

**THE RELATIONSHIP BETWEEN BULLYING AND SELECTED NURSING
STUDENT OUTCOMES (ANXIETY, STRESS, PERFORMANCE) AS MEDIATED BY
SELF-EFFICACY: TESTING A THEORETICAL MODEL**

by

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Abstract

Bullying is a prevalent issue within the nursing profession and nursing education. Decades of research have reported that student nurses are being exposed to and experience bullying in clinical learning environments. The literature has identified that these bullying experiences can negatively impact student nurses (s) performance and mental health. The development of self-efficacy within these learning environments, recognized as a critical part of the learning process according to Bandura's Social Cognitive theory, may have a mitigating impact on the effect of bullying. As such, it is paramount to address this bullying issue to ensure that students have an optimal learning experience and that their self-efficacy is nurtured. The current study was aimed to test a theoretical model that includes self-efficacy as a mediator between the relationship between bullying and behavioural responses (anxiety, stress, performance). Data were collected during the COVID-19 pandemic, where students had a clinical placement in a simulated and/or patient care setting. To test the theoretical model, structural equation modelling techniques were used. Findings identified that bullying remains an issue in the clinical learning environment and that intersectionality plays a role in the student nursing learning experience. The finalized model identified a positive direct relationship between bullying and behavioural outcomes (anxiety, stress, performance). Self-efficacy was a partial mediator between bullying to, stress and anxiety, but not performance. A metaparadigm of student educational experience was conceptualized, demonstrating that student nurses must have healthy, positive relationships with their educator(s) for the student to develop healthy self-efficacy, leading to improved mental health and academic performance. The findings of this study suggest that more work is needed to mitigate the gaps when it comes to enhancing no-tolerance policies and developing resources that would support educators in cultivating healthy,

safe learning environments for students, especially students who are representative of various intersectionalities.

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Chapter 1

Introduction

Nursing, at its core, is a profession representative of care and social justice, which fosters positive change within the health setting, and is taught through praxis in clinical and classroom settings (Felstead, 2013). Student nurses who embark on this pedagogical journey, must adapt to new ways of learning. Student nurses not only collaborate with fellow students and clinical teachers but are also expected to function in a complex environment with patients, family members, and members of the clinical multidisciplinary team. It is during this pedagogical experience students are exposed to a professional culture, which influences the development of their human agency, belief systems and values (Bandura, 1994). It is in these vulnerable moments of change and learning the student could experience bullying, which could potentially impact the trajectory of the pedagogical experience or future practice.

Bullying is an issue that has received international media attention and is acknowledged to be a world health issue (Srabstein & Leventhal, 2015). Bullying is a growing concern within the nursing profession resulting in position statements by professional associations (Canadian Nurses Association, [CNA] n.d; Registered Nurses Association of Ontario [RNAO], 2008) and zero-tolerance policies in healthcare organizations (Foster et al., 2004; Rucker, 2008). Regardless of the profession taking action, there has been limited resolution in decreasing the frequency of adverse experiences (Courtney-Pratt et al., 2018; King-Jones, 2011; Thomas & Burke, 2009). Nursing students in clinical settings are particularly vulnerable to bullying, which negatively impacts their mental, emotional and physical health (Clarke et al., 2012;

Hakojarvi et al., 2014; McAdam-Cooper, 2007; Mott, 2014). In one descriptive study representative of nursing students from years 1 - 4 in Ontario, 89% of nursing students reported that they experienced bullying at least once in a clinical setting (Clarke et al., 2012). More specifically, 77% of these students reported that bullying occurred in their first year of study, with the primary sources being faculty members, nursing staff, and peers (Clarke et al., 2012). Students have also reported witnessing staff bullying patients, nurses bullying each other, and faculty members bullying other students (Birks et al., 2018; Hoel et al., 2007; Randle, 2003). In a report by a working group of the Joint Provincial Nursing Committee (JPNC) in Ontario, results from a survey of nursing students revealed that 44.5% ($n=358$) of students who had experienced an unsatisfactory placement attributed it to an unhealthy work environment (JPNC, 2015). These experiences included an emotionally unsafe environment, working with an unsupportive clinical instructor, and/or working with unwelcoming or unsupportive floor staff who reported being bullied (JPNC, 2015). As a result, some students may perceive bullying behaviour to be the norm in the clinical setting and a part of their foundational learning experience (Freire, 2012; Machon, 2012; Seibel, 2014). In turn, these experiences may lead certain student nurses to adopt this behaviour in their future practice (Dulaney, 2015; Machon, 2012; Meissner, 1986; Seibel, 2014).

While there is a plethora of nursing research, news reports, and media outlets bringing to the public attention that bullying exists within the nursing profession, this increased attention has not translated into research investigating the issue within the post-secondary setting, more specifically within nursing programs. Empirical evidence has identified bullying to occur in a pedagogical environment; however, the primary area

where this phenomenon is reported to occur is within the clinical setting, but the extent of bullying behaviours experienced by nursing students is still unclear. In addition to the Ontario study mentioned in the opening paragraph, another multiple method study of 313 nursing students in the United Kingdom (UK) reported that 53% (n = 165) of participants had experienced at least one or more negative interactions during their clinical experience (Stevenson et al., 2006). Moreover, a qualitative study in the United States of America (USA) that included 47 senior baccalaureate nursing students, participants reported having been belittled by staff nurses (53%), humiliated (40%), talked about behind their back (26%) and had a sarcastic remark made about them (32%) (Longo, 2007).

Despite the variability in the data, nursing students experience bullying in the clinical setting. More specifically, students assert that bullying experiences have impacted their learning (Hakojarvi et al., 2014; Thomas & Burk, 2009) and future employment choices (Birks et al., 2018; Curtis et al., 2007; Hakojarvi et al., 2014). Additionally, research findings have indicated that these bullying experiences impact personal attributes such as self-efficacy (confidence) (Birks et al., 2018; Foster et al., 2004; Mott, 2014).

Self-efficacy is the personal belief system contributing to how people perceive situations and elicit behavioural responses (outcomes) (Bandura, 1989). Self-efficacy is a critical attribute in developing human agency and a person's belief system, particularly in learning (Bandura, 1977). This attribute influences the willingness to learn, pursue achievements, and appropriately manage mental well-being (Bandura 1989). Research has identified that a nursing student's behavioural response is elicited by their bullying experience. Examples of behavioural outcomes which students have reported concerning

their bullying experiences include low academic or clinical performance, anxiety, and stress (Birks et al., 2018; Machon, 2012; Randle, 2003; Seibel, 2014). However, in the literature there is a noticeable gap related to understanding the potential mediating effect of self-efficacy on the relationship between bullying and selected behavioural outcomes (performance, anxiety, stress) of nursing students.

The purpose of this study was to test a theoretical model examining the relationship between bullying experienced in the clinical practice environment and selected student outcomes (anxiety, stress, performance), as mediated by self-efficacy. The Social Cognitive Theory (SCT) by Albert Bandura (1989) was used to guide the development of the theoretical model, which is described in more detail in Chapter Two. This study will contribute to the body of knowledge related to bullying experienced by student nurses in the clinical setting and the impact it has on the student nurse.

1.1 Significance

Self-efficacy is an attribute that gauges a person's belief system and is an integral part of the human agency, which includes learning, mental health, and pursuit of achievements (Bandura, 1977). Moreover, additional research recognizes the role self-efficacy plays in the cognitive process and is recommended to be a fundamental concept in nursing education (Robb, 2022). Thus, understanding the effects of bullying on performance, anxiety, and stress and the role of self-efficacy in mediating these relationships could provide practical solutions to facilitate change within the clinical practice (learning) environment, such as teaching approaches, evaluation methods, and student nurses learning how to manage exposure to bullying experiences. In addition, with the increasing emphasis within the profession on the recruitment and retention of

nurses, it is imperative to create clinical environments that emphasize positive relationships (Birks et al., 2017; Seibel, 2014).

At present, the nursing profession is in a crisis as it relates to the current nursing shortage as predicted by many researchers, identifying that positive work environment(s) and manageable workloads are needed to retain nurses (Marc et al., 2019; Oulton, 2006). These concerns have become a reality, and the profession is trying to navigate and mitigate the issue (Canadian Federation of Nurses Unions 2022; Registered Nursing Association, 2021), along with finding innovative and creative ways to create positive work environments (Canadian Nurses Association, 2022a). At the time of this research, nurses were leaving the profession due to burnout, increased workload, not feeling supported by their employer, and issues related to the COVID-19 pandemic (Registered Nurses Association, 2021). Reports have identified that the COVID-19 pandemic has caused psychological duress, hostile work environments, and increased workload (Galehdar et al., 2020; Mukhtar, 2020). Such issues have negatively impacted many organizations regarding recruitment, retention, quality of nursing care, and nursing education (Dulaney, 2015; Haddad & Toney-Butler, 2020). Secondly, the impending wave of retirement may impact the quality of the work environment and patient care, job satisfaction, and finding qualified professionals to train future nurses (Birks et al., 2018; Dulaney, 2015; Haddad & Toney-Butler, 2020); presently, the average age of a nurse ranges from 45-54 years (Canadian Institute for Health Information [CIHI], 2018; Canadian Nursing Association, 2022b). The possibility that many nurses will potentially be retiring over the next 5-15 years, coupled with the implications resulting from the COVID-19 pandemic, will critically impact the current nursing shortage. Conversely,

these identified findings have been reported to lead to bullying in the clinical practice setting (Boamah et al., 2021; Dulaney, 2015; McAdam-Cooper, 2007; Szutenbach, 2013; Tee et al., 2016). Therefore, if students are potentially being exposed to environments where bullying takes place, they are at risk of experiencing bullying themselves with downstream negative outcomes (Budden et al., 2017; Celik & Bayraktar, 2004; de Villiers et al., 2014; Du Toit, 1995; Szutenbach, 2013). These outcomes may be in feelings of intimidation (Foster et al., 2004; Machon, 2012; Palaz, 2013a), fear (Mott, 2014), compromised patient safety (Dulaney, 2015; Smith et al., 2016), or a limited ability to critically think (Machon, 2012; McAdam-Cooper, 2007; Palaz, 2013a).

1.2 Layout of the Thesis

The chapter that follows will provide a broader overview of the literature that will be presented, in addition to the hypothesized model that guided this research. Chapter 3 will outline the methodology used in this study. Chapter 4 will discuss the study's results, including data analysis and structural equation modelling. Finally, Chapter 5 discusses the study findings, implications, and limitations.

Chapter 2

Literature Review and Theoretical Framework

Bullying within the nursing profession has been thoroughly researched and well documented in the literature. There is no debate that this phenomenon remains an ever-present issue, is considered unavoidable, and is explained as a "rite of passage" and indoctrinated into the culture (Edmonson & Zelonka, 2019). The concern for bullying within the profession could not be ever more accurate for nurses, especially during the COVID-19 pandemic, which exposed, and exacerbated the issue (Dye et al., 2020). The phenomenon adds to nurses leaving the profession or nursing programs to pursue other careers (Edmonson & Zelonka, 2019) and is a contributing factor for compromised patient safety (Etienne, 2014).

Empirical data have presented the pivotal role that bullying has on the profession and, more recently, how its presence translates to the student nurse population during their experience in clinical practice settings. In other student bullying studies, it was identified that 38% of nursing students experienced bullying (Kassem et al., 2015); in a report from the United Kingdom, 42% of student nurses indicated to have experienced bullying during clinical placement (Tee et al., 2016). In addition to the reported experiences, student nurses highlighted that their exposure and experiences with bullying in the clinical setting have an impact on their mental health and emotional and physical well-being (Birks et al., 2018; Tee et al., 2016). Some student nurses' experience was enough to signal them to leave the profession altogether and pursue other ambitions (Budden et al., 2017). Another significant aspect of bullying is the role it plays in the nursing culture and how student nurses are being socialized into the profession. In

Machon's (2012) exploratory case study of associate degree student nurses in Chicago, examining the socialization of bullying during the nursing educational experience was a theme, continuing the cycle of bullying and further entrenching it into the culture.

2.1 Examining the Literature

The literature review examined the behaviour, attributes, and outcomes of bullying specific to nursing students with being socialized into the profession. A search of electronic databases was conducted for articles published from 2003 to 2022. The time frame was chosen based on relevant research examining student nurse bullying and when such research was first reported in published literature. The search was limited to the English language, and the subsequent databases were used: Elton B. Stephens Company (EBSCO); Cumulative Index of Nursing and Allied Health Literature (CINAHL); Google Scholar; PsychINFO; ProQuest, and the National Library of Medicine (OVID Medline). The search terms included the following: student nurses, bullying, mobbing, vertical violence, and horizontal violence were selected because these terms have been reported to be synonyms with bullying (Budden et al., 2017; Cooper & Curizo; 2012; Curtis et al., 2007; Faerman-Geller, 2013; Hewett, 2010). Furthermore, concepts such as "negative behaviour", 'harassment,' 'abuse,' 'aggression,' and 'workplace-violence' have also been found to overlap with the concept of bullying (Budden et al., 2017; de Viller et al., 2014; Faerman-Geller, 2013; Fathi et al., 2018; Longo, 2007; Tee et al., 2016; Thomas & Burk, 2009). While these terms were not included in the search terms, articles that also discussed these concepts were included in the literature review. A PRISMA diagram presents the results of the literature review in Appendix A. Library scientist support was sought to verify the appropriateness and sensitivity of the search.

Thirty-four articles were included in the literature review; most designs were quantitative ($n=19$), followed by qualitative ($n=13$), and mixed methods ($n=3$). Many of the studies were completed in the USA ($n=10$) and Australia ($n=5$), followed by the United Kingdom ($n=4$), Turkey ($n=3$), New Zealand ($n=3$), South Africa ($n=2$), Canada ($n=2$), with only one study from several other countries (Iran, Finland, Italy, Ghana, and Egypt). Within the included studies, the sample sizes ranged from 6 to 1394 (Amoo et al., 2021; Birks et al., 2014; Birks et al., 2017; Budden et al., 2017; Clark et al., 2012; Cooper & Curzio, 2012; Curtis et al., 2007; Dulaney, 2015; Foster et al., 2004; Hakojarvi et al., 2014; Machon, 2012; Palaz, 2013; Stevenson et al., 2006).

There is complexity in the definition of bullying present in the literature. In the section that follows, a discussion of definitions precedes the themes found in the review of literature. The themes are, frequency rates and sources of bullying, behaviours experienced by student nurses, attributes of student nurses, the outcomes of bullying, and socialization of bullying into the profession.

2.2 Definition of Bullying in Research with Student Nurses

Bullying is a complex phenomenon usually defined or identified by the recipient (Birks et al., 2018; McAdam-Cooper, 2007; Mott, 2014). Twenty-four studies provided definitions of bullying, while seven studies provided no formal definition. Definitions included behaviours such as abuse of power to oppress peers and subordinates, abuse and intimidation (Clarke, 2009; Clarke et al., 2012; Foster et al., 2004; Randle, 2003; Thomas & Burk, 2009), and inappropriate behaviour (Hakojarvi et al., 2014). Other research defined bullying behaviour to include aggression (Cooper & Curzio, 2012; Curtis et al., 2007; Minton et al., 2018), hostility, and harassment (Budden et al., 2017; Courtney-Pratt

et al., 2018; Tee et al., 2016), abuse (Birks et al., 2018; Courtney-Pratt et al., 2018; Dulaney, 2015; Hoel et al., 2007; Machon, 2012), intimidation (Dulaney, 2015), humiliation (Dulaney, 2015), threatening, demeaning and injuring the dignity of others (Dulaney, 2015; Faerman-Geller, 2013; Minton et al., 2018; Stevenson et al., 2006), as well as physically injuring another (Fathi et al., 2018).

Another significant aspect of the definition of bullying is the potential impact the behaviour has on the victim's attribute(s), health (mental, physical, and emotional), and behavioural responses (Birks et al., 2018; Courtney-Pratt et al., 2018; de Villiers et al., 2014; Faerman-Geller, 2013; Hakojarvi et al., 2014; Kassem et al., 2015; Magnavita & Tarja; 2011; Minton et al., 2018; Stevenson et al., 2006; Tee et al., 2016). Several definitions refer to student attributes or health that may be affected by bullying, including self-esteem (Foster et al., 2004; Randle, 2003; Stevenson et al., 2006), self-efficacy (Kassem et al., 2015; Mott, 2014), emotional distress (Foster et al., 2004; Mott, 2014), mental distress (Birks et al., 2018; Budden et al., 2017; Hakojarvi et al., 2014), a combination of both (Dulaney, 2015; McAdam-Cooper, 2007), feeling threatened (de Villiers et al., 2014; Smith et al., 2016), and feeling humiliated or vulnerable (Celik & Bayraktar, 2004; Faerman-Geller, 2013; Hoel et al., 2007). Some definitions also discuss the relationship between the bully and victim, such as between members of a group (Budden et al., 2017; Curtis et al., 2007) and unequal power relationships (Courtney-Pratt et al., 2018; Dulaney, 2015; Machon, 2012; Thomas & Burk, 2009).

In summary, the definition of bullying in educational-related literature was presented as a perceived negative act, potentially impacting personal attribute(s) (Birks et al., 2018; Foster et al., 2004; Mott, 2014) with a range of behavioural responses

(outcomes) not limited to stress, anxiety, and performance which primarily occurs in the clinical setting (Cooper & Curzio, 2012; Courtney- Pratt et al., 2018; Fathi et al., 2018; Smith et al., 2016).

For this research, *bullying* was defined as a repeated negative or unwanted act, experienced over a period of time (Leymann, 1990; Matthiesen & Einarsen, 2010; Quine, 1999,2001), which can be intentional or unintentional, causing distress, mental, physical or emotional harm (Einarsen, 2000; Leymann, 1996; Matthiesen & Einarsen, 2010; Olweus, 1997).

2.3 Frequency Rates of and Sources of Bullying in the Clinical Setting

Although the frequency of bullying varies among studies, the types and sources of bullying behaviour(s) experienced by nursing students remain comparable across studies. Twenty-one studies identified the frequency of bullying experienced by student nurses in the clinical setting, ranging from 42-100% (Birks et al., 2017; Budden et al., 2017; Celik & Bayraktar, 2004; Clarke et al., 2012; Faerman-Geller, 2013; Foster et al., 2004; McAdam-Cooper, 2007; Minton & Birks 2019; Palaz, 2013a; Stevenson et al., 2006). For example, in a quantitative descriptive study of 370 undergraduate nursing students in Turkey (Palaz 2013a), 60% ($n=222$) of second to fourth-year nursing students reported bullying behaviours by others daily or weekly within a six-month period. The primary perpetrators were reported as practicing nurses (71%) and lecturers (30%): most of the students were frequently exposed to bullying during various stages of the program, and it was reported bullying primarily occurs in the clinical setting, with the primary perpetrators being nurses and instructors (Birks et al., 2018; Randle, 2003; Smith et al., 2016).

Student nurses rely on practicing nurses and clinical instructors for mentorship, and to learn exemplary practice (Codon, 2015; Cooper et al., 2011; Seibel, 2014). However, what is observed or experienced by students is the inculcated practices of nursing professionals who demonstrated bullying as a normal facet of the practice and the profession. This was noted to be the case in the qualitative studies conducted by Birks et al. (2018), and Randle (2003), who reported that student nurses who experienced or observed nursing staff and instructors bullying, concluded that bullying was a normal part of the nursing culture (Birks et al., 2018 & Randle, 2003). In a cross-sectional study of 313 student nurses that examined the relationship between bullying and the impact on students' self-esteem (Stevenson et al., 2006), 53% ($n=166$) of second and third-year nursing students, students reported experiencing bullying during their clinical placements where physicians and health care aids (HCA) were the primary perpetrators. A longitudinal qualitative study from 2004-2007 using a narrative approach focused on understanding vertical violence experienced by student nurses (Thomas & Burk, 2009). The sample included 221 nursing students in a Bachelor of Science nursing program (Thomas & Burk, 2009). Participants identified that vertical violence happened more frequently in the clinical practice setting compared to the classroom setting, and the primary perpetrators were nursing staff and clinical instructors (Thomas & Burk, 2009).

To further substantiate concerns pertaining to the bullying experiences of student nurses, a descriptive study was conducted in Turkey (Celik & Bayraktar 2004) with 225 Bachelor of Nursing students in years one to four. The entire sample (100%) of students reported experiencing some form of abuse during their nursing education, with the primary perpetrator being staff nurses and physicians (Celik & Bayraktar, 2004). The

sources and frequencies of bullying student nurses reported in the clinical practice setting were primarily persons with perceived power and authority (Budden et al., 2017; Clarke et al., 2012; Kassem et al., 2015). Forty percent reported experiencing bullying/harassment, and the bullying behaviours became more frequent as they progressed through the program (Minton et al., 2018). Students who reported English as a second language were more likely to report bullying and were identified by the researchers as having a limited understanding of how to identify bullying behaviours (Minton et al., 2018). The frequency and the source of bullying that have been reported by students are alarming and, according to Einarsen et al. (2011), suggests that if bullying is reported to have a prevalence rate of 10 percent, it necessitates strong attention and intervention.

2.3.1 Bullying Behaviours Experienced by Student

There were twenty-four studies that documented different bullying behaviours experienced by student nurses. Seven studies highlighted behaviours such as 'being ignored,' intimidated, criticized, 'yelled at, socially excluded (Courtney-Pratt et al., 2018; Foster et al., 2004; Hakojarvi et al., 2014; Machon, 2012; Smith et al., 2016; Stevenson et al., 2006; Thomas & Burk, 2009), and humiliation (Birks et al., 2017; Fathi et al., 2018; McAdam-Cooper, 2007). Other perceived bullying behaviours reported by student nurses in the clinical environment include unmanageable workloads (McAdam-Cooper, 2007; Palaz, 2013), physical abuse (Hoel et al., 2007), and aggression or abusive behaviour (Hoel et al., 2007; Smith et al., 2016; Thomas & Burk, 2009). An American qualitative study using phenomenology sought to understand bullying behaviours experienced by 56 baccalaureate nursing students in the clinical practice setting in their senior year of the

nursing program (Smith et al., 2016). Bullying behaviour experienced by students was presented in themes including 'being ignored,' 'witnessing, non-verbal behaviours,' 'being denied learning,' and 'being intimidated' (Smith et al., 2016). Participants rationalized bullying behaviours as a 'rite of passage', and to be unpreventable (Smith et al., 2016).

Research reports that the profession denounces bullying and is acknowledged to be individualistic in experience, hierarchical in nature (Zabrodska et al., 2011). Bullying experienced by student nurses does not occur in a specific year or semester, but can happen anytime throughout their pedagogical experience, and primarily in the clinical environment. As discussed above, the frequency rate of bullying varied from study to study. Variables that can impact the frequency rates of bullying reported in the research are based on the clinical unit (e.g., Acute care, Long-term Care, or community) (Thomas and Burke 2009; Stevenson et al., 2006); and organizational culture (Budden et al., 2017). More notably, nursing staff and faculty are expected to be positive role models, advocates, and mentors for nursing students who are embarking on this profession (Dulaney, 2015; Machon, 2012). However, the literature presented a different representation, which can instigate some deliberation by nursing students around whether they want to continue in a profession where bullying is experienced and is perpetrated by role models (Budden et al., 2017; McAdam-Cooper, 2007). Indication of the frequency and sources of bullying presented raises apprehension regarding the implication that bullying may have in the clinical setting, the profession, and policy development related to nursing education (Budden et al., 2017).

2.4 Nursing Student Attributes

The seminal role attributes play in the student nurse learning experience in the clinical setting is clear in reviewed literature. As reported above, the consequence is not only about the experience, but its impact on the student and their development as a professional nurse. Intersectionality plays a critical role in the student nurse experience and can result in negative outcomes for the student nurse, such as leaving their program (Birks et al., 2017). Moreover, the attribute of self-efficacy, which is a critical part of the development of human agency, and integral to socialization (Bandura, 2002; Hill-Collins, 2019), and reported to be critical to student learning (Robb, 2012). Self-efficacy regulates self-belief, motivation and decision-making (Bandura 2002; Robb, 2012), which is essential for cognitive development/learning (Bandura, 1991).

Eleven studies reported the impact of bullying on nursing students' self-efficacy or self-esteem (Birks et al., 2018; Courtney-Pratt et al., 2018; Faerman-Geller, 2013; Foster et al., 2004; Kassem et al., 2015; Minton & Birks, 2019; Mott, 2014; Randle, 2003; Stevenson et al., 2006). Nursing students who reported a change in their self-efficacy alluded that their perception of themselves changed once they started to experience bullying (Foster et al., 2004; Kassem et al., 2015; Randle, 2003; Stevenson et al., 2006). In one descriptive study, conducted in Australia, the researchers examined the bullying experiences of student nurses in the clinical setting (Birks et al., 2018). The total sample consisted of 884 participants, with 867 students in years one to three of the nursing program and 17 students in the midwifery program (Birks et al., 2018). Participants reported that the consequences of bullying behaviour negatively impacted their self-esteem and self-confidence (Birks et al., 2018). In a phenomenological study

conducted in Australia, researchers aimed to understand students' bullying experiences in the clinical and academic settings as a means of formulating recommendations to decrease bullying and receive feedback on how students can be empowered. The sample consisted of 29 nursing students in years one through three (Courtney-Pratt et al., 2017). The themes described regarding bullying in the practice setting were *covert behaviours such as being unwelcomed, excluded, and experiencing intimidation* (Courtney-Pratt et al., 2017). More importantly, bullying impacted students' confidence and brought on feelings of anxiety, stress and, for some, questioning if nursing was the right career for them (Courtney-Pratt et al., 2017).

2.4.1 Intersectionality: A component of Student Nurses' Attributes

Intersectionality is a combination of attributes (seen and unseen) that comprises a person's identity (Hill-Collins, 2019; Nash, 2008). While examining the experiences of bullying reported by the student nurse, the concept of intersectionality was present and identified for its role in the bullying experiences reported by student nurses.

Empirical studies have suggested that students who experienced bullying represent various intersectionalities and have been observed to play a seminal role in their bullying experience. One example of an attribute is classified under the theme 'class', which is representative of the attribute of 'student,' reported by Budden et al. (2017); Luganga et al. (2020); and Minton & Birks (2019). Being classified as a 'student' creates a vulnerability representing in experience, and having less knowledge compared to mentors, and educators, thus, placing the individual at a greater risk of experiencing bullying behaviour(s). Another identified intersectionality is 'having less education' or 'experience' (Cooper et al., 2011; Minton & Birks, 2019). The research also

acknowledged that intersectionalities such as speaking English as a second language (Birks et al., 2017; Budden et al., 2017), being a visible minority, and/or representing a particular religion (group) may play a pivotal role in the overall bullying experience (Birks et al., 2018; Budden et al., 2017; Kassem et al., 2015; Luganga et al., 2020; Minton 2018).

2.5 Outcomes of Bullying

Emotional outcomes reported by student nurses, experienced during clinical learning, are decreased productivity (Kassem et al., 2015), consideration of leaving nursing school (Budden et al., 2017; Minton et al., 2018; Palaz, 2013), poor performance, lack of concentration (Budden et al., 2017; Dulaney, 2015; Hakojarvi et al., 2014; Machon, 2012; Palaz, 2013a; Smith et al., 2016), and reduced ability to think critically (Budden et al., 2017; Minton et al., 2018; Palaz, 2013a). Secondly, outcomes reported to impact mental health, are stress (Birks et al., 2018; Cooper & Curzio, 2012; Courtney-Pratt et al., 2018; de Villiers et al., 2014; Faerman-Geller, 2013; Machon, 2012), anxiety (Courtney-Pratt, 2018; de Villiers et al., 2014; Fathi et al., 2018; Foster et al., 2004; Minton et al., 2018; Tee et al., 2016), and depression (Budden et al., 2017). The final group of outcomes reported by student nurses is the physical in nature. The consequences of bullying expressed by the student nurses are generalized body pain (Fathi et al., 2018; Hewett, 2010), lack of sleep (Dulaney, 2015), headache (Birks et al., 2018), and lack of appetite (Machon, 2012; Dulaney, 2015).

A cross-sectional study including a sample of 888 undergraduate nursing students from years one to four (Budden et al., 2017) highlighted that 50% of students reported experiencing bullying/harassment in the previous 12 months, and junior students were

more likely to be bullied/harassed than older students. Most students reported that the experience of being bullied/harassed made them feel anxious (72%) and depressed (54%). Another study using a descriptive design (Minton et al., 2018) aimed to gain insight into the bullying experiences of 296 student nurses in clinical settings enrolled in years one to three. Outcomes of bullying included anxiety (75%), feeling inadequate (70%), and depression (45%) (Minton et al., 2018). More importantly, students who experienced bullying reported that it negatively impacted their ability to provide patient care (33%) (Minton et al., 2018). These findings indicated that bullying not only impacts student self-efficacy, but it also influences behavioural responses demonstrated or experienced in the clinical practice setting (Birks et al., 2018; Dulaney, 2015; Kassem et al., 2015; Minton et al., 2018; Palaz, 2013a; Smith et al., 2016). Several of these authors were able to link the relationship between bullying and outcomes / behavioural responses. More specifically, these perceived experiences can lead to the student becoming stressed (Birks et al., 2018; Cooper & Curzio 2012; Courtney-Pratt et al., 2018; de Villiers et al., 2014; Faerman-Geller, 2013; Machon, 2012), feeling anxious (Courtney-Pratt, 2018; de Villiers et al., 2014; Fathi et al., 2018; Foster et al., 2004; Minton et al., 2018; Tee et al., 2016), and potentially limiting their performance when providing care (Birks et al., 2018; Courtney-Pratt et al., 2018; Dulaney, 2015; Palaz, 2013a; Smith et al., 2016). These commonly reported outcomes identified by student nurses, have been recognized to have the greatest negative impact on the student nursing pedagogical experience.

Understanding the relationship between student bullying experiences, attributes, and outcomes (anxiety, stress, and performance) within the student nurse's population will provide significant insight how these outcomes impact the student nurse learning

experience, and how nursing educators can help facilitate a more positive clinical learning encounter.

2.6 The Culture of Bullying and Socialization

Student nurses are socialized into the profession, which is an extensive process for the student nurse (Salisu et al., 2019). For many students, this process starts when they are first introduced to the profession upon commencement of clinical. During the clinical experiences, students start to embrace the culture of nursing, which includes values and belief systems (positive and negative) (Salisu et al., 2019). When it comes to bullying and the student experience, students believe the phenomenon to be a part of the nursing culture and is a 'rite of passage' (Birks et al., 2018; Smith et al., 2016). Thus, regarding the act to be common or normalized in many clinical environments. Also, many students believe that this 'rite of passage' is a consequence of the stress that the staff are experiencing (Birks et al., 2018; Cooper et al., 2011; Dulaney, 2015). Gillespie and colleagues (2017) comment on the often-used phrase, 'Nurses eat their young': it is expected that senior more experienced nurses will exhibit bullying behaviour to student nurse, which is an anticipated part of the socialization process for student nurses. For example, a qualitative study using a case study approach taking place at three universities in Chicago with students (N=21) in an undergraduate nursing program focused on describing how a culture of bullying plays a role in the student nursing experience. Two major themes in the study's analysis from were: 'nurses eat their young', and 'bullying is learned through socialization', which was noted to primarily occur in the clinical setting. Within the first theme 'nurses eat their young' (NETY), authors reported that students were primarily bullied by educators and mentors resulting in experiences such as public

humiliation, silent treatment, dirty looks, harassment, intimidation, and excessive critique (Machon, 2012). Participants also concluded that bullying happened because of poor management, nurse burnout, high acuity levels on the unit, increased patient load, and pressure to be a 'good nurse'. The second theme 'bullying is learned through socialization', it was reported that behaviours such as bullying is learned during nursing education experience as they are being socialized into the nursing culture. This is where student nurses observe the behaviours of identified role models and in nursing practice and education, which was reported that socialization starts the first day of nursing school (Machon, 2012). Participants identified how critical it is to have role models in the profession as a new nurse, it is through mentorship/ role modeling that student nurses learn how to act, think and identify with the profession. Moreover, it was recognized that through socialization that the acceptance of the unwanted behaviour can negatively impact the student nurse's belief system or personal attributes (Birks et al., 2018; Budden et al., 2017) and influences how the student responds to the behaviour (Birks et al., 2018; de Villiers et al., 2014; Kassem et al., 2015; Magnavita & Tarja, 2011): the student sometimes becomes the bully as a defense mechanism (Birks et al., 2018; King-Jones, 2011). Bullying behaviour is learned through observation or modelled by nurses and instructors in the clinical environment (Machon, 2012) and student nurses accept this behaviour as the norm.

2.7 Problem

No studies have formally analyzed or explored the relationships between bullying and self-efficacy as a mediating factor and outcomes. There is a need to examine factors linking bullying in nursing students' educational experiences to outcomes for these

students. No studies empirically link bullying behaviours to student outcomes through the mediating effects of elements of attributes, specifically self-efficacy. Self-efficacy is an attribute recognized to be a critical attribute in the student learning process (Bandura, 1986; 1994; Dogu et al., 2022). Therefore, this study aimed to develop and test a theoretical model examining the relationship between bullying experienced by student nurses in the clinical practice environment and measures of anxiety, stress and performance as mediated by self-efficacy and initiate the conceptualization of the student nurse-educator metaparadigm.

It is critical to have a theoretical underpinning to guide this study, testing the relationships of the identified variables, particularly self-efficacy, which is considered a critical attribute to learning according to Bandura (1986; 1994). Social Cognitive Theory (SCT) will be used to support this study because it helps guide the understanding of how learning relates to self-efficacy. However, more importantly, it is empirically recognized as a strong predictor of student performance (Doug et al., 2022). Therefore, this study seeks to explore how different variables (bullying, anxiety, stress, performance) influence an individual's self-efficacy and how that, in turn, affects the learning process of the student in the learning environment (Doug et al., 2022; Kassam et al., 2015).

2.8 Theoretical Model

The theoretical model (Figure 1) was formulated based on Social Cognitive Theory, described in more detail in the following sections, and the literature review of research examining bullying of nursing students. Variables were positioned to highlight the relationships identified between the environment, attribute(s), and output (outcomes), which will be described in more detail below.

2.8.1 Social Cognitive Theory

Social Cognitive Theory (Bandura, 1989) was central to the theoretical model used to guide this study (Figure 1), contributing to the mediating variable of self-efficacy between the learning environment and process where bullying occurs and behavioural responses in student nurses. Research has posited that self-efficacy is a strong predictor of a student's learning experience (El Mageen et al., 2021; Sarikock et al., 2017). Learning occurs in a social context, and it is based on the reciprocal interactions of the environment, person, and behavioural response(s) (Bandura, 1986). Pedagogy cultivates informal and formal experiences for students (Freire, 2012). Moreover, nursing pedagogy is interpersonal and diverse (Clarke, 2009; Dulaney, 2015). These experiences allow nursing students to formulate their conception of human agency as nurses. Human agency is the regulation of human functioning that motivates and guides the engrained core beliefs that create the desired effects of a person's actions (Bandura, 2002). In the pedagogical environment, the human agency that the student nurse conceptualizes includes values, beliefs, and behavioural responses (outcomes) (Bandura, 2002; Freire, 2012). Mediating the pedagogical environment can influence a nursing student's attribute(s) or behavioural response(s); Social Cognitive Theory (SCT) (Bandura, 1989) was used. SCT (Bandura, 1989) provides an understanding of how nursing students perceive bullying as they are being socialized into the profession (environment) and how these perceived experiences potentially change their attribute(s), thus causing behavioural responses (outcome) during their clinical experience.

SCT provides an explanation of how bullying experiences can impact the student nurse's attribute of self-efficacy, and outcomes such as, but not limited to, anxiety, stress

or performance. The pedagogy of nursing is interpersonal and diverse (Clarke, 2009; Dulaney, 2015).

2.8.2 Environment

Clinical settings are expected to be a positive learning environment for student nurses. However, student nurses have reported the opposite (Birks et al., 2018; Magnavita & Heponiemi, 2011; Minton & Birks, 2019). Even more recently and in light of the COVID-19 pandemic, the clinical setting has been reported to be high stress and high anxiety work environment, which has created an unhealthy and harmful work setting (Galehdar et al., 2020; Mukhtar, 2020), which can have a negative impact on the student learning experience. The behaviour (bullying) occurs within the environment, as identified in Figure 1. The clinical setting (environment) is where student nurses apply their foundational nursing skills and theoretical approaches known as "praxis" (Smith & Parker, 2015). Regarding applying praxis, students are socialized into the clinical environment and the profession during their rotation(s). During socialization and moments of praxis, student nurses learn through observation and experiences (Bandura, 1977; 1989; 1994). These moments of observed or actual experiences can occur between in interdisciplinary team, nurse-to-nurse, student nurse(s) to nurse(s), clinical instructor to student nurse(s), and nurse(s) to patient. For example, in a descriptive study conducted at three nursing schools in New Zealand, Australia and the United Kingdom by Birks et al. (2017), the bullying experiences of student nurses in the clinical setting were examined. The sample was representative of nursing students in years one through three (N=1394). Forty-three percent of the student nurses reported to have experienced bullying, and that bullying was a part of the job (Birks et al., 2017). From this dataset, Minton and Birks

(2019) analyzed the short answer responses of 296 student nurses using textual data analysis to create themes. The themes generated were manifestation of bullying, harassment, perpetrators, impact and consequences of bullying (Minton & Birks 2019). The study results implied through the comments that the clinical environment and unit culture plays a significant role in their learning and bullying experience: a student stated, "the ward manager didn't like students, and it felt like this gave the other RNs the right to treat us badly" (Minton and Birks 2019, p. 14).

2.8.3 The Learning Process

Learning is usually experienced through some form of social interaction, where people recognize and comprehend social norms through human interaction (Little et al., 2014). According to Bandura (1977; 1989; 1994), learning occurs within a social environment with a dynamic and reciprocal interaction of the person, behaviour, and environment. Bandura (1989) frames the environment as where people receive information, known as 'input.' The clinical setting is the point of contact where student nurses' knowledge is framed, and the characteristics of a practicing nurse are cultivated through the different interactions with patients, nurses, family members, and multidisciplinary team members. The environmental stimulus (learning) in social, cultural, or educational settings can lead to the development of various attributes, such as self-efficacy, which are demonstrated in an individual's behaviour with verbal responses, body language, or physical reaction (Bandura, 1989). Bandura (1989) frames this attribute to be developed during the mediational process (mental event/ processing). It is during this process that the student formulates their perception, belief system(s), judgements, reasoning, and knowledge through their experience(s), resulting in the form

of behavioural response (outcome) or 'output' (Bandura 1989). The 'output' can be represented by a behavioural response (outcome) in the environment or a change in the student's emotional, mental, or physical status. Students learning in clinical environments are exposed to various dimensions of learning that generate their belief system of self-efficacy (Bandura, 1986; McLeod, 2016). Bandura (1994; 1997) suggests that an individual's self-efficacy is based on four primary sources of information and influence, which is the most effective way to develop a strong sense of self-efficacy (Bandura 1994; 1997). These four primary sources are vicarious experiences, enactive mastery experiences, physiological feedback, and verbal persuasion. Enactive mastery involves the actual performance of a proposed activity and the subsequent outcome with preconceptions, perceived difficulty, effort required, help received, and the situational context also playing a role (Bandura, 1997). The vicarious experience reinforces the belief in one's capabilities by observing others, such as role models, successfully accomplishing the desired task (Bandura, 1997). Verbal influence refers to verbalizing faith in someone's capabilities rather than verbalizing doubt (Bandura, 1997). Lastly, physiological feedback and affective states are used to judge one's ability to perform a particular activity and influence one's confidence (Bandura, 1997). Indicators such as mood states, autonomic arousal, and physical inefficacy may all interfere in the judgment of perceived self-efficacy and self-efficacy itself. SCT has been used to explain bullying behaviours and self-efficacy in new graduate nurses and student nurse populations (Clarke, 2009; Dulaney, 2015; Flateau-Lux & Gravel, 2014; Swearer et al., 2014).

2.8.3.1 Bullying and the Mediator of Self-Efficacy

Self-efficacy is the ability to control behaviour and personal motivations and to be able to enact personal convictions about one's behaviour (Bandura, 1977). Additionally, it resonates with the person's characteristics and judgement (Bandura, 1977). Bandura also posits that efficacy beliefs influence how people behave, think, feel and motivate themselves and influence the development of human agency. Hence, individuals with high efficacy in their ability can view challenging situation(s) as a form of mastery verse a threat(s) that needs to be avoided (Bandura, 1994). There is a correlation between bullying experiences and a change in attributes, such as self-efficacy (Birks et al., 2018; Courtney-Pratt et al., 2018; Kassem et al., 2015; Mott, 2014; Palaz, 2013a). Student nurses have reported that bullying experiences negatively affected their self-efficacy (Courtney-Pratt et al., 2018; Faerman-Geller, 2013; Foster et al., 2004; Mott, 2014). In a qualitative study conducted in New Zealand using a case study approach, the researchers examined the bullying experiences of student nurses (Foster et al., 2004). The sample consisted of bachelor nursing students in years one through three ($N=40$). The study revealed that 90% ($n=36$) of students had experienced some form of bullying when in clinical (Foster et al., 2004). In addition, some students who experienced bullying reported a change of attribute of decreased self-confidence (69%) or low self-esteem (66%) (Foster et al., 2004).

Due to the diverse interpersonal nature of nursing education, student nurses are exposed to all four sources of information (enactive mastery experiences; vicarious experiences; verbal persuasion and physiological feedback) that generate self-efficacy beliefs (Clarke, 2009). As such, previous and repeated experiences of bullying in the clinical setting may allow the concept of enactive mastery experiences to negatively

impact their self-efficacy and their ability to perform in clinical practice successfully.

Likewise, vicarious experiences of perceived bullying and deficiency of positive verbal influence may also undermine student nurses' self-efficacy and may subsequently lead to concerns with student clinical performance or students becoming stressed or anxious.

2.8.3.2 Behavioural Responses to Bullying

Bullying experiences negatively impact the personal attribute(s) of student nurses in the clinical practice environment (Courtney-Pratt et al., 2018; Foster et al., 2004; Hoel et al., 2007; Kassem et al., 2015; Randle, 2003; Stevenson et al., 2006). In addition, for some nursing students, these experiences of bullying have elicited negative changes to their human agency, resulting in a change in their self-confidence/efficacy (Birks et al., 2018; Courtney-Pratt et al., 2018; Foster et al., 2004; Kassem et al., 2015; Mott, 2014; Palaz, 2013a).

Moreover, nursing student research reported that students who have decreased self-efficacy could elicit behavioural outcomes such as anxiety (Courtney-Pratt et al., 2018; de Viller et al., 2014; Fathi et al., 2018; Foster et al., 2004; Minton et al., 2018 Tee et al., 2016), stress (Birks et al., 2018; Cooper & Curzio 2012; Courtney-Pratt et al., 2018; de Villiers et al., 2014; Faerman-Geller, 2013; Machon, 2012) or negatively impact their performance in the clinical setting (Birks et al., 2018; Courtney-Pratt et al., 2018; Dulaney, 2015; Magnavita & Tarja; 2011; Palaz, 2013a; Smith et al., 2016).

2.8.3.2.1 Anxiety

Anxiety is a behavioural response when an autonomic response is triggered through an environmental or psychological stimulus (Lewis et al., 2010). It can be mild and may increase the students' perception and learning capabilities, but moderate to

severe anxiety may limit learning (Lewis et al., 2010). There is evidence that nursing students who reported anxiety as an outcome of bullying stated that the occurrence happened in the clinical setting (de Villiers et al., 2014; Dulaney, 2015; Fathi et al., 2018; Minton et al., 2018; Tee et al., 2016), but it was unclear if this resulted in a change of their self-efficacy.

2.8.3.2.2 Stress

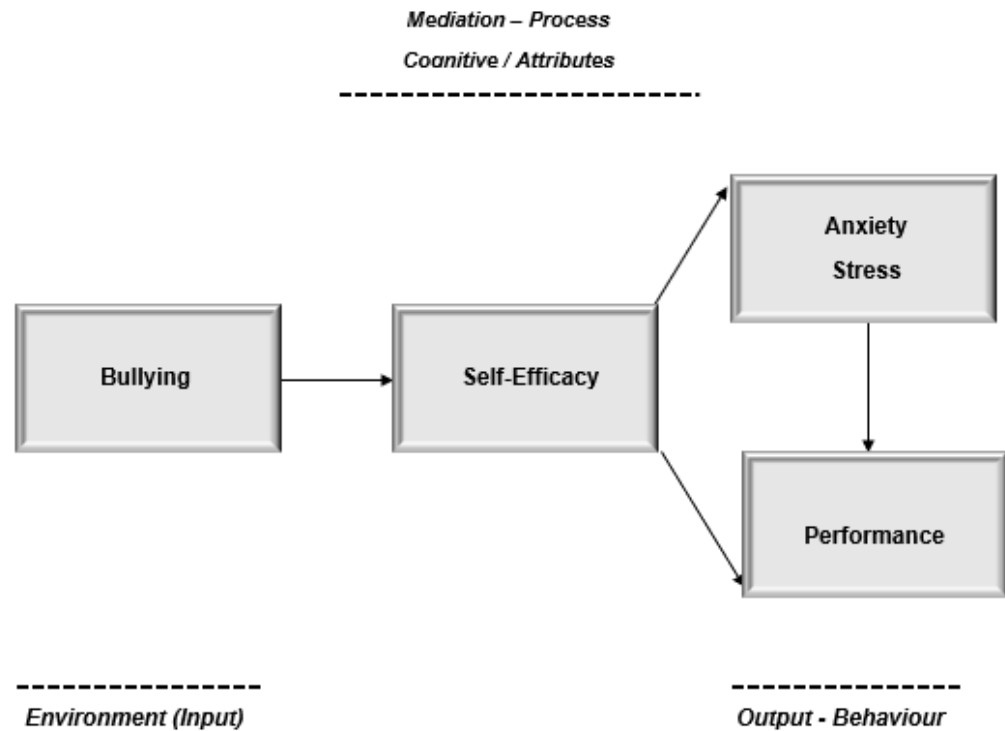
Stress is a behavioural response when a person perceives they cannot adequately cope with a situation, perceived stimulus, or when they feel threatened. Individual stressors vary from person to person and are based on perception and personal meaning, influencing the individual's response (Lewis et al., 2010). Nursing students reported that their increased stress is a direct result of bullying experiences in the clinical setting (Birks et al., 2018; Blochowicz, 2016; Faerman-Geller, 2013; Smith et al., 2016), or as a result of a change in the personal attribute of self-efficacy (Machon, 2012).

2.8.3.2.3 Performance

Nursing student(s) performance is based on pedagogical expectations and assessments established by the degree-granting Institute. Performance can be assessed based on patient care (Birks et al., 2018; Courtney-Pratt et al., 2018; Dulaney, 2015; Palaz, 2013a; Minton et al., 2018; Smith et al., 2016), critical thinking ability (Budden et al., 2017; Minton et al., 2018; Palaz, 2013a) and overall school performance (Palaz, 2013a; Smith et al., 2016). Such performance standards are dictated by the entry practice standards, which are implemented and managed by the nursing governing body (College of Nurses of Ontario, 2018; Doran, 2003).

Figure 1

Theoretical Model



2.8.4 Research Hypotheses

Student nurses who experienced bullying in the clinical setting reported that bullying impacted their clinical learning experience. In addition, these perceived experiences have been reported to influence the student's emotional, physical and mental status (Birks et al., 2018; Courtney-Pratt et al., 2018; de Villiers et al., 2014; Faerman-Geller, 2013; Hakojarvi et al., 2014; Kassem et al., 2015; Magnavita & Tarja; 2011; Minton et al., 2018; Stevenson et al., 2006; Tee et al., 2016). In several studies where students reported a high self-efficacy, students were less likely to experience or report

bullying in the clinical setting (Kassem et al., 2015; Minton & Birks, 2019).

Subsequently, it was also reported by Randle (2003), which is the only longitudinal study of nursing students and their experiences of bullying, self-reported having high self-esteem at the start of their nursing program. However, these same students then reported that their self-esteem decreased toward the end of their degree (Randle, 2003). Secondly, their bullying experiences increased as they progressed through the program (Randle, 2003; Stevenson et al., 2006).

Hypothesis 1: Nursing students' experiences of bullying in the clinical setting will have a direct negative effect on self-efficacy.

A student's self-efficacy is an integral attribute for the development of human agency (Bandura, 1977; 1989) and the student's learning process as the student develops their skills and competence as a nurse. Bullying experiences can have a negative impact on the student nurse's self-efficacy (Courtney-Pratt et al., 2017; Kassem et al., 2015; Minton & Birks, 2019). Moreover, not only does bullying has an impact on the student nurse's self-efficacy, but it can also impact the student's mental health, in particular student anxiety (Budden et al., 2017; Foster, 2004) and stress (Mott, 2014; Minton et al., 2019).

Hypothesis 2: Nursing students' self-efficacy will have a direct negative effect on anxiety and stress.

Student self-efficacy and clinical skills prove to have a relationship concerning how students perform in the clinical setting (Robb, 2012), especially when students are developing their self-efficacy through skills mastery (Bandura, 1994). At this point, student nurses may seek positive validation from their preceptor or clinical instructor (facilitator).

Hypothesis 3: Nursing students' self-efficacy will have a direct positive effect on performance.

Learning in the clinical environment is considered high-stakes learning for the student nurse. The student nurse(s) can only achieve a pass or fail for their clinical course, based on their clinical performance. Research has indicated that high-stakes learning can impact the stress and anxiety levels of the student nurse(s) (Tagher, & Robinson, 2016; Røykenes et al., 2014). In addition to natural stressors that come with high-stakes learning, a student nurse may experience perceived bullying in the clinical environment or negatively perceive their self-efficacy, which can add to their stress or anxiety.

Hypothesis 4: Nursing students' anxiety and stress will have direct negative effect on their performance.

Student nurse's expectations that bullying is inevitable and an expected part of the clinical learning experience (Birks et al., 2017; Minton & Birks, 2019) can potentially impact their self-efficacy (Faerman-Geller, 2013). Experiences of bullying in the clinical

setting can impact the student's level of anxiety (Courtney-Pratt et al., 2017; Tee et al., 2016) or stress (Blochwicz, 2016; Machon, 2012).

Hypothesis 5: Student nurses' experiences of bullying in the clinical setting will have a direct negative effect on their self-efficacy and indirect effects on their anxiety, stress, and performance as mediated by self-efficacy.

Research on student nursing experiences of bullying in the clinical setting has identified that it can have a direct effect on student nurse self-efficacy (Courtney-Pratt et al., 2017; Luhanga et al., 2020) and stress, anxiety, and performance. However, there is no empirical knowledge in student bullying literature identifying if there are mediating (indirect) effects between bullying outcomes of anxiety stress and performance.

However, in a cross-sectional study using hierarchical regression to test mediating relationships conducted in Taiwan with nurses ($N=422$), the study wanted to ascertain a relationship between bullying and mental health as mediated by self-efficacy. The results of the study indicated that nurse who works in the clinical setting that bullying had a direct effect on their mental health ($\beta=0.49, p < 0.001$), and self-efficacy partially mediated the impact of nurse mental health ($\beta=0.44, p < 0.001$) (Hsieh et al., 2019).

Chapter 3

Methods

An exploratory, predictive, non-experimental research design was used to test study hypotheses illustrated in Figure 1. Setting, sample, methods, and procedures that were used to implement the study will be described in the following sections. The instruments, data collection methods, data analysis process, and ethical considerations, will also be discussed.

3.1 Setting and Sample

The study was conducted at two universities in the province of Ontario. University One is in the eastern Greater Toronto Area and serves approximately 10,000 undergraduate students and 970 graduate students. The university offers many programs and is known for its collaborative education and experiential learning. University Two is also located in the Greater Toronto area, servicing one of the largest student populations (approximately 60,000). University Two is known for having a large, diverse student population and has a reputation for commitment to social justice and equity.

3.1.1 Sample Selection

The population under study were undergraduate nursing students in Ontario at the two university centres. The inclusion criteria were undergraduate baccalaureate nursing students enrolled in the third and fourth year of their program at the two universities. Students must have had at least two rotations in a clinical setting to ensure they have experience in a clinical setting within the baccalaureate program. The exclusion criteria were: 1) undergraduate baccalaureate nursing students enrolled in the first and second

year of their program, and 2) students enrolled in a bridging Registered Practical Nurse to baccalaureate Registered Nurse (RN) Program or in programs for nurses who were internationally educated. First- and second-year students were excluded as they have limited clinical experience and may have less exposure to bullying than students in the upper years. Furthermore, students who were Registered Practical Nurses earning their Bachelor's Degree and internationally educated nurses have previous clinical experience, which may result in a response bias based on their skills, and established belief systems (Polit & Beck, 2021).

3.2 Sample Size

The sample size calculation assumed that the proposed model would be tested using path analysis techniques with a maximum likelihood estimation within a structural equation modelling (SEM) technique. The ideal sample size recommended for SEM is a minimum of 200 participants (Hoyle, 1995; Wolf et al., 2013). This sample size is recommended to maintain the accuracy of the estimates in determining the degree of fit between the data and the proposed model (Hoyle, 1995; Wolf et al., 2013). However, since data collection was taking place during the COVID-19 pandemic, there was the potential for participation and recruitment of participants to be impacted. Therefore the N:q rule (Jackson, 2003; Kline, 2011) was used.

The N:q rule can be used to determine maximum likelihood estimations (Kline, 2011), which means that when researchers are determining the minimum sample size in a ratio representative of cases (N) and the theoretical model parameter (q). To obtain the maximum likelihood of testing a model, the researcher can use 10-20 cases per variable (Jackson, 2003; Kline, 2011). Therefore, using this method to test the hypothesized

model, which has five variables, a minimum of 50 to 100 participants was needed. The studies conducted by Sideris et al. (2014) and Wolf et al. (2013) provided evidence that when assessing the appropriate minimum sample size for evaluating structural equation modelling, 50-100 participants would provide sufficient power for evaluating a model. Secondly, the calculated sample size in this study assumed that all of the variables would be modeled as manifest variables and measured by a single indicator. Using a single indicator may be acceptable if the researcher is confident in the measure's validity and reliability (Garson, 2015). In this study, all variables were measured using well-established scales (psychometrically sound) and will be described in more detail in the instrument section. To account for a 30% response rate commonly found in online survey research (Dillman et al., 2014; Nulty, 2008), 655 students were invited to participate in the study to achieve the minimum threshold of at least 50 participants.

3.3 Data Collection

Following ethical approval from Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethic Board (6033077) Ontario Tech University Research and Ethics Board (16546), and York University Ethics Board (2021-318), data were collected using an online survey via the Qualtrics program between October 2021 to February 2022. Online surveys allow for easy distribution (Dillman et al., 2014) and flexibility for participants. Before formal data collection, Dillman et al. (2014) recommends that a survey pre-test be completed to assess readability, time of completion, and usability on personal devices (cell phone, tablet, computer). According to Dillman et al. (2014) and Pernger et al. (2015), when conducting a pre-test, a minimum of 5 participants are needed. In this study, the pre-test included 5 participants who were in

year 4 or recently graduated nursing students from one of the participating universities. The pre-test participants were contacted through the School of Nursing office at University One, and students interested in participating emailed the researcher. In addition to the invitation letter outlining the study, the students received a \$5 gift certificate from Tim Hortons. The pre-test questionnaire included additional questions about the length of time it took to complete the survey, accessibility across different devices, and the comprehension of the questions.

The pre-test results identified that the survey was completed on mobile devices ($n=2$) and computers ($n=3$), and that it took an average of 13 minutes ranging from 10 – 15 minutes to complete. In addition, participants identified that the questions were easy to understand, that it was easy to navigate on the Qualtrics™ platform, and that no concerns were raised regarding the survey.

Following pretesting, the study invitation was disseminated using various methods to ensure a successful response rate which will be outlined in the paragraphs below. Invitation dissemination and recruitment for participation were conducted according to Dillman's Method (Dillman et al., 2014). This included a combination of the following recruitment activities: posting announcements on the Learning Management system (LMS), follow-up supplements, e-mails; and posters in the student Newsletter (Dillman et al., 2014; Hoddinott & Bass, 1986). The distribution of the invitations at each university is as follows: University One invitation (Appendix E) was emailed a total of three times and posted twice to the students' Learning Management System (LMS) announcement board. In total, the invitation was sent out a total of five times. University

Two invitations were posted in the student newsletter twice, and the students received one email from their respective program year coordinators. The survey was distributed to 655 students meeting inclusion criteria (University One n=255; University Two n=400). After participants submitted their survey, the students were directed to a different hyperlink (URL) where they could participate in an online raffle to win 1 of 4 Tim Hortons gift cards valued at \$20. The virtual raffle was hosted in Qualtrics™, and student anonymity was maintained.

3.4 Data Collection Instruments

The survey (Appendix C) consisted of the following instruments: Bullying in Nursing Education Questionnaire (BNEQ) (Cooper et al., 2011), General Self-efficacy (GSE) (Schwarzer & Jerusalem, 1995), Perceived Stress Scale (PSS) (Cohen, 1994), General Anxiety Disorder (GAD) (Spitzer et al., 2006), Worrying about Workplace Bullying (WPB) (Al Omar et al., 2019), and a demographic questionnaire. The survey sequencing of the survey was formatted in the following order: GSE, GAD, PSS, BNEQ, WPB, and demographics. A summary of the variables and corresponding instrument is provided in Table 1.

Table 1*Variables and Instruments*

Variable	# Items	Instrument
Sample Characteristics Demographics Experience of bullying Location of bullying Sources of bullying Reporting of bullying	15	Developed for this study
Bullying	12	Bullying in Nursing Education Questionnaire (BNEQ)
Self-efficacy	10	Questionnaire General self-efficacy (GSE) tool (Schwarzer et al., 1995)
Anxiety	7	General Anxiety Disorder tool (GAD) (Spitzer et al., 2006)
Stress	10	Perceived stress scale (PSS) (Cohen, 1994; Cohen et al., 1983)
Performance	15	The Worrying about Workplace Bullying (WPB) (Al Omar et al., 2019).

3.4.1 Bullying

Bullying was measured using the Bullying in Nursing Education Questionnaire (BNEQ). Adopted from the 31-item Negative Acts Questionnaire (Cooper et al., 2011; Einarsen et al., 1994), the BNEQ measures personal experiences related to verbal, physical and academic bullying (Celik & Bayraktar, 2004; Cooper et al., 2011). The 12-item BNEQ uses a 5-point Likert scale, representing 1 (never) to 5 (always). The items are provided in terms of negative behaviour, without referring to the term bullying, therefore not “forcing” the participant to label their experience as bullying, even though it

is defined within the tool (Cooper et al., 2011). For each Item, the participant was asked how often they experienced the behaviour in their last 2-3 clinical rotations. A low score represents minimal bullying experiences by the student, while a higher score represents experiencing more bullying (Celik & Bayraktar, 2004; Cooper et al., 2011; El Mageed et al., 2021). In previous studies, the Cronbach α ranged from 0.80-0.97 (El Mageed-et al., 2021; Palaz, 2013). In addition to the BNEQ, participants were asked more specifically if they had experienced bullying. If so, they were asked where the bullying took place (academic or clinical setting) to identify the sources of the bullying and if they reported the incident. Unfortunately, results for the validity of the tool were not reported in referenced studies (Celik & Bayraktar,2004; Copper et al., 2011), but it was reported that the BNEQ has good construct validity in measuring bullying of student nurses (Celik & Bayraktar, 2004; Cooper et al., 2011; Magdeed et al., 2021).

3.4.2 Self-Efficacy

The General Self-Efficacy (GSE) tool was first created in 1979 in Germany to evaluate self-efficacy (Schwarzer & Jerusalem, 1995). This tool has been used in research with nurses and student nurses to measure their perception of self-efficacy related to clinical practice and patient care in clinical practice settings (Kassem et al., 2015; Kuru & Katsaras, 2016; Soudagar et al., 2015; Vnenchak et al., 2019). This tool is commonly used to measure an individual's belief system regarding their ability to achieve success or goals (Soudagar et al., 2015). The GSE tool has 10 items using a 4-point Likert scale, representing 1 (not true) to 4 (exactly true). The 10 items are summed up to an overall score ranging from 10 to 40, where a higher score indicates higher self-efficacy. In previous studies, the reliability of the scales using Cronbach α has ranged from 0.76 to

0.90 (Johnston et al., 1995; Kassem et al., 2015). Moreover, the construct validity of self-efficacy was found to be valid in other studies, with it being reported to be used in over 25 nations reporting to yield results to be meaningful and a universal construct (Cuevas & Penate, 2015).

3.4.3 Anxiety

Anxiety was measured using the General Anxiety Disorder (GAD) tool (Spitzer et al., 2006), with seven items using a 4-point Likert scale representing 0 (not at all sure) to 3 (nearly every day) (Spitzer et al., 2006). The tool was designed to measure indicators of anxiety according to the Diagnostic and Statistical Manual of Mental Disorders V (American Psychiatric Association 2023; Spitzer et al., 2006). Participants were asked to indicate how often they were bothered by each problem during the previous two weeks. The seven items are summed with a score ranging from 0 to 21, with a higher score indicating increased general anxiety symptoms. This tool has been identified to be reliable and valid (Dhira et al., 2021; Spitzer et al., 2006; Stevens et al., 2019). In previous studies, the reliability of the scale using Cronbach α has ranged from 0.83-0.93 (Johnson et al., 2019; Lowe et al., 2008) and has satisfactory validity with internal consistency (Dhira, et al., 2021; Plummer et al., 2016). The GAD tool validity has been tested using confirmatory factory analysis deemed statistically significant with the findings reported to be ($\chi^2 = 2425.95$, $df = 21$, $p < 0.01$) (Dhira et al., 2021). The GAD tool has been previously used to measure nursing student anxiety in the clinical practice and academic setting (Stevens et al., 2019).

3.4.4 Stress

Perceived Stress Scale (PSS) was developed to measure the degree of stress based on unpredictable and uncontrollable lived experiences students may have (Cohen, 1994). The PSS tool has been used previously in research with nurses and nursing students to measure stress in the clinical setting (Chan et al., 2009; Grobecker, 2016; Karaca et al., 2017; Lee & Kim, 2006; Onieya-Zafra et al., 2020; Purcell et al., 2011; Singh et al., 2011). The PSS has 10 items using a 5-point Likert scale, representing 0 (never) to 4 (very often) (Cohen, 1994; Cohen et al., 1983). The 10 items are summed with scores ranging from 0 to 40. A lower score represents minimal stress, while a higher score represents higher perceived stress. The reliability has been tested with an overall Cronbach α ranging from 0.70 to 0.81 (Lee, 2012; Sun et al., 2019). The research completed with nursing students reported the reliability of this scale using Cronbach α ranged from 0.81 to 0.96 (Grobecker, 2016; Karaca et al., 2017; Onieya-Zafra et al., 2020).

3.4.5 Performance

The Worrying about Workplace Bullying (WPB) tool was used in this study to measure performance related to bullying in the clinical setting (Al Omar et al., 2019). This tool was developed to measure nurses' level of worry about workplace bullying and how this influences performance, patient safety or quality of care (Al Omar et al., 2019). Permission was obtained from the primary author to use this tool to adapt the wording for the student nurse population (Appendix G). The scale consists of 15 items using a 5-point Likert scale representing 0 (strongly disagree) to 4 (strongly agree). A lower score represents a minimal impact on performance, while a higher score represents a higher

impact on nursing performance in the clinical setting. The survey conducted by Al Omar et al. (2019) with 1074 full-time health practitioners, including nurses, physicians, and pharmacists, highlighted that WPB negatively affected participants' work performance and communication between staff members. Thus, WPB influenced the identified indicators (work stress, performance, communication, thinking/concentration, delays in delivery of care, medical errors, emotional health, and overall rating of patient safety at their workplace (clinical practice environment) (Al Omar et al., 2019). Al Omar et al. (2019) identified it as valid based on face validity and reported having a Cronbach α of 0.96.

3.4.6 Demographics

A demographic questionnaire consisting of 12 questions was developed for the study (Appendix B). The questionnaire included the participant's age, gender, semester, ethnicity, and if COVID-19 impacted their clinical learning experience. These questions were included in the study due to COVID-19 impacting student nurses' clinical experiences, where clinical learning had to transition to simulation (Barrett, 2022), the questionnaire was modified and updated to capture how or if the pandemic impacted the student learning behavioural responses (anxiety, stress, performance).

3.4.7 Reliability

The reliability of each inventory was analyzed. The reliability of scales can be determined by the consistency or dependability of the instrument used to measure the attributes (Polit & Beck, 2021). The reliability reflects the consistency of items, tests, and groups (Kline, 2005; Polit & Beck, 2021). The internal consistency coefficients of each

major variable were calculated using Cronbach α . Generally, Cronbach $\alpha \geq 0.70$ is considered acceptable (Kline, 2005; Polit & Beck, 2021). In this study, Cronbach's alpha ranged from 0.80 to 0.97, indicating the reliability of the BNEQ, GAD, GSE, PSS, and WPB instruments.

Table 2

Instrument Internal Consistency

Instrument	Items	Cronbach's α
Bullying in Nursing Education (BNEQ)	12	0.952
General Self-Efficacy Scale (GSE)	10	0.885
General Anxiety Scale (GAD)	10	0.886
Perceived Stress Scale (PSS)	7	0.810
Worrying About Workplace Bullying (WPB)	15	0.900

3.5 Data Analysis

After data were collected, several data analysis techniques were used. To meet assumptions required by SEM, the data were first checked for missing data, outliers, univariate, normal distributions, multicollinearity, and reliability. Second, descriptive statistics were calculated to provide basic information about the scales used in this study and a description of the sample. The Likert scales were managed as interval data, calculating sums, means and standard deviations. Next, to analyze the strength of the relationships between each of the dimensions presented in the proposed theoretical model, SEM analysis techniques were implemented. Data analysis was performed using the Statistical Package for the Social Sciences (SPSSTM) version 28 software, with the Analysis of Moment Software (AMOS) computer program being used to test the hypothesized model (Figure 1).

3.5.1 Missing Data

Data can be missing for several reasons: glitches with the online survey software or technology, participants choosing not to answer questions, or the question being missed (Kline, 2011). Missing data may lead to decreased power, loss of information, biased estimations, and potentially increased standard errors (Kang, 2013; Dong & Peng, 2013). Therefore, if a significant amount of data are missing within certain variables, the data will be inspected to assess whether the data is pattern or random. A listwise/case deletion method is a standard method for handling incomplete data (Kline, 2011; Li, 2013); However, this can create potential bias because it entirely removes observations that have missing values versus the specific variable with the data. Therefore, it can skew data, misrepresent the studied population, or lead to inaccurate conclusions (Kline, 2011). However, listwise/case deletion method was used because participants ($n = 9$) completed less than five percent of the survey.

3.5.2 Outliers

For each manifest variable in the hypothesized model the outliers were checked based on inspection or observation of the value(s) that exist beyond the other values in a random sample from the data set (Polit & Beck, 2021). Thus, outliers were omitted from the research to enhance the reliability of the research findings. The SEM analysis is sensitive to the effects of extreme outliers as covariance matrices are negatively influenced (Kline, 2005; Kline, 2011). Univariate outliers were analyzed in SPSS™ by analyzing the data set using histograms, and box plots for each of the scales. When assessing the univariate outliers, it was determined that if a score of more than three standard deviations away from the average were considered an ‘extreme’ outlier when

analyzing the scores (Kline, 2005; Kline, 2011). Second, multivariate outliers were assessed by doing the Mahalanobis test in AMOS. As the Mahalanobis distance statistic measures the distance between data sets (Kline, 2011) identifying if the SEM has outliers. Therefore, it is recommended to remove the identified outliers from the data set, and then re-test the path model (Kline, 2011).

3.5.3 Distribution normality

Skewness and kurtosis are two ways that a distribution can be non-normal. Well established skewness and kurtosis statistics were used to identify univariate distribution normality. Typically, skewness statistics ≤ 3 and kurtosis statistics ≤ 8 reflect normality (Kline, 2005; Tabachnick & Fidell, 2001). Based on the findings, to validate the normality of the data set and to make sure there were no extreme values, the trimmed mean scores were evaluated for each inventory (Walfish, 2006). The data can then be adjusted based on these findings, and extreme cases can be removed from the data set.

3.5.4 Multicollinearity

Correlations were examined between variables. Assessing the correlation ascertains whether the relationship between variables has a positive or negative connection between continuous variables (Mukaka, 2012). The closer that the score is to -1 or +1 determines whether there is close to perfect correlation between variables (Mukaka, 2012), Which would be a concern as highly correlated scales might suggest overlapping or similar phenomena.

Next, multicollinearity was examined. Multicollinearity is a phenomenon where independent variables in a model are highly correlated with each other, meaning that two or more items in the model are measuring the same construct, which can lead to an unreliable and unstable construct (Polit & Beck, 2012). It determines the strength of the relationship between the exogenous and endogenous variables (Kline, 2011). This can result in unreliable coefficients and augment the standard errors with multicollinear variables (Bollen, 1989; Tarka, 2018). In this study, checking for multicollinearity consisted of assessing the association between the independent variables to determine if they were highly correlated (Polit & Beck, 2021). Therefore, appraising the results for multicollinearity will aid in and resolve any concerns that can contribute to standard error in path analysis (Marcoulides & Raykov, 2019). Product-moment correlation coefficients (also known as Pearson r) were used to analyze the relationships among the manifest variables, which were one-tailed. A one-tailed correlation was used because the identified relationships between variables were in one direction. Pearson's correlation tests the strength of linear relationships between variables (Gall et al., 2003). Essentially, a Pearson product-moment correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient (r) indicates how far away all these data points are to this line of best fit (i.e., how well the data points fit this new model/line of best fit). The product-moment correlation was selected because the tested variables were considered to be continuous. The significance levels were set at 0.05. In addition to analyzing the coefficients, the Variance Inflation Factor (VIF) statistical measure was used to assess the degree of multicollinearity of the variables in the hypothesized model. VIF scores indicate if the variables are highly correlated with other variables in the

model. A score greater than 5 indicates that independent variables are highly correlated (Pallant, 2013). The VIF scores in this study ranged from 1.48 – 2.85 (Table 8), indicating that the variables were not correlated.

3.5.5 Testing Mediator of Hypothesized Model

The mediator of the hypothesized model (Figure 2) was tested in SPSS before path analysis testing was initiated AMOS, using the Sobles method. Sobel's test is a statistical method used to ascertain whether the effect of an independent variable on the dependant variable though evaluating the significance of a mediator variable (Kline, 2011) It is commonly used in mediation analysis to test the indirect effect of an independent variable on a dependent variables (Iacobucci et al., 2007). Therefore, the researcher was required to ascertain any form of mediation (partial/ full) occurring in the hypothesized model before initiating model testing. To test the mediating variable (self-efficacy) the steps identified by Iacobucci et al. (2007) were followed. First, the model hypothesized that self-efficacy would mediate anxiety, stress, and performance. Second, it was also hypothesized that anxiety and stress would be partial mediators of self-efficacy to performance.

3.5.6 Structural Equation Modelling

SEM is a powerful path analysis method that is increasingly used in scientific research (Fan, 2016; Kline, 2011). A path analysis model identifies variables as latent or observed (Fan, 2016; Kline, 2011). Latent variables are concepts that are not necessarily observed and are referred to as conceptual construct (Kline, 2011). While, observed variables are the means used to measure the latent variable using an inventory (Kline, 2011; Polit & Beck, 2021). For this research, the variables tested in the path model are

modelled as manifest variables and measured by a single indicator, as previously mentioned.

SEM was selected for numerous reasons. First, it allows for simultaneous estimations of complex models with various models, and it provides an understanding of how several variables relate to each other. Second, it allows for hypothesis testing, in particular, testing the strength and direction of relationships between independent and dependent variables. Thirdly, SEM can examine complex relationships by simultaneously estimating multiple equations (Almost, 2010; Fan, 2016; Kline, 2011). Therefore, it was for this reason that SEM was chosen to test the theoretical model.

The multivariate approach builds and tests theoretical models that simultaneously estimate relationships between exogenous and endogenous variables (Kline, 2011; Polit & Beck, 2021). Using this technique, the researcher can investigate theoretical models in the context of discovering relationships between variables in current research or based on a model developed by the researcher (Kline, 2011). Finally, SEM can be used to analyze the estimates of indirect and direct effects between latent or observed variables, allowing estimation of the total effect. The path diagram in SEM helps to clearly present the direction of each effect and the covariances among all variables in one complete picture (Kline, 2011).

SEM analysis techniques consist of four steps that a researcher must follow, which include describing the model, identifying the model, establishing parameter estimations of the model, model evaluation and overall fit (Almost, 2010; Bryne, 2013; Hoyle, 2011; Kline, 2011).

Step 1. The first step is to describe the specification of the theoretical model as a diagram or a set of equations (Figure 2) (Almost, 2010; Kline, 2005; 2011). In this study, all variables in the model are manifest variables with a single indicator. Bullying is an exogenous variable because it acts only as a predictor or cause of other manifest variables in the structural model (Kline, 2011). Self-efficacy, anxiety, stress, and performance are the endogenous variables in this model, as they are the dependent or outcome variables in at least one causal relationship. In addition to self-efficacy being a manifest variable, it is the full mediator in the model. Self-efficacy is a mediator because the relationship between the exogenous variable (bullying) and endogenous variables (anxiety, stress, performance) is influenced based on self-efficacy. Succeeding, the full mediator of self-efficacy, anxiety and stress are identified as partial mediators between self-efficacy and performance within the hypothesized model (Figure 2). Fan et al. (2016) and Kline (2011) identify that a mediator is a variable that directly influences the outcome in a model. Next, using SEM enables the researcher to capture measurement error terms to account for and control for each tool's unreliability when conducting data analysis (Almost, 2010; Kline, 2011); which is the difference between the actual value and the measured value in the test model.

Step 2. The second step is to identify the model, ensuring the model can be estimated with the observed data (Kline, 2005). In this step, it is ideal to have the number of "knowns" (observed variable variances and covariance) be higher than the number of unknowns (parameters to be estimated), which is considered an over-identified model (Kline, 2005). For an over-identified model, the difference between estimations of parameters and observations must result in degrees of freedom (df) greater than zero

(Almost 2010; Kline, 2011). In this step, SPSS will provide values listing the *df* for the model using chi square (χ^2) to measure the degree of over-identification in the structural equation model (Almost, 2010).

Step 3. The third step in testing a theoretical model is to test the estimation of the parameters using AMOS (Almost, 2010; Kline, 2011). The hypothesized model has all manifest variables; therefore, the researcher does not have to conduct a confirmatory factor analysis (CFA) on each of the manifest variables. CFA is not needed because manifest variables are being measured by established and reliable tools therefore there is no need to confirm their measurement (Kline, 2011). Hence using manifest variables allows direct testing of the hypotheses. However, to validated that the tools chosen in this study is measuring the construct that it was intended to measure (Appendix F).

Step 4. The fourth step is determining if the model is a 'good fit' based on the goodness of fit measures evaluating the overall model fit (Kline, 2005). Kline (2011) recommends that at least four tests be used. In this study, Hoyle's (1995) criteria were used, including the chi-square (χ^2) (Jöreskog & Sörbom, 1989), Comparative Fit Index (CFI) (Bentler & Bonett, 1980), Tucker Lewis Index (TLI) (Bentler & Bonett, 1980; Tucker & Lewis, 1973), Goodness of Fit Index (GFI) (Sharma et al., 2005), and RMSEA (Steiger, 1980; 1990). These criteria will be described in the following paragraphs.

The Chi-square tests the hypothesized model against an alternative model. Unlike the more familiar uses of the chi-square statistic where one is looking for a large statistically significant value to support a theoretically posited relationship, a small, nonsignificant chi-square is considered optimal in SEM (Kline, 2011) and indicates that the specified model and the data are congruent rather than different (Hoyle, 1995). The

degrees of freedom (*df*) are calculated based on the observed variables in the model and the sample size (Kline, 2011). It provides a reference point indicating the difference between the observed and covariance matrices (Kline, 2011). A likelihood ratio (χ^2/df) less than two suggests the model is reasonably acceptable. Concluding a low chi-square (χ^2) score indicates that the model is a good fit.

The goodness fit index (GFI) and the Bentler Comparative Fit Index (CFI) vary from 0 to 1, with values close to 1 indicating a perfect fit. According to Kline (2011), a value greater than or equal to .90 indicates a good fit. The Tucker-Lewis Index (TLI) provides a score between 0 – 1, with a score > 0.9 indicating a good fit (Bentler & Bonett, 1980; Tucker & Lewis, 1973; Xia & Yang, 2019).

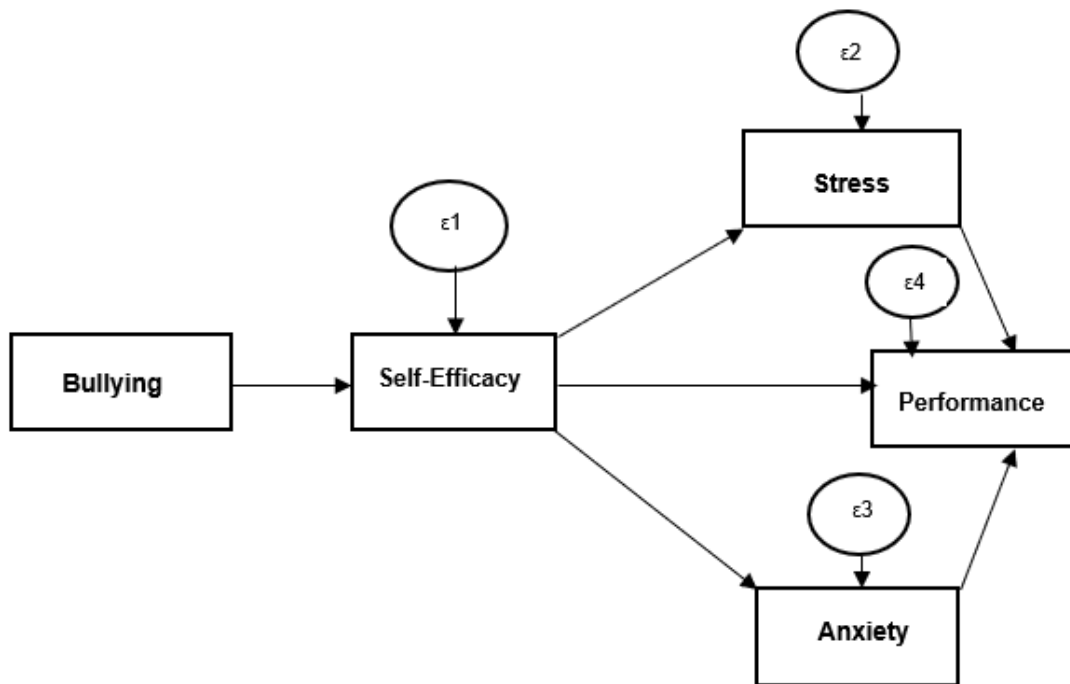
The root means square error of approximation (RMSEA) is a popular measure of fit that is less affected by sample size (Steiger, 1980, 1990). Considering the error of approximation in the population, the RMSEA evaluates the 'badness of fit' of a model (Fan et al., 2016; Shur, 2006). Taking into account the error of approximation in the population, the RMSEA assesses the extent to which a model with unknown but optimally chosen parameter values fits the population covariance matrix; therefore, Steiger (2007) has suggested an $RMSEA \geq 0.07$ as the cut-off for a good model fit. Next, path coefficient scores were assessed to identify the relationship. Kline (2011) and Shur (2006) identify a score of less than 0.30 in the path coefficient score, which indicates a minimal relationship between variables. In contrast, a score greater than 0.30 is a medium effect, and a score greater than 0.50 is a significant effect.

Finally, and if necessary, the model's fit can be improved by analyzing the modification indices based on the data presented in AMOS (Kline, 2011). Modification

indices is data output presented in AMOS identifying significant pathways that would strengthen the model and provide better-fit indices (Kline, 2011). For the researcher to consider the recommended modifications that AMOS suggests, the researcher needs to assess if these suggestions are logical and based on sound theoretical rationales related to the hypothesized model (Kline, 2011). Considering the recommended modifications produced by AMOS can improve the overall accuracy and validity of the model (Kline, 2011). By doing so, causal relationships can be inferred with greater accuracy (Kline, 2011).

Figure 2

Structure Equation Model



Direct and Indirect effects. The strength of the relationships between the variables in the model was examined for direct, indirect and total effects. To test the theoretical model's direct, indirect and total effects, bootstrapping techniques were used to provide accurate results even if there are measurement errors within the model and provide information about the model's overall quality (Kline, 2011). Bootstrapping parameters were set in AMOS to account for the uncertainty of the estimates of the model being tested; this technique allows for resampling the data many times, creating a new sample each time based on the current data set (Alfons et al., 2021; Kline, 2011; Streukens et al., 2016). Uncertainty of estimates is the degree of confidence in the parameter estimates obtained from the model (Kline, 2011). In addition, AMOS considers the variability of the estimates of the measure, which might differ from the true population values or chance (Kline, 2011). For the purpose of the study, bootstrapping parameters were set to 1000 (Alfons et al., 2021; Kline, 2011). Understanding a model's direct, indirect and total effects are essential to path analysis because it allows for a deeper understanding of complex relationships between variables. Direct effects in a path model identify causal relationships between two variables in a linear direction. They are identified through the strengths of identified coefficients in the path model (Kline, 2011). In the hypothesized model, direct effects will be tested and analyzed for bullying to self-efficacy, and self-efficacy to anxiety, self-efficacy to stress, self-efficacy to performance. Finally, anxiety and stress to performance. Indirect effects measure the relationship between the independent and dependent variables through a mediator. This enables the researcher to understand the relationship between the variables by testing for the mediator, which is measured through the product of the path coefficients. Assessing

indirect pathways can sometimes be quite complex, especially when the model is highly complex and has multiple pathways. Indirect effects will be tested and analyzed between bullying, anxiety, stress, and performance, with self-efficacy being the mediating factor.

3.6 Ethical Considerations

Before the implementation of the study, ethical approval was obtained from the Queen's University Health Services Research Ethics Board, followed by ethical approval at York University and Ontario Tech University (Appendix H). Participation in the study was entirely voluntary. No participating individuals or sites were identified by name in any report or presentation of the study results. For easy record keeping, the surveys were with unique identifiers.

Acknowledging bullying to be a sensitive subject matter, the invitation letter (Appendix F) provided information to participants on mental health supports they could access if necessary. Participants received information at the beginning and at the end of the questionnaire on how to access these services should require them. Study will be stored in secure file storage at Queen's University School of Nursing for 5 years. After 5 years, the data will be permanently erased/deleted.

Chapter 4

Results

In this chapter, the findings of this exploratory study are presented.

Characteristics of the sample are described, followed by the descriptive statistics of the study variables. Each of the manifest variables and the model measurement will be discussed and followed by a presentation of the analysis of the structural equation model. Data was collected from September 2021 to February 2022.

4.1 Sample Characteristics

A total of 655 nursing students in a baccalaureate nursing program in years 3 and 4 were invited to participate. One hundred twenty-three surveys were completed: 58 responses from University One, and 68 from University Two. Overall, 10 surveys were blank, and 9 participants only completed the demographic questions. When these nineteen surveys were removed, the final combined sample was 104, with a response rate of 18%.

University One had a total of 28 students in the 3rd year and 26 students in the 4th year, while University Two had a total of 30 students in 3rd year and 20 students in 4th year, there was no difference in participation rate between the universities ($\chi^2(1)=0.70$, $p=0.403$).

The overall sample was represented by female $n=92(88.5\%)$, followed by male $n=10(10\%)$, and the remaining students choose not to identify $n=2(2\%)$. The average age was 25 years ranging from 19-57 years of age, with an SD of ± 6.42 . Fifty-six percent participants reported being in the 3rd year of their program, with 44% being in 4th year. The sample was representative of various ethnic groups such as Caucasian (45%), Asian

(30%), Afro-descendant (12%), Indigenous (1%), and students who represent other groups or chose not to identify (13.4%). There was a statistical difference between the number of clinical rotations completed by students; those at University One had one more clinical rotation than students at University Two ($\chi^2 (1)=0.70, p=0.403$)

Table 3

Participant demographics

Age	University One	University Two	Total (N = 104)	
Range	19-57	20-43	19-57	$t(101)= -0.79, p=0.433$
Mean	24.5 (± 7.1)	25(± 5.5)	25(± 6.42)	
Gender	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	
Female	46 (85%)	46 (92%)	92 (88.5%)	$p=0.323$
Male	7(13%)	3 (6%)	10 (9.6%)	
Choose not to identify	1(2%)	1(2%)	2 (1.9%)	
Race				
Caucasian	26(48%)	21(42%)	47 (45.2%)*	$p=0.061$
Asian	13(24.1%)	17(34%)	30 (28.9%)	
Afro-descendant (Black)	10(18.5%)	2(2%)	12 (11.5%)	
Other – Choose not to identify	4(7.4%)	8(16%)	14 (13.4%)	
Indigenous	1(1%)	0	1 (1.0%)	
Year				
3 rd year	28(51.9%)	30(60%)	58 (55.8%)	$\chi^2 (1)=0.70, p=0.403$
4 th year	26(48.1)	20(20%)	46 (44.2%)	
Clinical Rotations				
Range	3-8	2-7	1-8**	$t(101)=3.27, p=0.001$
Mean	5.09(± 1.59)	3.95(± 1.91)	5(± 1.8)	
Clinical Simulation (Substituted for in Person Clinical)				
Yes	41(75.9%)	43(86.0%)	84(80.8%)	$\chi^2 (1)=1.70, p=0.193$
No	13(24.1%)	7(14.0%)	20(19.2%)	

4.2 Review of the Data

In reviewing of data of completed surveys there was one question left blank in the GAD inventory, and mean score imputation was used to insert the score for the participant. Histograms and plot charts were visually assessed for normality, skewness and kurtosis of data (Appendix E), as well as analyzing the distribution presented in Table 2. The values for the skewness were within the parameters of ± 2 , and kurtosis was within ± 7 , indicating that each variable was within the normal parameters (Kim, 2013). Next, the data were analyzed to determine if the univariate outliers (Table 3) should be removed. To determine this, the trimmed mean scores were compared to the mean score of each tool (inventory). According to Walfish (2006), the trimmed mean score must be within 5-10% of the mean score of the inventory being assessed. Based on the parameters, none of the outliers were removed from the data set. The final statistical method used to determine if the sample in its entirety is an outlier by providing data points from the center of the data set was the Mahalanobis distance test (Kline, 2011). This test is done to detect outliers in an SEM model by calculating the difference between the means of a group (Kline, 2013; Friedman & Komogortsev, 2019). The test was not significant ($p > 0.05$), with scores ranging from $p=0.08- 0.99$.

Next, each tool was evaluated for reliability based on recommendations by Ponterotto and Ruckdeschel (2007). Assessing the reliability instruments consists of determining the stability and consistency of results obtained, when repeatedly using the same survey with various methods (Polit & Beck 2021; Kline, 2011). Assessing reliability is a significant criterion for evaluating the quality of a tool (Polit & Beck, 2021). The Cronbach's α was analyzed on each of the inventory scales such as BNEQ, PSS, GAD, GSE and WPB. The Cronbach's α ranged from 0.81 to 0.952, as presented in

Table 5, indicating good to excellent internal consistency for the scales used in this study. The reliability scores were also consistent with previous research using the same research tools. To assess the validity of all tools, it must be determined if the survey is measuring the concept that it is intended to measure (Kline, 2011). This was determined by reports of face validity and criterion validity (Polit and Beck 2021; Kline, 2011).

Table 4

Skewness and Kurtosis

Variables	Skewness	Kurtosis
Bullying	.289	-1.412
Self-Efficacy	-.651	1.698
Anxiety	.001	-.481
Stress	-.092	.179
Performance	-1.355	2.815

Table 5

Outliers Table

Instrument	Participant	Outlier Score(s)
Bullying in Nursing Education (BNEQ) General Self-Efficacy Scale (GSE)	No Outliers	
	96	19
	100	17
General Anxiety Scale (GAD) Perceived Stress Scale (PSS)	103	13
	No Outliers	
	96	34
Worrying About Workplace Bullying (WPB)	68	7
	66	6
	84	22
	18	6

4.3 Descriptive Statistics of Observed Variables

The mean and standard deviation (SD) for each of the major study variables are presented in Table 6. The variables are reported in sequential order based on the presentation of the theoretical model. The bullying Education Questionnaire, out of 104

student nurses, only 1 person reported to never experience bullying (n=1, 1%). Forty-three percent of students (n=47) reported to seldomly experience bullying, while 20.5% (n=22) reported intermittent bullying. Frequent bullying was reported by 29.5% (n=28) nursing students. When measuring the self-efficacy scale, 20.5% (n=47) nursing students reported to have high self-efficacy. In contrast three nursing students (2.7%), reported that the statements in the questionnaire were hardly true for them indicating to have low self-efficacy. Most student nurses 54% (n=54), reported the statements in the questionnaire was moderately true from them indicating to have average self-efficacy. For the Perceived Stress Scale only three nursing students (2.9%) reported almost never to experience stress. Most nursing students 47.1%(n=49) reported to experience stress sometimes, followed by 46.2% (n=48) students reported to experiences stress fairly often, and 3.8% (n=4) of student nurses reported to have experienced stress very often. Anxiety reported by student nurses are as follows, eight participants (7.7%) reported not to experience at all. Twenty-three percent (n=24) reported to have experience anxiety several days. More than half the of the nursing students (n=57, 54.8%) indicated to have experience stress more than half the days, where 15 (n=14.4%) of nursing students experienced anxiety nearly every day. The final instrument Worrying about Workplace Bullying Questionnaire reveals that most respondents (n=67, 64.4%) strongly agree that workplace bullying impacts clinical performance. Thirty-two respondents (30.8) indicted that they somewhat agree that bullying does impact clinical performance, while only one (1%) respondent somewhat disagreed that bullying has minimal impact on performance in the clinical setting.

Table 6*Means, Standard Deviations and Major Study Variables*

Instrument	Range of Possible Scores	Mean	SD	Cronbach's Alpha
BNEQ (Bullying)	12-60	28.6	12.8	0.952
GSE (Self-Efficacy)	10-40	30.4	4.7	0.885
PSS (Stress)	0-40	20.4	5.5	0.886
GAD(Anxiety)	0-21	9.5	5.0	0.810
WPB(Performance)	0-60	48.7	9.7	0.900

4.3.1 Bullying Experiences, Sources, and Impact

Forty-six percent (n=48) of students identified their experience of bullying as targeted, 36.5% (n=38) stated that they were not targeted, and 17.3% (n=18) were uncertain if they were targets of bullying. The majority of the bullying experiences took place in acute care settings (n=43, 64.2%), followed by long-term care settings (n=27, 39.7%), 'other' clinical settings (n=20, 28.2%), and community care settings (n=1, 1%). In addition, students reported the sources of bullying to be nursing staff (n=57, 75.4%), clinical instructors (n=24, 36.4%), multidisciplinary team members (n=3, 4.5%), and patients (n=11, 16.4%). Of the students who experienced bullying, twenty-seven percent (n=20) reported the incident, and 73% (n=54) chose not to report the incident.

4.3.2 Student Clinical Experience during COVID-19

As a result of temporary mandates and policies, 80% of participants reported a minimum of one clinical rotation to be in a simulated setting. As a result of the pandemic, 87.5% of students reported increased anxiety, 87.5% reported increased stress, and 84.5%

reported that their self-efficacy was negatively affected. Finally, 68% reported that the COVID-19 pandemic had negatively impacted their overall clinical performance.

4.4 Correlation Table

Correlation tables were examined between the model variables as a next step (Table 6). Self-efficacy was significantly and negatively correlated with bullying, anxiety and stress, but not significantly correlated to performance. Self-efficacy was mostly strongly correlated with stress. Stress was strongly correlated with anxiety (0.74) and bullying (0.54). However, there was no relationship between stress and performance. There was a significant relationship between anxiety and bullying. Therefore, the positive correlation indicated that when a student experiences increased anxiety, it increases the likelihood of experiencing bullying as well. However, there was no correlation between anxiety and performance. The only inventory to correlate with performance was bullying. Bullying had a positive covariance with anxiety stress, and performance.

Table 7

Correlations Among Major Study Variables (N=104)

Variables	Bullying	Self-Efficacy	Anxiety	Stress	Performance
Bullying	1				
Self-Efficacy	-.223*	1			
Anxiety	.517**	-.292**	1		
Stress	.542**	-.488**	.735**	1	
Performance	.380**	-.114	.096	.141	1

* p < 0.05; ** p < 0.01

4.5 Multicollinearity

Before testing the path analysis model, multicollinearity was assessed with the variables within the model (Table 8). Variance inflation factors was used to statistically

analyze if there was collinearity each variable, and to ensure that variables within the model are not measuring the same construct even if they may be labeled differently (Kline, 2011). When analyzing the VIF scores the recommended threshold for VIF scores is value 5 (Pallant, 2013). Table 7 indicates that the multicollinearity assumptions were not violated in the selected direct variables.

Table 8

Multicollinearity Table

Variable (Instrument)	Variance Inflation Factor (VIF)
Bullying (BNEQ)	1.48
Self-Efficacy (GSE)	1.33
Anxiety (GAD)	2.30
Stress (PSS)	2.85

Dependent variable: Performance (WPB)

4.5.1 Sobel Testing – Hypothesized Model

As a part of this exploratory study mediation testing used determine if hypothesized model identify if there are relationships between the independent and dependent variables through a mediating factor (MacKinnon et al., 2007). To examine mediation, of the hypothesized model Sobel testing was used (Iacobucci et al., 2007). It was reported that the path coefficients from bullying to stress were significant (2.07; $p=0.02$). Secondly, the paths between self-efficacy to stress as partially mediated by anxiety, was identified to be significant (2.11; $p=0.02$). According to Baron and Kenny (1986) and Gunzler et al. (2007), when conducting the Sobel test for mediation, the Sobel test statistics need a minimum of 1.96 or greater and a p-value less than 0.05

for mediation to be significant. All other mediating pathways in the hypothesized model (Figure 2), were deemed to be not significant.

Table 9

Testing the Mediator

Mediation Test	Unstandardized Estimates	Standard Error [SE]	Sobel Test Statistics	One Tailed <i>p</i>-value
Bullying →Self-efficacy	-0.081	0.035	2.069	0.019*
Self-efficacy → Stress	-0.333	0.072		
Bullying → Self-efficacy	-0.081	0.035	1.593	0.056
Self-efficacy → Anxiety	-0.200	0.091		
Bullying →Self-efficacy	-0.081	0.035	0.331	0.370
Self-efficacy →Performance	-0.065	0.194		
Self-efficacy → Anxiety	-0.200	0.091	2.118	0.017*
Anxiety →Stress	0.604	0.076		

p < 0.05*

4.6 Structural Equation Model

To test the proposed hypothesized model and the data, AMOS version 28 software was used. To evaluate the relationships of the manifest variables, a combination of fit indices was used to evaluate the model (Fan et al., 2016). As mentioned in the previous chapter the following indices will be used to evaluate the model: Chi-Square (χ^2), Comparative Fit Index (CFI), Tucker-Lewis index (TLI), Goodness of Fit index (GFI) and Root Mean Square Error (RMSEA). The Chi-Square test observed and expected covariance matrices in a model; a score close to zero and a *p*-value greater than 0.05 indicates the model to be a good fit (Hu & Bentler, 1999; Shur, 2006). The CFI measures the amount of variance accounted for in the covariance matrices, indicating a better model fit, and a score closer to 1.0 indicates the model is better (Fan et al., 2016). The GFI measures the model's goodness of fit but is sensitive to sample size, and a score

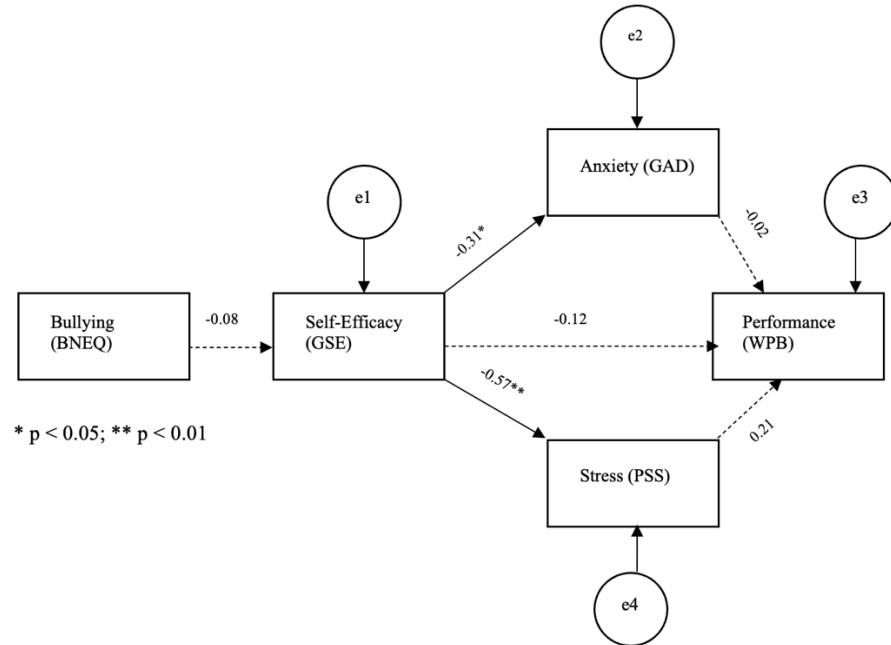
of close to 1.0 represents the model as a good fit (Wang et al., 2020). The TLI is a non-norm fit index, but it can indicate if the model is a good fit independent of the sample size, and a score > 0.90 is considered reasonable (Fan et al., 2016). Finally, RMSEA is the most sensitive index, but unlike the other indices, the RMSEA looks at the residual and the 'badness of fit' for a model, and a score of 0 represents a perfect fit, while a higher score indicates a poor fit (Hu & Bentler, 1999; Fan et al., 2016). Prior to conducting SEM Confirmatory factor analysis testing was conducted on the data set to test the underlying factors of the observed variables to determine if the variables on the model are measuring the same underlying construct (Kline, 2011). There were no significant findings to report (Appendix F).

4.6.1 Testing of the Model

The initial model was a poor fit and with a high significant Chi-square ($\chi^2=125.33$; $p<0.01$; $df = 4$), low GFI (0.695), low TLI (0.887), low CFI (0.245), and high RMSEA (0.538). In the model (Figure 3), the path coefficient scores identified the strength of the relationships. The initial model path coefficient scores between bullying and self-efficacy, self-efficacy and performance, anxiety to performance, and stress to performance were deemed insignificant. There was a significant relationship between self-efficacy and anxiety ($\beta = -0.292$, $CR=-3.095$, $p < 0.05$) and a strong significant relationship between self-efficacy and stress ($\beta = -0.488$, $CR=-5.667$, $p < 0.01$).

Figure 3

Structural Equation Model: Original Hypothesized Model



Acknowledging that the hypothesized model is a poor fit and considering that this is an exploratory study where such a model has never been conceptualized; it was appropriate to determine the best fit model based on the data, the identified variables and how the model was analyzed in SPSS, and in particular AMOS.

Before considering additional pathways that could result in a better fitting model, several factors were taken into consideration; first, evaluating if the pathways are a good fit statistically within AMOS. Second, determining this recommended pathway aligned with epistemological knowledge existing within student nurse bullying research.

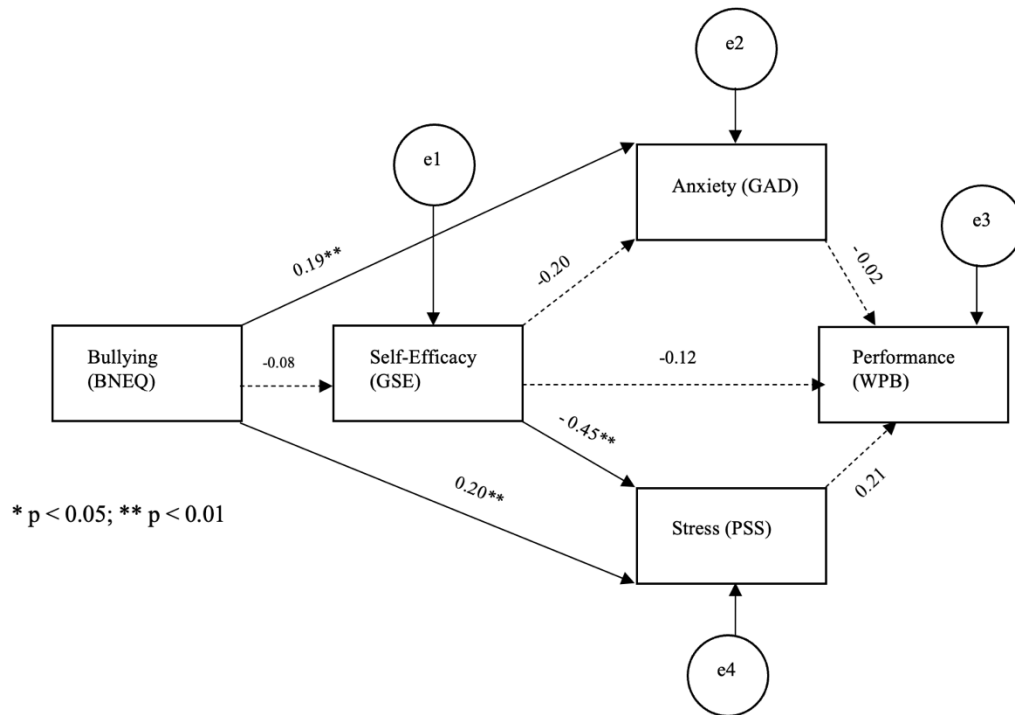
Therefore, based on this approach, two direct pathways were added: bullying to anxiety and bullying to stress. Evidence of these relationships were identified in studies by

Budden et al. (2017), Machon (2012), and Faerman-Geller (2013), reporting that nursing students who experience bullying also report direct outcomes of anxiety and stress.

Re-testing the model new pathways bullying to stress and bullying to anxiety (Figure 4) resulted in a better-fitting model with a lower Chi-square ($\chi^2=64.88$; $p<0.001$; $df=2$), a difference of 59.33 ($p<0.001$), high GFI (0.821), high TLI (0.989), but a low CFI (0.602) and high RMS (0.552). With the additional pathways, the paths between bullying self-efficacy, self-efficacy to anxiety, self-efficacy to performance, anxiety to performance and stress to performance were deemed insignificant. The weak relationships between anxiety and performance and stress and performance were surprising, not given the fact that research indicates that students who experience stress and anxiety identify that it impacts their performance (Dulaney, 2015; Smith et al., 2016). Additionally, pathways from bullying to stress ($\beta = -0.386$, $CR=5.99$, $p < 0.01$), bullying to anxiety ($\beta = 0.476$, $CR=5.62$, $p < 0.01$), and self-efficacy to stress ($\beta = 0.386$, $CR=-5.08$, $p < 0.01$) were significant within the model ($p<0.01$). However, the revised hypothesized model (Figure 4) remained a poor fit.

Figure 4

Revised Hypothesized Model 1



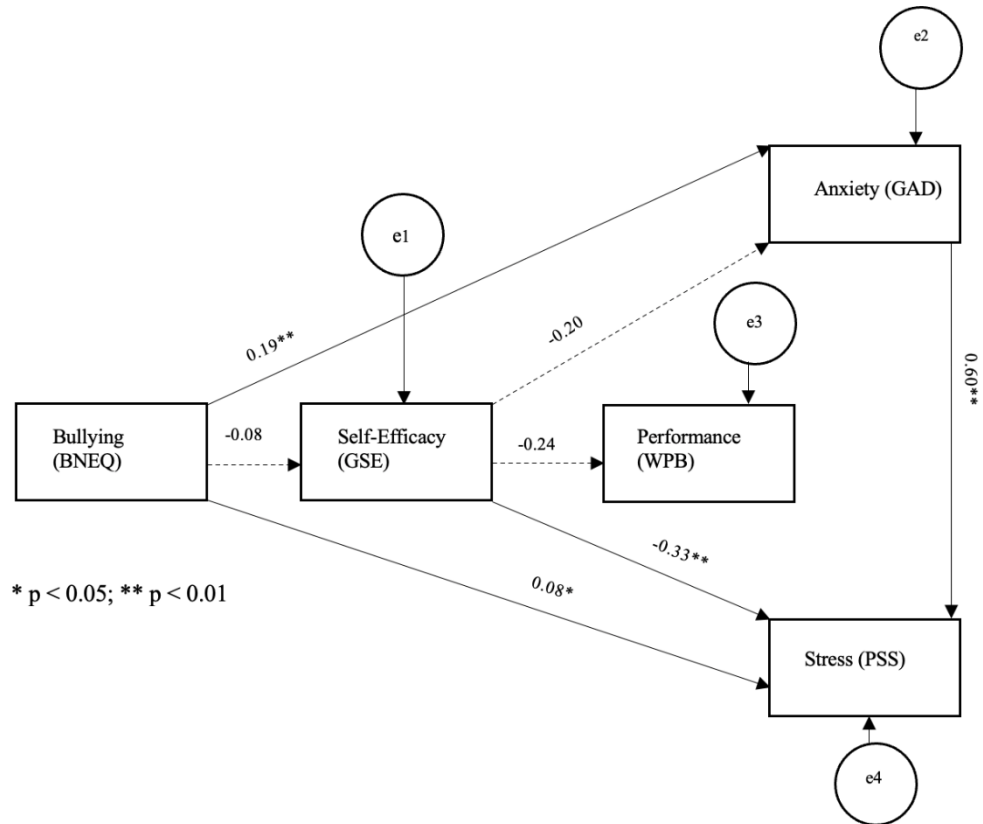
The model was re-evaluated to determine other relationships that would create a better-fitting model based on the modification indices presented reported in AMOS. During the re-evaluation, it was noted that the partial mediation paths from stress and anxiety to performance were insignificant in all tested models $p > 0.05$. Next, Kline (2011) identified that removing non-significant path coefficients in a hypothesized model will reduce the complexity and lead to a more accurate and better-fitting model. Based on this analysis, partial mediation paths from stress and anxiety to performance were removed. Additionally, a pathway was created from anxiety to stress based on modification indices, and evidence in the literature reported by Courtney-Pratt et al., (2017) and Faerman-Geller (2013) who identified student nurses reported to have

experienced bullying tend to experience anxiety and stress as an outcome of their experience.

After modifications were made the model the revised hypothesized-Model 2 was re-tested (Figure 5). The modified model was a better fit with a lower Chi-square ($\chi^2=16.83$; $p=0.001$; $df=3$) a difference of 48.05; high GFI (0.943), moderate TLI (0.708), high CFI (0.912), but also a high RMSEA (0.212). While this model was a better fit, it did not meet the model fit indices criteria of TLI, and RMSEA. Path coefficient identified to be significant was bullying to stress ($\beta = 0.193$, $CR=2.815$, $p < 0.05$). Whereas, bullying to anxiety ($\beta = -0.476$, $CR=-5.625$, $p < 0.01$), self-efficacy to stress ($\beta = -0.283$, $CR=-4.625$, $p < 0.01$), and anxiety to stress ($\beta = 0.533$, $CR=7.928$, $p < 0.01$) are highly significant with a p value of <0.01 , all other observed paths were non-significant.

Figure 5

Revised Hypothesized Model 2

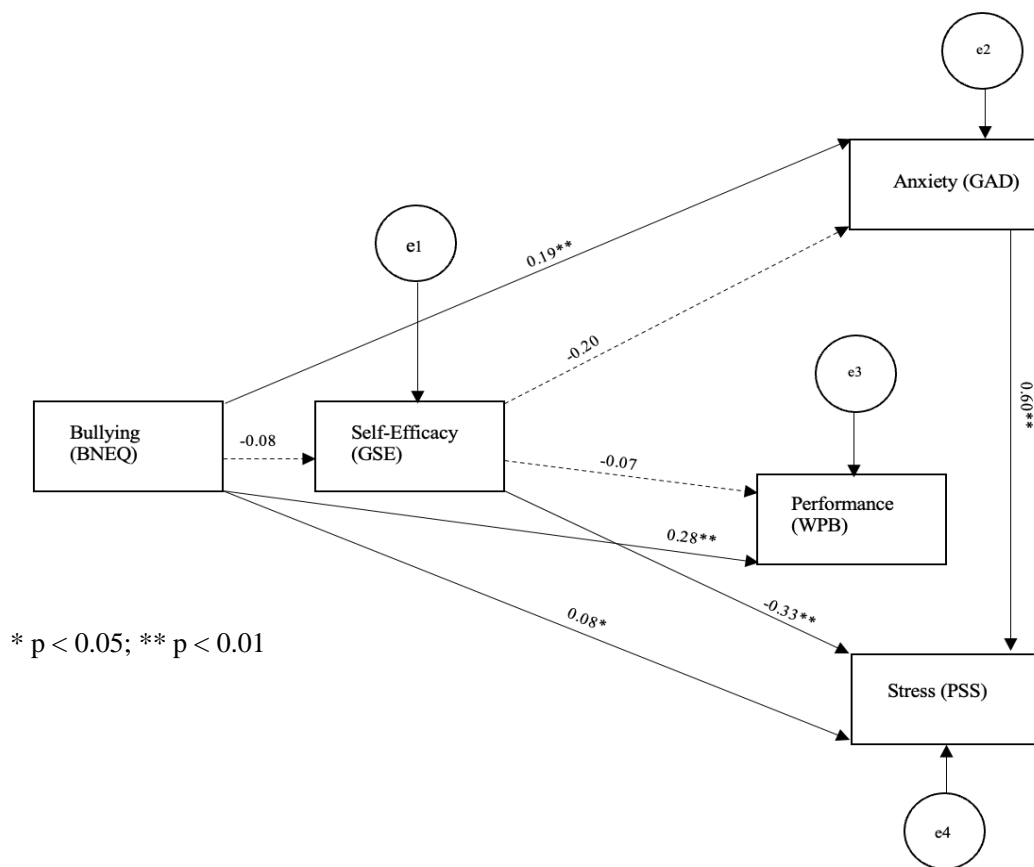


The hypothesized model was re-evaluated with a direct pathway added from bullying to performance based on recommendations (Figure 6), to align with the student bullying literature as identified by Dulaney (2015), and Smith et al. (2016) where it was reported students who experienced bullying reported that it impacted their performance (clinical/ academic). With the new path added, the model was re-tested. The final model had the best fit indices of the tested models: Chi-square ($\chi^2=2.047$; $p=0.359$; $df=2$); with a difference of 14.78 ($p<0.001$), high GFI 0.992, high TLI (0.999), high CFI (1.00) and acceptable (low) RMSEA (0.015). Research conducted in Finland (Hakojarvi et al., 2014), and New Zealand (Minton et al., 2018), also reported bullying to have a direct

effect on student performance in the clinical setting, which subsequently negatively impacted patient care. The remaining modification indices suggested other paths between the dependent variables to the independent variables; However, adding these pathways would create a completely new model and would not reflect the hypotheses in this study.

Figure 6

Revised Hypothesized Model 3: Final Model



4.7 Direct and Indirect Effects of Finalized Model

The final model (Figure 6) was tested for direct and indirect effects. According to Baron and Kenny (1986), and Kline (2011), the indirect effect in a model reflects the independent variable's effect on the dependent variable through a mediating variable

(Kline, 2011), and the direct effect is the immediate relation between two variables (Baron & Kenny, 1986; Kline, 2011). The total effect is the sum of an independent variable's direct and indirect effects on the dependent variable. Bootstrapping parameters were set when testing the direct and indirect effects of each path in the SEM. Bootstrapping is a method used to determine the accuracy of the sample by assessing the standard errors, parameters, and sample distribution from a more significant number (Kline, 2011). After validating that there was some mediation occurring in the hypothesized model (Figure 2), the final model (Figure 6) that met SEM fit indices was analyzed for direct and indirect effects. The standardized total effects in the final model included direct and indirect effects, which are presented in Table 10. Direct and indirect effects with the final model (Figure 6) identified that bullying had a positive direct effect on anxiety and an indirect effect with partial mediation of self-efficacy. Bullying also had a positive direct effect on stress and performance, but no mediation occurred in these pathways. The pathway between bullying and stress found positive direct effects but had two significant indirect pathways indicating partial mediation. The first indirect pathway is partial mediation anxiety, and partial mediation where bullying is partially mediated by self-efficacy and anxiety, thus leading to stress (Table 10). The final path observed to direct, and indirect effects is self-efficacy to stress. It was identified that self-efficacy has a direct negative effect on stress and a negative indirect effect on stress partially mediated by anxiety. To conclude, the final model has more than one mediator, a specific indirect effect (SIE). The final model did not have a pathway for full mediation, but there were three paths analyzed that have partial mediations, as stated earlier in the paragraph.

Table 10*Direct and Indirect Path [standardized effects] Final Model*

Relationships	Effects	Point estimate	95% Confidence Interval		p-value	Conclusion
			Low	High		
Bullying → Self-efficacy → Anxiety	Direct	0.476	0.311	0.606	0.002*	Partial mediation
	Indirect	0.016	0.002	0.050	0.028*	
Bullying → Self-efficacy → Stress	Direct	0.193	0.053	0.331	0.010*	Null (no) mediation
	Indirect	0.027	-0.001	0.069	0.067	
Bullying → Self-efficacy → Performance	Direct	0.373	0.321	0.518	0.001*	Null (no) mediation
	Indirect	0.005	-0.021	0.059	0.604	
Bullying → Anxiety → Stress	Direct	0.193	0.053	0.331	0.010*	Partial mediation
	Indirect 1	0.113	0.066	0.171	0.001*	
	Indirect 2	0.010	0.001	0.031	0.030*	
Self-efficacy → Anxiety → Stress	Direct	-0.283	-0.408	-0.131	0.002*	Partial mediation
	Indirect	-0.121	-0.255	-0.026	0.016*	

Confidence Interval 95%; $p < 0.05^*$

4.8 Hypothesis Testing

Based on the final model (Figure 6), the following hypotheses were tested (Table 11) by evaluating the path coefficients scores:

Hypothesis 1: Nursing students' experiences of bullying in the clinical setting will have a direct negative effect on self-efficacy.

Hypothesis 2: Nursing students' self-efficacy will have a direct negative effect on anxiety and stress.

Hypothesis 3: Nursing students' self-efficacy will have a direct positive effect on performance.

Hypothesis 4: Nursing students' anxiety and stress will have direct negative effect on their performance.

Hypothesis 5: Student nurses' experiences of bullying in the clinical setting will have a direct negative effect on their self-efficacy, as well, as indirect effects on their anxiety, stress, and performance as mediated by self-efficacy.

Hypotheses 1 and 2 were supported. In addition, Hypothesis 5 was partially supported, as bullying had an indirect effect on anxiety as mediated by self-efficacy. Hypotheses 3 and 4 were not supported. Finally, Hypothesis 5 was no longer included in the final model (Figure 6), and not tested. However, the parameter estimates for the additional pathways added to the final model are presented in Table 11. The results of the final model will be discussed in more detail in the Chapter 4.

Table 11

Parameter Estimates of Final Model and Hypotheses

Hypothesis	Estimate	Standard Error	Critical Ratio	Standardized Regression Weights	Hypothesis Supported?
1. Nursing students' experiences of bullying in the clinical setting will have a direct negative effect on self-efficacy	-0.081*	0.035	-2.319	-0.223	Yes
2. Nursing students' self-efficacy will have a direct negative effect on anxiety	-0.200*	0.091	-2.197	-0.186	Yes
3. Nursing students' self-efficacy will have a direct negative effect on stress	-0.333*	0.072	-4.625	-0.283	Yes
4. Nursing students' self-efficacy will have a direct positive effect on performance	-0.065	0.194	-0.337	-0.031	No
5. Nursing students' anxiety and stress will have direct negative effect on their performance.	Not included in final model				N/A
6. Student nurses' experiences of bullying in the clinical setting will have a direct negative effect on their self-efficacy, as well, as indirect effects on their anxiety, stress, and performance as mediated by self-efficacy. (Need process in SPSS to figure out)	The numbers represent the indirect effect in the final model (anxiety stress, performance)	Anxiety SE = 0.010 Stress SE = 0.018 Perf SE = 0.018		Anxiety IE = 0.016* Stress IE = 0.027 Performance IE = 0.005	Partially supported (only anxiety)

Additional Pathways in Final Model					
Hypothesis	Estimate	Standard Error	Critical Ratio	Standard Regression weights	Hypothesis Supported?
7. Bullying to Anxiety	0.187*	0.033	5.625	0.476	N/A
8. Bullying to Stress	0.083*	0.029	2.815	0.193	N/A
9. Bullying to Performance	0.282*	0.071	3.987	0.373	N/A
10. Anxiety to Stress	0.604*	0.076	7.928	0.553	N/A

$p < 0.05^*$

4.9 Summary

The findings of the study based on the various statistical approaches used to analyze, present the findings, and test the proposed hypothesis were reported. First, descriptive statistics were presented to describe the sample, and the data suggest that there was no difference between the student groups at the two universities, except for an additional clinical rotation for one of the sites. Second, correlation and multicollinearity were examined between variables: the correlations identified within the model were consistent with other studies. Thirdly, there is some correlation between variables with the strongest being with anxiety to stress, with no VIF scores < 5 . Finally, SEM analyses revealed that the original hypothesized model was not a good fit for the data. As such, the tested alternative model was an improved fit and provided a better understanding of bullying and its impact on the outcomes of anxiety, stress and performance as partially mediated by self-efficacy of the student nurse. More specifically, three of the five hypotheses were supported, and four additional pathways were added, resulting in a better fitting model.

Overall, higher levels of bullying resulted in lower levels of self-efficacy among nursing students in the study, which in turn resulted in higher levels of anxiety and stress. There were minimal mediating effects on the outcomes with anxiety and performance; however, self-efficacy was a mediating factor for stress. Bullying had moderate to strong effects on the experience of stress, anxiety, and performance. Anxiety was not only a direct effect of bullying, but it was a mediating factor leading the student experience higher levels of stress. Anxiety was a partial mediator between self-efficacy and stress in

the model. The subsequent chapter will discuss the findings, implications, and identified limitations to the study.

Chapter 5

Discussion

Research focusing on understanding the potential mediating effect of self-efficacy on the relationship between bullying and selected behavioural outcomes (performance, anxiety, stress) of nursing students is limited. This exploratory study addressed this gap and expanded research in this area through the testing of a theoretical model examining the relationship between bullying experienced in the clinical practice environment and selected student outcomes (anxiety, stress, performance), as mediated by self-efficacy. In this chapter an overview of the findings, their relatedness with other findings, implications for nursing practice and nursing education, the conceptualization of the theoretical model as it relates to the student learning metaparadigm will be presented, followed by strengths and limitations of the study and the final summary.

5.1 Overview of the Results

In this study, *bullying* was defined as an unwanted negative act that can be intentional or unintentional and causes mental, physical, or emotional harm (Birks et al., 2018; Fathi et al., 2018; Leymann, 1996; Matthiesen & Einarsen, 2010) of the student. Similar definitions were used in studies conducted by Celik & Bayraktar, 2004; Cooper et al., 2011. Forty-six percent of participants in this exploratory study it was reported experiencing bullying. These findings are like previous studies where researchers reported 40 - 60% of student nurses reported being targets of bullying (Budden et al., 2018; Cooper & Curzio, 2012; Minton et al., 2018; Palaz, 2013). Professional and regulatory bodies, such as the Joint Provincial Nursing Committee (JPNC) and Canadian Nursing Association (CNA), have implemented no tolerance policies and procedures for

bullying (CNA, n.d; JPNC, 2015). However, the results of this study show that this issue remains a significant challenge as close to half of the sample of student nurses in the clinical environment continue to report experiencing bullying.

5.2 Discussion of the Hypotheses

Three out of five hypotheses were supported, and one hypothesis was partially supported.

Hypothesis 1: Nursing students' experiences of bullying in the clinical setting will have a direct negative effect on self-efficacy.

In this study, nursing students' reports of having experienced bullying within the clinical setting has a direct, negative effects on self-efficacy. This finding is consistent with other research using qualitative methodologies (Faerman-Geller (2013; Mott, 2014) where students interviewed reported a reduction in self-efficacy following the experience of bullying. Nursing student education includes clinical and experiential learning to some degree in all years of Canadian nursing programs (Canadian Association of School of Nursing 2015). Student's self-efficacy can change based on their experiences during the 'input' phase (Bandura, 1989). As they integrate into the profession, students learn how to interact in the professional environment to determine behavioural norms The second learning phase is 'process'; after students observe, they process what they have experienced and, based on these experiences, can process this information when self-efficacy can be impacted (Bandura, 1989).

Hypothesis 2: Nursing students' negative self-efficacy will have a direct negative effect on anxiety.

The model for tested in Hypothesis 2 supported a direct effect of Student self-efficacy on anxiety: if the student's reported self-efficacy is negatively impacted by external factors such as bullying, student nurses are likely to experience behavioural responses such as anxiety. These findings confirm that the environment in which student nurses learn is important in their development. If the atmosphere fails to promote self-efficacy, it can lead to decreased confidence and increased anxiety, both of which can impede learning and professional development (Machon, 2012). Similar findings were also reported in a qualitative study by Foster et al. (2014), where a case study approach was used to describe the bullying experience of student nurses ($N=40$) in years one through three. In this study, student nurses reported bullying experiences as having a consequence of emotional, mental, and physical outcomes / behavioural responses, including changes in their self-efficacy and the experience of anxiety (Foster et al., 2014).

Hypothesis 3: Nursing students' negative self-efficacy will have a direct effect on stress.

There was a direct negative effect with self-efficacy on stress in model testing. Stress is a characteristic that is unique compared to other attributes in this study as it elicits an emotional and physical response as well as psychological strain (World Health Organization, 2021). Consequently, if the stimulus by bullying in the student learning environment, affects the student's self-efficacy, stress response may occur. Since self-efficacy is the belief that one has the capacity to execute tasks and reach goals (Bandura, 1997), a student with low self-efficacy may experience stress when exposed to a challenging learning environment (e.g. bullying). This stress response may manifest in

physical and emotional symptoms such as headaches, irritability, and fatigue (Hakojarvi et al., 2014; World Health Organization, 2021). Similar findings were supported in a study by Minton and Birks (2019), who conducted a cross-sectional study with 296 student nurses in years one through three. These authors reported that students who experienced increased stress had reported decreased levels of self-confidence and self-esteem in addition to physical symptoms related to their stress, such as stomach aches and diarrhea (Minton & Birks 2019).

Hypothesis 4: Nursing students' self-efficacy will have a direct positive effect on performance.

Self-efficacy did not have a direct and positive effect on the variable of performance in the study analysis. One possible explanation for the rejection of *Hypothesis 4* can be situated within the consequences of the COVID-19 pandemic; eighty-one percent of students reported having their clinical learning only in the simulated setting, a consequence of the mandates and regulations of the pandemic. Bambini et al. (2009) reported that a simulation setting is a safe, positive learning environment where student nurses can learn various skills, yielding positive effects such as increased self-efficacy or self-esteem and overall performance. In controlled environments, a student's performance is unlikely to be impacted, as the learning environment is contained, and external factors that could affect the student's performance, real-world stressors that can trigger bullying behaviours, would not be present. Stressors in the real world can include increased workload, burnout, and toxic environments (Laschinger et al., 2010), impacting patients, family, nurses, multidisciplinary teams, and other members of the healthcare community (Machon, 2012). Again, students develop/

increase their self-efficacy and self-esteem in positive learning environments through enactive mastery, verbal influence, and physiological feedback (Bandura, 1989; 1994), all of which occur during the input and output phases of learning.

Hypothesis 5: Nursing students' anxiety and stress will have direct negative effect on their performance.

Interestingly, the final hypothesis, was not supported in the final model testing. The paths in the test and re-test of SEM reported pathways were non-significant and resulted in a poorly fitting model. These findings were surprising as there was not alignment with studies in general populations of postsecondary students where a change in student self-efficacy could lead to increased stress or anxiety, resulting in decreased performance (Piccirillo, 2016; Rigby, 2014). Simulated clinical learning in managed environments as a result of COVID-19 restrictions may have had an impact in this model as well.

5.3 Implications for Nursing Practice

Despite the plethora of research within the nursing profession and the literature identified in this work, reported bullying rates remain the same, and for some practice or academic environments, there has been an increase (Amoo et al., 2021; Birks et al., 2017). Not addressing the presence of bullying behaviours in learning environments can cause negative implications for the profession and has the potential to compromise patient care (Griffin, 2004; Johnston et al., 1995; Sauer & McCoy, 2016), job dissatisfaction (Magnavita & Tarja, 2011; Rodwell & Demir, 2012), burnout (Laschinger et al., 2010; Machon, 2012) and recruitment and retention (Birks et al., 2018; Seibel, 2014). The nursing profession is considered to have one of the highest prevalence rates of

bullying compared to other professions (Ariza-Montes et al., 2013; Workplace Bullying Institute, 2014). Students who experience bullying contemplate continuing in programs and/or switching professions (Birks et al., 2018; Budden et al., 2017; Palaz, 2013a), while others have left their programs due to their bullying experiences (Courtney-Pratt et al., 2018; McAdam-Cooper, 2007; Palaz, 2013a) compounding the nursing shortage (Birks et al., 2018; Seibel, 2014).

The findings of this study have important implications for future practice and discourse regarding educational accountability in enforcing policy, education, support, and initiating effective interventions. The theoretical model can be utilized as a steppingstone towards understanding how experiences can negatively impact the learning process, and the development of student self-efficacy. Findings provide insight regarding the potential behavioural responses that affect student learning and would encourage positive development of student nurses' human agency and their personal nursing paradigm construction. The findings of this study can be used to initiate discourse with student nurses, and educators, cultivating a new sense of awareness of the need to support the development of skills needed for agency. In addition to supports and student development, educators can create innovative and creative ways to facilitate positive learning experiences in the clinical learning environment and continue the enhancement of teaching/ facilitation resources. The development and testing of this theoretical model support that bullying does impact student nurses anxiety, stress, and performance. As a result of identifying these relationships in student experiences of bullying, this model inherently frames the a new conceptualization of student version of the nursing

metaparadigm [person, nurse, environment, health] (Fawcett, 2000) on how they perceive their learning experience.

5.3.1 The Setting and Sources of Bullying

Another important finding in this study was the identification of the environment where bullying took place and who the sources were. The highest bullying rates were reported to occur in acute care settings (64.2%), followed by long-term care settings (39.7%). These findings were comparable to the educational bullying literature, where studies identified that bullying primarily occurred in acute care settings (Faerman-Geller, 2013; Machon, 2012; Minton & Birks, 2019; Stevenson et al., 2006) where recent reports have identified the highest rates of increased workload, burnout, and staffing shortages (Edmonson & Zelonka, 2019). There is concern related to a theoretical presence of these issues in the same clinical environment and as such, bullying needs to be addressed primarily in practice areas where this phenomenon is most likely to occur. If students are experiencing bullying in these settings, it is highly likely that they may avoid these areas and seek opportunities to work on units where their likelihood of experiencing bullying is minimal (Birks et al., 2017).

Three-quarters of student nurses in the study sample reported that the primary source of bullying was their clinical preceptor (a member of the nursing staff), and just over a third reported the source of bullying to be clinical instructors. These results are consistent with the findings of four studies with similar samples with publication dates of 2006 to 2020 (Birks et al., 2018; Clarke et al., 2012; Luhanga et al., 2020; Stevenson et al., 2006). It is clear there has been minimal change regarding the sources of student nurse bullying in longer than a decade, supporting the need to assess and elicit discourse

regarding onboarding, training and support for preceptors and clinical educators. Clinical instructors and preceptors are the primary points of contact for the student nurse and spend a significant amount of time with students (Machon, 2012). Each are tasked with role modelling and supporting student nurses as they integrate into the profession (College of Nurses of Ontario, 2013; Machon, 2012). Some reflection from SCT (Bandura, 1989) can inform the need for additional resource and support for these key members of the educational team. In these moments of learning and exposure to the profession, the observed and experienced behaviour can be reinforced, according to Bandura (1989). Exposure to bullying within the educational process may have deleterious consequences as the student may choose not to continue in the program or profession based on their experiences (Budden et al., 2017).

5.3.1 Implications for Nursing Education

The finding of this study suggest that information is needed to bridge knowledge gaps and help inform and enhance 'no tolerance policies' programs, and intervention to bullying in clinical environments, create resources, and provide support to educators and preceptors (Rutherford et al., 2019). Additionally, this framework can elicit discourse on hiring practices and evaluation methods to ensure that student nurses have clinical instructors and preceptors that are student centred and have a heightened sense of awareness; with the ability to provide student support, fostering safe positive learning environments that are equitable and inclusive. Providing support and resources for educators and preceptors allows student nurses to have positive learning experiences(s) in environments that may not lend to the ideal learning experience for student nurses. According to Bandura (1994) and Freire (2012), for optimal learning to happen for a

student, the environment must constitute safe learning, where the student can receive/ get positive feedback and allow for the opportunity for observational learning, development of self-efficacy, and reciprocal determinism (Bandura, 1986).

Presenting empirical knowledge substantiates the importance of students' self-efficacy and its role in the student nurse experience. Bandura (1989; 1997) indicates that students with high self-efficacy perform better in the learning environment. If nursing educators were to understand the importance of being intentional in supporting and increasing the self-efficacy of student nurses, it would allow for a more positive learning experience in the clinical practice setting (Clarke, 2009; McLaughlin et al., 2008). Therefore, it is critical that as a part of the student learning process, students develop and maintain self-efficacy and learn how to navigate experiences or systems that is perceived to be negative. Research has identified that nurses with low self-efficacy are not ideal patient advocates and are at increased risk of making practice errors, potentially putting the patient population at risk (Dulaney, 2015; Masoudi-Alavi, 2014). Nursing educators must be intentional in fostering learning experiences that support self-efficacy at all levels of the educational process.

5.3.2 COVID-19 and the Impact on Learning

The pandemic presented various challenges and experiences in the clinical setting for student nurses (Dewart, et al., 2020) in the Greater Toronto Area, but it provided an unanticipated dimension to the study that impacted bullying experienced by student nurses. Student nurses were still expected to function in unique circumstances where the environment is stressed and subjected to the same power dynamics and hierarchies as experienced nurses, despite their lack of experience and knowledge (Machon, 2012;

Seibel, 2014). During the pandemic, nurses were expected to be preceptors and educators for student nurses regardless of their reported burnout, struggling to manage increased workload, and working extra hours with minimal compensation (Maunder et al., 2021; Registered Nurses Association of Ontario, 2022). Moreover, the pandemic identified clinical units where nurses reported the above-mentioned issues, they experienced clinical unit staffing shortages, and as a consequence of these reported concerns, there was a report of increased rates of bullying (Dye et al., 2020; Mukhtar, 2020).

Under these circumstances, there is evidence that there were enhancement hostile work environments, increasing the likelihood that nurses and student nurses would experience bullying (Serafin et al., 2022). In these complex environments, students were expected to function, provide safe, competent patient care, and demonstrate competency. Student nurses in the study sample reported having increased anxiety (87.5%) and stress (84.5%), underlining the need to facilitate/create positive learning environments for students even when the learning and clinical environments are experiencing unprecedented and complex circumstances.

5.4 Framing the Emerging Metaparadigm of the Student Educational Experience

Having analyzed the theoretical model in some detail, the finalized model can be posited to build on the paradigm and conceptualization of bullying as affecting behavioural responses with the mediating variables of self-efficacy and anxiety that are based on the student nurse's pedagogical experience. According to Fawcett (1978), a metaparadigm is framed based on person, environment, health and nursing. Nursing education focuses on the nurse-patient metaparadigm to ensure that nurses are taught how to provide client care holistically; nursing education can be shaped in the same

framework; as such where nursing education is framed into a metaparadigm that nursing educators teach future nurses from a holistic framework, thus, supporting the student intersectionality, and maintaining the integrity of the learning process. To support this discourse Fawcett (2000) indicates that any form of empirical knowledge that is interpreted (e.g., Structural Equation Model) acknowledges a diversity of knowledge which can be then used to build a new body of knowledge. Therefore, this final theoretical model not only supports the extant literature provides a place for the genesis of the conceptualization the metaparadigm of the student experience. The metaparadigm could allow for the creation of a deeper understanding of this complex phenomenon of bullying and the impact it can have on the student.

In this work, the student nurse's clinical learning experiences were presented from within an environmental and process context. It is within the environment that student nurses are being socialized into the profession. In the process of being socialized, the student is developing their human agency as a professional through the mechanisms of learning (enactive mastery, vicarious experiences, verbal influence, physiological feedback) (Bandura, 1994) and eventually behavioural responses (anxiety, stress and performance). It is also important to note that through socialization, some students can identify the role that intersectionality can play in their learning experience, including bullying. All these attributes and dimensions significantly impact the nursing metaparadigm (Fawcett, 2000) of the student pedagogical experience. The metaparadigm then becomes, the student and all their attributes as the person, educator as nurse and environment as the context of the learning process toward explaining the student-educator experience.

5.4.1 Environment: Context

The environment in the study model is where learning takes place, bullying experiences may occur, and where students will have positive or negative experiences during their learning. The theoretical model provides an understanding of how bullying experiences students have during their clinical learning triggers a behavioural response. As the environment is where student nurses spend a significant amount of time and are introduced to the profession through socialization, this is where they observe and learn how to navigate and behave. The environment shapes student belief systems, and human agency is developed where intricate learning processes occur (Bandura, 1994). According to a study by Machon (2012), student nurses ($n=21$) in years 1-3 reported that the environment played a pivotal role in their learning experience. More significantly, it was identified that their experiences in the clinical environment were a significant attribute to their bullying experience, meaning students learned to 'play the game' and were told that they were being taught based on preceptors /instructors based on the way they learned, which enables the cycle to continue (p.96). Other contributing factors that can have a positive or negative impact on the student learning experience are the actual workload, stress and acuity of the unit (Stevenson, 2006; Machon, 2012); all attributes cultivate behavioural responses that may or may not have a negative or positive response on the student nurse. Thus, these learning experiences in the environment formulate the social context and reciprocal interactions of the environment, person, and behaviour (Bandura, 1986).

5.4.2 Person: Student

The section above explains how external factors (environment) formulate internal and social factors that reinforce learning. The experiences student nurses have in the clinical environment influence the development of the students' human agency and personal attributes. Human agency is the regulation of a person that guides and engrains belief, and their functions motivates development (Bandura, 2002). The student (person) can conceptualize their beliefs, values and behavioural responses based on external and internal stimuli (Bandura, 1994). Therefore, all experiences are critical to the learning process because this is how students learn how to respond or apply theoretical knowledge (praxis) to the situation they are exposed to. However, as the student nurse is vulnerable in the learning experience, it is critical to be cognisant of the development of self-esteem and self-efficacy in learning environments. A change in student self-efficacy can negatively impact their learning experience and the development of their human agency, impacting their future practice as graduated nurses. According to Bandura (1994), self-efficacy is a critical attribute of learning, for it influences how a person navigates their human agency and capabilities to perform in learning environments (Bandura, 1986). Self-efficacy helps the student navigate how they will approach their learning task and challenges, especially if (and when) they are unsuccessful (Bandura, 1994).

5.4.2.1 Intersectionality

The theoretical model did not test the role of intersectionality as a variable. However, these attributes cannot be ignored and must be acknowledged as they are inherent to the student nurse's identity and experiences as well-documented in literature. As such, defining the person in the new metaparadigm includes the student nurse's intersectionality as an essential component.

Intersectionality, according to Crenshaw (1991) and Hill-Collins (2019), is an element of the attributes of a person that is both seen and not seen and part of the human context. Students have to navigate how their intersectionality will contribute to their learning process based on their dimension of intersectionality and the impact it may have, may it be positive or negative (Canty et al., 2023). These experiences contribute to the development of human agency as defined by Bandura (2002), and the development of the practicing nurse, and more recently, to substantiate the narrative of intersectionality is an intricate attribute of the human experience. A recent report from the Registered Nursing Association of Ontario (RNAO) Black Nursing Task Force (2022) confirmed that intersectionality contributed to experiences of bullying and racism within the nursing profession.

5.4.3 Nurse: Educator

The nursing educator is an integral part of the learning process for the student nurse. The College of Nurses of Ontario states that registered nurses are accountable for supporting, mentoring and teaching students (College of Nurses of Ontario (CNO), 2013, 2017). Nursing educators must ensure that he/she/they are supporting and cultivating safe

learning experiences for students based on the CNO code of conduct (CNO, 2017).

Educators are charged with the responsibility to teach, mentor, and support the student in the learning environment and provide learning opportunities to enact learning processes.

These include vicarious experiences, verbal persuasion, and physiological feedback, which is critical to the process of nursing developing their self-efficacy and human agency (Bandura, 1994) as a student nurse. Through vicarious experiences student, nurses learn about the culture of the nursing profession and the attitudes, tenets and practices that make the profession unique. Educators are expected to challenge the students thinking, the application of praxis, and demonstrations of competency of nursing skills, but most important of all, to support the enhancement and development of student human agency, which is developed through mastery of experiences, vicarious experiences, and verbal persuasion (Bandura, 1997). Nurse educators are considered not only to be facilitators of knowledge but professional role models of appropriate conduct (CNO, 2017).

5.4.4 Health

Learning experiences will elicit a behavioural response; these responses may be positive or negative. The evidence identifies that the bullying experience or a negative learning experience does not come without consequences (Canty et al., 2023; Kassem et al., 2015; Luhanga et al., 2020). There can be a myriad of experiences resulting in emotional, mental and physical behavioural response (outcomes). A student's learning experience can have direct and indirect effects (s) on their behavioural response (outcome). Nursing is a high-stakes program, particularly the clinical nursing course where student nurses can only achieve a grade of a pass or fail (McClenny, 2018).

Inherently such expectations can elicit a biophysical or psychological response. Therefore, potentially impacting the health and well-being of the student nurse.

The new nursing metaparadigm that has relevance for education with the inclusion of the student nurse and learning experiences was created based on the theoretical model testing, drawing inferences of the complex relationships between the environment, the student, the educator and negative or positive experiences. Employing this metaparadigm, nurse educators must have a heightened sense of awareness and accountability for actions that promote self-efficacy within the student learning experience, and in nursing practice and policy development.

5.5 Limitations

The study provides insight into how bullying impacts student nurses' performance and behavioural outcomes in the clinical setting. One limitation maybe related to social desirability bias (Bergen & Labonté, 2019; Lavrakas, 2008). Bullying can be a sensitive topic for many, so some respondents may have felt pressured to shape their responses in ways they perceive would present more favorably. In this study, social desirability bias was minimized by assuring respondents that their answers are entirely confidential and anonymous. Making responses anonymous can alleviate the pressure that some respondents may feel to shape their responses based on a desire to present a positive image to the researcher.

Data collection occurred during the COVID-19 pandemic. Research has reported that COVID-19 has impacted online survey responses, data collection and participation in research (de Koning et al., 2021). According to de Koning et al. (2021), many participants were overwhelmed with the evolving issues related to the COVID-19

pandemic, coupled with the surge of research during the pandemic; this created survey fatigue, and participants losing interest in participating or engaging in survey-based research (de Koning et al., 2021). Other studies identified that other factors impacting survey-based research could be related to participants' decreased well-being and greater levels of distress to participants (Sollis et al., 2020) or participants choosing not to read electronic communications (Saleh & Bista, 2017). Considering such factors could potentially impact the response rate of this study, thus, impacting the expected response rate to be less than the anticipated 30% (Dillman et al., 2014; and Nulty, 2008).

Also, with the study occurring during the peak of the COVID-19 global pandemic, it resulted in the student population having limited exposure to the clinical practice environment; not all rotations were done in the clinical setting. Due to the COVID-19 mandates, some clinical rotations occurred in the simulated environment. A simulated environment provides excellent learning experiences for students and allows for students to see and experience health issues ideally not seen in the clinical environment (Koukouikos et al., 2021). However, these environments are controlled and do not reflect the true essence of the clinical experiences, for example, dealing with patients, family members, and multidisciplinary team members. Another limitation was that this study could not discriminate if bullying experiences brought on anxiety, stress, and performance or if the pandemic brought it on.

The final limitation of this study was able to identify that perception of bullying experienced by student nurses impacting their performance specifically related to patient care due to the students having clinical in the simulated setting. Studies have identified a

strong link between workplace bullying and decreased patient safety (performance). There is an increased risk of clinical errors, particularly when students are unwilling to ask questions in clinical settings known for a culture of bullying (Mitchell et al., 2014; Thomas & Burk, 2009). The risk of medication errors and medical errors (The Joint Commission, 2008; Wright & Khatri, 2015) has been identified as an area of particular concern.

5.6 Conclusion

In this study, a theoretical model to understand the relationship between bullying and behavioural responses with mediating variables (self-efficacy, anxiety) was tested. Bullying in the clinical setting does impact the student learning experience. Constructing and testing a theoretical model exploring the relationship between bullying and the outcomes (anxiety, stress, performance), as mediated by self-efficacy and anxiety in the clinical environment provides the foundation for future examination of contributing factors and educational and student support interventions. Student nurses are being exposed to or experience bullying in a clinical setting, where a substantial amount of their learning occurs (Berry et al., 2012; Du Toit, 1995; Seibel, 2014). Studies have indicated that if this issue is not addressed, the cycle of bullying will continue to negatively impact the nursing profession (Dulaney, 2015; McAdam-Cooper, 2007; Seibel, 2014).

The model may be used to facilitate discourse, providing insight into students' and educators' relationships through the lens of the student nurse metaparadigm to mitigate negative behavioural responses or learning experiences that can impact human agency development. Even though socialization was not the focus of the study, the paradigm of this ideology is based on the concept of socialization and an ontological approach to

learning. It provides insight into the metaparadigm of the student nursing learning experience based on Social Cognitive Theory (Bandura, 1989). Understanding bullying and its relationship with a student's attribute(s) and outcomes through the student nurse metaparadigm allows for discourse and the development of practical solutions for how students can manage perceived bullying and create resources and supports for educators and preceptors. More importantly, it allows the opportunity for nursing students to have a positive and safe clinical learning experience.

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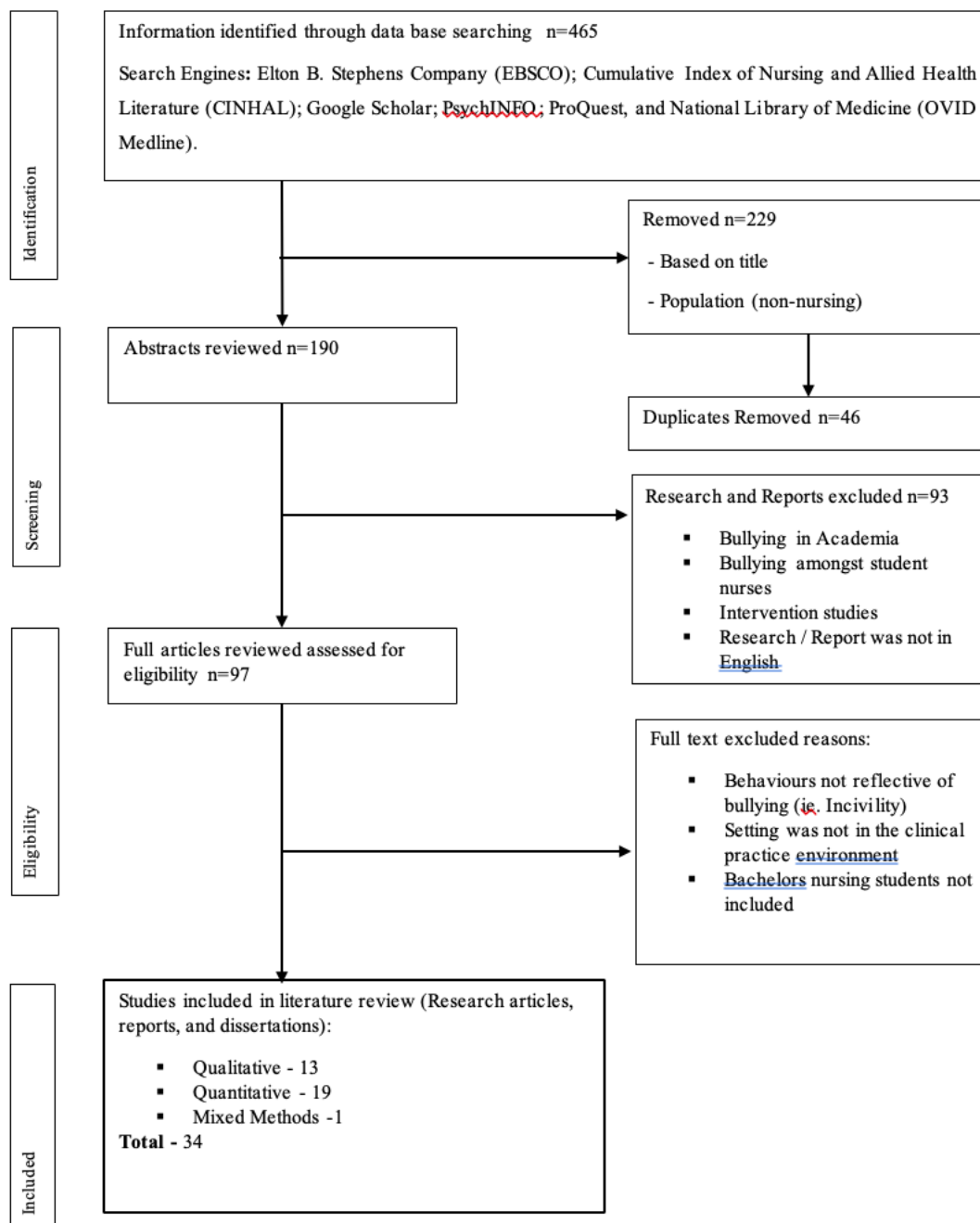
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Appendix A

PRISMA Diagram for Literature Review



Appendix B

Instruments

General Self-Efficacy (GSE)

Below are ten statements about yourself which may or may not be true. Using the 1-4 scale below, please indicate your agreement with each item.

	Not at all true (1)	Hardly True (2)	Moderately true (3)	Exactly True (4)
GSE 1. I can always manage to solve difficult problems if I try hard enough.				
GSE 2. If someone opposes me, I can find the means and ways to get what I want.				
GSE 3. It is easy for me to stick to my aims and accomplish my goals.				
GSE 4. I am confident that I could deal efficiently with unexpected events.				
GSE 5. Thanks to my resourcefulness, I know how to handle unforeseen situations.				
GSE 6. I can solve most problems if I invest the necessary effort.				
GSE 7. I can remain calm when facing difficulties because I rely on my coping abilities.				
GSE 8. When I am confronted with a problem, I can usually find several solutions.				
GSE 9. If I am in trouble, I can usually think of a solution.				
GSE 10. I can usually handle whatever comes my way.				

General Anxiety Disorder (GAD)

In the next section of the survey there will be questions that will address feelings of anxiety. Over the past 2-3 clinical rotations, how often have you been bothered by the following problems?

	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
GAD 1. Feeling nervous, anxious, or on edge				
GAD 2. Not being able to stop or control worrying				
GAD 3. Worrying too much about different things				
GAD 4. Trouble relaxing				
GAD 5. Being so restless that it's hard to sit still				
GAD 6. Becoming easily annoyed or irritable				
GAD 7. Feeling afraid as if something awful might happen				

Perceived Stress Scale (PSS)

The questions in this section address your feelings and thoughts you've had about stress during the last 2-3 clinical rotations. For each question, please indicate how often you felt or thought a certain way.

Perceived Stress Scale (PSS)	Never (0)	Almost never (1)	Sometimes (2)	Fairly Often (3)	Very Often (4)
PSS 1. How often have you been upset because of something that happened unexpectedly?					
PSS 2. How often have you felt that you were unable to control the important things in your life?					
PSS 3. How often have you felt nervous or stressed?					
PSS 4. How often have you felt confident about your ability to handle your personal problems?					
PSS 5. How often have you felt that things were going your way?					
PSS 6. How often have you found that you could not cope with all the things that you had to do?					
PSS 7. How often have you been able to control irritations in your life?					
PSS 8. How often have you felt that you were on top of things?					
PSS 9. How often have you been angered because of things that were outside of your control?					
PSS 10. How often have you felt difficulties were piling up so high that you could not overcome them?					

Bullying in Nursing Education Questionnaire – Revised (BNEQ)

Listed below are 12 behaviours that are identified as “bullying behaviours”.
 During the past 2 – 3 clinical rotations mark the category that best fits the frequency of the behaviour you experienced in the clinical setting.

	Never (1)	Seldom (2)	Intermittent (3)	Frequent (4)	Always (5)
BNEQ-1. Yelling or shouting in rage					
BNEQ-2. Inappropriate, nasty, rude or hostile behaviour					
BNEQ-3. Belittling or humiliating behaviour					
BNEQ-4. Spreading of malicious rumours or gossip					
BNEQ 5. Cursing or swearing					
BNEQ-6. Negative or disparaging remarks about becoming a nurse					
BNEQ-7. Assignments, tasks, work or rotation responsibilities made for punishment, rather than educational purposes					
BNEQ-8. A bad grade given as a punishment					
BNEQ-9. Hostility after or failure to acknowledge significant clinical, research, or academic accomplishment					
BNEQ-10. Actual/ threats of physical abuse or verbal acts of aggression					
BNEQ-11. Being ignored or physically isolated					
BNEQ-12. Unmanageable workloads or unrealistic deadlines					

Worrying about Workplace Bullying (WPB)

Recall your observed or actual bullying experiences of past 2 – 3 clinical rotations, and please indicate the extent to which you disagree or agree with each of the following statements.

	Strongly Disagree (0)	Somewhat Disagree (1)	Neutral (2)	Somewhat Agree (3)	Strongly Agree (4)
WPB 1. Bullying in the clinical setting increases my stress level					
WPB 2. Bullying in the clinical setting negatively affects my clinical performance					
WPB 3. Bullying in the clinical setting leads to communication problems between myself and the nursing staff or clinical instructor					
WPB 4. Bullying in the clinical setting alters my thinking or concentration					
WPB 5. Bullying in the clinical setting affects my delivery of care					
WPB 6. Bullying in the clinical setting may increase my medication errors					
WPB 7. Bullying in the clinical setting negatively affects my emotional health					
WPB 8. Bullying in the clinical setting increases patient complaints about my care					
WPB 9. Bullying in the clinical setting lowers my self-confidence					
WPB 10. Bullying in the clinical setting may increase my patients' falls					
WPB 11. Bullying in the clinical setting negatively affects my physical health					
WPB 12. Bullying in the clinical setting may lead to adverse events with my patients					

	Strongly Disagree (0)	Somewhat Disagree (1)	Neutral (2)	Somewhat Agree (3)	Strongly Agree (4)
WPB 13. Bullying in the clinical setting causes dissatisfaction with my nursing education					
WPB 14. Bullying in the clinical setting makes me consider leaving the nursing program					
WPB 15. Bullying in the clinical setting makes me want to stay home rather than go to clinical practice					

PART A: The questions in this section are about understanding your clinical experiences.

1. What year are you in?	3 rd year	4 th year	
2. How many clinical rotations have you had since starting your nursing program?			
3. Have you previously failed a clinical placement?	Yes	No	I prefer not to answer
4. During COVID-19, did any of your clinical rotations take place using clinical simulation rather than in a clinical setting?	Yes	No	

PART B: The questions in this section ask about bullying you may have experienced in the clinical setting

1. Have you ever been the target of bullying in any of your clinical placements?	Yes	No	Uncertain		
2. If yes, please indicate where? <i>Select all that apply</i>	Clinical Setting: Acute care	Clinical Setting: Long-Term Care	Clinical Setting: Community Care	Other	
3. If yes, who were the sources of the bullying? Please <i>Select all that apply</i>	Clinical Instructor	Nursing Staff	Multidisciplinary team member	Patient	Other
4. Did you report the incident?	Yes	No			

PART C: The questions in this section are about understanding how COVID-19 pandemic impacted your clinical experience

1. Are you experiencing higher than normal levels of anxiety during the COVID-19 pandemic?	Yes	No
2. Are you experiencing higher levels of stress during COVID-19?	Yes	No
3. Has the COVID-19 negatively impacted your clinical performance?	Yes	No
4. Has your self-efficacy or confidence been negatively affected during COVID-19?	Yes	No

PART D: In this last section of the survey, please answer questions about yourself:

1. Which gender do you identify as?	Female	Male	Transgender	Binary	I choose not to identify	
2. What is your age (years)?						
3. What is your ethnicity?	Afro-descendant (Black)	Caucasian	Indigenous	Asian	Other	I choose not to identify

PART E: This hyperlink is for participants who would like to enter their name into the raffle for a Tim Horton e-gift card

1. If you are interested in participating to the virtual raffle for 1 of 5 Tim Horton card please click on hyperlink.

Appendix C

Research and Ethics Approval



Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB)

HSREB Initial Ethics Clearance

August 06, 2021

Ms. Crystal Jardine-Garvey
School of Nursing
Queen's University

TRAQ #: 6033077

Department Code: NURS-520-21

Study Title: "NURS-520-21: The Relationship between Bullying and Selected Student Outcomes (Anxiety, Stress, Performance) as Mediated by Self-Efficacy: Testing a Theoretical Model"

Supervisors: Dr. Joan Almost, Dr. Jacqueline Galica

Review Type: Delegated

Date Ethics Clearance Issued: August 06, 2021

Ethics Clearance Expiry Date: August 06, 2022

Dear Ms. Jardine-Garvey:

The Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB) has reviewed the application and granted ethics clearance for this study as of the date noted above.

Document Name	Comments	Version Date
Letter of Information/Consent Form (combined document)	Letter of Consent Ontario Tech Pre-test	2021/08/05
Letter of Information/Consent Form (combined document)	Letter of Consent York	2021/08/05
Letter of Information/Consent Form (combined document)	Letter of Consent Queen's	2021/08/05
Letter of Information/Consent Form (combined document)	Letter of Consent Ontario Tech	2021/08/05
EMAIL	Co-ordinator information letter	2021/07/13
Recruitment Letter/Email/Notice/Poster	Invitation Pre-Test	2021/07/13
Debriefing Form/Letter	Thank you Letter	2021/07/24
Recruitment Letter/Email/Notice/Poster	Invitation Letter	2021/07/13
Questionnaire	Pre-test Questionnaire	2021/06/08
Questionnaire	Surveys to be used in study	2021/06/08

Documents Acknowledged:

- Ethics Training Certificates

Amendments: No deviation from, or changes to the protocol, informed consent form and conduct of study should be initiated without prior written clearance or an appropriate amendment event from the HSREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the study.

Health Science Research and Ethics Board Amendment



QUEEN'S UNIVERSITY HEALTH SCIENCES & AFFILIATED TEACHING HOSPITALS RESEARCH ETHICS BOARD (HSREB)

HSREB Delegated Amendment to Ethics Clearance

October 18, 2021

Ms. Crystal Jardine-Garvey
Faculty of Health Sciences\School of Nursing
Queen's University

TRAQ #: 6033077

Department Code: NURS-520-21

Study Title: "NURS-520-21: The Relationship between Bullying and Selected Student Outcomes (Anxiety, Stress, Performance) as Mediated by Self-Efficacy: Testing a Theoretical Model"

Review Type: Delegated

Date Ethics Clearance Issued: October 18, 2021

Dear Ms. Jardine-Garvey:

The Queen's University Health Sciences & Affiliated Teaching Hospitals Research Ethics Board (HSREB) has reviewed the amendment event form and is granting ethics clearance for the changes listed below:

- Inclusion of gift cards for participants

Regards,

A handwritten signature in cursive that reads "Albert F. Clark".

Albert F Clark, PhD

Chair, Queen's University Health Sciences and Affiliated Teaching Hospitals Research Ethics Board

The HSREB operates in compliance with, and is constituted in accordance with, the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the international Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Product Regulations; Part 3 of the Medical Devices Regulations, and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The HSREB is qualified through the CTO REB Qualification Program and is registered with the U.S. Department of Health and Human Services (DHHS) Office for Human Research Protection (OHRP). Federalwide Assurance Number: FWA#: 00004184, IRB#: 00001173. HSREB members involved in the research project do not participate in the review, discussion or decision.

Ontario Tech University Research and Ethics Board

Date: October 14, 2021
 To: Crystal Andina-Barney
 From: Paul Fielder, REB Vice-Chair
 File # & Title: 18546 - 16URS-530-21: The Relationship between Bullying and Selected Student Outcomes (Anxiety, Stress, Performance) as Mediated by Self-Efficacy: Testing a Theoretical Model
 Status: APPROVED
 REB Expiry Date: October 01, 2022

Document Type	Document Name	Version	Date
External Permission Approval Letter	York University Approval		2021-09-24
Participant Materials Handouts	Thank you letter		2021-07-24
Supporting Documentation	Approval Letter from Supervisors		2021-08-09
Recruitment Materials	Email invitations for professors		2021-07-24
Recruitment Materials	Pre-Test Invitation Letter		2021-07-24
Recruitment Materials	Invitation Letter		2021-07-24
Data Collection Materials	Questionnaire		2021-08-09
Data Collection Materials	Pre-test Questionnaires		2021-08-09
Consent Letter	Consent Form York		2021-08-05
Consent Letter	Consent Form Ontario Tech		2021-08-05
Consent Letter	Pre-Test Consent Form		2021-08-05
Consent Letter	Consent Form Queens		2021-08-05
External Permission Approval Letter	Approval Letter		2021-08-06
Supporting Documentation	Queens REB Application		2021-07-24

Notwithstanding this approval, you are required to obtain/submit to Ontario Tech Research Ethics Board, any relevant approvals/permissions required, prior to commencement of this project.

The Ontario Tech Research Ethics Board (REB) has reviewed and approved the research study named above to ensure compliance with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2 2018), the Ontario Tech Research Ethics Policy and Procedures and associated regulations. As the Principal Investigator (PI), you are required to adhere to the research protocol described in the REB application as last reviewed and approved by the REB. In addition, you are responsible for obtaining any further approvals that might be required to complete your project.

Under the TCPS2 2018, the PI is responsible for complying with the continuing research ethics reviews requirements listed below:

Renewal Request Form: All approved projects are subject to an annual renewal process. Projects must be renewed or closed by the expiry date indicated above ("Current Expiry"). Projects not renewed 30 days post expiry date will be automatically suspended by the REB; projects not renewed 60 days post expiry date will be automatically closed by the REB. Once your file has been formally closed, a new submission will be required to open a new file.

Change Request Form: If the research plan, methods, and/or recruitment methods should change, please submit a change request application to the REB for review and approval prior to implementing the changes.

Adverse or Unanticipated Events Form: Events must be reported to the REB within 72 hours after the event occurred with an indication of how these events affect (in the view of the Principal Investigator) the safety of the participants and the continuation of the protocol (i.e. un-anticipated or un-mitigated physical, social or psychological harm to a participant).

Research Project Completion Form: This form must be completed when the research study is concluded.

Always quote your REB file number (18546) on future correspondence. We wish you success with your study.

Sincerely,
 Dr. Paul Fielder, REB Vice-Chair Janice Moseley, Research Ethics Officer
 paul.fielder@ontariotechu.ca jmoseley@ontariotechu.ca



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Certificate #:	2021-318
Approval Period:	09/24/21-09/21/22

ETHICS APPROVAL

To: Crystal Jardine-Garvey – Graduate Student
Nursing, Queen's University
13cj12@queensu.ca

From: Alison M. Collins-Mrakas, Director, Research Ethics
(on behalf of You-ta Chuang, Chair, Human Participants Review Committee)

Date: Friday, September 24, 2021

Title: **NURS-520-21: The relationship between Bullying and Selected Outcomes (Anxiety, Stress, Performance) as mediated by Self-Efficacy: Testing a Theoretical Model**

Risk Level: Minimal Risk More than Minimal Risk

Level of Review: Delegated Review Full Committee Review

I am writing to inform you that this research project, “**NURS-520-21: The relationship between Bullying and Selected Outcomes (Anxiety, Stress, Performance) as mediated by Self-Efficacy: Testing a Theoretical Model**” has received ethics review and approval by the Human Participants Review Sub-Committee, York University’s Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

Note that approval is granted for one year. Ongoing research – research that extends beyond one year – must be renewed prior to the expiry date.

Any changes to the approved protocol must be reviewed and approved through the amendment process by submission of an amendment application to the HPRC prior to its implementation.

Any adverse or unanticipated events in the research should be reported to the Office of Research ethics (ore@yorku.ca) as soon as possible.

For further information on researcher responsibilities as it pertains to this approved research ethics protocol, please refer to the attached document, “**RESEARCH ETHICS: PROCEDURES to ENSURE ONGOING COMPLIANCE**”.

Please note that in response to the ongoing changes due to the pandemic, researchers are required check the [YuBetter website](#) (Section: Coming to Campus) for updates as there may be changes to protocol requirements.

Should you have any questions, please feel free to contact me at: 416-736-5914 or via email at: acollins@yorku.ca.

Yours sincerely,

Alison M. Collins-Mrakas M.Sc., LLM
Director,
Office of Research Ethics

Appendix D

Email Granting Permission to use Worrying about Workplace Bullying

From: Mahmoud Salam <mahmoudsalam@hotmail.com>
Sent: Monday, May 4, 2020 10:10 AM
To: Crystal Jardine-Garvey <13cj12@queensu.ca>; surimik@ksau-hs.edu.sa <surimik@ksau-hs.edu.sa>
Subject: Re: Requesting Permission for "Worrying About Bullying" Tool

Hello Ms. Crystal
Hope you are doing well
Your research focus is of great interest and good luck in your academic endeavor.
We don't mind using our tool in your dissertation. It has been presented in Table 1 of the paper and further details on how we adopted it can be found in the methods part.
Let me know if you need further clarifications
Best of Luck
Mahmoud

From: Crystal Jardine-Garvey <13cj12@queensu.ca>
Sent: Monday, May 4, 2020 1:26 PM
To: mahmoudsalam@hotmail.com <mahmoudsalam@hotmail.com>
Cc: Crystal Jardine-Garvey <13cj12@queensu.ca>
Subject: Requesting Permission for "Worrying About Bullying" Tool

Good Day Dr. Al Omar, Dr. Salam, and Dr. Al-Surimi

My name is Crystal Jardine-Garvey and I am a PhD at Queen's University in Kingston Ontario Canada. I am presently working on my dissertation proposal, which is creating a theoretical frame understanding perceived bullying experiences of student nurses in the clinical practice setting and the impact it has on their personal attributes and patient care outcomes. The goal is to test my theoretical framework thorough Structural Equations Modelling. Hence, the purpose for my email. I am requesting your permission to use your tool 'Worrying about Bullying' used and published in:

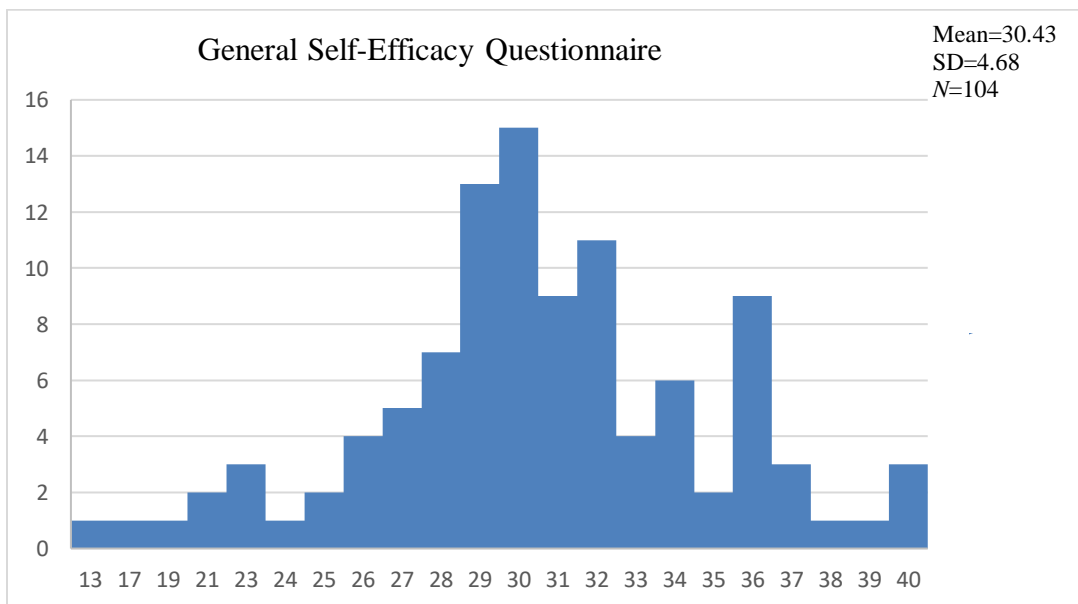
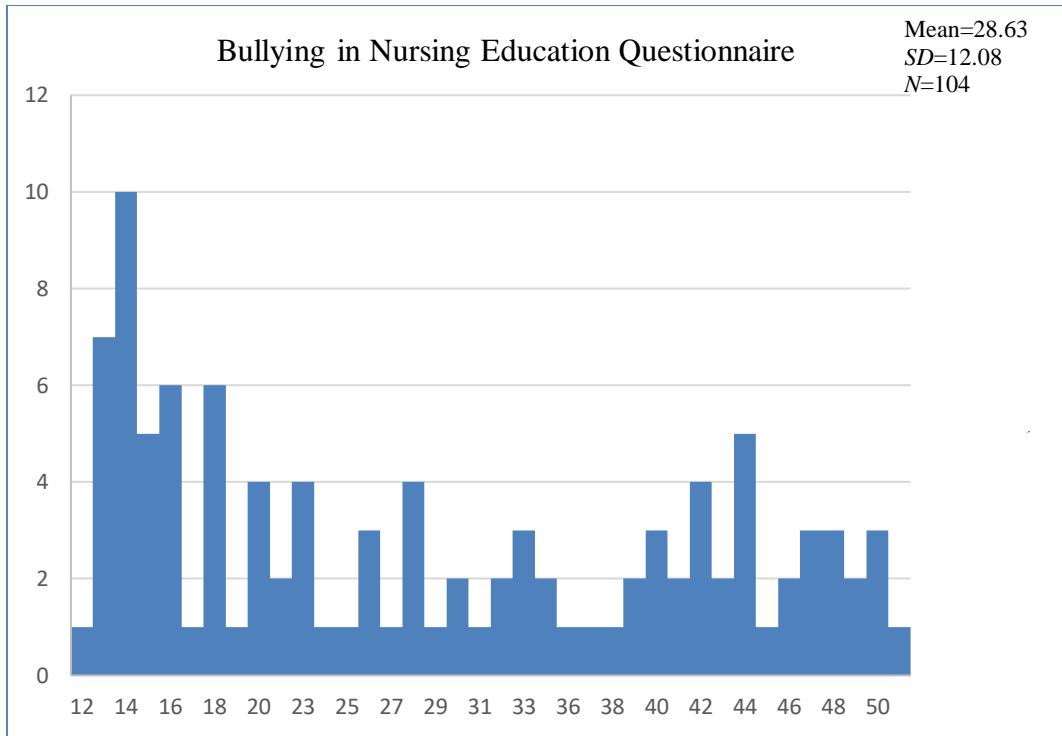
Al Omar, M., Salam, Mahmoud, and Al-Surimi (2019). Workplace bullying and its impact on quality of healthcare and patient safety. *Human Resource for Health*. 17(89)1-8. doi: <https://doi.org/10.1186/s12960-019-0433-x>

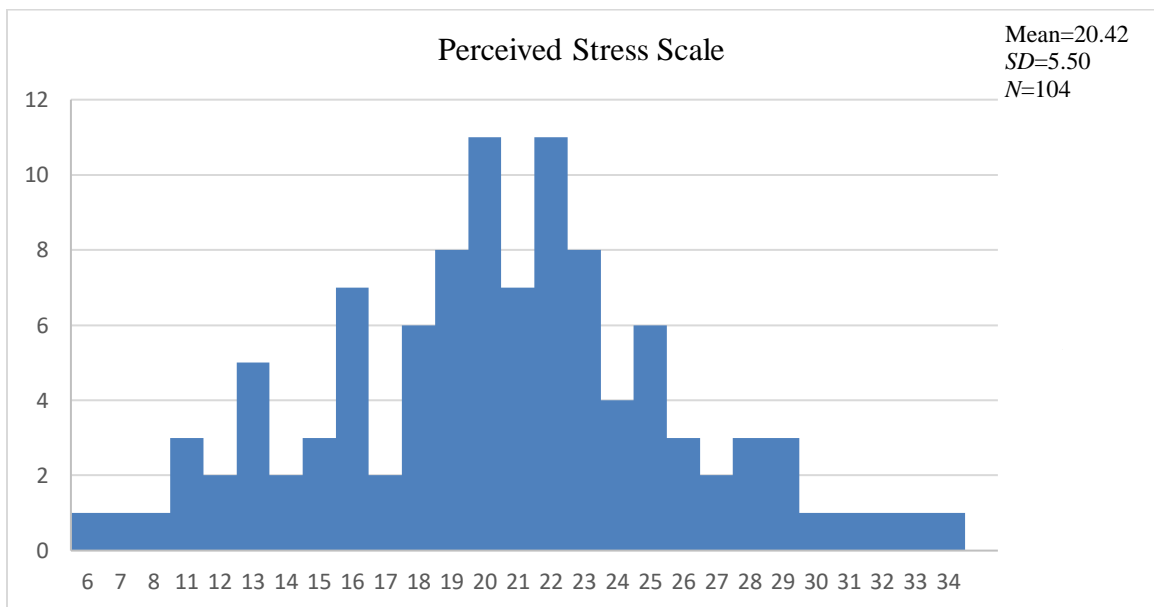
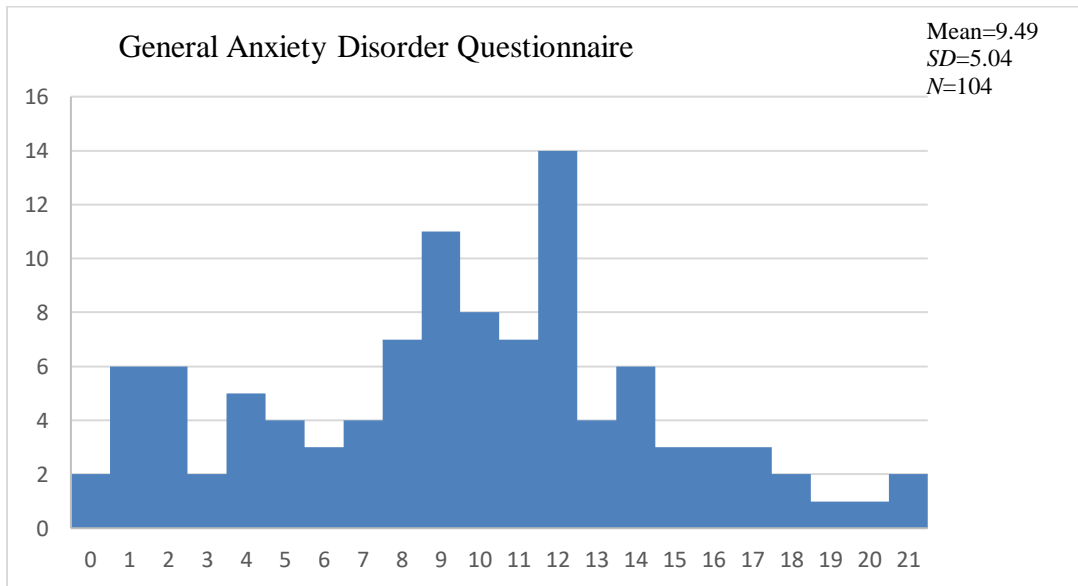
The variables identified in your study align perfectly with my proposed research. Using this tool will help build on empirical knowledge about perceived bullying experienced by student nurses in clinical practice setting.

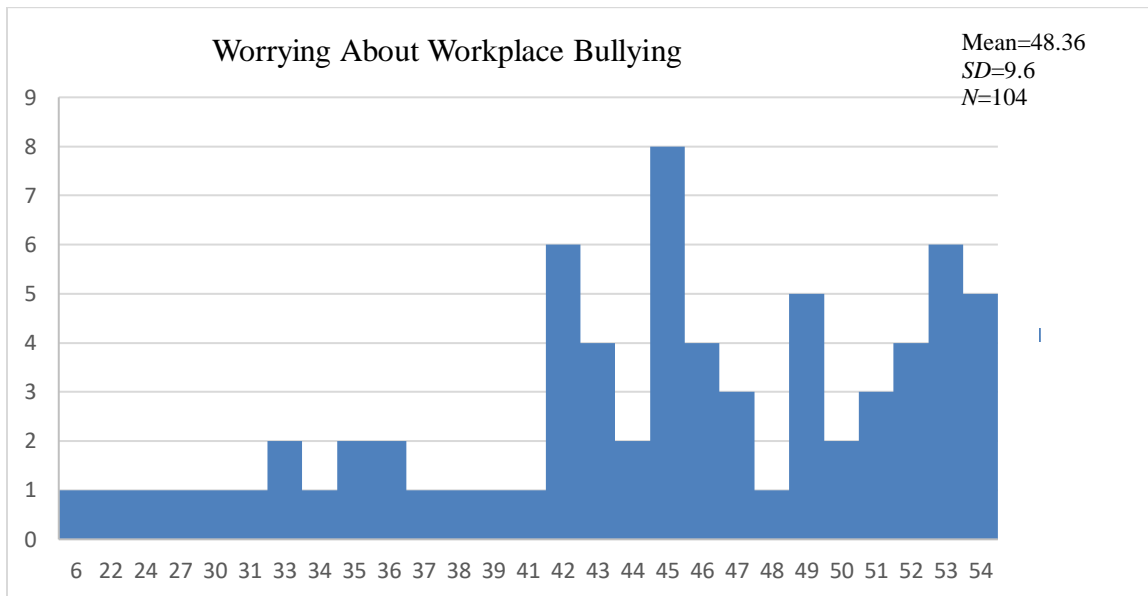
Thank you in advance, and I look forward to your response.

Appendix E

Histograms







Appendix F

Confirmatory Factor Analysis

