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ACCEPTANCE

This thesis, EVALUATION OF CLINICAL FACILITIES IN TERMS OF CLINICAL LEARNING ENVIRONMENT, SUPERVISORY RELATIONSHIP, AND ROLES OF CLINICAL INSTRUCTOR IN RESPIRATORY CARE EDUCATION, by Saeed Alghamdi, was prepared under the supervision of the Master's Thesis Advisory Committee of the Respiratory Therapy department at Georgia State University. It is accepted by the committee in partial fulfillment of requirements for the Master's of Science degree in Respiratory Therapy at Byrdine F. Lewis School of Nursing and Health Professions, Georgia State University.

The Master's Thesis Advisory Committee, as representatives of the faculty, certifies that this thesis has met all standards of excellence and scholarship as determined by the faculty.

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DEDICATION

Above all else, I think God (Allah) for everything presented to me for the duration of my life and during the completion of this accomplishment. Second, I dedicate this thesis to the beautiful two individuals I have ever known in this life, my mother and father. Without their affection, backing and love, I would not make it this far. It is truly elusive a word to depict how I am satisfied to have them in my life, and to praise this achievement with me. Third, I might want to thank my family to cover my back and dealing with my beautiful parents during their wellbeing and illness while I am being in the United States.

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Saeed Alghamdi

Spring 2016

**Evaluation of Clinical Facilities in terms of Clinical Learning Environment, Supervisory
Relationship, and Roles of Clinical Instructor in Respiratory Therapy Education**

By

Saeed Alghamdi, BSRT.

A Thesis

Presented in Partial Fulfillment of Requirements for the

Degree of

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In

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In

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Under the supervision of Dr. Arzu Ari

In

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Atlanta, Georgia

2016

EVALUATION OF CLINICAL FACILITIES IN TERMS OF CLINICAL LEARNING ENVIRONMENT, SUPERVISORY REALTIONSHIP, AND ROLES OF CLINICAL INSTRUCTOR IN RESPIRATORY THERAPY EDUCATION.

By

Saeed Alghamdi

ABSTRACT

BACKGROUND: Clinical facilities are essential components not only for health care delivery systems but also for health care education programs. The clinical learning environment is important in training the future workforce in healthcare. Respiratory therapy education programs face several issues with the need to prepare a proper learning environment in different clinical settings. **PURPOSE:** The purpose of this study was to determine the perceptions of respiratory therapy students on the learning environment of clinical facilities affiliated with a respiratory therapy program at an urban state university. **METHODS:** This study used an exploratory research design to evaluate the essential aspects of a clinical learning environment in respiratory therapy education. A self-reporting survey was utilized to gather data from 34 respiratory therapy students regarding their perception about the effectiveness of clinical facilities in respiratory therapy education. The researcher utilized The Clinical Learning Environment, Supervision and Nurse Teacher (CLES+T) evaluation scale that was developed by Sarrikoski et al. (2008). The CLES+T evaluation scale was adapted and modified after a written agreement from the author. The survey included three main domains, which are the clinical learning environment (18 items), the supervision relationship (15 items), and the role of clinical instructors (9 items). Thirty-two students participated in the survey with a response rate of 94.1%. **RESULTS:** Responses included two groups of students: the second year undergraduate (68.8%) and graduate students (31.3%), with 75% being female participants. The results obtained from the study indicated that both graduate and undergraduate respiratory therapy students gave high mean scores to the learning environment of the clinical facilities, supervisory relationship and the roles of clinical instructors. A statistically significant data was obtained pertaining to the difference of perceptions regarding the multi-dimensional learning between the graduate and undergraduate students. The graduate students evaluated that “the learning situation are multi-dimensional” more than the undergraduate students ($p = 0.03$). Findings of this study showed that female students had higher ratings than male students in all evaluations of clinical facilities. However, only one dimension of leadership style stating that “the effort of individual employees was appreciated” was statistically significant ($p=0.03$). The results stating, the presence of a significant percentage of the students with lack of successful private supervision and high percentage of failed supervisory relationship, are in contrast with the fact that clinical learning plays a vital role in the respiratory therapy education. It is also contrasting that majority of the students experienced team supervision, which is against the philosophy and principles of individualization. **CONCLUSION:** Since respiratory therapy is a practice-based profession, it is essential to integrate clinical education to respiratory care education. Gender and education level may impact students’ perceptions about the learning environment of clinical facilities. This study provides information about areas for improvement in clinical facilities affiliated with a respiratory care education program at an urban university.

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LIST OF ABBREVIATIONS

GSU: Georgia State University.

BSRT: Bachelor of Science in Respiratory Therapy.

CoARC: Commission on Accreditation for Respiratory Care.

CLES+T: Clinical Learning Environment, Supervision and Teaching.

CLE: Clinical Learning Environment.

CI: Clinical Instructor.

WM: Ward Manager.

RCP: Respiratory Care practitioner.

RT: Respiratory Therapy.

OT: Occupational Therapy.

PT: Physiotherapy

PTCIs: Physiotherapy Clinical Instructors.

RTCIs: Respiratory Therapy Clinical Instructors

ICUs: Intensive Care Unit.

EFA: Explorative Factor Analysis.

PCA: Principal Components Analysis.

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CHAPTER I

INTRODUCTION

The clinical environment has proven to be an essential component not only for the healthcare delivery system but also for the health care educational programs. For the training of future workforce, clinical learning environment is extremely important. It has also been noticed that the respiratory therapy programs are facing critical issues in order to provide a competent learning environment in the different clinical settings. Clinical learning environment is considered as a fundamental structure which acts as a facilitator of the learning process in the nursing students. (Dunn & Burnett, 1995). *According to the Commission on Accreditation for Respiratory Care* report of 2010, it was observed that the clinical experience of the respiratory therapy students vary within the different programs. This in turn greatly affects the knowledge and skills acquired by the students essential for practicing as a respiratory therapist. (Alasmari, 2014)

It is essential that the students are given an effective and efficient clinical learning environment so that they can associate the skills and knowledge acquired while practicing respiratory therapy. It also helps the student to collaborate the knowledge and theories acquired both in the classroom as well as the clinical setting and apply them efficiently in the real life situations. These advantages are not observed if the clinical learning environment is ineffective or inappropriate which in turn leads to a negative impact on the education and application of the skills in the respiratory therapy students. It is thus important to note that the clinical learning environment plays a critical role in the healthcare clinical education of the students. (Bisholt, Ohlsson, Kullen Engstrom, Sundler Johansson, & Gustafsson, 2014).

There is sufficient literature review available which defines the importance of clinical learning environment in the nursing education and its effectiveness in helping the students achieve

their learning goals (Bisholt, et al., 2014; Papp, Markkanen, & von Bonsdorff, 2003; Carlson & Idvall, 2014). There is evidence which shows that in the nursing education clinical instructors are assigned to each student who demonstrates clinical skills and theories during the student's clinical rotation and later assess the students. Studies have also been conducted to verify the effectiveness of assigning clinical instructors where in the students were left without clinical instructors and were assessed to know if lack of clinical instructor limited the student's abilities of clinical understanding. The results of the study demonstrated that clinical instructors and an apt clinical learning environment is essential in order for the students to achieve their set educational goals during the clinical rotation. (Henderson, et. al., 2009). Thus it can be said that the effectiveness of the clinical learning environment is highly influenced by the role of clinical instructor, pedagogical atmosphere and supervisory relationship. (Papp, Markkanen, & von Bonsdorff, 2003; Carlson & Idvall, 2014).

The outcome of the clinical learning experience of a student is greatly affected by the clinical environment which can be defined as an interactive system of certain influential factors (Dunn & Burnett, 1995). It is expected out of the fresh graduates from allied healthcare programs to have sufficient clinical or practical and theoretic knowledge and skills. It is essential that the undergraduates in these educational programs grasp any opportunity to nurture and develop the essential practical or clinical skills. Fieldworks internships, placements and clinical practice are all components of clinical education which is essential for most of the healthcare education programs. (Jarski, Kulig, & Olson, 1990; Ohman, Hagg, & Dahlgren, 2005; Rogers, Lautar, & Dunn, 2010; Hall, McFarlane, & Mulholland, 2012). A clinical learning environment provides the students an opportunity to acquire appropriate learning outcomes within the range of the clinical placement. (Salminen, et al., 2010; Hall, et al., 2012). Clinical environment differs in various clinical settings

as well as in the quality. This provides the students with wide varieties and flexible opportunities of learning. (Papp, Markkanen, & von Bonsdorff, 2003).

With the help of clinical placements, the students get the opportunity to collaborate their theoretic knowledge obtained in the class with the practical knowledge or clinical skills that are acquired during the clinical education process. This also helps the students to be prepared for the future clinical practice that the students might indulge themselves into in their career (Tompson & Proctor, 1990; Baldry Currens & Bithell, 2000). Thus the students are not only given the opportunity to fulfill their learning needs but also to learn from other students or healthcare professionals and to get accustomed to their future professional prospective (Baldry Currens & Bithell, 2000; Ohman, et al., 2005; Rogers, Lautar, & Dunn, 2010).

Meanwhile, the facilities of the clinical settings in clinical education require a closer look at the relationship between the academic program and the clinical facilities. In creating a clinical skills learning facility, research proposes that the physical environment must be flexible to permit the simulation of various clinical settings and to motivate a wide array of teaching and learning methods that encourage a self-directed sense of learning (Bradley & Postlethwaite, 2003).

Currently, there is lack of sufficient evidence or literature reviews supporting the importance of clinical environment in influencing the students learning and practice outcomes (Alasmari, 2014).

Clinical rotation is a crucial part of respiratory therapy programs, as a result of giving the students a chance to explore and interact with the real-life of the respiratory therapy profession in different clinical settings. This supports the idea that the quality of the clinical learning environment influences student's perception regarding their future career (Henderson, et al., 2010).

However, training students at clinical sites includes bedside instructions of students, and concentrates more on real-life problems in terms of professional health care practice. It also

motivates the students to inspire with relevant active participation. According to a study conducted on nursing student's clinical environment, it was observed that the student's clinical professional development was greatly influenced by their interaction with the hospital staff (Pearcey & Elliott, 2004). For instance, nursing students who assigned with lazy clinician, they had encountered negative reputation about nursing as a profession (Davies, 1993).

Another study that was conducted showed that the students learning improved and enhanced when they shared their clinical experience with a clinician who was partnered with them. (Henderson et al, 2009). The underlying reason for this improvement was because the students were able to comprehend their observations during the clinical practice and efficiently reflect when they were presented with a clinical situation during the practice (Henderson, Winch, & Heel, 2006).

There are many factors which influence the clinical environment, namely the pedagogical atmosphere, presumptions and principles of the instructor, and supervisory relationship (Saarikoski, Isoaho, Warne, & Leino-Kilpi, 2008; Papp, et al., 2003). All of these factors have a significant role to play in order to establish a relationship that exists between the learning outcome and the clinical learning environment which may impose a significant impact on the student's adaptation and learning processes. (Saarikoski, Isoaho, Warne, & Leino-Kilpi, 2008; Papp, et al., 2003)

Significance of the Study

Clinical facilities provide the students with the opportunities to apply their theoretical knowledge, concepts and skills acquired during the healthcare educational program while providing healthcare to the patients during the clinical practice. They are essential in providing high quality training to respiratory therapy students by attaining the clinical learning objectives set

by the program. However, the clinical facilities itself may also have a negative impact on the student's clinical practice. Many studies have been conducted in the past which have focused on the effective teaching as well as behavioral characteristics of the clinical instructors however, sufficient literature is not available to evaluate the importance of clinical facilities in the respiratory therapy education. There is also not much research available to establish the influence of clinical environment on the learning outcomes of the students. Thus if research is conducted on the perceptions of the students in the respiratory therapy program on the role played by clinical facilities in clinical education, it would be beneficial in exploring the effectiveness and influence of clinical facilities in respiratory therapy education. It would also help in determining the various aspects of the clinical facilities that need to be improved so as to provide the respiratory therapy students with a competent clinical learning environment.

Purpose of the Study

The purpose of this study is to determine respiratory therapy students' perception on the learning environment of clinical facilities affiliated with a respiratory therapy program at an urban state university. Also, perceptual differences between male and female students as well as undergraduate and graduate students in terms of clinical learning environment, supervisory relationship, and roles of clinical instructor at clinical facilities were compared in this study. Upon investigating what has been written about the learning environment of clinical facilities in respiratory therapy education, following research questions arose:

1. How was the learning environment of clinical facilities affiliated with an urban university evaluated by respiratory therapy students in terms of clinical learning environment, supervisory relationship and roles of clinical instructor?

2. What is the difference between undergraduate and graduate students in their perception on clinical learning environment in respiratory therapy education?
3. Does gender impacts students' perception on the learning environment of clinical facilities in respiratory therapy?

CHAPTER II

REVIEW OF THE LITERATURE

Because of lack of literature review in respiratory therapy particularly on the theme of clinical education, a significant part of the data can be connected from other health professions, for example, nursing, physical therapy, and occupational therapy. Nursing specialization has done various researches in terms of clinical education and clinical environment (Dunn & Burnett 1995; Saarikoski and Leino-Kilpi, 2002; Papp et al., 2003; Bisholt, 2009; Mousavinasab & Rafiee, 2014). Yet at the same time few studies were done that focused on the proper clinical environment from students' observation (Saarikoski and Leino-Kilpi, 2002; Papp et al., 2003; Mousavinasab & Rafiee, 2014). To be more accurate, search was centered in clinical environment as a part from clinical setting. Keywords, including clinical setting, clinical training, students' recognition, student's perception, allied health professions, respiratory therapy, nursing, physical therapy, occupational therapy, and nutrition are used in the study as a result of the overlap between these themes in clinical learning environment.

Description of clinical learning environment

Dunn and Burnett (1995) portrayed the clinical learning environment as an intuitive system of strengths inside of the clinical setting that impact the students' clinical learning results. One study in the nursing designed to explore the perception of nursing students at the clinical placements (Papp et al., 2003). Papp et al. (2003) concentrated on the student nurses' perceptions regarding their learning experience in the clinical setting. Researcher utilized the phenomenological methodology and open meetings to expressed student's opinions. Total of participants in this study was 16 nursing students. Students were asked to depict the importance of clinical learning environment. Result demonstrated there are four components that are essential in

the clinical learning environment: (1) the cooperation in the clinical setting, (2) the supervision, (3) the teaching style, and (4) student's self-learning. Also, a decent clinical learning environment was described as great co-operation between the universities and the employee at the clinical placement. Papp et al. (2003) inferred that the schools have to assigned students to a good clinical learning environment in order to help student learning and fill the gap between the theory and practice. Also, students expressed that different opportunity to practice and training will give them different clinical experience (Papp et al., 2003).

Other analysts discovered three classifications are critical in a decent clinical learning environment that are the pedagogical climate in the clinical setting, the supervisory relationship, and the role of the clinical instructor or clinical educator (Saarikoski and Leino-Kilpi, 2002; Bisholt et al. 2014). Researchers made this study among different clinical placement that affiliated with four nursing schools in Finland. According to Saarikoski and Leino-Kipi 2002, students liked the environment that gave them more supervision upon their clinical learning process. Also, students appreciated the clinical settings that provide clinical instructors or clinical staff for teaching and learning.

As stated by Bisholt, it is critical that there be co-operation in the middle of schools of health professions and the clinical placements about the clinical learning environment (Bisholt, 2009). According to Bisholt et al. (2014), nursing students conducted their clinical practice in diverse of clinical placement. However, in order to help student acquired appropriate clinical learning, students must be assign to different environment that will increase the opportunity to seeking more knowledge about the profession. Bisholt et al. (2014) utilized a survey to collected data from 185 nursing student participated in the study. The instrument that utilized was composed of three domains in the clinical environment: pedagogical atmosphere, supervisory relationship,

and the role of nursing teacher. Bisholt et al. (2014) thought about the learning environment in diverse clinical settings from the point of view of the nursing students. The results of the study demonstrated that the nursing students' fulfillment with the clinical settings that have the same tasks and duties rather than the have different tasks and duties. On the other hand, nursing teachers preferred the clinical learning to be multi-dimensional.

Saarikoski et al. (2008) developed a subscale to the Clinical Learning Environment, Supervision and Teaching (CLES+T) scale for gauging the quality of cooperation among the nurse students to evaluate the critical components in the clinical learning environment. Saarikoski et al 2008 instrument called Clinical Learning Environment, Supervision and Teaching (CLES+T) evaluation scale. The survey was composed of three main domains in the clinical learning: pedagogical atmosphere, supervision relationship, and roles of clinical educator.

According to Saarikoski et al. (2008) study showed that students preferred supervision relationship to be the most critical feature in the clinical settings. Also, the clinical learning objectives is affected by a scope of elements including the climate at the ward or unit, a preceptor-preceptee relationship, and the variability of educating at clinical settings (Saarikoski et al., 2008; Chuan and Barnett, 2012; Sundler et al., 2014). Saarikoski and his colleagues recommended that assign students to the clinical settings is critical situation and it might not meet the student's demands to achieve their clinical learning objectives due to the variability of the hospitals or clinical placements. These findings are very similar to the findings of the study conducted by Papathanasiou, et. al. in 2014 which discussed that for the students to be satisfied in a professional environment, participation in a real clinical setting or clinical practice are essential components.

Clinical Learning Environment in Respiratory Therapy Profession

Respiratory therapy students are rehearsing in distinctive clinical placements. In this way, the facilities of these clinical areas can be variable. For instance, in tertiary hospitals, the respiratory care practitioner (RCP) are anticipated to practice in homecare services, rehabilitation centers, and sleep labs beside to the tasks in the Intensive Care Units (ICUs). On the other hand; in a few hospital facilities students rehearse just in the ICUs zone and general ward. Furthermore, clinical placement has a suitable atmosphere to bolster learning and give chances to students to enhance their clinical encounters (Saarikoski et al., 2008).

Proper environment characterized as adequate clinical education, staff cooperation, and accessible facilities to give to the students enough exposure for the profession (Edwards et al., 2004; Chan and Wan, 2007). Respiratory therapy programs like any other health profession programs, faced difficulty to assign students to distinctive clinical settings (Rodger et al., 2008; Smith et al., 2010). Rodger et al. (2008) described the clinical training and practice settings issues by gathering of partnered health instructors worldwide. Rodger and his colleagues concentrated on schools of allied health in different countries. They aimed to investigate allied health sciences student's perception internationally regarding clinical learning environment. 21 universities participated in this qualitative study. The report presented that student's perception was variable regarding clinical training and practice situations over different health professions. This variance because of the different allied health science program objectives. As a conclusion Rodger et al. (2008) inferred clinical practice can be made to encourage, teach, and bolster clinical education.

In respiratory therapy, there are several elements impact the clinical learning environment, for example, the patients' sickness at the clinical settings, the load on the staff at that hospitals, and

other different variables must be discussed over before assigning students in clinical settings (Tompson and Proctor, 1990; Rodger et al, 2008; Smith et al, 2010).

Moreover, as per Chan, 2001 clinical settings are the most persuasive place to let students practice and learning the profession. Casares et al. (2003) discussed how clinical instructors and occupational therapy (OT) educators see the influence of changes in the environment of health care among clinical learning outcomes, and the practice of profession. The researchers utilized a survey composed of 48 items measure the changes in the clinical environment. 128 OT educators and clinical instructor were participated in this study. According to Casares et al. (2003) results demonstrated that both clinical instructors and OT educator's concurred efficiency, daily working hours, and documentation time have expanded. On the other hand, the job security, the continuous education, and the quality care for patients have decreased. Also, clinical instructors trusted repayment issues did not influence on their capacity to learn students and accept them. In contrast, OT educators believed repayment is highly influenced to acknowledge students (Casares et al. 2003).

Pedagogical Atmosphere

Wilson et al. (1995) observed and interviewed nursing students in three different clinical placements to investigate their satisfaction regarding the pedagogical atmosphere at the clinical settings. According to Wilson-Barnett and his universities 1995, the students felt both upheld and all around managed when they cooperated with inspired staff. While, some factors such as theory-practice gaps, uncooperative team work, and level of education for the clinical instructor made them unsatisfactory with the clinical environment.

Other studies expressed that the most imperative components of a "decent" clinical environment for the students are the positive climate of learning and profound staff (Fretwell,

1983; Orton, 1983; Levec and Jones, 1996). Also, great clinical learning settings were distinguished as showing cooperation and significant communication (Fretwell, 1983; Orton, 1983).

Clinical educators in respiratory therapy are an imperative piece of the pedagogical climate in the clinical position. The pedagogical environment has an effect on the learning results among allied health science students. So productive clinical teachers may show up like a proficient model for the students (Reynolds, 1992). Reynolds (1992) published a literature review that assessed the basic elements that the teacher should master it. Reynolds assessed the pedagogical teaching variability before, during, and after teaching tasks and concluded that effective teachers need to be able to interpret and analyze their own performance continuously.

Exceptionally the educators shape the pedagogical learning through their filling in as models for the students (Reynolds, 1992). These instructors will encourage to convert the theory content in classrooms into a frame that can be promptly comprehended and learned by students in the clinical situation (Reynolds, 1992). In addition, different analysts demonstrate there is motivation to trust that information and comprehension from educators who, give rationale to understand, positively encourage the students, and don't discriminating during advising or clinical practice (Fenstermacher 1978; Calderhead 1996; Bronsford et al. 2000; Parsell & Bligh 2001).

Mcload et al. (2009) assess the essential of pedagogical items that leading to effective teaching in clinical learning environment. 25 clinical instructor and academic teachers participated in an online survey that composed of 30 pedagogical principle. As pointed out by Mcload et al. (2009) there is a noteworthy agreement between clinical educators and non-clinician to consider the significance of pedagogical and information of which may upgrade instructing adequacy. This

congruity in agreement between both groups of educators is liable to support consider the pedagogical atmosphere as a critical item in the clinical learning environment.

Supervisory Relationship between Educators and Students

In a complex healthcare environment, the educational goal of a nursing baccalaureate curriculum is the graduation of better prepared health care providers capable and committed to provide quality and safety care for the patients (Gaberson & Oermann, 2010). Since nursing is a practice-focused profession, knowledge and skill are acquired through formal education in institutions and through experience in the clinical learning environment (CLE). (Gaberson & Oermann, 2010).

Dimitriadou et al. (2015) evaluate the clinical learning environment and supervision from point of view undergraduate nursing students. The instruments of clinical learning environment and supervision that created by Saarikoski and Kilpi (2008) was distributed on 375 participants in the study. The survey was designed with three main categories in clinical learning environment: pedagogical climate, mentor relationship, and role of nursing educator. According to Dimitriadou et al. (2015) students consider the supervision domain as the most significant in the clinical learning environment. Also, good mentor relationship in the clinical settings help to achieve the clinical learning objectives successfully. (Dimitriadou, M., Papastavrou, E., Efstathiou, G., & Theodorou, M, 2015)

Holland and Lauder (2012) report the advancement and testing of the supervision upon undergraduate nursing student and its influence in promoting the quality of learning in the nursing at United Kingdom (UK). According to Holland and Lauder (2012) the supervision among the students on the clinical learning environment is a vital variable in deciding the nature of nursing students' clinical experience. Also, it is additionally very much perceived that the clinical setting

can be a wellspring of anxiety and tension for students. 312 college students and 157 preceptors participated in this study to evaluate the supervision in the clinical settings. Clearly, the clinical supervisor was the key component in students' clinical learning. Moreover, it is crucial for expert teacher to be more strong and individualized supervision to the students keeping in mind the end goal to create and guarantee that the learners have a protected practice environment and a robust good example (Holland & Lauder, 2012).

As pointed out by Lewin (2007), a qualified preparing clinical placement composed of the enthusiastic learners, knowledge resources, and clinical facilities. Lewin (2007) reviewed the change in the clinical learning environment specifically in hospital wards over the time by utilizing the same survey. Lewin distributed a survey that measure the quality of hospital facilities in 2003 and compared the outcomes with previous outcomes done in 1978. The researcher concluded that the learning environment improve by 20 % over a 25 years in the same clinical settings.

According to Barrington and Street (2009) the qualified clinical settings will build self-learning, facilitate training, and encourages learning for students in the clinical placement. They emphasize supervision upon trainees give opportunity to discover student's weakness and strengths. Also, clinical practice course have objectives and goals need to be monitored, achieved, and evaluated by the clinical educator. Moreover, mentors in clinical settings can detect the students' needs during clinical practice course and meet their demands easily (Barrington and Street, 2009).

Clinical instructors assume a vital part in the training of respiratory therapy students, in light of the fact that clinical instructors manage students while they are finishing practice in the clinical settings. They are individually connected to the learning situations where students apply their developing proficient aptitudes. Qualified experts who impart their insight and aptitudes to

students will have the capacity to screen and guide the students in a clinical setting given his/her involvement in educating future respiratory therapists. Doll et al., 2004; Hue & Li, 2008; OECD, 2010; Jones, 2011; Haydn, 2012).

Also, qualified clinical educator is not simply a piece of the practice instruction learning environment, yet generally in charge of developing and encouraging it. Qualified clinical instructors have the capacity to show successfully, give productive input, rouse students, alter their self-learning, encourage proper inquiries, and foster a positive climate in a clinical setting (Doll et al., 2004; Hue & Li, 2008; OECD, 2010; Jones, 2011; Haydn, 2012).

Effective Clinical Teaching and Clinical Instructor

Knowledgeable, appreciable, and great communicator clinical instructors are favored by students in clinical settings. James & Chapman, 2009 investigate the impact of the first clinical practice course in the nursing student perception. James & Chapman interviewed undergraduate students regarding their impressions as a nursing student, nursing – patient relationship, and their perception about the clinical instructor. As pointed out by James & Chapman, 2009, nursing students reported that the effect of clinical educators and the clinical placement are the most significant influences on their perception. Students might stop studying nursing if they faced some critical situation in the clinical setting. However, effective clinical instructor can be encouraging and helping student to overcome all these obstacles to complete learning and practice nursing care (James and Chapman, 2009).

As pointed out by Tang, 2005 attributes of successful clinical teacher at the clinical settings are consider as the ability to maintain communicate with student's, update students' knowledge, understand student's demands, and assessment student's attitudes. Tang, 2005 investigate these four qualities and consider it as important for clinical settings to have productive clinical educators

(Tang, 2005). The researcher surveyed 214 students from two different school of nursing. According to Tang, 2005 results showed all these four behavioral were highly ranked by the students to represent effective clinical educator. On the other hands, ineffective clinical educators were ranked highly in bad communication, uncooperative and unknowledgeable instructor.

Ohman et al. (2005) investigated the perceptions of physiotherapy clinical instructors (PTCIs) regarding the education of physiotherapy and the professional role in the hospitals. This qualitative study was involved 15 PTCIs. Result showed that educate and mentor the knowledge of students is the cause that encourage PTCIs to work in the clinical settings. Researchers highly recommend collaboration between schools and clinical placement to overcome theory- practice gap.

Summary

The clinical learning environment in respiratory therapy has numerous destinations to be a compelling clinical learning environment. This writing survey concentrates on three fundamental targets that are the pedagogical climate, supervisory relationship in the middle of preceptor and preceptee, and adequacy of educating.

Also, productive supervision considered as one of the key in preparing health programs schools. To outline, supervision is the key variable in any clinical settings to safeguard proper accomplishments. Likewise, help learners to amplify the objectives of clinical practice (Holland & Lauder, 2012). In expansion, chief in clinical position empowers, offers opportunities, and encourages learning for the students in the clinical settings (Barrington & Street, 2009; Lewin, 2007; Hamshire et al., 2012; Holland & Lauder, 2012).

Additionally, the clinical environment is relied upon to be amazing with awesome instructing offices. Especially, qualified clinical educators are important keys to give the students

powerful clinical education. Notwithstanding their capacities to operationalizing the learning objectives in the clinical settings.

Since CLE can impact on student's results in respiratory therapy clinical learning, it is crucial to distinguish the powerful clinical placements that give proper clinical learning environment to student to guarantee suitable clinical instruction.

CHAPTER III

METHODOLOGY

Research Design

This study used an exploratory research design to evaluate the essential aspects of clinical learning environment in respiratory therapy education. Self-reporting survey was utilized to gather data from respiratory therapy students regarding their perception about the learning environment of clinical facilities in respiratory therapy education.

Clinical Facilities

Clinical facilities play a major role in training respiratory therapy students; therefore, this study evaluated 19 medical centers, hospitals and agencies that have been affiliated with department of respiratory therapy at an urban university. All students getting their training at different clinical facilities have been assigned to a clinical instructor or preceptor. Respiratory therapy students typically spend 224 hours for 14 weeks at their clinical facilities every semester.

Instrument

The Clinical Learning Environment, Supervision and Nurse Teacher (CLES+T), an evaluation scale that was developed by Sarrikoski et al (2008), was used in this study. CLES+T evaluation scale examines students' perception regarding the learning environment of clinical facilities. Since there is no instrument that can help us evaluate clinical learning environment in respiratory therapy education, CLES+T evaluation scale was adapted and modified after a written agreement from the author. The following modifications were made in the instrument: (1) The word "nursing" was replaced with "respiratory therapy", (2) The word "general ward" was changed to "ICU", (3) "Nursing educator" was replaced with "clinical instructor". Also,

demographic data were added to the survey and all the modifications that were made in the CLES+T was approved by Saarikoski et al.

In addition to the CLES+T evaluation scale, information about student's age, gender was gathered. The CLES+T evaluation scale composed of three main domains: (1) Clinical learning environment, (2) Supervisory relationship, and (3) Role of clinical instructors. Each domain in the scale has 2 or 3 sub-categories, as classified below.

(1) Learning environment domain (3 sub- dimensions), (2) Supervisory relationship domains (2 sub-dimensions), and (3) Role of clinical instructor (3 sub-dimensions). The first domain on learning environment investigates pedagogical atmosphere (9 items), leadership style of respiratory therapy manager (4 items), and respiratory therapy in the intensive care units (4 items). The second domain on supervisory relationship investigates the content of supervision (8 items), and occurrence of supervision (1 item). The third domain investigates the role of clinical instructor as enabling the integration of theory and practice (3 items), cooperation between placement staff and clinical instructor (3 items), and relationship among student and clinical instructor (3 items). Likert-type scale is used to capture student perceptions about clinical learning environment in respiratory therapy education. The scores utilized in Likert-type scale are as follows: (1) fully disagree, (2) disagree to some extent, (3) neither agree nor disagree, (4) agree to some extent or (5) fully agree.

According to Saarikoski et al. (2008) CLES+T evaluation scale is valid and reliable. Validity of the instrument was evaluated with explorative factor analysis (EFA) and principal components analysis (PCA). The reliability of each sub-dimension was analyzed using Cronbach's alpha coefficient ($r= 0.94$) (Fabrigar et al., 1999).

Sample

The convenience sample of this study includes the second-year respiratory therapy students in the undergraduate and integrated master's degree programs at an urban university in the south-east region. The sample size of this study was 34.

Inclusion criteria were the second year respiratory therapy students who have at least two rotations at different clinical facilities. The first year respiratory therapy students and the second year respiratory therapy students who have two clinical rotations in the same clinical facility were excluded from this study. Student's who have clinical training at more than two clinical facilities were selected in order to capture their perception on the effectiveness of clinical facilities in respiratory therapy education. Having clinical experiences at different clinical facilities help students improve their perspective regarding clinical learning environment, supervision relationship, and role clinical instructor in the intensive care rotation.

Ethical consideration

Institutional Review Board (IRB) approval was obtained prior to the distribution of the survey to protect all human and clinical facilities that tend to participate in this study. Participation to this study is completely voluntary and did not have any risks and punishments for students. Also, all responses were kept anonymous.

Data Collection and Procedure.

After obtained the IRB approval, both the cover letter and the survey were distributed to students in class by the researcher after the completion of their ICU rotations. The researcher was distributed the study survey to the students in the Department of Respiratory Therapy at Georgia State University. Since respiratory therapy students were subjects of this study, they were approached to determine eligibility. Each participant was screened based on inclusion and

exclusion criteria of this study. Subjects who passed the screen were provided a clear explanation of the purpose of the study, expected duration of the subject's participation, procedures to be followed, and the confidentiality of any records. It was made known that the subjects would not be affected regardless of their decision to participate in this research. All information was presented as simply and straightforwardly as possible. Subjects were also informed that they have the right to drop out of the study at any time. After all questions were answered by the researcher, each subject was asked whether or not he/she would like to participate in the study. Students, who understood this study and expressed willingness to participate, completed the survey and returned it to the researcher.

Data Analysis

Statistical Package for the Social Sciences (SPSS) version 22 was utilized for the data analysis of this study. Descriptive statistics were utilized to evaluate the learning environment of clinical facilities affiliated with an urban university based on students' perceptions in the respiratory therapy program. Also, two separate independent sample t-tests were used to compare perceptual differences between male and female students as well as undergraduate and graduate students in terms of clinical learning environment, supervisory relationship, and roles of clinical instructor at clinical facilities.

CHAPTER IV

RESULTS

32 out of 34 students participated in this study with a response rate of 94.1%. As shown in Table 1, responses included two groups of students: (1) The second year undergraduate students (68.8%) and graduate students (31.3%) in their second year in the integrated master's degree program. 75% of participants was female, while the rest included male students (Table 1).

Table 1. Characteristics of the students participated in this study.

Demographics	Frequency	Percentage
Male	8	25%
Female	24	75%
Undergraduate	22	68.8%
Graduate	10	31.3%

Evaluation of the Learning Environment of Clinical Facilities

This section answers the 1st research question, “How was the learning environment of clinical facilities affiliated with an urban university evaluated by respiratory therapy students in terms of the learning environment of clinical facilities, the content and occurrence of supervision and the role of clinical instructors?” The mean scores and standard deviations of the three domains including the learning environment of clinical facilities, the content and occurrence of supervision and the role of clinical instructors were shown in Table 2, Table 3 and Table 4, respectively. The learning environment of clinical facilities was evaluated through pedagogical atmosphere, leadership style and respiratory care in the ICU. As shown in Table 2, the pedagogical atmosphere, the first dimension of the clinical learning environment, includes eight components arranged from the highest to the lowest rank order pertaining to the important aspects given by the students. Participating students felt comfortable going to the ward at the start of their shift and thought that

there were positive, sufficient and meaningful learning situations on the ward with staffs, who were personable and easy to approach. Students' evaluations of clinical facilities revealed that students somewhat felt less comfortable taking part in the discussions during staff meetings before shifts and staff were moderately interested in student supervision.

As a second dimension of clinical learning environment, student evaluations of the leadership style adopted by the ICU manager were good and ranged from 4.46 ± 0.67 to 4.28 ± 0.72 . The leadership style of the ICU manager as a team member was given the highest rank as opposed to the statement, "Feedback from the ICU manager could easily be considered as a learning situation" that was ranked the lowest by students among all other statements in this section.

The third dimension of clinical learning environment was the respiratory care given in the intensive care units (ICU) of the clinical facilities that was ranked in the order of opinion as given by the participating students. Findings of this study showed very positive student evaluations indicating that patients received individualized respiratory care, and documentation of respiratory therapy was clear. Students also stated that the philosophy of respiratory care in the ICU was clearly defined and there was no problem related to patients' care.

Table 2. Students' evaluations (mean \pm standard deviation) of clinical learning environment in terms of pedagogical atmosphere, leadership style and respiratory care in the intensive care units of clinical facilities.

Domain	Statement	Mean \pm SD	
Clinical Learning Environment	Pedagogical Atmosphere	I felt comfortable going to the ICU at the start of my shift.	4.65 \pm 0.65
		There were sufficient meaningful learning situations on the ICU.	4.65 \pm 0.60
		The staff learned to know the student by their personal names.	4.62 \pm 0.70
		The staffs were easy to approach.	4.50 \pm 0.71
		There was a positive atmosphere on the ICU.	4.31 \pm 0.59
		The learning situations were multi-dimensional in terms of content.	4.28 \pm 0.77
		During staff meetings (e.g. before shifts) I felt comfortable taking part in the discussions.	3.81 \pm 1.14
		The staffs were generally interested in student supervision.	3.81 \pm 0.99
	Leadership Style	The ICU manager was a team member.	4.46 \pm 0.67
		The effort of individual employees was appreciated.	4.43 \pm 0.66
		The ICU manager regarded the staff on her/his ward as a key resource.	4.34 \pm 0.70
		Feedback from the ICU manager could easily be considered as a learning situation.	4.28 \pm 0.72
	Respiratory care in the ICU	Patients received individual respiratory care.	4.68 \pm 0.53
		Documentation of respiratory therapy was clear	4.59 \pm 0.66
		The ICUs respiratory care philosophy was clearly defined.	4.15 \pm 1.01
		There were no problems in the information flow related to patients' care.	4.12 \pm 1.03

Evaluation of the Content and Occurrence of Supervision at Clinical Facilities

The second domain is pertaining to supervision in clinical facilities that has three dimensions: (1) occurrence of supervision, (2) private unscheduled supervision and (3) content of supervision. Nearly 81.3% of the participating students were supervised by respiratory therapists, 9.4% were supervised by respiratory specialists and 9.4% were supervised by the clinical instructors.

While 50% of students stated that the hospital supervisor varied according to shift or place of work in their clinical education, 31% had a personal supervisor with whom they had good

relationship during their clinical education. 13% stated that the same supervisor had several students and assumed the role as a group supervisor rather than an individual supervisor. Only 6% of the students worked with a personal supervisor, but thought that their relationship with this person did not work during the placement.

When the participating students were asked if they had private unscheduled supervisions with the clinical instructor, 31.3% of the students answered “Not at all”, 28,1% had unscheduled supervision once or twice in each semester. Twenty-five percent stated that it was less than or equal to once a week. Only 15.6 percent of students answered that they had private unscheduled supervisions more often than once a week. The findings of this study showed that RT students were satisfied with the content of supervision that they experienced during their clinical education. They also stated that their supervisor showed positive attitude, established a relationship of equality and mutual interaction to promote their learning, while providing continuous feedback and individualized supervision.

Table 3. Students’ evaluation of the content of supervision

Domain		Statement	Mean ± SD
Supervisory Relationship	Content of Supervision	My supervisor showed a positive attitude towards supervision.	4.65 ± 0.54
		The supervision was based on a relationship of equality and promoted my learning.	4.50 ± 0.80
		There was a mutual interaction in the supervisory relationship.	4.34 ± 0.97
		The supervisory relationship was characterized by a sense of trust.	4.31 ± 0.99
		I felt that I received individual supervision.	4.31± 0.89
		Mutual respect and approval prevailed in the supervisory relationship.	4.28 ± 0.99
		Overall I am satisfied with the supervision I received.	4.25 ± 1.04
		I continuously received feedback from my supervisor.	4.12 ± 1.00

Evaluation of the Role of Clinical Instructors

The third domain was focused on the role of the clinical instructors and was divided into three dimensions: (1) the role of the respiratory care teacher in enabling integration theory and

practice, (2) cooperation between the respiratory teacher and placement staff, and finally (3) the relationship between students and clinical instructors.

As for the ability of clinical instructors in facilitating the integration of theory and practice, students' evaluations showed that clinical instructors were able to integrate theoretical knowledge and everyday practice while helping students to reduce the theory practice gap by operationalizing the learning goals of clinical facilities. According to students' evaluations, cooperation between the clinical instructor and staff was excellent. Clinical instructors worked with clinical teams and gave their pedagogical expertise to them to support student learning. The relationship between students, and clinical instructors was satisfactory because of comfortable experience with their clinical instructors at the common meetings. The participating students stated that they felt like colleagues in the meetings and these meetings were focused on their learning needs.

Table 4. Students' evaluations (mean \pm standard deviation) of clinical learning environment in terms of integration of theory & practice, cooperation and relationship between student & mentor.

Domain		Statement	Mean \pm SD
Roles of Clinical Instructors	Integration theory & Practice.	The clinical instructor was capable to integrate theoretical knowledge and everyday practice.	4.56 \pm 0.56
		The clinical instructor helped me to reduce the theory-practice gap	4.50 \pm 0.67
		The clinical instructor was capable of operationalizing the learning goals of this clinical placement	4.46 \pm 0.62
	Cooperation	The clinical instructor and the clinical team worked together in supporting my learning.	4.65 \pm 0.60
		The clinical instructor was able to give his or her pedagogical expertise to the clinical team.	4.56 \pm 0.61
		The clinical instructor was like a member of the respiratory care team.	4.53 \pm 0.71
	Relationship between students & clinical instructors	The common meetings between myself, and clinical instructor were comfortable.	4.65 \pm 0.70
		Focus on the meetings was in my learning needs.	4.37 \pm 1.09
		In our common meetings I felt that we are colleagues.	4.34 \pm 1.03

Differences between Undergraduate and Graduate Students in Their Perception about Clinical Learning Environment.

This section answers the 2nd research question, “What is the difference between undergraduate and graduate students in their perception about the learning environment of clinical facilities in respiratory therapy education?” When perceptions of undergraduate and graduate students were compared in terms of the learning environment of clinical facilities, the content of supervision and the role of clinical instructor (Table 5 Table 6 and Table 7, respectively), it was found that ratings of graduate students were greater than that of undergraduate students in all domains of clinical facilities.

As shown in Table 5, the only statistically significant difference in perception between undergraduate and graduate students was on the statement in the pedagogical atmosphere of clinical facilities. Graduate students gave significantly higher ratings to the learning situations of clinical facilities as multi-dimensional in terms of content than undergraduate students in the program ($p = .03$). The rest of the comparisons related to clinical learning environment was not statistically significant ($p > 0.05$).

Table 5. Differences between undergraduate and graduate students in their perception (mean \pm standard deviation & p value) about clinical learning environment in terms of pedagogical atmosphere, leadership style and respiratory care in the intensive care units.

Domain	Statement	Undergrad. Students	Graduate Students	p value	
Clinical Learning Environment	Pedagogical Atmosphere	I felt comfortable going to the ICU at the start of my shift.	4.54. \pm 0.73	4.90 \pm 0.31	0.15
		There were sufficient meaningful learning situations on the ICU.	4.59 \pm 0.66	4.80 \pm 0.42	0.37
		The staff learned to know the student by their personal names.	4.63 \pm 0.78	4.60 \pm 0.51	0.89
		The staffs were easy to approach.	4.40 \pm 0.79	4.70 \pm 0.48	0.29
		There was a positive atmosphere on the ICU.	4.27 \pm 0.63	4.40 \pm 0.15	0.58
		The learning situations were multi-dimensional in terms of content.	4.09 \pm 0.81	4.70 \pm 0.48	0.03
		During staff meetings (e.g. before shifts) I felt comfortable taking part in the discussions.	3.59 \pm 1.25	4.30 \pm 0.67	0.10
		The staffs were generally interested in student supervision.	3.86 \pm 0.83	3.70 \pm 1.3	0.67
	Leadership Style	The ICU manager was a team member.	4.50 \pm 0.59	4.30 \pm 0.82	0.43
		The effort of individual employees was appreciated.	4.31 \pm 0.71	4.70 \pm 0.48	0.13
		The ICU manager regarded the staff on her/his ward as a key resource.	4.27 \pm 0.70	4.40 \pm 0.69	0.40
		Feedback from the ICU manager could easily be considered as a learning situation.	4.27 \pm 0.70	4.20 \pm 0.78	0.92
	Respiratory care in the ICU	Patients received individual respiratory care.	4.63 \pm 0.58	4.80 \pm 0.42	0.43
		Documentation of respiratory therapy was clear	4.54 \pm 0.72	4.70 \pm 0.48	0.55
		The ICU respiratory care philosophy was clearly defined.	4.09 \pm 1.09	4.40 \pm 0.84	0.37
There were no problems in the information flow related to patients' care.		4.09 \pm 1.15	4.20 \pm 0.78	0.78	

As shown in Table 6 there is no statistically significant difference between undergraduate and graduate students' perception on the content of supervision in clinical facilities.

Table 6. Differences between undergraduate and graduate students in their perception (mean \pm standard deviation & p value) about the content of supervision in clinical facilities.

Domain		Statement	Undergrad. Students	Graduate Students	p value
Supervisory Relationship	Content of Supervision	My supervisor showed a positive attitude towards supervision.	4.95 \pm 0.59	4.80 \pm 0.42	.32
		The supervision was based on a relationship of equality and promoted my learning.	4.54 \pm 0.73	4.40 \pm 0.96	.64
		There was a mutual interaction in the supervisory relationship.	4.30 \pm 0.99	4.40 \pm 0.96	.82
		The supervisory relationship was characterized by a sense of trust.	4.22 \pm 1.02	4.40 \pm 0.96	.65
		I felt that I received individual supervision.	4.22 \pm 0.97	4.50 \pm 0.70	.43
		Mutual respect and approval prevailed in the supervisory relationship.	4.27 \pm 0.98	4.30 \pm 0.64	.94
		Overall I am satisfied with the supervision I received.	4.18 \pm 1.09	4.30 \pm 0.94	.77
		I continuously received feedback from my supervisor.	3.95 \pm 1.09	4.50 \pm 0.70	.15

Table 7 refers to the differences between undergraduate and graduate students in their perception about role of clinical instructor in integrating theory and practice, establishing good cooperation and relationship between students and the clinical team. Comparisons between undergraduate and graduate students in their perception about clinical instructors in establishing good cooperation and relationship between students and the clinical team showed no statistically significant difference ($p > 0.05$). However, ratings obtained from graduate students were higher than that from undergraduate students. A statistically significant data was obtained pertaining to the difference of perceptions regarding the multi-dimensional learning between the graduate and

undergraduate students. The graduate students evaluated that “the learning situation are multi-dimensional” more than the undergraduate students ($p = 0.03$).

Table 7. Differences between undergraduate and graduate students in their perception (mean \pm standard deviation & p value) about role of clinical instructor in integrating theory and practice, establishing good cooperation and relationship between students & clinical team.

Domain		Statement	Undergrad. Students	Graduate Students	p value
Role of Clinical Instructors	Integration theory & Practice.	The clinical instructor was capable to integrate theoretical knowledge and everyday practice.	4.45 \pm 0.59	4.80 \pm 0.42	0.11
		The clinical instructor helped me to reduce the theory-practice gap.	4.40 \pm 0.73	4.70 \pm 0.48	0.26
		The teacher was capable of operationalizing the learning goals of this clinical placement.	4.36 \pm 0.65	4.70 \pm 0.48	0.15
	Cooperation	The clinical instructor and the clinical team worked together in supporting my learning.	4.63 \pm 0.65	4.70 \pm 0.48	0.78
		The clinical instructor was able to give his or her pedagogical expertise to the clinical team.	4.50 \pm 0.67	4.70 \pm 0.48	0.40
		The clinical instructor was like a member of the respiratory care team.	4.54 \pm 0.67	4.50 \pm 0.84	0.87
	Relationship between students & clinical instructors	The common meetings between myself, and clinical instructor were comfortable experience team.	4.59 \pm 1.79	4.80 \pm 0.42	0.44
		Focus on the meetings was in my learning needs.	4.27 \pm 1.24	4.60 \pm 0.69	0.44
		In our common meetings I felt that we are colleagues.	4.22 \pm 1.15	4.60 \pm 0.69	0.35

Impact of Gender on Students’ Perception about Clinical Learning Environment.

This section answers the 3rd research question, “How gender impacts students' perception on the learning environment of clinical facilities, the content of supervision and the role of clinical instructors in respiratory therapy?” There was a statistically significant difference in the mentor appreciation obtained by the males and the females with female students feeling more appreciation from the clinical instructors than the male students ($p = 0.03$). Findings of this study showed that

female students had higher ratings than male students in all evaluations of clinical facilities. However, the rest of the comparisons made on the dimensions of clinical learning environment showed no significant difference ($p>0.05$). No significant difference was found between male and female students in their perception of the content of supervision that took place in the clinical facilities affiliated with the respiratory therapy program in an urban university ($p>0.05$). Similarly, comparisons between male and female students in their perception about the role of clinical instructors were not statistically significant in all dimension.

CHAPTER V

DISCUSSION

The results obtained from the study indicated that both graduate and undergraduate respiratory therapy students gave high mean score to the academic atmosphere of the clinical facility. This study also revealed that all the students felt supported and managed in the clinical practice when they cooperated with the staff. However, they were unsatisfied with the clinical learning environment with factors like multi-dimensional learning condition.

Another important factor associated with the study was the supervisory relationship, which acted as an important parameter in improving the quality of learning of the students in the clinical facility. Although majority of the students reported being supervised, their level of supervision varied according to the clinical placement. It is suggested that a shift in the style of the supervision from team supervision to an individualized supervision, be observed.

The study also showed that highest mean scores were also given to the dimension of the role of clinical instructor. This reveals that, with an effective clinical instructor, the students would be encouraged and helped to overcome any form of obstacle to successfully complete learning and practice. If the clinical instructor is cooperative, supportive as well as knowledgeable, they would help the students integrate theory and practice. Continuous meetings and visits from the instructor help the students academically and support them emotionally.

Evaluation of Clinical Facilities in terms of the Learning Environment, the Content of Supervision and the Role of Clinical Instructors

The first research question, “How the learning environment of clinical facilities affiliated with an urban university was evaluated by respiratory therapy students in terms of the learning environment of clinical facilities, the content of supervision and the role of clinical instructors?”

pertains to the domain of learning environment in the clinical facilities. First domain of clinical learning environment was focused on the pedagogical atmosphere in the clinical settings. The participating students ranked, “feeling comfortable in the clinical settings”, as the most important aspect of academic atmosphere. Another important aspect of the academic atmosphere is a supportive learning environment and cooperative staff. This was consistent with the findings of the previous studies conducted in the nursing profession (Fretwell, 1983; Orton, 1983; Levec and Jones, 1996; Saarikoski, 2002; Dimitriadou, 2015). As per these studies, the most competent factor in the clinical facility that influences the academic atmosphere is the presence of reflective and supportive staff as well as a positive clinical learning environment (Fretwell, 1983; Orton, 1983; Levec and Jones, 1996).

The results also revealed that the interaction of the staff within the clinical facility significantly influenced the student’s capacity to improve their knowledge and practice. Study conducted by Reynolds in 1992 reported similar results with the exception that the current study also stated that the students were uncomfortable in the staff meeting. This might be due to the different education levels attained by the clinical instructor in the clinical setting as concluded by Mcload, et.al. in a study conducted in 2009.

An article published by Mcload in 2009 focused on the perceptions of the instructor regarding the importance of the pedagogical atmosphere in a clinical educational environment. The results showed that the perceptions of the instructors varied depending on the effectiveness of the instructors. The effective instructors considered pedagogical atmosphere as a crucial component influencing the clinical learning environment, while the ineffective instructors focused on the instruction adequacy.

The participating students in this study ranked the statement, “during staff meetings I felt comfortable taking part in the discussions”, as the lowest. There are two critical elements, which are described in the various studies attributed to the clinical learning environment, which are – the need to appreciate the student and consider them as a part of the respiratory care team and a supportive staff. Mutual respect and positive regard for others created a significant impact on the confidence of the students as per the qualitative studies that were conducted in UK (Spouse, 2001), Sweden (Lofmark and Wikblad, 2001), Canada (Myrick and Yonge, 2001) and Ireland, (Chesser-Smyth, 2005).

A study conducted by Saarikoski et.al. in 2009 investigated the perception of the students regarding the importance of effective leadership of the ward managers. The students stated that they considered the mentor as a highly significant factor as they helped them understand the basic and fundamental concepts of the clinical practice. This study also showed similar perception of the participating students who held the opinion that an effective ward manager was one who believed in giving feedback, a good teamwork and good communication within the staff. As in other studies, the leadership style of the ward manager was considered as an important aspect in a clinical learning environment (Wilson-Barnett et al., 1995; Dunn and Hansford, 1997; Saarikoski et al., 2002).

The second domain focused on the supervisory relationship of the respiratory therapy students in the clinical learning environment. Fifty percent of the participants of the study ranked “occurrence of supervision is variable” as the highest aspect in the domain of supervisory relationship, thus, making supervisory relationship as a significant factor in the learning environment of the clinical setting. Majority of the participating students reported that they had supervisor in the clinical facilities; however, they varied according to the clinical facility.

Dimitriadou et.al. concluded that a good relationship with clinical instructors results in the successful achievement of the clinical learning objectives (Dimitriadou, M., Papastavrou, E., Efstathiou, G., & Theodorou, M, 2015).

The findings of this study showed that supervisory relationship was problematic as 59.4% of the students did not have private supervision or experienced it one or two times during the entire course. The main reason for this lack of supervision was the occurrence of the supervision, which was variable. The supervisors of the students ranged from respiratory therapist, to respiratory specialist, or clinical director. The students were not assigned to a specific supervisor in the clinical setting nor did the mentorship program function as expected. This could be due to the clinical instructor having prevented the mentors to have an active role in the student supervision.

In this study, it was reported that the respiratory therapy students did not report their supervision experience as a positive one nor were they satisfied from the team supervision model. Only a small percentage (15.6%) of the participating respiratory therapy student reported that the supervision relationship occurred “more often”.

The results stating, the presence of a significant percentage of the students with lack of successful private supervision and high percentage of failed supervisory relationship, are in contrast with the fact that clinical learning plays a vital role in the respiratory therapy education. It is also contrasting that majority of the students experienced team supervision, which is against the philosophy and principles of individualization.

The third domain in this study focused on the role of the clinical instructor. The participating students ranked, “I feel we are colleagues” as the lowest aspect in the clinical instructor relationship domain. This report reflected that the clinical instructor was not seen frequently in the clinical area. This report was consistent with the studies conducted previously

wherein the clinical instructor was seen as a “visitor” with the clinical placement students. (Saarikoski et al., 2009; Waren et al., 2010)

The sub-dimension, “clinical instructor enabling integration of theory and practice”, received the highest mean score indicating that emphasis was placed on the role of CI as a coordinator, supporter of students, and their mentor. Price et.al, identified the need of the CI to be visible and available at regular intervals in the clinical setting in their qualitative study conducted in 2011.

Differences between Graduate and Undergraduate Students in Their Perception about Clinical Learning Environment

The second research question focused on the difference between undergraduate and graduate students in their perception on clinical learning environment in respiratory therapy education. A statistically significant data was obtained pertaining to the difference of perceptions regarding the multi-dimensional learning between the graduate and undergraduate students. The result obtained showed that the graduate students evaluated that “the learning situation are multi-dimensional” more than the undergraduate students. ($p = 0.03$).

Information of this study reflected that the Level of education might impact the clinical learning environment in respiratory therapy. Researchers assumed that graduate students are more comfortable than undergraduate students because they have more experience in the profession of respiratory therapy in different clinical facilities. Experiencing the profession from different perspectives gives graduate students a chance to explore the real life of the learning environment in the clinical facilities.

Impact of Gender on Students' Perception about the Learning Environment of Clinical Facilities.

The third research question focused on the gender perception of the clinical learning environment and stated, "How gender impacts students' perception on the learning environment of clinical facilities in respiratory therapy?" This study reported that there was a statistically significant difference in the mentor appreciation obtained by the males and the females with female students feeling more appreciation from the mentors than the male students. ($p = 0.03$). That difference is due to the different style of learning behavior between males and females. Female students preferred mentors who appreciate and support them during clinical practice. Also, behavior rewards were found more effective in female learning (Aymen, Korabik, & Morrise, 2009).

Implications for Research

The results obtained from this study would be able to help the coordinators of the respiratory therapy program to value the opinion and experience of the students in order to fully appreciate the areas of strengths of the programs as well as improvise the areas requiring improvements for a successful and effective clinical education environment for respiratory therapy. This study would also enlighten not only the clinical supervisors and instructors of clinical facilities but also directors of clinical education involved in the respiratory therapy education regarding the areas that may need manipulation, modification and improvement in clinical education to create an effective learning environment for respiratory therapy students. This is the first study that evaluates clinical facilities affiliated with a respiratory therapy program from multiple perspective. Therefore, it is considered as a significant contribution to the literature as it focuses on the various aspects related to the improvement of clinical facilities to foster the clinical

learning experience of the respiratory therapy students. This study is also important as it further adds to the existing short list of the studies conducted in the field of clinical learning environment with regards to respiratory therapy education.

Recommendations for Future Study

Since there is lack of sufficient literature pertaining to the perceptions of the respiratory therapy students with respect to the clinical learning environment, further research is recommended in the future. This study should be replicated with use of a larger sample size with the involvement of the students with an associate degree.

Limitations

The sample size of the study was small and convenience sampling from a single institution was used in this study. The small sample size factor is essential when compared to the different classes of the students with the result being measures just one time. With multiple measurement, a lot more information can be gathered. The final limitation is the lack of a comprehensive research that addresses the clinical learning environment in the respiratory therapy profession.

Conclusion

Since respiratory therapy is a practice-based profession, it is essential to integrate clinical education into the respiratory care curriculum. Gender and education level may impact students' perceptions about the learning environment of clinical facilities. This study provides information about areas for improvement in clinical facilities affiliated with a respiratory care education program at an urban university.

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