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# Navigating Nursing Student Anxiety: A Conceptual Model

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# Navigating Nursing Student Anxiety: A Conceptual Model

**Abstract**

Nursing students experience high rates of anxiety (Gurková & Zeleníková, 2018; Mills et al., 2020; Wedgeworth, 2016) but little is known about the relationship between anxiety and the learning environment. This study intended to explore and better understand what components of the learning environment are impacted by or impact anxiety. This research utilized a grounded theory approach utilizing constant comparative analysis of findings to develop a theoretical model that identifies and describes the components of the learning environment that impact anxiety. Focus groups revealed that educator practices, participants' sense of self, and social determinants of health impacted student experiences of anxiety. Participants also identified several protective factors including self-management and self-care strategies, professional mental health resources, and relationships. The model provides a conceptual framework that can be used as a resource to guide practices of nurse educators and administrators as they reflect on the relationships between intrinsic and external factors, including the learning environment.

Les étudiants et les étudiantes en soins infirmiers connaissent des taux élevés d'anxiété (Gurková & Zeleníková, 2018; Mills et al., 2020; Wedgeworth, 2016), mais on sait peu de choses sur la relation entre l'anxiété et l'environnement d'apprentissage. Cette étude avait pour but d'explorer et de mieux comprendre les éléments de l'environnement d'apprentissage qui sont influencés par l'anxiété ou qui l'influencent. Cette recherche a utilisé une approche théorique fondée sur une analyse comparative constante des résultats afin d'élaborer un modèle théorique qui identifie et décrit les composantes de l'environnement d'apprentissage qui ont un impact sur l'anxiété. Les groupes de discussion ont révélé que les pratiques des éducateurs et des éducatrices, l'image de soi des participants et des participantes et les déterminants sociaux de la santé avaient un impact sur les expériences d'anxiété des étudiants et des étudiantes. Les participants et les participantes ont également identifié plusieurs facteurs de protection, notamment des stratégies d'autogestion et d'autosoins, des ressources professionnelles en matière de santé mentale et des relations. Le modèle fournit un cadre conceptuel qui peut être utilisé comme ressource pour guider les pratiques des formateurs d'infirmiers et d'infirmières et des administrateurs et administratrices lorsqu'ils réfléchissent aux relations entre les facteurs intrinsèques et externes, y compris l'environnement d'apprentissage.

**Keywords**

anxiety, stress, teaching, learning environment, protective factors; anxiété, stress, enseignement, environnement d'apprentissage, facteurs protecteurs

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Feelings of anxiety are common among postsecondary students, and those in the nursing discipline have a higher prevalence compared to other educational programs (Gurková & Zeleníková, 2018; Mills et al., 2020; Wedgeworth, 2016). Entering higher education and the associated increase in personal demands and responsibility has been linked to stress and anxiety. The Bachelor of Sciences in Nursing (BSCN) program is known to be a stressful educational program (Mills et al., 2020). There are additional stresses on students who are required to balance theoretical and practical learning and can include additional stressors such as shift work (Middleton, 2018) as well as stress from learning to care for patients with complex needs in new contexts which is associated with uncertainty, fears of making a mistake, and harming another person (Chernomas & Shapiro, 2013; Jenkins et al., 2019).

The mental well-being of university students is of strong concern, but current population-based data is difficult to obtain, and events such as the pandemic have likely significantly altered the prevalence of mental health concerns, but baseline and emerging data are not rapidly available. Within this study's jurisdictional context, the most recent reports available are dated but identify 90% of post-secondary students felt overwhelmed, 64% had overwhelming anxiety, 42% felt depressed and found it difficult to function, 13% had seriously considered suicide and 2% had attempted suicide (Alberta Government, 2017). In a more recent study of 3029 first-year undergraduates at Canadian institutions, King et al. (2021) found 28% reported having a diagnosis or previous diagnosis of a mental health disorder with only 8.5% currently reporting undergoing treatment. Of these participants, standardized screening tools demonstrated positivity for clinically significant anxiety in over 33% and clinically significant depression in 28%.

Anxiety can be defined in different ways from a biomedical, illness-focused, diagnostic label to a broad interpretation of it. For the purposes of this study, there was a broad approach and anxiety was defined as a form of stress that can range from being a motivating stimulus to an overwhelming mental state which can interfere with daily life (Canadian Mental Health Agency, 2016). Positive stress, or eustress can lead to increased motivation, improved focus and recall, challenge individuals to reach their full potential, and help individuals learn strategies to manage and overcome stressful situations (Postareff & Mattsson, 2017; Rudland et al., 2019). When stress becomes overwhelming or is prolonged, anxiety, mental distress, burnout, depression, social withdrawal may occur (Dube et al., 2018). In addition to the personal impacts of anxiety, it has a known impact on academic progression and achievement. Student anxiety in nursing programs can result in lower grades, impair self-esteem, and in some cases, can impact a student's progression in the program (Wedgeworth, 2016; He et al., 2018).

Despite its high prevalence and the impacts of it, there is limited research investigating the generalized impact of the learning environment on anxiety. Existing research focuses on more specific aspects of anxiety, such as areas related to testing and clinical practicum, as well as specific interventions aimed at reducing anxiety (Cornine, 2020; Turner & McCarthy, 2017; Vaz et al., 2018; Zhang et al., 2020). This gap in the literature, for a larger picture understanding of what impacts anxiety in the learning environment, results in educator uncertainty and a lack of guidance assisting students or minimizing stressors (Hughes & Bryom, 2019) and lacking clarity of role of educators (DiPlacito-De Rango, 2022). With awareness of this gap, this research was devised to answer: what components of the learning environment are impacted by or impact anxiety? The overall purpose of this research was to develop a theoretical model which identifies and describes the components of the learning environment that impact or are impacted by anxiety. This model will be the first model of nursing anxiety within the learning environment reported within the literature and will provide a starting point for further inquiry, such as intervention or

participatory action-based inquiry addressing aspects of the learning environment that impact anxiety.

# Method

## Design

This study utilized a qualitative, grounded theory approach to expand the understanding of the learning environment and its relationship to student anxiety. Using focus groups, guided by semi-structured interview questions, key elements of the learning environment which influenced student anxiety were identified and then the relationships between these key elements were categorized as they related to student anxiety. Research ethics board approval and institutional research funding were obtained prior to the commencement of data collection.

## Research Participation and Recruitment

Participants were recruited from two nursing programs in a mid-size Western Canadian University, a Bachelor of Science in Nursing (approximately 1200 students) and a pre-licensure Diploma in Psychiatric Nursing program (approximately 150 students). Recruitment occurred through student email distribution lists, the Faculty of Nursing social media accounts, and printed flyers. Students who expressed interest in participating were contacted individually and received more information about the study. All students were invited to participate, not just those with anxiety, and there was no collection of personal health information such as having a diagnosis of anxiety or self-perception of anxiety.

A total of 34 participants were elicited which included individuals from year-one term one to year four term-two of the programs. Thirty-two participants (94%) were from the BScN program and two (6%) from the Diploma in Psychiatric Nursing. Six of the participants (18%) identified as he/him and 28 (82%) identified as she/her which is consistent with the distribution traditionally seen in these programs. Due to Research Ethics Board limitations, information on ethnicity was not gathered.

## Data Collection

Focus groups were the primary means of data collection, and these occurred virtually due to the data being obtained during the COVID-19 pandemic where in person activities were not permitted. Participants provided written and verbal consent prior to the collection of their personal information and their experiences within the learning environment. All focus groups were recorded and transcribed. Participants were able to access the transcription for their review if requested. Transcripts were reviewed independently by three researchers, two who completed the full analysis and the third who reviewed the transcripts in detail and moderated all dialogue about analysis looking for consensus and reliability. Connections between the concepts and key elements were agreed upon by all researchers prior to moving on to the next data collection and analysis phase.

There were three distinct phases of data collection that were closely associated with the iterative phases of data analysis. During the first phase of data collection, participants shared aspects which influenced their anxiety in various learning environments. Participants were asked to describe their learning environments, identify if there was a change from pre-COVID learning

experiences, and subsequently reflect and share how their stress and subsequent anxiety was impacted by the learning environment. Phase one data analysis led to developing a preliminary model regarding factors contributing to student anxiety. See Table 1 for samples of focus group questions utilized.

**Table 1**

*Focus Group Question Samples*

| | |
|---|---|
| Phase 1<br>Questions Exploring the Phenomenon | -Are there times when your anxiety has been a positive experience for you during your nursing program?<br>-Have you had negative experiences because of anxiety for you during your nursing program?<br>-When thinking of an in-person lecture like class, are there specific things in a classroom environment that cause you anxiety?<br>- Are there particular times in the academic term that your anxiety is higher and lower? |
| Phase 2<br>Questions that Validated the Themes Emerging and Delved Deeper Into the Detail | -In thinking about times when you have felt anxious or stressed, has this been a positive or negative factor on your sense of self?<br>-We heard from previous participants that one stressor for them was different communication patterns among various courses and instructors.<br>a) Are there specific things related to communication with your instructors that impact your stress level either positively or negatively?<br>b) Overall, are there specific things about instructor communication that assist in decreasing anxiety and stress?<br>-In the first phase of this study, we heard from the participants that peers influenced their stress and anxiety both positively and negatively.<br>-In what ways do your peers increase or decrease stress and anxiety for you? |
| Phase 3<br>Questions to Validate and Expand Model | -When looking at this model, how does this resonate with you?<br>-Are there any elements you feel we are missing?<br>-Would you categorize or represent any of these areas differently? (With prompts to clarify thoughts on language use and relationships between areas)<br>-One aspect we remain uncertain about is the protective factors and where they fit in the model. We see that there are some overarching protective factors and some that are perhaps more embedded or specific to the different areas. When thinking of the protective factors you use for your mental wellness in relation to anxiety, where would you put these? |

During phase two, key concepts of the developing model were shared with focus group participants. Participants provided feedback on the accuracy of the proposed model. Feedback was received related to the ability of the model to capture the tacit meanings and processes within the learning environment impacting student anxiety. Additional information was also sought related to key elements of the model. Participants identified protective and risk factors within the learning environment. More information about the protective factors was needed to refine a model which more fully reflected the participant experiences.

In phase three, participants validated a revised, comprehensive model based on adjustments recommended during phase two. The phase three focus groups also provided an opportunity to clarify relationships between protective factors and actions within learning environments which could further mitigate factors negatively impacting student anxiety. There were no substantive changes to the revised model presented to the participants in this phase. Participants identified that the model had accurately captured their experiences. Based on this participant feedback, the research team determined thematic data saturation had occurred, and another phase of data collection and analysis was not needed.

## Data Analysis

Although data collection and analysis are discussed separately within this article, there was a constant interplay between them. To ensure trustworthiness, the researchers maintained an awareness to bracket personal biases and experiences, assumptions, and prejudices. This was done through regular pre- and post-debriefing sessions with each focus group. To enhance a deep and accurate appreciation of the phenomena studied, triangulation of transcriptions, field notes, and participants' review of potential themes were completed (Carter et al., 2014).

The analytic approach used a constant comparative analysis (Glaser & Strauss, 1967). The theoretical model was generated initially from the data gathered during the first focus group. Then was elaborated upon, and modified, as additional data was gathered through subsequent focus groups. Model development was guided by the interpretation, perspectives, and voices of study participants. After the first focus group, theoretical coding, coupled with constant comparison, provided foundational information which informed an initial visual conceptualization of the model. Learning environment conditions and their consequences on student anxiety were the cornerstones of the developing model. This "draft model" integrated a set of concentric circles, one inside each other, each corresponding to different factors within the learning environment and the anxiety-related experiences of the participants. This original version had anxiety as the center of the model. As participants described their experiences, it became clear their personal experiences, within the context of their lives, was central rather than unique experiences of anxiety. Thus, the embodiment of the student's full experiences required the student to be represented at the center of the model.

In the second and third focus groups, researchers asked generative and concept-relating questions of the participants to ensure their experiences were reflected in the evolution of the theoretical model. Gaps in understanding conditions related to the student experiences with the learning environment were filled as participants provided feedback on the "draft model." Using this approach ensured that the developing model would reflect the experiences of the participants and be highly applicable in using the model to guide decision-making related to factors influencing the learning environment. Both the second and third focus group participants confirmed there was

a pattern of reciprocal interaction among the variables. In phase three, participants validated a revised, comprehensive model based on recommended adjustments during phase two.

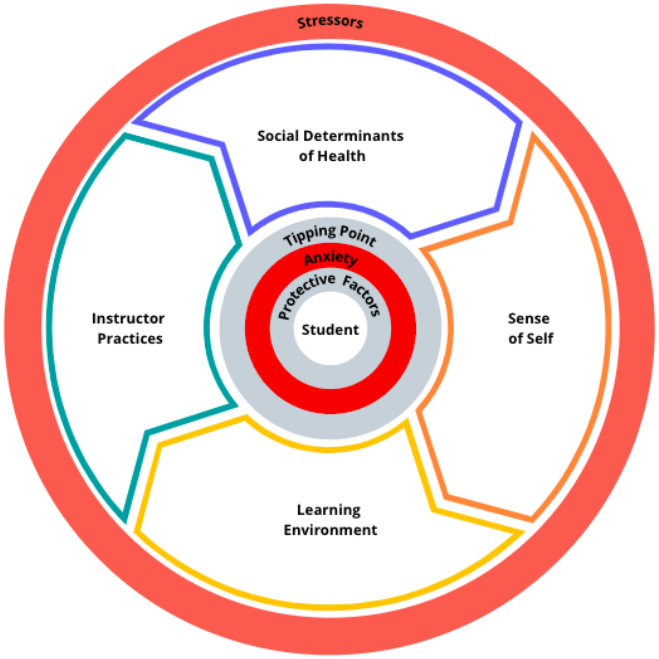
The third focus group also provided an opportunity to clarify relationships between protective factors and actions within learning environments that could potentially mitigate adverse impacts of student anxiety. Based on the input from these participants the model was further revised, and the student was placed in the center of the model, with intersecting factors that influenced their ability to adapt and respond to learning environmental stressors.

## Findings

This research study explored the components of the learning environment that impact or are impacted by student anxiety. The conceptual model was created to identify and describe the main themes emerging from the research findings (see Figure 1). The student is central to the model and is encircled by protective factors. External to these protective factors are the domains of the learning environment impacting student anxiety including social determinants, sense of self, instructor practices and the learning environment. Each of these domains are not discrete variables but overlapping factors that contributed to student anxiety. The following section is organized by the model subcomponents student, protective factors, anxiety, tipping point, key factors impacting students experience of anxiety: social determinants of health, sense of self, learning environment; and stressors.

**Figure 1**

*Conceptual Model of Nursing Student Anxiety*



## Student as Central

Participants were recruited from an undergraduate teaching intensive institution with a focus on learner-centered teaching, student growth, opportunity, and achievement. To reflect the researchers' and institutions commitment to teaching and learning, "students" are at the center of the model. Based on the belief that individuals have their own history and experiences, each student will interact with the components of the model differently; furthermore, they will have their own experiences impacting their anxiety and how they manage it.

## Protective Factors

Participants readily identified numerous protective factors they used to help manage their anxiety. These factors were focused on four areas: relationships, self-management strategies, self-care, and professional mental health resources. With regards to relationships, participants shared that spending time with friends or peers; belonging to a team; seeking support from families, friends, and educators was motivating and helpful knowing they had support. Sometimes support from peers and others was helpful to stay on track and other times it helped lower anxiety by just hanging out with friends instead of studying. Some of these relationships were with nursing peers and others were family, roommates, and other friends.

Participants shared using self-management strategies like identifying priorities, creating a schedule, making to-do lists assisted them in feeling more in control of their feelings which lowered their anxiety. However, when their schedules and to-do lists became too busy or looked too busy when all put together, they were overwhelmed, and these strategies were no longer effective. As one participant shared:

> So usually what I do at the beginning of the semester… I get all my planners ready. I write down everything that's due in the next few weeks. And that kind of overwhelms me, because it's just like the enormity of things that you need to do when you create to-do list... And these to-do lists are just kind of never-ending.

An additional participant shared the disadvantage of to-do lists for people with anxiety could arise when they were unable to complete things on their to-do lists "whenever he was not able to accomplish a single task on his to-do list, everything after that would just – you know, won't work out for him, he will just lose all the motivation to work ahead." So, it is important to note that these self-management strategies had benefits but could also increase anxiety in some contexts.

The term "self-care" came up frequently in focus groups. Participants universally recognized the importance of it. Participants identified engagement in self-care activities was important. Some of these strategies included exercising; participating in hobbies or activities outside of school; meditation; yoga; and breathing techniques. Participants also used various approaches to improve their eating and sleep patterns. However, also shared was a common concept that as soon as the stress level or anxiety ramped up, they and their peers were quick to abandon the self-care activities and nutrition, exercise and sleep suffered.

With regards to protective factors, a number of external supports were identified. Some participants identified seeking out or utilizing professional and mental health resources (such as seeing a counsellor) and lay support services within the institution (such as peer support programs or mental health workshops) and in the broader community (with similar services of counselling

and peer support, workshops etc.). Participants identified using mental health resources to support their ability to manage stressors. Some participants also expressed meaningful linkage to their faith community supported these needs as well (such as attending services and community events).

## Anxiety

Stressors were described by participants as external phenomena which impacted individuals' ability to process events, either for themselves or their peers. The more stressors that participants experienced, the more challenging it was for them to cope. This consequently resulted in participants experiencing what they then described as increased levels of anxiety. Language use was enlightening as in general the terminology students used when speaking in focus groups was primarily focused on the word "stressor" until they felt it was overwhelming, and at that tipping point and then most of the participants specifically switched to the use of the word anxiety.

## Tipping Point

The 'tipping point' was a point where either the anxiety-producing elements were too strong, or the protective measures were insufficient and the participants experienced a sense of overwhelm where the stressors which they were primarily calling "anxiety" was unmanageable. One participant described this as "it's more like a dam breaking because that pressure just like slowly builds up and then finally the dam can't take it anymore and just all comes crashing down." Participants were asked if they were aware they were approaching the tipping point. Most participants shared it was hard to predict as it was triggered by different things, and they, therefore, didn't recognize when it began. Others described the tipping point coming after a slow, gradual build-up. The pressure builds up slowly until the tipping point is reached - then "like a dam breaking." Participants described how, when they hit a tipping point, they "go into shut-down mode" and can't do anything. Some described having physical symptoms which escalated as anxiety built up: "wake up every morning feeling really anxious," "would puke every morning," "feel like fainting." Other things that were identified as tipping points were when participants or their peers had failed an assignment or a course and were "spiraling" or "going down" and "having trouble getting back up." This was particularly challenging with failed courses as this impacted finances, time to finish their program, and peer connections as their peers would progress to other courses without them. Participants described failing a course or receiving a low course grade impacted their sense of self and their personal feeling that they were meant to be a nurse. The tipping point or being past the tipping point was seen as a vulnerable state, which one participant described as, "You just feel really vulnerable. You're vulnerable to anything that can just come out of nowhere and take you out."

## Key Factors Impacting Students' Experience of Anxiety

There were several factors reported by the participants as having a positive and negative impact on their anxiety. Four primary factors emerged: social determinants of health, sense of self, instructor practices, and the learning environment.

### *Social Determinants of Health*

Elements of this theme focused on the health status of the participants and others, economic pressures, living situations, transportation, relationship dynamics, and other life challenges. Most of the participants identified the need to work to support themselves and pay tuition. Many also mentioned student loans and having other responsibilities such as parenting or caregiving. For several participants, not having enough time and/or money were factors that influenced their ability to cook healthy meals or take care of themselves. Since the study was conducted during COVID, participants described it impacting their social determinants of health, in terms of changes in living environments, the need for personal space with roommates or family members, exposure to others, and Wi-Fi or technology challenges. Some personal factors, such as illness or death of a family member, had such a significant impact on some participants, which were tipping points for some. One participant shared that they were doing really well before experiencing the death of a family member, upon which they elaborated:

> I've found that everything since then has just been – it's been a really hard time utilizing those things I used to do to help me decrease stress. I'm having a really hard time de-stressing nowadays. Like, I find it's just snowballing so much, and I don't know if it's because I pulled my foot off the gas for a bit when I was mourning or if it was just – if I'm still mourning and then that's part of it.

Participants felt their educators sometimes didn't seem to realize they had outside stressors and demands within their lives and did not then take this into account when considering course workloads. The social determinants of health also influenced the participants' sense of self.

### *Sense of Self*

Participants identified many factors which contributed to their anxiety that were linked to their sense of self. Participants shared the importance for them of peers and instructors thinking highly of them and in many cases performance anxiety was a strong factor, particularly in laboratory and clinical learning. How others viewed them appeared to inform how they thought of themselves. For some, they were quite anxious heading into a new semester, but they felt more settled once they understood how everything was mapped out for them for the rest of the term. Common themes emerged included: motivation; not feeling as smart as peers; competitive feelings (internal and external); and self-confidence. One participant stated:

> I don't know if anyone else has felt this, but like, transitioning from high school to university is probably, like, the biggest transition ever because you go from high school where you feel really, really smart, and then you go to university into this competitive program surrounded by all these incredibly smart and intelligent people. And, like, you sometimes like, you feel so dumb, and asking, like, around, like, oh, have you started this paper and they're like, oh yeah, like, I'm done it. Like that is just so – like it makes me so anxious and stuff like that because I feel like, oh my God, how did they even let me in this program?

Participants identified their sense of self as a nursing student was better developed after the first year when they knew how to be a university student and had a sense of belonging to the cohort and the discipline. Many participants identified the beginning of a new clinical practicum as a "mini-tipping point" where their anxiety was extremely high until they got settled in and could relax a little. A participant shared:

> The tipping point always happens in clinical rotations and it basically happens in every clinical rotation that I go on. It's sort of like, you're the new person at this job site and you're trying to get acquainted and it's sort of, you're thrown off of your regular sleep schedule and then kind of all of these different factors compile on one day. And in one moment when you're trying to get yourself sorted and start trying to do your thing, and then somebody kind of injects their own input onto the situation and it just piles on and it takes a stressful situation and just kind of elevates it beyond what you're capable of handling at the moment, sort of like I'm already stressed and then kind of, there's this other person who's just adding a big weight on and just kind of pushes it over the limit.

This anxiety was attributed to a sense that they couldn't do it or a low sense of self-efficacy. This peak of anxiety would wane once they settled into the clinical environment but would sometimes peak again with increasing complexity of patient condition, status, or number of patients to care for, or what they experienced as increased instructor expectations. When those expectations were higher, particularly when they did not feel they had the support of the clinical instructors or ward staff, participants felt their sense of self was negatively impacted. When they were more comfortable with their surroundings and feeling more confident, then their sense of self was enhanced, and their anxiety would decrease. Their sense of self also had a reciprocal relationship with the learning environment.

### *Learning Environment*

Participants shared various factors in the learning environment which impacted their anxiety. Different learning environments (lecture, labs, clinical) each had unique factors and, as a result, they impacted anxiety differently. It was notable that sometimes things in the learning environment which were positive and helpful for some participants were anxiety-producing for others, particularly in relation to exams and laboratory and simulation learning. As an example, some participants identified going into a simulation and knowing their peers and instructors would be watching was a positive and motivating factor, while others felt like it was significantly impairing their ability to partake fully in the learning. One participant described simulation as "auditioning for a Bates [health assessment teaching] video."

Assessments and examinations were areas of the learning environment which came up frequently, and participants shared that source of significant stress and anxiety included tests, graded assessments, performing (in simulation), and being evaluated. When these experiences were scheduled in different courses in close succession such as during midterm time, this increased anxiety. Participants also identified different aspects of test-taking impacted anxiety, including the pressure they put on themselves to do well and the amount of knowledge they needed to retain. When discussing exam anxiety in general, some participants identified that exam anxiety was a positive factor which motivated them to study. During the test itself, several participants identified how anxiety producing it was to see peers before the exam, after the exam where they would

debrief the questions making them doubt themselves, and in specific to be sitting writing the exam and watching classmates finish. One participant elaborated on this to say:

> But in those situations where the teacher gives you a quiz and you need to finish by X-time – and people are shuffling and they're talking and they're ready to kind of start the second chapter and I'm not even done – I am so scared, and I just want to cry. Because I'm so – I don't know, it just distracts me. And then I think about them talking. And then, I'm like, "OK. No, you need to focus on your exam." But then the teacher is like, "OK. Five more minutes. Two more minutes. One more minute." And it's just – I just – I can't.

Some participants identified the online exam environment utilized during the COVID pandemic was helpful to reduce anxiety as they did not need to see peers finish. However, other students identified online exams as increasing anxiety due to worries about Wi-Fi, technology, and not having access to their instructor during the exam. This anxiety was reduced when the instructor was available during the exam. Other positive factors related to online exams were related to writing in the comfort of their own environment. Some anxiety-producing components of online exams, as described by participants included a belief that their peers may not be abiding by the expectation of academic integrity and stated this gave them anxiety as they were abiding and didn't want to be penalized with lower grades.

Another significant factor was peers who were seen as either helpful for coping with stress or a source of anxiety when competitive. Some participants spoke of peers being a motivating factor in their learning environment and others spoke of the competition being too much for them and challenging their sense of self. Some participants spoke openly about "sitting in a room of smart people" and knowing they didn't know as much. In general, the relational component of nursing education was seen as anxiety-reducing and anxiety-provoking as participants described feeling vulnerable as they learned about and reflected on the many facets of being a nurse. The anxiety reduction came from a sense of camaraderie and a feeling they were "all in this together" and could relate to each other and the stress of nursing education. One participant summed this up saying, "It's nice to know that other [students] are in the same situation. It's not just you who's struggling."

### *Instructor Practices*

Instructor practices came out strongly as a factor, and participants described instructor practices were sometimes helpful in mitigating their anxiety while at other times, increased it. Examples of helpful instructor practices included: consistency in communication, being calm and relational, answering emails in a timely manner, and reminding students of upcoming due dates. Some described stress in deciding if they should reach out to their instructor for help and distress in waiting for a response which could be for several days, or in some cases felt they got no response at all. A frequent helpful practice brought up by participants was when faculty adjusted in response to students, such as slowing down the pace of lecture or giving assignment extensions as needed. One participant shared:

> I think if I had to speak on what instructors have done to alleviate anxiety is kind of just making it very clear that they're available, reiterating their office hours, just like, yeah, just

> if you guys have any questions, feel free to come and speak to me at the end of class… be a little bit more transparent and accessible.

Aspects of instructor practices participants considered to be unhelpful or increase anxiety were when instructors were inconsistent, not flexible, unavailable, and non-responsive to emails. Additionally, when instructor expectations were not clear or when they found inconsistency in the guidelines for assignments. One participant shared, "anxiety increases when there's an inconsistency between what's in the course outline versus what the instructor says, versus what's on Blackboard (learning management system) versus the email that I just got." Learning management system setups and instructor technological ability (or lack of) was also identified as stressful and anxiety-producing. Factors relating to this included: instructor set-up of the learning management system, types of documents posted (not all students could access PDF's), the number of external sites and programs being used, and instructor facilitation of online class time. Based on participant responses they were not looking for expert technicians but were frustrated when they felt an instructor's lack of technical ability impacted course design or learning. Since data collection was completed during COVID with remote teaching, this likely came out more profoundly than it might have, due to experiences where classes were done asynchronously due to the instructor not "taking the time to learn" how to use the online platform. Lastly, during the COVID learning times students identified increasing anxiety with completely asynchronous courses. They felt they were teaching themselves and constantly wondering if they were doing the right things.

Discrepancies between the amount of feedback desired and received and the feedback styles also negatively impacted participants' stress levels. Students who had less formative feedback expressed feeling as if they were "left behind" or "less prepared" to become a nurse than their classmates who had more formative feedback. However, some participants also expressed that it stressed them to get too much formative feedback from their clinical instructor and felt every interaction was an evaluation. Participants noted that during their clinical experiences, the attitudes and behaviors of their instructor had a greater effect on their anxiety levels than the nursing staff; if the staff were "hard to work with" but the instructor was supportive, participants did not feel as anxious as when the instructor was difficult, but the staff were helpful.

Having a strong, positive relationship with their instructor was beneficial, as they felt more supported and more confident in their ability to succeed in the course both in pre-COVID learning and in remote teaching. During COVID remote delivery, participants reported that instructors who did check-ins during classes, offered extensions, and adjusted the workload were seen as helpful in supporting their students' mental health by decreasing their anxiety. Overall, a calm, caring, and relational instructor in any learning environment improved student anxiety significantly.

## Stressors

Stressors were described by the participants as precursors to their experience of anxiety. Participants identified the key factors, described above, attributed to either an increase or a decrease in their experiences of stress. Stressors included a myriad of events and situations, such as financial, relational, or academic challenges. Several participants did at times interchange and perhaps conflate the words "stressors" and "anxiety" but on close reading of the transcripts there tended to be a shift from the word "stressor" to "anxiety" when there was a more significant number of stressors or a more impactful stressor (i.e., death in the family).

## Discussion

Anxiety is increasing in the post-secondary population and is prevalent in the nursing student population (Mills et al., 2020; Wedgeworth, 2016). Post-secondary educators, and specifically nursing educators, have responsibilities to create (co-create) learning environments which foster student growth and development. Being aware of factors that the educator can directly influence is an important first step. Educators may attempt to decrease anxiety in the learning environment and to respond to students' needs, but with little empirical evidence identifying what impacted the stressors or anxiety and what mitigated it, there is little evidence to inform these practices (DiPlacito-De Rango, 2022; Hughes & Bryom, 2019). The model described here is novel in the literature as the first model of anxiety in the learning environment related to nursing education. Based on this research and by utilizing this model, educators can now have a better understanding of the many complex factors influencing student anxiety which will inform future research into strategies to mitigate it.

Data from this study highlights that educators have a significant influence on the way students experience the learning environment and can positively or negatively influence student stress and anxiety levels. Rudland et al. (2019) state it is important to recognize the positive benefits of stress in health professional education. For example, stress can be associated with increased motivation, enhanced work ethic, and support-seeking practices (Postareff & Mattsson, 2017). Educators have a role in proactively assisting learners to reframe negative thoughts regarding stress and help them view stressors as potentially promoting eustress, which positively influences learning and growth (Rudland et al., 2019; Walker, 2011). The goal for educators and students is to find ways to maximize the positive impact of stress to enhance learning and minimize the negative aspects of anxiety.

For educators, an important area they can take from this model and incorporate into their teaching is the importance of instructor practices. Since participants identified appreciation for instructors who took time to ask them how they were doing, allowing time for connecting with each other, or encouraging self-care, the simple act of incorporating this into teaching plans can have a positive impact. This is further supported in the literature. Mainhard et al. (2018) found greater interpersonal teacher communication was affiliated with reduced student anxiety. The relational component of the educator-student dyad was identified by participants as a protective factor which is supported in the literature (Hughes & Bryom, 2019). Instructor characteristics like being trustworthy and caring, while demonstrating interest in individual students and their well-being served to decrease the psychological distance between students and instructors, thereby reducing student anxiety (Schussler et al., 2021; Witt et al., 2014).

Other instructor practices to consider from our findings was consistency, both with actions and communications and with expectations. Student anxiety was reduced when instructors were seen as reliable and dependable sources of information and delivered course material clearly and properly paced for student learning needs (Witt et al., 2014). Non-verbal behaviors and cues like smiling or nodding to enhance the student-teacher relationship has been found to reduce student anxiety (Schussler et. al., 2021; Witt et al., 2014). Overall, many of the beneficial instructor practices identified align with universal design for learning practices. Thus, while literature on teaching practices to reduce student anxiety is sparse, universal design has a body of work which may have positive effect at mitigating academic stressors. There are also important policy considerations arising from this research, and participants identified institutional supports were important. Policies that prioritize these needs will help guide a cohesive and coordinated approach

to supporting students and the provision of support students could use to protect their well-being. As mental health needs increase in complexity within the post-secondary environment many governments and institutions have funded institutional support for a diverse range of student needs (Government of United Kingdom, 2021). These include professional counselling, peer support; health promotion workshops, academic success sessions, food bank services, and medical services. Comprehensive services are needed to meet the diverse range of needs which is supported by this model.

## Future Research

This model is a starting point for pulling together or creating structure to the wide variety of areas that impact anxiety in higher education. When looking back to the preliminary literature search and there was a wide variety of very specific research completed (such as aromatherapy in examinations, anxiety in simulation-based learning, and performance anxiety in clinical education). This model provides an overall picture with which to view this research and tie it together. As with most studies, the research team is left with more questions than answers now that the model has been created, but now the future research questions "belong" under the different components of the model. For example, a deeper understanding of which social determinants and life circumstances are the most influential to the student's anxiety level and academic performance is important in order to ensure that supports are being put into the right areas. Additionally, investigating instructor practices which influence anxiety negatively and potential strategies to reduce this can be undertaken.

When thinking of future research, it is hard not to consider the protective factors as an important area for knowledge development. Although all students had at least one protective factor, the students' ability to utilize their protective factors varied. Some participants had several protective factors and could easily access support, others had minimal access to supports. Thus, further inquiry with a focus on more marginalized students or those with less social support is recommended. Many participants identified the ability to utilize these protective factors until the stressors began compounding and they didn't have "time" or "interest." This was supported by Hamadi et al. (2021) who found that nursing students in the pandemic struggled to maintain adequate coping factors for the cumulative stressors they encountered and advocated for stress management education. When stressors are not managed or compound then anxiety can flourish, so inquiry into this or action research with interventions to enhance the maintenance of these strategies even in times of stress would be beneficial. Enhanced understanding of student's knowledge, access, and utilization of protective mechanisms allows for the development of strategies to enhance resiliency for academic and other life stressors.

## Limitations

Although several strategies were used to ensure trustworthiness of the findings and rigor of the data collection, there are limitations which must be considered when interpreting the results of this study. The first major factor was the timing of this study which occurred during the global COVID-19. Participants shared their experiences of learning both prior to and during pandemic learning. This paper and model were developed based upon the data set of student experiences in learning environments prior to COVID learning. Additionally, focus groups needed to be conducted virtually, which may have limited the observation of non-verbal communication.

However, while the pandemic provided some limitations to this research, it also made the topic even more important to study as it heightened mental health stressors globally and there is significant emerging research on the mental health challenges to post-secondary students during this time period.

Within this study, authors acknowledge that undertaking this inquiry while living through the ongoing pandemic demonstrated that one cannot understate the impact that current socio-political environments like a pandemic, or economic factors like recession and unexpected personal financial insecurity, have on the mental wellness of all people. Authors acknowledge the potential for the participants of this study to be more homogenous than other samples as all participants were students within one post-secondary institution in a relatively economically stable province in Canada.

Globally, stigma surrounding mental health challenges remain a key barrier to disclosing, seeking out, and participating in services (Stangl et al., 2019). This stigma might have prevented some students from participating in the focus groups, for example some potential participants may have declined to participate because they were fearful of disclosing something in focus groups about their own anxiety or to talk about anxiety in general publicly. Participants may have been more cautious what they shared due to the stigmatizing nature of anxiety and may have filtered their responses. Lastly, race and ethnicity will factor into the experiences of students in the learning environment, and in the subjective experience of anxiety and practices of accessing support so further research in this area is warranted. However, utilizing the model as a guide to consider these aspects which impact anxiety in your own environment and context should allow for this to be a customizable tool with good utility.

## Conclusion

Research suggests anxiety is a common but complex phenomenon experienced by many higher education students. This study explored the interaction between nursing student anxiety and the learning environment. The model presented provides a conceptual framework of the interrelationships between protective factors, anxiety, social determinants of health, instructor practices, sense of self and the learning environment. This theoretical model can be utilized to inform teaching practices and guide policy development. By understanding the impact of the learning environment on anxiety, further work can be done to better understand where interventions can be attempted or teaching practices can be adapted to help support students. The creation of policies related to mental health and wellness are essential to promote and support student mental wellness. Further research is needed, specifically to explore the relationships between each of the model components, to determine what strategies or interventions could be incorporated to minimize negative stressors and to better understand protective factors.

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