A PHENOMENOLOGICAL EXPLORATION OF THE EFFECTS OF HUMAN PATIENT
SIMULATION ON UNDERGRADUATE STUDENT NURSES CONFIDENCE TO
PRACTICE IN THE CLINICAL

by

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ABSTRACT

There is a growing need for undergraduate students to acquire quality placements for clinical practice. However with the current state in healthcare, quality placements have been very hard to attain (Traynor, et al., 2010). Therefore HPS are become the latest trend in many nursing schools in attempt to address this issue (Traynor, et al., 2010). In this study, HPS has been seen to help with confidence levels for clinical practice. However, the benefits that students' take away from the simulation based learning activities is very dependent on how the simulation is organized, structured and conducted. This notion is supported by the findings of this study.

A qualitative phenomenological study design using two focus groups was used .A convenience sample of students from one educational institution; University of British Columbia (UBC) in the term 3, of their undergraduate nursing degree was emailed an invitation to attend a focus group session.

There were six major themes and multiple sub- themes that came about during this study that impacted how students perceived their experience with HPS in relation to clinical confidence. The major themes that were evident from the participants' experiences were classified as: Realism, building on knowledge, safe environment, critical thinking and confidence and anxiety. From this study several conclusions can be drawn about how HPS effects undergraduate student nurses confidence for clinical practice. Findings indicate it is crucial or participants to feel that the whole simulation experience depicts reality. Realism was the major theme related to clinical confidence. If the scenario was not simulating enough participants felt they did not learn much from them; however, during times when simulations were at the optimal level participants felt that they acquired many things, such as confidence, clinical techniques, linking theory to practice, identifying their own knowledge gaps, critical thinking, background

knowledge to help in similar cases in the actual clinical environment. It is very important that HPS is well integrated into the nursing programs so students achieve great results from the simulations, which can be done if the simulations being conducted and organized at the right times in the programs.

PREFACE

This research is based on the work conducted in the University of British Columbia's School of Nursing by Harjinder Sandhu. I was responsible for conducting, collecting research and analysing the research data under the supervision of my thesis committee. The names of the committee members as follows: Dr. Bernie Garrett, Dr. Maura MacPhee, & Dr. J.Craig Phillips.

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CHAPTER 1: INTRODUCTION OF PROBLEM

Introduction

Simulation training has been around for many decades, first described back before World War II; when it was used to train pilots, a practice that still continues in the aviation industry today (Ward-Smith, 2008). Simulation training is an important aspect of training in the aviation industry which ascribes it as the safest and most cost effective way of training pilots (Ward-Smith, 2008).Learning safety procedures, emergency landings, with simulators, enhanced the use of simulation and led to further adoption in other disciplines and for use in healthcare education (Ward-Smith, 2008). In healthcare, Human Patient Simulator (HPS) was first utilized with anesthetic students (Nehring, 2008). Then widely known to the healthcare field, it became popular for physicians, paramedics, nursing and other healthcare providers.

In nursing education, HPS has been designed to provide students a safe place to learn, and make mistakes which do not cause harm to an actual patient (Sanford, 2010). This is further asserted by Gaba (1992), who believes that simulation is most beneficial because it allows students to be able to practice in real-time scenarios with no risk to an actual patient and helps in higher learning processes. Allowing students to practice in simulation labs and fostering learning is the actual clinical environment is a crucial part for student nurses to become well situated in their practice.

Nursing is profession which is highly based on hands on practical experience. It is important for undergraduate student nurses to be exposed to various clinical environments to become more confident with their practice. However, with the current climate of healthcare, clinical placements are becoming scarce; many hospitals have experienced staffing shortages, with a decrease in the number of trained nurses and a decreased willingness of staff to preceptor

students due to increased patient acuity and nurse's workload. (Traynor, Gallagher, Martin& Smyth, 2010). Furthermore, issues arise from a decreased availability of practice placements, and who gets preference for specific clinical site placements. The apparent lack of clinical placements needs to be considered and alternative ways to reproduce the learning opportunities outside of practice placements need to be addressed (Alinier, Hunt, Gordon & Harwood, 2006). These challenges have resulted in some educational institutions with limited access to clinical placements; consider the use of HPS it has been increasingly incorporated in nursing programs, because HPS exposes students to various clinical scenarios that may increase their clinical confidence.

Background of Problem

The profession of nursing, as a practice-based discipline, is based on clinical experience. Sufficient exposure to various clinical environments and situations facilitates undergraduate student nurses to develop their confidence and competence for clinical practice. As identified above, clinical placements are increasingly more difficult to obtain. It has become a challenge in nursing education according to Seropian, Brown, Gavilances, and Driggers (2004), to obtain clinical placements, due to site availability. Traynor et al. (2010), also address concerns about clinical site availability to be linked to staff shortages on units which cause the nurses to become overworked and therefore a decrease the desire to work with students, and the lack of trained nurses to take on students. Therefore, it is important for nursing students and educational institutions to reproduce clinical environments in a similar manner to optimize learning and consolidate skills, allowing students to gain a well rounded exposure to their future roles as nurses. Furthermore, HPS will increase their experiential knowledge which is vital to learning and successful integration of the skills and abilities required of a nurse.

Educational technologies, such as simulated learning environments and HPS are becoming more prevalent within nursing schools to help students engage in controlled clinical environments and develop confidence within their scope of practice (Alinier et al, 2006; Blum, Borglund, & Parcells, 2010). Simulated environments can range from low fidelity simulators (LFS), to high fidelity simulators (HFS), that mimic patients talking back to the student and incorporate complex clinical scenario's that simulate real world experiences. HFS's also offer a wide range of experiences with a multitude of settings, from simple dressing changes to initiating intravenous catheters. Simulation training has been observed to enable students to learn in a safe, controlled environment and acquire skills that are transferable to real life patients (Alinier et al, 2006). Blum et al. (2010) stated that simulated learning environments "may increase students' self- confidence and competence during actual clinical experiences" (p. 2). Smith & Roehrs (2009), discovered in their simulation study that the only link to increasing self- confidence in simulation was problem solving through scenarios. Smith & Roehrs (2009) also concluded that the design characteristics of a simulation program are highly influential of students' self- confidence and satisfaction. Furthermore, according to Bandura's (1977) self- efficacy theory, it is stated that simulations, role playing and case studies help develop and increase students confidence in all domains: cognitive, psychomotor and affective. Lastly, other research showed that more programs are adopting simulation into their undergraduate nursing programs because of limited clinical placements, and the fact that simulation has shown to help clinical learning (Gordon & Buckley, 2009).

Problem Statement

Due to limited clinical placements, and increasing demand for certain units, nursing schools everywhere are struggling to get students into the clinical environment for practice

(Alinier et al, 2006). However due to this there has been an increased need for Nursing schools to incorporate simulation into their curricula to help students with the practical experience which is vital to their nursing careers. There have been many studies that show the satisfaction of HPS on learning and how students feel about practicing on HPS. But there are no studies that actually explore, in depth, how simulation affects undergraduate students' confidence for clinical practice. Literature reveals that there is a link between satisfaction in clinical and simulation training but more needs to be uncovered to fully understand if HPS actually contributes to confidence in clinical.

Purpose

The purpose of this research study is to explore the effects of HPS on undergraduate student nurses confidence to practice in the clinical environment. This study also seeks to understand if HPS elicits any other changes in the confidence of students, rather than the intended purpose of promoting clinical confidence. To better understand the lived experiences of undergraduate student nurses, a phenomenological perspective will be adopted using Van Manen's (1990), phenomenological lens in this study to explore the experiences that students have while practicing in simulation labs, and how this relates to their personal lived experience of clinical confidence in various clinical settings, during their nursing program.

Research Question

It is important to establish what effects HPS has on clinical confidence in practice. The research question that will be addressed is:

What are the effects of HPS based educational experiences upon undergraduate student nurses' confidence in clinical practice?

Definition of Terms

Human patient Simulator (HPS): Refers to mannequins that are capable of mimicking an actual human patient. They come in various setting, from being very simple also known as low fidelity simulator to becoming very complex such as a high fidelity simulator.

Undergraduate Student Nurses': Refers to university students, who are enrolled in the Bachelor of Science in nursing (BSN) program and completing the degree to become Registered Nurses.

Fidelity: Refers to the degree of complexity of the simulation manikins are programmed at to depict a real human being.

Low Fidelity Simulator (LFS): "Low-fidelity simulators allow practitioners to practice skills in isolation, such as administration of an intramuscular injection" (Yaeger et al., 2004, Pp328).

Medium Fidelity Simulator (MFS): "Simulators offer more realism but lack many cues necessary for participants to completely immerse themselves in the situation" (Yaeger et al., 2004, Pp328).

High Fidelity Simulator (HFS): "High-fidelity simulators provide the trainee with the cues necessary to suspend their disbelief during dynamic, immersive, hands-on scenarios; they offer mannequins that react in realistic ways to trainees' interventions" (Yaeger et al., 2004, Pp328).

Simulation: "a technique...to replace or amplify real experiences with guided experiences, often immersive in nature" (Gaba, 2007, Pp. 126).

Confidence: Refers to a state of being in which, one feels that they are right and are able to succeed in what they are approaching to do.

Clinical Practice: Refers to the actual clinical environment, i.e. hospital wards, community healthcare settings, where students will go work with actual patients and healthcare providers.

<u>Phenomenology</u>: A study of peoples lived experiences, and how these experiences shape their everyday world.

Theoretical Framework

A phenomenological approach will be taken to explore the effects of HPS on undergraduate student nurses confidence in clinical practice, because it will allow the researcher to discover how the students feel about simulation. It will also help uncover, from their individual experiences, how simulation affects their confidence and what their experiences of simulation with regards to confidence means to them.

Phenomenology is grounded in a "philosophical tradition" developed by Husserl and Hiedegger, who wanted to study peoples' lived experiences (Polit & Beck, 2012, p 494). Husserl (1962) was the first to develop descriptive phenomenology which looked at describing human experiences, while his student Hiedegger (1962) moved towards interpretive phenomenology, which looked at interpreting the human experience instead of just describing it (Polit & Beck, 2012). Moreover, phenomenology inquiry helps one to see the meaning behind another's lived experience and how it shapes their world and ideas (Van Manen, 1990). It also enhances our perceptions and allows us to become more in touch with how humans form relationships with their lived experiences (Van Manen, 1990). Van Manen uses a phenomenological approach to understand the experience of the phenomenon being studied, which allows him to grasp vital information about the experience.

Van Manen (1990) phenomenology understands that phenomenological research studies require integration of six activities which will enhance the analysis of research, as follows:

1: finding a phenomenon that catches ones attention,

2: inquiry about the experience through phenomenological lens,

3: finding out what major themes are surrounded by the phenomenon of interest,

4: aggregating the themes and analyzing them, using various techniques,

5: Finding relationships within the phenomenon,

6: and putting it all together with research and study data, as one big picture (Van Manen, 1990).

Van Manen firmly believes that other sources such as literature should be explored to enhance insight of the researcher about the specific phenomenon being studied (Polit & Beck, 2012). By integrating the steps of Van Manen's phenomenological approach, it will help in analyzing, integrating and presenting the study findings in a logical way. Furthermore, exploration of major themes that arise will be examined thoroughly by following the above six activities introduced by Van Manen 1990.

Significance of Study

Since nursing education is the foundation for well trained nurses, in is important to recognize how as nurse educators, we can optimize the best experience for undergraduate student nurses during this climate change in the healthcare settings. Nurse educators need to understand how nursing students actually feel about simulation based education so they can incorporate change within their courses to benefit the students so they are confident in clinical. Also knowing why students feel confident and how simulation effects their practice, in a negative or positive way, will give nurse educators the knowledge that simulation can be incorporated more or less into the nursing curricula and changed if needed.

Organization of Thesis

This thesis is compromised of five chapters. In chapter one, the introduction, background of problem, the problem statement, problem statement, purpose, and research question, definition of terms, theoretical framework, and significance of the study have been addressed. Chapter two will consist of the literature review for the identified problem. Chapter three will address the methodology the research study follows. It will explain the study design, data collection procedures, sampling, data analysis, ethical considerations, recruitment problems, study limitations. Chapter four will compromise of the study findings and key themes. Lastly, chapter five will be the summary of the research, future implications and conclusions.

CHAPTER 2: LITERATURE REVIEW

Introduction

It is important to establish what effects human patient simulation (HPS) has on increasing clinical confidence in practice for undergraduate student nurses. To fully understand the evolution of how simulation was incorporated into the nursing schools globally, a review of literature is presented. The historical development of HPS, the definition of fidelity and varying levels of fidelity, and how nursing schools have incorporated simulation within in their curricula are presented within the context of Bandura's Self efficacy theory. Furthermore, competence related to confidence is discussed, but not much literature within the field of nursing in regards to simulation training has been published. Moreover, other varying perspectives are looked at, and why simulation can be of concern for the social future of nursing students. Lastly, the implications of HPS are discussed and what does simulation education hold for the future of nursing education as a whole.

The literature search began with the combination of key words and phrases as follows: "simulation in nursing", "HPS", "students' confidence in clinical", "clinical confidence", "level of fidelity", "self-confidence", "educational technologies", "technology", "competence" and "history of simulation". The search engines used to do the literature review were: Cumulative Index of Nursing Allied Literature (CINHAL), Google Scholar, Academic search Premier, Medline and Pub Med. The Google Scholar data base was used to search for broad ideas of what is out there about my topic so I could focus on pertinent aspects of the research question better. Then CINHAL was accessed through the search engine. CINHAL was used because it directly relates to the nursing field. Moreover, searching through Medline gave me a variety of information on my research question as it pertains to all health professions, and it is larger than

CINHAL. Academic search Premier was also utilized because it gave background literature

about education and educational technologies in general. Pub Med was searched for relevant

articles with regards to other health disciplines. Limitation criteria was set to articles being peer

reviewed as these articles hold grounds on its study basis and validates the study and the search

was further limited by articles being written in English only. Many relevant articles and research

studies where retrieved, analysed and are presented in this review of literature.

Historical Development of Human Patient Simulation

In the United States, simulation was first utilized in the aviation industry, to improve

safety outcomes. The first aircraft simulator was developed in 1929 by Edwin Link (Rodgers,

2007). The simulator was first used as a "coin-operated amusement ride" (Shaffer et al, 2001, Pp.

76). This device was later enhanced by him to provide student pilots with feedback, as it was

connected to a computer program (Rodgers, 2007). With further advancements, by 1949, the

simulator aircraft model was in use in many aviation schools and in the military (Shaffer et al,

2001). Success of the flight simulators grounded their use as a training modality "because they

made a complex and difficult process safer, less expensive and more effective" (Shaffer et al,

2001, Pp. 76). After the success of his initial flight simulator, Link's growing popularity helped

advance his creations of more complex models of simulation which are used today within the

aviation industry as well as space (Rodgers, 2007). Shaffer et al. (2001) concludes that,

> "Simulation training is attractive in disciplines where margins for error are small and the
>
> costs of training are high. The high-cost, error intolerant field of aviation has made
>
> extensive use of simulation-based training" (Pp.76).

In the in the late 1960s, it was introduced into the world of healthcare, initially in the

anesthetic field (Nehring, 2008). The first computer controlled high fidelity patient simulator

(HFS) was developed by Denson and Abrahamson (1969) at the University of Southern California, and named SimOne, for the use of anesthesiology students. They made two assumptions to develop the simulation manikin;

"(A) To have its greatest value, the simulator's environment, appearance, and reactions should accurately simulate a patient in the operating room

(B) If a very complex and sophisticated prototype could be developed, the feasibility of simulation would be firmly established and then the progression of less complicated models could proceed rapidly" (Denson& Abrahamson, 1969, pg, 504).

Abrahamson, Wolf and Denson (1969) concluded in their research study, how anesthesia residents who practiced on the SimOne reported to have come to an acceptable level of performance in fewer days in the operating room, than residents who did not train on the simulator. However, one down fall of the SimOne model was that it was too expensive, and many school where not buying it and another model was developed later by Michael Gordon in 1974, named "Harvey" (Nehring, 2008).This model was more feasible as it was not a full bodied manikin, and able to simulate more than fifty cardiac conditions (Gordon, 1974). Gordon (1974) describes his goal that he would like to achieve with simulation education as to providing an educational experience that helps increase active learning, is easily accessible and is an effective learning tool for all students in the healthcare field. Moreover, the purpose of simulation, according to Gaba (2007), is not just providing a technology, but rather a technique which is useful in providing a real life experience, in an interactive manner, and for the purpose of improving patient safety and care. Since the development of Gordon's manikin Harvey, there has been large demand for its use (Nehring, 2008). Furthermore, in 1980's two more models of the HPS were developed at the simulation centers in the University of Florida (Nehring, 2008).

Later in 1986, to add to the simulation mannequins, David Gaba and Abe DeAnda, at Stanford University developed the Comprehensive Anesthesia Simulation Environment (CASE). David Gaba partnered up with CAE- Link, which was an organization that arose from the aviation industry to help in the development of CASE, and to market it commercially (Cooper, J & Taqueti, 2004). MedSim purchased this product, and marketed it under several names; however they withdrew their production and support because training centers where not in popular demand at that time (Cooper, J & Taqueti, 2004). Many more simulators were developed after this to cater to different healthcare disciplines. Also amongst the HPS, there were other forms of simulators that were developed to train and educate healthcare professionals such as animal models, human cadavers, standardized patients, written simulations, audio simulations, video based simulations, three- dimensional static models, task specific and virtual reality simulators (Rodgers, 2007).

HPS have also become popular among students in various health professions such as nurses, medical students, resident physicians, practicing physicians, physiotherapist, and many other multidisciplinary team members (Rodgers, 2007). Now simulation has been utilized all across healthcare fields to help provide realistic environmental experiences of those that may be limited to students when in a clinical setting, and for gaining real-time experiential knowledge, and to provide safe care to patients.

Definition of Simulation

The word simulation has been defined in literature in many ways, but gives the same sort of general idea. Some have used the word simulator and others have used the word simulation (Rodgers, 2007). Gaba (2007) defines simulation "as a technique...to replace or amplify real experiences with guided experiences, often immersive in nature" (Pp. 126).

The word simulation is literature refers to the whole environment in which the scenario is taking place, while the word simulator refers to the mannequin or the technology itself that is used to produce the simulation scenario (Dutta,Gaba, and Krummel, 2006; Rodgers, 2007). However, there is much discrepancy in literature about the use of the terms simulation and simulator in research studies to frame the right research question; are the researchers studying the simulator or the technique of simulation? (Dutta et al, 2006). Simulation itself encompasses the participant to be fully engaged in their environment and be involved in an interactive scenario, including the simulator mannequin; however, when referring to the technical device it is referred to as a simulator; therefore it is important to use the right terminology when framing research questions.

Definitions of Fidelity

The word fidelity, in simulation literature, refers to the degree of complexity of the simulation manikins are programmed at to depict a real life patient (Berragan, 2011; McAdams, Rankin, Love & Patton, 1989; Ross, 1988). Simulated environments can range from low fidelity simulators (LFS), moderate fidelity simulators (MFS) to HFS, that mimic patients talking back to the student and incorporate complex clinical scenario's that simulate real world experiences. The levels of fidelity, defined by Yaeger et al. (2004):

> "Low-fidelity simulators allow practitioners to practice skills in isolation, such as administration of an intramuscular injection.
>
> Moderate-fidelity simulators offer more realism but lack many cues necessary for participants to completely immerse themselves in the situation. A mannequin with breath sounds but no corresponding chest rise is an example of a moderate-fidelity simulator.

High-fidelity simulators provide the trainee with the cues necessary to suspend their

disbelief during dynamic, immersive, hands-on scenarios; they offer mannequins that

react in realistic ways to trainees' interventions" (Pp. 328).

Incorporation of Simulation into Undergraduate Nursing Programs

Simulation education now has a widespread use in the undergraduate nursing curricula

internationally (Berragan, 2011). The goal of simulation is "to replicate some or nearly all of the

essential aspects of a clinical situation so that the situation may be more readily understood and

managed when it occurs for real in clinical practice" (Hovancsek 2007, p. 3).

In the 1960's, Canada changed their nursing education dramatically by transferring

nursing schools from being hospital- based moving them into colleges and universities

(McAdams et al., 1989). This made it harder for students to grasp skills from simulation labs at

the educational institutes and transfer them into a clinical setting that they were unfamiliar with

(McAdams et al., 1989). Moreover, students were faced with increased anxiety when in the

clinical area that they were not familiar with. Prior to this big shift, into educational institutions,

during their lab sessions, students learned how to perfect psychomotor skills on a peer or

mannequin before, actually practicing on a patient (Love, McAdams, Patton, Rankin, & Roberts,

1989). However, by the 1960's, psychomotor skills were consider to be too technical and the

cognitive domain was given more emphasis on to develop into nursing schools (Love et al.

1989). Now many universities globally, have developed many large simulation centers, which

are formatted in manner similar to hospital units (Berragan, 2011). This allows students in

nursing curricula and from other healthcare disciplines to practice in an environment safe, and

less stressing than an actual clinical setting. Simulation training helps the students to be fully

immersed into patient care scenarios, with varying level of fidelity. It helps the students to critically think, and take into account everything going on in the simulation scenario, and what physiological changes are occurring with the simulator mannequin, so they can respond accordingly, and see the results of their interventions immediately, without causing harm to an actual patient; however, this was not possible with the traditional lab training that has been utilized for the past 50 years in nursing education. Simulation training in nursing has been observed to enable students to learn in a safe, controlled environment and acquire skills that are transferable to real life patients (Alinier et al, 2006). Berragan (2011) also asserts that "with current technological advances, simulators can reflect engineering and... fidelity far more than the manikins of twenty years ago and move towards providing a 'realistic' educational experience (Pp. 661).

Importance of Simulation in Nursing Education

With the current climate of hospital setting internationally, clinical placements are becoming scarce; many hospitals have experienced staffing shortages, with a decrease in the number of trained nurses and a decreased willingness of staff to preceptor students due to increased patient acuity and nurse's workload (Traynor et al. 2010). Moreover, the high patient turnover ratio, and hastened discharge time, affects the quality and knowledge that a student experiences in a clinical practice setting (Traynor et al. 2010). The apparent lack of clinical site placements needs to be considered and alternative ways to reproduce the learning opportunities outside of practice placements need to be addressed (Alinier et al. 2006). These challenges have resulted in some educational institutions with limited access to clinical placements, considering the use of HPS to be increasingly incorporated in nursing programs, because HPS exposes students to various clinical scenarios that may increase their clinical confidence. Now, more than

ever, undergraduate student nurses are faced with increased pressure to be practice ready, and be very knowledgeable in providing safe patient care. However, it is suggested that many students do not get the experience they need by the time they have finished nursing school (Duhram and Alden, 2008), and therefore simulated learning experiences are the best environments for students to experience less frequently encountered critical situations so they are better equipped to practice. The incorporation of the HPS and how they affect clinical confidence needs further review, so nurse educators are able to address all the areas of concern to better suit the student nurses' learning process.

Additionally, with the increased incorporation of HPS within the nursing programs, attention is needed to how nursing educators are conducting simulation labs, so students are able to have productive learning experiences. The educators need to be able to comfortably run a simulation, know how to operate the simulator and know the goals of that particular simulation lab (Jeffries, 2005). That being said, educators need to be familiar with the complexity of the simulation equipments and how to utilize them smoothly throughout various scenarios. Moreover, educators need to have clear objectives set out for the simulation lab. A simulation for most students maybe a fairly new concept and in addition to the specific learning objectives, students need information about the scenarios, time required to perform them, their expectations, roles and outcomes from the simulation (Jeffries, 2005).

Furthermore, familiarisation with the simulators can pose a limitation to the students learning, as they may not be aware of all the functions of the mannequin. The design of the simulation scenario needs addressed so it benefits the students, therefore requiring the scenarios to be "student- centered" and not "teacher centered" as a "traditional classroom setting," where the instructor would lead (Jeffries, 2005, Pp.98). The scenarios are a mode to assess where the

student is at from a clinical standpoint and what they need to work on, it is not to pass or fail the student. The teachers' role in simulation is being a facilitator and allowing the student to lead the scenario, with minimal instruction or interruption from the teacher (Jeffries, 2005).

The final stage of simulation is debriefing which is very important for both the student and the facilitator. Debriefing can involve the simulation scenario to be video- taped, so the student and teacher can talk about it after the scenario is completed or the teacher can make notes while the simulation is going on and discuss this with the student after (Jeffries, 2005). Debriefing, is valuable in that it reinforces positive experiences, students are able to better reflect on their practice once the scenario is over, helps students link theory in to practice, helps them to critically analyze the situation and areas for improvement are established (Jeffries, 2005). Moreover, Sanford (2010) asserts that reflective thinking after a simulation or clinical experience helps the student to become a better critical thinker and more satisfied. So "nurse educators need to be encouraged and supported in designing and implementing innovations such as simulations in the nursing curriculum" (Jeffries,2008, Pp. 73). Lastly, for students to be able to get a maximum benefit from simulation, they need to see it as a realistic, legitimate, and unique experience (Childs & Sepples, 2006).

Clinical Confidence and Bandura's Self Efficacy Theory

Bandura's (1977) self efficacy theory defines self efficacy as the person's perceptions of their capabilities on how well he or she is prepared to fulfil a task. Bandura (1997) defines confidence as one's perception about their ability. He also asserts that, the belief of self efficacy helps motivate people to fulfil a task, behave, think and react (Bandura, 1994). His belief was that people who have a high level of confidence in their skills and abilities will tackle a difficult activity and take it on as a test to be completed rather than being timid or shying away from it

(Bandura, 1994). People who take challenges are well prepared to fail as well, this allows them to face their failure with the fact that they were not adequately prepared at that time and recognize their mistakes and learn from them (Bandura, 1994). On the other hand people with a low level of confidence, who doubt their capabilities, are timid to approach a challenging task, take it as a personal threat (Bandura, 1994). Nursing students need to have strong self efficacy, which is built through mastering of experiences (Bandura, 1994). Additionally Bandura (1977) asserts that people build on their prior knowledge to increase their self efficacy. A study done by Lamond, Crow, Chase, Doggen, & Swinkels (1996) found that simulation in relation to Bandura's self efficacy beliefs about prior knowledge was true; students apply what they have learned from clinical settings and previous simulation scenarios, and build on and bring these experiences to new simulation training sessions; this helped to develop student nurses' self efficacy and clinical judgement. Simulation experiences can help build challenging situations that will encourage students to build their self efficacy and confidence in resolving them, and therefore be better prepared to perform in the clinical setting.

Clinical confidence is defined as ones perception of ability to perform in a clinical environment, in a competent manner (Leigh, 2008). Leigh (2008) also asserts that as one's "self efficacy increases, so does one's self-confidence" (Pp.3). To build on confidence in the clinical setting, nursing students first need the ability, and knowledge to link theory to practice and be able to critically think while applying the knowledge in a clinical situation (Leigh, 2008). Building clinical confidence is very important to the future of the nursing students; a qualitative phenomenological study done by White (2003) concluded that self-confidence plays a critical role in the decision making process and being able to understand the bigger picture, as a nurse.

Confidence cannot be seen alone, as a single construct, however there are no studies that report the change in confidence and competence together after students have been in simulation labs. Literature reveals that "confidence arises from competence via a dynamic interplay between these two constructs" (Blum et al. 2010, Pp. 10); therefore there is a relationship between the two which also supports the "theoretical model of response confidence, showing that confidence scores are influenced by both self-concept and competence" (Kroner & Beirmann, 2007, Pp. 587). If students are not confident, it can be explained only by two possibilities according the Kroner & Beirmann (2007), which are: they are competent, but signs around them tell them that they are not, and secondly they may have a perception of themselves being incompetent and therefore lack confidence to perform. Lastly, confidence and competence are linked together and do go hand in hand, but in this current study only confidence levels will be addressed; however some literature discussed below will address competence in relation to confidence.

Reilly et al (2006) conducted a phenomenological qualitative study, at the University of Tasmania, and the findings revealed that simulation experiences increased student nurses confidence and better prepared them for clinical environments. Overall students felt that it was a safe environment to be able to make mistakes in, they were better able to link theory to practice, and were able to pursue many skills that they would not have in a clinical setting (Reilly et al., 2006). Lastly, students also reported that due to an increase in their level of confidence they perceived an increase in their level of competence (Reilly et al., 2006).

Kiat, Mei, Nagammal, & Jonnie (2007) conducted a large study (n= 234), from the Singapore Institute of Technical education. They concluded that HPS training enhanced students' critical thinking skills and confidence (Kiat et al, 2007). Findings also stated that students where well able to find gaps within their knowledge base, and practice in a safe environment without

endangering real patients. Students also found simulation beneficial as it allowed them to practice critical thinking on the spot (Kiat et al, 2007)

A study mixed methods study done by Bambini, Washburn, & Perkins (2009), (n= 112) with nursing students enrolled in a four year baccalaureate degree program, concluded that students who were involved with simulation training for post partum care, showed a increased overall self- efficacy score, and increased confidence with performing post partum exams. Moreover, qualitative data revealed that students felt prepared to go into the clinical sites as they knew what to expect, and how to handle certain situations which increased their confidence (Bambini et al., 2009).

Another study, done by Bremner, Aduddell, Bennett, & VanGeest (2006) reported similar results that students felt a lower level of stress when in the clinical practice setting, after taking part is HPS lab. They also concluded that students felt more confident while taking care of a patient which was associated by the students to be linked to the simulation training (Bremner et al., 2006). ,

Lasater (2007) conducted an exploratory study, in which he looked at clinical judgment and self- confidence of nursing students, (n= 48). Students were exposed to various simulated clinical scenarios; they concluded that simulation helped make scenarios and diseases processes learned in class come to life, they appreciated the depth of the simulation scenarios and the realism of it and lastly it helped bridge the gap between knowledge and theory acquired in class to the clinical setting (Lasater, 2007). However, a few students perceived, simulation as a negative experience in which they felt "stupid" talking to a mannequin, and this caused them to have anxiety (Lasater, 2007).

McCaughey et al (2010), conducted a longitudinal study at a Higher Education Institution, (n= 153), and the sample was at the verge of transitioning from nursing students to staff nurses. McCaughey et al. (2010) concluded that simulation training helped increase student nurses competence and safe practice as nurses following the exposure to simulation training. 92.5% of the students also reported that simulation helped increase their confidence for clinical judgment, as they were able to learn from their mistakes and identify areas for improvement in their practice (McCaughey et al., 2010). However, there were some opposing views with regards to the realism of simulation, which was seen as a limitation, but is noted by many researchers as a limitation to simulation in general (Alinier, et al.; Lasater, 2007; McCaughey et al. 2010).

Alinier et al. (2006), conducted a quantitative randomized control trial (n=99), in an undergraduate nursing program in United Kingdom. The experimental group was exposed to simulation as well as traditional lab time, while the control group was exposed to just traditional lab time (Alinier et al., 2006). The study results showed that students who were exposed to simulation lab had higher marks when they were tested in scenarios; while the students in the control group generally scored lower on the scenarios they were tested on. Interestingly, the data analysis results from students in the experimental group were not a statistically significant, in how simulation training effects their perception of stress or confidence (Alinier et al., 2006). The study concluded that simulation should be used within nursing schools, however, in this study there was no correlation between confidence and clinical performance amongst nursing students in the various groups (Alinier et al., 2006). But the study also revealed that students, who reported the lack of confidence, were also stressed out when working within a technologically enhanced environment like HPS labs (Alinier et al., 2006).

Blum, Borglund, & Parcells (2010), in thier research study to explore self- confidence and competence within entry- level nusring students, revealed that ther was no statistical siginificance in the difference within the level of self-confidence and comptentce with groups who where exposed to simualtion than those who were not. The results from students in the entry level validate, that traditional labs, were effective in training them skills (Blum, et al., 2010). However, faculty felt that simualtion was labs were more interactive and help in the learning process better than the traditional models of lab (Blum et al., 2010). The possiblity of fusing simualtion with higher level students rather than entery level should be considered, as higher level students are accustomed to complex scenarios and are better able to process and integrate that amount of information (Blum et al., 2010).

Sinclair & Ferguson (2009) conducted a large mixed methods study (n=250), using Bandura's self efficacy framework. The study consisted of a control group who were exposed just lecture and the intervention group who were exposed to lecture and simulation (Sinclair & Ferguson, 2009). The results of the study concluded that students in the intervention group, 91% reported that simulation combined with lecture to be highly effective, while with the control group, only 68% reported lecture to be effective (Sinclair & Ferguson, 2009). Students in the intervention group also reported that simulation helped them reinforce previous knowledge, increased their level of confidence; however in the control group students requested that they have less power points, more case scenarios and more hands on active learning (Sinclair & Ferguson, 2009).

Traynor et al. (2010) conducted a mixed method study (n=90), with 3rd year university nursing students. The students took part in simulation training over the course of the term and participated in a focus group after the training session was over (Traynor et al., 2010).. Results

indicated that 85.6% of the students felt simulation scenarios helped develop organizational skills, 96.7% agreed that helped test clinical skills, 96.7% agreed that it allowed them to practice safely, without harming a real patient in an acute like scenarios, 81% agreed that working through simulation scenarios helped increase their confidence (Traynor et al., 2010). The researchers concluded that simulation training can increase knowledge, help facilitate the acquisition of skills, lower anxiety, and promote clinical judgment skills (Traynor et al., 2010).

Many of these studies have concluded that simulation, combined with traditional classroom modality of teaching, can increase the active learning process, increase the reality of simulation in confidence and competence, and students are better able to integrate theory to practice, and additionally, there are many benefits of working in safe environment, (McCaughey et al., 2010; Reilly et al., 2006; Sinclair et al., 2009; Traynor et al., 2010). Lastly, the decreased use of lecture and traditional modes of teaching, and increased use of new modalities, such as HFS, has shown an increase in the self-confidence of nursing students (Leigh, 2008).

Opposing Viewpoints

Currently there is a vast amount of information, within the literature, on how simulation can be incorporated in to the educational field of nursing and the benefits that students may acquire from this type of training (Durham et al., 2008; Rodgers, 2007). However, on the other hand Berragan (2011) argues that, simulation is used as a way to replace clinical time and real patient interaction that is vital for a novice student to become accustomed to socialize into their role of a nurse. Berrgan (2011) feels that the actual nurse to patient interaction is lost and that there is "the potential that simulation may take over from or replace reality" (Pp.661). Learning to interact with our patient and being with them hour to hour is how nurses begin to develop their own professional self (Berrgan, 2011). Linking the theories that are learned in class and being

able to socially apply them to the context of the patients', history, culture and community are very important (Lave and Wenger, 1991), to the in the social world of a nurse.

Simulation training has the ability for students to become accustomed to using simulation in school and effectively apply all skills well into the clinical setting, while some learners may find this as a challenge (Berrgan, 2011), which will hinder their learning process and may block them from performing well in a clinical environment; hence, the student who will find it a challenge in the clinical environment will feel a decreased level of clinical confidence and self–efficacy.

Furthermore, as discussed above, the encouragement of HPS, has been seen in positive light, however, as technology is becoming more advanced, educators need to know the benefits and implications simulation training has for different student learners' styles. Other issues that arise from simulation training is that it may cause the learner to "promote simulation of learning" rather than the intended outcome of "learning by simulation" (Bligh and Bleakley, 2006; Berrgan, 2011, Pp.661). Moreover, when students are in clinical setting they may understand themselves to be confident, because they were successful in the completion of a multiple simulation scenarios, however this may be false, in reality when they are unable to effectively relay critical thinking skills and technical skills to the clinical environment (Berrgan, 2011) and it may be "linked to inappropriate identity construction in simulated settings" (Berrgan, 2011, Pp.662). For example, a student may be able to, perform a Foley catheter insertion with a high level of confidence, and apply the right steps in a sepsis scenario on a mannequin in a simulation lab, but it reality if this were to happen the student may not be able to integrate what they have learned into the clinical setting; hence, producing a false identity for that student about their self-efficacy and confidence.

Others argue that simulation training is an excellent teaching method, however, in nursing it should be incorporated during the senior levels rather than at the entry level because senior students are better able to process complex scenarios and "integrate multiple contextual factors" (Blum et al., 2010, Pp. 10). Students in the first years may not understand simualtion as they are at the beginning of their education in nursing and maybe overwhelmed with the vast amount of material they need to learn. Allowing them to absorb theories and learn about the social roles and history of nursing is more applicable at tht stage. Therefore, Blum et al. (2010) feel that simulation should be integrated in the latter part of the programs. However, Duhram and Alden (2008) point out that simulation can be incoporated in to all levels, from beginner students learning psychomotor skills and head to toe assessments to the advanced level of practicing complex scenarios.

Implications for the Future of Nursing education: Increase use of HPS in Nursing Programs

The literature suggests that the lack of clinical placement time for students impacts their ability to become confident within their nursing skills and assessment techniques (Alinier et al., 2006; Duhram et al.,2008). It is useful to consider providing more time in simulation labs for nursing students, which re-enact the clinical environment, not as a means to replace clinical placements, but to counterbalance the diminishing exposure to clinical practice areas. Simulation training can provide many other benefits to students' learning in nursing programs such as: interactive learning with no risk or harm to an actual patient, multitude of skills and scenarios that they may not experience in the clinical environment, active participation from all team members, team work and team building skills, helps in bridging the gap between theory and practice, possibility of reducing clinical anxiety and helping self- confidence and helps the

students identify gaps within their knowledge base (Duhram et al.,2008). This would allow students get a full scope of nursing, hands on.

Simulation can offer many benefits that may not be present in the clinical environment, or students may be reluctant to go ahead to practice due to lack of practising a certain skill. Therefore, simulation, combined with traditional classroom teaching, can increase the active learning process, increase the reality of simulation in confidence and competence, and students are better able to integrate theory to practice, and lastly, there are many benefits of working in safe environment, (McCaughey et al., 2010; Reilly et al.,2006;Sinclair et al., 2009; Traynor et al., 2010). Furthermore, simulation provides an experience in real time where students can see the cause and effect of the intervention they have initiated and it " appeal[s] to the contemporary learner" as they are more fascinated by and are well immersed with, new technology (Durham and Alden, 2008,pg 11) .

 Moreover, nursing educators need to be cautious not to replace clinical time with simulation lab time, as this defeats the purpose of simulation. Clinical time is crucial, because the richness of experience and linkage of theory to practice come together in the hands on experience in actual clinical environments, even though research shows that this can be done through simulated learning environments. Lastly nursing faculty need increased support with designing and implementing simulation labs in the undergraduate nursing curricula.

Conclusions

Human patient simulation has been around for many years in the healthcare field, and is now more commonly used in all nursing schools to promote clinical techniques and real life scenarios. Now than ever, HPS is becoming a large part of nursing curricula and it helps the

students' ability to transfer skills learned in lab to an actual clinical environment. As clinical time is becoming scarce and placement issues have developed over the past years, students need a place where they are able to practice clinical skills effectively and beneficially, so students will be able to apply them in their nursing practice, within a clinical setting. Studies have shown that simulation training enables students to learn in a safe environment and acquire skills that are transferable to real life patients (Alinier et al., 2006, Pp.360). The review of literature has revealed methodologically sound body of evidence, which demonstrates effectiveness of HPS with the combination of traditional classroom teaching, in transferring technical skills and critical skills in to clinical setting. Literature also revealed possible negative attitudes towards incorporating a large amount of simulation training within nursing school and how this may adversely affect student nurses' in socializing into their role as nurses. Definitions of varying levels of fidelity's were discussed along with definitions simulation and simulate and the definition for clinical confidence and self–efficacy. The role of competence and how it relates to confidence also was examined and the how they go hand in hand through Bandura's (1977) self-efficacy theory. Through the literature search it is presented that nursing schools are increasing their use of simulation training, due to decreased practice placements and the desirability to have students on the floor because of increased workload of staff nurses

Much of the literature explored does not account for how students felt about their confidence in clinical practice and if simulation helped or hindered their confidence? Therefore this study will use a phenomenological approach to explore how HPS effects student nurses' confidence for clinical. Chapter 3 will be about the methodological approach and methods of analysis used to deploy this study and understand students' perspectives about HPS in relation to confidence.

CHAPTER 3: METHODS

The methodology for the study is described in this chapter, including design, sampling, data collection, analysis, ethical considerations and limitations of the study.

Study Approach and Design

A qualitative phenomenological study design using two focus groups was used to address the proposed research problem. A phenomenological method was used to help elicit thoughts, viewpoints and opinions related to HPS and clinical confidence from the participants. This method is well utilized when obtaining "subjective insights into phenomena" (Ream & Richardson, 1996, Pp. 45). Phenomenology is concerned with peoples lived experiences and how it has shaped their realities for everyday and moreover how each person interprets those lived experiences (Ream & Richardson, 1996; Taylor, 1993). This approach helped the researchers to explore in depth the feelings of the participants and how HPS has affected their clinical confidence.

Phenomenology, as described by Van Manen (1990) is the inquiry that helps one to see the meaning behind another's lived experience and how it shapes their world and ideas. It also enhances our perceptions and allows us to become more in touch with how humans form relationships with their lived experiences (Van Manen, 1990). Van Manen uses a phenomenological approach to understand the experience of the phenomenon being studied, which allows him or her to grasp vital information about the experience. The application of Van Manen's phenomenological lens was utilized to help the researcher to better understand the meaning of students experience with simulation and how it impacts their clinical confidence. Van Manen's (1990) six activities as stated below will be used to understand the phenomena behind confidence related to HPS:

Table 3.1: Van Manen's Thematic Analysis Steps

Step	Description of Activity
1	Finding a phenomenon that catches ones attention
2	Inquiry about the experience through phenomenological lens
3	Finding out what major themes are surrounded by the phenomenon of interest
4	Aggregating the themes and analyzing them, using various techniques
5	Finding relationships within the phenomenon
6	Putting it all together with research and study data, as one big picture

Focus group interviews were the chosen method for data collection. Focus group interview is "an interview with a group of individuals assembled to answer a given topic" (Polit & Beck, 2012, Pp. 728). This method allows the researcher to be non- judgmental, and open to viewpoints and opinions of the participants so they are able to comfortably express themselves about the phenomena at hand, also helps the researcher grasp and explore ideas that emerge about the particular phenomena (Krueger & Casey, 2009). Moreover, focus groups also help the participants to relate their experiences to one another, in a safe non- threatening environment and this may also help them feel that their voice has been heard and may make a difference for the future (Krueger & Casey, 2009). Lastly, focus groups "allow[s] informants to express and clarify their views in ways that are not easily accomplished in one-to-one interviews" and by "participating in a discussion, these particular informants may find it easier to uncover how they really feel about something" (Craig & Smyth, 2007, Pp. 159).

Sampling

A convenience sample of students from one educational institution, University of British Columbia (UBC) in the term 3, of their undergraduate nursing degree was emailed an invitation and consent form to attend a focus group session. The researcher first contacted the nursing administration clerk at UBC School of Nursing through which the invitation letter and consent form was sent to the students in term 3. Convenience sampling was used as it fits with the chosen study design, relies on volunteers and is "easy and efficient" (Polit & Beck, 2012, Pp. 516). About 6 – 8 participants were sufficient for each of the two focus group for this type of qualitative research. If there are too many participants it will be hard to get good group discussion. Qualitative research requires small sample sizes as it is driven by the wealth of knowledge and experiences that the participants have to offer rather than " by a desire for representativeness" of the sample (Polit & Beck, 2012, Pp. 516).

Incentives such as water bottles, and pastries were provided for participants that enrolled into the study and the first twelve students that reply back to the email were entered in a draw for a gift card to Starbucks. There were two Starbucks gift cards valued at ten dollars each that were drawn for at the end of each focus group. This also helped avoid recruitment problems.

Inclusion criteria consisted of all undergraduate students enrolled in the Bachelor of Science in Nursing (BSN) degree, in term 3 of their program. They were invited to participate in the focus groups particularity because at the level they are at in the program, they have been exposed to HPS at various times throughout the program and in their current term. Exclusion criteria consisted of students enrolled in the BSN program and are in terms 1, 2, 4 and 5, this is because, in term one they have only just been introduced to simulation, term 2 is the first time

they engage in simulation based learning and term 4 did not start until September, and term five students were inaccessible and recruiting them would have been a challenge.

The total number of participants recruited initially was fourteen, seven in each group; students picked a date which was convenient for them attend one of the two focus groups; however, during the second focus group some students had a time conflict with another meeting, therefore three students opted out of the second focus group session and the researcher was left with four students in the second focus group. In total there were eleven participants who joined and expressed their views on HPS. The first focus group consisted of seven participants who were all female nursing students from the BSN program in term three. The second focus group consisted of four female students, and they were also within approximately the same age range as the first focus group. The researcher was aware that there is a potential for another focus group(s) if data was not fully saturated and new ideas and themes keep emerging, however this was not required as there was a lot of overlap of the themes that emerged from both focus groups.

Informed consent forms were signed by the participants to allow their data to be used for the purpose of research prior to the focus group session and collected on that day. The invitation letter with the consent form attached was emailed via administration to terms 3 students, and they replied back by email to the researcher directly if they are interested in participating. Furthermore, participants were asked also to provide an email address for contact once the focus groups were over, to send a preliminary summary of the interview notes (email information was collected at the beginning of the focus groups) to see if the researcher grasped all ideas and viewpoints from the focus groups correctly.

Procedures and Data Collection

Those students from term three who were interested emailed the researcher and then the researcher set up two dates over the lunch time period for the focus groups to be held. The participants, who were interested, assigned themselves to a date that was convenient for them to attend the focus interviews sessions. All communication for the interested participants was done via email. The session took place at UBC in the Nursing building, in a conference room at noon time. Faculty members were not be present during the focus group sessions, as that helped to minimize hierarchy and any kind of bias or power over students that students may perceive as threatening. At the beginning of the focus groups participants' were informed that they can withdraw from the study at any time and no questions would be asked as to their desire to leave. No one withdrew during the interviews. Focus groups allowed participants to openly talk about their experiences and learning with HPS and will be encouraged to express their feelings, negative or positive, in regards to the use of this educational technology tool. The focus group sessions took around 30- 35 minutes each and were audio taped for later transcription. The researcher also verified with the participants that all audio data that was collected will only be used for this research purpose and only anonymous quotes would be utilized within the research study. The researcher did not take any notes on any non-verbal behaviour, and data used is strictly what is transcribed verbatim. At the end of each focus group session a draw took place to announce one winner from each group who took home a Starbucks gift card valued at ten dollars.

Lastly, the questions those were addressed throughout the focus groups sessions to generate discussion can be found in Appendix B.

Data Analysis

Once the sessions were complete, the data was transcribed and a thematic analysis of data took place using Van Manen's phenomenological strategy to review the data. The six steps outlined in his framework were used, to aggregate and analyse transcribed data. First the researcher reviewed the transcript, and highlighted the words and phrases that related to confidence and HPS. The researcher then re-read all the transcripts again to find out and cluster words with similar meanings or commonalties which helped in the data analysis process for coding for themes. Common themes and phrases that arose from the transcripts where coded at the end. Themes, key phrases and terms that are related to confidence in clinical practice were sought out and any other themes that seem to consistently reappear were also coded for analysis. Adverse phrases or negative cases, not linked to confidence were also sought out; but there were no adverse themes that emerged from the analysis process. This is also referred to as "negative case analysis" where the researcher is identifies adverse or exceptional themes, or cases within research data, so that the data does not look "ordered or regular than it already is" and this strategy strengthens the credibility of the research as it shows that negative cases were "sought out and dealt with" within the analysis research (Craig & Smyth, 2007, Pp. 165).

Once data was fully aggregated, a preliminary summary of the interview notes was emailed to the participants for member-checking, a strategy in qualitative research that allows confirmation about whether the researcher grasps all the ideas from participants' perspectives and furthers the validity of the qualitative research (Craig & Smyth, 2007, Pp. 164). Out of the eleven participants those were emailed the preliminary summary, only four replied back and summarized that they agreed with what was reported in the summary.

As the researcher, I acknowledged my own biases and viewpoints on the phenomena of interest as much as possible so that I was able to analyse the data that is transcribed with minimal biases from my judgment; this is referred to as reflexivity, in which the researcher limits their influence on data analysis and research findings by recognizing that they may influence the data analysis process and explicitly stating this is the research findings (Craig & Smyth, 2007, Pp. 171). Member-checking was another procedure utilized to minimize the researchers' biases by verifying with the participants that what was analysed was correct from their viewpoint. According to Van Manen (1990), it is crucial for the researcher, in step five, to maintain a strong relationship with the phenomena under investigation; otherwise there can be many temptations for the researchers' biases to arise during the analysis. While conducting the analysis, the researcher took into account how the themes and phrases related back to the research question, which further helped minimize the any biases that would have occurred. Bracketing was also a procedure which was utilized to minimize biases; this is done when the researcher identifies his or her beliefs and does not let them and sets them aside so they do not overpower the analysis or any part of the research about the phenomena under study (Polit & Beck, 2012).

Following this, interpretation of research findings took place in which themes from analysis be brought to review it with findings from the literature. Literature was reviewed again by the researcher, to seek out similarities or discrepancies in existing research to the initial findings. Van Manen firmly believes that other sources such as "literature... can provide a wealth of experiential information that can increase the insights as the phenomenologist tries to grasp the essential meaning of the experience being studied" (Polit & Beck, 2012, Pp. 568). Moreover, participants that replied back to the preliminary summary all concurred with what was being said; therefore, no changes were made to the findings. Finally, the study ended with a

summary of the themes generated from focus groups' qualitative evidence and researcher's conclusions with further recommendations and implication for the future with continued use of HPS in nursing education.

Ethical Considerations

Informed consent forms were signed by the participants to allow their data to be used for the purpose of research prior to the focus group session and collected on that day. The invitation letter with the consent form attached was emailed via administration to terms 3 students, and they replied back by email to the researcher directly if they are interested in participating. Furthermore, participants were asked also to provide an email address for contact once the focus groups were over, to send a preliminary summary of the interview notes (email information was collected at the beginning of the focus groups) to see if the researcher grasped all ideas and viewpoints from the focus groups correctly.

The consent forms that the participants signed were approved and other ethical considerations were taken into account prior to the study by the Behavioural Research Ethics Board (BREB) at the University of British Columbia. Anonymity and confidentiality was limited as students knew each other from their courses and that the participants relied upon to respect the group process and keep information disclosed in the groups within the groups, this was also outlined in the consent form before participants signed up. Participants were given one week after responding with their interest to the initial email, to be in focus groups, to read through what the study is about and respond back if they want to still participate. Willing participants then signed up for one of the two focus groups, which were convenient for them to attend. The participants' confidentiality was maintained during email communication through sending individual emails rather than a mass email. Lastly all physical data and participant information

was kept in a secure filing cabinet of the student researchers office and data kept on personal laptops was password protected along with the files being password protected. Once research is complete all data will be kept for five years post study and then will be destroyed.

Limitations of Study Design

Qualitative study design itself is a study limitation as there is no truth or final answer, but rather many understanding and perspectives on the phenomenon being studied (Polit & Beck, 2012).The final result from a phenomenological study is generated by the conversation between the researcher and the participants, and how the researcher understands their lived experience (Polit & Beck, 2012). Moreover, the researcher needs to be aware of their own biases and use reflexivity, which is the technique used by researchers to recognize their biases (Craig & Smyth, 2007). This can be done throughout the data collection and analysis, as the researcher states explicitly their own social context and biases about the phenomena under research (Craig & Smyth, 2007). The researcher also kept in mind her own biases and thoughts about HPS and went back to the research question when she thought she was being judgmental with her own experiences with regards to the HPS and confidence for clinical practice; this helped her to differentiate her own biases while collecting data and doing the data analysis.

Convenience sampling can be seen as a study limitation, as only students from one institution are recruited. Qualitative studies aim to "extract the greatest possible information from the few cases in the sample, and the convenience sample may not provide the most information-rich sources" (Polit & Beck, 2012, Pp.516). In future, studies can incorporate other educational institutions where they use HPS for training their BSN students, and this may give a broader perspective on simulation and confidence.

The fidelity of the simulators being used by the participants in the study can be seen a limitation of this study. The participants were mainly exposed to medium fidelity simulation mannequins, and much of the literature talks about how high fidelity simulation enhances students learning experiences and factors which affect them. It is a possibility that study finding are biased due to the medium fidelity simulations used at this educational institution.

Summary

Chapter three was an overview of the methodologies used to conduct this qualitative exploratory research study. It introduced how data was collected, handled and analysed and moreover, how confidentiality and other ethical considerations were taken into account and handled. Eleven participants were involved with the study and attended focus group sessions to express their experiences on how HPS affects their confidence for clinical practice. The focus groups were used so to help facilitate open discussion amongst participants so they could express their attitudes and viewpoints about HPS. That data that was generated from the focus groups was thematically analyzed by Van Manens`s 1990, analytical process. The thematic analysis and the research findings from the two focus groups are presented in Chapter four.

CHAPTER 4: RESEARCH FINDINGS

Introduction

Chapter four begins with the research findings and analysis of how participants related HPS as to how it affected their confidence for clinical practice. There were six major themes uncovered with several sub themes that emerged from them. The literature was also consulted to further explore evidence related to these themes.

The data collected in this study was obtained from eleven university students at UBC, and reflects their, ideas, viewpoints and opinions of HPS in their undergraduate nursing program as it related to their personal confidence in clinical practice. All students in the study were enrolled in term three of five in the course of the program and had previous experience with HPS. Most of the students' experiences were very similar, and they had no problems answering question during the focus groups and everyone in the groups participated.

The research findings presented in this chapter address key themes that were aggregated by the researcher from the participants' responses to how HPS affects their clinical confidence. The major themes that were evident from the participants' experiences were classified as:

- Realism,
- Building on Knowledge,
- Safe Environment,
- Critical Thinking and
- Confidence and Anxiety

As illustrated in the figure below:

Figure 4.1:   **Thematic Tree Analysis of**

Factors of HPS that effect Confidence to Practice in the Clinical Environment
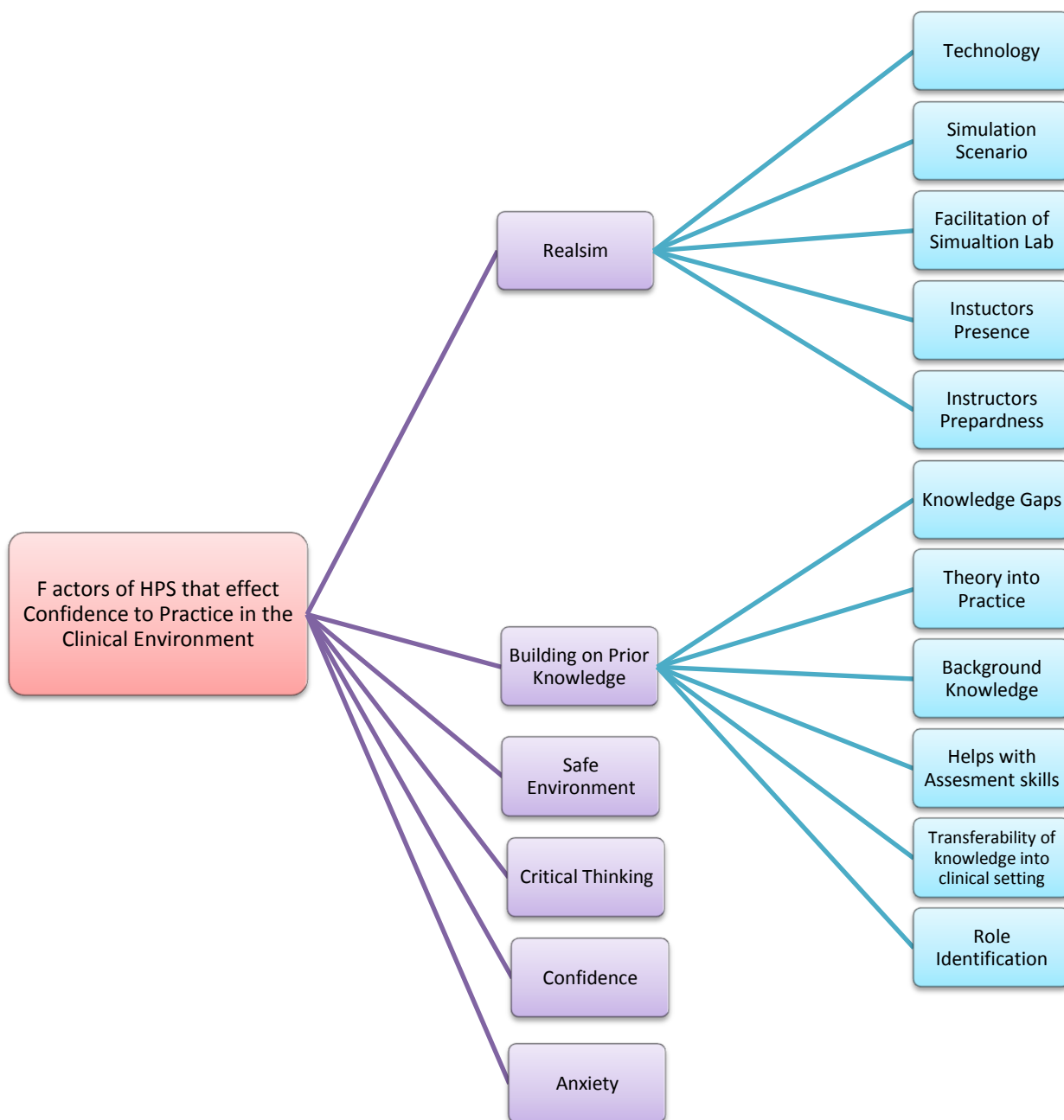
Realism

Realism was a major theme that emerged throughout both focus groups and it was illustrated by many related sub- themes. Participants felt that their acquisition of knowledge was influenced by the realistic qualities of the simulation experience. In this study participant' experience of realism was affected by many other elements, including the following sub-themes: technology, simulation scenarios, simulation lab facilitation, instructor preparedness and presence.

Technology

Participants' were generally concerned about practising on a mannequin as the mannequin did not feel like an actual person that really hindered their learning process because they could not get over that fact that they were practicing on a mannequin. Participants felt it was hard to interact with the mannequin, and they felt uncomfortable during the scenarios. Two participants described their experience as:

> "I just hate it so much ... I dread the final exam – not because of my skills but because I... hate interacting with the mannequin and I just feel so uncomfortable and weird."
>
> "Lacks the whole patient, their own emotion... [and] just the human-ness"

The fidelity (how closely the mannequin relates to a real human being) of the mannequins was also in question from participants. They felt the mannequins were not as realistic as they thought they would be, and they found that the whole experience was not enhancing their knowledge acquisition. Therefore technology played a big role as to how realistic the simulation experience was considered by the participants. One participant stated "I find that the doll we had

… it was not a simulating as I would have liked...” Another participant found that the plastic qualities of the mannequin made it difficult for her to distinguish between different respiratory sounds during the simulation.

> “I find it’s much harder to concentrate...like, during our lab exam because it’s a mannequin, and it’s a plastic mannequin, so stuff like when you do [respirations], just because of the stethoscope [and] plastic you hear some weird sounds and you’re like is that supposed to simulate...a crack[le] or some wheezes, or is it just the machine? “

Lastly, participants felt that technical equipment used in the simulations, such as IV pumps and dressing trays, was different from actual clinical settings, negatively of the influencing the realistic qualities of the simulation experience.

Simulation scenarios

The simulation scenarios were also in question as participants revealed that they did not feel that the scenarios were as challenging to them after they had acquired more knowledge about different types of disease processes and clinical techniques during clinical practicum experiences: Throughout the term, simulations became less realistic for them. One described her experience as:

> “I knew more; like my knowledge has increased a lot more throughout the term and it was harder for me to talk the mannequin where I could say ‘I don’t see, I don’t hear [that]…”

Participants’ also felt that the scenarios were less integrated and interactive than actual clinical experiences. One participant described her feelings as follows:

"I thought that would be really nice [if] the simulations had...[the assessment and intervention of the patient]... they're coming with [and] they're presenting with all these other symptoms and you have all this other data and then you call the doctor and then they give you interventions. And then...the result would be – we would just talk about what we would do. Whereas I feel like a real simulation would be like, you would do them (the interventions) and... you would do the interventions and see their effect and, maybe, this didn't work. Let's try another one. Like, be more comprehensive in that way, because in clinical it doesn't stop after you've assessed them and get given orders. It continues and it's evaluating your care and I feel like simulations just stop after observations."

Others felt that they were learning in preparation for the test (lab test), and it was hard for them to apply some concepts to real clinical experiences. Moreover they discussed how they focused on the mannequin and the task at hand, rather than how they would apply the scenario experience to a clinical situation:

> "we're more learning for... the test not so that we can apply it to clinical...when we were getting ready for our lab exam that we were... not actually...thinking about how it is in practice, it was more like.... This is how I know I need to be with my doll."

All the participants agreed, in regards to the simulation scenario, that they do not see the direct effects of their interventions on the mannequins, negatively influencing the realistic aspects of simulation. By comparison, in real clinical situations, they believe that they can re-assess patients after interventions and better appreciate how their nursing interventions have influenced patient outcomes. One participant describes her view on this as follows:

"I found really challenging and really stressful was...with the real patient, if their

blood pressure's plummeting you can tell by looking at them … so you re-check

their vitals but with the mannequins you have no idea… you can't use that clinical

judgement."

Simulation Lab Facilitation

Simulation lab facilitation, as described by the participants, lacked realism; this was due

to the instructor standing behind them talking to the student as the patient during the simulation.

(However, it noted that this particular participant may not have been talking about a HFS

because they are equipped with built in loud speakers controlled through microphones, or it

could be possibility at that time the simulation mannequin had technical issues.). One participant

stated that:

"They're just standing there... you're supposed to ask the mannequin questions

but they're answering behind you. It's really difficult to not turn around and ask

them questions because that's the person that you're talking to but you're really

supposed to be talking to this inanimate object."

The steps taken to conduct the simulation lab also affects the scenario realism and can be

seen as a disadvantage by most students, as instructors tell them to ignore minor discrepancies

and errors. Moreover the time to introduce and explain program simulation is seen as a

disadvantage. Participants' felt that simulation would be more beneficial if it was conducted

throughout all terms to increase familiarity with this learning approach from the beginning of the

nursing program. All participants were in agreement with the following statements:

"I feel it would have been better if we'd used the sims at the very beginning of our program… [The] very first semester, so that [it] would make me more comfortable talking to [the] patient during all the assessments because that's the time when I think i[t] would be... the most beneficial and i[t] would give me confidence."

"I felt like it would have been more beneficial in the first semester when I get to practice everything in sims labs before I got into hospital."

Participants all agreed that more time spent in simulation labs would benefit them with respect to skills acquisition and confidence. One participant concluded that:

"I just wish we had more… opportunity to go over the skills at that volume more than we're doing now, so that I feel more confident before I go out and actually practice it."

Instructor's Presence

The participants related the presence of the instructor to realism as they felt that there were not many instructors during the simulation labs, therefore making it hard for students to ask for help when needed. In this study when the students were immersed in the simulation scenario they had to stop to ask questions, and they had to wait for a long time because so few lab instructors were present during the scenario. The waiting period for the instructor to come and answer their questions caused them to become disconnected from the simulation experience. They felt they needed more support from the simulation lab instructors.

"...there [are] not many instructors. Most of the time you're on your own [;] you just have a scenario and you're trying to figure out what to do and you just do it

on your own and then you just go home and the answers are posted online. For

Med/Surg, at least, that's the way they run the labs."

"... an instructor per dummy and... have the four students, an instructor could

teach more ... in the smaller groups rather than twenty of us [.][O]ne instructor,

[a] whole bunch of mannequins... I find it's like if I have a question sometimes I

have to wait half an hour if I do. [So if the] instructor is busy and I'm kind [of],

like, trying to work on a scenario and I don't know if I'm doing it right"

Instructor's Preparedness

Lab instructors need to be trained well on the equipment to conduct simulations; otherwise it

detracts from the educational value of the scenario and in turn affects the realism of the

simulation. Instructors should be able to troubleshoot when a problem arises so that it does not

cause delays in the limited and valuable simulation lab time that the students have. One

participant commented as follows:

"I found in the mannequins...even instructors half the time could not tell if it was

abnormal/normal. They had to look at the actual manual that they set up... During your

exams the instructors don't know how to properly program them so half way through

exams they struggling. So it's difficult to concentrate."

When instructors are not prepared for the simulation, the student starts to feel out of

context and forgets about the overall scenario and finer details : "You get stuck on those details

and then you get distracted because then that's when you realize that, oh yah, that's not real life,

it's just a doll." The continuity is lost and therefore hinders the learning process.

With regards to instructor preparedness, there can also be differences between students' preparatory readings and instructor's knowledge and expectations. The disconnect between the students' understanding of certain skills and lab instructors' expectations is seen as a disadvantage by the students when it comes to examination time: Students do not know whether they will be tested on what is in their readings or what the lab instructor taught them. One participant stated that:

> "...we may do some prep work and then we'll have an instructor that's maybe done the skill a certain way for a very long time and doesn't necessarily know what the latest practice is or just hasn't been in the practice setting for a long time and doesn't have a lot of knowledge. So that makes it difficult for us in the simulation lab when we're asking questions and they're saying 'Do it this way' but then we're getting different knowledge from our readings."

Building on Prior Knowledge

A second major theme that arose out of the participants' experiences with simulation and their clinical confidence was the building of new knowledge on prior knowledge. Participants from both focus groups all agreed that their knowledge base was expanded after HPS labs; they described that they were able to identify their own knowledge gaps, link theory to practice, acquire background knowledge, and it helped with assessment skills, transferring knowledge to the clinical setting and lastly role identification.

Knowledge Gaps

Participants all agreed that one major advantage of simulation learning was that it helped them identify areas that need improvement before going in to actual clinical to practice. In this

study, participants felt that HPS helped them identify gaps present within their own practice: A good "wake- up" as one participant described it. It was described as follows by another participant:

> "Learning the basics, it's such a great introduction to what we're going to be experiencing, what we're going to interact with… and getting that feedback from our instructor before we go into the actual setting."

Theory into Practice

Human patient simulation labs can also be seen by some to be able to help them put what they have learned in theory to practice that was described by one of these participants as a "stepping stone":

> "It's a stepping stone...we learn the theory, then we can sort of apply it on these mannequins...it's better than just the theory."

> "...it was a good way for me to go through task lists that we'd learned in the labs and the lectures..."

Background Knowledge

Participants described how simulation labs gave them the background knowledge and a set of skills that they are able to apply to clinical settings. When they are in clinical settings, they are not solely focused in the skills at hand, but are able to interact with patient, because they are able to adapt and remember steps from lab. The ability to do this provides the students with increased confidence, as they are able to focus on the patient and the clinical skill at the same time:

"I can somewhat do those [skills] and then concentrate...more on the patient and on how the patients doing instead of thinking, like, what are the different steps that I need to be doing."

Simulation also helped the participants practice with more ease and confidence and less stress which helped with their confidence level. One participant stated:

"That it gives me the basic knowledge... how it should be done and then it's easier to modify something you already learned rather that something from scratch"

Helps with Assessment Skills

Acquiring background knowledge is also linked with assessment skills. Simulation labs provided students with opportunities that helped them to think about normal versus abnormal findings. These learning experiences helped students identify the areas where improvement was needed and the simulation lab provided practice opportunities. A participant stated that:

"I think also it helps in... listening to abnormal things because in those labs versus the labs where we're just...practicing on our lab partner, like our heart rate's going to be normal, so we're really used to hearing that normal but we may not be sophisticated enough to know what we're listening to is abnormal until we're told it's abnormal. That's one thing that I found helpful with it."

Transferability of Knowledge to Clinical Setting

Participants all agreed that they were able to easily transfer knowledge and skills acquired from simulation scenarios and apply them to an actual patient situation in their clinical environment. Moreover, study participants described that they were able to reflect on their

assessment skills learned in simulation lab and compare them to what was happening in the actual clinical setting. This helps to build confidence as the students figure out with by critically thinking about the way they would do the skill and coming up with the rationale to why they chose a certain way to do the skill:

"... [you can] watch and you can pick out areas that are different and then you can choose to, to do the wound care dressing the way you did it prior, in lab, or you can adapt their skills ...into your practice."

Role Identification

Lastly, role identification in relation to building on knowledge was brought up by the participants. Participants confirmed that they felt that simulation scenarios helped them identify where they stand in a team environment, and what their role is during a clinical situation. They felt that in a simulation scenario, the way you act is most likely representative of how you will act in a real life situation. It was described as follows by a participant:

"in the simulated labs, you can get an idea of how you're going to react. Like whether you're going to step up and figure it out or whether you're just going to kind [of] shut down... it know[ing] yourself...[a]nd knowing how you're going to react in a... situation."

Safe Environment

Simulation can be seen as a safe environment to practice by the students, which was a third major theme that resulted from the focus group analysis. Simulation is seen as a safe environment because students can make mistakes on the mannequins and they are not actually

harming a real person; from that they can learn from their mistakes. Participants described their experiences as follows:

> "[It's] a safe place, like you know, it's ok if you make a mistake and I feel more comfortable doing it [in lab]."

> "I thought it was an amazing experience having a fake person because you know you that you're not going to kill them..."

> "I feel more relaxed to ask questions... in the lab it seems they're much more open to just you asking questions and working through what you need to work through..."

Moreover, participants agreed that it was a safe environment because they could ask the lab instructor a variety of questions; giving them peace of mind and helping them practice with ease.

Critical Thinking

Critical thinking was another major theme that emerged from the two focus groups in relation to HPS and clinical practice confidence. Participants felt that working on simulation scenarios helped them with their clinical decision making process thus providing them with rationale for clinical judgment. One participant describes her view on HPS and critical thinking as:

> "... [it] get[s] my thoughts together and understand and [how to] make... critical decisions and really start to understand the process with, in dealing with someone who is sick."

Again, HPS helped the students because they know what you are looking for in a certain situation, and they relay the steps back to what they have learned in the simulation lab reinforcing the critical thinking process. Furthermore it helps with decision making and critical thinking process, which is easily adapted into the clinical setting by students and seen as a major advantage of simulation labs:

> "It helps you create, sort of like, decision making model for yourself... if this happens, do I do this or this...and what's more important, and why?...Also critical thinking skills, too, can be easily transferred to the real life setting. So, in clinical practice you know what to do then."

Confidence

Increased confidence levels were reported by most students, however they felt that it really did not increase to a level they would prefer in clinical; moreover, some participants stated that having knowledge increased their confidence, not the simulation scenarios From this study it was concluded that learning is individualized: for some students reading about the skill can increase confidence, for others practicing simulations can affect their confidence and some students may be most affected by actual clinical experiences. One participant states:

> "It doesn't necessarily increase confidence, it increases knowledge, and I think that that's individualized, like for me knowledge, having knowledge, gives me a lot of [confidence] ... but maybe for you, your confidence is increased by actual human practice."

Participants' also found that having more exposure to different HPS scenarios prior to clinical practicums helped them strengthen their learning during clinical and boosted their confidence:

"I feel if you're exposed to it and then when you go into clinical and have a human, you you're a little bit more confident. "

A few participants agreed that HPS did not affect their confidence in the clinical environment. They also felt that confidence for clinical practice did not change because they knew that the hospital setting was different from their lab experience. One participant stated that:

" [I] think it's a great introduction to just know what you're getting into and then when you do practice it in the real setting you sort of feel like 'Ok, well I think I have a sense'... I do think it increased my confidence."

Lastly, all participants agreed when asked if simulation a set up a spark for confidence for clinical practice, but moreover they felt it gave them some background knowledge to practice in clinical.

"I would say it's started confidence …"

"Made a spark..."

"More so, like, initiate the confidence..."

Anxiety

The last major theme that was brought up by the participants of the focus groups was anxiety. Participants from the focus groups felt that simulation labs helped them reduce anxiety in clinical settings, as they had practiced skills before in simulation. One participant described her experience as:

"...doing something for the first time with a real person I get really anxious... just

knowing that I'd done it once, even if it's not on a real person, [because] I find I

work things out."

Similar opinions emerged with regards to anxiety: The participants described how simulation

helped with relaxation, decreased anxiety in clinical settings and helped their confidence level.

They acknowledged that simulation lab time helped them to figure out what they needed to

know, and it helped them function better in the clinical setting:

"I feel I go in there and I can sort of work out all the kinks... [it] helps in lab

because if I went right into the clinical placement my... stress levels would be

through the roof... so definitely I think confidence levels for sure it would help."

Some participants had opposing viewpoints and opinions about anxiety related to HPS.

Some students had anxiety when going into simulation lab to practice on the mannequins, and

then became more stressed during HPS. Some students felt that the whole role-play aspect of

simulation was a hindrance to their learning and thinking about role-play caused them to become

nervous and anxious. One participant described her anxiety issue as:

"I really truly get nervous about role play... I just feel so deeply awkward [and]

it's made more badly by then that the situation doesn't feel that realistic."

Relevant Literature Findings

According to Van Manen (1990), as a part of his thematic analysis process, literature

needs to be consulted to see what is said about the current state of the phenomena under research.

In this study the six major themes were explored in literature to see what relevance it has to the

current study finding.

Realism was one of the major themes with multiple sub-themes that emerged from it. As seen from the study analysis that participants' felt that simulation had to be realistic enough for them to fully experience the simulation experience. Reilly and Spratt (2007) believe that the simulation experience should provide enough of a realistic experience that the student forgets that they are practising on a mannequin and are fully immersed into the scenario, whereby they can start to critically think and make clinical judgments. Moreover, Traynor et al. (2010) also asserts that the simulation scenarios should be adequately created and or structured, so students can actually acquire knowledge and skills from the simulation experience.

Participants also reported that the simulation scenarios were not designed to challenge their learning; this factored into the whole realistic aspect of the simulation. Rhodes and Curran (2005) also assert that simulation scenarios should be designed at the level of the students' knowledge, and when students are at senior levels in the program, more complex scenarios should be developed in order to teach the more integrated "high- level" concepts (Pp. 261). The findings from this current study concur with what Rhodes and Curran (2005) suggest.

In this study, participants described that the way the simulation lab was facilitated, whereby the instructor standing behind them and talking to the student as the patient was seen in negative light. Studies show that the instructors' role is as a facilitator during a simulation lab; providing support to the learner as needed, whilst during lab exams they are solely the observer (Jeffries, 2005).

The participants also discussed the ratio between the numbers of student to lab instructors. They felt more instructors were needed to facilitate the simulation lab, so if the students had questions they did not have to wait for long periods of time. In literature this

concern is also addressed: Durham and Alden (2008) state one major disadvantage of simulation is the high number of students to one faculty which means that more time is required from that faculty member to provide the simulation experience.

Moreover, instructors need be prepared to facilitate the simulation labs and be able to trouble shoot, without hesitance. Durham and Alden (2008) also point out that faculty need extra time to prepare for simulation scenarios and they need extra faculty that will help them in supporting the use of HPS.

Durham and Alden (2008) state that HPS helps learners "bridge the gap between theory and clinical practice" by allowing them to make critical decisions and critically apply previous knowledge acquired through simulation labs; furthermore, they conclude that a HPS can provide a well rounded experience for the students' learning. In this study, students felt that if the simulation helped them build on prior knowledge and find areas where improvement was needed in their current practice. Durham and Alden (2008) concur "learning experiences with the patient simulator help students to identify gaps in their knowledge and experience base" (Pp.12). Moreover, it can be related to the constructivist learning theory whereby, students bring their past experiences and knowledge and construct on them with new knowledge that is being learned; by this process students are actively learning, and the material being learned is more meaningful to the learner (Ausbel, Novak, & Hanesian, 1978)

Participants felt that HPS helped them to easily transfer knowledge and skills that they had acquired from the simulation in to clinical settings. A study done by Traynor et al. (2010) concludes that simulators can help student nurses in effectively transiting into the clinical environment. Furthermore, simulation training helps with teaching students about

"interdisciplinary teamwork and communication" skills, and when students are role-playing and immersed into the scenarios they are able to delegate tasks to the other students and assume leadership roles (Durham and Alden, 2008, Pp. 7).

A safe environment to practice was another major theme that emerged in this study analysis. Participants positively commented on simulations as a safe place for them to practice without harming an actual human being. McCaughey and Traynor (2010) believe that simulation not only provides students with clinical skills acquisition and critical thinking but also a safe environment in which they can competently make decisions without harming a patient. Furthermore, students are able to practice their clinical skills and intervene with someone there to supervise them, which help the student feel more "confident" when they are in the clinical setting (Durham and Alden, 2008, Pp. 12).

A study done by Rhodes and Curran (2005) concluded that HPS can be used as a tool to help with critical thinking and clinical judgment in the actual clinical setting, moreover, various types of scenarios can help facilitate students' clinical decision making. Also HPS can help nursing students at the novice stage to advance to a higher level in their practice (Rhodes and Curran, 2005). Critical thinking is a process whereby students learn to "apply nursing process to determine, prevent and manage patient problems" and is linked to clinical judgment as it allows them to make a decision, based on their critical thinking process (Alfaro-LeFevre, 2009, pp. 8). In this study students felt that HPS facilitated their critical thinking process.

Confidence for the clinical practice setting was also seen throughout this study in positive light. Not much of literature explores confidence related to clinical practice setting and how HPS affects it. However one study done by Bremner, Aduddell and Bennett (2006) concluded that

simulation increases students' confidence levels with respect to assessment skills. Another study

concluded that simulation helped them reinforce previous knowledge and increased the

participants' level of confidence (Sinclair & Ferguson, 2009).

Lastly, anxiety emerged a major theme from this study. Some students felt anxious going

in to a simulation lab, while with some students' anxiety for clinical was decreased due to

practicing in simulation**.** However, simulation can be seen as "anxiety provoking," yet at the

same time if a skilled instructor is available to instruct and debrief pre, post and during a

scenario, simulation has the potential to become more popular amongst students (McCaughey

and Traynor, 2007, Pp. 831).

Summary of Findings

Overall study participants reported that HPS had a positive influence on their confidence

in clinical practice. The six major themes and multiple sub-themes reflect the many factors that

affected students' experience with HPS and their subsequent clinical practice confidence.

Participants' felt that ***realism*** of the simulation experience was affected by how they

perceived simulation labs. They felt that lack of fidelity of the mannequin caused them to think

and react with the mannequin as just a "doll" versus an actual patient. Moreover, the simulation

scenarios were not challenging enough for the participants: they wanted more complex scenarios

to challenge them to learn more. Instructors also need to be prepared and have enough

knowledge and support to run simulation labs. Sufficient instructors are also needed to avoid

long waits for assistance, taking away from the limited and valuable time students have during

simulation labs.

Additionally participants felt that HPS helped then ***build on prior knowledge*** which they were easily able to transfer into the clinical setting. Simulation helped them to develop assessments skills, ***critically think*** and make clinical judgements. With regards to clinical ***confidence***, participants went both ways: for some students, HPS helped to boost confidence before clinical practice, but other students did not believe that it affected their confidence in any way. Lastly, participants described ***anxiety*** related to HPS: Some students felt that simulations helped reduce their anxiety levels for clinical practice, while other students felt really anxious going in to practice on the mannequins because it was hard for them to see the mannequin as an actual patient, and therefore caused a learning barrier for them. Overall the consensus that emerged from the focus groups was that HPS was a helpful experience. Participants cited ways to enhance HPS to better benefit student learning.

In chapter five I will discuss the future implications of HPS on confidence for clinical practice, in regards to the future of nursing education, and summarize the qualitative research with conclusions drawn from this study.

CHAPTER 5: SUMMARY, IMPLICATIONS &CONCLUSIONS

Summary

There is a growing need for undergraduate students to acquire quality placements for clinical practice. However with the current state in healthcare, quality placements have been very hard to attain (Traynor, et al., 2010). Therefore HPS are become the latest trend in many nursing schools in attempt to address this issue (Traynor, et al., 2010). In this study, HPS has been seen to help with confidence levels for clinical practice. However, the benefits that students' take away from the simulation based learning activities is very dependent on how the simulation is organized, structured and conducted. This notion is supported by the findings of this study.

There were six major themes and multiple sub- themes that came about during this study that impacted how students perceived their experience with HPS in relation to clinical confidence. ***Realism*** was one of the main themes. It was concluded in this study that students needed to feel that the whole simulation environment is realistic for them to actually fully immerse them into the scenarios. With more integrated and complex scenarios, increased fidelity simulators, and simulations starting early on in the nursing curricula would be very beneficial to the students learning and confidence for clinical practice. Students suggested that higher fidelity simulators would benefit their learning as they depict a human patient more closely than any other simulation mannequins. Moreover, instructors need to be supported, as simulations can be time consuming and resources need to be in place to help those faculty members conduct simulations at an optimal level. This study also suggests that more instructors are need in simulations so they are better able to help students during that time period which would help avoid long waiting periods for students who need help. Students also felt that HPS helped them ***build on prior knowledge*** by making links to theory that they had already learned in lectures,

finding their knowledge gaps, providing them with assessments and techniques that were easily transferable to the clinical setting and role identification. Students saw that HPS provided them with more knowledge that they were able to integrate with their prior knowledge, which in turn was for boosting their confidence for clinical practicums. A *safe environment* for learning was another major theme that was uncovered in this study. Students felt that they HPS labs provided them with a safe learning environment, where they could make mistakes without actually harming a patient. Moreover, HPS labs also gave them a chance to develop on their *critical thinking* skills and in turn help them able to make clinical judgments, which was highly valued by students when they were in clinical environments. This study also concluded that most students felt *confidence* to practice in clinical was effected in positive way by HPS labs, however few students felt that HPS did not affect their confidence. Lastly, *anxiety* was a major theme that was uncovered during this study. Some students felt that simulations caused them to become anxious because they did not feel that was a real person that they were performing skills, however, for others anxiety for clinical practice setting was reduced because they had done the skills/ assessments in simulation.

Literature indicates there are limited placements for clinical sites in many health authorities. The demand in nursing schools to replicate the clinical environment is high and this problem needs to be addressed (Alinier et al., 2006). Proper equipment, such as HPS and moreover, the use of high fidelity simulators would benefit the students learning. Many studies have shown an increase in knowledge base, skill acquisition, critical thinking and clinical judgement (Alinier et al., 2006; Lasater, 2007; Sinclair et al., 2009), however much of the literature search does not represent how students felt about their confidence for clinical practice with the use of HPS. This study summarizes that the use for simulation can be beneficial for

clinical confidence if integrated at the right times of the program and with increased fidelity

simulators that depict reality of the patient more closely.

The methodology used to conduct this study was a qualitative phenomenological

approach which aided the researcher in the exploration of thoughts through the lived experiences

of the participants. A phenomenological lens helped to see how negative and positive

experiences of the participants as shaped by their realties and how this effects their options and

viewpoints about HPS and their confidence for clinical practice.

While the focus groups were designed to explore the effects HPS had on undergraduate

student nurses' confidence for clinical practice, participants all shared similar views and opinions

with regards to this topic. Focus groups helped the participants talk openly about the phenomena

at hand which out and judgments from the researcher. Participants were able to talk amongst

themselves about HPS and did not feel pressured to talk in the small focus group environment.

Lastly, the two focus groups had overlapping of themes and most of the participants felt that they

the reality was a major factor which hindered the confidence at many levels.

Steps taken to analyse the data was taken from Van Manen's (1990) phenomenological

approach to understand the lived experience by utilizing his thematic analysis process. The

researcher, started by looking at the transcripts, highlighting similar phrases and sentences,

coded them into major and sub- themes. Transcripts were re-read to see if more themes would

emerge or if anything was missed or misinterpreted. A preliminary summary with the themes

aggregated was sent to the participants for validation process, from which the participants agreed

fully with the summary. Then literature was reviewed again to see what similarities and

discrepancies were related to major and sub- themes that emerged from the data analysis process.

Much of literature talked about the realism aspect, skill acquisition, critical thinking, safe environment, similar to that of the data in this study, but lacked detail on clinical confidence. Lastly, the synthesis and integration of literature to the research findings was written up as seen in chapter four from the themes those were aggregated.

Furthermore, it was noted that there were methodological issues that limited the findings of the study. It had become apparent that some students were talking about non HFS experiences, and so conflated HFS with other lab experiences. This may have lead to unintentional biases and misleading results.

Implications for the Future of Nursing Education

It is important for the future of nursing education that educators are aware of the different types of simulations and fidelities, as HPS within nursing schools are becoming more popular. The lack of clinical placement times for students impacts their ability to become more confident in their nursing skills and assessment techniques (Alinier et al., 2006). From this study it was indicated that the instructors need to be well trained on the HPS in order for students to get a well-rounded experience. Therefore, the need for more lab instructors who are experts with HPS should be considered, to train other faculty to become for efficient at conducting and troubleshooting during simulation labs.

Moreover, it is useful to consider providing more time in simulation labs for nursing students, which re-enact the clinical environment, not as a means to replace clinical placements, but to counterbalance the diminishing exposure to clinical practice areas. HPS can provide many benefits to students' learning in the nursing programs such as: interactive learning with no risk or harm to an actual patient, multitude of skills and scenarios that they may not experience in the

clinical environment, active participation from all team members, team work and team building skills, helps in bridging the gap between theory and practice, possibility of reducing clinical anxiety and helping self- confidence and helps the students identify gaps within their knowledge base (Duhram et al.,2008).

Furthermore, from an economical standpoint, the question then arises, how feasible is it to employ HPS? It needs to be taken into consideration that employing HPS is a huge investment. First off, the cost of one mannequin can be anywhere from thirty thousand to eighty thousand dollars, varying on the fidelity. Then more staff are needed to run simulation labs that need a designated area to run simulation labs. Moreover the cost to have a faculty there who can troubleshoot at all times needs to be taken into account. Although HPS are an effective way to help confidence for clinical practice in nursing students, there are huge costs associated with employing such educational strategy. Many factors need to be accounted for before decisions can be made, with positive light that it is for the benefit of students'.

Conclusions

From this study several conclusions can be drawn about how HPS effects undergraduate student nurses confidence for clinical practice. Findings indicate it is crucial or participants to feel that the whole simulation experience depicts reality. Realism was the major theme related to clinical confidence. If the scenario was not simulating enough participants felt they did not learn much from them; however, during times when simulations were at the optimal level participants felt that they acquired many things, such as confidence, clinical techniques, linking theory to practice, identifying their own knowledge gaps, critical thinking, background knowledge to help in similar cases in the actual clinical environment.

It is very important that HPS is well integrated into the nursing programs so students achieve great results from the simulations, which can be done if the simulations being conducted and organized at the right times in the programs. Maximum benefits can be achieved and confidence can be boosted if simulations are well managed and executed, so students feel that the whole simulation environment is realistic.

Lastly, other possible future directions for studies may include the exploration of long term efficacy of HPS with the success of students in clinical and in their nursing careers or even the effect it has on their confidence when they are novice graduate nurses.

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APPENDIX A

UBC

The University of British Columbia

School of Nursing
T201-2211, Wesbrook Mall

Vancouver, B.C. V6T 2B5

Phone: (604) 822-7417 Fax: (604) 822-7466

Focus Group Invitation

A Phenomenological Exploration of the Effects of Human Patient Simulation on Undergraduate Student Nurses Confidence to Practice in the Clinical Environment.

Tuesday, August 21, 2012

Dear UBC student

I am a Master's of Science in Nursing student, researching how Human Patient Simulation (HPS) effects the undergraduate student nurses' confidence in clinical practice. I am interested in learning about student experiences with HPS so I can incorporate the best strategies in helping undergraduate student nurses utilize the HPS in my future practice as an instructor. I would appreciate you providing feedback on your learning experiences over the past semester by taking part in a short focus-group discussion session around HPS and how it relates to confidence in practice. This focus group will be held at UBC in the a designated library study room on [DATE] at [TIME}

What is involved?

Two small groups of 6-8 other participants each, you will be invited to communicate your viewpoints on the effects of HPS as it relates to undergraduate student nurses' clinical confidence, in a short 30 to 45 minute focus group session. The focus group will be audio-taped and, while no personal identifying information will be required, your voice and contributions to the focus group conversation will be audio-taped, and then transcribed for the use of research.

The first 16 participants to reply back will be entered in a draw to win a Starbucks gift card which will take place during the focus group sessions. Refreshments and cookies will also be provided at the focus group sessions.

Consent form for this study is attached to this email. Please review it if you are interested in participating in the study. If you would then like to participate please contact me directly by email at: ....by April 27th 2012, so I can contact you and set a time and date for the focus group meetings. I will need you to bring a signed copy of the consent form to the focus group before we begin. Thank you very much for considering this request.

PLEASE CONTACT ME VIA EMAIL TO CONFIRM YOUR PARTICIPATION

Sincerly,

Harjinder Sandhu

MSN Student Researcher, UBC

Supervisory Committee:

Dr Bernie Garrett

Associate Professor

School of Nursing

University of British Columbia

Dr. Maura MacPhee

Associate Professor

School of Nursing

University of British Columbia

Dr. J.Craig Phillips

Assistant Professor

School of Nursing,

University of British Columbia

APPENDIX B

The University of British Columbia

School of Nursing
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Vancouver, B.C. V6T 2B5

Phone: (604) 822-7417 Fax: (604) 822-7466

Consent Form

A Phenomenological Exploration of the Effects of Human Patient Simulation on Undergraduate Student Nurses Confidence to Practice in the Clinical Environment

Principal Investigator:

Harjinder Sandhu, School of Nursing, University of British Columbia,
Master of Science in Nursing Student

Co-Primary Investigator/ Supervisory Committee Chair:

Dr. Bernie Garrett, School of Nursing, University of British Columbia,
Supervisory Committee:

Dr. Maura MacPhee, School of Nursing, University of British Columbia

Dr. J.Craig Phillips, School of Nursing, University of British Columbia,

Purpose: This study is aimed at exploring the effects of Human Patient Simulation (HPS) on clinical confidence of undergraduate student nurses. In order to explore this, I intend to set up two focus groups of 6- 8 participants in each group from the term 3 and 4 of the UBC Bachelor of Science in Nursing program. Groups will then engage in one focus group session each exploring and discussing perceptions about how they feel about HPS as it relates to clinical confidence and other impacts it may have on their confidence.

Study Procedures: You are being asked to participate in this project for one focus group session over 30- 45 minutes, followed by an email verification of the summary that will be sent to you to see if the researcher grasped all the perceptions correctly. Your participation in this study will require you to do the following:

- Participate in one focus group session in which you will be invited to comment on particular aspects to this study in further detail.

It is anticipated that the total time commitment for the project will be approximately 3 hours or less, including the reading the intent of the study, focus group session and replying back to summary of themes. The specific dates for these tasks will be confirmed once the project is underway.

Research use and Confidentiality: By agreeing to participate in this project, you will be allowing the research team to use and analyze the materials you produce (focus-group responses) in order to be written up for research thesis. Please note that the focus group will be audio-recorded. While other group members and the research team will know your identity, your personal identity will be kept strictly confidential in all written materials. Furthermore, no indentifying information apart from your first name will be required in the focus group. All physical documents and files pertaining to this study will be identified only by code number and kept in a locked filing cabinet in a locked office in the UBC School of Nursing and can be accessed only by the supervisory committee and the myself. Any data kept on electronic media (computers) at UBC's School of Nursing and personal lap-tops, will not include the name or personal details of the individual subject and will be password protected, kept solely on the computers of the principal researchers, Dr. B.Garrett and Harjinder Sandhu. As a research participant, you will not be identified by name in any reports of the completed study, although quotations from the interview may be used without personal identifiers. There are no known risks to participating in any aspect of this educational study.

Anonymity will be limited as individuals will meet each other at the focus groups so this is acknowledged as a potential risk. However, the participants will be asked at the start of the focus group to agree to respect the group process and keep all information disclosed in the group confidential, and respect the privacy of all participants.

Compensation: Refreshments and cookies will be provided at each focus group session and the first 16 respondents that reply back and participate will be entered into a draw for a $10 Starbucks gift card. This draw will take place at the end of each focus group.

Contact for information about the study: If you have any questions related to this project or wish to have further information with respect to the study, you may contact the Dr.Bernie Garrett the Co-Primary Investigator/Supervisory Committee Chair at: ....

Contact for concerns about the rights of research subjects: If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject information Line in the UBC Office of Research Services at ....

Consent: Your participation in this project is entirely voluntary and you may refuse to participate or withdraw from the project at any time without jeopardy to your employment or class standing. Your signature below indicates that you have received a copy of this consent form for your own records. Your signature also indicates that you consent to participate in this project.

Name of Participant _____

Signature_____   Date: _____

E-Mail Contact: _____

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APPENDIX C

The University of British Columbia

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A Phenomenological Exploration of the Effects of Human Patient Simulation on Undergraduate Student Nurses Confidence to Practice in the Clinical Environment.

Questions (to generate discussion)

Q1: Please tell me about your experience with HPS?

Q2: How did you feel about going into lab and practicing on HPS?

Q3: How did HPS help your confidence in the clinical setting?

Q4: Did you feel anything else while practicing in the lab

Q5: How did you feel about transferring skills learned in the HPS lab into the clinical environment?

Q6: What do you think are the advantages and disadvantages of using HPS in teaching nursing skills and critical thinking?

Additional Clarifying Questions (maybe asked):

1: Can you tell me more about that experience?

2: What was the meaning that had for you?

3: How did that make you feel?

4: Can you give me an example?

5: What was is like to discover HPS?