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ACCEPTANCE

This thesis, EVALUATING THE EFFECTIVE TEACHING CHARACTERISTIC OF SAUDI ARABIAN PRECEPTORS IN CLINICAL EDUCATION, by Abdulaziz Alolayan, was prepared under the direction of the Master's Thesis Advisory Committee of the Respiratory Therapy department at Georgia State University. The committee in partial fulfillment of requirements accepts it 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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Abdulaziz Alolayan

Fall 2021

EVALUATING THE EFFECTIVE TEACHING CHARACTERISTIC OF SAUDI ARABIAN
PRECEPTORS IN CLINICAL EDUCATION

By

Abdulaziz Alolayan, BSRT

A Thesis

Presented in Partial Fulfillment of Requirements for the

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in

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Under the supervision of Dr. Douglas S. Gardenhire

in

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2021

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(Under the Direction of Dr. Douglas S. Gardenhire)

ABSTRACT

BACKGROUND: Preceptors play an important role in clinical education for the next generation of respiratory therapy students. To improve respiratory therapy clinical educations, clinical instructors' behavioral characteristics that affect students' performance must be thoroughly evaluated. Therefore, there is a growing need to better address what students consider the most and least important effectiveness characteristics of clinical instructors in respiratory therapy clinical education. **PURPOSE:** The purpose of this study was to evaluate and perceive the effectiveness of behavioral teaching characteristics of clinical instructors by interns and undergraduate respiratory therapy students. **METHODS:** The study utilized a descriptive cross-sectional survey. The survey was distributed to interns and undergraduate students enrolled in an accredited respiratory therapy program at urban universities and hospitals located in Saudi Arabia. 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 and Mann-Whitney U test. **RESULTS:** Thirty-six students responded with a response rate of 63%. Interns were 50% of the total sample, with females and males equally split at 50%. Fifty percent of respondents studied were undergraduate, of which females accounted for 36.2% and males 13.8%. The study findings indicate that the evaluation of interns and undergraduate students of the most and least important behavioral characteristics are similar, but both grasp the ordered rank of importance differently. Intern students ranked "Facilitate student's awareness of their Professional responsibility" as the most effectiveness characteristic with a mean score value $M = 4.92$ and standard deviation ($S.D \pm .39$). While undergraduate students ranked the behavioral characteristic "Encourage students to feel free to ask questions or ask for help" as the most effectiveness with a mean score value $M = 4.72$ and standard deviation ($S.D \pm .49$). Additionally, intern students rank the characteristic "Demonstrate engaging style of bedside teaching" as the least effectiveness with a mean score value $M = 3.14$ and standard deviation ($S.D \pm 1.0$). While undergraduate students ranked the behavioral characteristic "Be realistic in expectations of students' performance" as the least effectiveness with a mean score value $M = 3.56$ and standard deviation ($S.D \pm .93$). **CONCLUSION:** Although the ratings of interns and undergraduate students were similar, mean scores revealed a change in the ranking of effectiveness teaching characteristic evaluation. This could be due to the fact that students' evaluations vary as they progress through clinical training or educational experience. In the end, the findings of this study will enable respiratory therapy clinical instructors to evaluate themselves based on the evaluations of interns and undergraduate students.

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CHAPTER I

INTRODUCTION

Respiratory therapy education is based on a theoretical concepts and scientific experience. There has been a big demand to use volunteer clinical preceptors to provide clinical guidance to students of respiratory therapy (RT), and today's preceptors play a critical role in educating the next generation of RTs at the bedside (Rye & Boone, 2009). Additionally, clinical education prepares students for their future purposes and provides them with multiple opportunities to apply the information, principles, and skills they have gained in college (Makarem, Dumit, Adra, & Kassak, 2001). Having appropriate clinical education for RT students would enhance their success at the bedside and allow them to develop skills that can only be obtained through clinical practice (Rye & Boone, 2009). The majority of students in respiratory care programs begin their clinical rotation during the first semester of their junior year, allowing them to integrate quickly would into the clinical realm (Kapucu & Bulut, 2011; 2). Some of the most challenging stages of student studies may be starting a clinical rotation (Kapucu & Bulut, 2011; Brown, Herd, Humphries, Paton, 2005).

The experience of the clinical preceptor with the student is referred to as preceptorship. Preceptorship is the ideal healthcare system model for teaching undergraduate and graduate students (Rye & Boone, 2009). Respiratory therapy students prefer this teaching form because it significantly impacts developing skills beyond the college or the working environment (Rye & Boone, 2009). It is required that Preceptors build and promote an effective learning environment to develop clinical educations.

Indeed, an evaluation of clinical preceptors is required to assess individual and program efficacy and to understand how the experiences of preceptors influence respiratory therapy student's practice. Student evaluation of teaching has been one of the most widely used indicators of teacher effectiveness and educational quality (Scherer et al., 2016). The evaluation also provides empirical evidence to evaluate and improve or refine the preceptors' strengths and weaknesses (Applegate, 1998). To achieve higher standards in clinical instruction for respiratory therapy programs, the behavioral features of clinical instructors that affect student performance must be thoroughly examined to improve respiratory therapy clinical educations. Therefore, there is a growing need to better address what students consider in respiratory therapy clinical education as the most and least important effectiveness characteristics of clinical instructors.

Statement of Problem

Clinical practice teaches students how to perform well in the clinical environment and provides them with the knowledge, attitudes, and strategies required for critical and creative thinking. Clinical educators with outstanding professional skills would be very effective practitioners. They play a crucial role in educating respiratory therapists of the next generation. Nevertheless, there is minimal literature available in respiratory therapy education, which explores how clinical instructors' behavioral teaching characteristics affect student learning.

Purpose of the study

This study evaluates and perceives the effectiveness behavioral teaching characteristics of clinical instructors that the students of respiratory therapy consider most and least significant by RT students in Saudi Arabia. Also, the study assessed whether there are differences in the students'

evaluation ranking for effectiveness teaching characteristics between different academic years.

The following research questions will be pointed out in this study:

1. Which characteristics of effectiveness clinical instructors are observed to be most valuable by interns and undergraduate degree respiratory therapy students?
2. Which characteristics of effectiveness clinical instructors are observed to be least valuable by interns and undergraduate degree respiratory therapy students?
3. Do students' evaluations differ according to the amount of time they spend in their clinical training program?

Significance of the study

This study will help to improve the clinical education perspective in the respiratory care profession by evaluating the perceived effectiveness teaching characteristics of preceptors in clinical education based on student evaluations. These behavioral characteristics can then be emphasized to assist the clinical instructors in training future respiratory therapists. Respiratory therapy student's evaluation of the effectiveness teaching characteristic of preceptors in clinical education is a significant measure for modifying and encouraging successful clinical instruction.

CHAPTER II

Review of the Literature

The purpose of this literature review is to identify the concepts and theories of preceptorship and perceived the effectiveness teaching characteristic of preceptors in clinical education. An internet literature search utilizing databases accessed for these reviews include PubMed, CINHALL, Ovid, ProQuest, Medline, and EBSCOhost. Search keywords used were: preceptorship, preceptor, effectiveness preceptors, clinical education, preceptor characteristic, respiratory therapy, nursing, pharmacy, and medicine. Results included a broad spectrum of articles that discussed the history of preceptorship in clinical education in various health professions, content, effective clinical teaching characteristics, effective clinical instructor, precepting in the respiratory therapy field, and preceptor- students Relationships.

Effective Clinical Teaching Characteristics

Many researchers have explored the qualities that define a preceptor in dispensing the teachings to various health care providers. James and Chapman (2009) studied the impact of the first clinical practice course on nursing students' perceptions. James and Chapman interviewed undergraduate students on their perspectives as nursing students, nurse–patient relationships, and their perceptions of the clinical instructor. According to James and Chapman (2009), nursing students reported that clinical educators and clinical placement influence their perceptions. Students might stop studying nursing if they faced some critical situation in the clinical setting. However, an excellent clinical instructor can encourage and assist students in overcoming all of these difficulties in order to complete their studies and practice nursing care (James and Chapman, 2009).

Additionally, according to student perceptions, another study focusing on the effective and ineffective characteristics of clinical instructors invited 214 students to participate. The study discovered that effective clinical instructors possessed high levels of professional competence, personality traits, interpersonal relationships, and teaching abilities. There was also a significant difference between effective and ineffective interpersonal relationships and personality traits. It can be derived from the findings that the attitude of the clinical instructors toward their students is the fundamental factor in determining the effectiveness or ineffectiveness of the clinical instructors, instead of their personal abilities as other studies suggest (Tang, Chou, & Chiang, 2005).

Another study evaluated the effectiveness of clinical instructors based on the particular objectives and goals in hiring clinical educators. Heshamti (2010) studied nursing students and faculty members in Iran to determine their perceptions of effective characteristics among clinical instructors. Through qualitative research methods, an interview of 10 nursing students and clinical instructor volunteers found five important categories: personal traits, meta-cognition, making clinical learning enjoyable, being a source of support, and being a role model. According to the researchers, effective clinical instructors synchronize with students and act as role models for students and patients. Moreover, the study findings did not identify differences between students and clinical instructors. (Heshamti, 2010).

Effective Clinical Instructor

Preceptors who are being introduced to the precepting roles may at first get terrified by being honored in such a position, considering them it is their first time. Quek and Shorey (2018) pointed out that the preceptors need to acknowledge and they need to be patient to acquire experience that will enable them to serve effectively. Effective preceptors may take advantage of

any preceptor education opportunities. If they are readily available, the preceptor may utilize workshops, lectures, manuals to familiarize them before the clinical practice starts (Quek & Shorey, 2018). Gathering more information about the practice makes the preceptors better and equipped to serve the students more satisfactorily.

According to Della (2018), the next thing that the new preceptor may need to do is identify the challenges and realities of the precepting. A common challenge is meeting and balancing patients' needs and preceptors (Della, 2018). Sometimes there is a high turnover of staff, and the workload is too heavy. A good preceptor should determine how to meet the needs of both the students and the patients. An effective preceptor prioritizes patients' safety over everything else (Della, 2018). Learners will always be keen to see how their mentor handles such situations and rate them accordingly. It is good for a preceptor to explain to the students if they do not fulfill their needs in such situations. At the same time, the students may assess the preceptor's decision in such critical times that they may use it as a learning opportunity for setting opportunity.

According to L'Ecuyer et al., (2018), another challenge is that some preceptors may lack a positive attitude, knowledge, and skills to serve in the demanding field. The author found that the preceptors should always manage the weak learners to avoid risks in practice, such as a patient being handled as required. The preceptor tries to oversee the weak students' activities to prevent blames based on lack of irresponsibility (L'Ecuyer et al., 2018). Students expect the preceptors to give them individual support, particularly in some areas. It is essential to support the new preceptors to appreciate their roles as preceptors. Additionally, it is the role of the facility to support the preceptors by meeting the many needs in practice to allow them to remain motivated as they teach the students. Good preparation will prompt the preceptor to maintain a healthy

relationship with the learners and influence good students' outcomes and precepting. One strategy of preparing the preceptors is by placing them in the preceptorship before assuming the role.

Preceptor-student Relationships

One important approach to effective implementation of the education process is creating a good rapport with the students. The clinical practice is demanding for the learners. Preceptors should therefore be a companion for the students by creating beneficial interpersonal relationships with students. Most effective preceptorship starts with the students and the preceptors maintaining respectful and honest interactions. The preceptor needs to have skills that will help them serve as educators, not just clinicians. Omer et al. (2019) reported that one of the core strategies that build the preceptor skills in assuming both roles is creating a good relationship with the learners. A good and effective relationship between the students and the preceptors promotes a suitable environment for learning. By establishing a good relationship with the learners, the student can reach each level while building on their strengths and supporting them in their areas of weakness (Omer et al., 2019). The relationship is dependent on how the teachers relate with the learners during the first interaction. Moreover, the preceptors may memorize and address the students by their names, which may impress students that their teacher is more concerned about their progress. A good relationship will motivate the learners to gain skills and knowledge by assuming the right attitudes (Omer et al., 2019). On the other hand, the students may lose motivation if the preceptors are neither caring nor caring about their progress.

Additionally, the preceptor needs to maintain closeness between the students and other practitioners in the clinical practice. Introducing the learners to each is critical to meet the support the student may need during the practice. Queck et al. (2019) argue that an effective preceptor familiarizes the students with the culture of the medical field through the closeness between the

two groups. The preceptor will also use an effective relationship to orient the students to different things associated with the learning facility and how they may be utilized. In addition, the student needs to introduce them to schedules, routines, location of departments. Through such strategies, the students will build the right attitude towards the preceptors and perceive them as their mentors from the start.

Mutual trust develops and strengthens over time. The preceptor must maintain the goal of assisting the learner in performing to their level best through academic guidance and seeing them as partners in medical education. Preceptors should make the students feel that they are an added advantage to the medical field. Therefore, they should appreciate helpful ideas that the students may develop while welcoming the suggestion from them if the preceptor is not prepared to solve an academic problem. Such a strategy will build confidence among the student and will make them more motivated. For the students to have such an opportunity, there must be a good relationship between the two sides.

According to Kramer (1974), as Wakefield (2018) cited, graduated students undergo four stages as they are introduced to the medical field. The first is known as honeymoon, where the graduates are in full mood and enthusiastic about their profession. By maintaining a good relationship with the preceptors, the preceptors may utilize these as an opportunity to bombard the students with skills and inspires them to assume the right attitude (Wakefield, 2018). The next stage is the shock, where the student's record decreased motivation and becomes doubtful of their performance. They also feel discouraged and unmotivated. The preceptors must identify the stage and intervene with strategies to counter the situation (Wakefield, 2018). One tool remains in a good relationship with the students as they recover while giving them psychological support they may need to persevere. The intervention or lack thereof may influence the formed perception the

learners may have on both the preceptors and the clinical practice. Therefore, the preceptor needs to support the students to prevent them from forming a negative attitude. The next stage is known as recovery, followed by eventual resolution, which is important in enabling the student to recover from the shock and embraces the demands of the medical field (Wakefield, 2018). Similarly, like in previous stages, preceptors must support the learners when going through these stages. All these stages require caring about how they feel and creating time to talk to and encourage them. The preceptor can be that person, and building a caring relationship may help the students overcome whatever makes them worried.

Preceptors and Debriefing

Akhtar (2018) described the debriefing as a short interaction between the preceptor and students, usually after undergoing the care experience. Preceptors see debriefing to give more skills and knowledge to the students and a strategy that offers discovery learning through the guidance they achieve in the short exchange (Akhtar, 2018). In most cases, the preceptors carry out debriefing in designated locations that offers privacy from other non-participants of the experience. During debriefing, the preceptor's message is based on four themes: a reflection of the whole practice, highlighting rules, reinforcing what has been achieved through the practice, and correcting what might not have been achieved (Akhtar, 2018). Debriefing is a vital aspect of the entire clinical practice, although given a short time. For one, debriefing can change the formed attitudes by explaining to the students their experiences and achievements. A preceptor can explain that may make those students who had difficult experiences during the clinical practice be more satisfied. During debriefing, the preceptors may analyze any errors made and help the students explain each (Akhtar, 2018). It is possible to withdraw any blames the students may have on the preceptors when they give satisfactory explanations during debriefing.

During reflection, which is the first step of debriefing, the preceptors must reflect on the achievement after going through the practice. The preceptors in the process assess the learners' perspective (Akhtar, 2018). The preceptor analyses the thoughts and attitudes of the preceptors as they reflect and then prepares to change any wrong attitude or misunderstanding that the learner may have formed in the process. The preceptors can do these by giving feedback or responding to the reflections. The next step requires the teacher to highlight guiding rules for the whole practice (Akhtar, 2018). The step is to help the students to compare the performance against the rules. In the process, the students will withdraw any errant perspectives and thinking. Through debriefing, what the students might have perceived as unstructured will appear to be structured. Overall, debriefing can be a sure strategy of making the students believe that the preceptor and the whole clinical practice did them just.

Precepting in Respiratory Therapy

Preceptorship in respiratory therapy was studied by Rye and Boone (2009). They developed a survey instrument that was sent to all accredited programs in the United States (n=248), with the goal of determining the effectiveness of preceptor training programs in respiratory care (Rye & Boone, 2009). Seventy-four respiratory education programs responded to the survey, with a response rate of 30% (Rye & Boone, 2009). Eighty-one percent of respondents agreed on the need for a formal standardized preceptor-training program (Rye & Boone, 2009). Respondents ranked the most important skills they seek from the program for preceptors as follows: the ability to assess and evaluate the students' clinical performance (57%), skills in providing effective feedback to the students (44%), and a complete understanding of their roles and responsibilities (41%). These findings represent respondents ranking of these skills as "most important," a rating

of 10 on a scale of 1-10. The authors provide no discussion or results regarding responses at alternative rankings, and they did not provide any averaging of these results.

Aldhahir et al. (2020) cited that teaching in the clinical field has changed over the last decade. Respiratory therapy (RT) students are subjected to unique clinical rotations compared to other educational programs on health. Precepting in RT has been aligned to give the students clinical skills, experience, knowledge, and attitudes to better outcomes (Aldhahir et al., 2020). However, that has not been effective in some cases with a shortage of preceptors in clinical teaching. Aldhahir and his colleagues noted that preceptors are forced to teach in rotational programs due to this shortage, which may be associated with the ineffectiveness of administering knowledge and skills. When the preceptors are hospital-based, it is easier for them to monitor the students' clinical experience and their performance, which promotes their ability to capture the relevant skills more effectively (Aldhahir et al., 2020). Preceptorship will promote the provision of enough preceptors who can serve a more significant number of students.

Preceptorship allows the transfer of clinical skills with supervision; thus, the students will likely gain relevant skills. Preceptorship may expose the learners in the demanding RT to pressure, but it transforms them into highly reliable professionals (Henry et al., 2021). The facility offering the clinical practice may choose the most qualified and willing therapist to offer the preceptorship in RT. The effectiveness of precepting based on such factors will influence how students perceive the whole clinical practice. All the factors highlighted above may be necessary for the students to have the right attitude towards learning. When they gain all the skills and knowledge in RT, they may be motivated to perform in their roles without complaints and dissatisfaction.

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 teaching students to assist students' learning by clinical instructors. In simple terms, the roles of preceptors are indispensable. They are mandated to assist students in developing relevant abilities to perform competently in health care. One of the strategies identified as effective in teaching the preceptor is maintaining a close relationship with students. As seen, an effective relationship between the learners and the preceptor is the beginning of a friendly learning environment associated with better outcomes, and health care providers should support the rest of the team to perform to their level best. Preceptors should lead by example by maintaining good performance throughout the practice to inspire and motivate the students to learn. A precepting role requires the preceptor to use models to enable the preceptor to excel. The preceptor needs to recognize that student forms perceptions about the nature of the entire practice and the level of professionalism reflected by each preceptor, so the preceptor must remain professional in clinical practice.

CHAPTER III

METHODOLOGY

Instrumentation

The survey instrument to be used in this study is the modified survey version of the Effective Clinical Instructor Characteristics Inventory (ECICI) modeled by Alasmari and Gardenhire (2014). Thus, it is necessary to attain the author's permission to allow the use of the survey instrument.

Research Questions

1. Which characteristics of effectiveness clinical instructors are most valuable by interns and undergraduate degree respiratory therapy students?
2. Which characteristics of effectiveness clinical instructors are observed to be least valuable by interns and undergraduate degree respiratory therapy students?
3. Do students' evaluations differ according to the amount of time they spend in their clinical training program?

Population

This study will be a sample of interns and undergraduate respiratory therapy students attending an accredited respiratory therapy program at urban universities and hospitals located in Saudi Arabia. The final population will be accomplished using social media, specifically through Twitter and WhatsApp groups. The survey will be shared on Twitter by popular RT accounts in Saudi Arabia, as well as several WhatsApp groups for RTs students. Inclusion criteria in this study include students who enroll in undergraduate degree programs in the second, third and fourth years

and who enroll in a clinical practice course (Intern). Exclusion criteria include students from other respiratory therapy programs, such as associate, diploma, bridge, and traditional graduate program.

Design

The study was using a descriptive exploratory design with a self-reporting survey. The survey design provided a means to collect data from students about how they evaluate the effectiveness clinical instructors' instruction behaviors. The advantage of survey research was in terms of lessening costs because it only used a free survey software, the Internet, and access to the study's participants. There is also disadvantage to the survey. Non-response bias can also affect survey research, particularly in cases where the non-respondents differ substantively from the respondents of research. This can affect the generalizability of the results.

Data collection

Our school's Institutional Review Board (IRB) acceptance would be the first phase of the study. The project's IRB application qualified as exempt research. This research evaluated and perceived the effectiveness behavioral teaching characteristics of clinical instructors that the students of respiratory therapy consider most and least significant in Saudi Arabia. To gather comprehensive information, the questionnaire was reach students using via social media. Therefore, participants were asked to respond to all questions in the survey to collect complete information. According to the alpha reliability coefficient of Cronbach, the tool scored 0.84, which showed the reliability and validity of the instrument.

Data analysis

In the study, SPSS was analyzed and evaluated all statistical investigations (version 23). Descriptive statistics including frequency, percentage, mean and standard deviation, and Mann-Whitney U test were conducted to identify the differences in students' evaluation ranking of different academic levels and program years. Mean scores were calculated for each behavior. Higher scores implied more important characteristics in mean scores, and lower scores implied less important characteristics.

CHAPTER IV

RESULTS

The purpose of this study was to evaluate and perceive the effectiveness of behavioral teaching characteristics of clinical instructors that the students of respiratory therapy consider most and least important, as well as to compare these evaluations in undergraduate degree respiratory therapy and intern respiratory therapy students. This chapter included information about the sample's demographics as well as the findings of the statistical analysis.

Research Questions

1. Which characteristics of effectiveness clinical instructors are observed to be most valuable by interns and undergraduate degree respiratory therapy students?
2. Which characteristics of effectiveness clinical instructors are observed to be least valuable by interns and undergraduate degree respiratory therapy students?
3. Do students' evaluations differ according to the amount of time they spend in their clinical training program?

Demographic Findings

The study included a convenience sample of 36 respiratory therapy students with 50% (n = 18) participants from the undergraduate degree program, and 50% (n = 18) participants from the clinical training students (Interns), attending an accredited respiratory therapy program at urban universities and hospitals located in the Saudi Arabia. The sample included 13.9% (n = 5) second-year, 8.3% (n = 3) third-year, and fourth-year 27.8% (n = 10) undergraduate students. Moreover, clinical students accounted 50% (n = 18).

The undergraduate students' age means score, and S.D was [21.5, ± 2.3] while the intern students were [25.3, ± 4.1]. Even so, several students (n = 7) did not provide their ages. Females composed 72.2% (n =13) and 50% (n = 9) respectively from both undergrad and intern students. furthermore, males composed 27.8.% (n = 5) of the sample from the undergrad and 50% (n = 9) in the intern student's sample. Demographic information of the sample is provided in Table 1.

Table1. Demographic Data of Undergraduate Degree Respiratory Therapy and Clinical Training Students

(n = 36)

Demographics	Undergraduate (n = 18) Mean ±SD or %	Interns (n = 18) Mean ±SD or %
Age (y)	M = 21.5, SD ± 2.3	M = 25.3, SD ± 4.1
Female	72.2 %	50.0 %
Male	27.8 %	50.0 %
Clinical completed	M = 1.1	M = 1.7

Students reported the number of completed clinical courses between one and five; the most common group reported was completing one to three clinical courses (52.1%), followed by four to five clinical courses (36.5%). Students' exposure to clinical classes ranged from 1 to 10.

In response to the survey item asking students if they had attained any previous educational program that utilizes clinical instruction, 69.4% (n = 25) of respiratory therapy students responded that they had attended a previous educational program that included clinical education. However,

30.6% (n = 11) of respiratory therapy students stated not attending a previous educational program that offered clinical instruction.

Table 2. Have you attended any previous educational program/programs that utilize clinical instruction?

N= 25 (69.4%)	Yes
N= 11 (30.6%)	No

The last question in the first section of the survey was on students’ opinions of what they believe would be the best student-to-teacher ratio for clinical instruction. Students’ views on the optimal ratio of students per clinical instructor are that 11.1% of students preferred having one clinical instructor for every student. A ratio of 2:1 student to the instructor was strongly supported at 44.4%. Then, 25.0% of students rated the 3:1 ratio, while 16.7% rated 4:1 as an acceptable ratio. Lastly, 2.8% of students rated 5:1 student to preceptor ratio.

Table 3. Students Ratio for Clinical Instructor.

Student – Teacher Ratio	Percentages %
1:1	11.1. %
2:1	44.4 %
3:1	25.0 %
4:1	16.7 %
5:1	2.8 %

Findings Related to Research Question 1

The first research question asked, “Which characteristics of effectiveness clinical instructors are observed to be most valuable by interns and undergraduate degree respiratory therapy students.?” Table 4 and 5 show mean scores (M) and standard deviation (SD) of the top eight most important effectiveness clinical teaching behavioral characteristics evaluated by the intern and undergraduate students. Tables 4 and 5 show the data results, containing the survey item number, a description of the teaching conduct, and the associated category for each teaching behavior. Intern students ranked the behavioral characteristic “Facilitate student’s awareness of their Professional responsibility” as the most effectiveness with a mean score value $M = 4.92$ and standard deviation ($SD \pm .39$). While undergraduate students ranked the behavioral characteristic “Encourage students to feel free to ask questions or ask for help” as the most effectiveness with a mean score value $M = 4.72$ and standard deviation ($SD \pm .49$).

Table 4. Eight Most Effectiveness Clinical Teaching Characteristic Ranked by Interns Students
(n = 18)

Item No.	Behavior Description	Category	Mean	Std. Deviation
PC 1	Facilitate student’s awareness of their Professional responsibility	Professional competence	4.92	.39
RS 5	Allow freedom for discussion	Relationship with students	4.75	.42
PC11	Facilitates critical thinking in clinical practice	Professional competence	4.75	.42
RS 3	Be honest and direct with students	Relationship with students	4.63	.58

PC 3	Demonstrate knowledge of respiratory therapy in the area of Instruction	Professional competence	4.59	.62
PA 6	Exhibit sense of humor	Personal Attributes	4.58	.64
PA 8	Be organized and well prepared	Personal Attributes	4.50	.69
PC 10	Demonstrate skills, attitudes & values that are be developed by students in clinical area	Professional competence	4.47	.73

Table 5. Eight Most Effectiveness Clinical Teaching Characteristic Ranked by Undergraduate Students

(n = 18)

Item No.	Behavior Description	Category	Mean	Std. Deviation
RS 4	Encourage students to feel free to ask questions or ask for help	Relationship with students	4.72	.49
PC 3	Demonstrate knowledge of respiratory therapy in the area of instruction	Professional competence	4.69	.51
PC 2	Show genuine interest in patients and their care	Professional competence	4.67	.53
RS 1	Respect student as an individua	Relationship with students	4.61	.60
PC 10	Demonstrate skills, attitudes & values that are be developed by students in clinical area	Professional competence	4.61	.60
PC 7	Assist in new experiences without taking over the task from the student	Professional competence	4.58	.62
PA 6	Exhibit sense of humor	Personal Attributes	4.53	.65
PA 9	Responds promptly	Personal Attributes	4.52	.70

Findings Related to Research Question 2

The second research question asked, “Which characteristics of effectiveness clinical instructors are observed to be least valuable by interns and undergraduate degree respiratory therapy students.?” Tables 6 and 7 show mean scores (M) and standard deviation (SD) of the top eight least important effectiveness clinical teaching behavioral characteristics that the intern and undergraduate students evaluated. Tables 6 and 7 show the data results, containing the survey item number, a description of the teaching conduct, and the associated category for each teaching behavior. Intern students ranked the behavioral characteristic “Demonstrate engaging style of bedside teaching” as the least effectiveness with a mean score value $M = 3.14$ and standard deviation ($SD \pm 1.0$). While undergraduate students ranked the behavioral characteristic “Be realistic in expectations of students’ performance” as the least effectiveness with a mean score value $M = 3.56$ and standard deviation ($SD \pm .93$).

Table 6. Eight least Effectiveness Clinical Teaching Characteristic Ranked by Interns Students
(n = 18)

Item No.	Behavior Description	Category	Mean	Std. Deviation
PC 9	Demonstrate engaging style of bedside teaching	Professional competence	3.14	1.0
PA 12	Exhibits autonomy	Personal Attributes	3.14	.98
PA 7	Admits limitations	Personal Attributes	3.28	1.1
PC 4	Show clinical skill competence	Professional competence	3.42	.94
PC 12	Identifies each individual attribute of the learner	Professional competence	3.50	.91
PA 4	Demonstrates enthusiasm for teaching	Personal Attributes	3.50	.87
PA 10	Responds confidently	Personal Attributes	3.56	.88

RS 6	Allow expression of feeling	Relationship with students	3.67	.83
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Table 7. Eight least Effectiveness Clinical Teaching Characteristic Ranked by Undergraduate Students

(n = 18)

Item No.	Behavior Description	Category	Mean	Std. Deviation
RS 2	Be realistic in expectations of students' performance	Relationship with students	3.56	.93
RS 8	Be approachable	Relationship with students	3.58	.89
PC 14	Provide individualized timely feedback	Personal Attributes	3.67	.71
PA 12	Exhibits autonomy	Personal Attributes	3.67	.71
PC 12	Identifies each individual attribute of the learner	Professional competence	3.72	.67
PA 2	Able to collaborate with other disciplines	Personal Attributes	3.72	.53
PC 4	Show clinical skill competence	Professional competence	3.80	.50
PA 8	Be organized and well prepared	Personal Attributes	3.86	.58

Findings Related to Research Question 3

The third question asked, “Do students’ evaluations differ according to the amount of time they spend in their clinical training program?” Table 8 shows the difference of the mean ranking between interns and undergraduate students, containing the year of level, mean rank, Mann-Whitney U test, P-value, and size of effect. The intern and undergraduate students demonstrate different evaluations of the most effectiveness clinical teaching behaviors, as illustrated in Tables

9,10,11 and 12. The intern students classified the behavior “Facilitate student’s awareness of their Professional responsibility” as the most effectiveness characteristic. On the other hand, undergraduate students didn’t rank it as one of the eight most effectiveness characteristics. Also, the behavior “Provide individualized timely feedback” was evaluated by only second-year undergraduates as the most effectiveness behavior characteristic. Another behavior ranked by only intern students as the second most effectiveness characteristic was “Allow freedom for discussion.”

Additionally, the third-year students perceive “Exhibit sense of humor” as the fifth most effectiveness. In contrast, fourth-year students identify this behavior eighth most effectiveness, and intern students ranked this behavior as the sixth most effective characteristic. The behavior “Encourage students to feel free to ask questions or ask for help” was evaluated as second most effectiveness by fourth-year students, while second and third-year ranked it third most effective; however, intern students didn’t rank it as one of the eight most effectiveness behaviors. In comparison, fourth-year students ranked the behavior “Demonstrate skills, attitudes & values that are be developed by students in the clinical area” as the first most effectiveness, while third and second-year students ranked it sixth, and intern students ranked it as eighth most effective.

Table 8. Mann-Whitney U Test for Differences between Interns and Undergraduate students ranking

Year level	Mean Rank	Mann-Whitney U	Z	P-value	Size effect
Intern (n= 18)	19.11	151.00	-0.348	0.728	0.05
Undergraduate (n= 18)	17.89				

Note. *Significant at P < .05

Table 9. Eight Most Effectiveness Clinical Teaching Characteristic Ranked by Second-Year Undergraduate Students

(n = 5)

Item No.	Behavior Description	Category	Mean	Std. Deviation
PC 14	Provide individualized timely feedback	Professional competence	5.0	.00
PC 8	Available to work with students in clinical setting	Professional competence	5.0	.00
RS 4	Encourage students to feel free to ask questions or ask for help	Relationship with students	5.0	.00
PC 2	Show genuine interest in patients and their care	Professional competence	5.0	.00
PC 7	Assist in new experiences without taking over the task from the student	Professional competence	5.0	.00
PC 10	Demonstrate skills, attitudes & values that are be developed by students in clinical area	Professional competence	4.83	.41
PC 11	Facilitate critical thinking in clinical practice	Professional competence	4.83	.41
PC 3	Demonstrate knowledge of respiratory therapy in the area of instruction	Professional competence	4.83	.41

Table 10. Eight Most Effectiveness Clinical Teaching Characteristic Ranked by Third-Year Undergraduate Students

(n = 3)

Item No.	Behavior Description	Category	Mean	Std. Deviation
RS 8	Be supportive & helpful	Relationship with students	5.0	.00
RS 1	Respect student as an individual	Relationship with students	5.0	.00

RS 4	Encourage students to feel free to ask questions or ask for help	Relationship with students	5.0	.00
PC 3	Demonstrate knowledge of respiratory therapy in the area of instruction	Professional competence	5.0	.00
PA 6	Exhibit sense of humor	Personal Attributes	5.0	.00
PC 10	Demonstrate skills, attitudes & values that are be developed by students in clinical area	Professional competence	5.0	.00
PC 2	Show genuine interest in patients and their care	Professional competence	5.0	.00
PA 9	Responds promptly	Personal Attributes	5.00	.00

Table 11. Eight Most Effectiveness Clinical Teaching Characteristic Ranked by Four-Year Undergraduate Students

(n = 10)

Item No.	Behavior Description	Category	Mean	Std. Deviation
PC 10	Demonstrate skills, attitudes & values that are be developed by students in clinical area	Professional competence	5.00	.00
RS 4	Encourage students to feel free to ask questions or ask for help	Relationship with students	5.0	.00
PC 3	Demonstrate knowledge of respiratory therapy in the area of instruction	Professional competence	5.0	.00
PA 9	Responds promptly	Personal Attributes	4.83	.41
PC 7	Assist in new experiences without taking over the task from the student	Professional competence	4.83	.41
PA 7	Admits limitations	Personal Attributes	4.67	.52
PA 3	Demonstrate self-control & patience	Personal Attributes	4.67	.52
PA 6	Exhibit sense of humor	Personal	4.67	.52

CHAPTER V

INTERPRETATION OF FINDINGS

This chapter contains a discussion of the findings reported in Chapter IV. This chapter is classified into six primary divisions, including an overview of the study, discussion of results, implications for research, a recommendation for further research, study limitations, and conclusion.

Overview of the Study

This study aimed to evaluate and perceives clinical instructors' effectiveness behavioral teaching characteristics based on what the respiratory therapy students deem most and least important. Data were collected from an accredited respiratory therapy program at urban universities and hospitals in Saudi Arabia, representing a sample of both interns and undergraduate respiratory therapy students.

Research Questions

1. Which characteristics of effectiveness clinical instructors are observed to be most valuable by interns and undergraduate degree respiratory therapy students?
2. Which characteristics of effectiveness clinical instructors are observed to be least valuable by interns and undergraduate degree respiratory therapy students?
3. Do students' evaluations differ according to the amount of time they spend in their clinical training program?

Discussion of Findings

Findings Related to Research Question 1

The first research question asked, “Which characteristics of effectiveness clinical instructors are observed to be most valuable by interns and undergraduate degree respiratory therapy students.? According to the results received from the study, the intern students rated the characteristic of “Facilitate student’s awareness of their Professional responsibility,” which is under the “professional competence” category, as the most important characteristic of the effectiveness clinical instructor. These findings are similar to previous research in the nursing field. Nahas et al. (1999) released an article on Jordanian undergraduate students' perceptions of effective clinical instructors' characteristics. Overall, the nursing students evaluated the clinical instructor's professional competence as the most important characteristic. (Nahas et al. 1999). Professional competence refers to an instructor's knowledge and proficiency in their profession (Allison-Jones 2004). Similarly, prior studies have shown that professional competence is essential for effective teaching (Brown, 1981; Bergman & Gaitskill, 1990). The clinical instructor's competence seems to have an impact on students' ability to comprehend and ask questions during clinical educations. (Alasmari 2014).

Furthermore, the undergraduate students rated the characteristic of “Encourage students to feel free to ask questions or ask for help” which is under “relationship with students” category, as the most important characteristic of the effectiveness clinical instructor. Undergraduate students respond to the "relationships with students" domain as the most important characteristic among others. In 2002, Lee, Cholowski, and Williams conducted a study on full-time undergraduate nursing students at an urban regional university in Australia sampling 150 second year students, 112 third-year students and 34 clinical educators from nursing college on Australia. According to

Lee et al. (2002), both students and instructors rated the category of interpersonal relationships as most important. It was concluded that clinical instructors are required to value interpersonal relationships with students as well as clinical competence (Lee et al., 2002). Hanson & Stenvig (2008) have also similar to that in nursing education where students identified interpersonal presentation, including the instructors' positive, professional, and supportive attitudes, as valuable. Alasmari and Gardenhire (2014) reported that undergraduate students evaluated that relationship with students of instructors as the most important characteristic (Alasmari, 2014).

Findings Related to Research Question 2

The second research question asked, "Which characteristics of effectiveness clinical instructors are observed to be least valuable by interns and undergraduate degree respiratory therapy students.?" The majority of the interns and undergraduate students have selected a category "personal attribute" as the lowest important characteristic of the effectiveness clinical instructor. Four out of the eight least important characteristics were selected "personal attribute" category by intern students. These characteristics are (1) Exhibits autonomy, (2) Admits limitations, (3) Demonstrates enthusiasm for teaching, (4) Responds confidently.

Furthermore, undergraduate students selected four out of the eight least important characteristics under "personal attribute" category. These characteristics are (1) Provide individualized timely feedback, (2) Exhibits autonomy, (3) Able to collaborate with other disciplines, (4) Be organized and well prepared. These findings are consistent with previous studies reported in other nursing and allied health professions. Nursing studies have reported that students ranked the personal attribute of the clinical instructor as least important (Brown 1981; Knox & Morgan, 1985; Lee et al., 2002). As Lee et al. (2002) stated, "relationships with students" category

score higher since they reflect actual behavior, whereas items in the personality category score lowest because they describe traits.

Findings Related to Research Question 3

The third question asked, “Do students’ evaluations differ according to the amount of time they spend in their clinical training program.?” A Mann-Whitney U test showed no statistically significant difference between interns and undergraduate students. However, Table 6 revealed that the ranking scores were significantly lower in the undergraduate students ($M=17.89$) compared to the intern students ($M=19.11$). Furthermore, the second-year undergraduate students ranked professional competence characteristics higher than third-year, fourth-year, and intern students, corresponding with Gignac-Caille & Oermann (2001) findings. Gignac et al. (2001) observed that students with fewer clinical hours consider nursing competency and teaching skills more than students with more experience. On the other hand, fourth-year undergraduate students ranked personal attribute characteristics higher than other categories. This finding is consistent with a previous study by Berg & Lindseth (2004) in which personality traits have received the highest overall ratings.

Using mean scores systematically would support understanding the levels in different evaluations to address the issues that may be causing the change in the perceptions (Alasmari, 2014). According to the results shown in tables 6,7 and 9, the ranking between the intern and the undergraduate students among effectiveness characteristics points that the evaluation of clinical instructors' characteristics either increases or decreases as students advance in their degree. For example, the characteristics “Facilitate student’s awareness of their Professional responsibility” and “Demonstrate skills, attitudes & values that are be developed by students in clinical area” seem to increase in importance as the level of study progresses. Consequently, as students obtain more

clinical experience, their evaluations of this part of teaching behavior led to growing closer to faculty perception (Bergman & Gaitskill, 1990). However, the results also indicate decreases in the importance of some characteristics as the program level advances. To illustrate, the characteristics “Demonstrate skills, attitudes & values that are be developed by students in clinical area” and “Provide individualized timely feedback” seem to decrease in importance as the level of students advanced.

Implications for Research

The findings of this study will enable respiratory therapy clinical instructors to evaluate themselves based on the evaluations of interns and undergraduate students. This evaluation is critical to ensuring that clinical instructors focus on the items that students rated the highest. Clinical educators will benefit from students' evaluations not just in recognizing and overcoming their weaknesses, but also in enhancing and reinforcing their strengths. Clinical educators should endeavor to improve their attitudes, behaviors, and characteristics toward students in order to achieve the objectives of clinical education. Understanding the variation in ranking between characteristics among interns and undergraduate students would be a good indicator for the clinical instructors to ensure that they maximize on the characteristics that work best in the different levels.

Recommendations for Future Study

Further research is required due to a lack of information on student evaluations of effectiveness clinical instructor characteristics in respiratory therapy. Replication of this study with a larger sample size encompassing a variety of accredited undergraduate and postgraduate programs is urgently advised in order to generalize these findings. The addition of faculty, hospital department administration is also recommended in the future.

Limitations of the Study

The survey was conducted through social media, which was a major limitation of the study; consequently, more reliable results would have been obtained in a controlled situation. The use of social media may have had respondents that were not representative of the intended sample. The minimal number of respondents who responded to the inquiry. Also, there is a lack of comprehensive research in respiratory care education that addresses the behavioral teaching characteristics of effectiveness clinical instructors in the respiratory therapy profession.

Conclusion

The objective of this study was to improve respiratory therapy clinical education as well as identify and evaluate the effectiveness clinical teaching characteristics as evaluated by respiratory therapy students. The conclusions of this study revealed that clinical instructors should focus on "professional competence" with students as well as enhance "relationships with students." Although the ratings of interns and undergraduate students were similar, mean rank scores revealed a change in the ranking of effectiveness teaching characteristic evaluation of clinical instructors' characteristics either increases or decreases as students advance in their degree. This could be due to the fact that students' evaluations vary as they progress through clinical training or educational experience. In the end, this study found that respiratory therapy students' evaluations of a clinical instructor's most and least important effectiveness teaching characteristics are consistent with other health professions.

Appendix A: Effective Clinical Teacher Characteristics Instrument

Part 1: Demographics Characteristics:

1. Indicate your age: _____

2. Gender: (please circle one)

- Male
- Female

3. Year/level in program: (Please circle one).

- Second-year
- Third-year
- Fourth-year
- Intern student

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

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

_____ Yes

_____ No

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

1:1 2:1 3:1 4:1 5:1

Please go to the next page

Dear Student,

This study aims to explore the effective Clinical Instructor characteristics perceived as important by respiratory therapy students. Your sincere response is appreciated. We assure you of 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: Informed Consent

Dear Respiratory Therapy Student,

You are invited to a research study because you have taken part in clinical training as an undergraduate student or respiratory therapy intern. The purpose of this study is to evaluate the effective teaching characteristics of clinical instructors.

Abdulaziz Alolayan 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. Although there will be no direct benefit to you from participating in this study, the information gathered will aid respiratory therapy clinical instructors in determining and evaluate which characteristics are most beneficial in enhancing student learning.

If you choose to participate, you will be required to complete the following survey, which should take no more than 10 minutes. Your participation is entirely voluntary, and you may refuse or discontinue taking the survey at any time without penalty or loss of benefits to which you are otherwise entitled.

Please note that your responses are used exclusively and entirely confidential for research purposes. To protect your privacy, no names or codes will be used to identify you or your survey.

Your completion and submission of the survey constitute your agreement to take part in the study. We look forward to the completion of your survey. However, you may withhold at any time by not completing or sending a blank survey if you decide not to participate in this study.

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.

If you have any questions about this research, now or in the future, don't hesitate to contact Abdulaziz Alolayan at aalolayan1@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 imply that you have read this information and consent to participate in the research.

Sincerely,

Abdulaziz Alolayan

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