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**THE IMPORTANCE AND NEEDS FOR A STANDARDIZED PRECEPTOR TRAINING  
PROGRAM IN RESPIRATORY THERAPY DEPARTMENTS IN RIYADH CITY,  
SAUDI ARABIA**

By

Ahmed Aljoni

A Thesis

Presented in Partial Fulfilment of Requirements for the

Degree of Master of Science in Health Sciences in the

Department of Respiratory Therapy

Under the supervision of Dr. Chip Zimmerman

In

Byrdine F. Lewis College of Nursing and Health Professions

Georgia State University Atlanta, GA

Fall, 2021

## ACCEPTANCE

This thesis, THE IMPORTANCE AND NEEDS FOR A STANDARDIZED PRECEPTOR TRAINING PROGRAM IN RESPIRATORY THERAPY DEPARTMENTS IN RIYADH CITY, SAUDI ARABIA, by Ahmed Aljoni, was prepared under the direction of the Master Thesis Advisory Committee of the Respiratory Therapy department at Georgia State University.

It is accepted by the committee in partial fulfillment of requirements for the Master of Science degree with a concentration in Respiratory Therapy at Byrdine F. Lewis College of Nursing and Health Professions, Georgia State University.

The Master 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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## AUTHOR'S STATEMENT

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## **DEDICATION**

It always seems impossible until it's done. I will start to express my gratitude to God for providing me with the strength, safety, health, abilities, and all blessings in my whole life. My most profound appreciation goes to my incredible parents, sisters, and brothers for their unlimited support, encouragement, motivation, care, and sincere prayers, making me this strong person during graduating school. Mom and dad, I love you so much, and I cannot thank you enough for all you have done for me. To my best friends, I would like you to know that I was pleased to receive your encouragement and support. Thanks for supporting me all through the ups and downs.

*Ahmed Aljoni*

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*Ahmed Aljoni*



## ABSTRACT

**BACKGROUND:** Preceptorship is defined as the interaction between the staff and a student. It was the only method of transmitting and providing respiratory therapy (RT) education. Preceptorship is the preferred method of educating both undergraduate and graduate students. Due to a staffing shortage, clinical instructors (Cis) are rarely allocated to RT students. Instead, they are placed with RT staff who act as a clinical preceptor with little to no formal education training. Therefore, the RT students may not receive sufficient clinical education. **PURPOSE:** This study aims to examine the availability and the method of preceptor training and evaluates the importance and the need for employee preceptor training programs in respiratory therapy departments in Riyadh city, Saudi Arabia. **METHODS:** A cross-sectional study involving a convenience sample of RTs from Saudi Arabia was conducted through an electronic survey. **RESULTS:** Seventy-one of RTs (N=71) from five selected hospitals from Riyadh, Saudi Arabia, were surveyed in this study. The majority of respondents (74.6%) were male. (n=43; 60.6%) were staff, (n= 16; 22.5%) were supervisors, (n= 9; 12.7%) were clinical instructors and (n= 3; 4.2%) were managers. The majority of participants (87.3%) believed there is a need for a standardized preceptor-training program. However, only (n= 15; 21.1%) of them received their training before receiving the students. The majority of respondents (64.8%) pointed out that preceptors have been assigned to preceptorship tasks. **CONCLUSION:** This study was the first study to evaluate the needs and importance of standardized preceptor-training programs across RT departments in Saudi Arabia. The results of the study support the demand for a standardized preceptor-training program for respiratory therapy members.

## **List of Abbreviations**

AARC: American Association for Respiratory Care

CoARC: Commission on Accreditation for Respiratory Care

CI: Clinical Instructor

Cis: Clinical Instructors

RT: Respiratory Therapy

RTs: Respiratory Therapists

SA: Saudi Arabia

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## CHAPTER I

### INTRODUCTION

Respiratory Therapy (RT) is a health care profession that focuses on diagnosing and treating patients with acute or chronic respiratory illnesses. Adult, pediatric, and neonatal patients are all assessed, diagnosed, monitored, and handled by respiratory therapists (RTs). The American Association for Respiratory Care (AARC) organized the duties that RTs are responsible for, such as maintaining airways and mechanical ventilators, discussing care plans with doctors and diagnosing, giving patient education, and responding to emergencies (American Association for Respiratory Care, n.d.).

RT became a profession in the 1950s. The tasks of RTs back then were significantly different from what they are now. The term "oxygen technicians" was later introduced to describe these workers, representing their primary task. Over the years, RTs have advanced from providing necessary services to taking on various therapeutic and diagnostic roles in critical care lung diseases, such as mechanical ventilation (Kacmarek, 2013). As a result, respiratory therapists' employment is expected to rise 19 percent between 2019 and 2029, significantly faster than the average (U.S. Bureau of Labor Statistics, 2021). Increased incidence of respiratory diseases, such as pneumonia, chronic obstructive pulmonary disease (COPD), and other respiratory disorders will result from the growing middle-aged and older population. As the population ages, there will be greater demand for RT services and treatments, mostly in hospital (U.S. Bureau of Labor Statistics, 2021).

In Saudi Arabia (SA), RT was initially presented as a profession in the mid-1970s at the military hospital in Riyadh, and Saudi workers were assigned to study RT in the US. The first

RT department was established in 1975 (Al-Otaibi & AlAhmari, 2016). Because of the importance of RTs in critical care, government and private universities and colleges have established RT programs to meet the growing demand for RTs in Saudi Arabia, where the first RT program began in 1987 (Alotaibi, 2015).

Clinical education is the major teaching component in RT, whereas RT students must complete clinical rotations different from other allied health care programs. RT students gain essential skills like attitudes, knowledge, clinical experience, and clinical skills throughout these rotations, preparing them for the current clinical world and converting classroom theory and knowledge to clinical life (Li et al., 2018). All RT academic programs in the United States are accredited by the Commission on Accreditation for Respiratory Care (CoARC). CoARC mandates programs to have recorded compliance, assessment, and scoring of students' competencies during their hospital rotation and internship. They must address the standards and duration of clinical rotations in detail (CoARC, 2021). As a result, clinical education requirements vary per program across the country (Barnes et al., 2011). The requirement for a standard respiratory care preceptor is critical in this line of inconsistencies.

Preceptorship is known as the interaction between the staff and the student (Udlis, 2008). When the profession began, RTs were on-the-job-trained by experienced therapists, and preceptorship was the only method of transmitting and providing RT education (Collins, 1969). In the healthcare field, preceptorship is the preferred method of educating both undergraduate and graduate students. RT students, in particular, appear to prefer this style of education since it has a significant impact on developing specific abilities outside of the classroom or laboratory (Rye & Boone, 2009).

## **Statement of Problem**

Clinical education teaches students how to perform effectively in a clinical setting and how they get the essential information, attitudes, and abilities, such as critical thinking and problem-solving, as a result. Clinical Instructors (CIs) are required to be skilled clinicians with strong teaching abilities. They are essential in the education of the next generation of RTs. However, due to a staffing shortage, CIs are rarely allocated to RT students. Instead, they are placed with respiratory care staff who have little to no formal education training. As a result, students may not have sufficient role engagement, decision-making, or patient skills training.

## **Purpose of the Study**

This study examines the availability and the method of preceptor training. It evaluates the importance and the need for preceptor training programs according to the perceptions of the respiratory therapy staff and managers of respiratory therapy departments in Riyadh city, SA.

## **Research Questions**

The following research questions are addressed to guide the designing and collection of this research study:

- 1- Is a standardized preceptor training program in RT departments necessary?
- 2- What is the prevalence of clinical instructors among RT students? And what are their roles?
- 3- What is the prevalence of preceptor training programs among RT departments?
- 4- What methods are used to select preceptors for RT departments?



### **Significance of Study**

This study will help us to identify the availability of the preceptor training program among RT departments in selected hospitals. It will improve our knowledge to evaluate the needs of an appropriate preceptor training program in the RT departments in Riyadh city, SA. Moreover, it will improve the clinical education for the next generations of RT students because there were no existed papers to evaluate preceptorship in Saudi Arabia.

### **Delimitations**

The participants in this study will be respiratory care directors and staff from selected hospitals in Riyadh city, SA. This study's results can only be applied to this group of directors and therapists. Other healthcare providers and RT students are excluded from the survey. The therapists' data will be used to satisfy the study questions.

### **Assumption**

The result of this study supposes to be proving the demand for a standardized preceptor training program among RT departments in SA. Additionally, explain the variation of preceptor training from one hospital to another if these programs are available.

## **CHAPTER II**

### **LITERATURE REVIEW**

The following review of the literature covers a diversity of health professions during the last few decades. Preceptorship-based training has mainly been used to further the field of clinical education in these professions. Google Scholar, PubMed, Science Direct, EBSCOhost, and CINHALL were among the databases used in this review. Clinical instructor, clinical instruction, clinical education, preceptorship, preceptor program, preceptor, mentor, mentorship, respiratory care, respiratory therapy, physical therapy, nursing, pharmacy, and medicine were among the keywords used in the search. The results revealed a number of publications that examined the function of preceptorship in clinical settings and the qualities of the preceptors in terms of enhancing and developing clinical education. This chapter is divided into sections: preceptorship in nursing, preceptorship in pharmacy, preceptorship in physical therapy, preceptorship in respiratory therapy, and summary.

#### **Introduction**

Preceptorship is the clinical teaching model of choice in undergraduate and postgraduate healthcare education, in which the trainee collaborates with a professional practicing therapist (Rye & Boone, 2009). Many publications in the fields of respiratory care, nursing, pharmacy, and physical therapy have used the terms "preceptorship" and "mentorship" often. These terms were used equally in certain publications (Mantzorou, 2004; Rye & Boone, 2009). There is a clear distinction between the roles of each term, preceptorship refers to a connection between a recently graduated practitioner and an experienced registered staff member to assist with the transition to employment (Billings & Kowalski, 2019). However, this term is problematically

applied to a special connection, such as the one between a student and an experienced staff member to assist in applying ideas and information in the clinical setting. Preceptorship follows a set schedule with defined objectives and aims to meet (like procedure check-off for students). On the other hand, mentorship is generally linked with a longer, unspecified duration of connection with no set schedule or objectives to follow (Billings & Kowalski, 2019).

### **Preceptorship in Nursing**

More than 120 years ago, Florence Nightingale recommended that nurses spend their first year of training in a hospital setting under the direct supervision of professional nurses who had been "trained to train" (Udlis, 2008). Yonge and Trojan (1992) stated that nursing faculty began implementing preceptorship more than 30 years ago as part of clinical instruction. In addition, preceptorship programs are now widely used as an alternate clinical teaching modality in undergraduate nursing school (Udlis, 2008).

In 1991 in the United Kingdom, the preceptorship was launched with the initial objective of improving competence and confidence. Although one-to-one preceptorship influences confidence and competence, preceptorship programs have a more significant influence than individual preceptors (Irwin et al., 2018). Hardyman and Hickey (2011) show that advanced preceptorship with essential study days, clinical supervision, skills, and/or people of trust have been established to coordinate the growth of new nurses instead of individual precepts. In addition, Banks et al. (2011) report improved competencies of advanced communication abilities through advanced preceptorship in statistically significant terms (Irwin et al., 2018).

Work readiness has been ascribed to essential variables that may be focused on when attempting to enhance the possibility for new nurses to be ready for work upon registration,

despite having various definitions. Preparing registered nurses as preceptors for the job and providing new nurses with appropriate clinical exposure can enhance clinical competence and confidence, helping students be more ready for practice (Edward et al., 2017). Preceptors assist preceptees in acclimating to the nursing culture and environment. However, experienced nurses may be hesitant to take on the position of preceptor because they believe they are unprepared, unsupported by their colleagues, and lacking in confidence (Ward & McComb, 2017). Preceptorships that go well lead to higher work satisfaction and lower turnover. The highest nursing retention rates were seen in hospital systems that included preceptorship since new nurses felt more confident in continuing their nursing careers with the additional assistance they get (Quek et al., 2019).

The evidence-based precepting program at the U.S. Army Institute of Surgical Research (USAISR) Burn Center provided a method for converting experienced nurses with no burn care expertise into proved competent burn nurses. Orienting nurses has become a more efficient and simplified procedure since the program's inception. This program allowed the period of orientation to be adjusted to the individual employee. It accelerated the transition to full patient load by having a defined objective and subjective criteria for evaluating proficiency. After completing orientation, preceptors, employees, and new recruits were interviewed, and the results showed an increase in employee confidence. Nurses who finished the training expressed confidence in their abilities to administer primary burn treatment and expressed an interest in extending their coaching relationship with their preceptor to enhance their skills during the formal orientation (Robbins et al., 2017).

Aboshaiqah and Qasim (2018) surveyed 92 undergraduate nurse interns who have completed a preceptorship in one of the tertiary hospitals in Riyadh, Saudi Arabia. They discovered that preceptorship had a beneficial impact on nursing interns' clinical competence. Preceptorship supports the conversion of theory into practice, which is critical in increasing nursing students' clinical competence in specific settings due to effective preceptorship and high-quality preceptor-preceptee relationships (Aboshaiqah & Qasim, 2018).

### **Preceptorship in Pharmacy**

Preceptor training has become more important in pharmacy clinical education to ensure the quality of experiential training and professional growth of pharmacy students, preregistration trainees, and residents. According to the Accreditation Council for Pharmacy Education (ACPE,2016) Standards, pharmacy preceptors must be educated about their program's goal and receive professional development in compliance with their educational duties. Furthermore, the American Society of Health-System Pharmacists (ASHP) establishes criteria for pharmacy residency programs, including preceptor credentials, teaching duties, and resident evaluation (Knott et al., 2020).

The descriptions of preceptor credentials in the Current Practices in Global/International Advanced Pharmacy Practice Experiences (G/I APPE) should contain terminology applicable to non-pharmacist or international preceptors. Documentation of students' pre-rotation knowledge and experience with rotation objectives should be supplied to preceptors. Before the students' arrival, preceptors should be given the rotation objectives and student learning objectives and enough time to plan the students' experience to guarantee the objectives are accomplished. Preceptors should be provided with training materials by pharmacy schools to improve their professional growth and capacity to precept and assess students. During the G/I APPE, schools

of pharmacy should keep in touch with students and preceptors frequently. Finally, programs should think about ways to increase preceptor recognition, especially for non-faculty or overseas preceptors, through awards or adjunct appointments if possible (Dornblaser et al., 2016).

Volunteer preceptors at The Effective Clinical Preceptor course, established by the University of California, San Francisco (UCSF) School of Pharmacy, assess pharmacy preceptors' training requirements and interests. Preceptors were surveyed on different elements of precepting as well as their desires for more training. According to the findings, preceptors lacked confidence and needed further training in the following areas: working successfully with diverse learning styles, motivating and inspiring students, and effectively communicating with and questioning students. Preceptors with prior training were more competent in setting clear objectives, assessing a student's knowledge base, and encouraging critical thinking and problem-solving abilities (Assemi et al., 2011).

Sonthisombat (2008) compared the views of preceptors' teaching practices among PharmD students and preceptors. According to the data, preceptors appeared to overestimate the quality of their work compared to student evaluations. These results point to the demand for a preceptor training program. To increase learning experiences, we need to prepare preceptors and build programs to guide and support their further development. We also need to instruct students on their right to get evaluation and feedback from their preceptors since these are critical to meeting curricular objectives (Sonthisombat, 2008).

### **Preceptorship in Physical Therapy**

Clinical education in physical therapy is essential in preparing students to assume the roles and responsibilities of clinical practice, and for creating competent and professional (entry-level) practitioners, according to the Commission on Accreditation in Physical Therapy

Education (CAPTE). Clinical education allows students to connect theory to practice in a real-world setting. As a result, clinical education programs structured to optimize student learning are more helpful to students (Bridges et al., 2013). Therefore, in 1997, the Clinical Instructor Education and Credentialing Program (CIECP) was created by the American Physical Therapy Association (APTA). The renamed Credentialed Clinical Instructor Program (CCIP), a structured and organized clinical instructor (CI) certification course, was created for rehabilitation therapists participating in clinical instruction (Greenfield et al., 2014).

CIs play a critical role in educating physical therapy students to take on the roles and responsibilities of the modern profession. To serve as a CI, CI must be licensed as a physical therapist, has one year of full-time post-licensure clinical experience, and be a competent role model and clinical teacher, according to the CAPTE (Ozga et al., 2016).

Housel et al. (2010) used a modified survey instrument from the New England Consortium of Academic Coordinators of Clinical Education (NEC-ACCE) to compare the students' evaluations of 76 clinical preceptors (38 credentialed and 38 non-credentialed), representing 32 different institutions across the United States. Students were asked to assess their clinical experience and preceptors using 27 specific criteria. The credentialed preceptors rank better on 22 of the criteria. According to the authors, CIECP enhanced the efficiency of preceptorship during student clinical instruction (Housel N et al., 2010).

### **Preceptorship in Respiratory Therapy**

Students enrolled in RT programs must complete clinical rotations different from those needed in other allied health care programs. RT students get critical skills like attitudes, knowledge, clinical experience, and clinical skills throughout these rotations, which equip them for the contemporary clinical world (Aldhahir et al., 2020). RT programs rely on volunteer

clinical preceptors to help students transition from the classroom to the clinical work (Smith et al., 2014). Thus, standardized preceptor training is essential to give students consistent clinical experiences, according to RT managers in the hospitals and RT directors of education programs (Dunlevy, 2013).

Positive and compassionate preceptors were beneficial to students. On the other side, when students were mainly permitted only to observe, their learning was limited, and they thought the preceptor did not want them. Through supported continuing education programs of their clinical RT preceptors, RT Program instructors can improve their students' clinical learning experiences (Patten et al., 2021).

As the profession progressed, the establishment of the Commission on Accreditation for Respiratory Care (CoARC) in 1996 marked a significant move forward in the accreditation of all respiratory care educational programs (CoARC 2020). In June 2010, CoARC established new accreditation requirements requiring RT programs to prove inter-rater reliability across preceptors who conduct student assessments. To provide a standardized clinical preceptor educational program that RT programs can utilize to prepare instructors to conduct successful clinical instruction while also meeting CoARC standards (Dunlevy et al., 2013).

In 2009, Rye and Boone developed a survey instrument sent to all accredited institutions in the United States (n= 248) to assess the value of preceptor training programs in respiratory care. The survey received responses from seventy-four respiratory education programs, for a 30% response rate. Even though the authors did not state any limitations, the survey's actual content (32 survey items) likely contributed to the low response rate. A formal standardized preceptor-training program is needed, according to 81% of respondents. The capacity to analyze and evaluate the students' clinical performance (57 %), a comprehensive understanding of their



duties and responsibilities (41%), and ability to deliver appropriate feedback to the students are the essential qualities respondents want from the program for preceptors (44%). Respondents rated these abilities as "most important," giving them a score of ten on a scale of 1 to 10. The authors give no commentary or findings for replies at different rankings (e.g., how many individuals scored 9 on the preceding skills), nor do they average these data (Rye & Boone, 2009).

### **Summary**

Preceptorship is still an essential element of respiratory therapy clinical education. Other health professions that have used preceptor training techniques have found it to be as important. Since 1997, physical therapy has been a part of this sort of training and education. Preceptorship training is required of pharmacists throughout their residency internship. Other professions, such as nursing, have dedicated resources, such as clinical instructors who supervise and offer clinical instruction in clinical settings. Clinical education in respiratory care is still one of the most important areas that are developing and changing. The organization and staff of respiratory care departments vary, with some departments employing clinical instructors. However, most of the respiratory departments in Saudi Arabia have faced a staffing shortage, so they do not have enough or do not have clinical instructors. Hence, they assigned clinical education to their therapists to work as clinical preceptors. Based on my search, it appears that there has been no research done to assess the needs and significance of preceptor training programs in Saudi Arabian respiratory therapy departments. Since a result, the characteristics of an ideal preceptor are yet unknown, as further study is needed.

## **CHAPTER III**

### **METHODOLOGY**

In this study, the researcher explored the current situation and the future needs for standardized preceptor training programs among respiratory therapy (RT) departments in Riyadh city, Saudi Arabia (SA). The researcher used the online survey to investigate the availability and the perceptions of RT managers, clinical instructors, and staff who act as clinical preceptors in selected hospitals in Riyadh city, SA. This chapter went through the methods and processes that were utilized to conduct the study.

#### **Research Questions**

- 1- Is a standardized preceptor training program in RT departments necessary?
- 2- What is the prevalence of clinical instructors among RT students? And what are their roles?
- 3- What is the prevalence of preceptor training programs among RT departments?
- 4- What methods are used to select preceptors for RT departments?

#### **Instruments**

The instrument which used in this study was designed and structured by Rye & Boone (2009). Their objective was to evaluate the need for a nationwide preceptor-training program for respiratory therapists, according to academic program administrators. The permission was obtained from Dr. Kathy Rye to use the survey instrument. The survey was modified to evaluate the importance and need of a preceptor-training program for respiratory therapists, as determined by respiratory care managers, clinical instructors, and staff.

The survey consisted of two parts: the first part was the demographic data sheet containing eleven questions designed especially for this study: gender, name of the hospital, educational level, experience in years, and the specific role of the RTs. The second part was that the preceptor training needs contained eight multiple-choice questions to evaluate the availability and needs of preceptor training programs. Additionally, how and who is delivering this program. Six scale questions to examine the most important content of the preceptor training program and the most effective way to deliver this program.

### **Research Design**

A descriptive research design was employed in this study. The survey was developed as an online link that will distribute to participants via their email accounts at selected hospitals in Riyadh city, SA. A survey is the most typical way to offer descriptive research. Postal mail, telephone, personal delivery, and electronic distribution are all options for sending surveys (Jones et al., 2013). In order to investigate the current state and future demands for standardized preceptor training programs across RT departments in Riyadh city in SA, a cross-sectional survey was conducted.

### **Study Sample**

The study sample included a convenience sample of RT managers, clinical instructors, and regular staff who act as clinical preceptors. This research was limited to the government hospitals selected in Riyadh city, SA, and provided clinical training for the students. The survey was supported by an invitation cover letter that explained the study's primary goal and ensured participants' confidentiality.

The selected hospitals were four tertiary-centers (King Abdulaziz Medical City, Prince Sultan Military Medical City, King Saud Medical City, King Fahad Medical City), and one cardiac center (Prince Sultan Cardiac Center). These hospitals' capacity was 1973 beds for King Abdulaziz Medical City, 1606 beds for Prince Sultan Military Medical City, 1400 for King Saud Medical City, 1200 beds for King Fahad Medical City, and 200 beds for Prince Sultan Cardiac Center. The number of RTs, who were on staffing in the selected hospitals, was approximately 740 RTs.

### **Protection of Human Subject**

To protect the rights of human participants, the Georgia State University Institutional Review Board (IRB) reviewed the research proposal. To ensure confidentiality, participants were anonymous, and no personally identifiable data was utilized in this study. The survey was completely optional, and consent was assumed once the survey was started. In addition, using an online survey technique eliminated the need for participants' responses to be delivered through email, eliminating indirect identification. After the data was evaluated, all surveys were deleted.

### **Informed Consent and Invitation Letter**

The first page of the survey included an electronic invitation letter with informed consent for all participants in this study. Before going to the survey, each participant must read the initiation and agree to participate. If a participant rejects to take part in the study, the survey would be ended immediately, and no further action would be taken. Appendix D contains the informed consent and invitation letter for this study.

### **Ethical considerations**

The security and confidentiality of the obtained data were ensured by producing a password excel file from the Google survey results. There was no personally identifiable information collected. If unintentionally recorded personally identifying information, it was deleted. That file was accessible only to the principal investigator and the student investigator.

### **Data Collection and Analysis**

The study was conducted using an online survey that was administered through the Google Forms website. After the IRB approval was obtained, an online link was sent to each RT department's director or instructor via email addresses, inviting him/her to be part of the study by distributing the survey among the targeted RTs staff. The first page of the survey was sought participants' consent to participate in the study. Additionally, the email clarified that participation in this study was voluntary and that participants had the right to withdraw at any time and without providing a reason.

Approximately one week after the initial email that contained the survey, a reminder email was sent to remind participants to complete the survey.

After data collection, statistical Package for the Social Sciences (SPSS) version 27.0, SPSS Inc., Chicago, IL, was used to verify, clean, modify, and analyze the raw data. The standard deviation, mean, frequency, and the total number of participants will be computed, and the response rate and differences between respondents and hospitals.

## **CHAPTER IV**

### **FINDINGS**

The primary goal of this chapter is to explore the current situation and the future needs for standardized preceptor training programs among respiratory therapy (RT) departments in Riyadh city, Saudi Arabia. This chapter contains demographic information as well as statistical analysis findings.

#### **Research Questions**

- 1- Is a standardized preceptor training program in RT departments necessary?
- 2- What is the prevalence of clinical instructors among RT students? And what are their roles?
- 3- What is the prevalence of preceptor training programs among RT departments?
- 4- What methods are used to select preceptors for RT departments?

#### **Demographic Findings**

A convenience sample of respiratory therapists from Riyadh city, Saudi Arabia, was used in the study. The online survey was sent to 191 RTs, and a total of 71 were completed the survey with a response rate of 37.17%. Twenty-one (29.6%) were from King Abdulaziz Medical City, eighteen (25.4%) were from Prince Sultan Cardiac Center, fourteen (19.7%) were from King Saud Medical City, twelve (16.9%) were Prince Sultan Military Medical City and six (8.4%) were from King Fahad Medical City (Table 1).

Fifty-three (74.6%) of respondents were male, and eighteen (25.4%) were female. Forty-three (60.6%) were staff, sixteen (22.5%) were supervisors, nine (12.7%) were clinical

instructors, and three only (4.2%) were managers or directors. The mean years of experience per respondent was 7.148 (SD±5.373). The majority of responders had bachelor's degrees (n=62; 87.3%), five had master's degrees (7.1%), and only four had diplomas (5.6%) (Table 1).

**Table 1:** Demographic characteristics of survey respondents.

<b>Demographic Variable</b>		<b>Result N (%)</b>
<b>Gender</b>	Male	53 (74.6%)
	Female	18 (25.4%)
<b>Hospital</b>	King Abdulaziz Medical City (KAMC)	21 (29.6%)
	King Fahad Medical City (KFMC)	6 (8.4%)
	King Saud Medical City (KSMC)	14 (19.7%)
	Prince Sultan Cardiac Center (PSCC)	18 (25.4%)
	Prince Sultan Military Medical City (PSMMC)	12 (16.9%)
<b>Degree</b>	Diploma	4 (5.6%)
	Bachelor's Degree	62 (87.3%)
	Master's Degree	5 (7.1%)
<b>Position</b>	Manager/Director	3 (4.2%)
	Clinical Instructor	9 (12.7%)
	Supervisor	16 (22.5%)
	Staff	43 (60.6%)
<b>Mean Years of Experience (±SD)</b>		7.148 (±5.373)

## Findings Related to Research Question One

The first research question asked, “Is a standardized preceptor training program in RT departments necessary?” The results of the two items in the survey related to this question are listed in table 2. The first question stated that “I believe there is a need for a standardized preceptor-training program available for use by respiratory therapy education programs” and offered two choices. The majority of participants believed there is a need for a standardized preceptor-training program (n=62; 87.3%). The second question stated that “Please rate the importance of having a preceptor-training program available for use by your education program,” and five different choices were available. Results showed a positive perception of having a preceptor-training program with a mean score of M= 4.4 and a standard deviation of (SD±0.858) (Table 2).

**Table 2:** The importance of a standardized preceptor training program.

Survey Item		Result N (%)
<b>I believe there is a need for a standardized preceptor-training program available for use by respiratory therapy education programs.</b> (n=71)	No	9 (12.7%)
	Yes	62 (87.3%)
<b>Please rate the importance of having a preceptor-training program available for use by your education program.</b> (n=62)	Not at All Important	1 (1.6%)
	Slightly Important	2 (3.2%)
	Neutral	3 (4.8%)
	Important	21 (33.9%)
	Very Important	35 (56.5%)



	Mean (SD±)	4.4 (± 0.858)
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### Findings Related to Research Question Two

The second research question asked, “What is the prevalence of clinical instructors among RT students? And what are their roles?” The results of the related survey items are listed in table 3. One item in the survey asked, “What is the ratio of clinical instructors to respiratory therapy students at your hospital?” The most common answer was one clinical instructor to all students (n=22; 31%), followed by one clinical instructor to one student (n=21; 29.6%). Another item was stated “What are the main responsibilities of clinical instructors within the respiratory therapy department?” The respondents had the ability to select more than one answer between five answers. The most frequent answer was “direct managing and evaluating students” (n=55; 77.5%), and the least common answer was “participate as a member of the development team” (n=25; 35.2%).

**Table 3:** The prevalence and the main responsibilities of clinical instructors.

Survey Items		Result N (%)
What is the ratio of clinical instructors to respiratory therapy students at your hospital?	1 Student	21 (29.6%)
	2 Students	12 (16.9%)
	3 Students	1 (1.4%)
	4 Students	7 (9.9%)
	5 Students	4 (5.6%)
	6 Students	1 (1.4%)
	7 Students	1 (1.4%)
	8 Students	2 (2.8%)

	All Students	22 (31%)
What are the main responsibilities of clinical instructors within the respiratory therapy department?	Direct Managing and Evaluating Students	55 (77.5%)
	Directly Guides and Observes Students	47 (66.2%)
	Preparing Clinical Preceptors	26 (36.6%)
	Participate as a Member of The Development Team	25 (35.2%)
	Providing Educational Courses for Staff	38 (53.5%)

**Findings Related to Research Question Three**

The third research question asked, “What is the prevalence of preceptor training programs among RT departments?” Table 4 shows the results of the related items. Four items asked whether the preceptor-training program is provided to respiratory therapists, how it is delivered, and who is delivered the program. Fifty-six of respondents (78.9%) did not receive any training before receiving students. In comparison, only fifteen of respondents (21.1%) received their training mostly by completing lectures or workshops in an average of four to twelve hours. Thirteen (86.7%) received their training from educators within the RT department at the hospital, and only two (13.3%) obtained it from educators from the college or institution that trains the students. All of the fifteen therapists believe this training is met their specific needs.

Additionally, one item asked about the most important barrier to conduct a successful preceptor-training program. The participants had four choices, (n=25;41%) chose lack of incentives or rewards for preceptors as a primary reason, when (n=22; 36.1%) chose a staff

shortage. Twelve respondents (19.7%) selected lack of support from the hospital administration as the main barrier, and only (n=2;3.3%) selected lack of curriculum (Table 4).

**Table 4:** Prevalence of preceptor-training programs among RT departments.

Survey Items		Result N (%)
Do Clinical Instructors/Preceptors Receive Any Type of Training Prior to Receiving Students? (n=71)	No	56 (78.9%)
	Yes	15 (21.1%)
Describe the Type of Training That They Receive. (n=15)	Bedside	1 (6.7%)
	Lecture	7 (46.6%)
	Online	1 (6.7%)
	Workshop	6 (40%)
Describe the Length of Training That They Receive (Hours). (n=15)	4 Hours	4 (26.7%)
	6 Hours	3 (20%)
	8 Hours	2 (13.3%)
	12 Hours	6 (40%)
Who Delivers That Training? (n=15)	Educator from the College or Institution That Trains the Students.	2 (13.3%)
	Educator within the Respiratory Therapy Department at the Hospital.	13 (86.7%)
Is the Training Designed to Meet the Specific Needs of Respiratory Care Clinical Preceptors? (n=15)	No	0 (0%)
	Yes	15 (100%)
What Is the Most Important Barrier to Conducting Successful Preceptor Training at Your Institution? (n=62)	Lack of Curriculum	2 (3.2%)
	Lack of Incentives or Rewards for Preceptors	25 (40.3%)
	Lack of Support from the Hospital Administration	12 (19.4%)

	Staff Shortage	23 (37.1%)
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### Findings Related to Research Question Four

The fourth question asked, “What methods are used to select preceptors for RT departments?” Table 5 shows the statistical data for items related to this question. One survey item asked if the respiratory therapists who act as clinical preceptors are assigned or volunteers. The majority of respondents (64.8%) pointed out that preceptors have been assigned to preceptorship tasks, and 35.2% indicated that preceptors volunteer to precept students. Another item stated that “respiratory therapists are selected to act as preceptors depending on their” and respondents could select all that apply from six provided choices. The choices were “behaviors, level of education, years of experience, performance evaluation, attendance records, and competent and confident”. Years of experience received the highest response rate (71.8%), while the attendance records received the lowest (35.2%).

Table 5: The methods of selecting clinical preceptors.

Survey items		Result N (%)
<b>Are respiratory therapists who acts as a clinical preceptor</b>	Assigned	46 (64.8%)
	Volunteer	25 (35.2%)
<b>Respiratory therapists are selected to act as preceptors depending on their</b>	Behaviors	42 (59.2%)
	Level of education	32 (45.1%)
	Years of experience	51 (71.8%)
	Performance evaluation	33 (46.5%)

	Attendance records	25 (35.2%)
	Competent and confident	40 (56.3%)

**Summary**

This chapter summarized the findings from the data collected to assist in answering the research questions. In short, most RT managers, clinical instructors, and therapists believe there is a need for a standardized preceptor-training program with a positive perception towards the importance of this type of training program (mean score of 4.4). Moreover, few respondents (21.1%) received preceptor training prior to precepting their students, and most of the preceptors (64.8%) were assigned to preceptorship duties.

## **CHAPTER V**

### **DISCUSSION**

This chapter objects to discuss the results presented in chapter IV. The chapter will divide into six main sections: an overview of the study, discussion of findings, the implication for research, study limitations, recommendations for future research, and conclusion.

#### **Overview of the Study**

This study aimed to evaluate the availability and the needs for standardized preceptor training programs among respiratory therapy (RT) departments in Riyadh city, Saudi Arabia. The following research questions guided the study:

- 1- Is a standardized preceptor training program in RT departments necessary?
- 2- What is the prevalence of clinical instructors among RT students? And what are their roles?
- 3- What is the prevalence of preceptor training programs among RT departments?
- 4- What methods are used to select preceptors for RT departments?

#### **Discussion**

The results of demographic data showed that some clinical preceptors hold diploma degrees (n=4; 5.6%). Years of experience were considered one of the criteria to select RT staff to act as a clinical preceptor, which gives us a potential explanation to find who hold diploma degrees to serve as a clinical preceptor.

The first research question asked, “Is a standardized preceptor training program in RT departments necessary?” According to the data acquired from the findings chapter, most respondents (87.3%) believed it is necessary to standardize a preceptor training program among their departments. The majority (56.5%) rate the importance of this type of program is very important. Our findings indicated that a standardized preceptor-training program among the RT departments is highly needed.

The results were consistent with what Ray and Boone founded in their study that was conducted to assess the value of preceptor training programs in respiratory care (Rye & Boone, 2009). In other health care professions, the importance of clinical education is recognized. Therefore, in 1997, American Physical Therapy Association (APTA) established the Credentialed Clinical Instructor Program (CCIP) to prepare the clinical preceptors for their educational duties (Greenfield et al., 2014).

The second research question asked, “What is the prevalence of clinical instructors among RT students? And what are their roles?” Based on the statistical analysis of the ratio of the clinical instructors to the students, the findings showed a considerable variation while (30%) of respondents choose one instructor per all students, (29.6%) selected one instructor to one student, and (16.9 %) selected one instructor per two students. The variation in the result may show a misunderstanding of this question. However, because of an insufficient number of clinical instructors, some respiratory care program directors stated that unpaid therapists supervised the students in the clinical environment (Rye & Boone, 2009). Additionally, in nursing education, preceptorship is better than the traditional way, which is one clinical instructor assigned to a group of 6-8 students (Udlis, 2008).

Moreover, according to the statistical analysis of the survey question “what are the main responsibilities of clinical instructors within the respiratory therapy department?” participants had the ability to choose more than one choice, and they selected direct managing and evaluating students as the most important duty of clinical instructors (77.5%). Then, directly guiding and observing students got (66.2%), providing educational courses for staff (53.5%), preparing clinical preceptors (36.6%), and participate as a member of the development team (35.2%).

The findings showed us the vital roles of clinical instructors in supervising, guiding, and observing students' educational processes. Additionally, they have an essential part in staff and department development. Most respiratory therapy members did not receive preceptor training before receiving the students, which provides a potential explanation for the results.

The third question asked, “What is the prevalence of preceptor training programs among RT departments?” Based on statistical analysis, the findings showed that only (n=15; 21.1%) out of 71 respondents received preceptor training prior to receiving the students. This finding indicated that most RT departments in Riyadh city do not employ preceptor-training programs for their therapists who act as clinical preceptors.

Furthermore, (n=7; 46.7%) received their training via lecture, and (n=6;40%) indicated that the training was a workshop. The length of the training was 12 hours for (n=6; 40%), 4 hours for (n=4; 26.7%), and 6-8 hours for (n=5; 33.3%). The majority (n=13; 86.7%) received their training from educators within RT departments in their hospitals. All of the therapists who received preceptor training believe that the training programs were designed to meet clinical preceptors' specific needs. Ray and Boone (2009) reported that the clinical instructor within the



department provided 60% of preceptor training in the range between 1 hour to 8 hours, and the workshop was the most effective way to deliver the training.

According to the respondents' selection, the most impotent barrier to conducting a successful preceptor training program was the lack of incentives or rewards for preceptors (40.3%), followed by staff shortage (37.1%). This is in line with the results of Ray and Boone, who reported the staff shortage and lack of incentives for preceptors as a part of top barriers to a successful preceptor training program.

The fourth question asked, “What methods are used to select preceptors for RT departments?” The survey was asked if the preceptors were assigned or volunteer. More than half of respondents (64.8%) pointed out that respiratory therapists who act as clinical preceptors have been assigned preceptorship duties, while the remaining (35.2%) were volunteers.

Regarding the most important elements to choose respiratory therapists for preceptor duties, the respondents had five choices, and they were able to pick up more than one choice. The majority (71.8%) believe that years of experience is the most important element, followed by behaviors (59.2%) and competence and confidence (56.3%). One study indicated that most RT administrators believe the professional competence of clinical preceptors is the most important behavioral characteristic (Aldhahir et al., 2020).

### **Implication for Research**

The results of this study give a clear insight into the low prevalence of preceptor-training programs in RT departments in Riyadh, Saudi Arabia. The study also adds to the existing literature on preceptor training in clinical education by evaluating the views of respiratory

therapy managers, clinical instructors, and therapists on the need for preceptor-training programs in respiratory therapy to be standardized. The findings of this study might be used to create a preceptor-training program for respiratory therapy staff. Furthermore, this study may raise awareness of the need for standardized training programs in the clinical field across RT departments in Saudi Arabia. The findings of this study will contribute to future practice-based research on preceptorship programs.

### **Study Limitations**

This study had several factors limitations. First, the small sample size (n=71) compared to the large population of RTs in Riyadh city, Saudi Arabia. Second, this study was conducted in five hospitals in one city only in Saudi Arabia. Third, there was a misunderstanding for one question, which was about the ratio of clinical instructors to the RT students, in the survey, which may affect the results related to this question. The findings cannot be generalized due to these limiting factors.

### **Recommendation for Future Study**

Further research is highly recommended due to the lack of research on the preceptor-training program among RT in Saudi Arabia. This study opens the window for further studies involving a standardized preceptorship program and students' perceptions toward the preceptorship model to improve the quality of clinical education. Replicating the study by including a larger sample size from around the whole country is highly recommended.

## **Conclusion**

To our knowledge, this study is the first study to evaluate the needs and importance of standardized preceptor-training programs across RT departments in Saudi Arabia. More studies are recommended to support what we found. The results of the study support the demand for a standardized preceptor-training program for respiratory therapy members. A few respiratory therapy staff received a preceptor-training program prior to receiving students, and all of them believe that this training met their specific demand in clinical education.

## Appendix A: Permission to Use the Survey



Ahmed AlJoni

Tue 8/10/2021 5:06 PM

To: ryekathyj@uams.edu <RyeKathyJ@uams.edu>



Dear Dr. Rye,

Greetings.

I am Ahmed Aljoni. I am currently a master's degree student in Respiratory Therapy at Georgia State University. I am working on a thesis titled "The Importance and Need for a Standardized Preceptor Training Program in Respiratory Therapy Departments in Saudi Arabia." under the supervision of Dr. Chip Zimmerman. Therefore, I would kindly ask to get your permission to use the survey instrument you developed in your study titled "Respiratory Care Clinical Education: A Needs Assessment for Preceptor Training" to conduct my study.

Your cooperation is highly appreciated.

Best,  
Ahmed Aljoni



Rye, Kathy J <RyeKathyJ@uams.edu>

Wed 8/11/2021 4:12 AM

To: Ahmed AlJoni



Ahmed, I give permission for use of the survey instrument. I am excited to hear about your interest in a topic that has been a passion of mine for many years. Best of luck with your research. Kathy Rye

Sent from my iPhone

## Appendix B: The survey

### **Part 1: Demographic**

1. **What is your gender:**
  - a. Male
  - b. Female
2. **In which hospital are you working?**
3. **What is your level of education?**
  - a. Diploma/Certificate
  - b. Bachelor's Degree
  - c. Master's Degree
  - d. Doctoral Degree (PhD, EdD, etc.)
4. **Describe your position within the respiratory therapy department:**
  - a. Manager/Director
  - b. Clinical instructor
  - c. Supervisor
  - d. Staff
5. **How many years of experience do you have working as a respiratory therapist?**
6. **Who directly supervises the clinical instruction of respiratory therapy students in your institution? (Please chose all that apply)**
  - a. Clinical instructors of respiratory therapy department
  - b. Respiratory therapists as preceptors
  - c. Clinical Instructors from College
  - d. Other \_\_\_\_\_
7. **Are respiratory therapists who acts as a clinical preceptor:**
  - a. Volunteers
  - b. Assigned
8. **Respiratory therapists are selected to act as preceptors depending on their (Please chose all that apply):**
  - a. Behaviours
  - b. Level of education
  - c. Years of experience
  - d. Performance evaluation
  - e. Attendance records

- f. Competent and confident
9. **What is the ratio of clinical instructors to respiratory therapy students at your hospital?**  
1 clinical instructor: \_\_\_ students
10. **What are the main responsibilities of clinical instructors within the respiratory therapy department (Please chose all that apply)?**
- a. Direct managing and evaluating students
  - b. Directly guides and observes students
  - c. Preparing clinical preceptors
  - d. Participates as a member of the development team
  - e. Provide educational courses for staff
11. **Please select the clinical sites utilized by your program (Please chose all that apply):**
- a. Critical care (ICU, ER)
  - b. General care
  - c. Outpatient (Pulmonary function testing, home care, ...)

**Part 2: Preceptor-Training Needs**

1. **Do clinical instructors/preceptors receive any type of training prior to receiving students?**
- a. Yes
  - b. No. Please go to Question 4.

If yes, please describe the type of training that they receive

- i. Online
- ii. Workshop
- iii. Lecture
- iv. Other

If yes, please describe the length of training that they receive \_\_\_\_\_(Hours)

2. **Who delivers that training?**
- a. Educator from the college or institution that trains the students.
  - b. Educator within the Respiratory Therapy Department at the hospital.

c. Other \_\_\_\_\_

3. **Is the training designed to meet the specific needs of respiratory care clinical preceptors?**

- a. Yes
- b. No

4. **I believe there is a need for a standardized preceptor-training program available for use by respiratory therapy education programs:**

- a. Yes
- b. No. If no, thank you for completing this survey. You may submit your survey now.

5. **Please rate the importance of having a preceptor-training program available for use by your education program:**

Not at all important	Slightly important	Neutral	important	Very important

6. **Please rate the following content areas' importance in preceptor training and development:**

1-Not important. 2-Slightly important. 3-Neutral. 4-Important. 5-Very important.

	1	2	3	4	5
a. Roles and responsibilities					
b. Characteristics of the adult learner					
c. Student needs in the clinical environment					
d. Establishing inter-rater reliability					
e. Providing effective feedback					
f. Selecting a teaching strategy					

g. Dealing with the difficult student					
h. Communication skills					
i. Evaluation of student clinical performance					

7. **What is the most important barrier to conducting successful preceptor training at your institution?**

- a. Lack of support from the hospital administration
- b. Lack of incentives or rewards for preceptors
- c. Lack of curriculum
- d. Staff shortage

8. **Please rate the effectiveness of each of the following methods of delivery to achieve the training needs of clinical preceptors in your program.**

**1-Not effective. 2-Slightly effective. 3-Neutral. 4-Effective. 5-Very effective.**

	1	2	3	4	5
a. Classroom					
b. Video					
c. Online					
d. Workshops					
e. Computer-based training					
f. Web conferencing					

9. **I believe department managers in my area would support preceptor training:**

Strongly disagree	disagree	Neutral	agree	Strongly agree



**10. In which of the following ways would the department managers in your clinical affiliates support preceptor training and development? Check all that apply.**

- a. Paid time off to attend a workshop
- b. Payment of registration fees
- c. Use of institutional technology to complete a course
- d. Other \_\_\_\_\_

**11. I believe most department managers in my area would agree to the length of a preceptor-training program at:**

- a. 1/2 day (4 hours)
- b. 1 day (8 hours)
- c. 2 days (16 hours)

**12. I believe preceptors would desire continuing education credit for this activity:**

Strongly disagree	disagree	Neutral	agree	Strongly agree

**13. I believe the preceptor-training program should ultimately lead to certification for the clinical preceptor:**

Strongly disagree	disagree	Neutral	agree	Strongly agree

**14. Do practitioners who act as clinical preceptors in your area receive any type of reward from their employer (i.e., career ladder opportunities, additional pay, CMEs, etc.)?**

- a. Yes
- b. No

## Appendix C: IRB Approval



### INSTITUTIONAL REVIEW BOARD

Mail: P.O. Box 3999  
Atlanta, Georgia 30302-3999  
Phone: 404/413-3500

In Person: 3rd Floor  
58 Edgewood  
FWA: 00000129

September 08, 2021

Principal Investigator: Ralph Zimmerman

Key Personnel: AlJoni, Ahmed Y; Zimmerman, Ralph

Study Department: Georgia State University, Respiratory Therapy

Study Title: The Importance and Needs for a Standardized Preceptor Training Program in Respiratory Therapy Departments in Riyadh City, Saudi Arabia\

Submission Type: Exempt Protocol Category 2

IRB Number: H22124

Reference Number: 366859

Determination Date: 09/02/2021

Status Check Due By: 09/01/2024

The above-referenced study has been determined by the Institutional Review Board (IRB) to be exempt from federal regulations as defined in 45 CFR 46 and has evaluated for the following:

1. Determination that it falls within one or more of the eight exempt categories allowed by the institution; and
2. Determination that the research meets the organization's ethical standards

If there is a change to your study, you should notify the IRB through an Amendment Application before the change is implemented. The IRB will determine whether your research continues to qualify for exemption or if a new submission of an expedited or full board application is required.

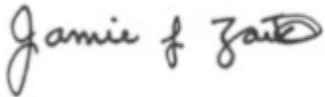
A Status Check must be submitted three years from the determination date indicated above. When the study is complete, a Study Closure Form must be submitted to the IRB.

This determination applies only to research activities engaged in by the personnel listed on this document.

It is the Principal Investigator's responsibility to ensure that the IRB's requirements as detailed in the Institutional Review Board Policies and Procedures For Faculty, Staff, and Student Researchers (available at [gsu.edu/irb](http://gsu.edu/irb)) are observed, and to ensure that relevant laws and regulations of any jurisdiction where the research takes place are observed in its conduct.

Any unanticipated problems resulting from this study must be reported immediately to the University Institutional Review Board. For more information, please visit our website at [www.gsu.edu/irb](http://www.gsu.edu/irb).

Sincerely,

A handwritten signature in black ink that reads "Jamie f Zaikov". The signature is written in a cursive style with a loop at the end of the last name.

Jamie Zaikov, IRB Member

## Appendix D: Informed Consent and Invitation Letter

Georgia State University

Title: The Importance and Needs for a Standardized Preceptor Training Program in Respiratory Therapy Departments in Riyadh City, Saudi Arabia

Principal Investigator: Ralph "Chip" Zimmerman, PhD, RRT-NPS

Student Principal Investigator: Ahmed Aljoni, BSRT.

Dear Respiratory Therapist:

You have been invited to participate in a study. It is entirely up to you whether or not to engage in the research. The research will look at Respiratory Therapy managers, clinical instructors, and staff perceptions about the importance of standardized preceptor training programs among Respiratory Therapy Departments in Riyadh city, Saudi Arabia. Your participation in the study will take approximately 15 minutes.

Ahmed Aljoni is a master's student at Georgia State University. He is supervised by Dr. Ralph "Chip" Zimmerman, Clinical Associate Professor, Director of Clinical Education, and Coordinator of Interprofessional Education in the Department of Respiratory Therapy.

Participation in this study is completely voluntary, and you may withdraw at any time. You will not be punished for submitting a blank survey. If you accept to participate in this research, you will be asked to complete the following survey. All responses are kept strictly confidential.

Respondents will remain anonymous, regardless of their names, codes, or IP addresses. Your information will be used solely for research purposes. All surveys will be deleted once data has been gathered.

Purpose:

The study aims to examine the prevalence of preceptor training programs, their importance in Respiratory Therapy Departments of selected hospitals in Riyadh city, Saudi Arabia, and the methods of selecting clinical preceptors. Additionally, the study will examine the prevalence of clinical instructors and their roles.

Procedures:

If you want to participate, you will be prompted to click the link and tick the agree button. Following that, you will be prompted to complete the questionnaire. The survey consists of two sections.

- There will be a total of 25 questions asked.
- Each question has choices.
- For each question, please select/check the most appropriate choice.
- It will take approximately 15 minutes to complete this survey.
- Your response will be totally confidential and anonymous and will be used for research purposes.

Risks:

You will not face any additional risks throughout this research than you would on a typical day. Although no harm is anticipated from this study, please notify the research team immediately if you feel you have been harmed.

Voluntary Participation and Withdrawal:

You are not required to participate in this study. If you want to participate in research but later change your mind, you have the freedom to withdraw at any time. You may skip questions or withdraw from the survey at any time. The participants' rights are protected and secured in perpetuity.

Contact Information:

Please get in touch with Dr. Ralph "Chip" Zimmerman at [chip@gsu.edu](mailto:chip@gsu.edu) or 404-413-1267 in case any of the following occur:

- If you have questions about the study or your part in it.
- If you have questions, concerns, or complaints about the study.

At Georgia State University, the IRB reviews all research involving human subjects. You may contact the IRB if you wish to talk with someone not directly participating in the study. You may contact the IRB with any concerns, questions, concerns, information, or feedback on your rights as a study participant. Contact the IRB at 404-413-3500 or [irb@gsu.edu](mailto:irb@gsu.edu).

Consent:

Your completion and submission of the survey imply that you agree to participate in this research. Please note that you may withdraw at any time by not completing or by clicking the disagree button.

Thank you in advance for your cooperation

Sincerely,

Ralph "Chip" Zimmerman, PhD, RRT-NPS

Ahmed Aljoni, BSRT

Please note: If you agree to participate in this research, please continue with the survey. You can print a copy of the form for your records.

- I Agree
- I Disagree

## References

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