Respiratory Therapy Students' Perceptions of Effective Teaching Characteristics of Clinical Instructors at an Urban University

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DEDICATION

I thank God for all the wisdom, strength, perseverance, and blessings bestowed upon me during this thesis as well as throughout my life. I dedicate this thesis to two people I mention first deserve much credit for guiding me through life and making me the man I am today. My dad has always looked out for my future and for being someone who I can talk to about all challenges that I have faced during my scholarship journey in U.S. Thank you Dad. To My great and lovely mother, I really don't want to through a piece of word 'thanks' for you because it never expresses my feeling for you; I just simply wish you to be with me and rest of the family healthier and happier ever. Thank you mom, for everything.

To my beloved wife, Suhilah, and my gorgeous children (Abdullah, Dana, and Jwana) who were with me all the way and supported me by listening, fretting, and celebrating with me. Your understanding of my need to undertake this endeavor and belief in my ability to do it made all of the difference. Thank you from the bottom of my heart.

I also thank the rest of my family and friends for their unlimited care, love, patience, encouragement, and confidence.

This thesis is dedicated to the memory of my beloved Uncle, Ali Bin Mesfer. It is your shining example that I try to emulate in all that I do. Thank you for everything.

ACKNOWLEDGMENTS

      I would like to sincerely thank my dissertation chair, Dr. Doug Gardenhire for his support and guidance. I consider myself fortunate to have had you for a teacher and advisor. I also wish to express my deep appreciation to my committee members, Prof. Ralph Zimmerman and Prof. Robert Murray for sharing their insights, expertise and time to facilitate this process. I owe gratitude for the support of my colleagues and friends for cheering me along. Thank you to Mr. Ryan Siraj, being able to discuss ideas was invaluable, as was your support and friendship.

Ali Alasmari

Fall 2014

RESPIRATORY THERAPY STUDENTS' PERCEPTIONS OF EFFECTIVE TEACHING
CHARACTERISTICS OF CLINICAL INSTRUCTORS AT AN URBAN UNIVESITY

By

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A Thesis

Presented in Partial Fulfillment of Requirements for the

Degree of

Masters of Science

in

Health Sciences

In

the Department of Respiratory Therapy

Under the supervision of Dr. Douglas S. Gardenhire

in

Byrdine F. Lewis School of Nursing and Health Professions

Georgia State University

Atlanta, Georgia

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ABSTRACT

Clinical instructors may have a negative or positive effect on student's clinical practice. The behavioral characteristics of respiratory therapy clinical instructors are vital to the success of student's clinical learning experience. Therefore, respiratory therapy student's perception of the effectiveness of the clinical instructor's behavior is an important indicator to modify and facilitate effective clinical instruction. PURPOSE: The purpose of this study was to identify the most effective clinical teaching behaviors (ECTB) perceived by undergraduate respiratory therapy (BSRT) and integrated graduate respiratory therapy (MSRT) students and to identify any similarities in their rankings. METHODS: The study used descriptive exploratory design with a self-reporting survey. The survey was administered to a convenience sample of first and second year BSRT and MSRT students attending an accredited respiratory therapy program at an urban university located in the southeastern United States. The survey consisted of 35 teaching behaviors presented on a five-point Likert scale according to importance. The collected data were analyzed using descriptive statistics. RESULTS: Seventy-two students were surveyed, more than two-thirds of the respondents were female. Seventy-five percent of respondents studied were BSRT, which females accounted for 78% and males 22%. Graduate MSRT studied were 25% of the total sample with females and males equally split at 50%. Two thirds of MSRT students reported previous education with BSRT students reporting less than one-quarter. The study findings indicate BSRT and MSRT students' perceptions ranking of the most important behavioral characteristics hold similarities but both perceive the ordered rank of importance differently. Both BSRT and MSRT students ranked "be approachable" as the most important clinical behavioral characteristic with mean scores and S.D respectively (M 4.89, S.D ±0.37, and M 4.94, S.D ±0.24). Additionally, BSRT students rank the characteristic "respect student as an individual" (M 4.87, S.D ±0.34) next significant while MSRT students rank "demonstrate self-control & patience" (M 4.94, S.D ±0.23) the next highest. CONCLUSION: Although BSRT and MSRT students' perceptions demonstrated similarities, mean scores data between first year and second year show a shift in ranking between characteristics. This may be because student's perceptions could change as they advance in their clinical course work or their past educational experience. In addition, the results may assist respiratory therapy clinical instructors to appreciate students' views and acknowledge areas of success as well as areas needing improvement.

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CHAPTER I

INTRODUCTION

Medical, nursing, and allied health program educational curricula are primarily divided into two components: didactic and clinical. Traditionally, the didactic portion involves extensive lectures and book learning, while during the clinical aspect students apply the theory into practice. Students bridge the gap to become caregivers applying the knowledge and concepts learned to provide actual patient care. "The aim of clinical education is to develop in the student the professional skills and knowledge needed in life-long learning and critical thinking, to create self-confidence as a nurse, and to ensure that the nurse is able to make his/her own decisions and be independent" (Elcigil & Yıldırım, 2007). Nevertheless, respiratory therapy is a specialized healthcare field involving the treatment of those with respiratory ailments from cardiac or pulmonary disease. The crux of the curriculum in respiratory therapy is clinical instruction. For respiratory care programs, clinical education is the main component of teaching and learning, since it has a great impact on the students' critical thinking and problem solving skills (Gullen, 2005). According to the Commission on Accreditation for Respiratory Care (CoARC), which accredits all respiratory care academic programs in the United States, the type and duration of clinical educational experience varies from program to program. Moreover, the Coalition for Baccalaureate and Graduate Respiratory Therapy Education (CoBGRTE) in 2010 published a white paper which stated that about 937 hours in respiratory therapy baccalaureate programs are spent in clinical rotations and most four-year academic programs start their clinical rotation in the first semester of the junior year in order to allow the student to adapt to the professional environment. Moreover, clinical experiences directly impact self-awareness, critical thinking, psychomotor proficiency, and professionalism of respiratory therapy students.

There are three main models of clinical instruction: experience-based learning, problem-centered learning, and a combination of individual and team learning (Irby & Papadakis, 2001). The challenges experienced during clinical education help the student understand the complex and serious nature of real world clinical practice where decisions may mean the difference between life and death (Beard & Wilson, 2002). However, respiratory therapy clinical instructors are responsible for ensuring student learning while gaining hands-on experience to practice techniques. Effective clinical instructors integrate behavioral characteristics such as evidence-based medicine, clinical skills, and critical thinking into the teaching experience. Hence, the behavioral characteristics of clinical instructors are vital to the success of students' clinical learning experience. In addition, clinical instructors must possess effective teaching characteristics such as professional knowledge, role modeling and clinical competence with communication skills to facilitate optimal clinical learning. Nevertheless, the quality and effectiveness of clinical instruction is difficult to assess and currently there are no guidelines as how to do so (Langbein, 2007). Although there is a demand for evaluation the effectiveness of clinical instruction, the criteria for determining effective clinical teaching remains poorly defined (Lee, Cholowski & Williams, 2002). Yet, current procedures used to evaluate clinical teaching effectiveness in health allied instruction areas are generally student based (Girija, Shukri, Hayudini, & Narayanan, 2013).

In respiratory therapy education there is a paucity of literature available that addresses how clinical instructors' behavioral characteristics influence student learning. In contrast, this has been extensively studied in nursing education, both from the student and faculty point of view (Benor & Leviyof, 1997; Brown, 1981; Knox & Morgan, 1985; Kotzabassaki, Panou, Dimou, Karabagli and Ikonomou, 1997; Kube, 2010; O'Shea & Parsons, 1979; Tang, Chou &

Chiang, 2005; Lee et al, 2002). In order for respiratory therapy programs to achieve higher standards in clinical instruction, clinical instructors' behavioral characteristics that influence student learning must be thoroughly explored. Hence, there is a compelling need to better understand what students perceive as effective characteristics for clinical instructors in the realm of respiratory therapy education.

Statement of Problem

Clinical instruction provides the student with the opportunity to apply knowledge, skills and concepts learned in the classroom to actual care of the patient. The clinical instructor may have a negative or positive effect on students' clinical practice. In addition, behavioral characteristics of clinical instructors are vital to the success of students' clinical learning experience. In respiratory therapy education, however, there is an insufficient amount of literature available that addresses how clinical instructors' behavioral characteristics influence student learning. Thus, undergraduate and graduate respiratory therapy students' perceptions would provide an exploration for the effectiveness of clinical instructors' behavioral characteristics, which can be an important indicator to modify and facilitate effective clinical instruction in respiratory therapy programs.

Purpose of the Study

The purpose of this descriptive study is to identify the perceptions of undergraduate and graduate degree respiratory therapy students at different academic levels regarding the effective characteristics of clinical instructors. The researcher also assessed whether there are differences between different academic years. The following research questions were addressed to help steer the study:

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1. Which characteristics of effective clinical instructors are perceived to be most important by undergraduate degree respiratory therapy students?

2. Which characteristics of effective clinical instructors are perceived to be most important by graduate degree respiratory therapy students?

3. Do students' perceptions differ according to the amount of time they spend in their program of study?

Significance of the Study

This study will advance respiratory therapy clinical education by contributing information about how utilizing various tools to evaluate effectiveness of clinical instructors' behavioral characteristics based on students' perceptions of clinical experience. Respiratory therapy student's perception of the effectiveness of the clinical instructor's behavior is an important indicator to modify and facilitate effective clinical instruction. However, the relationship between students and clinical instructors in the clinical setting for respiratory therapy is limited.

Definition of Terms

CoARC: The Commission on Accreditation for Respiratory Care accredits professional respiratory care degree programs at the Associate, Baccalaureate, and Masters Degree level in the United States and internationally.

CoBGRTE: The Coalition for Baccalaureate and Graduate Respiratory Therapy Education is an organization to help students, faculty, and the general public learn about baccalaureate and graduate respiratory therapy education in the United States of America.

Assumptions

The following assumptions were used for this study of effective clinical instructor

characteristics:

1. Students' evaluations of clinical instructors are used frequently and are generally considered valid measures (Hassan, 2009; Raingruber & Bowles, 2000; Zimmerman & Westfall, 1988).

2. Students' self-esteem and self-confidence increase when clinical faculty demonstrates supportive behaviors.

3. Effective clinical instruction requires outstanding characteristics to promote learning.

Summary

One of the main objectives in respiratory therapy education is to facilitate learning in order for students to attain competence when practicing respiratory therapy. The professional knowledge, clinical competence, and effective characteristics of clinical instructors are vital to student learning outcomes. Students' perceptions would provide an exploration of effective characteristics of clinical instructors, which are an important indicator to modify and facilitate effective clinical instruction in respiratory therapy programs. Thus, clinical instructor characteristics that have a positive effect on students' clinical practice must be identified.

CHAPTER II

REVIEW OF THE LITERATURE

Purpose of this literature review is to identify effective behavioral characteristics of clinical instructors from different health profession perspectives. An internet literature search utilizing databases accessed for these reviews include PubMed, CINHAL, Ovid, ProQuest, Medline, and EBSCOhost. Search keywords used were: clinical education, clinical instructor, allied health education, respiratory care, respiratory therapy, nursing, physical therapy, athletic training, pharmacy, medicine, and radiography. The search covering the clinical education in various health professions was initially limited to the past five years, which resulted in fifty articles. However, the time frame was then expanded for more depth and the classification of articles limited to peer reviewed which yielded a reduction up to twenty-eight articles that discussed effective clinical instruction and student perceptions.

Additionally, when we expanded the time frame of publications in our search to three decades we found numerous publications that have examined the characteristics and behaviors of clinical instructors from medical, nursing and allied health programs such as, physical therapy, athletic training and radiography. Nursing education has been a popular area of study among other health care professions that have the most abundant publications. Respiratory therapy lacks specific research on this topic; however, much of the information can be related. Furthermore, historical and recent quantitative and qualitative studies were reviewed to identify previous research conclusions on the effectiveness of clinical instructors.

Clinical Instruction in Nursing Education

Clinical education and clinical instructors have been widely studied in nursing education settings. Clinical experience has been shown to be the most important component of nursing

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education (Gaberson & Oermann, 2007; Walker, 2005). Teaching behaviors of clinical nursing faculty have been the topic of many studies. Clinical and classroom instructor effectiveness have an impact on student learning outcomes. Reviewing the literature resulted in numerous citations describing effective teaching characteristics, others ranked importance of the characteristics and some sought to differentiate perceptions of clinical teaching effectiveness based on various qualities of the research subjects (Brown, 1981; Gignac-Caille & Oermann, 2001; Knox & Morgan, 1985; Nehring, 1990). This literature included associate degree, baccalaureate degree, and graduate students' in their studies as study populations. Nevertheless, major areas of research of student-instructor relationships have emerged as important to the clinical education of nursing students.

One example is student and faculty perceptions of effective or ineffective clinical instructor characteristics (Benor & Leviyof, 1997; Brown, 1981; Kotzabassaki, Panou, Dimou, Karabagli & Ikonomou, 1997; Knox & Morgan, 1985; Kube, 2010; Smith, Swain & Penprase, 2011; Tang, Chou & Chiang, 2005; Lee Woo-Sook, Cholowski & Williams, 2002). Moreover, research on the dimensions of effective instruction in the clinical setting has been the focus of studies for several decades. According to Kube (2010), student learning in the clinical setting was facilitated by a higher demonstration of effective teaching behaviors.

Clinical Instructor Characteristics Instruments

Numerous tools to evaluate teacher effectiveness are described in nursing literature. These instruments were designed by nursing teaching faculty for use at their respective universities.

Brown (1981) designed the Clinical Teacher Characteristics Instrument (CTCI) to identify characteristics of effective clinical teachers. The study identified and compared

perceptions of 82 senior level baccalaureate-nursing students and 42 faculty members at one baccalaureate nursing program in North Carolina in regards if similarity perceptions of effective clinical teaching characteristics existed between the students and their teachers. The hypothesis of the study was that students and faculty would have comparable descriptions of effective clinical teachers. Brown developed a tool consisting of two sections. The first section included a 20-item Clinical Teacher Characteristic Instrument (CTCI) which were rated on a five-point Likert scale according to importance and placed the characteristics into the following three categories, professional competence, relationships with students', and personal attributes. The second section included questions asked to respondents to select the five characteristics they deemed to be most important, and then to rank them in order of importance. The study results rejected Brown's (1981) hypothesis when results revealed that students ranked relationships with the faculty as more important while faculty ranked professional competence as more important. Moreover, students acknowledged the following most important characteristics: (a) well informed and communicated knowledge to students, (b) objective and fair in the evaluation of the student, (c) showed genuine interest in patients and their care, (d) conveyed confidence in and respect for the student, and (e) encouraged students to feel free to ask questions or to ask for help (Brown, 1981). Brown's findings concluded that students and faculty do indeed perceive the most effective clinical teaching behaviors differently.

Brown's (1981) study was replicated (Bergman and Gaitskill, 1990; Nahas V L, Nour V and al-Nobani M, 1999) but in another cultures. Nahas et al. (1999) conducted study to explore Jordanian undergraduate nursing students' perceptions of effective clinical teacher characteristics. The results of this study showed that Jordanian nursing students' responses as to the most important characteristics of the clinical teacher are different to nursing students from

other Westernized countries as they value the clinical teachers' professional competence more than interpersonal skills and personal attributes.

A primary theme for research has been to categorize clinical teaching behaviors as effective or ineffective or to assess the effectiveness of clinical teaching with regard to the use of teaching behaviors. Knox and Morgn (1985) developed an instrument to measure the effectiveness of teaching characteristics, known as the Nursing Clinical Teaching Effectiveness Inventory (NCTEI), which compares the importance of five categories of clinical teacher characteristics as perceived by university nursing faculty, students and professional graduate nurses. They conducted an exploratory study at the University of British Colombia in Canada to identify important clinical teacher behaviors engaging 393 baccalaureate nurses students, 49 clinical instructors, and 45 graduate nurses. A 48-item of clinical teaching characteristics and behavior instrument used a 5-point Likert scale (1= not important at all to 5 = very important). Additionally, the effective clinical instructor behaviors placed into five different categories: 1) teaching ability 2) nursing competence 3) evaluation 4) interpersonal relationship 5) personality participants included baccalaureate nursing students, faculty, and graduate practicing nursing.

The instrument Reliability coefficients ranged from alpha = 0.79 to 0.89, and the analysis of variance of the responses of the six groups showed a significant difference for all five categories of teacher behaviors" (Knox & Mogan, 1985). The results indicated that junior level baccalaureate degree nursing students rated evaluation, which includes demonstrating objectivity and fairness, providing timely feedback, and providing constructive criticism, as more important than recently graduated students and faculty. Graduate practicing nurses rated nursing competence as significantly more important than second-year students. Interpersonal relationship and personality categories showed the greatest difference between ratings. The study concluded

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that evaluation rated most important (93%) and personality characteristics as least important (87-6%) which imitate some of the findings by Brown (1981).

Knox and Mogan (1987) published another study using the same instrument they developed in the first study NCTEI (1985) to enhance their clinical teaching characteristic instrument by identifying and comparing the "best" and "worst" characteristics of clinical instructors. The study conducted in seven nursing schools, which included 173 students at 3 different academic levels (second year, third year, and fourth year students) and 28 faculty. Study results concluded that both groups rated a good role model, demonstrated mutual respect, and approachable as the highest as the best instructor characteristics.

Nehring (1990) and Kotzabassaki et al (1997) replicated Mogan and Knox's (1987) descriptive study of the best and worst characteristics of clinical teachers. The replicated studies reflected similar faculty and student perceptions to those found by Knox and Mogan (1987) and such similar findings confirm the tool's reliability over time and with different samples (Nehring,1990). Benor & Leviyof (1997) surveyed 123 students at three nursing schools in Israel using a modified version of the NCTEI to identify student perceptions of ideal, best and poorest clinical teachers. The study results showed the best teacher characteristic ranked by students was nursing competency and least important was for interpersonal skills.

Nonetheless, The NCTEI was used in various settings and the common result of these studies were the lack of statistically significant differences between student and faculty clinical instructor ratings of clinical instructor behavior (Lee, Cholowski & Williams, 2002; Li, 1997; Sieh & Bell, 1994).

Another instrument is the Effective Teaching Clinical Behaviors (ECTB) that was developed by Zimmerman and Westfall (Zimmerman & Westfall, 1988) is a 43-item instrument

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based on 5-point Likert scale. They surveyed 281 nursing students from baccalaureate and diploma programs to assess the validity of ECTB as well as to evaluate internal consistency and test–retest reliability of the scale. They concluded that the ECTB instrument was valid..

Characteristics of Effective Clinical Instructors

Multiple citations found in nursing education looks at specific goals that can be achieved with comparing students and clinical instructors perceptions of effective clinical instructor qualities. In addition, these studies identified that nursing instructors require possessing knowledge and clinical competence to establish clinical objectives, fairness in evaluation and good at feedback techniques, identify role responsibilities, employ interpersonal relationship skills (Kelly, 2007; Lee et al., 2002; Kube, 2010; Stenvig, 2008; Heshmati-Nabavi and Vanaki, 2010; Girija et al., 2013; Smith, C., Swain, A., & Penprase, B., 2011). Students' perceptions of the clinical instructor revealed that knowledge and clinical competence are impacted by the quality of the student-instructor relationship (Gignac et al., 2001; Jenkins, 2006). Hence, good student-teacher relationships, professional competence, as well as personal traits are important to facilitate student's clinical learning.

Regarding good student-teacher relationships, students respond to this character with a feeling of acceptance as most important among other characteristics. Lee, Cholowski, and Williams (2002) conducted a study on full-time undergraduate nursing students at an urban regional university in Australia sampling150 second year students, 112 third-year students and 34 clinical educators. According to Lee et al. (2002), both students and instructors rated the category of interpersonal relationships as most important and no statistically significant difference between the student and clinical instructor's perceptions. However, younger students between 18 and 20 years of age ranked interpersonal relationships higher than older students. It

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was concluded that clinical instructors needed to value interpersonal relationships with students as well as clinical competence (Lee et al., 2002).

Kelly (2007) also investigated student perceptions of effective clinical teaching in two groups of students' (diploma & baccalaureate) over 14 years at a Canadian university. The study findings indicated remarkably very similar perceptions. The students' view of an effective clinical instructor as one who were knowledgeable, good at giving feedback, as well as having high communication skills.

Another study conducted by Hanson and Stenvig (2008) examined the characteristics of effective clinical instructors studied perceived attributes of clinical educators by baccalaureate nurses. They found that knowledge, interpersonal skills, and teaching strategies ranked as the highest characteristics.

Kube (2010) conducted a study on the relationship of clinical teaching and student nurses perceptions of learning with a sample of first-degree baccalaureate nursing students. Kube reported using the NCTEI with a 7-point Likert scale with ratings from never to always. Kube reported teaching behaviors demonstrated by clinical instructors and most frequently perceived by nursing students as influencing student learning. These teaching behaviors reflected a positive influence on student learning were as follows: (a) approachable, (b) appears organized, (c) provides support and encouragement, (d) provides frequent feedback, (e) well prepared for teaching, (f) encourages mutual respect, (g) listens attentively, and (h) makes suggestions for improvement (Kube, 2010).

Conversely, Kube reported teaching behaviors perceived by nursing students of high importance to facilitate learning and not frequently demonstrated by clinical instructors as follows: (a) demonstrates clinical procedures, (b) corrects mistakes without belittling, (c)

provides specific practice opportunity, (d) gears instruction to student level, and (e) remains accessible to students. In addition, Kube (2010) analyzed which categories of effective characteristics had the greatest influence and least influence on facilitating learning in the clinical setting. Student nurses responses indicated a high facilitation of learning when clinical instructors demonstrated a high frequency of use of effective characteristics from the following categories (a) interpersonal relations, (b) personality traits, and (c) evaluation procedures. In addition, according to Kube, nursing students perceived a low facilitation of learning when there was a low demonstration of effective characteristics in the category of nursing competence used by clinical instructors.

Another published study by Heshmati et al. (2010) cited the perceptions of Iranian nursing students and faculty members' towards effective clinical educator characteristics. The study based on a grounded theory, however, they identified five key features of effective clinical educators: (1) personal traits; (2) meta-cognition; (3) making clinical learning enjoyable; (4) being a source of support; (5) being a role model. The personal traits included compassion for the nursing profession, and reflective thinking. The metacognition characteristics included knowledge of the clinical environment and knowledge of the curriculum. Making clinical learning enjoyable included junction theory into practice by applying clinical reasoning and using a patient-centered approach in clinical training. Being a source of support deliberated when clinical instructors use interpersonal relationships skills with both students and staff members. Being a role model included clinical competency. They concluded that effective clinical instructors are those who are in synchronization with students and act as a role model for students and patients. Moreover, the study findings did not identify differences between students and clinical instructors.

Using quantitative research method, Girija et al. (2013) surveyed 120 nursing students from the College of Nursing of Sultan Qaboos at the University of Oman, who completed one year or more of clinical instruction. Girija et al. (2013) reported using the Effective Clinical Instructor Characteristics Inventory (ECICI), which the author developed. Moreover, the 40-item ECICI is divided into three sections, which included demographic data, 38 characteristics, and two open-ended questions. These 38 statements that describe teacher characteristics were grouped into three categories: (a) Professional Competence consisting of 18 statements (b) Relationship with Students containing 8 statements (c) Personal Attributes included 12 statements. A four point, Likert scale ranging from 1 (unimportant) to 4 (most important) was used to assess respondents perceived level of importance of each clinical instructor characteristic.

The study results revealed that both male and female Omani nursing students rated professional competence of instructors as the most important characteristic and instructors' relationship with students as the second most important characteristic without any discrepancy (p >0.05). Male and female students' perceptions on instructors' relationships with students was found to be significantly different (p <0.05). Students ranked the first five most effective clinical instructor characteristics as followed: objective evaluation, role modeling, clinical competence and communication skills, respecting students' individuality. Also, students perceived 4:1 student- teacher ratio as the most optimal learning environment. Finally, the researchers concluded that these results may assist faculty to appreciate students' views and become aware of those characteristics of success to reinforce them, as well as those that need improvement.

Clinical Instruction in Physical Therapy

Students during physical therapy instruction are required to complete thirty weeks of

clinical instruction (CAPTE, 2009). The American Physical Therapy Association (APTA) in 1997 created a national training program for physical therapy clinical instructors known as the Clinical Instructor Education and Credentialing Program (CIECP) (APTA, 1997). APTA statistical data emphasized that CIECP has been completed by more than 31 thousands physical therapists nationwide (APTA, 2010). However, publications in physical therapy evaluated student's perceptions of their clinical instructor's effective teaching behavior have been described from many different perspectives (Emery, 1984; Jarski R, Kulig K, Olson R, 1989; Morren, Gordon, & Sawyer, 2008; Wetherbee, Nordrum, & Giles, 2008).

Jarski et al. (1989) administered 58-item questionnaire developed by Gjerde and Coble in 1982 to 311 physical therapy students and teachers. In this study, interpersonal skills of the teacher ranked highest among the students. The relationship between the students and teachers were described as 'open' where students could approach the teacher and ask for help. Similar results were also found in the study conducted by Emery (1984) which studied physical therapy students' perceptions of 29 important clinical instructor behaviors by surveying 102 seniors who had completed their clinical education from three different undergraduate physical therapy programs. The researcher designed a questionnaire by dividing 43 previously identified clinical instructor behaviors into four categories: communication, interpersonal relations, professional skills, and teaching behaviors. Emery requested the students to score each behavior according to how important the behavior was relative to the quality of their clinical education experience as well as the frequency with which the student observed his or her clinical instructor exhibiting each behavior. Study results revealed that students reported that all behaviors were important and that all were observed with the same relative frequency. The teaching behaviors that promote effective clinical instruction include matching clinical teaching skills to student understanding

and experience, having good communication skills, providing constructive feedback, and training clinical instructors.

Clinical Instruction in Athletic Training

Athletic training clinical instructors' effective behavior characteristics and skills have been described from many different perspectives. Regarding these behavioral characteristics, it appears that students perceived communication skills, clinical competence, and interpersonal skills as significant clinical instructor characteristics (Laurent & Weidner, 2001; Weidner & Henning, 2002; Swann, 2002).   Laurent and Weidner (2001) compared clinical instructors and four undergraduate athletic training student perceptions of instructor characteristics as being either most or least helpful in the learning process. They utilized a 42-item questionnaire, which was divided into eight categories: student participation, clinical instructor attitude toward teaching, problem solving, instructional strategy, humanistic orientation, knowledge and research, modeling, and self-perception. Study results confirmed that both the students and the clinical instructors rated all of the clinical instructor characteristics as being helpful. However, Laurent and Weidner concluded that both the clinical instructor and student perceptions of clinical instructor characteristics would help shape the direction of clinical instruction. The authors also found that supervision and relationships are dynamic in clinical instruction and that the relationship needs to keep pace with the educational process.

Another study by Weidner and Henning (2002) listed nine essential quality characteristics and skills needed for effective clinical instruction and they should be included in clinical instructor training: (a) Legal and ethical behavior (b) Clinical competence (c) Injury evaluation and assessment skill (d) Communication (e) supervision (f) instruction (g) professional development (h) administration (i) interpersonal skills.

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Finally, Swann (2002) cited communication skills were effective for clinical instructors as a set of characteristics that generate a positive learning environment for athletic training students. The purpose of her study was the importance for clinical instructor's feedback, which would assist students in enhancing their clinical skills and behaviors. Feedback was most important because it allows the student to know what improvements are needed. Swann asserted that the clinical learning environment was an ideal setting for feedback because of the practical nature of the setting. Therefore, clinical instructors should include this style of communication in their training to students. Nevertheless, Swann stressed when providing feedback, particularly negative feedback if it is not reported in a desirable fashion, it may have a negative impact on students. Swan explained that the feedback should be conducted in a way that permits students to advance their clinical skills without disparaging their clinical skills. Swan concluded the study by stating that constructive communication skills are crucial for clinical instructors to be effective.

Clinical Instruction in Radiography

The behavioral characteristics of radiography clinical instructors are also important to the success of students' clinical learning. Williams and Webb (1994) completed a study using radiography students to determine effective and ineffective clinical setting activities that encourage independent student development. The study looked at student perceptions of the clinical supervisor's role relative to effective and ineffective behaviors used to carry out their supervisory responsibilities. Two groups of participants volunteered for this study, 24 radiographer educators and 84 radiography students. The critical incident data fell into three categories: Teaching Skills and Techniques, Interpersonal Style, and Professional Competence. Williams and Webb found that 80% of the critical incidents came from two categories (Teaching Skills and Techniques, and Interpersonal Style).

Using a descriptive design with a self-reporting questionnaire, Ingrassia (2011) conducted a survey on both second year radiography students and clinical instructors in New Jersey concerning their perceptions of effective characteristics of clinical instructors. The results showed that in all four categories (competence, teaching ability, evaluation skills, and interpersonal relationship), the students' ranking of the most important behavioral characteristics were competence and interpersonal relationship which matched those of the clinical instructors.

Summary

Clinical education and clinical instructors are crucial components of health professions' education. Effective clinical instruction in respiratory therapy requires clinical knowledge, clinical proficiency, good personality and skills in teaching students to assist learning of students by clinical instructors. Clinical competence, interpersonal relationships and personality traits are identified in prior research that used the ECICI instrument. However, there is strong evidence that students in prior studies ranked clinical instructor's professional competence and relationship with students as a significant influence in the clinical instruction environment (Brown, 1981; O'Shea & Parsons, 1979; Viverais-Dresler & Kutschke, 2001). Determining which teaching behaviors are more effective will allow clinical instructors to use them and function more effectively (Knox & Mogan, 1985). Although a number of studies have been undertaken on the effectiveness of clinical teaching, the most effective approaches to clinical practice have yet to be clearly identified.

CHAPTER III

METHODOLOGY

In this study, the researcher explored the current effective characteristics of clinical instructors that have an influence on respiratory therapy students learning outcomes as well as providing insight into the improvement of educational programs for developing clinical respiratory therapy education. The survey was distributed by the researcher as a way to reduce bias to undergraduate respiratory therapy (BSRT) and integrated graduate respiratory therapy (MSRT) students at the participating school to rank the importance of clinical instructor behavioral characteristics listed in the survey. In addition, the committee members met and discussed every element of the instrument and finalized a survey of thirty-seven questions (see appendix A). This chapter contains a description of the methods and procedures that will be used in this study.

Research Questions

1. Which characteristics of effective clinical instructors are perceived to be most important by undergraduate degree respiratory therapy students?

2. Which characteristics of effective clinical instructors are perceived to be most important by graduate degree respiratory therapy students?

3. Do students' perceptions differ according to the amount of time they spend in their program of study?

Instrumentation

The survey instrument to be used in this study was a modified version of the Effective Clinical Instructor Characteristics Inventory (ECICI) developed by Girija et al. (2013). Girija et

al. (2013) developed the Effective Clinical Instructor Characteristics Inventory (ECICI) instrument, therefore, permission was attained from the author to allow use of the survey instrument. After permission of use was granted the survey was modified using a Q-sort method to identify the respiratory therapy students' perceptions of effective teaching characteristics of clinical instructors according to undergraduate respiratory therapy (BSRT) and integrated graduate respiratory therapy (MSRT) students.

The instrument for this study consisted of two sections, demographic and the survey instrument (See Appendix B). Section I, the demographic section consisted of fill in the blank and circled items regarding age, number of clinical courses completed, gender, academic level in the program, educational level, and ratio of students to clinical instructor. Section II, the survey adapted and modified from the ECICI consists of 35-items of clinical instructor characteristics divided into three sub-scales. The sub-scales are professional competence with 15 statements, relationship with students consisted of 8 statements, and personal attributes with 12 statements. A four point, Likert scale ranging from 1 (unimportant) to 4 (most important) was used to assess respondents perceived level of importance of each clinical instructor characteristic.

Validity and reliability of the ECICI in the original study was established using Cronbach's alpha reliability coefficient. According to experts' suggestions and pilot results, five items were deleted and three items were reworded for better clarity. The final modified questionnaire had 40-items. Cronbach's alpha reliability coefficient was 0.87, demonstrating the reliability of the tool.

Validity describes the extent to which a tool actually measures what it was designed to measure (Burns & Grove, 2005). A panel of respiratory therapy education experts consisting of the Director of Clinical Education, two assistant clinical professors, applied content validity and

myself critically reviewed the tool for this study and made suggestions regarding wording, format, and content. Directions to the committee were to keep good items, eliminate poor items, and reword unclear items and decide if a construct had been omitted. The committee held one meeting lasting one-hour. From this meeting, thirty-seven items were kept and can be found in Appendix B.

After the suggested revisions were incorporated into the tool, the panel agreed that the tool appeared that it would capture students' perceptions of the degree to which effective clinical instructor characteristics' beneficial to their learning.

Research Design

The study employed a descriptive exploratory design with a self-reporting survey. A survey is a process of research that involves answering questions and is a common type of descriptive research (Brown, 2009). The survey design provided a means to collect data from students about how they perceived the effective clinical instructors' instruction behaviors influenced learning. The purpose of a survey is to collect data from a sample to report the population in research (Portney & Watkins, 2008). One of the most beneficial aspects of using survey research is to collect a large amount of information from many participants using only one instrument. Another benefit is the low cost of survey research since most surveys assuming using online technologies and reaching large number of participants (Portney & Watkins, 2008).

Sample

The population of this study was a convenience sample from undergraduate and graduate respiratory therapy students attending an accredited respiratory therapy program at an urban university located in the southeastern part of the United States. The sample for this study consisted of an anticipated convenience sample of 72 respiratory therapy students in various

levels of their undergraduate and graduate respiratory therapy degree programs. In convenient sampling, subjects are chosen on the basis of availability.

Inclusion criteria included students who were enrolled in the undergraduate or graduate degree programs and were enrolled in a clinical practice course. Exclusion criteria include students from other levels of respiratory therapy programs, such as associate, diploma, bridge, traditional graduate program, and from alternate learning methods, such as distance or online.

Protection of Human Subjects

This study proposal was submitted to Georgia State University Institutional Review Board (IRB), the rights of the subjects were protected at all times. Participation was strictly voluntary with implied consent assumed with return of the completed survey. No names were used for data collection. Also, there were no risks identified for being included in this study. Benefits from this study included identification of effective characteristics of clinical instructors, which may provide a positive effect on student learning outcomes in the clinical setting. Findings about characteristics of those in instructional roles will be of value in devising a valid and reliable evaluation tool to assess the effectiveness of clinical instructors.

Procedure

After receiving IRB approval, the researcher determined the date to administer the survey. To reduce bias, the researcher personally administered and distributes the survey packets to students. The survey packets consisted of a cover letter with an explanation of the study and the instrument survey. No identifying information recorded on the survey instruments to ensure the anonymity of each participant.

Cover Letter

Development of a cover letter occurred by the researcher after examining different examples and styles of previous similar surveys (Portney & Watkins, 2008). A Cover letter sample was created, it was sent to the thesis chair for review. After recommendations a final cover letter can be found in Appendix C.

Data Collection

The data analyzed using the statistical program of Statistical Package for the Social Sciences (SPSS) version 22. Descriptive statistics including frequency, percentage, mean and standard deviation will be conducted to identify the differences in students' perceptions ranking of different academic levels and program year. Mean scores will be calculated for each behavior. In mean scores, higher scores will imply more important characteristics and lower scores will imply less important characteristics.

CHAPTER IV

FINDINGS

The purpose of this study was to examine the current effective characteristics of clinical instructors that were perceived as important by respiratory therapy students in the clinical education curriculum, as well as to compare these perceptions in undergraduate degree respiratory therapy (BSRT) and integrated master's degree respiratory therapy (MSRT) students. The results are presented in this chapter. Demographic information of the sample and results of the descriptive statistical analyses are provided. Statistical analysis was conducted using Statistical Package for the Social Sciences 22 (SPSS 22).

Research Questions

1. Which characteristics' of effective clinical instructors are perceived to be most important by undergraduate degree respiratory therapy students?

2. Which characteristics' of effective clinical instructors are perceived to be most important by graduate degree respiratory therapy students?

3. Do students' perceptions differ according to the amount of time they spend in their program of study?

Demographic Findings

The study included a convenience sample of 72 respiratory therapy students with 54 (75%) participants from the baccalaureate degree program (BSRT), and 18 (25%) participants from the integrated graduate degree program (MSRT) at an accredited, southeastern urban university. In addition, the sample included 57.4% (n = 31) first-year (junior), and 42.6% (n = 23) second-year (senior) undergraduate students (BSRT). Moreover, first-year graduate students

(MSRT) accounted for 66.7% (n = 12) and 33.3% (n = 6) second-year.

Demographic information of the sample is provided in Table 1. The BSRT students' age mean score and S.D were [22.1, ± 5.1] while the MSRT students were [26.5, ± 3.7]. Nevertheless, a small number of students (n = 4) did not report age. Females totaled 56.9% (n = 41) and 50% (n = 9) respectively from both programs BSRT and MSRT. Moreover, males totaled 43.1% (n = 13) of the sample from the BSRT and 50% (n = 9) in the MSRT sample.

Table1. Demographic Data of Undergraduate Degree Respiratory Therapy (BSRT) and Graduate Degree Respiratory Therapy (MSRT) Students
(n = 72)

Demographics	BSRT (n = 54)	MSRT (n = 18)
	Mean ±SD or %	Mean ±SD or %
Age (y) *N= 68*	M = 22.1, SD ± 5.1	M = 26.5, SD ± 3.7
Clinical completed	M = 1.5	M = 2
Female	56.9%	50%
Male	43.1%	50%
Education Level	75%	25%
Previous Education	22.2%	66.7%

The number of clinical courses reported by the students varied based on the students' level in the program. For instance, second-year program students had more clinical courses than first-year students. Furthermore, students reported the number of completed clinical courses between zero and four; the most frequent category reported was the completion of 0 to 1 clinical courses (69.5%) followed by three to four clinical courses (29.4%). Students also ranged in exposure to clinical instructors from 0 to 30.

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In regards to the survey's item asking students to indicate if they had attained any previous certificate or degree from another clinical program, 34% (n = 24) of respiratory therapy students indicated attending a previous educational program that included clinical instruction. BSRT students accounted for 22.2% and MSRT students 66.7%. Two thirds of MSRT students completed their BS in respiratory therapy and graduated from Saudi Arabia, while there were 2 students that did not indicate their BS degree and one student noted a BS in physical therapy from Saudi Arabia.

The last open-ended question in the first section of the survey was on students' opinion of what they believe would be the best student to teacher ratio for clinical instruction. Students' opinions on optimal ratio of students per clinical instructor are presented in Figure 1, revealing that 29.2% of students preferred having one clinical instructor for every student. A ratio of 2:1 student to instructor was second most favorable at 26.4%. Then, 20.8% of students rated 3:1 ratio, while 15.3% rated 4:1 as an acceptable ratio. Lastly, 8.3% of students rated 5:1 and no participant a selected 6:1 ratio.

Figure 1. Perceived Students Ratio for Clinical Instructor.
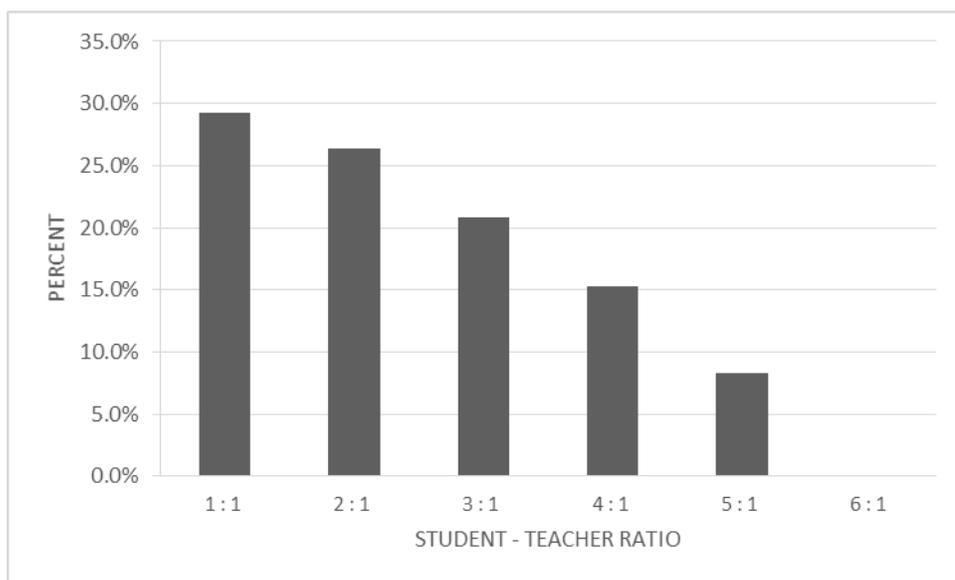
The first research question asked, "Which characteristics of effective clinical instructors are perceived to be most important by undergraduate degree respiratory therapy students?" Table 2 shows mean scores (*M)* and standard deviation (SD) of the top 10 most important effective clinical teaching behavioral characteristics ranked by BSRT students. Data results were tabulated and presented in Table 2, which includes the item number on the survey, a description of the teaching behavior, and the corresponding category for each teaching behavior. BSRT students ranked the behavioral characteristic "be approachable" as the most effective with a mean score value *M* = 4.89 and standard deviation (SD ± .37).

**Table 2. 10 Most Effective Clinical Teaching Behaviors Ranked by BSRT Students
(n = 54)**

Item No.	Behavior Description	Category	Mean	Std. Deviation
RS8	Be approachable	Relationship with students	4.89	.37
RS1	Respect student as an individual	Relationship with students	4.89	.37
PC13	Evaluate students objectively and fairly	Professional competence	4.87	.34
PC3	Demonstrate knowledge of respiratory therapy in the area of instruction	Professional competence	4.83	.38
RS4	Encourage students to feel free to ask questions or ask for help	Relationship with students	4.81	.48
PA8	Be organized and well prepared	Personal Attributes	4.81	.44
PA1	Demonstrates good communication skills	Personal Attributes	4.81	.39
PC6	Able to communicate knowledge and skills to students for safe practice	Professional competence	4.81	.44
PC4	Show clinical skill competence	Professional competence	4.80	.41
RS2	Be realistic in expectations of students' performance	Relationship with students	4.80	.45

Findings Related to Research Question 2

The second question asked, "Which characteristics' of effective clinical instructors are perceived to be most important by graduate degree respiratory therapy students?" Table 3 shows the mean scores (*M)* and standard deviation (*SD)* of the top 10 most important effective clinical teaching behavioral characteristics ranked by MSRT students. Data results were tabulated, which includes item number on the survey, a description of the teaching behavior, and the corresponding category for each teaching behavior. The behavioral characteristic "be approachable" ranked the highest by MSRT students with a mean score value of (*M* = 4.94) and standard deviation (*SD* ± .24).

Table 3. 10 Most Effective Clinical Teaching Behaviors Ranked by MSRT Students (n= 18)

Item No.	Behavior Description	Category	Mean	Std. Deviation
RS8	Be approachable	Relationship with students	4.94	0.24
RS7	Be supportive & helpful	Relationship with students	4.94	0.24
PA3	Demonstrate self-control & patience	Personal Attributes	4.89	0.32
RS4	Encourage students to feel free to ask questions or ask for help	Relationship with students	4.89	0.32
RS1	Respect student as an individual	Relationship with students	4.89	0.32
PA1	Demonstrates good communication skills	Personal Attributes	4.83	0.51
PA10	Responds confidently	Personal Attributes	4.78	0.43
PC6	Able to communicate knowledge and skills to students for safe practice	Professional competence	4.78	0.43
PC4	Show clinical skill competence	Professional competence	4.78	0.43
PA11	Exhibits responsibility	Personal Attributes	4.72	0.46

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Findings Related to Research Question 3

      The third question asked, "Do students' perceptions differ according to the amount of time they spend in their program of study?" A table 4 below shows the descriptive statistical results for items related to this question. The first and second year BSRT students demonstrate different perceptions of the most effective clinical teaching behaviors as illustrated in Tables 4 and 5. The second year students identified the behavior "be approachable", as the most effective. In comparison, the first-year students rank this behavior fifth most effective. Moreover, the second-year students perceive the behavior "respect student as an individual" second highest, where as first-year students identify this behavior third most effective. The behavior "be supportive & helpful" was identified as third most effective by second-year students, however, first-year students didn't rank it as one of the 10 most effective behaviors. The behavior "evaluate students objectively and fairly" ranked highest by first-year students, second-year students ranked it sixth most effective. One other behavior ranked by the first-year and the second-year students in the top ten most effective behaviors was "be organized and well prepared" this behavior was ranked fourth by first-year students and ninth by second-year students.

Table 4. 10 Most Effective Clinical Teaching Behaviors Ranked by First-Year BSRT
(n = 31)

Item No.	Behavior Description	Mean	Std. Deviation
PC13	Evaluate students objectively and fairly	4.94	.25
PC3	Demonstrate knowledge of respiratory therapy in the area of instruction	4.93	.25
RS1	Respect student as an individual	4.90	.40
PA8	Be organized and well prepared	4.87	.34
RS8	Be approachable	4.87	.34
RS4	Encourage students to feel free to ask questions or ask for help		.43
PC6	Able to communicate knowledge and skills to students for safe practice	4.87	.34
PC1	Facilitate student's awareness of their professional responsibility	4.84	.38
PA1	Demonstrates good communication skills	4.84	.37
RS2	Be realistic in expectations of students' performance	4.81	.40

Table 5. 10 Most Effective Clinical Teaching Behaviors Ranked by Second-Year BSRT
(n = 23)

Item No.	Behavior Description	Mean	Std. Deviation
RS8	Be approachable	4.91	.42
RS1	Respect student as an individual	4.87	.34
RS7	Be supportive & helpful	4.83	.39
PC4	Show clinical skill competence	4.83	.49
RS2	Be realistic in expectations of students' performance	4.78	.42
PC13	Evaluate students objectively and fairly	4.78	.52
PA1	Demonstrates good communication skills	4.78	.42
PA11	Exhibits responsibility	4.74	.54
PA8	Be organized and well prepared	4.74	.54
PC6	Able to communicate knowledge and skills to students for safe practice	4.74	.45

Tables 6 and 7 show descriptive statistical results for items related to this question. First and second year MSRT students have different perceptions of the most effective clinical teaching behaviors as illustrated in both tables below. In comparison, first-year students ranked the

behavior "demonstrate self-control & patience" as the most effective, while second-year students rank this behavior seventh most effective. First-year students perceive the behavior "be approachable" third highest, whereas second-year students identify this behavior second most effective. Nonetheless, second-year students ranked the behavior "be supportive & helpful" highest, which was also ranked sixth most effective by the first-year students.

Table 6. 10 Most Effective Clinical Teaching Behaviors Ranked by First-Year MSRT (n = 12)

Item No.	Behavior Description	Mean	Std. Deviation
PA3	Demonstrate self-control & patience	5.00	.00
PA1	Demonstrates good communication skills	5.00	.00
RS8	Be approachable	5.00	.00
PA11	Exhibits responsibility	4.92	.29
PA10	Responds confidently	4.92	.29
RS7	Be supportive & helpful	4.92	.29
RS4	Encourage students to feel free to ask questions or ask for help	4.92	.29
RS3	Be honest and direct with students	4.92	.29
RS2	Be realistic in expectations of students' performance	4.92	.29
RS1	Respect student as an individual	4.92	.29

Table 7. 10 Most Effective Clinical Teaching Behaviors Ranked by Second-Year MSRT (n = 6)

Item No.	Behavior Description	Mean	Std. Deviation
RS7	Be supportive & helpful	5.00	.00
RS8	Be approachable	4.83	.41
RS4	Encourage students to feel free to ask questions or ask for help	4.83	.41
RS1	Respect student as an individual	4.83	.41
PC3	Demonstrate knowledge of respiratory therapy in the area of instruction	4.83	.41
PC2	Show genuine interest in patients and their care	4.83	.41
PA3	Demonstrate self-control & patience	4.67	.52
RS5	Allow freedom for discussion	4.67	.52
PC13	Evaluate students objectively and fairly	4.67	.52
PC4	Show clinical skill competence	4.67	.52

CHAPTER V

INTERPRETATION OF FINDINGS

This chapter will present the discussion of findings conferred in Chapter IV. The chapter is divided into five major sections, including overview of the study, discussion of findings, implications for research, recommendation for future research, study limitations, and conclusion.

Overview of the Study

The purpose of this descriptive quantitative study was to explore respiratory therapy students' perceptions to provide insights into the dynamics of the respiratory therapy student-clinical instructor relationship with regard to effective teaching behavioral characteristics. Data were collected from an accredited respiratory therapy program in an urban setting and represents a sample from both baccalaureate and master degree programs. This study was guided by the following questions:

1. Which characteristics' of effective clinical instructors are perceived to be most important by undergraduate degree respiratory therapy students?

2. Which characteristics' of effective clinical instructors are perceived to be most important by graduate degree respiratory therapy students?

3. Do students' perceptions differ according to the amount of time they spend in their program of study?

The survey instrument utilized by this study was the Effective Clinical Instructor Characteristics Inventory (ECICI) developed by Girija et al. (2013). The purpose of their study was to identify effective teaching behavioral characteristics of clinical instructors for nursing students. However, their instrument was reviewed and modified using a modified Q-sort to adapt the instrument to a respiratory therapy program. A panel of experts at Georgia State University

completed the revisions and modifications. The committee members met and discussed each characteristic of the instrument, consisting of the demographics section as well as a survey of thirty-five questions (Appendix A).

Participants in the study were selected based on a convenience sample of first and second year undergraduate (BSRT) and graduate (MSRT) respiratory therapy students attending an accredited respiratory therapy program at an urban university located in the southeastern United States. The researcher administered and distributed the survey packets to seventy-two students of both BSRT and MSRT. The survey packets consisted of a cover letter with an explanation of the study and the instrument survey.

Discussion of Findings

Findings Related to Research Question 1

The first research question asked, "Which characteristics' of effective clinical instructors are perceived to be most important by undergraduate degree respiratory therapy students?" The overall results of this study revealed that both male and female BSRT students rated the characteristic of "being approachable", which is under "relationship with students" category, as the most important characteristic of the effective clinical instructor. These findings are consistent with previous studies reported in other nursing and allied-health professions. Nursing studies have reported that students ranked interpersonal relationship of the clinical instructor as most important (Bergman & Gaitskill 1990; Brown 1981; Coles et al. 1981; Kanitsaki & Sellick, 1989; Kube, 2010; Lee et al., 2002; Sieh & Bell 1994; Tang et al., 2005). Similarly, in athletic training, relationships with students are dynamic in clinical instruction and these relationships need to keep pace with the educational process (Laurent & Weidner, 2001; Weidner & Henning,

2002). Radiography professions have also reported that students rank competence and interpersonal relationship very highly (Ingrassia, 2011; Williams and Webb, 1994). In addition, literatures on physical therapy students' perceptions show similar findings (Emery 1984, Gjerde & Coble 1982, Jarski et al. 1989).

The second rated behavioral characteristic by BSRT in the current study is that the preceptor should "respect the student as an individual". The third behavioral characteristic ranked most effective involves professional competence, "evaluate students objectively and fairly". The fourth-ranked characteristic is that the preceptor should "demonstrate knowledge of respiratory therapy in the area of instruction" and lastly the fifth ranked behavioral characteristic is "encourage students to feel free to ask questions or ask for help".

It can be clearly seen that a majority of the top five most effective clinical teaching behavioral characteristics ranked by BSRT students are characteristics of the "relationship with students" category. Although the highest ranked behavioral characteristic as well as the majority of the top five characteristics selected by BSRT students involves the "relationship with students" category, the third and fourth behavioral characteristics included in the top five are from the "professional competence" category. This supports the findings of Nehring (1990), Ingrassia (2011), Kotzabassaki et al., 1997, Seih and Bell (1994) in which the interpersonal relations with students and professional competence categories were first and second respectively. Girija et al. (2013), however, reported that students rated professional competence of instructors as the most important characteristic and instructors' relationship with students as the second most important characteristic. The current study found BSRT and MSRT students' ranked relationship with the student as the highest. This may be due to differing cultures as Girija's study was done in the Middle East, not the United States. The least important category as

ranked by BSRT students was personal attributes. This finding is in contrast to a previous study by Berg & Lindseth (2004) in which personality traits have received the highest overall ratings.

Findings Related to Research Question 2

The second question asked, "Which characteristics' of effective clinical instructors are perceived to be most important by graduate degree respiratory therapy students?" The findings of this study are similar to those in Brown (1981), Bergman and Gaitskill (1990), and Wolf et al. (2004) were MS graduate students ranked "being approachable" as the most important characteristic. Results also indicated MSRT students' valued the relationship with students "be supportive and helpful" as the second most effective characteristic. Personal attribute characteristics involving the ability to "demonstrate self-control and patience" ranked third. Moreover, students rank "encourage students to feel free to ask questions or ask for help" and "respect student as an individual", ranked fourth, and fifth respectively. This finding is also similar to that in nursing education where students identified interpersonal presentation including the instructors' positive, professional, and supportive attitudes as valuable (Hanson & Stenvig (2008).

Findings Related to Research Question 3

The third question asked, "Do students perceptions vary according to the amount of time they spent in their program of study?" First-year BSRT students ranked professional competence characteristics higher than both second-year and MSRT students, which is congruent with findings of Gignac-Caille & Oermann, 2001 and Sieh & Bell, 1994. In nursing, differences in the perceptions of effective teaching characteristics among students' class levels have been highlighted in several studies. Significant differences were found between second and third year

students in all except the personality subsets (Benor & Leviyof, 1997). First-year students rated "relationships with students" higher than other groups (Bergman & Gaitskill, 1990; Hartland & Londoner, 1997). Second-year BSRT students valued "relationships with students" as a more effective teaching characteristic. Girija et al. (2013), however, reported that students rated professional competence of instructors as the most important characteristic. On the other hand, first-year MSRT students rated "personal attributes" characteristics as more important than other categories. This finding is similar to (Nahas, V. L., Nour, V., & Al-Nobani, M., 1999) who suggested that as nursing students at this level are used to the clinical setting and are more clinically confident and knowledgeable. Students will look to clinical instructors who communicate well and permit freedom of discussion (Nahas et al, 1999). Second-year MSRT students rated "relationships with students" higher than other categories.

Another method to analyze variance in students' perceptions as they advance in the program is by tracking trends of the mean scores of both groups. However, the results as shown in Table 8 indicate that the behavioral characteristic mean scores are either increasing or decreasing as students advance in their degree. For instance, the trend for "be approachable" and "be supportive and helpful" appears to increase in importance as the level of study progresses. Therefore, as students gain more clinical experience, their appreciation of this part of teaching behavior tends to grow closer to the perception held by the faculty (Bergman & Gaitskill, 1990). Trends also indicate consistent decreases as the program level advances. For example, the perceived importance of "how clinical skill competence" and "evaluate students objectively and fairly" decreases consistently with grade level. These findings are dissimilar to Sieh and Bells (1994) results that determined second semester students rated nursing competence significantly higher than first semester. This finding may indicate that students with fewer clinical hours value

nursing competency and teaching skills more than the students with more experience (Gignac-Caille & Oermann, 2001).

Table 8. Characteristic Mean Scores of highest rank by Students in Four Class Levels

Item No.	BSRT First-year (n = 31)	BSRT Second-year (n = 23)	MSRT First-year (n = 12)	MSRT Second-year (n = 6)
PC1	4.84	4.70	4.75	4.00
PC2	4.81	4.74	4.58	4.83
PC3	4.94	4.70	4.67	4.83
PC4	4.77	4.83	4.83	4.67
PC6	4.87	4.74	4.92	4.50
PC13	4.94	4.78	4.75	4.67
RS1	4.90	4.87	4.92	4.83
RS2	4.81	4.78	4.97	4.33
RS3	4.77	4.70	4.92	4.33
RS4	4.87	4.74	4.92	4.83
RS5	4.58	4.70	4.58	4.67
RS6	4.16	4.65	4.17	4.33
RS7	4.74	4.83	4.92	5.00
RS8	4.87	4.91	5.00	4.83
PA1	4.84	4.78	5.00	4.50
PA2	4.65	4.74	4.83	4.50
PA3	4.81	4.74	5.00	4.67
PA4	4.71	4.61	4.83	4.50
PA10	4.81	4.74	4.92	4.50
PA11	4.77	4.74	4.92	4.33

Implications for Research

The results of this study will allow respiratory therapy clinical instructors to appreciate students' opinions and acknowledge areas of strengths as well as areas demanding improvement. As a clinical instructor is aware of characteristics that are perceived as most important by respiratory therapy students, teaching approaches and attitudes can be reinforced, changed or developed. Respiratory therapy clinical instructors must strive to form positive relationships with

students to achieve positive learning outcomes.

The study contributes to the literature as it proposes the need to promote consistently identified effective clinical teaching characteristics that can foster respiratory therapy students' clinical learning. Additionally, findings of this study will add to the literature given the scarcity of studies examining effective clinical education in the field of respiratory therapy.

Recommendations for Future Study

Due to the lack of research in the subject of student perceptions of effective clinical instructor characteristics in respiratory therapy, further research is recommended. Replication of this study is strongly recommended to generalize these findings with a larger sample size involving a number of accredited BSRT and MSRT programs. The addition of faculty, hospital department administration is also recommended in the future.

Limitations

This study was limited by several factors. The sample was selected from only one institution and the number of participants involved was limited. The relatively small sample size must be taken into account with regard to the comparison of different classes of students. The study also involved a one-time measurement. Multiple measurements over time (i.e., before the term begins, during the term, and after completion) would provide further information. Additionally, this study did not take age, gender, and ethnicity into account.

Conclusion

Enhancement of respiratory therapy clinical education as well as the identification of effective clinical teaching characteristics perceived by respiratory therapy students is the foundation of this study. The results of this study showed that both student groups perceived

clinical instructors need to value interpersonal relationships with students, as well as clinical competence. Although BSRT and MSRT students' perceptions demonstrated similarities, mean scores between first year and second year show a shift in ranking between characteristics. This may be because student's perceptions could change as they advance in their clinical course work or their educational experience. This study demonstrated that respiratory therapy student perceptions as to the most important effective teaching characteristics of a clinical instructor are congruent with other health professions.

Appendix A: Effective Clinical Teacher Characteristics Instrument

Part 1: Demographics Characteristics:

1. Indicate your age_____

2. Number of clinical courses **completed**_____ course/s (as of today).

3. Gender: (please circle one)

   (a) Male.

   (b) Female.

4. (a) Year/level in program: ___First year (junior)___ Second year (senior)

   (b) Educational level: _____ **B.S RT**; _____ **MS** of health science.

      (Please circle one).

5. Have you attended any previous educational program/programs that utilize clinical instruction?

   ____ Yes

   ____ No

6. Do you possess a certificate of completion or degree from another clinical program:

   ____ Yes

   ____ No

   If so, please list here:

7. How many clinical instructors/preceptors have you been exposed to during your course of respiratory therapy education? _____.

8. In your opinion regarding good ratio of Students to Clinical Instructor is:

   1:1 □   2:1 □   3:1 □   4:1 □   5:1 □   6:1□

Please go to the next page

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Dear Student,

The **study aims to explore the effective Clinical Instructor characteristics perceived important by respiratory therapy students. Your sincere response is appreciated. We assure you the confidentiality of the data. Please check (√) according to your opinion on the Effective Clinical Instructor Characteristics. There are five options to mark. 5= Most Important, 4=Important, 3= Neutral, 2=Less Important, 1=Unimportant**

No.	Characteristic of Effective Instructor	Most Important (5)	Important (4)	Neutral uncertain (3)	Less Important (2)	Unimportant (1)
I	**Professional competence**					
1	Facilitate student's awareness of their professional responsibility					
2	Show genuine interest in patients and their care					
3	Demonstrate knowledge of respiratory therapy in the area of instruction					
4	Show clinical skill competence					
5	Able to relate theory to practice					
6	Able to communicate knowledge and skills to students for safe practice					
7	Assist in new experiences without taking over the task from the student					
8	Available to work with students in clinical setting					
9	Demonstrate engaging style of bedside teaching					
10	Demonstrate skills, attitudes & values that are be developed by students in clinical area (Role modeling)					
11	Facilitate critical thinking in clinical practice					
12	Identifies each individual attribute of the learner					
13	Evaluate students objectively and fairly					
14	Provide individualized timely feedback					

15	Provide constructive feedback on student progress					
II	**Relationship with students**					
1	Respect student as an individual					
2	Be realistic in expectations of students' performance					
3	Be honest and direct with students					
4	Encourage students to feel free to ask questions or ask for help					
5	Allow freedom for discussion					
6	Allow expression of feeling					
7	Be supportive & helpful					
8	Be approachable					
III	**Personal Attributes**					
1	Demonstrates good communication skills					
2	Able to collaborate with other disciplines					
3	Demonstrate self-control & patience					
4	Demonstrates enthusiasm for teaching					
5	Demonstrates flexibility in clinical settings					
6	Exhibit sense of humor					
7	Admits limitations					
8	Be organized and well prepared					
9	Responds promptly					
10	Responds confidently					
11	Exhibits responsibility					
12	Exhibits autonomy					

Appendix B: Cover Letter

Dear Respiratory Therapy Student,

You are invited to take part in a research study because you are an undergraduate or graduate respiratory therapy student who has participated or will participate in clinical training. The purpose of this study is to determine the effective characteristics of clinical instructors.

Ali Alasmari is conducting this research study as part of the requirements of the master degree in respiratory therapy from the Department of Respiratory Therapy at Georgia State University, under the guidance of Dr. Doug Gardenhire, Director of Clinical Education. You will receive no direct benefit from participating in this study, but the information gained will be helpful to respiratory therapy clinical instructors in determining which characteristics are most effective in facilitating student learning.

Should you decide to participate you will be asked to complete the following survey, which should take approximately 10 minutes to complete. Your participation is strictly voluntary and you can refuse to participate or stop taking the survey at anytime without penalty or loss of benefits to which you are otherwise entitled.

Please note that your responses will be used for research purposes only and will be strictly confidential. In order to protect your confidentiality, no names or codes will be used to identify you or your survey. Surveys will be destroyed after all surveys have been collected. Your completion and submission of the survey indicate your consent to participate in the study. We hope that you will submit a completed survey. However, if you choose not to participate in this study, you may withdraw at any time by not completing or submitting a blank survey.

The information from this study may be published in journals and presented at professional meetings. This study does not cost the participant in any way, except the time spent completing the survey. There is no compensation or known risk associated with participation.

We don't foresee this study causing you any harm or discomfort. However, should you be uncomfortable about completing the survey, simply submit a blank survey.

If you have any questions about this research, now or in the future, please contact Ali Alasmari aalasmari1@student.gsu.edu or Dr. Doug Gardenhire at dgardenhire@gsu.edu. The department's mailing address can be found at the bottom of this page. You may also contact the Georgia State University. Please note: completion and submission of this survey implies that you have read this information and consent to participate in the research.

If you are 19 years of age or older and agree to the above please proceed to the survey. When finished, please place your survey in the designated envelope in the room.

Sincerely,

Ali Alasmari

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