

Undergraduate nursing students' and facilitators' perspectives about psychological safety in
simulation: An interpretive description

By

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Abstract

Background: Simulation is an education pedagogy that has been used for decades in many healthcare and non-healthcare professions. Psychological safety in simulation is a concept not unique to health care and recent literature has identified the significance that this concept plays to education and learning. Psychological safety mitigates feelings of anxiety, promotes critical thinking and problem solving and encourages speaking up and asking questions without fear of retribution or embarrassment. Few articles explore the nature of psychological safety from the learners' perception. **Purpose:** The purpose of this qualitative interpretive description study was to explore the perceptions of psychological safety in simulation among undergraduate nursing students and facilitators. **Methods:** Seven undergraduate nursing students and four simulation facilitators were interviewed using a semi-structured interview guide and all interviews were digitally recorded. The digital recordings were transcribed verbatim and used in conjunction with reflexive journaling as supplemental data to assist in interpreting participants' perspectives of psychological safety in simulation. The analysis utilized was a continuous and iterative process using axial coding, inductive analysis and constant comparative methods. **Results:** Two themes emerged from the student interviews: dynamic interactions and self-efficacy. Whereas, the two themes from the facilitator interviews were simulation design and trust. **Conclusions:** The knowledge generated from this study will support simulation educators in creating and maintaining a psychologically safe learning environment. This study intended to advance nursing science by filling the gap in the empirical literature on undergraduate nursing students' and facilitators' perspectives on psychological safety in simulation.

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Dedication

This thesis is dedicated to the memory of my dad. Furthering my education was always important to you and I wish you were here as I achieve this accomplishment. I miss you and I love you.

To my family - Chad, Wesley, Nicolas, Aman and Mom:

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Chapter 1: Background

Introduction

Psychological safety is a concept that has been popularized with the increased use of simulation in the last decade. Simulation is an education pedagogy that has been used for decades and in many healthcare and non-healthcare professions (Chopra et al., 1994; Hussain et al., 2016; King et al., 2016; Rogers et al., 2000). The military, aviation industry, and training response teams of airport mass casualties utilize simulation for training purposes (Lawrence, 2016; Tomczyk, 2010; Waxman, 2010). As educational institutions and healthcare organizations increased the use of simulation within their organizations, understanding all aspects of simulation became imperative.

Specific to the profession of nursing, in 2015, the National Council of State Boards of Nursing (NCSBN) released the results of a longitudinal, randomized control trial study that recommended that up to 50% of clinical could be replaced by the use of simulation (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014). Within educational institutions, incorporating technology has changed the way nurse educators teach. The use of technology has given nurse educators an opportunity to combat rising costs of maintaining traditional clinical placements and has allowed the ability to standardize key experiences in a nursing students' education (Hall & Tori, 2017).

Through technological advancements, what has remained central to nursing educators is the need to provide high quality teaching, relevant clinical experiences and excellent overall learning for all learners. As simulation is continuously becoming more prevalent in education, facilitators are tasked with the challenge of ensuring that simulation-based experiences for formative learning remain non-punitive and occur in environments that are conducive to

Psychological Safety

Psychological safety is not a unique term to the health profession and within the literature, psychological safety can be seen in organizational literature, psychology, business and education (Turner & Harder, 2018). The International Nursing Association for Clinical Simulation and Learning (INACSL) defines psychological *fidelity* as “factors such as emotions, beliefs, and self-awareness of participants; the extent to which the simulated environment evokes the underlying psychological processes that are necessary in the real-world setting for the participant” (INACSL Standards Committee, 2016a, p. s42). Whereas, the Society for Simulation in Healthcare (SSH) defines psychological safety for participants as “a feeling (explicit or implicit) within simulated-based activity that participants are comfortable participating, speaking up, sharing thoughts, and asking for help as needed without concern for retribution or embarrassment” (Lopreiato et al., 2016, p. 28). SSH further defines psychological safety for a team as “the perception that the team is safe for risk taking, and mistakes will be considered learning opportunities rather than there being punitive consequences” (Lopreiato et al., 2016, p. 38). While a few definitions of psychological safety exist, a concrete, concise and universally accepted definition continues to be elusive. In a concept analysis by Turner and Harder (2018) on psychological safe learning environments, the authors combined the definitions of psychological fidelity and safe learning environment which gave way for a broader and clearer definition. Psychological fidelity means the realism within the simulated environment and the “degree of perceived realism” (Lopreiato et al., 2016, p. 38). Perceived realism refers to the myriad of emotions or beliefs evoked from the simulation. Whereas psychological safety refers to the perception of safety for the learner to take risks and make mistakes without any perceived punishment (Lopreiato et al., 2016). Therefore, Turner and Harder (2018) defined psychological

safety as “a feeling or climate whereby the learner can feel valued and comfortable yet still speak up and take risks without fear of retribution, embarrassment, judgment or consequences either to themselves or others, thereby promoting learning and innovation” (Turner & Harder, 2018, p.49).

The concept of psychological safety is not new to nursing simulation literature. In recent years, literature supports the importance and need for creating psychological safety within simulation (Rudolph, Raemer, & Simon, 2014; Turner & Harder, 2018). Some nursing simulation literature focuses on how to create the psychologically safe learning environment (Fey, Scrandis, Daniels & Haut, 2014; Ganley & Linnard-Palmer, 2012; Rudolph et al., 2014; Kolbe et al., 2019), while others focus on the physical environment itself, such as, the facilitators’ demeanor, body language (Kolbe et al., 2019), room set up and location of the debrief (Abatzis & Littlewood, 2015; Cantrell, 2008; Fanning & Gaba, 2007; Miller, Riley, Davis, & Hansen, 2008). Few articles explore the nature of psychological safety from the learners’ perspective.

Importance of Psychological Safety

Simulation itself can be anxiety producing for participants (Kang & Min, 2019; Nielson & Harder, 2013). The apprehension of attending simulation can produce multiple levels of participant anxiety and simulation facilitators can influence this anxiety either positively or negatively through their actions (Nielson & Harder, 2013). This anxiety can impact participants’ performance, as a lack of confidence or fear of making mistakes can cause a loss of focus and diminish performance (Kang & Min, 2019; Nielson & Harder, 2013). Ensuring psychological safety can mitigate the anxiety felt by participants thereby improving their performance in simulation (Ignacio et al., 2015).

Stress and anxiety differ from psychological safety. Stress can be characterized by a response where an individual feels tension either physically, mentally or emotionally (Cantrell, Meyer & Mosack, 2017); whereas anxiety is a symptom of distress and can be unrecognized or caused by an unknown source (Cantrell et al., 2017). An increase in negative stress or anxiety has been shown to decrease performance, learning and could cause various physical manifestations such as headaches or high blood pressure (Cantrell et al., 2017; Nielson & Harder, 2013). Yockey and Henry (2019) identified that the possibility of making a mistake and performance anxiety ranked higher among nursing students instead of a lack of understanding of the simulation and affected their decision to volunteer to participate in the simulation. However, positive stress can act as motivation for high level performance (Cantrell et al., 2017). As a result, to achieve transformative nursing education through experiential learning some degree of challenge, stress and anxiety is required (Al-Ghareeb, McKenna & Cooper, 2019). Ganley and Linnard-Palmer's (2012) study on academic safety during nursing simulation, identified that a safe environment could still include levels of anxiety and that to a certain degree it could be beneficial and healthy for the participant.

Similarly, in a study of medical students by Paskins and Peile (2010), students perceived that performing in front of their peers contributed to their anxiety; therefore, being observed by peers can impact psychological safety. However, the students in Paskins and Peile (2010) study also noted that the anxiety they felt was helpful in the simulation. Nielson and Harder (2013) further stated that participant anxiety was greatly increased when they were observed or video-recorded. Ganley and Linnard-Palmer (2012) examined student and faculty perceptions on academic safety and concluded that despite creating a psychologically safe environment, the student still may not feel safe. This unsafe feeling could be related to what the student brings to

the simulation in terms of confidence, prior knowledge and their cultural background (INACSL Standards Committee, 2016b; Ganley & Linnard-Palmer, 2012; Turner & Harder, 2018).

The importance of psychological safety is based on the premise that participants need not fear reprisals or punishment for any mistakes made in the simulation experience (Aranzamendez, James, & Toms, 2015; Turner & Harder, 2018). Learning from one's mistakes is one of the hallmarks of simulation and has been identified as an attribute and a desired consequence of psychological safety (Turner & Harder, 2018). When a participant feels psychologically safe, they take risks, challenge their thinking and experimenting because mistakes do not have the same consequence in simulation as they do in the clinical setting (Edmondson, 2004; Engelmann, 2009; Nielson & Harder, 2013; Rudolph et al., 2014).

Psychological safety can allow participants to enter complex situations and experiment with their own knowledge and skills and should errors occur, the participant, or patient is free of sustained or devastating consequences (Gore, Hunt, & Raines, 2008). This affords participants a level of freedom which they do not encounter in clinical practice. Psychological safety facilitates innovation, collaboration and effective interprofessional communication (Edmondson, 2004; Halbesleben & Rathert, 2008; Rathert, Ishqaidef & May, 2009); it contributes to more effective problem solving as individuals and as team members (Bastable, 2008; Edmondson, 1999; Turner & Harder, 2018); and provides opportunity for educators to increase the level of risk and complexity of the simulation experience, thereby further encouraging the participants to challenge their thinking (Edmondson, 2004; Ganley & Linnard-Palmer, 2012). Psychological safety can influence simulations and student learning; therefore, furthering our understanding of students' perspectives is an important step in advancing our understanding in this area of simulation.

Theoretical Framework

A theoretical framework is the underpinning of a research study (Polit & Beck, 2017). Grounding a study within a theoretical framework allows researchers to organize their observations in an orderly fashion (Polit & Beck, 2017). These frameworks can be used as guides for researchers in understanding the *what* and *why* of a phenomenon and are often the basis of predicting phenomena and help stimulate research and knowledge by giving direction (Polit & Beck, 2017). The framework that was chosen to guide this study was the National League of Nursing (NLN) Jeffries Simulation Theory.

The NLN framework was first created in 2005, as there were no simulation specific frameworks at that time (Jeffries, 2016). After multiple iterations and consultations with colleagues and experts in the field, there was movement of the Jeffries Model toward a theory in 2012. This theory was chosen to act as a guide because it implies that psychological safety is required to have the desired learning outcomes from the simulation.

Each component of the theory, from the background, design of the simulation, the simulation experience and the outcomes all rely on psychological safety as a key component. Psychological safety is not something that can be intermittently inserted into a simulation, but rather, it is imbedded in all components of the NLN Jeffries Simulation Theory (2016) and remains essential in successful outcomes. In simulation, as in the NLN Jeffries Simulation Theory, there is a cyclical interconnectedness that is essential for successful simulations. Should one area fail to create psychological safety for a participant, then the overall outcomes are at risk. Each component of the NLN Jeffries Simulation Theory can impact the psychological safety of the simulation.

One key aspect of the theory is the context in which the simulation is occurring. Jeffries (2016) explains that some contextual factors may include circumstances and the setting in which a simulation occurs. The context also includes the purpose of the simulation. Once the context is understood, the theory can be applied to the phases of the simulation experience: design, the pre-learning preparation, the prebrief, the active simulation and the debrief.

Within the NLN Jeffries Simulation Theory (2016), the design refers to how the simulation is created, and the elements related to the scenario itself, such as pre-learning preparation, and planning the facilitator approach. In designing the simulation, psychological safety can be attended to by matching the simulation to the level of the learner (INACSL Standards Committee, 2016b). The more a learner is exposed to the simulation process, the more confident they become. This consideration is important because participant familiarity with the simulation process will help ensure psychological safety is experienced by the learner. The background in the NLN Jeffries Simulation Theory also encompasses aspects of the design such as expectations and objectives as well as how the simulation fits within the larger curriculum (Jeffries, 2016).

The pre-learning preparation is information that participants need to know prior to coming into a simulated experience. This preparation can be linked the background noted in the NLN Jeffries Simulation Theory. Depending on the level of the learner or the type of learner, this preparation can vary (INACSL Standards Committee, 2016c). Psychological safety can be promoted in the background and pre-learning by ensuring that the simulated based experience is not new content to the learner, so that the learner has the skills and knowledge to successfully meet the objectives of the simulation. Pre-learning preparation includes completing readings,

reviewing policy, and bringing information from their working experience and knowledge.

Finally, Jeffries (2016) includes in the background the space, equipment and human resources.

Prebriefing is the information or orientation session/phase that occurs immediately before the active simulation (Jeffries, 2016). The prebrief serves as the first point of contact for the learner with their facilitator for simulation and remains a critical place to embed psychological safety. The purpose is to review ground rules, begin to build the trust between the participant and the facilitator, review objectives, and establish the safe environment (Arafeh, Hansen, & Nichols, 2010; INACSL Standards Committee, 2016a; Lopreiato, 2016; Page-Cutrara, 2015). Within the prebrief, anxiety can be alleviated through discussion and outlining the expectations and objectives (Nielson & Harder, 2013). The psychological safety and trust that is forged within the prebrief can avert any defensive behaviours and facilitate personal risk taking among the participants (Rudolph et al., 2014).

The active simulation experience is characterized by an environment that is embedded with trust, is experiential, collaborative and learner centered. Active simulation includes the facilitator, participant and educational strategies as well as the dynamic interaction between the participant and the facilitator (Jeffries, 2016). The facilitator can embed psychological safety into the facilitation of the active simulation through their tone of voice, types of cues given within the simulation and the amount of facilitation based on the level of the learner (INACSL Standards Committee, 2016b; INACSL Standards Committee, 2016c). The dynamic interaction also includes how the facilitator responds to the participant within the simulation, their facilitation skill, education level and again, the level of support they give the participants as some examples (Jeffries, 2016).

Within the NLN Jeffries Simulation Theory, the simulation experience also includes the participant, which will be the focus of this study. Some of the participant attributes that may shape their perspectives of psychological safety include age, gender, level of anxiety, self-confidence as well as preparedness for the simulation (Jeffries, 2016).

Debriefing is often considered the “cornerstone” of simulation (Abatzis & Littlewood, 2015; Reiersen, Haukedal, Hedeman, & Bjørk, 2017). Within the NLN Jeffries Simulation Theory (2016), outcomes are referred to as systemic, patient and participant outcomes; however, the focus in the literature tends to be on the participant outcomes which is learning (Jeffries, 2016). Debriefing is often formal, collaborative and a reflective process that occurs immediately after the simulation-based experience and is often led by a trained facilitator (INACSL Standards, 2016a; Lopreiato, 2016). Similar to the active simulation phase, the way the facilitator leads the debrief can greatly impact the overall learning experience (Kim & De Gagne, 2018; Luctkar-Flude, Wilson-Keates, Tyerman, Larocque & Brown, 2017); and may alter the psychological safety within the group dynamic. This framework will guide the study because psychological safety is implicitly embedded within the theory without being explicitly stated. Therefore, this study will help us gain a deeper understanding of how we can create psychologically safe environments. Additionally, the structure of the framework lends itself well to the structure of the simulation process so that the findings may be interpreted within the framework. Therefore, the NLN Jeffries Simulation Theory was determined to be the best framework to guide this research study that sought the students’ perception on psychological safety.

Assumptions

Thorne (2016) asserts that disclosing any assumptions at the beginning of the research process is important; additionally, Creswell (1994) suggests that qualitative researchers should be forthcoming with any biases or preconceived assumptions. My work in simulation has given me a perspective on psychological safety. Through this experience and immersing myself within simulation and adopting many of the best practice guidelines and recommendations from the literature, I found that students learn more effectively and are more active and engaged in a psychologically safe environment. The nursing and simulation-based literature related to psychological safety often is based on expert opinion and/or literature reviews, few are based on original research. This research was conceptualized from witnessing these outcomes, but I was unable to locate empirical evidence to support it.

Therefore, it is essential to explore the student and facilitator perspectives of psychological safety. Student learning and patient safety remain the most important outcomes of simulation. I believe that psychological safety is not related to one specific aspect of simulation and therefore, needs to be part of the whole process and is not scenario specific. This means that students will bring all their simulation experience into the interview - both the positive and negative experiences. Additionally, the facilitators bring their own perceptions into simulation and have their own biases towards psychological safety. Therefore, I felt it was important to interview both groups to see the relationships between the two.

Purpose of the Study

The purpose of this exploratory qualitative study was to identify the perception of psychological safety among undergraduate nursing students and facilitators about a simulation-based experience. The specific aim was to discover what students and facilitators considered

important attributes to create and maintain a psychologically safe learning environment in simulation. This research study delved into both students' and facilitators' perception and the findings may inform educators on whether the current empirical research addresses the needs for psychological safety with both students and facilitators.

Research Question

The research question for this study was:

1. What are nursing students' and facilitators' perspectives about psychological safety in simulation?

Significance of the Problem

Aspects of psychological safety has been documented in the literature (Rudolph et al., 2014; Turner & Harder, 2018), however what has yet to be explored is the student and facilitator perspective and how they experience psychological safety in simulation. The simulation research and literature has taken on two divergent directions, one examines the outcomes of the simulations. This includes researching student learning through debriefing methods (Gantt, Overton, Avery & Elhammoumi, 2018), clinical judgement (Lavoie, Pepin, Cossette & Clarke, 2019), and learning outcomes (Blanié, Gorse, Rolleau, Figueiredo & Benhamou, 2018). Whereas the alternative direction examines the simulation processes and systems to better inform educators on how to make the simulation process successful for participants. It is the simulation process of psychological safety to which this study explored and will inform the literature.

Additionally, there are many assumptions that are being made in regard to participant or students' psychological safety. As educators, we are using empirical literature to create psychological safety for learners as research has given direction on how to create and maintain a psychologically safe learning environment (Turner & Harder, 2018). However, we have yet to

know what psychological safety means to student or facilitator and gain their perspective. There are a few studies that capture students' perspectives on academic safety (Ganley & Linnard-Palmer, 2012), or anxiety in simulation (Nielsen & Harder, 2013), but there remains to be several gaps in the literature around psychological safety. To the best of my knowledge, only one article focuses only on students' perspectives of psychological safety in simulation and none focus on the facilitator.

Chapter Summary

This chapter introduced the concept of psychological safety as a general topic as well as the importance of psychological safety in simulation within nursing education. The chosen theoretical framework, the NLN Jeffries Simulation Theory, was described in detail and then further linked to the simulation process and the topic of psychological safety. Lastly, the researchers' assumptions were outlined. Chapter 2 will provide a review of the literature.

Chapter 2: Literature Review

Psychological safety is evident in multiple professions and disciplines. In this chapter, I provide a broad overview of organizational literature and will narrow down to psychological safety in nursing simulation. A review of the psychological safety literature is presented which will provide the foundation in which to explore the phenomenon of students' and facilitators' perspectives of psychological safety. An overview of the search strategies for the literature review will be first, followed by a history of psychological safety. Next will be the types of psychological safety and the common components of psychological safety. Finally, psychological safety in relation to nursing simulation will be detailed.

Search Strategies for the Literature Review

A broad search was conducted to explore what is in the literature about psychological safety. The databases that were included were PubMed®, the Cumulative Index to Nursing and Allied Health Literature (CINAHL®), Scopus, Johanna Briggs Institute, and Cochrane Database. Databases Educational Resources Information Center (ERIC), PsycINFO and ABI/INFORM Complete® were used for non-healthcare related searches (for articles in the education and organizational literature). Key terms that were used (and truncated when appropriate) were: “psychological safety, safe container, undergraduate nursing students, nursing, nursing students, human patient simulation and simulation”. Boolean operators of “OR” and “AND” were used to narrow the search results. From the list of results, the abstracts were examined to ensure the articles chosen were related to the key concepts of this study; specifically, psychological safety and nursing simulation. In addition to the online search, supplemental searching included targeting journals dedicated to simulation in

nursing: *Clinical Simulation in Learning, Advances in Simulation, Simulation in Healthcare, Simulation in Gaming, and Medical Teacher*. Finally, when relevant articles were identified, the reference lists were manually searched for additional studies and articles.

History of Psychological Safety

Psychological safety made mainstream news in 2016 largely related to an article in the New York Times which reported longitudinal work by Google's People Analytics Unit which identified psychological safety as the number one characteristic in successful, high-performing teams (Duhigg, 2016). The article popularized the term and gave light to an important and essential construct to understand (Bergmann & Schaeppi, 2016).

Psychological safety as a construct is not new and was first identified in 1965 by MIT professors Edgar Schein and Warren Bennis who characterized psychological safety as necessary for organizational learning and change (Frazier, Fainschmit, Klinger, Pezeshkan & Vracheva, 2017). Schein and Bennis (1965) offered the first definition of psychological safety stating, it decreased the perception of threat and removed potential barriers for change in creating a context which "encourages provisional tries and which tolerates failure without retaliation, renunciation, or guilt" (Schein & Bennis, 1965, p. 45). Later, Schein (1993) argued that psychological safety is essential for individuals to overcome feelings of anxiety, and defensiveness. Schein (1993) concluded that for change to occur, the individual must feel psychologically safe.

In 1990, William Kahn published an article where he stated that the construct of psychological safety is necessary for people to feel attachment to, or engagement in their work. Kahn (1990) concluded that psychological safety must be present for an individual to apply oneself without feeling fear of negative consequences to either their self-image or to their

career. A few years after Kahn's 1990 article, Amy Edmondson (1999) published an article looking at team psychological safety in an organizational context. Edmondson posited that psychological safety within a team is a shared belief and that within the team it is safe to take personal risk.

These seminal works from Schein and colleagues (Schein, 1993; Schein & Bennis, 1965), Kahn (1990) and Edmondson (1999) on psychological safety all converged to a single construct in that psychological safety is a perception felt by the individual or team and must be established to allow for risk taking that has minimal to no consequences to the risk taker or team members. Frazier et al. (2017) identified that while all three seminal works on psychological safety lead to the same single construct, each were varying in their focus, Schein and colleagues (Schein, 1993; Schein & Bennis, 1965) and Kahn (1990) both discussed psychological safety to the individual and the individual's perceptions of psychological safety, whereas Edmondson (1999) focused on team psychological safety and its effect on the group construct. Both will be described in further detail in this chapter.

Types of Psychological Safety

Within the literature found on psychological safety there are three main types that are identified; individual, team/group based and organizational. These three types will each be discussed.

Individual

There have been studies done on individual psychological safety, more specifically the perception of psychological safety and work engagement. However, this is more prominent in the organizational literature rather than in the healthcare literature. Kahn (1990) pioneered this

area as he focused on individual's abilities to engage and disengage in their work and the contributing factors to this. In a systematic review of psychological safety, Newman, Donohue and Eva (2017) found that some studies measured the individual and their held perceptions of psychological safety. However, the majority of these were related to teams or organizations. This systematic review focused on work environments and excluded any work related to students or non-working adults. That said, Newman et al. (2017) found that if an individual perceived status as a member within the team the individual's perception of psychological safety is increased which could lead to willingness of that individual to speak up, engage in the team, and share ideas. Edmondson and Lei (2014) refer to this as speaking up and voice. This is where employees often do not feel safe to speak up in their work environments (Edmondson & Lei, 2014).

In their article, Edmondson and Lei (2014) concluded that psychological safety has a direct positive effect on voice and the ability to speak up. Bienefeld and Grote (2014) argued that psychological safety is a mediator between status and speaking up, stating that status differences can often create feelings of superiority versus inferiority. They studied 504 cockpit and cabin crew members of a European airline during an emergency scenario in a multicrew flight simulation (Bienefeld & Grote, 2014). They concluded that the perception of psychological safety allows for individuals to move past the status and inferiority and speak up with the safety of knowing that their remarks will not be judged, ridiculed or punished for voicing their concerns (Beinefeld & Grote, 2014). Clapper and Kong (2012) discussed the human factors related to crew resource management and the use of the acronym "CUS" which means Concerned, Uncomfortable and Safety/Stop. This is used to encourage communication and mitigate the fear of speaking up. Edmondson (2004) confirmed this sentiment, stating that a perception of

psychological safety makes it “possible for people to believe that the benefits of speaking up outweigh the costs” (Edmondson, 2004, p. 257).

Team/Group Based

Team psychological safety is what Edmondson’s seminal article in 1999 focused on as did the key finding from Google’s Peoples Analytic Unit, New York Times article (Duhigg, 2016). Edmondson posited that psychological safety was based on a shared mental model within a team, which allowed for interpersonal risk taking (Edmondson, 1999). This is heightened by the idea that within a team with a strong perception of psychological safety, members could take risk with confidence knowing that they would not “embarrass, reject, or punish someone for speaking up” (Edmondson, 1999, p.354). Edmondson (1999) continued by stating that a team’s psychological safety is a group construct, whereby focus must be given to the group or team rather than the individual members that make up the group. Xu and Yang (2010) further supported the notion that within a team, members need to be open to other’s ideas to create a productive group; thereby enhancing the learning brought on by having a psychologically safe environment. They continued to state that within a psychologically safe team, quiet members or silent members are more likely to contribute to the discussion further encouraging group learning behaviours (Xu & Yang, 2010).

Organizational

Newman et al. (2017) identified in their systematic review of psychological safety, that only two studies measured psychological safety at the organizational level. Newman et al. (2017) further stated that although individual perceptions of psychological safety can be generalized to the organizational-levels, it often depends on the leadership and team characteristics which

influences an employee's perception; therefore, it remains questionable as to the generalizability. Smaller organizations may have a stronger sense of teamwork compared to larger corporate organizations which can further influence the organizational psychological safety (Newman et al. (2017). However, the authors concluded that they believed "psychological safety is more potent and meaningful at the team level, rather than the organizational level" (Newman et al., 2017, p.524). Edmondson and Lei (2014) stated that at an organizational level psychological safety can be promoted through human resource practices which support knowledge sharing and can motivate employees to be innovative and engaged.

Antecedents of Psychological Safety

Within the literature, distinct antecedents of psychological safety have been identified. This next section will discuss the major influencing antecedents of leadership, trust and the individual differences in relation to psychological safety.

Leadership

In the seminal articles by Schein (1993), Kahn (1990) and Edmondson (1999), the role of the leader is highlighted. Schein (1993) stated that good coaches are necessary for creating psychological safety as they master the ability to motivate learning, provide direction and reduce anxiety. Schein (1993) went on to further state that charismatic leaders provide support and encouragement to overcome any fear and shame that may be associated with making a mistake. Kahn (1990), like Schein discussed how supportive, resilient and clarifying management and leaders can help establish psychological safety.

Unpredictability, micromanagement, inconsistency and hypercritical leader's do not promote psychological safety (Kahn, 1990). Whereas, Edmondson (1999) asserted that

leadership behaviours show a direct increase in overall team effectiveness. Edmondson (1999) went on to state that a leader who is “supportive, coaching-orientated, and has non-defensive responses tends to constitute a [psychologically safe] environment” (Edmondson, 1999, p. 356). Furthermore, Hu, Erdogan, Jiang, Bauer and Liu (2018) identified that leaders who showed humility, openness, recognized team members strengths, and prioritized growth helped to facilitate psychological safety within leadership. Conversely, should a leader act in an authoritarian manner or in a punitive way, team members are less likely to take personal risk (Edmondson, 1999). Xu and Yang (2010) argued that in education, early within a semester, instructors should be encouraging group norms and group processes to facilitate a sense of team and collaboration among students.

In a systematic review on psychological safety, Newman et al. (2017) identified multiple leadership qualities that are necessary at the individual level for psychological safety. Some of those qualities are: leader-inclusiveness (Bienefeld & Grote, 2014), support (Schein, 1993; Kahn, 1990; Edmondson, 1999), trustworthiness (Newman et al., 2017); invitation and appreciation for team members’ participation (Nembhard, Edmondson, Ramanugam & Rousseau, 2006) and openness (Newman et al., 2017). Additionally, the systematic review found that leaders who value participation and people would have a higher psychological safety (Newman et al., 2017). Finally, Edmondson, Higgins, Singer and Weiner (2016) concluded that within the fields of education and healthcare the leader effectiveness is essential for an individual to feel psychological safe, thereby growing and learning.

Trust

The concept of trust is inherently an antecedent of psychological safety as trust is necessary in taking interpersonal risk without fear of consequences. Edmondson (1999) stated that team psychological safety goes beyond trust and into a realm of where there is both trust and mutual respect for each team member and everyone is comfortable with themselves. Edmondson (2004) highlighted that trust and psychological safety are complimentary concepts but can still affect both behavioral and organizational outcomes.

Trust is defined in Merriam-Webster dictionary as relying on truthfulness or accuracy; to place confidence in and to say or do something without fear or misgiving (Merriam-Webster Dictionary, n.d.). Jones and George (1998) viewed trust as an “expression of confidence between the parties in an exchange of some kind – confidence that they will not be harmed or put at risk by the actions of the other party” (Jones & George, 1998, p. 531). They also argued that no party within the trust relationship will exploit the other’s vulnerability (Jones & George, 1998). It is evident with these definitions that there remains an element of perceived risk and vulnerability like with psychological safety (Edmondson, 2004).

While trust and psychological safety have many things in common, such as the perception of risk and vulnerability and making choices to reduce harm/negative consequences they are distinctly separate concepts (Edmondson, 2004; Newman et al., 2017). With trust, it is giving “others the benefit of the doubt, indicating a focus on *others*’ potential actions or trustworthiness (Edmondson, 2004, p. 243). Whereas with psychological safety, the focus becomes “whether others will give *you* the benefit of the doubt” (Edmondson, 2004, p. 243). This becomes clear with the exemplar of making a mistake. When an individual makes a

mistake, if they are patronized rather than supported by their leader, this can lead to losing trust within the organization. Employees who trust and are supported by their managers are more likely to approach them about any mistakes that occur rather than not (Edmondson, 2004). Conversely, employees who are patronized by their leadership are more likely “to monitor their own actions to protect themselves, rather than trying to protect themselves by monitoring others’ actions” (Edmondson, 2004, p. 244).

Calhoun, Pian-Smith, Truog, Gaba and Meyer (2015), in an article proposing a framework for emotionally difficult simulations, focused on the deception that can occur in simulation. Trust is embedded within the design and ground rules of many simulations; the INACSL Standards of Best Practice, Simulation Design, Facilitation and Debriefing all refer to maintaining an environment that fosters trust with the participants (INACSL Standards Committee, 2016b; INACSL Standards Committee, 2016c; INACSL Standards Committee, 2016d). The consequences of not establishing such an environment can lead to potentially uncomfortable learning experiences, poor participant engagement and an overall negative learning experience (INACSL Standards Committee, 2016b; INACSL Standards Committee, 2016c; INACSL Standards Committee, 2016d). Calhoun et al. (2015) maintained that deception could potentially break the trust amongst participants and create more stress that could negatively impact the learning or create an aversion to simulation-based learning.

Participant and Perceived Hierarchy and Power

Perceived hierarchy and power within the individual can alter the ability for one to feel psychologically safe. Wanless (2016a) discussed psychological safety in human development and stated that in times when stakes feel higher and are public, unclear and have identity-related

issues at play, the perception of risk is higher and so the psychological safety may be perceived as lower. This is true for group dynamics within a team. If one considers themselves to have low status within the group, they would be less likely to feel psychologically safe to engage within the group or in front of the group (Wanless, 2016a). Therefore, Wanless (2016a) concluded that situations in where risk-taking moments are public, unclear or challenge identities may require greater psychological safety to ensure that all individuals' participation and eventual learning and development is possible.

Wanless (2016a) also argued that given the individuality of each person, multiple people may perceive the same moment or situation differently and that the degree of risk for each individual shifts and changes, thus necessitating the need for perhaps different levels of psychological safety. The more experienced or proactive an individual is may require less psychological safety than someone who is novice or not as proactive. This is supported by Edmondson and colleagues' concept of individual proactivity (Edmondson, 1999; Edmondson & Lei, 2014). This also means that proactive individuals may seek out learning, growth, and information exchanges (Edmondson & Lei, 2014) thereby, building stronger trusting relationships.

Additionally, Wanless (2016a) argued that other factors such as sociodemographic characteristics may assist in developing an individuals' perception of psychological safety. The level of risk an individual is willing to take may depend on past life experiences, relationships, access to resources or life situations (Wang, Kruger & Wilke, 2009; Wanless, 2016a). Kahn (1990) described this as psychological availability, in that individuals may have psychological resources to engage in and a correlation between personal engagement and psychological

availability was found (Kahn, 1990). Kahn (1990) continued to state that there are four major forms of distractions which can impact our level of psychological availability and could affect our ability to feel psychological safety: emotional energy, individual insecurity, physical energy and outside lives (Kahn, 1990).

Outcomes of Psychological Safety

Positive Outcomes

The outcomes from having a psychologically safe environment are significant. Wanless (2016a) stated that “psychological safety provides an opportunity for learning from mistakes, asking for help and engaging in learning opportunities, providing feedback to others and speaking up” (Edmondson & Lei, 2014). Frazier et al. (2017) completed a meta-analysis on psychological safety and concluded that some of the outcomes to having perceived psychological safety include, work engagement, increased task performance, learning behaviors, satisfaction, creativity and citizenship behaviors. Since Kahn’s (1990) articles were published, it has been purported that psychological safety supports work engagement. Kahn (1990) asserted that an environment that is inclusive and encourages one to share and engage in their work will help with the employee’s investment in the organization and overall job satisfaction (Kahn, 1990; Edmondson & Lei, 2014). May, Gilson and Harter (2004) supported Kahn (2005) as they found that psychological safety positively linked to work engagement.

Task performance is a desirable outcome from psychological safety as having that perception of safety allows for individuals or teams to take interpersonal risk that could potentially result in a mistake (Frazier et al., 2017). While these mistakes are positive and through reflection can result in a stronger learning experience; psychological safety mitigates the

negative consequences of making a mistake (Frazier et al., 2017). This gives teams and individuals time to take initiative and improve their task performance (Frazier et al., 2017).

Edmondson (1999) asserted that psychological safety facilitates information sharing. Frazier et al. (2017) corroborated that statement by concluding that the perception of an environment that facilitates collaboration and feedback is an accepted mode of information sharing. Another outcome described in Frazier et al. (2017) meta-analysis was that of citizenship behaviour. This included behaviors such as voice behaviours or speaking up, also identified by Edmondson and Lei (2014), creativity and experimentation with innovation, solutions and problem solving (Frazier et al., 2017). Other behavioral manifestations of psychological safety can be open communication, admission of errors and adaptation to change (Pearsall & Ellis, 2011). Finally, individual or team learning is a positive outcome of psychological safety. This allows for individuals or teams to overcome their anxiety in performance and learn together through their mistakes, speak up and grow as groups or individuals (Frazier et al., 2017).

Finally, in the field of human development, research concluded that creating psychologically safe environments could help children and others learn about self-regulation (Wanless, 2016a). This could easily be translated to an adult population in relation to learning. Additionally, psychological safety can affect individual relationships, and have an impact on stress and satisfaction (Wanless, 2016b). Psychological safety allows people to engage in personal or professional experiences and interactions which can impact personal and professional learning and development and it also encourages prosocial behaviors (Wanless, 2016b).

It remains ever important to maintain the perceived psychological safety so that new, innovative, controversial ideas can be equally assessed for their merit without individuals feeling they would be attacked, penalized or ridiculed for their ideas (Pearsall & Ellis, 2011). However, with perceived psychological safety can come some negative or unintended outcomes.

Negative Outcomes

This area of psychological safety does not contain as robust findings of research as positive outcomes or the other components of psychological safety. During the initial literature search, no empirical research was found studying the negative effects of psychological safety. As one can imagine, exposing educational gaps through conversation or performance indicators could create a negative response in the participant (Henricksen, Altenburg & Reeder, 2017). While these events within a simulation can be rare, they are known to occur creating psychological distress and manifest themselves as crying, anger, panic, fear or hostility (Henricksen et al., 2017). Any of these reactions to a simulation can negatively impact the learner and their ability to learn (Henricksen et al., 2017).

Newman et al. (2017) in a systematic review on psychological safety found one article that studied the potential unintended consequences psychological safety could have on participants within a simulated experience. Pearsall and Ellis (2011) studied 378 participants assigned in 126 three-member teams from two undergraduate management classes in the United States. The teams were randomly selected and worked together to write reports that reviewed and analyzed issues in case studies (Pearsall & Ellis, 2011). They concluded that psychological safety was a team level variable and that for teams “high in utilitarianism, psychological safety helped to unlock the team’s propensity to engage in unethical behaviour” (Pearsall & Ellis, 2011,

p. 407). If the team members are just right, then psychological safety can have an “unintended consequence of contributing to the incidence of behaviours that are detrimental to the long-term success of the organization” (Pearsall & Ellis, 2011, p. 407).

Relation to Nursing Simulation

In the next section, I present a review of the literature through a nursing simulation lens. The nursing simulation construct of psychological safety parallels the broad psychological construct in both education and organizational literature. In nursing simulation, psychological safety has been discussed as being important throughout the simulation process; however, much of the literature relates to both prebriefing and debriefing (Rudolph et al., 2014). There is an importance of ensuring that a psychologically safe environment is created within the prebrief which translates for the debrief post simulation (Rudolph et al., 2014).

Types of Psychological Safety in Relation to Nursing Simulation

Team Psychological Safety. The main type of psychological safety that is referred to in nursing simulation literature is team psychological safety. Team psychological safety refers to working as a team within the simulation itself, (Aranzamendez et al., 2015). This form of group psychological safety is related to what Edmondson (1999) was referring to, with many similarities between healthcare teams and simulation teams. The same construct of psychological safety applies, in that within simulation the common goal or shared mental model is still important, and expectations are required to be understood by the entire group (Edmondson, Higgins, Singer & Weiner, 2016; Turner & Harder, 2018). This closely aligns with the NLN Jeffries Simulation Theory for the simulation experience as creating a shared mental model and reviewing roles within a team/group falls under the simulation process of prebriefing.

Aranzamendez, James and Toms (2015) stated that in relation to simulation, teams who can perceive psychological safety are more likely to engage in the simulation and are more confident. Aranzamendez et al. (2015) continued by saying that fostering psychological safety within a team allows for members to bring forth issues and concerns with performance which can enhance a debrief post simulation and the team learning especially should the learning be from a mistake. This aligned with other research where there is a link between psychological safety and a team's willingness to learn from their mistakes (Carmeli & Gittell, 2009).

Simulation Experience

As previously mentioned, nursing simulation literature on psychological safety tends to focus on the post simulation debriefing session. In recent years, the importance of psychological safety (creating and maintaining such an environment) has been more visible in research (Abatzis & Littlewood, 2015; Rudolph et al., 2014; Turner & Harder, 2018). However, the focus of this research typically is in relation to creating and maintaining the environment (Rudolph et al., 2014; Turner & Harder, 2018) and the physical environment itself (Abatzis & Littlewood, 2015). However, this can be difficult, Rudolph et al. (2014) stated “creating psychological safety is an abstract goal that instructors can move toward in collaboration with their learners” (p.341). Moreover, in a concept analysis on psychologically safe learning environments, Turner and Harder (2018) identified trust, the qualities of the facilitator (leader) as antecedents and attributes of creating a psychologically safe learning environment in simulation.

Leadership/Facilitator. The concept of leadership in simulation is significant. In the NLN Jeffries Simulation Theory (2016) the facilitator contributes to the dynamic interaction with the participant and could therefore, influences the perceived psychological safety of the

participant. A large component of the simulation research is around debriefing and psychological safety and focuses on the facilitator and how they can create and maintain a construct where simulation participants feel safe to take chances, and make mistakes (Kolbe et al., 2019; Turner & Harder, 2018). Rathert and Fleming (2008) supported leader inclusiveness and stated that inclusivity empowers teams to be more collaborative and increases the problem-solving capacity. Rudolph et al. (2014) stated that leader inclusiveness is a predictor for the construct of psychological safety, and this includes the ways in which a leader communicates (Reierson et al., 2017) such as, active listening, and acknowledgement of all group members and their ideas (Rudolph et al. (2014). This is consistent with comments from Nembhard, Edmondson, Ramanugam, and Rousseau (2006) that inclusive leadership involves invitation and appreciation of team members and their participation. Pfeifer and Vessey (2019) continued by saying leaders must acknowledge their own mistakes and reiterate that mistakes are merely learning opportunities in which to grow. In addition, many of the same leadership qualities outlined in educational and organizational literature that focus on psychological safety are mirrored within the simulation literature.

Turner and Harder (2018) articulated that the facilitator and leader are in positions of power, and therefore must remain respectful, assessible, approachable, and invite feedback from the simulation participants. Edmondson (2004) identified the ability to admit to a mistake as a leader, will help with creating the goal of psychological safety. Furthermore, simulation literature stresses the need for the facilitator to generate this psychological safe environment so that each participant in simulation has a positive learning experience (Neill & Wotton, 2011). Further to these studies, in a study interviewing undergraduate nursing students and simulation instructors with a focus on the facilitator characteristics, Parsh (2010) identified six

specific characteristics: “personality, teaching ability, evaluation, nursing competence, interpersonal relationships and realism” (Parsh, 2010, p.4) that contribute to successful facilitators.

Facilitator Skills. This is an area that has garnered research in recent years. The INACSL Standards of Best Practice recognizes the significance the facilitator can play in simulation and as such has a full standard dedicated to the facilitator. This follows the NLN Jeffries Simulation Theory as the facilitator and their level and skills influences the dynamic interaction between the participant (Jeffries, 2016). Two important criteria noted in the Facilitation standard is that facilitators must be educated with specific skills and knowledge in simulation pedagogy and must be able to facilitate to the appropriate level of the learner (INACSL Standards Committee, 2016b). These are important characteristics about the facilitator because they must act as a mediating factor between obstacles which may inhibit learning (Jeffries, 2016; Parker et al., 2012).

Trust. Trust within the nursing simulation setting is essential to learner perception of psychological safety (Turner & Harder, 2018). The NLN Jeffries Simulation Theory refers to an “environment of trust” where both facilitator and participant share trust (Jeffries, 2016). Learners expect facilitators and the group members to remain respectful of what occurs within simulation (Turner & Harder, 2018). The trusting relationship that occurs between the facilitator and learner is a fragile entity that begins prior to the active simulation but it begins in the pre-simulation phase and in the prebrief (Rudolph et al., 2014). It remains important to maintain the trust as it helps foster psychological safety (Rudolph et al., 2014). As Edmondson (2004) described, the learner is vulnerable to the actions of the leader/facilitator, so ensuring a trusting relationship is

essential. Furthermore, when trust is established between the learner and the leader, participants are *willing* to become vulnerable and risk their reputations (Muckler, 2017). Aranzamendez et al. (2015) further stated that when group members are connected and trust their leader, it positively influences the group and allows for open communication, allows for the members to speak out/up and improves overall team performance.

Fanning and Gaba (2007), strengthened this argument stating that trust is imperative within the group itself; mutual trust ensures a cohesiveness between the group members ensuring respect and consideration which would further enhance the psychological safety of the group (Ganley & Linnard-Palmer, 2012; Wickers, 2010). Finally, students require trust to receive feedback as it has been shown that feedback can cause anxiety (Nielson & Harder, 2013; Reiersen et al., 2017). However, within a climate of trust, leaders/facilitators may give feedback regarding performance to learners, and learners may be more willing to accept the feedback in a positive fashion (Nielson & Harder, 2013; Reiersen et al., 2017).

The Participant. It is important to recognize that within simulation, each participant or learner has individual traits that can impact their own perception of psychological safety, such as the “participants backgrounds, cultures, personalities, skills” (Wickers, 2010, p. 84) and abilities. The NLN Jeffries Simulation Theory identifies (2016) that the participant brings multiple variables that can influence the simulation and psychological safety and how vital the participant is to the dynamic interaction with the facilitator (Jeffries, 2016). The NLN Jeffries Simulation Theory (2016) recognizes the variable that the participant brings to each simulation and as such the psychological safety such as the level of anxiety and preparedness (Jeffries, 2016).

Similar with Kahn's (1990) four level of distractions, Gaba (2013) states that psychological safety can be affected by "stress fatigue, illness, prescription medication, or other vagaries of life" (Gaba, 2013, p. 6). Jeffries, McNelis and Wheeler (2008) present barriers for interprofessional simulations; however, many are applicable to all forms of simulations. Role ambiguity and confusion within a simulation in terms of what is the role of each participant can distract from the objectives of the simulations (Jeffries, McNelis & Wheeler, 2008). Hierarchical relationships between professions can intimidate and add a dimension of unease or power to the simulation (Jeffries et al., 2008). Age, readiness to learn, gender issues and culture can influence how an individual participates within a simulation and what they bring to the simulation (Diez et al., 2013; Fenske, Harris, Aebersold, & Hartman, 2013; Jeffries et al., 2008). Culture refers to a "person's way of life, knowledge, values, beliefs and behaviours" (Jeffries, et al., 2008, p. 473) which can impact how an individual interacts within the simulated environment. Finally, low self-esteem and self-confidence can affect an individual's perception of psychological safety during simulation (Janzen et al., 2016).

Therefore, it is impressed upon the facilitator to mitigate the factors which inhibit participants perception of psychological safety as best they can. This is by creating a balance between psychological and emotional conditions that offer the participant an empowering learning experience (Ganley & Linnard-Palmer, 2012). However, while nursing simulation researchers have identified additional antecedents such as controlled environment (Turner & Harder, 2018) the prebrief, and a fiction contract (Rudolph et al., 2014), leadership, trust and participant differences dominates the nursing, educational and organizational literature.

Outcomes of Psychological Safety in Relation to Nursing Simulation

Interestingly, the outcomes of psychological safety are similar, if not the same, to that of the educational and organizational literature. Depending on the context and purpose of simulation, some outcomes may fall under “system” as described in the NLN Jeffries Simulation Theory (2016); however, for student perception the focus is on the participant and the learning outcomes with the patient and patient safety being the ultimate outcome.

Learning Outcomes. Creating a perception of psychological safety may allow for a deeper sense of learning from simulation participants. Turner and Harder (2018) identified that simulation participants are more likely to take advantage of rich teachable moments when mistakes are made, and this in return gives the participants a sense of safety in which they could learn from their mistakes. Participants with the perception of psychological safety are more likely to problem-solve through difficult situations due to the lack of fear from making a mistake should they make the wrong decision (Turner & Harder, 2018). Skill acquisition was another learning outcome mentioned in the concept analysis wherein both psychomotor, technical skills and communication skill development are linked to the participant perception of psychological safety (Ironside, Jeffries & Martin, 2009; Turner & Harder, 2018). Palaganas, Fey and Simon (2016) suggest that psychological safety is critical to learning, and that only when participants perceive psychological safety are, they able to “openly disclose and discuss their actual thoughts” (Palaganas, Fey & Simon, 2016, p. 79).

Outcomes of Psychological Safety in Nursing Simulation. The benefit of psychological safety within the simulation setting is that educators can create an environment that resembles reality without harm to the actual patients (Ironside et al., 2009). The construct of psychological

safety allows learners to feel safe to make mistakes without embarrassment, gives them the ability to accept their mistakes, and more importantly, learn from their mistakes (Muckler, 2017). This allows individuals and teams to engage fully in the simulation thereby creating a richer learning experience (Muckler, 2017) and creates the potential to improve patient safety for the public (Aranzamendez et al., 2015).

What is missing?

Throughout the literature review, what is noticeably absent is students' and facilitators' perspectives about psychological safety. I located four articles related to student perspectives and safety of some form. Kang and Min (2019) recently explored students' perceptions of psychological safety in simulation; using focus groups to gather their data. Kang and Min (2019) concluded that students felt they were unprepared for simulation, had anxiety about making mistakes, worried about damaging their teamwork and experienced fear related to evaluation. Kang and Kim's (2019) findings focused only on students' perspectives and did not include the facilitator's perspectives. A major influencing factor of Kang and Kim's (2019) article was that the facilitators conducted evaluations on the student for each of the simulations.

Ganley and Linnard-Palmer (2012) examined students and faculty perspectives of academic safety, and while they used the terms psychological safety and academic safety interchangeably, Janzen et al. (2016) argued that they are distinctly different. Academic safety refers to when "students fear academic failure or negative judgement by their faculty and peers" (Ganley & Linnard-Palmer, 2012, p. e50); whereas psychological safety's foundation is safety and trust, where an individual can make a mistake or take risks without facing consequences

(Edmondson, 1999). Ganley and Linnard-Palmer's (2012) article addressed students' perspectives on safety and described outcomes for psychological safety.

Nielson and Harder (2013) examined the causes of student anxiety during simulation identified in the literature and made recommendations on decreasing anxiety based on student perspectives. Many of the recommendations which relate to psychological safety came from Ganley and Linnard-Palmer's (2012) article, which stated that a safe academic environment is where learners could make mistakes without ridicule or fear of failure (Ganley & Linnard-Palmer, 2012; Nielson & Harder, 2013). However, the aim of Nielson and Harder's (2013) study was focused on student anxiety rather than psychological safety.

Fey, Scrandis, Daniels and Haut (2014) conducted a study examining students' perspectives of debriefing. One of the themes described from the students' debriefing experience was that of a safe environment (Fey et al., 2014). In Fey et al.'s (2014) study, a safe environment held double meanings; 1) safe in terms that no patient could be harmed within the simulated experience, and 2) that of psychological safety (Fey et al., 2014). To the students within this study, psychological safety meant, "exploring anxieties, fears and worries about the simulation and performance" (Fey et al., 2014, p. e253). While this study gave insight into psychological safety in relation to debriefing, what is still missing is our understanding of the phenomenon of psychological safety from the students' and facilitators' perspective. This could assist nursing educators' efforts to promote the construct of psychological safety in the simulation environment.

Chapter Summary

In this chapter, a review of relevant literature was provided. A broad overview of psychological safety was discussed in relation to organizational literature which included a brief history of the origin of psychological safety. Next, the different types of psychological safety were reviewed with antecedents and outcomes. This further narrowed to psychological safety in relation to nursing simulation and incorporating the antecedents and outcomes. Finally, what is missing in the literature about psychological safety was discussed. This chapter provided a thorough foundation to which prepares for the exploration of the phenomenon of students' and facilitators' perspectives of psychological safety. The following chapter will discuss the research method.

Chapter Three: Research Method

In the following chapter, a description of the chosen qualitative research method is discussed. Interpretive description is presented, along with its philosophical underpinnings. Data collection and analysis are outlined, including the sampling strategy, recruitment process and setting, data collection methods and the approach to data analysis. This is followed by a discussion on trustworthiness, credibility, and notable ethical considerations.

Morse and Field (1995) stated that selecting a method for a research approach should be decided on what approach best answers the question, what is known about the phenomenon, and can vary depending on a multitude of factors. Qualitative research is used to study everyday experiences, and “understanding life and the perspective of the participants” (Morse & Field, 1995, p. 21). The purpose of this qualitative study was to gain a better understanding of how psychological safety in simulation was perceived by undergraduate nursing students and facilitators. The main question addressed in this study was: 1) what are undergraduate nursing students’ and facilitators’ perspectives about psychological safety in simulation?

This question refers to an understanding of experience and learning about perspectives consistent with a qualitative approach. Interpretive description at its foundation, concerns itself with giving further understanding about individual’s experience of a phenomenon and how nursing can make a difference within a phenomenon (Thorne, Kirkham & MacDonald-Emes, 1997; Thorne, Kirkham & O’Flynn-Magee, 2004). In the following discussion, a review of the chosen qualitative approach will be discussed in detail.

Interpretive Description

Nursing research oftentimes focuses on answering many complex and contextually embedded questions about real people’s issues and problems (Thorne et al., 2004). As such,

nursing researchers typically sought epistemological credibility through phenomenology, grounded theory or ethnography (Thorne et al., 1997). Interpretive description uses many aspects of grounded theory; therefore, many of the analysis used in interpretive description utilized the same data analysis and coding as found with grounded theory. Methodological variations of these main traditional approaches tend to be discouraged; however, as Thorne et al. (1997) argued, the nature of nursing inquiry cannot be categorized always into the traditional qualitative approaches (Thorne et al., 1997). The foundation of interpretive description arose from the need for researchers to have an alternative way they could generate knowledge (Thorne, 2016). Thorne (2016) asserted that nurses bring a certain level of disciplinary experiential knowledge to the role of researcher which can generate rich descriptive, clinically based research questions.

Thorne et al. (2004) describes interpretive description as relatively small scale, inductive analytic approach wherein “interpretive account that is generated on the bases on informed questioning using reflective and critical examination, which will ultimately guide and inform disciplinary thought in some manner” (Thorne et al., 2004, p. 3). This means that researchers are not readily satisfied with description alone, but rather are open to exploring meanings that may impact the application of the research (Thorne et al., 2004).

The philosophical underpinnings of interpretive description ensure a coherence that allows this study to be established separately as an interpretive descriptive study rather than other qualitative blended approaches (Thorne, 2016). Given that I have several years of experience and knowledge within the field of simulation, development, pedagogy and simulation facilitation, this methodology aligned well in that I can apply prior knowledge and experience to the data collection, analysis and overall interpretation process.

Interpretive description guided the design of this study. The research study plan, sample sizes, sample selection, data sources and methods for analysis used to ensure a rich interpretive description of the student's experiences.

Research Methods and Procedures

Interpretive descriptive designs will seek out, explore and understand inherently complex phenomena (Thorne, 2016). Therefore, the following section reviews the procedures, sample selection, recruitment, data collection methods and the data analysis approach implemented for this study.

Sampling and Recruitment

Sampling. Both groups of participants utilized convenience sampling. A convenience sample is defined as a those most readily available as participants for the study (Polit & Beck, 2017). Thorne (2016) states, "a sample created entirely by "convenience" is quite appropriate, in that the group of people who are closest at hand may well be an excellent source of insight for applied qualitative researchers about a phenomenon" (Thorne, p. 98, 2016). While there were specific inclusion and exclusion criteria for the sample population for this study, the participants were the group of students that were the most easily accessible, and therefore, convenient.

Students. By virtue of having recently participated in nursing simulations as part of their curriculum, participants were recruited from a simulation lab in Western Canada. The participants had a unique experience that would help us better understand their perspectives on psychological safety giving us a rich description of the phenomena (Thorne, 2016). Inclusion criteria for students were those who were enrolled in the institution's Undergraduate Nursing program who: 1) were in year three of their undergraduate program, 2) and had finished all

required courses (clinical and theory) in year one and two. Exclusion criteria include: 1) if a student was repeating the clinical course.

Facilitators. The inclusion criteria for facilitators was: 1) those who facilitated in the simulation lab in the undergraduate program. Exclusion criteria included: 1) those faculty who do not facilitate in the simulation lab in the undergraduate program.

Sample Size. An interpretive description study could be conducted with virtually any sample size; however, many of the studies utilizing this approach have a relatively small sample (Thorne, 2016).

Student Participants. Seven students volunteered to participate for this portion of the study. Participants were recruited from the institution in Western Canada undergraduate nursing program and had been specifically recruited from a third-year cohort with a total class size of 80 students. These students had previously participated in simulation activities in their undergraduate nursing program.

Facilitator Participants. For this portion of the study, four facilitators volunteered to participate. Facilitator participants were recruited from the institution in Western Canada's Faculty with a total number of 12 faculty. They consisted of the faculty members who facilitated in simulation with the undergraduate students.

Recruitment and Procedure.

Student Recruitment. The recruitment process and procedure for students was the following, post ethics approval: 1) access to students (Appendix C) had been requested by the Chair of the Nursing Program at an institution in Western Canada. 2) Once granted access, an emailed letter of invitation (Appendix D) and poster (Appendix E) requesting participation in the study and information about the study was sent to the students. The Assistant to the Director of

Nursing sent the email to all students in year three, based on the inclusion/exclusion criteria and the students were blind carbon copied in the email to protect student privacy. The Assistant to the Director was chosen as there is no research coordinator who has access to student email addresses. The assistant to the Director was an administrative (support) role and did not teach, evaluate, nor hold any position of power vis a vis the participants. While posters were used, not all students may have seen them, so an email ensured the posted reached all students. 3) Any interested participants contacted the PI, via email; phone or text and consent forms were then emailed to the students to review. Any questions the participants had regarding the study were answered by the PI at that time prior to signing of the consent form or data collection. 4) Once a participant had read the consent (Appendix F) to participate in the study, the participants were able to schedule a one-on-one interview with the researcher in a private location and at a time and location of their choosing. This typically was at a private office or conference room located in their university that was booked by the PI. Any outstanding questions were answered prior to reviewing and signing the consent form in person and prior to the data collection. 5) In addition to the email that was sent to the students, posters were posted (Appendix E) in common student areas to attract potential participants. 6) Finally, a \$50 gift card was provided for all participants in the interviews. This was given as a thank you for their time. The gift card was to the general bookstore and was offered at the beginning of the interview.

Facilitator Recruitment. The recruitment process and procedure for facilitators, post ethics approval, followed the following steps: 1) access to facilitators (Appendix C) was requested by the Chair of the Nursing Program at a University in Western Canada. 2) The Assistant to the Director emailed out a letter of invitation requesting their participation based on the inclusion/exclusion criteria. The facilitators were blind carbon copied in the email to protect

facilitator privacy. The Assistant to the Director was an administrative (support) role and was not involved in faculty recruitment, hiring, or performance evaluations. They were in no position of power vis a vis the facilitators. 3) Any interested facilitators contacted the PI via email, phone or text and a facilitator consent (Appendix H) was sent to them to review. 4) Once a participant read the facilitator consent (Appendix F) to participate in the study, the facilitators scheduled a one-on-one interview with the researcher in a private location and at a time and location that suited their schedules. Any outstanding questions were answered prior to reviewing and signing the consent form in person and beginning data collection. 5) Finally, a \$50 gift card was provided for all who participated in the interviews. This was given as a thank you for their time. The gift card was to the general bookstore and was offered at the beginning of the interview.

Procedure. The rest of the procedure for this study followed the research guidelines for health care simulation research by Cheng and colleagues (2016). These guidelines help to ensure that all simulation-based research remain consistent (Cheng et al., 2016). “Failure to adequately describe the key elements of a research study impairs the efforts of editors, reviewers, and readers to critically appraise strengths and weaknesses or apply and replicate findings” (Cheng et al., 2016, p. 2), thereby limiting the advancement of simulation in healthcare. The reporting guidelines are meant for reporting two specific categories: 1) studies that are evaluating simulations for educational purposes; 2) studies that are using simulation as an investigative method (Cheng et al., 2016). While these guidelines are not specifically meant for qualitative methodologies (Cheng et al., 2016), outlining the requirements ensures that all background information regarding the simulations is documented in detail which would help with transferability and transparency of the study.

Participant Orientation. In the pediatric and maternity rotation, which ran concurrently, students were orientated to simulation in general and to the mannequins/environment. This included having one of the simulation experts speak with the students and give an overview of simulation. During this orientation, the general simulation program objectives were reviewed as well as learner goal setting and self-identifying learner expectations for simulation. Facilitator expectations were discussed in terms of professionalism, punctuality and pre-simulation preparation. It was during this initial orientation when students signed a simulation specific confidentiality agreement.

On the day of simulation, learners spent about 10 minutes touching, feeling and listening to the mannequin. The facilitators reviewed what the mannequin could do and what it could not do in terms of fidelity. There was also a review of the importance of suspending learner disbelief and buying into the reality of the scenario and simulation. A review of the confidentiality agreement was also brought up to ensure students understood this concept. The orientation to the environment was included in 10 minutes where the students were reminded of the equipment in the simulation room, supplies and who they could call if they needed help in the simulation.

Simulator Type and Simulation Environment. The simulator type that the educational institution used was the Laredal Nursing Annie and 3G. No modifications to the mannequins were made. All the simulations ran in a simulation centre located within a College campus with no external stimuli.

Simulation Scenario and Instructional Design. The scenarios were designed using the INACSL Standards of Best Practice. They were scripted for the operators with intentional states, cues (both conceptual and reality) and triggers. The students had participated in several simulations, which included maternity-based simulation, pediatric simulations and palliative

simulations. The focus of the simulations that were used was based on clinical scenarios were important for students to experience prior to graduating but generally focused on teamwork, the occasional technical skill like medication administration and communication. Due to the nature of this study in that students likely brought prior experiences in simulation to the interview, no specific scenario was used prior to the interview. The students had completed maternity, pediatric and palliative simulations as part of their course work for their undergraduate program. Simulation was integrated into the nursing curriculum at the educational institution as it situated within the clinical course and was seen as part of clinical. For some of the scenarios, they were seen as adjuncts to the clinical course such as palliative, whereas others were replacing clinical time such as, the maternity and pediatric simulations.

Learning objectives were provided for the students in their clinical course syllabus at the beginning of the term along with related articles or policy and procedures necessary for the simulation. The pre-learning activities consisted of reviewing the patient chart before their simulation day and the students were expected to complete a client case summary. This included researching the patient diagnoses, medications, laboratory values associated to the patients' diagnoses, priorities for the patient and creating a nursing diagnosis. The students handed this information in to their facilitator who was also their clinical course leader. These were marked pass/fail in the areas of professionalism, punctuality and preparation. Regarding these three areas, the course leader marked the preparation as to whether it was completed in entirety; punctuality related to whether the student was on time and prepared for simulation and professionalism referred to how the students conducted themselves within the simulation. Any outlier comments were placed on the students' clinical evaluation tool at the end of term to

inform any other decisions based on trends or patterns for the student related to these three main areas should the need arise.

The students came to the simulation lab in groups of four and participated as an active participant in one simulation and observed one simulation. Any adjuncts that were used such as moulage (the technique of creating simulated physical characteristics to support the sensory perceptions, fidelity and realism of the scenario (INACSL Standards Committee, 2016a) were minimal. All simulations were pilot tested first by a group of instructors, whereby edits were made based on the instructors' feedback. Then a group of voluntary students who had successfully completed the clinical course pilot tested the edited simulations for a total of two rounds of pilot testing prior to the use with the larger student body. In terms of actors and standardized patients, some of the palliative, maternity and pediatric simulations contain actors who played the role of the parent for a pediatric patient, or family member for the palliative patient.

Each simulation in duration was made up of the traditional four parts totalling 1 hour and 45 minutes where the prebrief took about 20 minutes (10 minutes orientation, 10 minutes scenario specific prebrief), active simulation ran for approximately 20 minutes followed by a 40-45 minute debrief. Students do not repeat the simulations. They come for their simulation segment of their clinical and do not repeat for the rest of the clinical course. The scenarios were scaffolded throughout the term so that students who come early in the term complete simulations to which they have prior knowledge, whereas students who come later in the term participate in focused simulations based on the area in which they were in clinical.

At this educational institution, instructors (n=12) used a prebrief checklist to standardize their prebrief between facilitators and groups. The prebrief checklist consisted of the following

areas: review of the mannequin, review of the chart for the students to prepare for the simulation, review any equipment changes, the location of the medication cart, policy and/or procedures that may be applicable for the simulation, the learner and facilitator goals, and finally review the aspects of psychological safety. The prebrief included reminders that simulation was not for marks, focused on learning, mistakes were encouraged in the environment and that a charge nurse was within the simulation to answer any questions. Further explanation on suspending the disbelief was communicated and the night shift report was read by the facilitator.

The facilitator remained an important sub element as the facilitator is key in the NLN Jeffries Simulation Theory (2016) and in the overall simulation processes. At this educational institution, the facilitators were all nurse educators. Typically, within any given simulation experiences there were two facilitators. The facilitators could be broken into two types of facilitators, content experts and simulation experts. All facilitators, content and simulation experts were masters prepared, however, there were upwards of 12 that facilitated the simulation experiences. Each simulation typically comprised of two facilitators at one given time. Content experts were faculty and their role consisted of being the facilitators who worked/taught within the content area and normally played the role as the charge nurse within the active simulation. They were present in the room and acted as a resource for the students to ask questions should they need to. These facilitators were typically the clinical course leaders and normally lead the debrief. The content expert facilitators typically received faculty development through workshops for approximately one and a half days which covered topics such as what was simulation, what was debriefing and a review of the preferred debriefing framework. Facilitators who were content experts typically received a narrated PowerPoint, an article on the debriefing

framework to review and had a debriefing expert sit in on one of their first simulations to give comments and feedback as their form of simulation education.

The other role of facilitators was that of a simulation expert. There were three simulation experts within the faculty. They normally operated the mannequin and aided in the facilitation and debrief should their partner facilitator, the content expert, required assistance. The simulation expert had simulation specific training in that they were in the process of completing the Canadian Association for Schools of Nursing (CASN) Simulation Certificate modules, had attended INACSL conferences as simulation specific continuing education and completed their masters with a focus on simulation. It is the simulation experts, who developed, operated the mannequins and facilitated within the simulation program.

Debriefing. The duration of the debrief ranged between 40-45 minutes. At most, there was two-faculty debriefing and a standardized patient sitting in on the simulation debrief at times. The facilitator was a content expert and the operator had simulation background, was faculty and participated at times. The instructors used Debriefing for Meaningful Learning (Dreifuerst, 2015) as the framework and to structure their debriefing. The debriefing was conducted in a separate location such as a classroom away from the mannequin and the simulation environment. There were tables and chairs arranged in a comfortable position to conduct the debrief. At the end of the simulation day, the students were provided with a short questionnaire/evaluation that helped with quality control and facilitators gave another announcement regarding confidentiality of simulation scenarios.

Data Collection Methods

The data sources for this study included one-on-one digitally recorded, semi-structured interviews, and the researcher's reflexive journaling. The primary investigator (PI) conducted

face-to-face interviews to capture rich descriptions of the phenomenon. A semi-structured interview guide ensured consistency with interview questions yet gave the participants freedom to provide as many descriptions as they wish within the context of the phenomena (Polit & Beck, 2017; Sandelowski, 2000). Please see Appendix A for the interview guide for the students and Appendix B for the interview guide for the facilitators. Semi-structured interviews are typically used when the researcher knows what questions they want to ask but are unsure of the direction the participants will answer (Morse & Field, 1995). This form of interviews also gives the opportunity for the participant to explain their perspective in their own words (Morse & Field, 1995).

Reflexive journaling was used as another sources of data and was included in the data analysis process. Reflexivity is a process where the researcher is an “integral part of the research and vice versa” (Munhall, 2012, p. 321). Reflexivity allows for a circular relationship between the investigator and the research data in that though the research process interpretations will emerge early in the data collection or analysis phase (Munhall, 2012). This will occur through repeated exposure to the journals, as my thinking is engaged and begins to group, connect and highlight important entries, thereby turning disjointed, random things into an organized shape, which can then be, interpreted (Thorne, 2016).

Data Analysis

Data analysis was a continuous and iterative process which used inductive analysis. Inductive analysis allows for research findings to emerge from the raw data. This process initially started when the PI began to reflect on the interviews and completed the reflexive journaling. Once data collection begins, the data analysis process starts. The digital interview recordings were transcribed verbatim, checking for errors and correcting as necessary (Morse &

Field, 1995). In addition to the transcripts of the digital recording, a reflexive journal was kept in order to triangulate the data and were analyzed concurrently. Data triangulation is the use of multiple sources to interpret data about a phenomenon to ensure an accurate representation (Polit & Beck, 2017), which was done in this study.

An open and axial coding was used. Open coding includes line-by-line coding reading of the data and further examining it for similarities and differences (Thomas, 2006), then labeling the code which enables the researcher to sort through the data and uncover any underlying meanings within the text (Morse & Field, 1995). To improve the coding process, the text was read in its entirety and the researcher then had some time to reflect upon the whole of the text. The researcher then reengaged with the data to recognize categories within the data set (Morse & Field, 1995). To enhance the recognition of categories, ongoing engagement with the data occurred, to test, confirm, explore and expand on the basic conceptualizations from the text (Thorne, 2016). Axial coding started when the data was categorized. The connections between the categories began to emerge and patterns and linkages could be seen (Thomas, 2006). The initial categories were broad in nature so that large amounts of data could be sorted into groups and eventually combined to create a few main themes from the data set (Morse & Field, 1995) which generates the results and discussion.

Member checks are a popular means for verifying content from participants; however, Thorne (2016) asserts that member checks can lead to “false confidence and could potentially derail researchers from the analytic interpretations and does not recommend” (Thorne, 2016, p. 175) this method of confirming. Instead, to confirm the content and analysis, I ensured the raw data supports my conclusions and interpretations.

Trustworthiness

Trustworthiness for qualitative research is the accepted and appropriate criterion used for evaluating qualitative studies (Maher, Hadfield, Hutchings & de Eyto, 2018). Unlike reliability, replication, and validity which are paramount in demonstrating rigour in quantitative research; Lincoln and Guba in seminal work from the 1980s proposed that qualitative research should satisfy four criterion which is foundational to trustworthiness: credibility, dependability, confirmability and transferability (Maher et al., 2018; Morse, Barrett, Mayan, Olson & Spiers, 2002).

Credibility is described as confidence in the truth of the data and interpretation of the data and measures what was intended to be measured (Maher et al., 2018; Polit & Beck, 2017). To ensure credibility for this study, peer debriefing was used. This is when a peer familiar with the phenomenon reviews the data, decisions, documentations and interpretations (Lewis, 2009); for this study, this was completed by reviewing the data and interpretations with the PI's advisor, who has extensive understanding, knowledge and expertise in the field of simulation. The PI will also have the data reviewed by the researcher's committee members throughout the analysis phase.

Dependability refers to the reliability of the data over time (Polit & Beck, 2017). Dependability ensures the process of the study is described in detail to enable another research to replicate the study (Maher et al., 2018). Dependability is an important criterion as it directly influences credibility, in that credibility cannot be attained without dependability (Polit & Beck, 2017). An audit trail was established by reviewing de-identified transcripts and reviewing the reflexive journals. An audit is important to maintain that there is no creative accounting in the

research thereby ensuring accuracy in the data (Lewis, 2009). Additionally, the reflexive journals gave further insight as to how I came to certain interpretations or understandings (Thorne, 2016).

Confirmability is described as objectivity, in that, congruence would be found between two or more independent people in relation to data accuracy, relevance and/or meaning (Polit & Beck, 2017). Confirmability minimizes investigator bias (Maher et al., 2018) and was completed by reviewing the data with the primary investigators' advisor. Confirming with the PI's advisor that the initial analysis meaning, relevance and accuracy through preliminary axial coding, categorizing and through conversations to build initial themes or review themes and categories seen in the data.

The final criterion described by Lincoln and Guba (1985) is transferability. Transferability is described as the extent in which the results could be applied in a different setting or group (Maher et al., 2018; Polit & Beck, 2017). The descriptive data provided within the research will allow for transferability to other contexts whereby, in a similar environment with similar samples, the recommendations from this study can be applied in the context of simulation.

In recent years, qualitative researchers have been questioning Lincoln and Guba's assertion of trustworthiness and have provided other guidance on how to retain rigour (Morse et al., 2002). One of the criticisms of Lincoln and Guba's (1985) framework is that it is post hoc evaluation for threats to rigour and validity (Morse et al., 2002). Morse et al. (2002) assert that to improve the trustworthiness of qualitative research, focus on processes of verification during the study will prevent the researcher from missing serious threats to reliability or validity (Morse et al., 2002). Verification is described as "mechanisms used during the process of research to incrementally contribute to ensuring reliability and validity and, thus, the rigor of a study"

(Morse et al., 2002, p. 17). The process of verification for this study was methodological coherence, sample adequacy, concurrent analysis and theoretical thinking (Morse et al., 2002).

Methodological coherence refers to ensuring there is consistency between the research question and the components of the method (Morse et al., 2002). This means that the data may demand that the methods may have to be modified, or sampling plans may be expanded or changed (Morse et al., 2002). Sample adequacy refers to ensuring the participants are those who best have knowledge of the research topic (Morse et al., 2002). Sample adequacy also means that the researcher will seek negative cases and reaching data saturation, wherein there is replication of categories and no new categories are found (Morse et al., 2002). Concurrent analysis facilitates the iterative process that is common in qualitative research and is important in the attainment of reliability and validity (Morse et al., 2002). Concurrent analysis also refers to exposure to the data (Morse et al., 2002). Finally, theoretical thinking refers to adjusting perspectives into macro-micro ideas without making cognitive leaps but rather checking and rechecking new ideas in the data and verifying the new ideas in the existing data (Morse et al., 2002).

Ethical Considerations

When humans are the study participants, it is essential for researchers to maintain their rights and take the necessary ethical considerations into account (Polit & Beck, 2017). Strategies that were utilized throughout this study intended to minimize all types of harms and discomforts to the study participants (Polit & Beck, 2017). The PI completed all modules for the Canadian Association of Schools of Nursing, Simulation Certificate Program and recently earned the designation of Canadian Certified Simulation Nurse Educator (CCSNE). The PI brought to the study extensive experiential knowledge and training in psychologically safe, unsafe situations

and debriefings so as to support participants with emotional distress. Had participants required further expertise, an information pamphlet about counselling services at Red River College would have been provided prior to the interview, however, this was not necessary as no participants required additional support. Participants were notified that they could stop the interview at any time without penalty or risk of consequence (Polit & Beck, 2017) by notifying the PI during the interview that they did not want to continue. Participants who ended their interview were still eligible to receive the appreciation gift card. Participants were able to recuse themselves from the study up until 1-month post interview at which time data analysis had begun in earnest. None of the participants stopped the interviews or recused themselves from the study.

Consent

A consent form (Appendix F) was signed in person by the participants. The consent forms are stored separately from any data that is collected. Each participant was assigned a pseudonym. The assigned pseudonyms and matching participant names were collected on a separate hard copy sheet also stored separately from the data collected. Participants have been only referred to as their pseudonym in any electronic and hard copy data collected that involves them. All paper copies of consent will be kept for 3 years, and subsequently destroyed via confidential shredding.

Interviews

One-on-one face-to-face interviews were used. Participants in the study were asked to maintain confidentiality of both the content and the identity of any other students or facilitators they may feel were involved in the study. However, the data collected from all participants only used pseudonyms and for coding and any use of quotations used pseudonym thereby not allowing identification of individual participants. Additionally, interviews were assigned a code name removing all identifiable information. The PI was the only one with access to the

identifiable interviews and they are kept in a password protected file on the PIs computer in a locked office in Helen Glass Centre for Nursing.

Audio Recordings

The audio recordings were recorded using a digital recorder. No personal identifiers were associated with the digital recording other than the participants pseudonym. Recordings were stored in a password protected folder on a password protected computer. A transcriptionist was hired and also signed a pledge of confidentiality (Appendix H). Once the audio recordings were transcribed and checked by the primary investigator against the original recording, the files were destroyed using a digital file shredding program.

Transcripts of Audio-Recordings

Audio recordings were transcribed as soon as possible following the interviews. A transcriptionist was used, and they were required to sign a confidentiality agreement prior to beginning the transcription of the data (Appendix H). As the audio recordings were only identified using a pseudonym for the participant, there was no personal identifiers provided to the transcriptionist at any time. The transcriptionist was instructed to not document any names of individuals when transcribing the audio recordings. Transcripts were stored in a digital document that was password protected and stored in a password protected folder on a password protected computer in a locked office at Helen Glass Centre for Nursing and only accessible by the principal investigator. As per Faculty of Graduate Studies, the PI's advisor had access to all the data.

Reflexive Journals

There were no hard copies of the reflexive journals. The electronic journals were stored on password protected computer in a locked office at Helen Glass Centre for Nursing to which

the PI only had access to. As per Faculty of Graduate Studies, the PI's advisor had access to all the data as necessary. Reflexive journals were completed electronically, post interview. Once the reflective journal was in electronic form, they will be kept until March 2026, then destroyed in accordance to the University of Manitoba's policy on destruction of confidential information.

The knowledge gained from this research will be shared with the participant before it is made public. The participants were asked to provide their email addresses on the consent form if they wished to receive a lay summary report. Information from this study may be published or presented in public forums, however, the participant name and other identifying information will never be used or revealed. The participant may be referred to with a general descriptor such as "Student A, B, C etc. or Facilitator A, B, C etc." with a direct quote from an interview or in a summary of all the interviews. The results of this research study will be disseminated in the publication of my thesis. Additionally, manuscript(s) will be created for potential publication in peer-reviewed journals. A poster as well as a presentation will be created to potential presentation at local, national or international conferences. As part of the ongoing faculty development in simulation at my University, I intend to present the findings of this study to the simulation facilitators. In addition, opportunities will be sought to present findings in an online environment, such as a webinar.

Chapter Summary

This chapter has described the methodological approach to this research study. The method of interpretive description was described and the research methods and procedure, including sample size, and recruitment strategies. Next, was a description of the proposed data collection methods and the approach to data analysis. This was followed by a discussion about research integrity and trustworthiness. Lastly, the ethical considerations were addressed.

Chapter 4: Findings

In this chapter, the findings of the study are reported. First, the demographics of the sample populations will be described, followed by the qualitative findings related to the research question.

The purpose of this study was to explore psychological safety as perceived by undergraduate nursing students and facilitators in simulation. The study aimed to answer the following question:

1. What are undergraduate nursing students' and facilitators' perspectives on psychological safety in simulation?

Qualitative data in the form of face-to-face interviews were collected from June 5-June 14, 2019. The sample was divided into two groups: students and facilitators. The total potential sample of students was n=80 and of those, seven students volunteered to participate in the interviews for a study response rate of 11%. For the facilitators, the total potential sample was 12 and of those, four facilitators volunteered to participate in the interviews for a study response rate of 30%. A transcription service was responsible for transcribing the audio recorded interviews. The transcriptionist signed a University of Manitoba Nursing and Education Ethics Board (ENREB) approved oath of confidentiality prior to receiving the password protected files.

Qualitative Data Analysis

The purpose of this study was to explore psychological safety as perceived by undergraduate nursing students and facilitators in simulation. During the semi-structured interviews, students and facilitators expressed their views and perceptions on psychological safety in simulation. After each interview, I spent some time reflecting on the interview and writing down my thoughts into reflexive journals. I used these journals throughout the data

analysis process to refresh my memories and expound on my initial thoughts on what participants were saying; I referred back and forth to these journals throughout the data analysis process. Therefore, data triangulation occurred with three sources of the data, the transcripts, my reflexive journals and verification from my advisor, as she offered additional perspectives and interpretation of the data.

The data analysis was divided into two separate parts. I first focused on the student transcripts by re-listening to each student interview. I did this a few times to get a sense of each students' perspective individually. I listened to each student interviews while verifying the words written in the transcribed interviews to verify the accuracy of the transcription. This was helpful as I was able to hear the participants' voice alone and not be influenced by the other participants. I then read the student interviews in their entirety as a group. This gave me insight into how each of the transcripts connected and aligned with one another. I then proceeded to conduct line by line coding, writing down words that stood out in the transcripts. As I am a novice in the coding process, my advisor independently read the transcripts and created codes for the student transcripts. We then compared our codes looking for similarities and our mutual understanding of the student's perspectives. Once I had completed open coding on coded each of the student transcripts, I rewrote the codes on a separate paper, so I only had the codes to look at. As I was studying them, I was able to identify categories and clusters within the codes. My advisor and I had similar or related codes with few discrepancies, however as a novice researcher, I had significantly more codes as compared to my advisor. Any discrepancies were settled through conversation and returning to the raw data. I continuously verified and compared the categories and clusters with my advisor to ensure my analysis process. Throughout this, I would review the transcripts and reflexive journals to understand context of each of the codes, conversations with

the participants and context of the interviews along with my initial analysis. Through this iterative back and forth process with the data and my reflexive journals, and with guidance from my advisor, I was able to cluster the codes into various categories and using axial coding combine them to form the themes. I depended on the knowledge and experience of my advisor to assist me in understanding how to merge, hone and refine like categories into themes. After I had preliminary themes, categories, and sub-categories for the student interviews, I set them aside to focus on the facilitators. I worked with the facilitator group and student groups independently of one another so as to not be influenced or project the student's perspectives onto the data analysis of the facilitators.

The analysis process was repeated for the group of facilitators. After both the student group and facilitator group were coded, categorized and the themes identified I was able to view both groups together to understand the differences in thoughts and perspectives. The results of the data analysis are described below.

Description of Participants

This section includes a description of the students and the facilitators who participated in this study. The demographic findings of this study were collected through the interview process and the questions can be found at the beginning of the interview guide.

Students. Seven third-year undergraduate nursing students who: 1) were in year three of their undergraduate nursing program, 2) and had finished all required courses (clinical and theory) in years one and two and were not repeating the clinical course participated in the interviews. After receiving approval from the ENREB and the participating educational institution's Ethics Board, the students were contacted via an email sent by the Assistant to the Director of Nursing and the primary investigator went to the students' classroom to make an

announcement regarding participating in the study. Any interested students contacted the PI via email or cell phone and a consent form was emailed to them. Data was collected over a 14-day period from June 5-June 14, 2019. The participants' gender, age and highest level of education is located in Table 1.

Table 1: Student Demographics

Demographic Characteristics of Sample (N=7)		
Characteristic	Frequency	%
Sex		
Female	6	85.70%
Male	1	14.30%
Age, Years		
19-25	3	43.00%
26-35	3	43.00%
36-45	-	-
>46	1	14.00%
Highest Level of Education		
High school or equivalent	4	57.14%
Bachelor's Degree	2	28.57%
Master's Degree	-	-
Other Certification/diploma	1	14.29%

Characteristics of the Student Interview Transcripts. The interviews with the students ranged from 22 minutes to 51 minutes. After interviewing seven participants there was repetition within the interviews, thereby concluding that sufficient data was collected to have relevance to fulfill the purpose of the research question. However, this recognizes that while there is confidence that the information collected is sufficient to warrant reporting, there could always be more to study (Thorne, 2016).

Facilitators. Four instructors who facilitated in the simulation lab in the undergraduate nursing program participated in the interviews. After receiving approval from the ENREB and participating educational institution's Ethics Board, an email was sent out to all the facilitators by the Assistant to the Director of Nursing. Interested facilitator contacted the PI via email or cell phone and a consent form was emailed to them. Data was collected over a 14-day period from June 5-June 14, 2019. The participants gender, age, highest level of education, length of nursing instructor and length teaching in simulation is presented in Table 2.

Table 2: Facilitator Demographics

Demographic Characteristics of the Sample (<i>N</i> = 4)		
Characteristic	Frequency	%
Sex		
Female	4	100%
Male	0	
Age, Years		
19-25	-	
25-35	-	
35-45	2	50%
>45	2	50%
Highest level of Education		
Bachelor's Degree	1	25%
Master's Degree	3	75%
Other Certification/diploma	-	
Length as a Nursing Education		
0-5 years		
6-10 years	2	50%
11-15 years	1	25%
16-20 years	1	25%
>21 years	-	
Length in Teaching Simulation		
0-2 years	1	25%
3-4 years	1	25%
5-6 years	-	
7-8 years	1	25%
8-9 years	-	
10 or >10 years	1	25%
Role in Simulation		
Facilitate	4	100%
Develop	3	75%
Operate	1	25%

Characteristics of the Facilitator Interview Transcripts. The interviews with the facilitators ranged in time from 25 minutes to 33 minutes. After interviewing four participants there was repetition within the interviews, thereby concluding that sufficient data was collected to have relevance to fulfill the purpose of the research question. However, this recognizes that while there is confidence that the information collected is sufficient to warrant reporting, there could always be more to study (Thorne, 2016).

Student Findings

Two major themes emerged from the student interviews: dynamic interaction and self-efficacy. The codes created a strong foundation for the categories and informed the creation of the themes that are presented in Table 3.

Table 3: Student Themes

Theme
Dynamic interaction: “Calms you down and gives you reassurance”
Self-Efficacy: “You got this; you can do it”

Elements of the dynamic interactions included facilitator relationships, support and communication. The first theme is that dynamic interactions, while the second theme is self-efficacy. This next section will present the findings of the students’ perspectives.

Theme 1: Dynamic Interactions: “Calms you down and gives you reassurance”

The theme of dynamic interaction was a combination of the relationships and communication with a facilitator. The relationships are important to the creation and maintenance of psychological safety because the students bring these past relationships into the simulation. Therefore, depending on the type of relationship, whether it be positive or negative, could impact a student’s sense of psychological safety within the simulation. Early in the student interviews, I heard about relationships and previous relationships and,

“...how important it is to have a facilitator that they know and...how that can impact the relationship and the safety...” Reflexive Journal Student 4

Relationships are also cultivated through communication between the facilitator and the student. The way in which a facilitator approaches the students in the simulation process, provides verbal feedback, as well as their non-verbal reactions can influence the students' sense of psychological safety.

A positive previous relationship with a facilitator can positively impact the students' overall perception of psychological safety. This can occur because the student perceives that the facilitator understands their capabilities prior to entering in simulation, therefore, should a mistake happen, it may not be a true representation of the students' ability. The feeling of having to prove oneself are unnecessary. This can increase the likelihood that students would feel more comfortable or psychologically safe in asking questions or seeking feedback and receiving it openly and with a willingness to learn. Student 4 supports this by stating that a previous relationship with facilitators that are already established enables them to freely ask for feedback,

“...And then instructors that I've known and seen and worked with, it has that impact where you can ask them anything you want and ask for feedback...”
Student 4

A past relationship with the facilitator may help students to feel more confident which may result in the ability to take risks within a simulated environment. Student 2 stated that having a working relationship increased the feelings of safety,

“Part of it I think would be on a past relationship and past rapport. I feel that if you have a [...] professional working relationship with them that it would be easier to feel safe with them.” Student 2

Additionally, the overall anxiety felt by the student may be reduced with a known facilitator making the student feel calmed and/or reassured when interacting with the facilitator. This can impact psychological safety as the students' overall comfort in the environment will likely be established more quickly. Student 3 felt that when an instructor was known to the students, there was not the same level of anxiety within the simulation,

"...because most of the facilitators are known to the students, they don't feel that level of anxiety as a stranger, so that is also a good factor." Student 3

While Student 4 spoke about feeling calm and reassured with interacting with a known facilitator,

"I was fortunate enough that the two instructors that were in the sims with me, one of them I adore because I've known her since the beginning of the year. So even before getting into a sim [...] just giving us good encouragement and I guess knowing that person and having some sort of relationship with them actually kind of gives you like a – I don't know, calms you down, gives you reassurance that okay, she wouldn't lie to me." Student 4

While a known relationship with the facilitator can positively impact the feelings of psychological safety in simulation for the students, so too can a negative previous relationship with a facilitator. From my reflexive journals, I felt there was an emphasis placed on the relationship and that, *"...the type of relationship may change the dynamic..." Reflexive Journal Student 1*. Examples of this could be seen as students' spoke at length and shared examples of negative relationships with their facilitator and the impact it had on their simulation. When the relationship between the student and the facilitator has seen conflict in the past, it may be difficult for the student to receive feedback in a constructive manner. The student may feel

uncomfortable and judged from past performances thereby not take any risks, not engage and/or participate in the simulation which would impact their own and that of their groups ability to learn from the simulation. Student 1 articulated this by stating,

“...if I’ve had a conflict with an instructor who is now watching me perform in simulation. It kind of takes away from the experience, because you’re too focused on doing what you’ve got to do just to get out of there, as oppose to enjoying the experience and learning from it...a lot of people are intimidated by specific instructors, and that does play a role, in terms of how you perform during simulation, so for me...I walk into simulation and that same [instructor], is now the actor I’m supposed to perform with. It’s very uncomfortable, and yeah, it wasn’t, it wasn’t good, to say the least.” Student 1

When asked how that made the student feel, they responded with, “I felt like I was being punished” and went on to say,

“I took it personally. Like, whether that was the intention or not, I felt like if you know I’ve had issues with this person, in the past, why would you put me in a situation where I’m now being re-graded by them. So, it – yeah, psychological safety, in that situation, I would say no. Intentional, not necessarily.” Student 1

There was a perception from the students that if they did not have a good relationship with the facilitator it was difficult to then trust the facilitator in simulation. This led to concerns of the instructors sharing information from the simulation with other instructors or their clinical instructors. This could also negatively impact the psychological safety of the students as students may have felt that they did not want to participate for fear of it getting back to their clinical instructors and therefore impacting their overall clinical grades. I noted this in my reflexive

journals as a repetitive concern among students, that “...*there was a question as to whether the [simulation] facilitators would speak to the clinical instructors based on their simulation experiences...*” *Reflexive Journal Summary*. Students had a real fear in trusting their simulation facilitators. Student 5 articulated this by stating,

“I think there’s always that underlying thought at least in the back of my head is that like everyone [instructors] works so closely together, you kind of have a hard time really feeling like nothing is going to get back to anyone” Student 5

They went on to say,

“But I think a lot of the times the students were just so anxious about everything and we’re always worried that this has somehow going to come back to negatively affect us. I know that’s been a constant worry of time throughout my entire program” Student 5

While the students focused on the relationships between themselves and their facilitators, they brought up the relationship between the peers and as a team. Their peer relationships could also shape the student’s perception of psychological safety in simulation. A positive relationship between peers meant for feelings of comfort and confidence within the simulation environment.

Additionally, students felt it was easier to take risks among known peers, which could result in a better learning experience for the students as individuals and the students as a group. Student 1 discussed a sense of comfort with known peers,

“...I knew all the peers I was working with, I was comfortable around them. We all helped one another.” Student 1

While Student 3 articulated the ability to easily those peers who are known to them,

“...being comfortable with the people that’s around you. For me at least, I’m more prone to speak up with people that I do know. So the classmates I had, I’ve known them for three years so it’s like they’re basically friends, right?” Student

3

Further to this, feeling comfortable in the simulation environment with peers can help with students sense of anxiety. Having known peers within their team and trusting whom they are working with in the simulation can decrease their overall anxiety. This can allow the students to be more open to feedback and a learning experience. Student 7 shared the sentiment that being with those they trust makes for a stronger learning experience,

“I feel like just providing like, an area that we’re comfortable in and with people [peers] that we trust and are comfortable with would be the best way to make this a better learning experience and not so stressful.” Student 6

Another aspect of the dynamic interaction between student and facilitator that can assist with reassurance students in feeling more psychologically safe is the level of support given to the student in the simulation process. The kind of relationship that is established between the student and the facilitator affects the way the students may seek support or the perception of support in the simulation. Students brought this up stating that facilitators need to be open to helping students within the simulation experience. This could be through the use of prompts and cues where facilitators help in the active simulation to prompt students in the right direction.

A takeaway that I found in my reflexive journals was about,

“...facilitators and how they interacted and facilitated in the simulation, how they were supportive, reiterating and reinforcing the environment and how they debriefed played a big part, the language, body language etc. If [psychological

safety] is not reinforced with every sim, then it gets pushed to the back of students mind...” Reflexive Journal Student 5

This shows how much the support of the facilitator can impact a students’ psychological safety. By doing this in a timely manner the students can further build trust among students and facilitators. This helps with the perception of psychological safety as it encourages students to ask for help should they require it. Student 2 clearly articulated by this by saying,

“Another thing would be that communication, just keeping the doors open for communication, you know, knowing that if something’s going wrong during the simulation that we can turn around and say, “hey, I need a little help here.””
Student 2

If students are not feeling supported from the facilitator during the active simulation or debrief, they are less likely to ask for clarification or help during the simulation and await the facilitator to prompt them. If the facilitator-student relationship is such that it prevents the student from asking questions, then the students may not be psychologically safe. The students identified that they needed more guidance during the simulation. This may be their way of expressing their need for support or help within the simulated environment. Students commented on this, especially when they were uncertain of what to do next in the simulation,

“Like we we’re standing there and we’re kind of questioning things and the majority of the time we know what to do but we just need a bit more guidance. So sometimes I think maybe if the facilitator was able to kind of communicate with us throughout the simulation it might be a little bit more helpful.” Student 6

Student 6 further stated,

“So having them kind of encourage what you did right and then like, your giving you tips on what you could do better, but not just focusing on the negative made me more relaxed going into my next simulation.” Student 6

In the facilitator providing the students more support during the simulation and creating an environment whereby the students are psychologically safe to ask questions, it would increase their ability to take risks and ultimately increase their learning experience. How the facilitator responds to questions furthers the perception of psychological safety within the student, as it reinforces to the students that they are not being set up to fail but that the facilitators have the students learning and best interests as a mutual goal. Therefore, an important component of the dynamic interaction is that of communication. To create successful relationships and to provide effective feedback, consideration regarding the communication between the facilitator and the student is important. This was apparent as the students focused largely on the communication and feedback techniques of the simulation facilitator. There was a distinct link between how the students perceived their interactions with their facilitators in relation to feeling psychologically safe in the simulation environment.

The students thought they would benefit from having the concepts of psychological safety repeated during several points of the simulation, as students were not always clear on what psychological safety was. Despite the facilitators commenting on what psychological safety comprised of at the beginning of the simulation, the students still felt that they needed reminding of what a safe environment was, that mistakes are part of the simulation process and an explicit

definition of psychological safety. This would fit with the understanding that adults learn more effectively when they know the rationale.

Student 2 suggests how to improve the perception of psychological safety,

“I guess it would be just reiterating the point that okay this is sim, this is a safe place, no judgement, you can make mistakes here. You know, what happens here stays and we’ll just, we’ll talk about it after, we’ll debrief, we’re not here to judge you.” Student 2

And further echoed by Student 6,

“I guess just them reinforcing you know, like this is the place to make mistakes and this is a learning experience, and this isn’t us trying to test you or anything like that. Reinforcing those things...” Student 6

For students, who are feeling vulnerable about making mistakes within a professional, clinical setting, acknowledging that mistakes are expected and encouraged can reinforce a sense of safety among students and increase their ability to engage, take risks and learn.

Further, the manner in which a facilitator communicates in a simulation can either positively or negatively affect the students’ perception of psychological safety. Without effective communication between facilitators and peers, the students’ psychological safety was drastically affected. Through the students’ interviews, it was clear that effective communication between both the facilitators and peers was necessary to feel psychologically safe. The students identified

effective communication as positive communication where the language was not overly critical, judgemental or negative in nature.

Feedback refers to how the facilitators deliver feedback, and whether the feedback is positive or negative. Regardless of the intent of the feedback, the way in which it is relayed to the students could have implications on how the feedback is received by the student. The students identified that the intended message from the facilitators and the perceived message from the students often varies. Feedback may be interpreted negatively by the students if the facilitator focuses solely on the negative aspects of the students' performance in simulation. Reinforcing and communicating positive behaviours found in the simulation is equally, if not more important because the students mentioned that often it is the negative feedback that is heard thereby negating any positive comments. This also included the manner in which the feedback was delivered, through the facilitator's choice of words, body language and tone of voice.

Feedback was a strong indicator in my reflexive journals related to how psychologically safe a student felt. I wrote that,

"...if feedback is not given in a constructive manner, that it [feedback] itself can alter how students feel about simulation and psychological safety. That simulation would be equal to punishment or related to punishment..." Reflexive Journal

Student 1

When the students felt overly critiqued, they felt diminished and it resulted in a lack of confidence. Student 1 relayed the experience of a fellow student,

"...some of the critique [...] if you're hearing that, as a student, it kind of like diminishes your, and you could gently see her just kind of crawl into her shell [...] like if your sim doesn't go as well as you expected it too, and you're receiving

that negative feedback it can topple into the week [...] it kind of kills your confidence.” Student 1

From the conversations with the participants, communication was reiterated and brought up in various ways by each of the students. The students mentioned the way the facilitator engaged the students in giving feedback, both positive and negative feedback. Students also noted that positive comments received from facilitators bolstered their confidence and validated students' decisions,

“That positive look or like, “yeah, you did that well” and providing some like positive feedback helps kind of like butter you up I guess a little bit to when you do get the harder stuff...” Student 5

Students were attuned to how the facilitators communicated with them throughout the simulation process, from how the facilitator introduced themselves, interacted with them through the prebrief, helped them navigate through the active simulation and how they gave feedback in the debrief. From previous simulation experiences, the students had a distinct awareness of effective communication techniques. Therefore, slight variations in communication patterns impacted whether they felt more or less psychologically safe. This is essential for psychological safety because the feedback process is a major component to the learning experience. In order to have a successful simulation and gain knowledge from the experience, positive and negative feedback is necessary; however, the negative feedback must be presented in a manner that is constructive and encourages reflection and deeper thinking, rather than be judgmental or punitive. Student 7 describes their feelings during an instance where the facilitator was giving feedback and focusing on the negative feedback.

“...during debriefing I feel the way instructors kind of critique you is really, really nerve-wracking because I feel that there’s kind of the sandwich model [...] I feel lots of instructors don’t do that. They just go straight into it and [...] you feel really stupid and you – and then it affects your next experience and you don’t feel safe to do it anymore.” Student 7

Often, the students mentioned how the language facilitators used influenced their experiences and overall perception of psychological safety. Language and word choice can make a difference when students are feeling vulnerable in simulation. The students have performed in order to learn and may have made mistakes. When debriefing or communicating with the students, using fewer perceived judgement statements made it easier for the student to apply and accept the feedback, rather than feel discouraged or inept in their ability. Student 5 described such an experience,

“...starting off with something negative I think kind of makes you feel like, “oh no, I just don’t want to talk about this.” I feel silly for making that mistake and I should have known better [...] but when you get a [positive response] It just makes you feel like okay, I can talk about any mistake that I made now and its way more comfortable having acknowledge an not feeling made to be like stupid or something like that because you made a mistake” Student 5

It was clear that the students had expectations on how feedback could be through previous simulations or experiences and felt that instead of utilizing positive feedback methods to ease tensions and create a community of learners, the facilitators often were unduly critical in their feedback. This is an important consideration in the perception of psychological safety

because the purpose of simulation often times is to push students beyond their comfort zones to engage in experiential learning and reflection, however in this process of encouraging students, a natural consequence is to make mistakes. Students need to feel comfortable to make and to learn from mistakes rather than feel harshly criticized in their feedback. The way in which the facilitator communicated their mistakes then greatly influences the students' perception of psychological safety and experience in the simulation. Student 2 shared an example of the differences in attitudes among facilitators and the impact on the simulation,

“I felt that we could make mistakes, it wasn't a big deal, that we would just talk about it and they would ask, “ well, what was your rational for doing A, B, C instead of X, Y, Z?” [...] that one particular sim [...] I felt that, if we did make a mistake they would kind of say, “well, why did you do it that way, why didn't you do it this way?” you know a completely different attitude” Student 2

Non-verbal communication was identified both in my reflexive journals and by the students as an aspect that students felt that calmed them down and reassured them within the context of simulation and influenced the dynamic interaction among facilitators and students. Non-verbal communication was referred to by the students and in my reflexive journals as facial expressions, tone of voice and body language within the simulation process. These non-verbal communications altered the perceptions of students' psychological safety as they at times could be more powerful of a communication than verbal communication. Non-verbal communication may be interpreted negatively and can reduce the sense of safety in simulation as it could give the perception that what the students are doing or saying is undervalued or not important. Again, within an environment where risk taking, hypothesizing, and experimenting is encouraged,

feeling that one's opinion or voice is not valued through non-verbal communication can be deflating and discouraging. There were many examples of how students experienced non-verbal communication. Student 6, who shared the experience of a fellow student who experienced non-verbal communication that was interpreted negatively, expressed another example,

"...we had a student that messed up and it was just kind of the instructors look at each other and they're like wider-eyed and they start like kind of whispering back and forth to each other..." Student 6

Through this non-verbal communication, students may be left to feel discouraged to share, reflect or engage in the simulation. This would be the antithesis of what our purpose is in simulation and ultimately would affect student learning.

Students commented less on the communication with their peers compared to the communication with their facilitator. This was expected as the facilitator has a greater role in establishing and maintaining a psychologically safe environment. Students did however, comment on the requirement of providing formal written feedback to their peers following the simulation. Of note, the students mentioned the requirement of offering somewhat formal written feedback to the active simulation participants. One of the students addressed how receiving this feedback from their peers was largely a negative experience. It was felt that critiquing their peers and receiving critique in such a manner added an additional level of insecurity, stating,

"...after simulations, we are all given sheets of paper, and we're asked to grade each other, essentially, on how they think we performed..." Student 1

They go on to say,

“...so now you’re being forced to critique your peers, which is a whole new dynamic, that you may or may not want to explore, depending on your relationship is with that peer.” Student 1

Offering feedback in this manner is not necessarily conducive to creating a psychologically safe environment. When a debrief begins with negative comments, the students may naturally feel defensive of their actions. If the environment is meant to be experiential and for formative learning, then being asked to grade one another on performance turns formative learning into a form of summative learning. Once a simulation becomes summative, the dynamic in which it runs and is experienced changes drastically. Further, students may not know how to give constructive criticism; the observing students may list the missed components of the simulations rather than giving positive and negative feedback to their peers. This can further disintegrate any feelings of safety the students may have in the simulated environment and result in students disengaging, not participating and being defensive of their actions and decisions rather than reflecting on their decisions.

However, while some students found the formal written feedback off-putting, other students preferred the support and verbal feedback given by their peers. It was less intimidating, and they felt it was helpful in benefiting their own personal growth and helped with their own feelings of safety in the simulation. This was evident in the comments from Student 2,

“...to be empathetic and put them in someone else’s shoes. I think for the most part everyone gets really nervous going into sim, so I think its just to remember

that, you know, if you're in that situation you're quite nervous too. So not to be too hard on each other, and I think for the most part we are pretty good. We're mostly very supportive of each other going into sim." Student 2

The students associated the support with teamwork and camaraderie which helped lessen anxiety, reduce the pressure of performing and encourages them to take risks within the simulation environment.

"...just that support like oh yeah, I do think that's what's going on [...] we all kind of stick together throughout the three years, so you do kind of have that sense of camaraderie and support between each other." Student 5

"...that teamwork and working together so it doesn't feel like that extra pressure is on you." Student 6

The theme of dynamic interactions: "calms you down and gives you reassurance" between a facilitator and student was apparent within the student findings. Relationships are built and maintained with effective communication. The dynamic interaction between facilitator and student would not be possible without some form of relationship and communication. Students come with expectations of what and how it is to communicate effectively, and previous relationships can shape their experiences by increasing student's self-confidence, engagement, reducing anxiety and their overall their perception of psychological safety within a simulated context.

Theme 2: Student Self-Efficacy: “You got this; you can do it”

The second theme identified from the student findings was that of student self-efficacy or student’s belief in themselves and their ability to perform within the simulation. This came out as students inferred how their confidence or lack of confidence could impact their feelings of psychological safety. Students related their self-efficacy to their own knowledge and preparation. The more confident the students were through their preparation, research, and trust in their peers and facilitators, the more the students felt they could perform in the simulation. It was apparent through the student interviews that the students at times felt unsure of their decision-making ability or of their assessments, thereby decreasing their confidence and self-efficacy. With multiple students the statement of, “I don’t know”, “I was unsure” or questioning themselves with asking “did I [do the right thing]?” was repeated throughout the interviews.

Through the students’ transcripts, there was a linkage between decreased self-confidence and decreased self-efficacy and the perception of psychological safety. In that, when a student felt unsure or less confident in their own knowledge or abilities their perception of psychological safety was lower than those who felt confident in their knowledge or abilities. Often times, students would self-reassure themselves or provide their own encouragement through positive self-talk to help them overcome their fears and their own lack of self-confidence. Through my reflexive journals, I wrote that,

“Students own intrinsic need to learn and find out what they knew and did not know impacted how they prepared for the simulation, some may challenge themselves, while others may not...” Reflexive Journal Student 3

Student 4 articulated that they actively have to mentally prepare themselves and create their own psychological safety through reassuring them self, encouraging and increasing their confidence through positive self-talk,

“Okay, so when I think about psychological safety, I think it’s just for me to mentally have something prepared [...] its kind of like that little voice in the back of your head. It’s like okay, you know your stuff, you got this, you could do it.”

Student 4

While other students who possessed more self-confidence felt that each simulation was a challenge to be met and overcome. Student 3 approach to the simulation was different and felt that each simulation was a challenge,

“I feel a lot of confidence about that and I was very positive about going to the simulations [...] okay let’s take this challenge and this is a part of our learning process. So I think there is more positive approach and attitude towards this rather than hiding yourself.” Student 3

Students mentioned how their preparation or lack of preparation could affect their confidence in the simulation. This could then affect their ability to perform, feel comfortable and take risks in the simulation, thus affecting their self-efficacy and psychological safety in the simulation. The purpose of giving student preparation prior to clinical is to ensure the information they need to know for the simulation is at the forefront of their minds and the knowledge is easily accessible to them. When a student does not prepare for the simulation then it is unsurprising that they are more anxious or less confident with the upcoming simulation experience and this could then influence their overall perception of psychological safety. Student 5 associated being prepared with feeling more confident and safer in the simulation,

“It kind of gives you that like confidence that you actually know what’s going on with that patient. And it just helps you kind of be able to start processing like okay, this is what the complication could be and this is where it could go [...] I was on the right track [...] I definitely knew where to go with it, it was just kind of that I’m a student and I’m like always second guessing myself. But yeah, I think that definitely contributes to just feeling a little bit more safe in what you’re doing like you actually know what’s going on with people.” Student 5

As the student’s confidence increases with being prepared, so too could their comfort to take risks within the simulation environment. Therefore, preparation may influence not only a student’s confidence and anxiety, but also their ability to take risks, make mistakes and learn from the experiences. I wrote in my reflexive journal that students are more *“willing to take risks when they are more prepared”* and Student 6 associated being prepared with an ease in taking risks in simulation and being safe. However, if the student was unprepared for the simulation, they described themselves as,

“super worried because you have no idea what you’re walking into [...] which is only like making you more anxious [...] I just feel like overall the simulations where I had to do research and go in I felt much more prepared and more willing to take risks because I knew the risks I could take and with like being safe.”
Student 6

Comparatively, students expressed significant feelings of being unsure. That feeling of being unsure made it difficult for them to trust their instincts, assessments, knowledge and abilities. Student 4 articulated the varied questions that cause doubt and insecurity in their own abilities,

“...you know like they tell you, “we’re not testing you, this is just for your learning experience,” but it’s always in the back of your mind, “Oh, I’m being judged, I’m doing this wrong. Did I check the policy and procedures? Did I do the right steps for your checks? Is this the right medication? Did I do the right drug calculation? Am I even allowed to do this?” Student 4

Student 5 mentioned how their own lack of confidence in their assessments created doubt in their instincts and abilities,

“...Just in terms of the entire scenario and just unsure about the assessments that you’re gathering in the sense that like I remember they had IV fluid bags on the feet and it was just like okay, what am I even feeling here? I think that’s edema but I have no idea because it doesn’t feel right kind of thing. So I think in that sense like when it doesn’t seem realistic enough, it makes it difficult I guess to take that risk because you don’t really know what the data you’ve gathered is correct...” Student 5

The theme of student self-efficacy was the second theme for the student interviews. Students’ identified their confidence and preparation as contributing factors to their self-efficacy. Overall, from the student’s transcripts, two themes emerged, dynamic interaction and student self-efficacy. The next section will now describe the results from the facilitators’ interviews.

Facilitator Findings

The facilitator interviews yielded two major themes. The first theme is simulation design which contains two categories, modifiable factors which include design characteristics that educators have control over, and non-modifiable factors, which are the factors educators do not have control over. The second theme that emerged from the facilitator interviews was that of

trust. The facilitator themes and categories are presented in Table 4. This section will review the results of the facilitator's interviews.

Table 4: Facilitator Themes

Theme	Category
Simulation Design: "A Safe Bubble"	Modifiable Factors
	Non-Modifiable Factors
Trust	

Theme 1: Simulation Design: A "Safe Bubble"

Overall, the facilitators perspectives are that psychological safety is something that is created a "safe bubble" where the simulation design characteristics help to create and maintain psychological safety in simulation. In asking the question "How do you create a psychologically safe learning environment?" facilitators expounded on the different design characteristics of simulation. There were two main categories identified, the category of modifiable factors that are composed of the different simulation design characteristics and the category of non-modifiable factors which constitute for those factors that educators are unable to control or modify.

Category 1: Modifiable Factors. The category of modifiable factors includes those design characteristics which educators can alter or change to create a better simulation. This concept of design characteristics is supported in my reflexive journals as I state, "*the design and implementation is important*", however, noting that "*the facilitator role is becoming more of a major player than I thought*". There is a basic understanding that these design characteristics may influence psychological safety. The design characteristics can factor into the different phases of simulation, background, design, pre-simulation, prebriefing, active simulation or the debrief. Each of these factors relate to the facilitators perceptions of what is necessary to create

and maintain psychological safety in simulation. These design characteristics are all part of the design process and are established prior to the students participating the simulation itself.

Confidentiality had been integrated throughout the simulation program. All the facilitators - early in the interviews - brought up confidentiality. Facilitator 3 used the phrase “safe bubble” to describe acknowledging that the simulation and what happens during simulations remained confidential. The facilitators felt that if the students had a space in which they could make mistakes and learn from that constituted psychological safety. Facilitator 3 further described confidentiality and the analogy of the “safe bubble” stating,

“...I like the idea of the confidentiality that, you know, what happens in sim stays in sim. To give them that sort of that safe bubble that they can make mistakes and nobody’s going to find out about it, its not going to get back to their other instructors, their clinical instructors. That they can feel free to make mistakes and its okay because, in fact, their performance is not what’s being evaluated, it’s a safe space just to try things out and learn” Facilitator 3

Whereas Facilitator 4 believed that confidentiality was a key element of simulation, and that psychological safety was unable to be created without the implementation and upholding of confidentiality.

*“So the key elements would be things like the confidentiality, ensuring that its confident (?) and that everybody here is going to keep what happens here, here.”
Facilitator 4*

The facilitators further spoke of maintaining confidentiality and the impact this could have on students and their ability to perform in simulation. Without maintaining confidentiality, students may feel that their performance would be discussed among faculty. Facilitator 1 directly

addressed not talking about their simulation experiences or to speak with the student's clinical instructor regarding their simulation experience,

"...they know that we're not going to be talking about their performance. So that if they try something and then they screw up or whatever it is, it's not going to be reflected or talked about to their peers or to their clinical instructors [...] I want them to make sure that they know that I'm not going to be talking to their instructors..." Facilitator 1

Facilitators brought up the importance of trying to ensure the facilitator were not the same instructors who evaluated the students in their clinical practice. If that was the case, it could create a conflict where the student is now being put into a situation where their facilitator is now in a position of power over the student for a grade. Therefore, what is meant to be formative may now be regarded as summative even though no grades are associated to the simulation itself.

Facilitator 3 mentions how they attempt to prevent that power differential from occurring,

"We make sure that the clinical facilitator [instructor] that's facilitating sim is not the same one that is evaluating them in clinical. So they don't ever have that link between somebody who's evaluating them being also in sim. So we make sure that there's that disconnect between the two." Facilitator 3

Throughout the facilitator interviews, another design characteristic that was mentioned as important for students' and facilitators' perception of psychological safety was that of preparation. Preparation is a design characteristic that can be conceptualized in the background, design phases, and implemented in the pre-simulation phase of simulation. Most of the facilitators felt that the preparation the students completed would help with the overall psychological safety. The information that they would give the students in the preparation phase

of the simulation helped the students have an idea of what the simulation would be about, boost their self-confidence, knowledge and ease their anxiety prior to the active simulation. This would help the students feel better prepared for the actual simulation. Facilitator 1 spoke about how students could anticipate the simulation through the preparation,

“...if you think about it a little bit, you can kind of anticipate, there’s some foreshadowing there, you can anticipate what the scenarios going to be, so you can better prepare. I had a group so students who it was clear they hadn’t done any of that prep work. And so when they sat down [...] they then became flustered, because they weren’t prepared.” Facilitator 1

They continued to state that preparation could help ease their anxiety or feelings of insecurity prior to coming into clinical,

“I give them a lot of information that they can review ahead of time, so a mock chart, some policies and procedures and a brief rundown of the day, so that when they’re coming in they know what to expect. And as I said, I’m not really hiding too much about what’s going to happen in a scenario. So they should be able to prepare and hopefully that also helps them to feel a little bit more at ease, because they know what they’re coming into.” Facilitator 1

Another design characteristic that was identified by the facilitators was that of cognitive load and the level of the student. Taking the cognitive load and level of the student into account in the design and active simulation phase is essential. The level of the students could impact how difficult the simulation is or is not. The level of the student would factor into how the facilitator gave prompts and cues for the students in order to complete the simulation. If this is designed well, then it can influence the flow of the simulation and can also influence the successfulness of

the simulation. Whereas the cognitive load could impact the students' ability to think through the scenario and problem solve. These two characteristics are intimately related as one affects the other. Therefore, both could have an impact on the students' perception of psychological safety.

Facilitator 4 articulated this by stating,

“They may be having great thought processes in their head, that type of thing. And then finding out why, are they just overwhelmed, is their cognitive load too much, is any of that impacting them?” Facilitator 4

Facilitator 4 continued to say that each individual may have a different level of capabilities and potential cognitive load,

“...understanding how to build a simulation within their capabilities. Again though, you have eight individuals [...] but they're still eight different individuals [...] and not everybody's at the same level.” Facilitator 4

The cognitive load and the level of the student could also impact the active phase of simulation as the facilitator may alter the prompts and cues given to the learner based on these factors.

The fiction contract was briefly mentioned by several of the facilitators. A fiction contract is where facilitators encourage the suspension of disbelief for the duration of the simulation. The fiction contract is an understanding that educators are trying their best to create a realistic simulation given the resources and technology available. Facilitator 3 spoke about how implementing the fiction contract into their prebrief, and stating it prior to the simulation, students now are aware that it is safe to make mistakes.

“The other thing we've seen too is that fiction contact has really helped so we've been able to, we, as part of our prebriefing script we have a fiction contract that

we tell them about. And we've been able to of give them that ability to suspend their disbelieve and not feel like, you, we're trying to trick them which was somethings what they thought" Facilitator 3

Along with the fiction contract, consideration for the fidelity is required. The facilitators felt the fidelity increased students' ability to buy into the simulation, thereby providing greater opportunity to take more risks,

"The more they can buy into a scenario, so increasing the fidelity and the realism of it [assists them] because then they can fully immerse themselves in it easier. And so that allows them to take risks more" Facilitator 4

Objectives and expectations should also be considered during the design phase of the simulation but also needs to be reinforced during the pre-simulation preparation and the prebriefing phases of simulation. The facilitators felt that reasonable expectations and learning objectives were necessary from the beginning to create a psychological safety in simulation. Facilitator 4 described the learning outcomes related to simulation design stating that,

"...knowing the learning outcomes and setting it up so that person can be successful so you're not overestimating or underestimating them. And making sure all of your – making sure everything's set up so that it happens as it's expected." Facilitator 4

Facilitator 4 went on to say that reasonable expectations need to be set from the onset of the simulation process,

"right from the beginning [...] the only way a person's going to feel safe is if they are - have reasonable expectations and that's the learning objectives. You have to

make it reasonable for that person, so right from the planning stage.” Facilitator 4

Whereas Facilitator 3 described their interpretation of students understanding of the expectations,

“We expect mistakes, that’s okay. So that expectation that nobody’s going to be perfect in sim and that’s not what we’re expecting but this is where we’re going to learn from it, has really become something that I think has really improved the psychological safety” Facilitator 3

There are many considerations in designing the simulation experience, and through the facilitator interviews, there appears to be a pattern between the objectives and expectations, and the students’ perceptions of psychological safety.

The prebrief is the phase that occurs directly before the active simulation and was discussed by the facilitators as an important component that they felt increased the students’ psychological safety in simulation. The facilitators felt that the process of the prebrief helped calm anxiety, re-establish the expectations and objectives for the simulations and get the students prepared for the simulation by re-establishing that the focus of the simulation is learning and not performance. Facilitator 3 stressed the importance of the prebrief,

“...with all the prebriefings that we do, with all of the information that we give them about sim its always about the learning, not about the performance. And, again, having that safe environment to make mistakes. So that’s reiterated through everyone course that does sim, so it’s very much uniform throughout.” Facilitator 3

The prebrief sets the stage for the simulation, and this is where Facilitator 4 states that they are able to reiterate the important design characteristics to demonstrate to the students that everything is being done to encourage psychological safety in the simulation experience.

Facilitator 3 articulated this by stating,

“Psychological safety is so huge, I mean it just keeps going, it goes through the whole process from prebriefing and prep [...] to confidentiality and the fiction contract and saying, you know, I’m going to try my best but I’m human too and some of these things may not be as real as possible but I want you to play along with us” Facilitator 4

Prebrief demonstrates again how facilitators and developers of simulations need to contemplate how to conduct the pre-simulation and incorporate the different design characteristics into the simulation design. This is done to encourage the perception of psychological safety in the simulation environment for the students.

Finally, the debrief is another example of a simulation design characteristic that the facilitators spoke about impacting the creation of psychological safety in simulation. Within the debrief, facilitators can assess how the students are feeling and through their interactions can identify whether the students are perceiving a safe environment and are feeling psychologically safe.

“ Often times during the debrief there’s a lot of laughter or you know just revelations or they’ll get to a place where they seem to be feeling good [...] you could see it in her face and even some of the comments she was making [...] so that was very clear to me that they were not feeling particularly safe [...] so I think you can tell when they’re not feeling ready to engage in sim” Facilitator 1

It is also during the debrief where the facilitator can re-establish or reinforce the psychological safety in the simulation through their communication and bring it full circle back to the learning objectives and expectations.

“So the debriefing part is huge [...] we can kind of reassure them [...] we’re going to figure out okay how can we do this better the next time [...] so reassuring them that there are supports around them. So the debriefing is huge for validation, support, just extra knowledge” Facilitator 2

While debriefing it of itself is very important, the facilitators focused more on other aspects of the simulation process when discussing psychological safety. The facilitator’s perspective aligned more with the aspect that psychological safety needs to be present in order to have an effective debrief.

“The debrief contributes to psychological safety in the sense that you’re tying it all back together and you’re saying it’s the thank you for putting the risk in, now let’s look at what that risk brought you in terms of learning [...] I’d say that debriefing has to be psychological[ly] safe but that had to be there way before there. And it’s almost this is what you’re reaping from having, from being willing to risk and trust and how that safety present now, let me know how that felt and what you feel you learned” Facilitator 4

It is apparent from the facilitator interviews the debrief phase is instrumental in ensuring a psychological safe environment for the students. Overall, the theme of simulation design with the category of modifiable factors are important and necessary as perceived by the facilitators. The modifiable factors are foundational for the simulations the students participate in.

Category 2: Non-Modifiable Factors. An essential category that came from the facilitator interviews were that of the non-modifiable factors. The category of non-modifiable factors evolved from understanding the facilitator data and my reflexive journals as within my journals I kept referencing towards an “*unknown component*” which I had yet to name and how facilitators and students,

“...bring their past experiences to simulation and that each have to be open and willing to learn from each other, otherwise, the simulation will not be successful and neither will psychological safety be present...” Reflexive Journal Facilitator 4

The non-modifiable factors are what simulation educators or facilitators are unable to predict and are considered to be outside of the facilitators’ control. The facilitators felt these non-modifiable factors greatly impacted the students’ perception of psychological safety. These non-modifiable factors include, the individuality of the student and the students background or history in previous simulations.

Facilitator 3 identified the individuality of the students. However, within multiple reflexive journals, I noted how the facilitators mentioned individuality of the students and how

“...what feels safe to one person may be different for others. The individual brings other aspects to the forefront. It is a hard thing to judge, what any of us perceive as safe may not mean the others perceive the same thing...that the perception is completely individual...” Facilitator Reflexive Journal 2

The facilitators went on to assert that the perception of psychological safety was as individual as the person themselves. That each student brought non-modifiable factors to the

simulations and as such their feeling of psychological safety may be influenced by their own history and experiences,

“...I wonder if they’re not quite as psychologically safe in their sim as maybe in others. And I wonder if psychological safety is not the same for everybody, it really depends on their background, what they come with, whether or not they trust us to actually be, you know, true to our word that we’re not going to tell anybody that it’s not going to impact their future learning.” Facilitator 3

The facilitators spoke about the students’ simulation background and the how the amount of exposure to previous simulations during their nursing education may play a role in the students’ psychological safety,

“I think exposure to sim, so right from day one they’re seeing that sim is not this big scary thing that we’re doing to them. That this is, that we truly have their best interests in mind when we do this.” Facilitator 3

Where Facilitator 4 also ponders each students’ individuality, however they considered how their personal integrity, culture and past may influence their psychological safety,

“I don’t think you can make somebody feel psychologically safety because part of them is in there and that’s their whole personal integrity and their, you know, they bring their past, their culture, everything with them. And so its – it impacts on it. So we can make it as safe as we can but those types of things come up.”
Facilitator 4

While the facilitators did not comment on their own background or individual characteristics, what was discussed was their demeanor, their approach to the students, and the non-verbal communication. While the individuality of the facilitator was not mentioned, the

same non-modifiable factors may hold true for the facilitator; however, what was brought up within the facilitator transcripts was that of facilitators' demeanor and non-verbal communication, their overall approach to the students. This could be interpreted as their own facilitation style or individual approach to facilitation.

Therefore, the facilitators' demeanor and non-verbal communication was something that they felt contributed to a large degree to the students' trust of the facilitators and feelings of psychological safety in simulation. This could start immediately when the students enter the simulated environment,

"I think it's also partially to do with the tone that the facilitator sets. So I do try to be welcoming and relaxed, so to help them feel a bit relaxed, but then I also emphasize the need for confidentiality and respect between participants."

Facilitator 1

Communication related to feedback either within the simulation or in the debrief, and non-verbal interactions were another important concept that was brought forward from the facilitators' transcripts. The way in which the facilitator communicated their feedback to the students, Facilitator 2 gave some examples of negative feedback,

"...not berating the students if they do something wrong, that they kind of know that fact that no matter what they do it's a rehearsal kind of thing. That there's no negative outcomes that can come of this." Facilitator 2

Facilitator 2 discussed reassuring the students when giving feedback to them,

"...if we're saying at the beginning you're not being judged, you're not being marked, just go with it, then we can't be going behind them and cutting them off at the knees." Facilitator 2

Facilitator 3 addressed debriefing and how the approach towards debriefing, where the majority of feedback is given and how this feedback could impact the student's perception,

"...if the debriefing is sort of housed in an air of wanting to make it for their learning, to not be punitive, to, you know, simply try to figure out why they did this and trying to change their thinking to why doing it a different way would be the better way, giving them some sound rationale. I think that really contributes to it. If debriefing is very punitive and very fact-based and very rigid, I think the students feel very persecuted because, you know, they were told that you didn't do this...versus figuring out why they did it that way and figuring it out a better way to do it." Facilitator 3

The modifiable and non-modifiable factors play a large role within the context of simulation and psychological safety. While the modifiable factors tend to be easy to control and manipulate to the purpose of the program, creating psychological safety may require some participation of the participant themselves. This was evident with the non-modifiable factors and how the students' individuality, past experience/background with simulation and the facilitators' own approach and facilitation style; these could greatly influence their own perception of psychological safety.

Theme 2: Trust

The second theme that appeared from the facilitators' transcripts was trust and how an environment of trust is created by the facilitator. The facilitators felt that trust was created through how a facilitator communicated with the students verbally, through feedback, or non-verbally, through their body language and facial expressions. My thoughts from my reflexive journals kept referring back to the facilitators and how,

“...trust with the facilitator and student is very important, this brought my thoughts towards the dynamic interaction between facilitator and student and how key that is – when that interaction is not present or absent how that can impact psychological safety...”. Reflexive Journal Facilitator 1

The importance of consistency among facilitators in relation to their approach with students during the prebrief, active simulation and debrief also came up as factors that influenced perceived trust among students and feelings of psychological safety. While the facilitator did not discuss their role in detail during the interviews, aspects of facilitator behavior were brought up. This was regarding how the facilitators' behaviour could impact students' perception of psychological safety. The facilitators discussed that the message sent to the students' needed to be consistent among facilitators. The role of the facilitator is felt to be key to the students' perceptions of psychological safety.

“...key elements are the facilitator, you can't get away from the person who's in the simulation being pivotal to it because not only is the design important but if you really look at it its setting the environment up so that you – its really, its adult learning principles, its treating the learner with respect and that they have integrity and that you're going to learn as much from them as you're going to learn from the experience that you've set up for them” Facilitator 4

From the facilitator's interviews, they felt that non-verbal communication was also a significant factor for psychological safety. The facilitators indicated that body language and the overall demeanour of the facilitator can impact the students' feelings of psychological safety.

Communication in its different forms was brought up by all the facilitators and influenced trust among the facilitators and the students. The need for a facilitator to validate,

support and reassure students is interpreted by the facilitators as a contributing factor in students' psychological safety in simulation. As was the need for facilitator consistency and to reiterate comments about the safety of the environment. The intent of Facilitator 1 was to be supportive stating,

"If someone does try something and it doesn't work out the way they wanted to, we're maintaining that support, we're not going to belittle or tease someone or punish them." Facilitator 1

Facilitator 2 used effective communication techniques to reassure students of their feelings,

"...it's like reassuring them that again your feelings are normal, they're okay, don't be ashamed of the fact that you got emotional with what's going on there." Facilitator 2

Facilitator 4's communication approach was to be honest and open themselves with the students and to buy into the simulation experience as a facilitator,

"I have seen facilitators who have done the fiction contract, done the confidentiality but they got an edge about them because they're not necessarily open to a learning experience themselves or don't feel – or like being on the higher ground than the students. So, to me it really has to do with communication and people's willingness to be immersed in a simulation and that's both for the facilitator and the student." Facilitator 4

The facilitators also felt there was a relationship between trust and deception or mistrust. In that, if trust is not developed between the facilitator and student through communication, then the student may not feel comfortable taking risks or speaking up,

“...they’re not going to feel comfortable in the situation at all and it’s going to be very disjointed. They’re going to be like guarding what they’re saying, what they’re doing and as opposed to actually being in the role [...] if they’re not trusting us, then it’s kind of like “oh this is a trap, what’s my answer supposed to be”.” Facilitator 2

Additionally, if the students were not prepared well enough to suspend disbelief, then any of the discrepancies between the simulation and reality may be perceived as mistrust and deception.

“...we’ve been able to sort of give them that ability to suspend their disbelief and not feel like, you know, we’re trying to trick them which was sometimes what they thought, when clinical didn’t match sim it was that we were trying to trick them. And that I would assume, made psychological safety decrease because they feel like they’re being manipulated or tricked.” Facilitator 3

Communication related to facilitator support, prompts and cues was also brought up among the facilitators. Facilitator 2 mentioned that they interpret student body language and facial expressions when facilitating a simulation to help guide them to give prompts and cues within the simulation,

*“...their face goes blank and they don’t know what to do at a that moment [...] so as a facilitator you could cue them as in, you know, it depends on what’s going on in the scenario but you could prompt them in terms of getting them going again just to start those wheels going so they don’t lose confidence in themselves.”
Facilitator 4*

The facilitator interviews showed that the facilitator themselves and communication is important in fostering trust among the students and facilitators, and that the facilitator themselves must be willing to learn. Through the use of preparation, support, prompts and cues the facilitator can impact students' perception of psychological safety in simulation.

Summary of Findings

This chapter first described the demographics of the study participants. The students consisted of six females and one male aged 19-47 years with a highest education being a bachelors' degree with one having a certification. The facilitators consisted of four females aged 35-48 years. All but one facilitator held a graduate level degree and half of the facilitators participate in simulation education as a facilitator, developer and operator. All 11 participants participated in semi-structured one-on-one interviews on their perceptions of psychological safety.

Multiple themes for each group of participants emerged. For the students, two major themes came from their interviews. The themes that emerged were dynamic interaction and self-efficacy. The facilitator interviews had two major themes, simulation design which was further divided in categories of modifiable and non-modifiable factors and the second theme of trust.

Both the student and facilitator groups were open and honest when discussing their perceptions and how they viewed psychological safety in simulation. The aim of this study was to provide important interpretive description of the complex clinical phenomena of psychological safety in the context of simulation in nursing education, therefore, there was sufficient data in the number of interviews conducted to come to these results. The results of this study have provided insights otherwise unknown from prior research. The following chapter will explore these insights in relation to the current literature.

Chapter 5: Discussion of Findings

This chapter will present a discussion of the research findings of students' and facilitators' perceptions of psychological safety in simulation. Insofar, the analysis of both the students and facilitators had been independent of one another and this chapter will merge the two groups to compare their perspectives in relation to each other and the current literature. This chapter will conclude with the study limitations, and implications for practice and future research.

Perspectives of Psychological Safety

Looking through the lens of the NLN Jeffries Simulation Theory, the findings of this study will be discussed along with pertinent literature. The NLN Jeffries Simulation Theory is comprised of four main categories: background, design, the simulation experience and outcomes. The simulation experience encompasses the facilitator and the participant. This study contributes to the understanding of the perception of psychological safety in relation to both students and facilitators. The discussion will follow the framework of the NLN Jeffries Simulation Theory starting first design characteristics, then moving to the simulation experience with a focus on the facilitator and participant, and finally outcomes. The student and facilitator findings were analyzed separately because while they were similar, they did not have the same findings. The facilitators perception of psychological safety primarily stemmed from the background and design of the simulations as well as the context from the NLN Jeffries Simulation Theory; while the students perceptions focused more on the dynamic interaction between the student and facilitator as well as the simulation experience. In fact, the interviewees used terminology which allowed for easy application of this framework for the discussion chapter.

Design Characteristics

The NLN Jeffries Simulation Theory first identifies the contextual factors as the foundation of the theory. To that end, the context of this study is within an academic environment and is a formative learning experience for the students. The next concept within the theory relates to the background and the design. The NLN Jeffries Simulation Theory describes the background as focusing on the goals of the simulation and specific expectations which includes the learning objectives, identifying fidelity, constructing prompts and cues, roles, prebriefing or debriefing activities (Jeffries, 2016).

One of the major themes within this study is that of simulation design. In this study, facilitators felt strongly that the design characteristics were important in creating the psychologically safe environment for students. Preparation came up from both the students and the facilitators. The students had to formally hand in their simulation preparation prior to the simulation and felt that the preparation helped them to foresee and research the patient they would have in simulation. Students felt that this helped with their overall comfort in the simulation. Therefore, providing preparatory material decreased students' anxiety but did not eliminate it completely (Gantt, 2013; Sharoff, 2015; Tyerman, Luctkar-Flude, Graham, Coffey & Olsen-Lynch, 2019). This is consistent with the students' comments that the preparation helped them feel more comfortable for the future simulation but did not eliminate their anxiety towards the simulation. Whereas facilitators' perception was that students who were well prepared were more comfortable in the environment and willing to take risks in simulation. Prepared students also were more likely to interpret mistakes as teachable moments. Aligning with previous findings, this study showed that when students were prepared for simulation, they were more confident and satisfied with the simulation learning experience (Tyerman et al., 2019).

Contrarily, when students were not as well prepared in this study, they often got defensive if a mistake was made in the simulation environment.

Further, facilitators in this study felt that an effective prebrief that included reviewing the objectives and expectations, a fiction contract, and the confidentiality clause prior to the simulation helped students feel more prepared and comfortable in the simulation itself. This is congruent with the literature on prebriefing (Chamberlain, 2017; Chmil, 2016; Page-Cuttrara, 2015). Roh, Ahn, Kim and Kim (2018) found that students who received a structured prebriefing prior to simulation showed higher team psychological safety. Whereas, Sharoff (2015) found that prebriefing engaged and empowered participants in their learning experience. The student participants in this study mentioned that having the pre-learning material and prebrief helped them feel confident in the simulation environment which positively impacted their perception of psychological safety. It is for these reasons that there is a need to attend to the simulation design to ensure the psychological safety of all participants. Overall, these results are congruent with what is known in the literature regarding simulation design and can greatly impact how a simulation is run as well as participant engagement, participation and psychological safety (INACSL Standards Committee, 2016c). Therefore, an improperly designed simulation, which would be one that does not have any objectives, expectations, fiction contract, preparation, prebrief or confidentiality clause, can create a suboptimal simulation and weaken the overall simulation experience (INACSL Standards Committee, 2016c).

Confidentiality was another design characteristic which the study participants, both students and facilitators, felt was essential in the creation and maintenance of psychological safety. The facilitators believed that there needed to be a level of commitment to confidentiality among facilitators and students to help students feel psychologically safe within the

environment. The facilitators felt that it was important to notify students of the verbiage “what happens in sim, stays in sim” in relation to psychological safety. However, the students felt that although those sentiments of confidentiality were expressed, there was a mistrust in the believability and actuality of those words. Students in this study were very concerned that their clinical instructors or other educators would hear of their performance in simulation, which would in turn negatively affect their clinical experience or their academic progress. Rudolph et al. (2014) states that transparency about “what and with whom information” (Rudolph et al., 2014, p. 341) regarding the simulation will be shared will help build trust. In this study, students felt that the “with whom” is important as there is a fear of their performance being disclosed with their clinical instructors. Therefore, explicitly outlining the confidentiality, discussing what and with whom information will be shared will begin the establishment of psychological safety. However, Rudolph et al. (2014) warns that confidentiality alone is not enough to inspire trust among participants. Turner and Harder (2018) expand on this sentiment, stating that confidentiality among facilitators and participants promotes mutual respect, therefore that is considered an antecedent in establishing a psychologically safe learning environment.

While there is no doubt that debriefing is an integral part of, or the “cornerstone” of, simulation learning (Abatzis & Littlewood, 2015; Kim & De Gagne, 2018; Reirson et al., 2017; Waxnonis, 2014), the students and facilitators in this study attributed a greater import to psychological safety than to the debriefing, as without psychological safety, the debrief would not be as valuable and reflective of a session. While debriefing was addressed by the study participants, it was not considered a main component in the simulation to create, promote, or maintain psychological safety. Instead, more emphasis was put on the facilitator and their communication, interaction and relationships with the participants and the importance of

psychological safety than the way in which the simulation was debriefed. Without psychological safety, the students did not meaningfully engage in the simulation or the debrief session, further supporting May et al. (2004) and Frazier et al. (2017), assertions that psychological safety promotes engagement. However, the students felt that the facilitator influenced their psychological safety and their learning based on their communication as oppose to the debrief itself.

Simulation Experience

The NLN Jeffries Simulation Theory characterizes the simulation experience as being within a supportive environment wherein trust can be developed between the facilitator and the participant (Jeffries, 2016). Jeffries (2016) asserts that the both the facilitator and participant share a dynamic interaction and can affect the simulation experience. Jeffries (2016) highlights attributes of the facilitator, identifying that facilitators may need to respond and adjust feedback, thereby further building trust during the active simulation in the form of planned and unplanned prompts and cues (INACSL Standards Committee, 2016b; Jeffries, 2016; Wickers, 2010). Feedback may also need to be adjusted during the debrief, based on participant needs and level of the learner (Bowe, Johnson, & Puscas, 2017; Jeffries, 2016). As such, from both the student and the facilitator perspectives in this study, the facilitator and the participant were noted as significant factors in overall perception of psychological safety in simulation.

Facilitator. One of the significant themes that came from both the student and the facilitator interviews was the magnitude in which the facilitator can impact a simulation and the students' perception of psychological safety. In the literature, the facilitator, their contributions and impact on the experience are well documented (Cantrell, 2008; Jeffries, 2016; Luctkar-Flude et al., 2017; Rudolph et al., 2014). The way in which the facilitator communicates has been

discussed (Cantrell, 2008; INACSL Standards Committee, 2016b; Turner & Harder, 2018) and can influence the outcomes of the simulation, the relationship between the facilitator and student and alter the team dynamic within a simulation.

Intrinsic to relationship between the facilitator and the student is trust. The students felt that having a previous positive relationship with the facilitator helped ease students into a non-threatening environment of simulation thereby increasing student psychological safety. In fact, throughout the interviews both students and facilitators identified trust between the facilitator and student as integral in the creation and maintenance of psychological safety. As trust is an implicit antecedent for psychological safety (Turner & Harder, 2018), it is placed at the center of the dynamic interactions between student and facilitator. Without trust, there is no relationships, risk taking, collaboration, or learning which is in essence psychological safety itself (Turner & Harder, 2018).

Communication came out as a commonality among the facilitator and the student interviews. This common alignment further demonstrates how communication in every form can influence students' perceptions of psychological safety. Luctkar-Flude, Wilson-Keates, Tyerman, Larocque and Brown (2017) concluded that student learning outcomes and satisfaction was influenced by facilitator methods. However, in this study, it was noted that facilitator methods could positively or negatively influence the simulation and the sense of psychological safety among the students. How the facilitator led both the pre-simulation phase and the active simulation phase and communicated throughout was deemed important for the participants. Cantrell (2008) noted that the demeanour of the facilitator is an influential component. This can include how the facilitator communicates with the students, and as noted in the interviews, their overall body language, tone of voice and the non-verbal communication that comes from it.

Additionally, Wickers (2010) identified that the way in which feedback is given can precipitate the feelings of positivity or negativity. To that end, student participants also identified that receiving reassurance, validation and support from their facilitators via open communication impacted their sense of psychological safety. This was supported by Reiersen et al. (2017) as they identified two patterns related to the way facilitators promote psychological safety: the use of open-ended questions, and the use of reassurance and go on to say that students' use of humor could help reduce tension. One facilitator participant in this study found the use of humor with their students helped ease the tension and used it in their approach with their students.

Kolbe et al. (2019) describes non-verbal communication which is that reflected and identified in this study's participants. Contempt, domineering, and defensiveness was identified in the students' and facilitators' transcripts as impairing the students' relationships with the facilitator, thus preventing the formation of trust. The students described negative non-verbal communication which Kolbe et al. (2019) describes as contempt; which could include eye rolling, or sarcasm. Whereas, domineering could be described as glowering, patronising and invalidation of content, and body language such as arms folder across their chest could be considered defensiveness (Kolbe et al., 2019). It is also these demonstrations of contempt, domineering and defensiveness that were identified by both facilitator and students as preventing the ability to take risks within a simulated environment or feel psychologically safe. Instead, the students desired an approach from the facilitator that communicated a willingness to learn from and learn with the students in the simulation. Kolbe et al. (2019) identified that leaning forward, making culturally appropriate eye contact and head nodding could be non-verbal attention that would have a positive effect. Therefore, facilitator body language could positively impact the

students and help create the environment of safety and perception of psychological safety within the students.

The support felt by having a positive relationship and positive communication helped alleviate some of the anxiety felt with simulation and increased their ability to take risks in the simulated environment. The support of the facilitator is consistent with Nielson & Harder's (2013) claims that faculty support and coaching is critical to student support in reducing anxiety in simulation. However, it does appear through this study that what facilitators are communicating, in terms of objectives, expectations and confidentiality as a few examples is not being adequately received in a manner in which facilitators intended. This is apparent through the repetitive nature in which students wanted content repeated or notification of being in a psychologically safe environment to be stated. Similarly, with Kolbe et al. (2019) they identify that establishing a psychologically safe environment prior to debriefings resembles the process of creating the environment where it relies on clearly communicating how we are intending to create this for the students. This way, if we are forthcoming in our goal of psychological safety and transparent in the steps in which we are committing to our goals, objectives, expectations and confidentiality, then students may understand and feel safer (INACSL Standards Committee, 2016e). Students in this study are stating they do not know or are unsure of what has been done to ensure their psychological safety, therefore, as educators we need to be transparent and explicit in our explanations. This can begin with giving students the definition of psychological safety and explaining how it has been embedded throughout the simulation process and reinforcing this throughout.

Finally, stress was another common thread in the student and facilitator interviews. However, what became apparent from the students' interviews was that the stress was in relation

to another unknown factor. This factor in large part was the facilitator, or the unknown of the simulation, while others included not feeling confident or competent in their own abilities, or not feeling prepared. This further reinforces that the qualities of the facilitator and their interaction with the students, the power differential and guidance from the facilitator remains essential (Turner & Harder, 2018). Indeed, this study suggests that the role of the facilitator play an even larger, more pivotal role than anticipated.

Furthermore, this study reinforces the relationship between psychological safety and stress/anxiety, in that, psychological safety can still exist within a stressful environment. The students in this study expressed feeling uncomfortable and anxious within the simulation but remained open to learning and taking chances. This supports Cantrell et al., (2017) assertion that positive stress could motivate learners for high performance; further, this reinforces the notion put forward by Ganley and Linnard-Palmer (2012) that a level of anxiety could still be beneficial to simulation participants. Whereby concluding that psychological safety instead mitigates feelings of insecurity and the inability to make mistakes while the stress and anxiety would still remain in varying degrees. Additionally, psychological safety and the students' understanding of psychological safety; that they will not be judged or punished for making a mistake within the simulation environment, could turn negative stress into positive stress thereby facilitating positive learning outcomes.

Participant. The participant is described by Jeffries in the NLN Jeffries Simulation Theory (2016) as one whose attributes also affects the simulation learning experience. These attributes include level of anxiety and self-confidence and preparedness for the simulation (Jeffries, 2016). These characteristics of the participant can also be described as student self-efficacy. In a concept analysis on self-efficacy, Zulkosky (2009) summarizes Bandura's self-

efficacy as the “difference in how people feel, think, behave, and motivate themselves” (Zulkosky, pg. 94, 2009); the author goes on to describe that “a low sense of self-efficacy is associated with stress, depression, anxiety and helplessness” (Zulkosky, pg. 94, 2009). Whereas, strong self-efficacy can increase a person’s self-confidence and success by their ability to take on new challenges and tasks (Karabacak et al., 2019; Zulkosky, 2009). Self-efficacy is often associated with simulation as it has been shown to affect confidence, performance and success (Karaback et al., 2019). This was found to be true with the students’ interviews.

Within this study, the students and facilitators identified that student self-efficacy was a major factor in the perception of psychological safety. Students felt that their preparation impacted their ability to feel confident in their own assessment abilities, critical thinking decision and ability to progress through the simulation itself. Whereas, feeling “unsure” or “not knowing” hindered their motivation to participate, decreased their confidence and they felt an increased anxiety in the simulation. In simulation, self-efficacy has been researched (Garner et al., 2018), however the outcome of such research tended to focus on the outcomes of the simulation in relation to teaching (Garner et al., 2018); maximizing the benefits of simulation (Kim & Park, 2018) and student outcomes such as clinical reasoning, knowledge and skills (Kim & Kim, 2015). Additionally, Chamberlain (2017) states that prebriefing increases the students’ perceptions of confidence and promotes learning therefore, the confidence gained from these activities can increase students’ sense of psychological safety. Notwithstanding, Roussin, Larraz, Jamieson and Maestre (2018) concluded that the degree and quality of learner participation is largely influenced by participants self-efficacy as well as their perception of psychological safety which is congruent with the perceptions of the students within this study.

However, the non-modifiable factors that the facilitators' identified in their interviews makes an important distinction regarding what each student brings to the simulation experience. This includes a myriad of factors that can positively or negatively impact their own psychological safety. The factors the students identified were their own confidence, their ability to manage their anxiety, their relationships with their peers and/or the facilitator, whereas the factors that the facilitators identified were the students' individual learning style and previous experience and exposure to simulation. This study therefore supports Wickers (2010) assertion that a person's individual traits could impact their own perception of psychological safety. Identifying these factors can impact how the students respond, feel, or perceive psychological safety in the simulation environment. Within this, there are the students' internal motivation to, and willingness to, learn from the simulation and the facilitators' external influence creating the facilitator and participants' dynamic interaction that is mentioned in the NLN Jeffries Simulation Theory (2016).

There is little literature that describes the student as an individual in learning in simulation. Turner and Harder (2018) mention that personal confidence may be intrinsically needed for a learner to feel psychologically safe; whereas Newman et al. (2017) mention the individual in the context of team differences with psychological safety. More recently, Kolbe et al. (2019) discusses psychological safety at an individual level. They include three characteristics needed for psychological safety in the individual; a proactive personality which is the ability to not allow external forces to alter behavior; emotional stability which means the ability and self-assurance to feel calm, relaxed and stable; and finally, a learning orientation which is described as the internal motivation to develop new skills and constantly learn and grow (Kolbe et al., 2019).

Proactive personality and learning orientation are reminiscent of the aforementioned Bandura's self-efficacy for self-motivation. Of note, these articles, and many other related to psychological safety focus on how to create and maintain psychological safety or enhance psychological safety, within a simulated context and are therefore, reviews of literature (Newman et al., 2017), concept analyses (Turner & Harder, 2018) and expert opinion (Rudolph et al., 2014; Kolbe et al., 2019) and are not informed by original research seeking the perceptions and understanding of students or facilitators.

Through this, what has become clear from the student and facilitator interviews is that psychological safety is something to be created through the extensive design and background phases of simulation. However, despite educators attempting to imbed psychological safety within the design characteristics of the pre-learning, prebriefing, active simulation, and debriefing, the student as an individual may still not feel entirely psychologically safe. Therefore, as educators, we have the opportunity to change the students' psychological safety based on how we respond, communicate and interact with the students in all phases of the simulation process, and impact the students' overall trust in the facilitator. While psychological safety is for all participants, including facilitators', the facilitators will always be in a position of power over the students, so it makes it even more imperative that the students feel psychological safe.

In this study, the students spoke of their peers and the influence their peers had to their perceptions of psychological safety. In the literature, peers are often referred to as working in teams or groups ranging from health care teams to organizational groups and psychological safety is referred to team psychological safety. Aranzamendez et al. (2015) identified that psychological safety enhanced the team's ability to learn. The students' individual psychological safety was affected when the facilitator was unknown to the students, however, the same does

not hold true for their peers. While knowing their peers within the simulation experience would be desirable for a higher sense of team psychological safety, the results of this study show that students had a sense of comradery, where they supported, encouraged and felt comfortable with one another despite their previous relationships. The comradery and teamwork made way for an overall student comfort of shared experiences their team members/peers which in turn helped increase their risk-taking ability and provided a stronger and richer learning experience (Edmondson, 1999).

Outcomes

Jeffries (2016) separates outcomes into three categories, that of system, patient and participant. For this study, the focused outcome is that of a psychological safe environment. There are multiple factors and components that are necessary for the creation and maintenance of psychological safety. The design characteristics are key in that they are the foundation of any simulation experience and include the learning outcomes and expectations along with leveling the simulation according to the level of the student (INACSL Standards Committee, 2016c). The facilitator, the trust and the dynamic interaction between the student and facilitator are important factors in psychological safety.

Additionally, the facilitator's communication style and approach with the students can influence trust and relationships with the students. Another outcome of the perception of psychological safety is that it is possible to have a high stress and high anxiety simulation yet also have psychological safety, as positive stress can be beneficial to learning and performance (Cantrell et al., 2017; Ganley & Linnard-Palmer, 2012). The level of stress and anxiety experienced by the students must be attended to carefully because an excess can be detrimental to student learning (Neilson & Harder, 2013). However, the non-modifiable factors greatly

impact the outcome of psychological safety as previously discussed. The student's own confidence, background, learning ability, experience with simulations and ability to maintain their own anxiety can impact their perception of psychological safety.

Limitations

There were several limitations to this study. This study used convenience sampling which Thorne (2016) states could result in commonalities about a phenomenon and could potentially alter the researchers' perceptions, and as a result, could affect the credibility within the context of the study (p. 98). Additionally, convenience sampling could produce participants who had extreme feelings which could also bias the results. Thorne (2016) asserts that it is important for researchers to be mindful of their own perspectives in their study, as my experience in simulation and with psychological safety could have biased me towards the data thereby creating a limitation in the study. By using a convenience sample, there may have been a response bias, as those participants who volunteered for the study may have had either very strong positive or negative experiences they wished to share. This study had a small sample size, with seven students and four facilitators. There may have been more emerging themes that were not discovered with the small facilitator sample size. Furthermore, this study was conducted at a single site, which limits the generalizability of this study. The students and the facilitators in this study were not paired together, so the students may or may not have had a simulation facilitated by one of the facilitators interviewed. The techniques of each individual facilitator may affect the student's opinions and perceptions of psychological safety in simulation. The students were at the end of their school term, therefore, this delay in timing from when they participated in the simulation and data collection may have skewed the interviews responses. The end of the term

also made it difficult to recruit both students and facilitators as both groups were in the middle of preparing for their final exams and completing the term.

Implications for Practice

Some of the implications for practice include being explicitly clear through written and verbal communications with students about how the simulations are designed, how they are levelled according to the students' abilities and the purpose, objective and importance of the preparation and pre-learning material. This could be written as a pre-learning document which the students need to review prior to coming to simulation and should include the definition of psychological safety. All of this information could be shared with the students either written or verbally prior to each simulation.

Additionally, this information can be reiterated during the orientation sessions with the students. Reiteration prior to each simulation may be required to ensure students have an understanding of psychological safety during all simulation experiences. Transparency can include having educators explain to students the simulation process, and to clarify the facilitators' role, the students' role, and any other actors or faculty who may be involved in the simulation experience. This should be done prior to beginning the simulation. Additionally, further explanation related to the differences between stress/anxiety and psychological safety could also help students have a better understanding of the simulation process. Finally, educating the students that it is important for them to communicate with faculty if they feel that their psychological safety has been compromised, and have a safe outlet for them to voice these concerns.

Faculty development regarding psychological safety is also recommended. Since this study supports the significance of the facilitator affecting psychological safety, continuing

education regarding facilitation methods is essential to ensure the use of stratagems such as the prebrief checklist are consistently used to send the same message to the students. Peer review provided by experienced facilitators or those who have taken formal simulation training can assist faculty in developing facilitation skills that promote psychological safety. Having a formally trained simulation educator providing peer feedback allows for continued feedback to allow for facilitator growth and development.

Implications for Future Research

With the inclusion of this study, there still is a gap in the research around student and facilitators' perceptions of psychological safety. With this study, we now have empirical knowledge to reinforce what psychological safety is, how students perceive it and how facilitators believe they could create such an environment. Therefore, future research could look at how an enhanced psychological safe environment contribute to enhanced learning opportunities and how psychological safety in general enhances students learning, critical thinking, clinical judgement and safety practices. Additional future research could include interviewing pairs of students and facilitators who participated in the same simulation experience to seek their perception of psychological safety. As aforementioned, research could focus on different types of simulations ranging from high, mid to low fidelity, or the use of standardized patients and how psychological safety is impacted based on the fidelity of the simulation experience. While this study focused on the general simulation experience, each aspect of the simulation process could be separated and adjusted to see how each individual aspect of the process influences student perception of psychological safety.

Conclusion

Psychological safety is a concept that is used in healthcare and non-healthcare settings to create an atmosphere that is safe for learners or participants to take risks and/or mistakes. In nursing simulation education, research has proven that psychological safety is beneficial to student learning and their overall ability to make and learn from their mistakes (Turner & Harder, 2018). An overlooked gap within the literature is the students' and facilitators' perspectives of psychological safety. Therefore, the purpose of this study was to explore psychological safety as perceived by undergraduate nursing students and facilitators in simulation. The research question to guide this study was:

1. What are undergraduate nursing students' and facilitators' perspectives on psychological safety in simulation?

Overall, there were many similarities between the student and facilitator perspectives on psychological safety. Students identified communication and relationships between their facilitators and their peers to be an influencing factor in their perception of psychological safety. While another major theme from the student interviews was that of self-efficacy and their own confidence in their abilities. Whereas facilitators felt that the simulation design characteristics of the simulation played a major role within the creation of psychological safety by comprising of modifiable factors such as a confidentiality clause, objectives and expectations, fidelity, fiction contract, preparation and prebriefing. According to facilitators, the non-modifiable factors that affected perceptions of psychological safety included the students' background, life experience, preparation for the simulation and their preferred learning style. Facilitators further elaborated that trust also significantly affected perceptions of psychological safety in simulation.

Implications for future practice includes outlining to students in detail how psychologically safety is established and maintained. This can be done by clearly outlining the objectives and expectations, reviewing a fiction contract, and reviewing the confidentiality clause. It would also behoove us to explain to students the difference between stress/anxiety and psychological safety so that they are aware that they may still feel stress/anxiety but should also feel psychologically safe to make and learn from a mistake without consequences. This study also reinforced the need for formal simulation facilitator education since the approach the facilitator communicates to the student and facilitates the simulation greatly influences student perception of psychological safety.

Implications for future research include studying pairs of students and facilitator who participate in the same simulation to compare their perception of the same simulation experience, changing the types of fidelities of simulation to see how fidelity can impact student perception of psychological safety. Finally, the simulation process could be further dissected, and each stage evaluated to see the impact on psychological safety.

This study has provided insight into both the perceptions of students and facilitators in relation to psychological safety in simulation. It provides educators a greater understanding of what students may need to feel psychologically safe in simulation. As a simulation educator, my goal is to create simulations where students are able to learn and grow. By knowing students' perceptions of psychological safety and how they relate to, or differ from their facilitators', it gives me the opportunity to hear their voices and meet their learning needs in creating a safe environment conducive to learning. A psychologically safe learning environment where students may feel safe and comfortable to take chances and make mistakes.

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Appendix A: Interview Guide for Students

Introduction to the interview: Thank you for volunteering to participate in this study. The purpose of this study is to understand how students' and facilitators' perceive psychological safety in simulation.

As we begin, I have a few questions about you as an individual.

1. Which gender do you identify with?

- Male
- Female
- Transgender
- Prefer not to answer

2. What is your age?

3. What is the highest level of education you have completed?

- High school or equivalent
- Bachelor's Degree
- Master's Degree
- Other certification/diploma

Before we begin the interview, I want to talk a bit about what are some of the common descriptions of psychological safety. There is a difference between psychological safety and stress and/or anxiety. All of these can be part of a simulation, so I want to provide some clarity about what we are talking about. Stress is something that causes tension either in your body or mentally Anxiety is when you feel uneasy or nervous, usually over something that is about to happen. Sometimes when you have stress or anxiety, you might feel your heart race, your breathing might get faster and you might feel a bit sweaty.

Psychological safety is a bit different. Psychological safety in simulation is when you feel like your contribution in simulation is valued, and when you feel comfortable enough to speak up and take risks without fear of embarrassment or judgment. You feel like you can try things in simulation and you're not worried that your peers or facilitator will judge you. Does this help you understand the difference?

The questions that I will ask you are here to help move the interview forward and to help draw out your thoughts, feelings and experiences. This is not a test. There are no right or wrong answers and I value your answers and what you are about to share with me. I can repeat the questions or definitions throughout the interview if you need it. If you do not want to answer the question, just say "pass" and we can move on to the next one.

Note: Probes will only be asked as needed. The purpose of having them is to generate discussion and to keep the participant on track if required.

- 1. I know that I have just read a definition of psychological safety to you, but can you tell me in your own words what psychological safety in simulation looks like to you?**

2. Given your past experiences in simulation, do you think psychological safety was integrated into your simulation?

Probe:

- Can you give me some examples?
- How did that make you feel?

3. Did you feel like you could make a mistake at any point during the simulation without any adverse consequences to yourself?

Probe:

- Can you explain to me what happened when a mistake was made in simulation?

4. Could you describe to me how would you know that there is trust between the participant and facilitator?

Probe

- Is trust important to have between a facilitator and participant?

5. How can a facilitator contribute to the psychological safety in simulation?

6. What do you think are the most important things that your facilitator can do to make you feel safe to take risks in simulation?

7. Did you ever feel like you could *not* take risks in simulation?

Probe:

- If so, what made you feel like this?
- Was there anything that someone (facilitator or participants) could have done to change this?

8. Were there any pre-simulation activities that you had to complete as part of the simulation? Tell me about those activities.

Probe:

- Do you think they contributed to the psychological safety, or your ability to take risks in simulation?
- How did they do this?

9. After your simulation, did you have a debrief session? In that session, was there a time where you felt you could or could not speak up or ask questions?

Probe:

- If so, what made you feel like this?

- Was there anything that someone (facilitator or participants) could have done to change this?

10. What do you think are the most important things that your peers can do to make you feel safe to take risks in simulation?

11. Tell me how you think physical space contributes to your feelings of being able to take risks?

Appendix B: Interview Guide for Facilitators

Introduction to the interview: Thank you for volunteering to participate in this study. The purpose of this study is to understand how students' and facilitators' perceive psychological safety in simulation.

As we begin, I have a few questions about you as an individual.

1. Which gender do you identify with?

- Male
- Female
- Transgender
- Prefer not to answer

2. What is your age?

3. What is the highest level of education you have completed?

- High school or equivalent
- Bachelor's Degree
- Master's Degree
- Other certification/diploma

4. How long have you been a nursing instructor?

5. How long have you been teaching in simulation?

The questions that I will ask you are here to help facilitate the interview and to help draw out thoughts, feelings and experiences from you. This is not a test. There are no right or wrong answers and I value your answers and what you are about to share with me. If you do not want to answer the question, just say "pass" and we can move on to the next one.

Note: Probes will only be asked as needed. The purpose of having them is to generate discussion and to keep the participant on track if required.

1. Tell me about your past simulation training.

Probe:

- Have you attended any workshops? Conferences?
- Have you taken any simulation specific education

2. Tell me in your own words, what does psychological safety in simulation mean to you?

Probe:

- What are some key elements of it?

3. How do you create a psychologically safe learning environment?

Probe:

- How do you know when the environment is psychologically safe?

- 4. What were some things that you saw or heard that made you think your students were not feeling comfortable in taking risks or making mistakes?**

Probe:

- Was there anything that someone (you or the students) could have done to change this?

- 5. How could trust between facilitator and student play a role in psychological safety? Why?**
- 6. What pre-simulation activities do the students complete and how can do you think they contribute to the psychological safety of students or their ability to take risks?**
- 7. In what ways could the debrief contribute to psychological safety?**
- 8. Tell me how you think the physical space contributes to students' ability to take risks?**

Appendix C: Request for Student and Faculty Access

Dear [REDACTED]

My name is Sufia Turner and I am a graduate student in nursing at the University of Manitoba. For my thesis research project, I would like to be granted access to term three, year three nursing students enrolled at [REDACTED] and faculty who facilitate in undergraduate simulation. This letter is to request your permission to access these individuals.

The following letter describes my research project and the potential involvement from a participant. If you would like further details regarding the contents within this letter, please do not hesitate to contact me.

Research Project Title: Psychological safety in simulation: Nursing students' and facilitators' perspectives

Principal Investigator and Contact Information:

Sufia Turner, RN BN
Graduate Student
Email: Sufia.turner@umanitoba.ca
Phone: [REDACTED]

Thesis Research Supervisor and Contact Information:

Nicole Harder, RN, PhD
Helen Glass Centre for Nursing, Rady Faculty of Health Sciences
University of Manitoba
Email: Nicole.harder@umanitoba.ca
Phone: [REDACTED]

Description of Research Project

The purpose of this study is to explore psychological safety as perceived by undergraduate nursing students and facilitators in simulation. There are many assumptions regarding psychological safety and how students' or facilitators' feel but little research in the area that addresses students' or facilitators' perceptions. The results of this study will advance nursing simulation science and research in psychological safety and will help nursing educators understand both the student and facilitator perspective to improve overall simulation learning. After the students complete the third term of their third year, they will be asked to participate in this study. This would occur by requesting the Assistant to the Director to send an email informing students of the opportunity to participate in this study. Posters advertising the study

will be posted in approved locations such as outside of a classroom, common student areas and/or lab space to help recruit students. Any interested students would contact myself to be emailed a consent form. Upon consenting, the students would participate in a 30-60-minute one-on-one audio recorded interview with myself. The interviews will take place on [REDACTED] Campus in a private location and time that is convenient for the participant. All participants will receive a \$50 appreciation gift certificate from [REDACTED] Campus Book Store for participating in the study. Facilitators will also be emailed a letter of invitation by the same process and should they be interested, a consent form will be sent for them to review. Facilitators will also receive a \$50 appreciation gift card from [REDACTED] Book Store for participating in the study. The interview will be recorded for transcription purposes and anonymized. A transcriptionist will be hired to transcribe the audio recordings verbatim and will be required to sign a confidentiality agreement prior to beginning the transcription of the data. The transcriptionist will be instructed not to document any names of individuals when transcribing the audio recordings. All audio, transcribed documents, and electronic copies will be kept within an encrypted password protected file in a locked office. Only the researchers will have access to the de-identified interviews. The researcher's advisor will be granted access to the anonymized transcripts. Quotations within any dissemination will not contain any personal identifiers.

Participants' decision to take part in this study is voluntary. Participants can withdraw at any time by notifying the PI during the interview that they do not wish to continue. Participants can recuse themselves from the study up until 1-month post interview at which time data analysis will have begun in earnest. To withdraw from this study, participants would contact myself and no reasons are required. If a participant chooses to withdraw before or within 1 month of the interview, the data they have provided will be destroyed. Any participant that chooses to withdrawal will still receive the \$50 appreciation gift card.

There are no identifiable risks to take part in this study beyond what could be encountered in everyday life. However, in the interview participants may reflect on their negative simulation experiences which could elicit emotions. While it may be therapeutic to discuss these experiences, the PI has experience with debriefing difficult situations. The PI has completed all modules for the Canadian Association of Schools of Nursing, Simulation Certificate Program. One module in the certification was devoted to facilitation, debriefing and handling difficult situations. The PI has also attended several local and national workshops on debriefing in nursing education." Should the situation progress beyond the PI's comfort or capabilities, the student would be referred to the [REDACTED] College Student Counselling Services at 204-949-8375.

I do not have any affiliation with [REDACTED] College and I do not evaluate or grade this population group.

I thank you for your time in considering this request for access to the term three, third year [REDACTED] College nursing students and faculty who facilitate in simulation.

Sincerely,
Sufia Turner RNBN
Graduate Nursing Student

College of Nursing, Rady Faculty of Health Sciences
University of Manitoba
Sufia.turner@umanitoba.ca



Appendix D: Letter of Invitation for Participants

Research Project Title: Psychological safety in simulation: Nursing students' and facilitators' perceptions

Principal Investigator and Contact Information:

Sufia Turner, RN, BN

Graduate Student

Email: sufia.turner@umanitoba.ca

Phone: [REDACTED]

Thesis Research Supervisor and Contact Information:

Nicole Harder, RN, PhD

Helen Glass Centre for Nursing, Rady Faculty of Health Sciences

University of Manitoba

Email: Nicole.Harder@umanitoba.ca

Phone: [REDACTED]

The following letter describes the research and what your potential involvement as a participant will include. If you would like further details regarding anything in this letter, or more information, please do not hesitate to contact the principal investigator. Please take the time to read this carefully.

Dear Student:

My name is Sufia Turner and I am completing my Masters of nursing degree at the University of Manitoba under the supervision of Dr. Nicole Harder. I would like to invite you to participate in a research study that is exploring students' perceptives of psychological safety in simulation. The commitment as a volunteer is to participate in a 30-60 minute one-on-one audio-recorded interview with myself, the primary investigator to discuss your thoughts and experiences on psychological safety in simulation. Individuals who participate in the interview will receive a gift card valued at \$50.00 to the [REDACTED] College Campus Store as a token of appreciation for participating in the study.

The findings of this study will add to the body of simulation research on psychological safety and allow educators to provide the best learning environment and simulation experiences for participants. There will be no additional simulation required to participate in, as you will be reflecting on your past experiences with simulation from your undergraduate program. If you decide to participate in the interview, you can contact the researcher to arrange a mutually agreeable time and location for the interview. The interview will be audio recorded for transcription purposes. The interviews will be assigned a code name. The audio recordings will be stored in a locked office, and the data and transcripts will be entered and stored in a password-protected file on my computer in a locked office, room 407, Helen Glass Centre for Nursing, University of Manitoba. My advisor and I will be the only individuals who have access to any identifiable data.

Your participation is entirely voluntary. You may choose to leave the study at any time during the interview and up until one-month post interview at which time the data analysis will have begun in

earnest. There are no known risks to participating in this study. If you have any concerns or complaints about this study, you may contact any of the above-named persons or the Human Ethics Secretary at 2044747122, or email humanethics@umanitoba.ca

Thank you for your time and considering this study.

Sincerely,
Sufia Turner RN BN
Graduate Nursing Student
University of Manitoba
Sufia.turner@umanitoba.ca

Appendix E: Recruitment Poster



Rady Faculty of Health Sciences | UNIVERSITY OF MANITOBA | RED RIVER COLLEGE OF APPLIED ARTS, SCIENCE AND TECHNOLOGY

VOLUNTEERS NEEDED!

**ARE YOU A THIRD YEAR NURSING STUDENT?
IF SO, YOU MAY QUALIFY FOR THIS STUDY!**



Study Purpose: To identify the perceptions of psychological safety among undergraduate nursing students and facilitators in simulation.

Who/Where/When: 3rd year nursing students who are completing or finished term 3 of their nursing program.

Volunteers are asked to participate in a one-on-one interview with the principal investigator, to discuss your perception of psychological safety in simulation. The interview will take approximately 30-60 minutes.

Volunteers who participate in the interviews will be offered a \$50 participatory gift card to the Red River College Campus Store

For more information please contact Sufia Turner at [REDACTED] or sufia.turner@umanitoba.ca

This research has been approved by the Education and Nursing Research Ethics Board of the University of Manitoba and Red River College Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at 204-474-7122 or humanethics@umanitoba.ca

Appendix F: Consent
LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH
Student and Facilitator

Title of Research Study: Psychological safety in simulation: Nursing students' and facilitators' perceptions

Principal Investigator:

Sufia Turner RN, BN
Graduate Student
407 Helen Glass Centre for Nursing
College of Nursing, Rady Faculty of Health Sciences
University of Manitoba
Winnipeg, Manitoba
R3T 2N2

Email: sufia.turner@umanitoba.ca

Research Supervisor:

Nicole Harder RN, PhD
455 Helen Glass Centre for Nursing
College of Nursing, Rady Faculty of Health Sciences
University of Manitoba
Winnipeg, Manitoba
R3T 2N2
2044746714
Email: Nicole.harder@umanitoba.ca

Funding Source:

Xi Lambda Chapter, Sigma Theta Tau International

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of the Study

The purpose of this study is to explore psychological safety as perceived by undergraduate nursing students and facilitators in simulation. There are many assumptions regarding psychological safety and how students' or facilitators' feel but little research in the area that addresses students' or facilitators' perceptions. The results of this study will advance nursing simulation science and research in psychological safety and will help nursing educators understand both the student and facilitator perspective to improve overall simulation learning

If you choose to take part in this study, your participation in a 30-60-minute one-on-one audio recorded interview would be requested. The interviews will take place on ██████████ Campus in a private location and at a time that is convenient for you as the participant. The Principal Investigator (PI) will conduct the interviews and will be the only one that will know that you have participated. A transcriptionist will be hired to transcribe the audio recordings verbatim and will be required to sign a confidentiality agreement prior to beginning the transcription of the data. The transcriptionist will be instructed not to document any names of individuals when transcribing the audio recordings.

Possible Risks and Discomfort

There are no identifiable risks to take part in this study beyond what could be encountered in everyday life. However, in the interview participants may reflect on their negative simulation experiences which could elicit emotions. Should any questions elicit negative feelings, the PI also has experience with debriefing difficult situations. Should you become uncomfortable during the interview, you may refuse to answer certain questions or recuse yourself from the study at any time. Should the situation progress beyond the PI's comfort or capabilities, referral to the ██████████ Student Counselling Services at 204-949-8375. Participation or withdrawal from the study will have no effect on student grades ██████████ ██████████ or current/future employment with ██████████.

Cost for participation

There will be no added cost to you for taking part in this study.

Confidentiality

The consent will be stored in a locked filing cabinet, separate from the data collected in the interview, in the PI's locked office, room 407, Helen Glass Centre for Nursing at the University of Manitoba for seven years, at which time they will be put into confidential shredding. Your data will be kept confidential. Interviews will be assigned a code name removing all identifiable information. The PI and their advisor will be the only one with access to the de-identified interviews and they will be kept in a password protected file on the PIs computer. All hard copies and electronic copies of study documents will be destroyed in accordance with the University of Manitoba's policy on destruction of confidential material in March 2026.

Information from this study may be published or presented in public forums, however, your name and other identifying information will never be used or revealed. You may be referred to with a general descriptor such as "Student A, B, C etc. or Facilitator A, B, C etc." with a direct quote from your interview or in a summary of all the interviews. Additionally, should reference be made regarding the institution, generalizations such as "a college in Western Canada" will be used to protect privacy and confidentiality.

Voluntary Participation/Withdrawal from the Study

Your decision to take part in this study is voluntary. There will be no negative repercussions if you decide not to take part or to withdraw from the study. This decision will not affect your education or employment ██████████ in any way. You can stop the interview at any time without penalty or risk of consequence. You would need to notify the PI during the interview that you do not wish to continue. Participants can recuse themselves from the study up until 1-month post interview at which time data analysis will have begun in earnest. To withdraw from this study, please contact Sufia Turner ██████████ or by email Sufia.turner@umanitoba.ca stating that you wish to withdraw. No reasons are required. If you choose to withdraw from the study up until 1 month after the interview is conducted, the data you have provided will be destroyed.

Debriefing and Dissemination

The knowledge gained from this research will be shared with you before it is made public. You may choose to receive a summary of the results by December 2019 (via email). The results of this research study will be disseminated in publication of the PI's thesis. Additionally, manuscript(s) will be created for potential publication in peer-reviewed journals. A poster as well as a presentation will be created to potential presentation at local, national or international conferences. As part of the ongoing faculty development in simulation at my University, the PI intends to present the findings of this study to the simulation facilitators. In addition, opportunities will be sought to present findings in an online environment, such as a webinar.

Compensation

You will receive a participation gift card at the end of the interview worth \$50 from the ██████████ ██████████ Campus Store. Should you withdraw from the study, you will still receive the gift card.

Questions

Please feel free to ask any questions about the study or your role as a research participant, please contact Sufia Turner at ██████████ or via email at Sufia.turner@umanitoba.ca

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Research Ethics Board of the University of Manitoba and ██████████ College Ethics Committee. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator at 204-474-7122 or humanethics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Printed Name: _____ Date: _____

Participants' Signature: _____

Provide your email address if you would like to receive a copy of the study's results:

Researchers' Printed Name: _____ Date: _____

Researchers' Signature: _____

College of Nursing
Helen Glass Centre for Nursing
Winnipeg, Manitoba
Canada R3T 2N2
Telephone 204-474-7452
Fax 204-474-7682



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OF MANITOBA**

**Rady Faculty of
Health Sciences**

Appendix G: Letter of Invitation for Facilitators

Research Project Title: Psychological safety in simulation: Nursing students' and facilitators' perceptions

Principal Investigator and Contact Information:

Sufia Turner, RN BN

Graduate Student

Email: sufia.turner@umanitoba.ca

Thesis Research Supervisor and Contact Information:

Nicole Harder, RN PhD

Helen Glass Centre for Nursing, Rady Faculty of Health Sciences

University of Manitoba

Email: Nicole.Harder@umanitoba.ca

Phone: 2044746714

The following letter describes the research and what your potential involvement as a participant will include. If you would like further details regarding anything in this letter, or more information, please do not hesitate to contact the principal investigator. Please take the time to read this carefully.

Dear Facilitator:

My name is Sufia Turner and I am completing my Masters of Nursing degree at the University of Manitoba under the supervision of Dr. Nicole Harder. I would like to invite you to participate in a research study that is exploring students' and facilitators' perceptives of psychological safety in simulation.

The commitment as a volunteer is to participate in a 30-60 minute audio-recorded one-on-one interview with myself, the primary investigator, to discuss your thoughts and experiences on psychological safety in simulation. Individuals who participate in the interview will receive a gift card valued at \$50.00 to the [REDACTED] Store as a token of appreciation for participating in the study.

The findings of this study will add to the body of simulation research on psychological safety and allow for educators to provide the best learning environment and simulation experiences for participants. If you decide to participate in the interview, you can contact the researcher to arrange a mutually agreeable time and location for the interview. The interview will be audio recorded for transcription purposes. The interviews will be assigned a code name. The audio recordings will be stored in a locked office, and the data and transcripts will be entered and stored in a password-protected file on my computer in a locked

office, room 407, Helen Glass Centre for Nursing, University of Manitoba. My advisor and I will be the only individuals who have access to any identifiable data.

Your participation is entirely voluntary. You may choose to leave the study at any time during the interview and up until one-month post interview at which time the data analysis will have begun in earnest. There are no known risks to participating in this study. If you have any concerns or complaints about this study, you may contact any of the above-named persons or the Human Ethics Secretary at 2044747122, or email humanethics@umanitoba.ca

Thank you for your time and considering this study.

Sincerely,
Sufia Turner RN BN
Graduate Nursing Student
University of Manitoba
Sufia.turner@umanitoba.ca

Appendix H: Transcriptionist Confidentiality Agreement



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PLEDGE OF CONFIDENTIALITY

WHEREAS I have been asked, in the course of my association / appointment / employment / contract (“Employment”) with the University of Manitoba (the “University”), to participate in the Review of a Unit pursuant to the University’s “*Administrative Unit Reviews*” policy and procedures (the “Review”);

NOW THEREFORE in consideration of my Employment with the University of Manitoba, and as an integral part of the terms and conditions of my Employment and my participation in the Review, I hereby agree as follows:

1. I ACKNOWLEDGE AND AGREE that, in connection with my Employment with University and/or my participation in the Review, I may acquire, use and become aware of confidential and proprietary information of the University relating to the prior, existing or contemplated operations of the University, including, but not limited to: any personal and personal health information, litigation, negotiations or contractual arrangements, financial information, operational and scientific information, and personnel information (collectively the “Confidential Information”). Confidential Information shall not include any information that is generally available to the public or becomes publicly known through no fault of my own.
2. I ACKNOWLEDGE that the Confidential Information could be used to the detriment of the University and its disclosure could cause irreparable harm to the University.
3. I AGREE to treat confidentially all Confidential Information and not to disclose it to any third party, either within or outside of the University either:
 - a. During the term of my Employment with the University; or
 - b. After termination of my Employment with the University;

except as may be necessary in the proper discharge of my duties and responsibilities during my Employment or my participation in the Review and in accordance with applicable Legislation and University policies and procedures governing proper release of information.

4. I ACKNOWLEDGE AND AGREE that my obligations contained herein will continue after my Employment with the University of Manitoba ends.

- 5. I AGREE that all notes or any other material containing Confidential Information coming into my possession during the course of my Employment, or the Review, shall belong exclusively to the University. I FURTHER AGREE to turn over to the University all copies of any such notes or any other materials in my possession immediately if requested to do so by the University and on termination of my Employment with the University.
- 6. I ACKNOWLEDGE AND AGREE that unauthorized use or disclosure of Confidential Information may result in a disciplinary action being taken or legal action being initiated.
- 7. I ACKNOWLEDGE AND AGREE that the damages which the University might suffer from my violation of any of my confidentiality obligations under this Pledge would be difficult or impossible to measure and that the University is entitled to, in addition to all other remedies it may have, injunctive relief or other equitable relief as a remedy for any actual or anticipated breach of this Pledge.

Name of Individual Making Pledge
(Please Print)

Signature of Individual Making Pledge

Date Signed

Signature of Individual Administering Pledge

Appendix I: TCPS 2 Certificate of Completion

**PANEL ON
RESEARCH ETHICS** **TCPS 2: CORE**
Navigating the ethics of human research



Certificate of Completion

This document certifies that

Sufia Turner

*has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)*

Date of Issue: **13 January, 2019**

Appendix J: Ethics Approval ENREB



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Research Ethics
and Compliance

Human Ethics
208-194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Phone +204-474-7122
Email: humanethics@umanitoba.ca

PROTOCOL APPROVAL

TO: Sufia Turner (Advisor: Nicole Harder)
Principal Investigator

FROM: Joseph Gordon, Chair
Education/Nursing Research Ethics Board (ENREB)

Re: Protocol #E2019:022 (HS22665)
Psychological Safety in Simulation: Nursing Students' and Facilitators'
Perspectives

Effective: April 4, 2019

Expiry: April 4, 2020

Education/Nursing Research Ethics Board (ENREB) has reviewed and approved the above research. ENREB is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*.

This approval is subject to the following conditions:

1. Approval is granted for the research and purposes described in the application only.
2. Any modification to the research or research materials must be submitted to ENREB for approval before implementation.
3. Any deviations to the research or adverse events must be submitted to ENREB as soon as possible.
4. This approval is valid for one year only and a Renewal Request must be submitted and approved by the above expiry date.
5. A Study Closure form must be submitted to ENREB when the research is complete or terminated.
6. The University of Manitoba may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

Funded Protocols:


- Please mail/e-mail a copy of this Approval, identifying the related UM Project Number, to the Research Grants Officer in ORS.

Appendix K: Ethics Approval RRC



RESEARCH ETHICS BOARD

CERTIFICATE OF APPROVAL

PRINCIPAL RESEARCHER(s) Tumer, Sufia		DEPARTMENT Nursing, University of Manitoba	NUMBER 2018/19-08		
INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT Red River College					
CO- RESEARCHERS Dr. Nicole Harder					
SPONSORING AGENCIES N/A					
TITLE: Psychological Safety in Simulation: Nursing Students' and Facilitators' Perspectives					
APPROVAL DATE April 29, 2019	TERM (YEARS) One	AMENDMENT	AMENDMENT APPROVED	ANNUAL REPORT/ RENEWAL DUE DATE April 29, 2020	
<p>CERTIFICATION</p> <p>The protocol describing the above-named project has been reviewed by the Red River College Research Ethics Board and the procedures were found to be acceptable on ethical grounds for research involving human subjects.</p> <div style="text-align: center; margin: 20px 0;">  </div> <p style="text-align: center;"><i>Approval of the Research Ethics Board by: Mike Krywy, Chair</i></p> <p style="text-align: center;"><i>This Certificate of Approval is valid for the above term provided there is no change in the experimental procedures.</i></p>					

