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Effects of Differing Education Levels on Respiratory Therapy Hiring Decisions in Pennsylvania

Ronald Curtis Aumiller
Walden University

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Walden University

College of Social and Behavioral Sciences

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Ronald Curtis Aumiller

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Review Committee

Dr. Michael Knight, Committee Chairperson,
Public Policy and Administration Faculty

Dr. Kristin Dailey, Committee Member,
Public Policy and Administration Faculty

Dr. Steven Matarelli, University Reviewer,
Public Policy and Administration Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2021

Abstract

Effects of Differing Education Levels on Respiratory Therapy

Hiring Decisions in Pennsylvania

by

Ronald Curtis Aumiller

MBA, University of St. Francis, 2009

MSHA, University of St. Francis, 2006

BS, University of St. Francis, 2002

AA, Harrisburg Area Community College, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

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Abstract

Many healthcare professions struggle with knowing what the entry-level educational requirement should be for their profession. This study looked at the educational level of hiring managers for respiratory therapy and whether that affected their decisions on hiring associate or baccalaureate degree graduates in the state of Pennsylvania. The quantitative internet-based questionnaire surveyed respiratory therapy hiring managers in hospitals in Pennsylvania. The power theory, with the use of expert power, organizational culture and change, and ethnographic principle, was used to examine how hiring managers choose their employees. An invitation was sent to 70 respiratory hiring managers in Pennsylvania to participate on the internet-based survey. The results showed a statistically significant finding using a Chi-Square analysis that the hiring managers in Pennsylvania prefer to hire associate degree graduates compared to baccalaureate degree graduates [$X^2(2, N = 58) = 7.52, p = .023$]. There were also statistically significant findings using a Spearman's correlation, that associate degree graduates and baccalaureate degree graduates possess all 69 competencies as outlined by the AARC 2015 and Beyond initiative [$r_s(57) = 1, p = <.001$]. The last piece of statistically significant finding was that the Covid-19 pandemic did not change the minds of hiring managers on the entry-level of the profession [$X^2(1, N = 58) = 7.66, p = .006$]. The implications for positive social change are that the current entry-level practice is meeting the needs of employers in Pennsylvania and allows for less barriers to diverse individuals that are seeking to gain a college education and a career in healthcare.

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Dedication

This dissertation is dedicated to my loving family and friends who pushed me, lifted me up, and drug me along during this process. Without their love and dedication, I would not have been able to get through this process. I especially want to thank my husband, Joseph Winterhalter II, for his encouragement and help along the way. My dedication extends to my colleagues in the field of respiratory therapy. I have learned so much from all of you over the years, and this research will hopefully help us all. Lastly, I would like to give a special dedication to my committee chair, Dr. Michael Knight. His strong encouragement, shoulder to lean on, and his enthusiasm is the only reason that I was able to make it to the end. I will be forever grateful!

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Chapter 1: Introduction to the Study

My study explored the issues around hiring practices of respiratory therapy managers in relation to their education level versus the education level of the new graduate. The profession of respiratory therapy does not currently have data to determine if there are any advantages to having a higher degree or if employers are preferring the higher degree for their new employees. Another issue outside the scope of my study is the terminology of baccalaureate degree. As a respiratory therapist myself, I am aware that the meaning behind the terminology in the profession is a Bachelor of Science in respiratory therapy; however, by saying that a baccalaureate degree is required without specification, it is unclear whether any baccalaureate degree would fulfill the requirement.

The determination that a baccalaureate degree will result in the respiratory therapist being viewed as a professional, be included in the Medicare law, and provide better patient outcomes lacks research. This chapter introduces a background to my research problem, purpose, research question and associated hypothesis. I also discuss the overall methodology of my study, define important terms, research limitations, overall study significance, and the impact on social change.

Background

Respiratory therapy is a relatively young healthcare profession. In the beginning, the individuals were known as inhalation technicians or oxygen technicians, and it was the start of individuals being charged with assisting physicians in the care of patients with breathing problems. The profession was officially established just over 60 years ago and

has continued to grow and evolve (Hess et al., 2016). In the early 1940s, most oxygen technicians were trained on the job; however, some short training programs began to appear in the late 1940s and 1950s (Kacmarek et al., 2009). In 1946, the Inhalational Therapy Association was founded at the University of Chicago Hospital (Hess et al., 2016). The introduction of this association brought along with it a need for direction of the internal workings of the organization, an educational system, and a means for awarding a credential. The organization began to hold lectures and workshops regarding inhalation therapy, and the first sign of credentialing was the awarding of certificates to individuals who attended 16 of the workshops.

In 1954 the membership had grown and covered 14 states. The organization once again changed its name to the American Association of Inhalation Therapists (AAIT). The AAIT was charged with not only being the national organization for inhalation therapists, but to provide standards for formal education and a more formalized credentialing system. In 1960, the credentialing portion was formalized into the American Registry of Inhalation Therapists or the ARIT. The first credentialing examination was taken by the candidates. The credentialing exam consisted of a written exam and two oral exams. The standards of the exams were rigorous, for a reason, as the inhalation therapist was responsible for a patient's life.

As time has moved forward, the profession of respiratory therapy has grown and expanded. The AAIT is now the American Association for Respiratory Care known as the AARC and the ARIT is now the National Board for Respiratory Care known as the NBRC (Hess et al., 2016). The task of setting educational standards for the profession is

now with the Commission on Accreditation for Respiratory Care (CoARC). Prior to 2002, a respiratory therapist could be an on-the-job trainee with no formal education (CoARC, n.d.). Many colleges that did offer formal education were only required to offer a certificate of completion after 1 year of education. The educational requirement was increased to a minimum associate degree in 2002, and the minimal educational level for entry into the profession was increased from certified respiratory therapist (CRT) to registered respiratory therapist (RRT) in 2010 (CoARC, n.d.).

Respiratory therapists are expected to be the experts when it comes to breathing. Nothing can be more important yet so complicated. When a person cannot breathe for themselves, they are placed on mechanical ventilators (Kacmarek, 2013). The ventilators of today can have multiple unique modes for ventilating a patient, and those modes should be based upon the unique needs of each patient (Kacmarek, 2013). Every respiratory therapist should be able to monitor and assess a patient that is on mechanical ventilation and be consulted for changes to be made to improve that patient. Kacmarek (2013) said, “not all programs provide education ... to ensure competency. The time available in the typical associate degree program is simply insufficient to ensure that all graduates have obtained these competencies” (p. 1091). However, Kacmarek did not support his statement with any data, nor did he define the competence level. Managing mechanical ventilation is a key component to the CRT and RRT credential examination. Simply passing a paper examination does not mean that a person is mechanically or intuitively prepared for the dynamic situations of managing ventilators in a critical care setting.

In the United States, as of December 31, 2020, there were 416 entry-level respiratory therapist programs within the United States. Of these programs, 17% ($n = 71$) offer a baccalaureate degree and 1% ($n = 5$) offer a master's degree. The remaining 82% ($n = 345$) of programs offer an associate degree (CoARC, 2021, p. 6.). Increasing the entry-level degree requirements could have repercussions in many areas where these advanced degree programs do not already exist. These impacts could be on patient care as well as availability of education to at risk communities. It may be considered unrealistic for employers to expect new graduates to possess all 69 competencies outlined by the *2015 and Beyond* committee. There are also issues concerning the definition of competence. New graduates that pass the credentialing exam are said to have minimal competence as a respiratory therapist (CoARC, n.d.). Minimal competence and overall competence may have different definitions to different individuals. My research focused on the examination of what the employers are doing within their hiring practices and allows information to be available so that a more informed decision can be made regarding the advancement of entry-level education requirement for the profession.

Problem Statement

As the field of medicine advances, the education and training of healthcare professionals to care for these patients must also advance. In 2003, the AARC issued a white paper regarding the development of baccalaureate and graduate programs in respiratory therapy (AARC, 2003). In 2007 as a follow up to this paper, the AARC commissioned a taskforce to examine the future of the respiratory therapy profession, what the future respiratory therapist might look like, and what skills would they need to

perform their jobs (Kacmarek et al., 2009). This task force was termed the 2015 and Beyond Conferences (Hess et al., 2016.). The summary of these meetings by the task force was that the respiratory therapist of the future would have a much more diverse role in the care of patients with pulmonary disorders and that the skills necessary to perform these roles could not be completed in an associate degree format due to the restrictions on credits at those types of institutions. The recommendation was made in 2010 that the profession should increase the entry-level education for respiratory therapists to a baccalaureate degree by the year 2015 (Barnes, Kacmarek, Kageler et. al., 2011).

Respiratory therapy is not the only profession that is hoping to increase their entry-level educational requirements. Nursing has been struggling with this situation for many years starting with the diploma nursing versus the associate degree nurse (ADN) versus baccalaureate degree nurse (BSN). Physician assistants (PA) are required to have a master's degree for entry into the profession, physical therapy and pharmacists are moving towards clinical doctorate programs for entry into the profession (Frank et. al., 2018). The concern is, after much debate, if there is added value or outcome to requiring a more advanced degree for entry into a respiratory therapy career. Healthcare is a competency based educational system. The degree advancement for healthcare professions is advocating that since a baccalaureate degree takes 4 years to complete there is more time to educate and competency individuals than in a 2-year associate degree (Frank et. al., 2018). These reasons are why it is believed that the baccalaureate should be the degree required for entry into the respiratory therapy profession (Frank et al., 2018).

There are issues regarding the definition of competence, entry-level skills, advanced level skills, and continuing education such as the clinical ladder system. There was no data available to inform whether the advancement of degree for respiratory was the best choice for the profession. There was also concern that increasing the educational requirements could have an impact on educational access for at-risk populations such as minorities and those individuals in lower socio-economic situations that may be unable to afford education at a baccalaureate school.

Purpose of the Study

The primary purpose of my quantitative study was to explore the extent and purpose to which hiring managers for respiratory therapists in Pennsylvania are looking for baccalaureate degree or associate degree new graduates. This study was originally slated to be conducted across the United States and the District of Columbia. The Covid-19 pandemic made access to these hiring managers quite difficult, so the breadth of the study was minimized to one state, Pennsylvania. It is the hope that this research can be continued on a national basis once the pandemic has abated. I focused the study on determining whether there was a difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels, and respiratory therapy applicant hiring decisions. Many respiratory therapy departments work on the principle of dividing the workload equitably so that all the tasks that are required to be completed are distributed among the workforce for the shift (Chatburn et.al., 2011.). This difference is significant if the belief of the baccalaureate respiratory therapist is to have

more time with patients to educate and care for the entire patient instead of just performing a task.

With the emergence of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) leading to the disease of coronavirus (Covid-19), the healthcare industry was besieged by patients needing respiratory care. This care was being given by respiratory therapists across the United States. Many hospitals were asking for more respiratory therapists and requesting senior level respiratory students from local colleges and universities to help with treating patients. Since there is no literature surrounding this type of situation, my study also examined if Pennsylvania hiring manager attitudes changed or if they were willing to adjust rules in times of emergency.

Research Question and Hypotheses

My quantitative study attempted to answer the research through analysis of the associated hypotheses presented in null (0) and alternative (1) forms:

RQ1: Is there a difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions?

H₀1: There is no significant difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions.

H₁1: There is a significant difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions.

Theoretical Foundation

I used the power theory with the use of expert power as well as the theory of organizational change and culture. The power theory with the use of expert power, as discussed by French and Raven in 1959 (Raven, 1993), was applicable since the individuals charged with the investigation for the 2015 and Beyond initiative were baccalaureate individuals who are also viewed as experts in the field of respiratory therapy. There appeared to be a power struggle within the profession that spilled over into the research being conducted. Power is a “structural phenomenon, a consequence of the division of labor and specialization” (Shafritz et al., 2014, p. 247). PAs and nurses do many of the tasks that a respiratory therapist is trained to perform (Keene et al., 2015). The hope is that the increase of entry-level education for the respiratory therapist will bring legitimacy to the profession and allow for power to be balanced between respiratory therapy and other professions in the game of healthcare. The second theory of organizational culture and change are applicable within the profession of respiratory therapy itself. Organizational culture and change were defined by the functional theorist Schein (1988) as

A pattern of basic assumptions, invented, discovered, or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore is to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (p. 7).

Hess et al., (2016) discusses that many years ago, the entry-level for the profession did not require formal education. Individuals were trained on-the-job regarding giving medication and running life support machines. In 2005, the entry-level for the profession was increased so that an associate degree was required to be eligible to sit for certification boards (CoARC, n.d.). This change was not seen as a threat to the profession since it increased the availability of applicants to the educational arena of the profession. There has been turmoil in the profession for over 30 years regarding which credential is necessary to perform certain functions as a respiratory therapist, CRT, or the RRT (CoARC, n.d.). This turmoil lends itself to this theoretical framework since the culture “assumes that many organizational behaviors and decisions are not determined by rational analysis” (Shafritz et al., 2014, p. 293).

Nature of the Study

In my study, I surveyed hiring managers of acute-care hospitals in the state of Pennsylvania. I set a delimitation that the hospital had at least one adult intensive care unit (ICU). The approach to my study focused on the hiring managers as a culture since they all share remarkably similar situations and challenges. First, they are all respiratory therapists. Second, they are all responsible for making hiring decisions regarding whom is best qualified to meet the needs of the department within the hospital setting. Examining cultures is best performed using an ethnographic concept method of research (Creswell, 2013). Since cultures share many similarities, using observational studies as well as descriptive studies techniques is in line with the similarity and contrast principles found in thematic analysis.

Definition of Terms

Descriptive studies: Descriptive studies can follow an individual, a group of individuals with similar issues, or a cross sectional review which looks at a specific point in time with no follow-up (see Lane & Kohlenbert, 2010). Using a group of individuals for a cross sectional review (Lane & Kohlenberg, 2010) can allow an extrapolation of data to be used for the whole cohort. Small numbers within the cross-sectional review can lead to doubt regarding bias or effect size being used during the extrapolation (Baur et al., 2017).

Hiring manager: Hiring manager refers to those individuals that are the managers within a respiratory therapist department in a hospital that are conducting interviews and making recommendations to their administrators or human resources departments about hiring individuals.

Observational studies: Observational studies are often used in healthcare research (National Council for Osteopathic Research [NCOR], 2014). One type of observational study that applied is the cohort study. Healthcare workers can be thought of as a population and the individual professions, such as respiratory therapists or nurses, can be thought of as cohorts of that population. These cohorts have something in common like education or experiences. By getting a group of the cohort together for discussion (Barnes, Gale, et al., 2010), a consensus of the group can be obtained when it comes to various thoughts and wishes. Sometimes, the thoughts and wishes of the cohort do not mean that change is accepted by the entire population (Smith, 2009). The unique aspect is that many cohorts can share the same vision and wishes, but some cohorts have an easier

time getting the entire population to buy-in with these wishes (Macci Bires et al., 2012). It is important to note that observational studies are only looking at a specific point in time. Many times, there can be changes occurring and a reevaluation of the same process could result in a different perspective at a different time.

Assumptions, Scope, and Delimitations

The scope of my study was to survey hiring managers in respiratory therapy departments of acute-care hospitals in Pennsylvania regarding their hiring practices and what was their actual need and desire for new graduates entering the field. I had set a delimitation that the hospital had at least one adult ICU. There was the assumption that hospitals with an adult ICU tend to have more positions and more turnover within their department, so the need for therapists is higher in these institutions.

Another assumption in my study was that the individuals answered the questions honestly. While the instructions emphasized the importance of answering questions honestly, there is no way to measure if the answers provided were truthful. There was also the assumption that the hiring manager did not have a bias based solely on the education level of the hiring manager. It may be that some managers have a bias towards individuals that are graduates from the same educational program from which the manager may have graduated.

Limitations

A limitation to my study was that questions were developed for my study using information from the 2015 and Beyond survey of department managers (see Kacmarek, Barnes, et al., 2012; see Appendix A) with incorporation of information derived from the

foundations of my study including ethnographic concepts, theory of organizational change and culture, and power and expert power theory. Another limitation of my study was there could be bias in that I am a graduate of an associate degree respiratory therapist program. I am also the program director of an associate degree respiratory therapist program. I do hold advanced degrees in Business Administration and Healthcare Administration as well as advanced credentials in the field of respiratory therapy.

Significance of the Study

The significance of my study was to show if associate degree education is meeting the needs of the employers in respect to respiratory therapists. Increasing the educational entry-level for the profession may be required to ensure that graduates have the knowledge needed to perform the job adequately and safely upon entry into employment. Since there is a lack of evidence to show the advantages of all respiratory therapists having an advanced degree, this study was conducted to increase the knowledge base to help individuals make decisions on the advancement of the profession.

Social Change Implication

The impact on social change was to examine if the current education level of respiratory therapists is adequate or if it needs to increase. If the associate degree does not prepare the individual for competence as a respiratory therapist, then the educational level needs to be increased. This would impact the communities that have associate degree respiratory therapist programs by impacting accessibility to professional education by at risk populations.

Summary

The profession of respiratory therapy is looking to make a change in the entry-level educational requirements to a baccalaureate degree. There is no research to determine the positives or negatives to this degree movement. By surveying hiring managers in the profession, some data was acquired to determine if the advancement of the degree requirement will meet the needs of the profession.

Chapter 2: Literature Review

Introduction

Presented within this chapter is a review of the current literature related to baccalaureate programs in respiratory therapy, nursing, and other healthcare professions. There is little literature regarding this issue in respiratory therapy while nursing has more literature regarding this issue. Chapter 2 begins with an overview of the history of the respiratory therapy profession, advancing educational requirements, entry into practice in healthcare, respiratory therapist future requirements, patient outcomes, isomorphism, and academic progression. The chapter concludes with a review of the methodology.

Literature Search Strategies

Various literature review strategies were used from August 2014 through July 2020. The published literature reviewed in this chapter primarily spans the past 5 years; however, some older literature was included for history, foundation, and trending purposes. Several online databases, such as EBSCO, OVID, and ProQuest, accessed from University of St. Francis or Walden University, were searched for relevant literature on *degree creep, entry into practice, respiratory education, associate to baccalaureate issues, academic momentum, history of first professional degree, time to degree, nursing degree history, professional, professionalism, reprofessionalism, isomorphism, and academic progression model*. Occasionally, internet searches using Google Scholar were used to locate related articles. In addition, the websites for the AARC and CoARC were searched for current literature on respiratory degrees.

Theoretical Foundation

The literature review for my study revealed many of the theories that are the bases for my study. The use of power theory with expert power, organizational culture and change, and the use of ethnographic concepts. The power theory was developed by Raven (1993) out of the theory of social power as potential influence. The theory is that individuals and/or groups will try to influence others to operate in a manner that is wished by the individuals or groups. Expert power is the assumption that individuals see prominent people in their field and believe that these individuals must know what they are talking about since they are prominent people. What is usually not considered is that power theory and expert power can be positive or negative. While I have explained positive power, the negative power is that the individuals may relate to the power being put upon them and rebel against that power for various reasons (see Raven, 1993).

Organizational culture and change theory are based upon the work of Schein in 1988. Schein (1988) defined culture as “the property of a group” (p. 8). Schein postulated that the concept of culture is easier to apply to groups and organization rather than to entire societies. Schein’s belief was that it would be easier to reconstruct the history of an organization or group rather than a society due to the homogeneity of the smaller groups. The strength of a culture is a function of the stability of the group and can grow or wither depending on the dynamics of the group culture.

The ethnographic concept is based upon the work of anthropologist Malinowski (see Creswell, 2013) from the 1920s. While Malinowski is credited as the founder of this concept, it has undergone much scrutiny and tweaks throughout the decades.

Ethnographic concept has its roots in qualitative research (see Creswell, 2013) but is useful in my study as well as the literature review, to explain how like-minded cultures think and process information. Respiratory therapists, nurses, pharmacists, and many other healthcare professions are grounded in the patient care arena. This gives an overall culture, while the individual profession is a subculture within the larger culture. Each subculture is trying to survive within the culture and working out individual differences within their own subculture. These thoughts of culture, ethnography, and power theory help to lay the foundation for my research and literature review to see why individuals as well as groups want to increase the entry-level into their respective professions.

Research Review

Currently, there were no studies found that show increasing the entry-level for respiratory therapists is beneficial. Previous research by the 2015 and Beyond committee postulated that there may be benefits. Research by other professions also does not conclusively demonstrate benefits with a baccalaureate entry-level. Many studies on the topic have been conducted in the nursing field, but different studies give mixed results on improved outcomes. Nursing has concluded that baccalaureate degree nurses do provide improved patient outcomes but does not require the BSN degree as the entry-level at this time (Blegen, et al., 2013). The following review of literature provides a basis for the use of the chosen theoretical framework as well as why my study will add to the body of knowledge.

History of Respiratory Therapy Profession

The history of the respiratory therapy profession is not as extensive as many other professions. Respiratory therapy is a relatively young profession when compared to the nursing profession. A profession varies distinctly from an occupation usually by the individual having some type of authority and autonomy over those they are serving (Emener & Cottone, 1989). This autonomy gives certain rights and privileges that societal groups would not otherwise grant to a simple occupation (Emener & Cottone, 1989).

The respiratory therapist educational journey has been a dynamic situation since the inception of the profession. Therapists have gone from on-the-job trainees (OJT) to certificate of completion to associate degree as the entry into the profession (Hess et al., 2016). During this time, there have always been baccalaureate degree programs for respiratory therapists, with most of these existing at academic medical centers (AARC Steering Committee of the Coalition for Baccalaureate and Graduate Respiratory Therapy Education, 2003). The AARC started addressing these concerns in 1995 by looking at the other healthcare professions and how they were dealing with the issue of advancing degrees and responsibilities (see AARC, 2003). Since healthcare is an interdisciplinary teamwork approach, educational differences among the team can be important. Most other professions have raised their entry-level to at least a baccalaureate degree, while others such as physical therapists and pharmacists are moving toward a masters or doctoral degree for entry into their profession (Keene et al., 2015). This can lead to the perception that the associate degree respiratory therapist is not as well rounded or

knowledgeable as those with a higher degree. It is also worth noting that federal government agencies, insurance providers, and military services (U.S. Public Health Service, 2018), all use the baccalaureate degree as the determining factor when defining a professional with the exception to this being the registered nurse since many are ADN nurses (AARC 2003).

A 2010 study issued by the NBRC examined educational program types and their effect on RRT candidate outcomes (Shaw & Traynor, 2010). Investigators examined the outcomes of individuals in 2008 that attempted the CRT, Written Registered Respiratory Therapist exam (WRRT), and the Clinical Simulation Exam (CSE) required to obtain the RRT credential in contrast to their degree earned (associate versus baccalaureate). Investigators then proceeded to examine those individuals who passed all three examinations on their first attempt. The results show that there is a statistically significant, but small improvement in the individual examination results based on the level of education. The CRT outcomes examined 6,489 candidates with an $r = 0.056$ and $p = 1$. The WRRT outcomes examined 5,927 candidates with an $r = 0.033$ and $p = 1$. The CSE outcomes examined 5,463 candidates with an $r = 0.045$ and $p = 1$ (Shaw & Traynor, 2010). The final variable was passing all three examinations on the first attempt. This outcome examined 2,813 candidates and showed no statistically significant difference based upon educational level. The authors cautioned that effect size needs to be considered in this study when looking at the independent events but summarize that there is no difference attributed to education level when it comes to the overall achievement of the RRT credential on first attempt (Shaw & Traynor, 2010).

Advancing Educational Requirements

The educational requirements for respiratory therapy have advanced since the introduction of the profession. As with all other healthcare professions, the amount of education required is in direct relation to the advancing knowledge and technology of the field of medicine. A search of the internet revealed that there are many terms for this advancement including academic momentum, degree creep, first professional degree, and entry-level. The requirements of the field must also be balanced with the education degree beyond high school and what is perceived as the expected level of knowledge at a given degree (Jankowski et al., 2013). The need for standardization of these core competencies is addressed in the degree qualifications profile (DQP) enacted by the National Institute for Learning Outcomes Assessment. The DQP laid the foundation for what students should know at the level of degree they are seeking. This is independent of other benchmark standards that are used such as employment rates and graduate testing scores (Jankowski et al., 2013.)

The use of these general academic standards as well as standards that are imposed by a profession led to many credits and work for students. This extra workload can lead to students not completing their degree or key components not being covered thoroughly in the curriculum, which can lead to lack of knowledge. Attewell et al. (2012) found that if a student starts their academic career taking a normal credit load, they are more likely to graduate and complete that program of study than those individuals who took a lighter load in the beginning or delayed starting college by more than a year after high school. The concern in this study is that the total number of credits for the degree were not a

variable. If an undergraduate degree is normally 120 credits that are completed in 4 academic years, that is 15 credits per semester. In some states, the number of credits for an associate degree are more than 60 credits and can range in the 64-74 credit range (HACC Respiratory Requirements, 2020).

In 2014, the Coalition for Baccalaureate and Graduate Respiratory Therapy Education (CoBGRTE) recommended in their white paper on accreditation that the educational requirements for a baccalaureate respiratory therapist program should consist of 60 semester credits of general education work and 60 credits in respiratory therapy or closely related field (i.e., research; CoBGRTE, 2014, p. 8). This is the first time that there has been mention of the number of credits recommended for a baccalaureate degree in respiratory therapy. Many individuals within the CoBGRTE debate stated that the baccalaureate degree allows more teaching for respiratory therapy, however this cannot be quantified. It is possible that the degree being offered is not in respiratory therapy but in a related field, in which case the amount of respiratory therapy being taught is the same in the baccalaureate and associate programs.

Advancing educational requirements has led to discussion on the possibility of a decrease in the diversity of individuals graduating from respiratory therapy programs (Kacmarek, Barnes et al., 2012). An AARC Human Resources Survey of 3,139 respiratory therapists showed that there was no statistically significant difference in the diversity makeup of individuals graduating from an associate degree program versus a baccalaureate program (Becker & Nguyen, 2014). It was noted that socioeconomic status and not race are driving factors for completing a baccalaureate degree. Study results also

showed that more graduates from baccalaureate programs earned credentials through the NBRC and had leadership and educator titles than their associate degree counterparts. One item of note in this study was that there was no statistical difference in the wages of respiratory therapists based on their educational degree earned at entry-level. A limitation of Becker and Nguyen's (2014) study was that the survey was sent to 112,700 respiratory therapists in the United States at the time of the survey, with only 3,139 respondents. This represents only 2.8% of the total population. There were greater response numbers from individuals that identified as AARC members, educators, and hospital directors, so this may have biased the results. The article does not specifically state how each survey was disseminated to each participant (Becker & Nguyen, 2014).

While there is great debate in the respiratory profession about associate versus baccalaureate, there is also discussion about graduate degrees. The current focus for graduate education of respiratory therapists has been in the arena of education and hospital administration. As the future respiratory therapist will be required to manage patients and provide care in alternate settings such as subacute facilities and long-term care facilities, it would stand to reason that the idea of respiratory therapy practitioners (RTPs) would surface. These practitioners would have similar authority and privileges as nurse practitioners or physician assistants (Douce et. al., 2014). This advanced level could be either an entry-level or an advanced option for those seeking to work in respiratory therapy. The profession loses individuals to doctor of nursing practice (DNP) or PA schools as many therapists want to be more involved in the care of their patients (Keene et al., 2015). At the time, this option of an RTP did not exist in the respiratory

world, but this option would allow these individuals to remain in the profession. This does however bring up a debate within the field regarding raising the upper level without raising the lower level from associate to baccalaureate degree.

Currently, the nursing profession has a variety of advanced practice degree track programs. These nurses are commonly referred to as nurse practitioners or advanced practice nurses and can provide care like physicians including prescribing medications and doing various procedures with greater degree of autonomy than non-advanced practice RNs. Depending on the legislation within the state that the advanced practitioner registered nurse (APRN) works, they may be required to work under the supervision and license of a physician. The current educational requirement for the APRN is, at least, a master of science in nursing (MSN). The American Association of Colleges of Nursing recommended that the entry-level for an APRN be advanced to a DNP by 2015 (Martsolf et al., 2015). The premise is to remove the MSN degree and have a BSN to DNP track for advanced nursing practice. The main themes that were derived from the Martsolf et al. (2015) research were perceived student demand, employer demand, and accreditation and certification. Many schools were hesitant to fully commit to the BSN to DNP degree track based upon one of these factors. While many schools could see that the DNP was where the field was heading in the future, those schools prefer to follow the trend instead of being the trend leader. As the debate between associate and baccalaureate degree entry into the nursing profession continues, the MSN versus DNP multiple entries into the APRN levels is just as complex. Some states are now requiring DNP's while other states still only require an MSN to be an APRN.

The American Nurses Association has been advocating for advancing the RN to be a BSN entry-level since 1964 (Smith, 2009). The Institute of Medicine (2011) reported on the future of nursing recommended that 80% of registered nurses should have a baccalaureate degree before the year 2020. Spetz and Bates (2013) researched the return on investment for the BSN versus the ADN or diploma nurse. Researchers found that a study in 2002 showed a correlation between the duties of an ADN and a BSN with both spending small amounts of time on complex or advanced skills. The researchers found a split regarding if there are improved patient outcomes from ADN versus BSN, and the authors chose to endorse the side of improved outcomes in their article. Now that payment systems penalize hospitals for poor quality and rewards them for high quality, the authors stated that there is a push on for employers to hire BSN nurses to improve quality and outcomes. This does not mean that all employers pay more for the BSN than the ADN, but that there is a notice of the increased value of the degree. The authors stated that while there was a slightly higher starting wage for the BSN over the ADN, the amount was not statistically significant (Spetz & Betz, 2013).

Research by Aikens et al., (2011) also identified that increased levels of education such as the BSN showed improved outcomes in all hospitals regardless of work environment. The amount of improvement was dependent upon the nurse-to-patient ratio, the nurse work environment, and the nurse's level of education. While the study showed improvement, there were aspects that were dropped from the study due to insignificance. "Interactions between nurse staffing and nurse education and between the nurse work environment and nurse education were tested and found, at least in some models, to be

insignificant, and as such were dropped from the model” (Aikens et al., 2011, p. S12). Studies such as this should also be conducted on respiratory therapists to determine if increased education levels can affect patient outcomes.

The profession of dietetics has been stagnant in their educational degree requirements since 1927, which requires a baccalaureate degree to be a registered dietician (RD; Kicklighter et al., 2013). In 2013, the profession had an organizational meeting like the AARC 2015 and Beyond that occurred in respiratory therapy. During this meeting recommendations were made to advance the RD to a graduate degree requirement as entry-level for practice and to add the designation of nutrition to their credential. This means that a person could be an RD or an RDN and that the choice of the acronym was solely up to the individual (Kicklighter et.al., 2013). There has been no further movement on advancing the degree requirement for entry-level.

One aspect that the PA profession has explored is the input from physicians regarding the advancement of degrees in a healthcare profession. This input appears to be missing from the literature in many other professions that are considering advancing their entry-level degree. Since many healthcare professions work closely with physicians, input from the American Medical Association could be helpful to those other professions. Physicians were surveyed regarding the possible advancement for master’s level PA programs to require a Doctorate Physician Assistant (DPA) as the entry-level for the profession (Muma et al., 2011) A few arguments being postulated by the PA profession include better patient care, better prepared, and increasing complexities of healthcare (Muma et al., 2011). The internal struggle of the PA profession is split on the

advancement of the degree for entry-level. By surveying actual physician input, another significant player in the healthcare area can be heard regarding their thoughts of the educational requirements of the individuals that are caring for the patient. Significantly it appeared that many of the physicians had not really considered the potential impacts of a DPA. Of the physicians surveyed, 56.2% felt that the master's degree was enough for entry-level of the PA, but it is unclear if the physicians considered the movement to a DPA since there could be the perception of the DPAs moving into the physician's occupational territory as the DPA would be calling themselves doctors. This can be confusing to the public since they equate the word doctor to mean medical doctor.

Respiratory therapy could take a lesson from the Society of Nuclear Medicine and Molecular Imaging (SNMMI). This organization had a meeting like the 2015 and Beyond initiative that occurred in respiratory therapy. In 2005, the SNMMI proposed that a baccalaureate degree be required of all Nuclear Medicine Technologists by 2015 (Macci Bires et al., 2012). An advantage to this proposal is that the profession worked to determine what the core curriculum should look like for a baccalaureate program, then recruited schools that were interested in advancing from a certificate or associate to a baccalaureate degree (Macci Bires et al., 2012). These educators, along with the SNMMI developed a baccalaureate resource manual to assist other programs that wanted to advance their degree designation on the necessary requirements and core curriculum. This manual also included a gap analysis section so that programs could begin to examine and identify gaps within their own curriculums and resources to fill in those gaps (Macci Bires et al., 2013).

Entry into Practice in Healthcare

Respiratory therapy is not the only healthcare profession that has been struggling with advancing entry-level degree requirements. The nursing profession has been working on this issue since 1965 when the American Nurses Association studied the increased complexities of healthcare and determined in a position paper that the entry-level for a registered nurse should be a baccalaureate degree (Smith, 2009). This position paper has been challenged and overturned in many states since it was introduced. One of the main challenges to the position paper at the time was the lack of empirical data to show that baccalaureate degree nurses provided better patient outcomes than other education levels of nursing. The premise behind the position paper was that nurses were the least educated of the major healthcare professionals and that diploma and associate degree nurses were rarely seated at the policy making tables because they were not viewed as professionals due to their lack of formal education (Smith, 2009).

In 2011, the Institute of Medicine (IOM) issued a report on the Future of Nursing that highlighted the need for nurses to have better training in care management and coordination as well as patient education and public health training which requires advanced education (Institute of Medicine, 2011). The report section for transforming education indicated that there was an “underrepresentation of racial and ethnic groups and men in the nursing workforce” (Institute of Medicine, 2011. p. 163). The recommendation was that more of these groups be represented in nursing schools. Another recommendation was to have academic progression that would flow naturally and allow nurses to enter the workforce as baccalaureate degree nurses or that associate

degree nurses be able to progress to baccalaureate degree earlier in their careers (Institute of Medicine, 2011).

Many individuals in the healthcare arena discuss shortages that do exist, or could exist, if the entry-level degree for a profession is increased. (Barter et al., 2001) This thought alone should not deter a profession from advancing. Teachers are a perfect example. There are teaching shortages across the United States, but the baccalaureate degree is, and will remain, the minimum degree required for teaching. In fact, many places not only require the degree, but also require a year of credentialing for teachers (Barter et al., 2001, p. 3). Many healthcare programs in community colleges have an open-door admission policy which means that anyone who applies for admission to the college is automatically admitted to the college (HACC, 2021). This leads to individuals with high academic achievement and those individuals with low academic achievement entering healthcare programs. This can set a student up for failure when they cannot handle the rigors of a healthcare program and leads to high attrition rates.

In 2011, the 2015 and Beyond conference conducted a survey of all respiratory therapist educational programs in the United States (Barnes, Kacmarek, Durbin, 2011). This survey was to help determine the level at which the competencies that were established by the second conference could be or were being taught at the baccalaureate and associate degree levels (Barnes, Kacmarek, Durbin, 2011). The researchers surveyed 435 respiratory program directors in 411 schools and 348 directors (80%) provided valid responses. The AARC president sent an invitation via email to the program directors, and CoARC provided the email addresses to the researchers. The survey was Internet-based

and self-administered. The Barnes, Kacmarek, and Durbin (2011) survey showed that baccalaureate programs were teaching the competencies necessary as presented by the second conference at a larger percentage than the associate degree programs that were surveyed. A limitation of the Barnes, Kacmarek, and Durbin (2011) study was that the authors proposed that six of the eight major competency areas were being taught more in the baccalaureate program than the associate program, but there was no aggregate data of these major competencies, only the sub-content areas within the competency. A generalization of the statistically significant increase in the main categories was not mentioned. Another limitation stated by Barnes, Kacmarek, and Durbin (2011) was that some competencies were not selected by program directors as being taught within a specific program. The authors did not include an answering option of “not currently taught in this program” (p. 1915) which may have given a better understanding of why certain competencies were not addressed by the individuals responding to the survey.

The third conference for the 2015 and Beyond conference focused on transitioning the workforce and respiratory therapist programs to meet the recommendations of the sixty-nine competencies recommended by the previous conferences (Barnes, Kacmarek, Kagler, et al., 2011). The recommendations were not all adopted, with three being not approved, and education being the largest dissent with 63% in favor and 38% against recommending a baccalaureate degree as the entry-level for respiratory therapy (Barnes, Kacmarek, Kagler, et.al, 2011). The authors state some of the opposing views to the educational advancement, however the main crux of the arguments surrounded the question of respiratory therapy as a workforce career, or a

professional career as discussed in Emener and Cattone (1989). Another discussion from the opposition revolved around entry-level versus a seasoned respiratory therapist (Barnes, Kacmarek, Kagler, et.al, 2011). The use of the advanced credentials offered by the NBRC, Registered Pulmonary Function Technologist, Neonatal/Pediatric Specialist, Adult Critical Care Specialist, and Sleep Disorder Specialist would lend to therapists needing additional education, regardless of entry-level degree, and would meet the competencies stated in the previous conference due to the competency-based education model taught in respiratory therapy schools (Barnes, Kacmarek, Kagler, et.al, 2011).

Respiratory Therapist Future Requirements

In 2007 the American Association for Respiratory Care (AARC) convened a task force to look at the growing roles and responsibilities for respiratory therapists in the future (Kacmarek, Durbin et al., 2009). This task force was known as the 2015 and Beyond initiative. The first meeting was to determine what the future would look like in healthcare and what would drive the changes in healthcare during that period. There are five drivers of change in healthcare that will have an impact on the American healthcare system. These drivers are cost of care, demographics, shift in the disease burden, technology, and consumers of healthcare (Kacmarek, Durbin et al., 2009). Cost of care in the United States in 2018 counted for more than 17.7% of the Gross Domestic Product with an estimated annual expenditure of over \$3.6 trillion dollars; the most expensive in the world (CMS, 2019). The demographics of the United States showed an aging population which puts more clinical and financial stress on the healthcare system. The shift in disease burden will go from acute disorders to chronic disease and disability.

The United States population currently lives 35 years longer than it did in the year 1900 (CMS, 2019). Technology has made its way into healthcare. The use of telemedicine and telecare will be utilized more frequently. The healthcare consumer will be looking at quality, convenience, price, and a host of other qualities that will shape their decision to purchase healthcare from various competing providers (CMS, 2019). The Kacmarek, Durbin et al (2009) study stated that for respiratory therapists to help meet these drivers, a higher level of education was required than the current associate degree level.

The second AARC conference of the 2015 and Beyond task force was titled “Educating the Future Respiratory Therapist Workforce: Identifying the Options” (Barnes et al., 2010, p.1), and focused on the perceived competencies that a graduate respiratory therapist and the respiratory therapist workforce will need to possess in the future to meet the changing healthcare climate and scope of practice defined during the first meeting of the task force. The agreed upon verbiage for a respiratory therapist workforce was any respiratory practitioner regardless of amount of experience or credentials. It was determined an 80% or higher agreement level was to be used as the threshold for determining consensus on the competencies. Appendix A displays the major categories for the competencies that were approved as required for the respiratory therapist by the committee (Barnes et al., 2010).

As medical knowledge advances, healthcare programs and graduates will need to keep up with these advances by increasing the amount of competency-based education. While the Barnes et al. (2010) study showed the 69 competencies for respiratory

therapists, these competencies are primarily hospital-based. As the profession continues to move into other areas such as homecare, subacute care, disease management, etc., the focus of education may need to change (Stoller et al., 2006). Nursing faces the same challenges when it comes to their educational requirements. As nursing moves to more emphasis on health education and prevention, payment reforms, and chronic care, the emphasis for most nursing academic programs will have to move away from acute care-based curriculums (Buerhaus et al., 2014). Educators must balance the needs between meeting the demands of the current job market and the ability of the graduates to pass standardized testing to be able to practice within their state. Many of these exams are years behind the current practice.

The RRT examination is an example. The content for the examination is updated every five years to be more in line with current practice. The most recent update happened on January 14, 2020 (National Board for Respiratory Care, 2019). This examination was fashioned after a survey conducted by the NBRC in 2017. This means that a student who takes the examination in 2024, prior to the next update, will be tested on information that is at least seven years old (National Board for Respiratory Care, 2019).

Patient Outcomes

The link between higher levels of education and successful patient outcomes is elusive. Respiratory therapy has virtually no data to support this, and nursing has conflicting equivocal data to support this premise. There is a push to increase the number of RNs with a baccalaureate degree to 80% by 2020 (Blegen et al., 2013). Blegen et al.

(2013) concluded that beneficial patient outcomes can be determined by more than mortality rates. The author's findings indicated that the education level of the nurse had a greater impact on patient outcomes even though the patients had less time with an RN compared to other outcome studies performed.

Academic Progression

Nursing has tried the approach of requiring advanced levels of education for many years. North Dakota was the first state to require that associate degree nurses must attain a BSN degree within ten years of becoming a registered nurse (Lane & Kohlenberg, 2010). In 2003, New York proposed a plan for continuing education for associate degree nurses, and New Jersey proposed a plan for mandated BSN's. (Lane & Kohlenberg, 2010) North Dakota overturned their decision in 2003 and legislation in New York and New Jersey did not pass. The argument of professionalism exists in the nursing profession as well. Nursing currently does not meet this definition due to associate degree education and multiple points of entry into the profession (Lane & Kohlenberg, 2010., p. 221). While these states failed, the premise behind their attempts was sound according to the authors. In December 2017, the state of New York was the first state to pass the *BSN-in-10* law which requires new licensed registered nursing graduates to have their BSN degree within 10 years to keep their nursing license (Zittel, 2018).

The idea of requiring a BSN degree within 10 years of attaining the RN shows that the contributions of associate degree nurses are not being discounted but that a path to improved outcomes are the basis for increased education (Zittel, 2018). The discussion of the *BSN-in-10* initiative is still being discussed in legislative circles outside of New

York (Specht, 2015). There are those who believe that legislative interference is not necessary as RNs are returning to school on their own. Specht (2015) stated that 60% of all new RNs are from ADN programs and that 5.8% of those continue through the master's level. The authors do not discuss the percentage of ADNs that are continuing to the BSN level and leads the reader to believe that this 5.8% is not enough to meet the Institute of Medicine 2020 goal. That goal is to increase the BSN population of nurses by 2020 and does not address the MSN situation.

While the movement to continue education after attaining entry-level continues, there are factors that can affect the attainment of that additional education. Munkvold et al. (2012) looked at some of these factors in nursing education in Oregon. A consortium was formed between the community colleges and the Oregon Health & Sciences University to allow graduates from the applied associate of science (AAS) nursing degree to enroll in the BSN completion program. Munkvold et al. (2012) says “the factors stated by students for not advancing their education after completion of the AAS included financial concerns, and conflicts with time regarding energy required for work and energy required for family” (p. 233). Another factor that is sometimes not accounted for in studies is the age of the graduate. Many community college graduates are not traditional students fresh from high school. A factor in the Munkvold et al. (2012) study that limited those going for their BSN were respondents between 49-58 years of age. Many of these students already hold a baccalaureate degree in something other than nursing. By already having a baccalaureate degree, these nursing students do not want to

repeat many courses that will only lead to a lateral degree to the one they already hold (Munkvold et al., 2012).

Brown-Benedict (2008) identified that some of the problems with doctoral degrees in nursing were related to the traditional pathways that many universities follow. Many ADN and diploma nursing programs did not emphasize research as traditional PhD programs require. This led to many nurses not pursuing advanced degrees as they would basically have to start over again. By instituting the MSN and DNP as professional practice degrees, it gave the opportunity for nurses to advance their education and help present themselves as professional practitioners in the arena of healthcare (Brown-Benedict, 2008). This situation needs to be included in any thoughts of other professions that are considering advanced practice degrees and want them considered the same as other master's and doctoral degrees.

A study by Baur et al., (2017) identified themes from RNs regarding their hesitation to completing a BSN. These included fear of failure, influence of others, family stressors or obligations, and not knowing what they do not know. This study was extremely limited in that there were only eight participants in a small hospital (Bauer et al., 2017). The overarching belief is that these types of stressors can be applied to anyone that is thinking of advancing their degree beyond their entry-level education. The IOM is recommending that 80% of all nurses have a BSN by the year 2020 (Institute of Medicine, 2011). Many healthcare organizations are looking at this benchmark and trying to find ways to meet this goal.

Some models for academic progression in nursing were identified by Pittman et al. (2014). Items identified include having universities that are recruiting associate degree nurses to use criteria other than grade point averages in their admission criteria. Using nursing work experience should carry some weight in the admission decision. Dual and automatic enrollment for students who are currently in an associate program into a BSN program was important to students. Since the students were already enrolled in the BSN program, it was perceived that they were already part way to completing the BSN degree, so they were likely to continue even if they were practicing (Pittman et al., 2014). The use of blended and online courses helps to ensure that students have access to the program regardless of their physical location and having some of the same instructors in the ADN and the BSN program helped ensure efficient use of educational resources as well as some familiarity and continuity for the students that are dual enrolled (Pittman et al., 2014). Many of these same types of issues can be examined for other professions including respiratory therapy to encourage students to advance their educational degree.

Nelson (2002) pointed out that utilization of resources has historically been directed toward the ADN and diploma levels of education. The author believed that the best way to move forward from the constant debate and fighting about the entry-level for nursing was to develop true articulation programs in which the nursing education begins in the community college. A direct transfer of liberal arts, science, and lower-level nursing courses would then be transferred directly to the baccalaureate program and the student would graduate with entry-level from the baccalaureate program. This type of

unconventional thinking should be considered with the goal to move the education level to the BSN as entry-level (Nelson, 2002).

Another profession that has seen a movement into the advanced degree is social work. Anastas and Videka (2012) discussed the move of the field into the practice doctorate arena like the DNP nursing profession. The problem observed by Anastas and Videka (2012) was that there was no clear delineation as to the purpose of the Doctorate in Social Work (DSW) degree. Some individuals saw this degree as a clinical doctorate that should allow the graduate to perform as an advanced social worker. One problem encountered was that some of these individuals never had a practice license at the lower educational levels of social work, so it was perceived that they were not prepared for the rigors of practice (Anastas & Videka, 2012). Other individuals saw the DSW as a way for research and policy to be the focus and these individuals would be prepared to meet the rigors of those areas in social work.

The last portion was to advance their knowledge and ability to become academic leaders in a field where they may have never practiced or seen a patient. Many of the students in these DSW programs felt that no matter what their motivation was, that the expectation was not being met (Anastas & Videka, 2012). As professions look at advancing their educational requirements, the profession should have a basis of what the degree will be able to grant as far as expectations. If there are multiple expectations, educational programs need to advertise the focus of their degree so that individuals can make an informed decision when it comes to choosing an entry-level education.

Isomorphism

Healthcare is competitive. Not only does the institution need to attract patients and doctors, but they also need to attract employees. The concept of isomorphism is that two groups are similar (Chen & Taylor, 2016). As applied to individuals, we tend to favor those that are like us in many ways. When it comes to institutions there can be coercive isomorphism or mimetic isomorphism (Chen & Taylor, 2016). Chen and Taylor (2016) discuss that coercive isomorphism in healthcare involves pressure from internal or external constituents. This type of pressure can be from a regulatory agency setting new standards or a board of directors that has some type of agenda. Chen and Taylor (2016) also discuss that mimetic isomorphism in healthcare occurs when an institution of similar size is doing something that is profitable and productive. Other organizations then try to copy that strategy in hopes of being able to reproduce the results within their own organization. This can be extrapolated to the hiring managers copying from each other within a specific region in hopes of attracting the best candidates for open positions.

Review of Methodology

A review of the current literature on respiratory therapy degrees, advancing educational entry-level requirements, hiring manager practices, and benefits of advancing entry-level degrees in healthcare revealed that the studies conducted were mostly toward educators and focused on the advantages of a baccalaureate degree as entry-level for respiratory therapists. There appears to be a void when it comes to current hiring practices and job performance duties of the associate versus the baccalaureate respiratory therapist.

The review of research on educational entry-level requirements and the benefits of advancing entry-level degrees in other healthcare professions was inconclusive. While the research regarding RN's increased value with increased educational requirements states there is a direct correlation, the data is inconsistent. This may be from a lack of universal determination of what factors should be used to determine increased value.

Summary

The arguments for advancing the educational requirements for entry-level into a profession are as numerous and varied as are the arguments against advancing the requirements. Respiratory therapy is looking to increase the entry-level to a baccalaureate degree, but data regarding the positive and negative effects of this move is lacking.

Nursing and respiratory therapy are the two bedside, therapeutic care, 24/7 occupations and yet nursing continues to provide both diploma, associate, and bachelor's degrees as entry-level education. There are studies for nursing that show better patient outcomes yet there are studies that show no difference in outcomes. The lack of definitive data is disturbing since the nursing profession recommended the baccalaureate degree as the entry-level over 50 years ago and it still has not happened. The determination of *what* is considered definitive proof of improved outcomes is also lacking. With so many people that have a stake in the outcomes (nurses, physicians, hospital administrators, etc.), it is no wonder that a decision cannot be reached.

The respiratory therapist profession should be clear as to their reasons for advancing entry-level is required. Being considered a professional cannot be the only requirement to advance the degree since the definition of professional can be extrapolated

to meet the current educational requirements of the field. If the 69 competencies are a factor, then there should be research to determine if the baccalaureate degree graduates are meeting all 69 of these competencies compared to the associate degree graduates. These competencies being taught in school and the competencies being articulated into actual hands-on practice as a graduate is information that has not previously been obtained.

Transition and Connection to Chapter 3

This chapter addressed the various healthcare fields that have sought to increase their entry-level into their respective professions. Some fields such as physical therapy and pharmacy have progressed to the point of Doctoral Degree for entry, while others like nursing and respiratory therapy are still debating. Chapter Three will discuss the methods that were utilized in this quantitative study in its attempt to assess the relationships in respiratory therapy between the 69 competencies determined by the 2015 and Beyond committee and what hiring managers are looking for in graduates. Data collection methods, sample size, survey creation, research question, and the associated hypothesis are discussed in Chapter Three.

Chapter 3: Research Method

Introduction

Chapter 3 contains the information on the background, study design, instrument selection, purpose, participants, data collection, and statistical analysis for my study. The goal of my quantitative study was to determine whether there a difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels, and respiratory therapy applicant hiring decisions in Pennsylvania. There has been a push by many healthcare professions to advance the entry-level requirements for new graduates to enter the workforce (see Jankowski et. al., 2013). There is no substantial evidence in many of these professions to show one way or the other if advancing the degree has benefit. As a profession, respiratory therapy has no data to show benefit or lack thereof. I strived to identify areas that can add to the body of knowledge regarding benefits or no benefits to advancing respiratory to a baccalaureate entry-level degree when it comes to hiring practices within the profession. Due to the Covid-19 pandemic limiting the access to a nation-wide study, the scope of this study was limited to the state of Pennsylvania.

The beginning of this chapter focuses on the research design and justification for choosing this design. The next section, setting and sample, describes the population from which data was obtained including the proposed sampling methods, sample size, and eligibility criteria for participants. The third section describes the formation of the instrument and how I used the instrument with the participants. The next section looks at

the type of data collection methods used and ways this data was analyzed. The final section discusses measures taken to help protect the study participants' rights.

Research Design and Approach

My quantitative study attempted to answer the research through analysis of the associated hypotheses presented in null (0) and alternative (1) forms:

RQ1: Is there a difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions in Pennsylvania?

H₀1: There is no significant difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions in Pennsylvania.

H₁1: There is a significant difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions in Pennsylvania.

I used an ethnographic concept. The ethnographic concept is that hiring managers for respiratory therapy can be viewed as a culture. These managers are all respiratory therapists and face many of the same challenges when it comes to managing and hiring respiratory therapists. The ethnographic approach looks at the similarities as well as differences within this specialized culture (Creswell, 2013). This is in line with the similarity and contrast principles found in thematic analysis and isomorphism.

My study began by telephoning hiring managers within the state of Pennsylvania to introduce myself, explain who I was, and to obtain the manager's email address so that

I could distribute the questionnaire. The questionnaire was then emailed to 70 hiring managers in Pennsylvania. The focus of the questionnaire was the hiring practices of new graduate respiratory therapists with the goal of obtaining information about the hiring managers' education level as well as how much the 69 competencies played into the hiring of graduates versus the completion of tasks. These managers were from hospitals that geographically cover the state of Pennsylvania to obtain a diverse sample. My questionnaire used Dillman's principles for constructing web surveys (see Gunn, 2002).

Methodology

Population

Respiratory therapy hiring managers within acute-care hospitals in Pennsylvania were surveyed. The hospital had to have at least one adult ICU. I had chosen this criterion since having an adult ICU may mean the hospital has more staff and therefore may have a higher need for the competencies listed. These hospitals may also have higher turnover rates which could mean those managers are hiring more graduates. What I did not anticipate was that children's hospitals would meet this same criterion and should be included within future surveys.

Recruitment and Participation

Hiring managers in Pennsylvania were chosen from the American Hospital Database (n.d.) and were contacted by me via phone to request their email address so that the survey could be distributed. The email included a link to the study which was hosted on Survey Monkey. The demographics collected on the participants included their position in the department, number of licensed beds at the institution, educational degree

when they entered the field, their current educational degree, and the location type the institution serves. In the invitation, participants were provided with the informed consent paperwork for participating in the survey.

Sampling Frame and Power Analysis.

My study used a sample size of 70 hospitals in Pennsylvania based upon the total population of 127, with a 10% margin of error, 95% confidence level, and a 50% response distribution (see Sample Size Calculator by Raosoft Website, 2004). This generated a recommended sample size of 55. I received 58 responses to the 70 surveys emailed. This gave me an 88% response rate. I believe the response rate was higher since I individually spoke to the managers on the phone, explained why I was doing the survey, and requested their email address directly. This personal outreach allowed for such a high response rate.

Instrumentation and Measures

An instrument that was previously used (see Appendix B) by the AARC was the groundwork basis for the quantitative instrument used in my study. The survey consisted of 20 questions, some of which were multiple-choice answers with explanation availability, a few fill-in-the-blank answers for demographics, and the use of a 5-point Likert scale for most of the survey. The use of the Likert scale allowed the respondent to indicate their feelings regarding new respiratory graduates possessing the 69 competencies, how various educational graduates perform in orientation, and the skill levels of associate versus baccalaureate degree graduates. Due to the recent pandemic of the COVID-19 virus, I was able to ask some questions about changes in hiring practices

due to the pandemic. The Likert scale consisted of choosing from *Strongly Agree*, *Agree*, *Neutral*, *Disagree*, *Strongly Disagree*, or *Not Applicable*.

Informed Consent

All hiring managers were contacted by myself via telephone. I explained the research I was conducting and requested their email address so that I could send them an email with the link for the survey. The email stated that no identifiable information is being requested in this survey and all data will be reported as aggregate. Once the manager clicked on the survey link, the informed consent letter appeared. This letter assured the manager that their participation was voluntary, that they were under no obligation to participate, and they may leave the survey at any time. The managers were also informed that by selecting *Next Page* to enter the survey, they were giving their consent to participate in the survey. The participants were notified that I would be emailing a copy of my final report to each of them for their records.

Operationalization

The independent variable of level of education of the new graduate was defined by an individual graduating from an accredited school, with either an associate or baccalaureate degree and is immediately eligible to sit for the NBRC credentialing examinations. The independent variable of level of education of the hiring manager was defined by the individual having some type of educational degree including certificate of completion at the time of the survey. The dependent variable of ability of the graduate to gain employment as a respiratory therapist was defined as a graduate having taken their credentialing examination and then being hired by a hospital as a respiratory therapist.

The first independent variable was measured in the survey by the hiring manager answering the question *when hiring respiratory therapists for open STAFF positions at my institution, I require my new graduates to have a(n): (Associate Degree only, Baccalaureate Degree only, Associate Degree enrolled in a Degree Completion program, No preference on the degree)* The second independent variable was measured in the survey by the hiring manager answering the question *What is your CURRENT educational level? (On-the-Job-Trainee, Certificate, Diploma, Associate Degree, Baccalaureate Degree, Master's Degree, Doctoral Degree).*

Data Collection and Analysis

I collected data for my research using the Survey Monkey online survey instrument. This software was used due to the familiarity of this format by many of the hiring managers. The survey was accessed by an <http://> link included in the invitation email that was sent to the hiring managers. The entry screen to the survey provided a detailed consent form and required the hiring manager to select the *Next Page* button to enter the survey. I will retain the raw data submitted via the Survey Monkey instrument in a thumb-drive that has been placed in a fire-proof locked box within my residence for a period of 5 years. The thumb-drive and data will be destroyed after this period has elapsed.

Data Retrieval Processes

My study used Statistical Package for Social Sciences (SPSS) software, version 27 for statistical analysis of the data collected. This software was used to help quantify responses to the survey regarding the research question: Is there a difference between

respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions? I downloaded the data from Survey Monkey to Microsoft Excel 360 at the conclusion of my data collection period. I exported the data using the function within Survey Monkey and utilizing the All Responses Collected option. This function exported all data into an Excel Workbook .xlsx format.

Once the workbook was saved onto the thumb drive, I recoded all the nonnumeric responses into numeric entries to utilize the SPSS software functions. The Likert scale scores ranged from 1 (other) to 7 (strongly agree). The questions requiring a yes or no response were coded 3 = yes, 2 = no, 1 = not applicable. A Chi-Square test of independence was performed on the independent and dependent variables to determine if the Null Hypothesis should be accepted or rejected. The open response information was collected and reported as listed.

External, Internal, and Statistical Validity

Threats to external validity of my study included time of survey administration, scope and length of survey, and psychological noise. To address the time of the survey administration, the survey was housed online with Survey Monkey. Respondents were given 30 days to log into the survey and were given as much time as needed to complete the online survey. To address the scope and length of the survey, the survey was developed to gather as much information in the shortest number of questions possible. The scope was within the daily job requirements of a hiring manager within a respiratory therapy department. Psychological noise was addressed by allowing the respondents to

take the survey online at their leisure so as not to be pressured to complete the survey during work or other busy times. There were no perceived threats to internal, construct, or statistical conclusion validity.

Ethical Procedures

To gain access to the hiring managers for this study, Institutional Review Board (IRB) approval through Walden University was obtained after University Research Review acceptance of my proposal as IRB approval 01-13-21-0247429. Participants were informed at the beginning of the survey that the results are confidential. Participants were also informed that they were free to withdraw from the study at any time by exiting the survey and that they would receive a copy of the results once the study was completed. The survey introduction contained my contact information, contact information for my dissertation chair and the director of research integrity and compliance at Walden University as well as the IRB phone number. The participant gave their consent to participate in the study by clicking on the *Next Page* button on the consent form at the beginning of the survey.

The use of Survey Monkey as the medium for the survey was utilized based upon the familiarity of the individuals surveyed with the format of this tool. No statistical data was obtained from the Survey Monkey format, only the familiarity and ease of use was the focus of this choice. The data was removed from Survey Monkey within 30 days after the close of the survey. All data is confidential and is being stored on a USB device specifically intended to house the study results and only accessed by me. The USB is

being kept in a fire-proof locked safe in the home office of the researcher and will be destroyed by the researcher 5 years after the completion of the study.

Summary of Design

I used a quantitative methodology via Survey Monkey to assess the overall attitude of hiring managers in the respiratory therapy profession regarding associate versus baccalaureate degree employees. The survey was originally slated as a nationwide survey, but the limitations of the COVID-19 pandemic, required a smaller accessible sample. The survey was limited to Pennsylvania. Once the data was collected, I used SPSS version 27 software for my statistical analysis. A final report will be mailed to the invited participants upon completion of the research. All data is considered confidential and is being stored on a USB drive in a fire-proof safe in my home and will be destroyed by me after 5 years.

This chapter focused on the research design, methodology, data collection, storage methods, and disposal of my study. The research survey, potential threats to validity, sample size, population, and data analysis were also discussed. The following chapter will use the data collected by the survey in Chapter 3 to test and analyze the research question in my study and its associated hypotheses.

Chapter 4: Results

Introduction

The purpose of this quantitative cross-sectional study was to explore the extent to which respiratory therapy hiring managers in Pennsylvania hired new graduates with varying educational degrees in relationship to the manager's educational degree. Participants for this study were obtained using the information from the American Hospital Directory in the state of Pennsylvania. I contacted the managers directly and sent them an email. Those who decided to participate in the survey clicked on the link located in the email. This chapter details information from the IRB-approved survey instrument and provides inferential and descriptive analysis of the research findings.

Research Instrument

IRB approval (01-13-21-0247429) from Walden University to conduct my research was obtained on January 13, 2021. The survey instrument is based upon the types of questions that were asked by the 2015 and Beyond task force. The original research questionnaire is listed in Appendix B. My survey focused on hiring managers, not educators, and was looking to determine if the education level of the hiring manager affected their decisions on hiring new graduate respiratory therapists. This research survey is listed in Appendix D. Other information obtained from my survey focused on the 69 competencies from the AARC 2015 and Beyond initiative as well as orientation and if the Covid-19 pandemic affected attitudes or behaviors in hiring respiratory therapists with a different degree.

Unexpected Variants

This study's survey was designed to be answered by respiratory therapy hiring managers of hospitals in Pennsylvania who had at least one adult ICU. I did not consider that children's hospitals could also fit within this criterion that I had determined. I had one hospital that was a children's hospital that has no adult ICU. I did leave this data within the collection as it does meet all the other criteria and general purpose of the research question. Removal of this data did not statistically affect the study outcomes.

It was also discovered upon contacting the hiring managers that some of the managers are the hiring managers for more than one hospital within their healthcare network. This variant was not considered at the time of the study design. If the manager listed that they were the hiring manager for more than one facility, the results were repeated for the other hospitals if those hospitals were included in the randomization.

Data Collection

On January 21, 2021, I started contacting hiring managers and emailing out my invitation and link to those managers. The number of hospitals that met the criterion was 127. I chose the hospitals by using every third hospital listed on the index and circling back through the list until the sample size of 70 was achieved. I then called the respiratory managers for those hospitals listed and spoke to them directly. I explained my survey and the reasons for my research. I then asked if I could have their email address to send them an email to participate in the survey. I made phone calls and sent emails to the chosen hospitals over the next 7 days as so not to trigger my email server to think that I was sending out spam notifications. After 2 weeks, I sent out a reminder email to all

those individuals that had been invited to participate. The window for the managers to respond was 30 days from the date that I sent the last original invitation email. This produced 58 responses to the survey which exceeded the minimum sample size of 55 necessary to achieve a power of at least 0.95 with an alpha level of 0.05 and a 50% distribution rate.

Descriptive Statistics

Analyses were conducted on position within the department, type of location served, education level of hiring manager upon entering the profession, current education level of the hiring manager, degree required by new graduates upon hiring, credential required upon hiring, if graduates possessed the 69 competencies determined by the 2015 and Beyond initiative, graduates completing their department orientation within the allotted time, graduate skill sets, degree completion availability, current entry-level structure for the profession, open positions affecting hiring decisions, and any types of hiring changes or belief change due to Covid-19.

Table 1 provides a summary of the sample characteristics. There were 58 respondents, and the participants were distributed across the state of Pennsylvania with 56.9% of respondents indicating that they serve a suburban population within their hospital. Seventy-one percent of the respondents skipped the question that asked for the number of hospitals for which they are the hiring manager. Of the respondents that did answer the question, 29% ($n = 5$) listed that they are the hiring manager for more than one hospital within their healthcare system.

Table 1*Survey of Respiratory Therapy Hiring Managers Characteristics of Sample Population*

Descriptive Variable	Number	Percentage
Position in your department?		
Supervisor	4	6.90%
Manager	30	51.72%
Director	24	41.38%
Location hospital serves?		
Urban	13	22.41%
Suburban	33	56.90%
Rural	10	17.24%
Other	2	3.45%
Education level when entering the field		
Certificate	7	12.07%
Associate Degree	33	56.90%
Baccalaureate Degree	17	29.31%
Other	1	1.72%
CURRENT educational level?		
Associate Degree	3	5.17%
Baccalaureate Degree	15	25.86%
Master's Degree	40	68.97%
When hiring new graduates I require a(n):		
Associate Degree Only	39	67.24%
No preference on the degree (Associate OR Baccalaureate)	19	32.76%
When hiring therapists I only hire new graduates with a:		
CRT waiting to take CSE exam	25	43.10%
RRT only	27	46.55%
Temporary license with no credential	4	6.90%
Other	2	3.45%
My associate degree hires possess all 69 competencies		
Strongly Agree	13	22.41%

Descriptive Variable		Number	Percentage
	Agree	26	44.83%
	Neither Agree nor Disagree	18	31.03%
	Disagree	1	1.72%
My baccalaureate degree hires possess all 69 competencies			
	Strongly Agree	13	22.41%
	Agree	26	44.83%
	Neither Agree nor Disagree	18	31.03%
	Disagree	1	1.72%
My associate degree hires complete orientation within the allotted time			
	Strongly Agree	33	56.90%
	Agree	23	39.66%
	Other	2	3.45%
My baccalaureate degree hires complete orientation within the allotted time			
	Strongly Agree	32	55.17%
	Agree	22	37.93%
	Neutral	1	1.72%
	Other	3	5.17%
My associate degree skill sets equal my baccalaureate degree			
	Strongly Agree	12	20.69%
	Agree	26	44.83%
	Neutral	16	27.59%
	Disagree	4	6.90%
Degree completion programs available, my staff they likely to participate			
	Strongly Agree	2	3.45%
	Agree	39	67.24%
	Neutral	14	24.14%
	Disagree	3	5.17%
I hire new associate degree graduates already enrolled in degree completion program			
	Strongly Agree	16	27.59%
	Agree	21	36.21%
	Neutral	15	25.86%

Descriptive Variable	Number	Percentage	
	Disagree	4	6.90%
	Strongly Disagree	2	3.45%
The current entry-level structure meets my facility's needs			
	Strongly Agree	11	18.97%
	Agree	38	65.52%
	Neutral	7	12.07%
	Disagree	2	3.45%
Amount of open positions in department change position on the associate versus baccalaureate entry-level perception?			
	Yes	12	20.69%
	No	44	75.86%
	N/A	2	3.45%
Covid-19 pandemic change position on the associate versus baccalaureate entry-level perception?			
	Yes	7	12.07%
	No	51	87.93%
Covid-19 make you adjust your hiring practices temporarily?			
	Yes	16	27.59%
	No	42	72.41%
During the Covid-19 pandemic, did you have enough respiratory therapists?			
	Yes	44	75.86%
	No	14	24.14%

$n = 58$

The survey allowed participants to write some comments for a few of the questions. Table 2 lists the questions that had a written response and the responses listed as written by the participant.

Table 2*Written Responses from Survey.*

Question on Survey	Written Response
Position in Your Dept.	Director of Cardiopulmonary Services
Location	Both Urban & Suburban General Acute Care Community Hospital
Ed Level Entered	BS Biology but OJT Respiratory Degree in Biology, OJT in Respiratory, University of Chicago RT program
When hiring, I only hire grads with	Must have RRT within 6 months of hire RRT or RRT Eligible RRT or CRT, new grads have 190 days to take and pass the RRT. Must have their NPS within 2 years Recently hired a new grad, expect to have RRT as soon as possible Need RRT within 6 months
AS degree complete Orient	On average, 15% of new grads, regardless of degree, need additional orientation days/simulations We are small enough that we individualize our orientation to the individual so there is no specific time frame.

Question on Survey	Written Response
BS degree complete Orient	A higher degree does not make someone more qualified. There are some people with higher than associate degree but are lacking in clinical skills.
Open positions change manager position on AS vs BS	<p>Not enough candidates to choose from. Have to lower my expectations</p> <p>On average, we hire >40 therapists of mixed degrees. With our current acceptance of AAS CRT with RRT required within 190 days we have a small number of applicants in our area and struggle to fill positions.</p> <p>Because of location there is no local program with either degree. I prefer to hire baccalaureate degree graduates but that is not always possible because of our location.</p> <p>It's more difficult to focus on the professional growth and advancement of individuals and our department when significant vacancies exist. It's much more imperative to first meet basic patient care needs</p>
Covid-19 change hiring practices temp	If we only accepted BS, we would not have many RTs in the applicant pool.

COVID worsened vacancies as parents had to decrease hours to help their children with virtual learning. Some RTs retired because of the elevated age and associated risks of working in a hospital.

Our profession is paid per our degree requirements and that is so unfair and not right.

Used traveling therapists *

Less candidates to choose from *

Added sign on bonuses to attract candidates *

All interviews now by Zoom

We have several full-time positions open as RTs are leaving to capitalize on travel agency assignments. We hire only RRT, but we have recently opened up a position for CRT and added a \$10 thousand dollar sign on bonus for 2 years.

More willing to take agency/travel RT's

Could not interview in person

Lowered our quality expectations

*Multiple responses were repeated so the main theme was listed only once.

The measurement of the education level when the manager entered the profession shows that 68.9% ($n = 40$) had an associate degree or less. The survey data also shows that at least 63.7% ($n = 37$) of these people increased their education above an associate degree since entering the field of respiratory therapy and that 68.97% ($n = 40$) of the hiring managers currently have advanced to a master's degree. This current education level is one of the independent variables within the research question. The position that

these individuals currently hold shows that 51.72% ($n = 30$) are managers while 41.38% ($n = 24$) are directors. These titles show that the individuals are responsible for their department. The survey responses represented a mean number of adult ICUs at 4.19 and mean licensed hospital beds at 357. The survey question regarding graduates possessing all 69 competencies as outlined by the 2015 and Beyond initiative were analyzed. Since the questions regarding the associate degree versus the baccalaureate degree graduates possessing all 69 competencies as outlined by the 2015 and Beyond initiative were on a Likert scale, a Spearman's correlation was run to determine if there was any significance (see Gravetter & Wallnau, 2013). As the data was ordinal, not interval, the Spearman's correlation was chosen over a Pearson's correlation.

The Spearman's correlation indicates that there was a significant positive association between associate degree versus baccalaureate degree graduates possessing all 69 competencies as outlined by the AARC's 2015 and Beyond initiative ($r_s(57) = 1, p = <.001$). This data is interpreted with caution as a 1.0 is a perfect correlation. The answers on the Likert scale to these two questions were identical across each participant, so this could indicate an artifact that may need to be examined in future research. The survey questions regarding completion of department orientation by degree were analyzed. A Spearman's correlation indicates that there was a significant positive association ($r_s(57) = .782, p = <.001$). This correlation indicates that managers believe the associate degree hires complete their department orientation in slightly faster time than the baccalaureate degree hires.

There was a positive result indicating that new associate degree graduate skill sets are equal to the new baccalaureate skill set with 65.51% ($n = 38$) indicating agree or strongly agree. Table 3 reveals that the chi-square test for independence showed a significant association between the number of open positions in the department changing the manager's position on associate versus baccalaureate entry-level perception and if the managers changed their position on this perception due to the Covid-19 pandemic $X^2(2, N = 58) = 12.53, p = .002$. Managers are not changing their opinions even in the face of the Covid-19 pandemic.

Table 3

Frequencies and Chi-Square Results for Number of Open Positions and Covid-19 Changing Managers Positions on Hiring (N = 58)

		Covid Change Perceptions				$X^2(2)$
		No		Yes		
		n	%	n	%	
Open Positions	N/A	2	3.92%	0	0.00%	12.53*
	No	42	82.35%	2	28.57%	
	Yes	7	13.73%	5	71.42%	

* $p = .002$

To determine if there was a link between the Covid-19 pandemic causing hiring managers to adjust their hiring practices temporarily and if the Covid-19 pandemic changed the hiring manager's position on associate versus baccalaureate entry level perception, a Chi-Square test of independence was performed. Table 4 shows that the relationship between these variables was significant, $X^2(1, N = 58) = 7.66, p = .006$. This

relationship shows that managers are not adjusting their hiring practices due to the Covid-19 pandemic.

Table 4

Frequencies and Chi-Square Results for Link Between Covid-19 Causing Temporary Hiring Practice Changes and Hiring Managers Changing Position on Associate Versus Baccalaureate Perception (N = 58)

		Covid Temporary Hiring Changes				X ² (1)
		No		Yes		
		<i>n</i>	%	<i>n</i>	%	
Covid Change Perceptions	No	40	95.24%	11	68.75%	7.66*
	Yes	2	4.76%	5	31.25%	

* $p = .006$

The question to determine if the managers had enough respiratory therapists to meet patient demands showed that 75.86% ($n = 44$) answered yes. The question about changing hiring practices temporarily during the pandemic resulted in many written responses indicating that the hospital had to hire traveling therapists. Table 5 reveals that a Chi-Square test of independence shows there was no significance between these variables $X^2(1, N = 58) = .009, p = .925$.

Table 5

Frequencies and Chi-Square Results for Having Enough Respiratory Therapists During Covid-19 and Managers Temporarily Changing Their Hiring Practices (N = 58)

	Covid Temporary Hiring Changes				$X^2(1)$	
		No		Yes		
		<i>n</i>	%	<i>n</i>		%
Covid Enough	No	10	23.81%	4	25.00%	.009*
Therapists	Yes	32	76.19%	12	75.00%	

* $p = .925$

Many managers indicated they were using traveling therapists when they had not done this previously, so the insignificance between the variables may show an ambiguity that could be addressed in future studies.

Hypothesis Testing

The research question and associated null and alternate hypotheses were created to measure if the educational degree of hiring managers for respiratory therapists influenced their decisions on hiring new graduate therapists with associate or baccalaureate degrees. The results are of which are presented here.

Research Question 1

Is there a difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions in Pennsylvania?

H₀: There is no significant difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions in Pennsylvania.

H₁₁: There is a significant difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels and respiratory therapy applicant hiring decisions in Pennsylvania.

To evaluate the hypothesis, a Chi-Square test of independence was performed.

This test was used to evaluate frequency data between the two variables in the population (see Gravetter & Wallnau, 2013). The dependent variable was that the graduate, regardless of educational degree, was getting hired. The first independent variable examined in the Chi-Square was the educational level of the graduate who was being hired. The choices were associate degree or baccalaureate degree. The managers were able to choose if they had a preference on the specific degree they wanted, or they could choose that they had no preference for the degree of the graduate.

The second independent variable that was examined in the Chi-Square was the current educational level of the hiring manager. The manager could choose their current education level from On-the-Job Trainee through Doctoral Degree. The assumption was accepted that the hiring manager was answering correctly on their hiring practices. The answers for these questions were quantified into SPSS for statistical analysis. The relationship between these variables was significant, $X^2(2, N = 58) = 7.52, p = .023$. This shows there is a difference between respiratory therapy applicant education levels, respiratory therapy hiring manager education levels, and respiratory therapy applicant hiring decisions in Pennsylvania.

Table 6 shows that the managers are preferring associate degree over other degrees, regardless of the education level of the hiring manager. This significance means

that the null hypothesis H_0 is rejected in favor of accepting the alternative. This data may have artifact. When looking at Table 2, some managers stated that they have limited choices due to locations of the hospitals in relation to educational institutes. This could mean that the managers prefer one degree simply because they have limited options on choosing from graduates with other degrees.

Table 6

Frequencies and Chi-Square Results for Current Education Level of Hiring Managers and Their Educational Preferences When Hiring for Staff Positions (N = 58)

Current Education Level of Manager	Hiring New Graduate Staff Positions								X ² (2)
	No Pref		AS in Degree Comp.		BS Only		AS Only		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Doctoral Degree	0	0%	0	0%	0	0%	0	0%	7.52*
Master's Degree	9	21.95%	0	0%	0	0%	32	78.04%	
Baccalaureate Degree	8	57.14%	0	0%	0	0%	6	42.86%	
Associate Degree	2	66.67%	0	0%	0	0%	1	33.33%	
Diploma	0	0%	0	0%	0	0%	0	0%	
Certificate	0	0%	0	0%	0	0%	0	0%	
On-the-Job Trainee	0	0%	0	0%	0	0%	0	0%	

* $p = .023$

Summary

Chapter 4 began with a description of the variables that were used within this study. Spearman's correlation and Chi-Square tests were performed on the various data sets to determine correlations or statistical significance. The hypothesis showed that there was significance in the educational level of the hiring manager and the educational level of the graduate. Therefore, the null hypothesis is rejected. In Chapter 5, I will discuss the

findings considering my results and discuss my conclusions, study limitations, recommendations, and implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This chapter discusses the findings, interpretation of the results, limitations of my study, conclusions, and recommendations for further study. Chapter 5 concludes with how this study can impact positive social change. The purpose of this study was to attempt to fill a gap in literature and to determine if the education level of hiring managers for respiratory therapy influenced their decisions on hiring new graduate respiratory therapists from various levels of education.

In this study, 70 respiratory therapy hiring managers in Pennsylvania were invited to complete my internet-based survey. A total of 58 managers completed the survey. No participants were excluded from the data collected. There were correlations and statistically significant findings when analyzing the data.

Interpretation of Findings

Research Question 1 was intended to find if there was a statistical difference between the current educational level of the hiring managers in respiratory therapy and the education levels of new graduates from respiratory therapy programs. The lens of French and Raven's power theory (Raven, 1993) was used during this analysis. The fact that the individuals hiring the graduates may have the same or higher degree was part of the analysis. Since power theory is looked at as the managers being experts in their niche of the world of hiring graduates, there could be the assumption that these managers would want to hire graduates with a higher degree. The assumption being that these managers may believe that the baccalaureate graduate was more knowledgeable and

proficient at the bedside and considered more professional based solely upon their educational degree.

The findings of the Chi-Square in Table 6 in Chapter 4 indicated that there was a statistically significant ($p = .023$) difference between these educational levels. Overall, the hiring managers who currently have a master's degree wanted graduates with associate degrees (78% $n = 32$) compared to managers with a baccalaureate degree (42%; $n = 6$). No managers surveyed in Pennsylvania listed that they preferred a baccalaureate degree over an associate degree graduate (see Table 6.) The two choices made by participants were associate degree only or no preference in degree. While this question was intended to determine if hiring managers with higher level degrees wanted baccalaureate degree graduates, the study shows that the level of education of the respiratory graduate in Pennsylvania is not as large a factor as the literature suggested. This finding could be different with a nationwide sampling and is a recommendation for further study.

The survey of managers showed that of the 58 respondents, 70.69% ($n = 41$) had an associate degree or less when they entered the field. Table 7 shows that the current education level that has an associate degree or less has dropped to 5.17% ($n = 3$). The survey also shows that 68.97% ($n = 40$) have advanced to a master's degree. Currently, there is no master's degree entry-level for respiratory therapists. The master's degrees are for management, education, or advanced practice, but not for an entry-level position. By advancing their degrees, these managers have demonstrated that entry-level does not mean that furtherance of education should stop.

Table 7

Education Levels of Respiratory Hiring Managers When They Entered the Field Versus Their Current Education Level (N = 58)

	Education Level of Hiring Managers			
	Enter Field		Current Education	
	<i>n</i>	%	<i>n</i>	%
On-the-Job Trainee	0	0.00%	0	0.00%
Certificate	7	12.07%	0	0.00%
Diploma	0	0.00%	0	0.00%
Associate Degree	33	56.90%	3	5.17%
Baccalaureate Degree	17	29.31%	15	25.86%
Master's Degree	0	0.00%	40	68.97%
Other	1	1.72%	0	0.00%

The questions regarding associate degree graduates possessing all 69 competencies as outlined by the AARC's 2015 and Beyond initiative (Appendix A) versus the baccalaureate degree had a direct correlation ($r_s(57) = 1, p = <.001$). As discussed in Chapter 4, the answers to the questions from the managers were identical on the Likert scale. This indicates that both associate degree and baccalaureate degree graduates are believed to possess the necessary competencies upon graduation. This should be interpreted with caution as this may be artifact and may need further investigation. There was also strong correlation regarding the associate versus baccalaureate graduates completing their orientation on time ($r_s(57) = .782, p = <.001$). This strong association indicates that managers believe that approximately 78.2% of graduates are completing their orientations in the allotted time regardless of their degree. Table 2 indicates some written responses that add a small amount of artifact to this

correlation as well. Further study could clarify or strengthen the result reported. There is also a 65.51% ($n = 38$) positive result indicating that the new associate degree graduate skill set is equal to the baccalaureate graduate skill set.

Due to the timing of this survey being conducted, I was able to obtain some preliminary data on how the Covid-19 pandemic might be affecting hiring managers and their perceptions or hiring practices. Table 3 shows significant findings, $X^2(2, N = 58) = 12.53, p = .002$, indicating that the number of open positions with the respiratory department during the Covid-19 pandemic did not change the manager's opinions on baccalaureate versus associate degree entry-level. This is not unexpected since most managers were hiring associate degree graduates. Another statistically significant finding illustrated in Table 4 is that hiring managers are not adjusting their hiring practices due to the Covid-19 pandemic $X^2(1, N = 58) = 7.66, p = .006$. This shows that the managers are utilizing the same strategies for hiring as they were prior to the Covid-19 pandemic.

There was one insignificant finding regarding the Covid-19 pandemic. Table 5 shows the determination regarding the managers changing their hiring practices temporarily versus if they had enough therapists to care for patients during the pandemic $X^2(1, N = 58) = .009, p = .925$. While this output is not statistically significant, the open-ended statements (Table 2) indicate that many are using agency therapists when they had not used this service in the past to supplement staffing requirements. This lends itself to question this statistic and should be considered for further review in future studies.

Limitations of the Study

Limitations of my study include the fact that I did not consider children's hospitals when I determined the inclusion criterion. The same premise for choosing adult ICUs in the inclusion would apply to a children's hospital. This study was originally slated to be a nationwide survey of hiring managers in respiratory therapy. Due to the Covid-19 pandemic, I selected a convenient participant pool within the state of Pennsylvania. Despite my professional association with some respondents, survey data were completed anonymously and there were no identifiable data linkages to the participants. This anonymous reporting limits any form of follow-up inquiries. Another limitation was the fact that I had not considered that some hiring managers are responsible for hiring staff in multiple hospitals within their healthcare network. While the same principles are applied to the hiring since the individual is being assessed and not the hospital, it is still something that I had not considered.

Recommendations for Action

Based on my study results, it is recommended that the Pennsylvania Society for Respiratory Care begin working with the hiring managers within the state of Pennsylvania to represent the state interests at the national level with the AARC. The AARC's initiative for baccalaureate entry-level for respiratory therapists, which was based on the wishes of educators, has been pushed back but is not reflective of what the managers in Pennsylvania are looking for to meet their needs. As discussed in the literature (Zittel, 2018), having an entry-level at associate degree but requiring a higher level within a specified time would meet the current needs of the field while requiring

those individuals to continue their education. This could be adopted on a state-by-state basis or could be a recommendation from the AARC for national legislation.

Recommendations for Further Study

This study was limited to the state of Pennsylvania. I would recommend that to help fill the gap in the literature on this matter, this study be conducted to respiratory therapy hiring managers on a national basis. This could be completed with the assistance of the AARC to disperse the study. A limitation may be that the AARC would be dispersing this study to members only and therefore may not be indicative of a random sampling. The researcher would need to utilize other resources to include those managers that are not AARC members to ensure a more diverse and randomized sampling. The questionnaire will need to be honed for more specific information to be obtained and could be more quantified. It is important to find out what the hiring managers and their hospitals need. It would also be important in future studies to somehow factor in that some managers hire for multiple hospitals within their healthcare system.

Implications for Positive Social Change

This study shows that in Pennsylvania, the current entry-level education system is meeting the needs of the healthcare systems across the state. Of the 21 respiratory therapy programs in the state of Pennsylvania, 71.4% ($n = 15$) offer an associate degree for entry-level into the profession. The removal of these programs would have a negative effect on the state's healthcare systems in relation to this vital health care role. Currently, the respondents indicated that they were using temporary agency therapists to help fill positions. This loss of even more therapists being put into the employment pool could

have unknown effects for hospitals and patients. This would also create barriers for some at-risk populations from being able to get a college degree and employment in a healthcare setting. The cost of a baccalaureate degree can be out of reach for some individuals. Meeting the need of the industry and removing barriers to education should be in the mix when considering how to increase educational requirements within a profession.

Conclusion

In conclusion, increasing the entry-level to any profession can be unpopular. There will always be those who do not want a change from the status quo. The field of respiratory therapy is considering an increase from an associate degree or baccalaureate degree as entry-level to only a baccalaureate degree for entry-level. There is minimal literature on this matter regarding respiratory; the needs of the hospitals themselves as well as the hiring managers has not been ascertained.

The purpose of this study was to investigate if the current level of education of the hiring managers in respiratory, in the state of Pennsylvania, influenced the hiring decisions of those managers. This study showed that the managers were more interested in hiring associate degree graduates than they were baccalaureate degree graduates. Knowing this need may help to remove any barriers to individuals who want an affordable education and a job in healthcare. This will provide the necessary respiratory therapists to meet the needs of the hospitals and hiring managers.

References

- AARC Steering Committee of the Coalition for Baccalaureate and Graduate Respiratory Therapy Education. (2003). *Development of baccalaureate and graduate degrees in respiratory care* [White paper]. Dallas, TX: American Association for Respiratory Care. https://www.aarc.org/wp-content/uploads/2017/03/issuepaper_baccalaureate_graduate_degrees.pdf
- Aikens, L. H., Cimiotti, J. P., Sloane, D. M., Smith, H. L., Flynn, L., & Neff, D. F. (2011). Effects of nurse staffing and nurse education on patient deaths in hospitals with different nurse work environments. *Journal of Nursing Administration*, 42(10), S10-S16. <https://doi.org/10.1097/01.NNA.0000420390.87789.67>
- American Hospital Directory. (n.d.). Hospital statistics by state. http://www.ahd.com/state_statistics.html
- Anastas, J., & Videka, L. (2012). Does social work need a “practice doctorate”? *Clinical Social Worker Journal*, 40, 268-276. <https://doi.org/10.1007/s10615-012-0392-3>
- Attewell, P., Heil, S., & Reisel, L. (2012). What is academic momentum? And does it matter? *Educational Evaluation and Policy Analysis*, 34(1), 27-44. <http://doi.org/10.3102/0162373711421958>
- Barnes, T. A., Gale, D. A., Kacmarek, R. M., & Kageler, W. V. (2010). Competencies needed by graduate respiratory therapists in 2015 and beyond. *Respiratory Care*, 55(5), 601-616. <http://rc.rcjournal.com/content/55/5/601.full.pdf+html>
- Barnes, T. A., Kacmarek, R. M., & Durbin Jr., C. G. (2011). Survey of respiratory therapy education program directors in the United States. *Respiratory Care*,

56(12), 1906-1915. <http://doi.org/10.4187/respcare.01259>

Barnes, T. A., Kacmarek, R. M., Kageler, W. V., Morris, M. J., & Durbin, Jr., C. G.

(2011). Transitioning the respiratory therapy workforce for 2015 and beyond.

Respiratory Care, 56 (5), 681-690. <https://doi.org/10.4187/respcare.01169>

Barter, M., & Lenihan McFarland, P. (2001). BSN by 2010: A California initiative.

Journal of Nursing Administration, 31(3), 141-144.

Baur, K., Moore, B., Wendler, M.C. (2017). Influencing commitment to BSN

completion: A pilot project using motivational interviewing. *Journal of Nursing*

Administration, 47(3), 172-178. <http://doi.org/10.1097/NNA.0000000000000461>

Becker, E. A., & Nguyen, X. T. (2014). The current impact of entry-level associate and

baccalaureate degree education on the diversity of respiratory therapists.

Respiratory Care, 59(12), 1817-1824. <http://doi.org/10.4187/respcare.03106>

Blegen, M. A., Goode, C. J., Park, S. H., Vaughn, T., & Spetz, J. (2013). Baccalaureate

education in nursing and patient outcomes. *Journal of Nursing Administration*,

43(2), 89-94. <http://doi.org/10.1097/NNA.0b013e31827f2028>

Brown-Benedict, D. (2008). The doctor of nursing practice degree: Lessons from the

history of the professional doctorate in other health disciplines. *Journal of*

Nursing Education, 47(10), 448-457. [https://doi.org/10.3928/01484834-](https://doi.org/10.3928/01484834-20081001-01)

20081001-01

Buerhaus, P. I., Auerbach, D. I., & Staiger, D. O. (2014). The rapid growth of graduates

from associate, baccalaureate, and graduate programs in nursing. *Nursing*

Economic, 32(6), 290-311. <https://cpb-us->

e1.wpmucdn.com/sites.dartmouth.edu/dist/9/2108/files/2019/06/BuerhausAuerbachStaiger_NursingEcon2014.pdf

Chatburn, R.L., Gole, S., Schenk, P., Hoisington, E. R., & Stoller, J.K. (2011).

Respiratory care work assignment based on work rate instead of work load.

Respiratory Care, 56(11), 1785-1790. <https://doi.org/10.4187/respcare.01253>

Chen, C. H., & Taylor, M. (2016). *An assessment of government regulation on adaptive capability and managerial strategy in U.S. healthcare* [PDF]. International Management Review.

<https://pdfs.semanticscholar.org/0c83/be896580586a5275fb45291724e7a58095e4.pdf>

Coalition for Baccalaureate and Graduate Respiratory Therapy Education. (2014).

CoBGRTE white paper on accreditation [White paper].

http://www.cobgrte.org/images/CoBGRTE_White_Paper_on_Accreditation_12Nov14.pdf

Commission on Accreditation for Respiratory Care. (n.d.). www.coarc.com

Commission on Accreditation for Respiratory Care. (2021). 2020 Report on accreditation in respiratory care education. <https://coarc.com/wp-content/uploads/2021/04/2020-CoARC-Report-on-Accreditation-4.29.21.pdf>

Center for Medicare & Medicaid Services. (2019). National health expenditure data:

Historical. Retrieved December 30, 2019, from <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical>

- Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Sage.
- Douce, F. H., Sergakis, G., Dunlevy, C., & Varekojis, S. M. (2014). The need for and interest in the advanced respiratory therapist practitioner *Respiratory Care Education Annual*. Fall 2014. <https://www.aarc.org/wp-content/uploads/2015/05/rcea14.pdf>
- Emener, W. G., & Cottone, R. R. (1989, June). Professionalization, deprofessionalization, and reprofessionalization of rehabilitation counseling according to criteria of professions. *Journal of Counseling and Development*, 67(10), 576-581. <https://doi.org/10.1002/j.1556-6676.1989.tb01333.x>
- Frank, J. R., Snell, L., Englander, R., & Holmboe, E. S. (2018, June 13). Implementing competency-based medical education: Moving forward. *Medical Teacher*, 39(6), 568-573. <https://doi.org/10.1080/0142159X.2017.1315069>
- Gravetter, F. J., & Wallnau, L. B. (2013). *Statistics for the behavioral sciences* (9th ed.). Wadsworth Cengage Learning.
- Gunn, H. (2002). Web-based surveys: Changing the survey process. *First Monday*, 7(12). <http://doi.org/10.5210/fm.v7i12.1014>
- HACC Respiratory therapist program requirements. (2020). <http://www.hacc.edu/ProgramsandCourses/Programs/HealthCareers/upload/Resp-Curriculum.pdf>
- Harrisburg Area Community College [HACC]. (n.d.). <http://www.hacc.edu>
- Hess, D. R., MacIntyre, N. R., Galvin, W. F., & Mishoe, S. C. (2016). *Respiratory care:*

- Principles and practice* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
- Institute of Medicine. (2011). *The future of nursing: leading change, advancing health*.
<https://doi.org/10.17226/12956>
- Jankowski, N., Hutchings, P., Ewell, P., Kinzie, J., & Kuh, G. (2013). The degree qualifications profile: What it is and why we need it now. *Change, 45*(6), 6-15.
<https://doi.org/10.1080/00091383.2013.841515>
- Kacmarek, R. M. (2013). Mechanical ventilation competencies of the respiratory therapist in 2015 and beyond. *Respiratory Care, 58*(6), 1087-1096.
<http://doi.org/10.4187/respcare.02546>
- Kacmarek, R. M., Barnes, T. A., & Durbin Jr., C. G. (2012). Survey of directors of respiratory therapy departments regarding the future education and credentialing of respiratory care students and staff. *Respiratory Care, 57*(5), 710-720.
<http://rc.rcjournal.com/content/57/5/710>
- Kacmarek, R. M., Durbin, C. G., Barnes, T. A., Kageler, W. V., Walton, J. R., & O'Neil, E. H. (2009). Creating a vision for respiratory care in 2015 and beyond. *Respiratory Care, 54* (3), 375-389. <http://rc.rcjournal.com/content/54/3/375>
- Keene, S., McHenry, K.L., Byington, R.L., & Washam, M. (2015). Respiratory therapists as physician extenders. Perceptions of practitioners and educators. *Respiratory Care Education Annual. Fall 2015*. <https://www.aarc.org/wp-content/uploads/2014/04/rcea2015.pdf>
- Kicklighter, J. R., Cluskey, M. M., Hunter, A. M., Nyland, N. K., & Spear, B. A. (2013). Council on future practice visioning report and consensus agreement for moving

forward the continuum of dietetics education, credentialing, and practice. *Journal of the Academy of Nutrition and Dietetics*, 113(12), 1710-1732.

<http://doi.org/10.1016/j.jand.2013.10.010>

Lane, S. H., & Kohlenberg, E. (2010). The future of baccalaureate degrees for nurses.

Nursing Forum, 45 (4), 218-227.

<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.853.6479&rep=rep1&type=pdf>

Macci Bires, A., Gilmore, D., & Bolus, N. E. (2012). The history, implications, and

development of the baccalaureate transition resource manual. *Journal of Nuclear*

Medicine Technology, 40(4), 265-270. <http://doi.org/10.2967/jnmt.112.106773>

Martsof, G. R., Auerbach, D. A., Spetz, J., Pearson, M. L., & Muchow, A. (2015). DNP

by 2015: An examination of nursing schools' decisions to offer a doctor of nursing practice degree. *Nursing Outlook*.

<http://doi.org/10.1016/j.outlook.2015.01.002>

Muma, R. D., Smith, B. S., Anderson, N., Richardson, M., Seizeer, E., & White, R.

(2011). Perceptions of U.S. physicians regarding the entry-level doctoral degree in physician assistant education. A comparative study with physician assistants and PA faculty. *Journal of Allied Health*, 40(1), 25-33.

https://soar.wichita.edu/bitstream/handle/10057/4937/Perceptions%20of%20US%20physicians_2011.pdf?sequence=3&isAllowed=y

Munkvold, J., Tanner, C. A., & Herinckx, H. (2012). Factors affecting the academic

progression of associate degree graduates. *Journal of Nursing Education*, 51(4),

232-235. <http://doi.org/10.3928/01484834-20120224-04>

National Board for Respiratory Care. (2019). <http://www.nbrc.org>

National Council for Osteopathic Research. (2014). Quantitative research methods.

[https://www.ncor.org.uk/wp-](https://www.ncor.org.uk/wp-content/uploads/2014/03/Quantitative_research_methods.pdf)

[content/uploads/2014/03/Quantitative_research_methods.pdf](https://www.ncor.org.uk/wp-content/uploads/2014/03/Quantitative_research_methods.pdf)

Nelson, M. A. (2002). Education for professional nursing practice: Looking backward into the future. *Online Journal of Issues in Nursing*, 7(3).

<http://ojin.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume72002/No2May2002/EducationforProfessionalNursingPractice.html>

Pittman, P. M., Kurtzman, E. T., & Johnson, J. E. (2014). Academic progression models in nursing: Design decisions faced by administrators in four case studies. *Journal of Nursing Education*, 53(6), 329-335. <http://doi.org/10.3928/01484834-20140520-03>

Raven, B. H. (1993). The bases of power: Origins and recent developments. *Journal of Social Issues*, 49(4), 227-251. <https://doi.org/10.1111/j.1540-4560.1993.tb01191.x>

Sample Size Calculator by Raosoft Website. (2004).

<http://www.raosoft.com/samplesize.html>

Schein, E. H. (1988). *Organizational Culture* [White Paper]. Massachusetts Institute of Technology Website: <https://dspace.mit.edu/bitstream/handle/1721.1/2224/SWP-2088-24854366.pdf?sequenc..>

- Shafritz, J. M., Ott, J. S., & Jang, Y. S. (2014). *Classics of organization theory* (8th ed.). Cengage.
- Shaw, R. C., & Traynor, C. (2010). *Effects from educational program type on RRT candidate outcomes*. NBRC. https://www.aarc.org/wp-content/uploads/2013/07/nbrc_program_study.pdf
- Smith, T.G. (2009). A policy perspective on the entry into practice issue. *The Online Journal of Issues in Nursing*, 15(1), <http://ojin.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol152010/No1Jan2010/Articles-Previous-Topic/Policy-and-Entry-into-Practice.html>
- Specht, D. M. (2015). More nurses asked to get baccalaureate degrees. *Nursing Critical Care*, 10(5), 40-46. <https://doi.org/10.1097/01.CCN.0000471003.09579.84>
- Spetz, J., & Bates, T. (2013). Is a baccalaureate in nursing worth it? The return to education, 2000-2008. *Health Services Research*, 48(6 pt.1), 1859-1878. <http://doi.org/10.1111/1475-6773.12104>
- Stoller, J. K., Niewoehner, D. E., & Fan, V. S. (2006). Disease management as an evolving role for respiratory therapists [Editorial]. *Respiratory Care*, 51(12), 1400-1402. <http://rc.rcjournal.com/content/51/12/1400>
- U.S. Public Health Service. (2018). Degree and licensure requirements for respiratory therapy. <https://www.usphs.gov/professions/respiratory-therapist/>
- Zittel, B. (2018). Passage of New York state legislation mandating academic progression toward the Bachelor of Science in Nursing degree. *Journal of Nursing Regulation*,

9(2), 4-8. [https://doi.org/10.1016/S2155-8256\(18\)30112-1](https://doi.org/10.1016/S2155-8256(18)30112-1)

**Appendix A: Competencies on Which General Agreement was Reached by the Second
Conference Attendees.**

Competency Area	Questions (n, =73)	Respondents (n, %)	Likert Scale Scores (n, %)+					Strongly Disagree	Median	Min	Max	Total Score £
			Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree					
I. Diagnostics												
A. Pulmonary Function Technology	3	28 (76)	47 (56)	21 (25)	9 (11)	7 (8)	0 (0)	5	2	5	84	
B. Sleep	3	28 (76)	30 (36)	43 (51)	5 (6)	6 (7)	1 (1)	4	1	5	84	
C. Invasive Procedures	5	28 (76)	100 (71)	27 (19)	9 (6)	3 (2)	1 (1)	5	1	5	140	
II. Disease Management												
A. Chronic	3	28 (76)	64 (76)	18 (21)	1 (1)	1 (1)	0 (0)	5	2	5	84	
B. Acute	3	28 (76)	41 (49)*	10 (12)*	5 (6)*	0 (0)	0 (0)	5	3	5	84	
III. Evidence-Based Medicine and Respiratory Care Protocols												
A. Evidence Based Medicine	3	28 (76)	46 (55)	24 (29)	7 (8)	5 (6)	2 (2)	5	1	5	84	
B. Respiratory Care Protocols	2	28 (76)	39 (70)	13 (23)	4 (7)	0 (0)	0 (0)	5	3	5	56	
IV. Patient Assessment												
A. Patient Assessment	3	28 (76)	68 (81)	11 (13)	5 (6)	0 (0)	0 (0)	5	3	5	84	
B. Diagnostic Data	4	27 (73)	74 (68)	21 (19)	8 (7)	5 (5)	0 (0)	5	2	5	108	
C. Physical Examination	4	27 (73)	104 (96)	4 (4)	0 (0)	0 (0)	0 (0)	5	4	5	108	
V. Leadership												
A. Team Member	1	28 (76)	24 (86)	3 (11)	1 (4)	0 (0)	0 (0)	5	3	5	28	
B. Healthcare Regulatory System	1	28 (76)	15 (54)	11 (39)	1 (4)	1 (4)	0 (0)	5	2	5	28	
C. Written and Verbal Communication	1	28 (76)	26 (93)	2 (7)	0 (0)	0 (0)	0 (0)	5	4	5	28	
D. Healthcare Finance	1	28 (76)	16 (57)	8 (29)	3 (11)	1 (4)	0 (0)	5	2	5	28	
E. Team Leader	1	28 (76)	19 (68)	4 (14)	3 (11)	1 (4)	1 (4)*	5	1	5	28	
VI. Emergency and Critical Care												
A. Emergency Care	7	27 (73)	139 (74)	37 (20)	9 (5)	4 (2)	0 (0)	5	2	5	189	
B. Critical Care	13	26 (70)	252 (75)	61 (18)	17 (5)	8 (2)	0 (0)	5	2	5	338	
VII. Therapeutics												
A. Assessment of Need for Therapy	1	28 (76)	18 (64)	10 (36)	0 (0)	0 (0)	0 (0)	5	4	5	28	
B. Assessment Prior to Therapy	6	28 (76)	128 (76)	37 (22)	3 (2)	0 (0)	0 (0)	5	3	5	168	
C. Administration of Therapy	5	28 (76)	121 (86)	19 (14)	0 (0)	0 (0)	0 (0)	5	4	5	140	
D. Evaluation of Therapy	5	28 (76)	116 (83)	18 (13)	1 (1)	5 (4)	0 (0)	5	2	5	140	
Adapted from Barnes et al. 2010												
* Percentage calculations in original publication were incorrect. These have been corrected.												
^ General Agreement was defined as approval of > 80% of respondents to the second conference survey.												
+ Likert Scale: 5 = strongly agree, 4 = agree, 3 = undecided, 2 = disagree, 1 = strongly disagree. Likert category is the total for all questions in that comp												
£ Total Score = number of respondents x number of questions in that competency area												

Appendix B: 2015 Survey of Respiratory Therapy Department Directors

AARC 2015 Survey of Respiratory Therapy Department Directors

DEPARTMENT INFORMATION

*1. Please indicate the city and state where your hospital is located.

City/Town: State:

*2. This survey should be completed by the Department Director if possible, if not by their designee. What is your position in the Department? Select one only.

3. How many beds are supported by your facility? Use only whole numbers with no letters or commas.

4. How many full time equivalent respiratory therapists are employed or are expected to be employed in each of the following years? Answer with whole numbers only for all positions that require graduation from an accredited respiratory therapy program.

2010 _____

2012 _____

2015 _____

2020 _____

*5. Which type of program do you prefer, if any, when hiring graduate respiratory

therapists?

Masters

Baccalaureate

Associate

No preference

Briefly explain your choice.

*6. How did the preparation of recent graduates (2005-2009) that you hired, meet your expectation?

Exceeded

Met

Fell below

*7. How long does your institution give recent graduates to earn the RRT credential before terminating their employment?

6 months

12 months

18 months

36 months

Not applicable, we do not have this requirement

8. Do you require respiratory therapists to maintain active NBRC credentials in addition to maintaining a state license?

Yes

No

9. Does your hospital offer tuition reimbursement to staff respiratory therapists pursuing a baccalaureate or higher degrees?

Yes

No

10. Is your institution a clinical affiliate of one or more COARC accredited respiratory therapy education programs?

Yes

No (Go to question 13)

11. What is the maximum number of students you can take on clinical rotation during the academic year? Enter whole numbers only.

12. How many hours of clinical practice to respiratory therapy students can you provide during the entire academic year? Answer with whole numbers and multiply the number of students x the number of hours they are in your facility, e.g., 6 students x 200 hours/each = 1200.

13. What are the barriers to taking students, or taking more students, on clinical rotations? Select all that apply.

Inadequate number of hospital-based clinical preceptors.

Clinical instructors are not provided by the program.

Not enough clinical experiences appropriate for students.

Workload prevents staff from serving as clinical preceptors.

Other (please specify)

14. How many full time equivalent "unfilled" staff respiratory therapist positions to you have? Do not include supervisory positions and use only whole numbers.

15. How many additional, "new", full time equivalent staff respiratory therapist positions to you expect to need by 2015? Do not include supervisory positions and use only whole numbers.

*16. How many work weeks does it typically take to orient a new graduate therapist in your organization? A work week should be considered as 40 hours, answer with the number of weeks using whole numbers only.

Weeks for Associate degree graduate?

Weeks for Baccalaureate degree graduate?

DIAGNOSTICS

The purpose of questions 17-25 is to evaluate how many competencies identified by the AARC Task Force on the Future of Respiratory Care will be needed by new graduates and other therapists working in your Department in 2015. See the special article published in Respiratory Care May 2010; 55(5):601-616 for specific information on these competencies.

*17. Which of the following diagnostic competencies do you expect a new graduate and other staff therapists to need in 2015? Select all that apply.

Perform basic spirometry.

Explain indications and contraindications for advanced pulmonary function tests.

Explain indications and contraindications for sleep studies.

Relate results of sleep studies to types of sleep disorders.

Explain indications and contraindications, general hazards, and complications of bronchoscopy.

Describe the bronchoscopy procedure and the respiratory therapist's role in assisting the physician.

Evaluate monitoring of a patient's clinical condition with pulse oximetry, electrocardiogram, exhaled gas analysis, and other related devices.

Perform arterial puncture and sampling, and blood analysis.

CHRONIC AND ACUTE DISEASE MANAGEMENT

*18. Which of the following chronic and acute disease management competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Explain the etiology, anatomy, pathophysiology, diagnosis, and treatment of cardiopulmonary diseases (e.g., asthma, chronic obstructive pulmonary disease) and comorbidities.

Engage patients through communication and education and empowerment.

Develop, administer, and re-evaluate the care plan for chronic disease management.

Manage respiratory care plans in the acute-care setting, using evidence-based medicine, protocols, and clinical practice guidelines.

EVIDENCE-BASED MEDICINE AND RESPIRATORY CARE PROTOCOLS

*19. Which of the following evidence-based and respiratory care protocols competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Critique published research.

Explain the meaning of general statistical tests.

Apply evidence-based medicine to clinical practice.

Explain the use of evidence-based medicine in the development and application of hospital-based respiratory care protocols.

Treat patients in a variety of settings, using the appropriate respiratory care protocol.

ASSESSMENT

*20. Which of the following patient assessment competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Complete a patient assessment through physical examination, chart review and other means as appropriate and interact with healthcare team members about assessment results.

Obtain past medical, surgical, and family history.

Obtain social behavioral and occupational history and other historical information incident to the purpose of the current complaint.

Interpret pulmonary function studies (spirometry).

Interpret lung volumes and diffusion studies.

Interpret arterial blood gases, electrolytes, complete blood cell count and related laboratory tests.

Inspect the chest and extremities to detect deformation, cyanosis edema, clubbing and other anomalies.

Measure vital signs (blood pressure, heart rate, and respiratory rate).

Evaluate patient breathing effort, ventilatory pattern, and use of accessory muscles.

Document oxygen saturation oximetry measurements under all appropriate conditions (with or without oxygen at rest, during sleep, ambulation, and exercise).

LEADERSHIP

*21. Which of the following leadership competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Contribute to organizational teams as related to planning, collaborative decision making and other team functions.

Describe fundamental/basic organizational implications of regulatory requirements on the healthcare system.

Demonstrates effective written and verbal communications with various members of the healthcare team, patients, families, and others (cultural competence and literacy).

Describe healthcare and financial reimbursement systems and the need to reduce the cost of delivering respiratory care.

Lead groups in care planning, bedside decision making, and collaboration with other healthcare professionals.

EMERGENCY CARE

*22. Which of the emergency care competencies will a new graduate and other staff therapists need in 2015? Select all that apply

Perform basic life support (BLS).

Perform advanced cardiovascular life support (ACLS).

Perform pediatric advanced life support (PALS).

Perform neonatal resuscitation program (NRP).

Perform endotracheal intubation.

Maintain current AHA certification in BLS and ACLS.

Perform as a member of the Rapid Response Team (Medical Emergency Team).

Participate in mass casualty staffing to provide airway management, manual and mechanical ventilatory life support, medical gas administration, aerosol delivery of bronchodilators and other agents in the resuscitation of respiratory and cardiovascular failure.

Provide intra-hospital transport of critically and chronically ill patients, provide cardiopulmonary life support and airway control during transport.

Recommend pharmacotherapy in clinical settings including emergencies.

CRITICAL CARE

*23. Which of the following critical care competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Apply invasive and noninvasive mechanical ventilation.

Apply all ventilation modes currently available on all invasive and noninvasive mechanical ventilators as well as adjunct to mechanical ventilation.

Interpret ventilator data and hemodynamic monitoring data, and calibrate monitoring devices.

Manage airway devices and sophisticated monitoring systems.

Make recommendations for treatment based on wave form graphics, pulmonary mechanics and related imaging studies.

Use of therapeutic medical gases in the treatment of critically ill patients.

Apply circulatory gas exchange systems in RT practice, e.g., ECMO.

Participate in collaborative care management based on evidence-based protocols.

Deliver therapeutic interventions based on protocol.

Integrate the delivery of basic and/or advanced therapeutics in conjunction with or without the mechanical ventilator in the care of critically ill patients.

Make recommendations, and provide treatment to critically ill patients based on pathophysiology.

Recommend cardiovascular drugs based on knowledge, understanding of pharmacologic action.

Use electronic data systems in their practice.

THERAPEUTICS

*24. Which of the following therapeutic competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Assess therapy.

Assess a patient prior to therapy.

Administer therapy.

Evaluate therapy.

THERAPEUTIC APPLICATIONS

*25. Which of the following therapeutic applications competencies will a new graduate and other staff therapists need in 2015? Select all that apply.

Medical gas therapy.

Humidity therapy.

Aerosol therapy.

Hyperinflation therapy

Bronchial hygiene therapy.

Airway management.

Mechanical ventilation

POST GRADUATE EDUCATION

26. How will your staff respiratory therapists acquire and document achievement of competencies that will be needed by the workforce in 2015? Select all that apply.

Required yearly competency demonstration.

Attendance at departmental inservices.

Required yearly written examinations.

Attendance at conferences and symposium.

Other

Please specify "Other"

RESPIRATORY THERAPY PRACTICE

Assuming several of the new competencies described above are needed by your department, please respond to the following questions.

*27. What credential should future graduates earn to enter the profession and meet the legal requirements of their state?

RRT

CRT

Please explain your rationale.

*28. What degree should future graduates be required to earn to be eligible for the examination they take to become licensed and enter practice as a respiratory therapist?

Doctorate

Masters

Baccalaureate

Associate

Please explain your rationale.

29. What degree should future graduates be recommended to earn for continued practice beyond licensure and entry into practice as a respiratory therapist?

Doctorate

Masters

Baccalaureate

Associate

Please explain your rationale.

30. Should future graduates be required to maintain an active CRT or RRT credential to document competency for renewal of their license to practice in your state?

Yes

No

Please explain your rationale.

SUMMARY COMMENTS AND SURVEY SUBMITTAL

Thank you for taking time to complete this important survey. Use the text box below for additional comments on any of the survey questions.

IMPORTANT: Remember to click on the “DONE” button on the bottom of the last page to submit your survey.

31. Use the text box below for additional comments on any of the survey questions.

Appendix C: AARC Permission Letter

From: Dean Hess <dhess@XXXX.ORG>
Sent: Wednesday, February 5, 2020 9:19 AM
To: Aumiller, Curtis <rcaumill@XXXX.edu>
Subject: Re: Permission Request
Importance: High

Curtis,

Permission granted.

Best of luck on your dissertation.

Dean Hess
Managing Editor
Respiratory Care

On Feb 4, 2020, at 12:37 PM, Aumiller, Curtis <rcaumill@XXXX.edu> wrote:

Dear Dr. Hess,

My name is Ronald Curtis Aumiller and I am working on my Doctoral Dissertation titled "What Are the Benefits of Baccalaureate First-Professional Degree in Respiratory Therapy". In my paper I am hoping to build upon the work of the 2015 and Beyond work that was completed. I am requesting permission to reprint in my paper, the survey that was sent to Directors of Respiratory Therapy Departments. The survey was by: Kacmarek, Barnes, and Durbin. (2012). Survey of directors of respiratory therapy departments regarding the future education of credentialing of respiratory care students and staff. *Respiratory Care*, 57(5). <https://doi.org/10.4187/respcare.01360>

I am using this survey as a basis for my own survey to determine if things have changed in hiring manager practices.

If you have any questions regarding this request, please do not hesitate to contact me at number below.

You may respond to this email with your decision.

Have a great day!

R. Curtis Aumiller, MS, MBA, RRT, RRT-NPS, RRT-ACCS, RPFT

-----Original Message-----

From: Dean Hess <dhess@XXXX.ORG>
Sent: Tuesday, February 4, 2020 6:25 AM
To: Aumiller, Curtis <rcaumill@XXXX.edu>
Subject: Your message

Curtis,

I received an email from the AARC executive office stating that you left a message regarding permission to reproduce a paper from Respiratory Care. Can you send me your request in writing to this email address?

Dean Hess
Managing Editor
Respiratory Care

Appendix D: Questionnaire of Respiratory Hiring Managers

The following survey is being conducted to determine how hiring managers in respiratory therapy departments are weighing the educational entry-level of their prospective employees in the hiring decisions. This survey will be referencing the 69 competencies that were determined by agreement in the 2015 and Beyond survey conducted by Barnes, Gale, Kacmarek, & Kageler, (2010).

These competencies can be found at
<http://rc.rcjournal.com/content/55/5/601.full.pdf+html>

1. What is your position in your Department?

Supervisor

Assistant Manager

Manager

Director

Vice-President

Other

If "Other", please specify your position.

2. For how many beds is your hospital licensed? *Use only whole numbers with no letters or commas.*

3. How many adult ICU's are in your institution? *Use only whole numbers with no letters or commas.*

4. What type of location does your hospital serve? (Select one only)

Urban

Suburban

Rural

Other (please specify)

5. When **you entered** the profession of Respiratory Therapy, what was **your** education level? (please choose one only)

On-the-Job Trainee

Certificate

Diploma

Associate Degree

Baccalaureate Degree

Master's Degree

Other

If "Other", please specify degree or experience.

6. What is your **CURRENT** educational level? (please choose one only)

On-the-Job Trainee

Certificate

Diploma

Associate Degree

Baccalaureate Degree

Master's Degree

Doctoral Degree

Other (please specify)

7. When hiring new graduates for open STAFF positions at my institution, I require my new graduates to have a(n): (please choose only one)

Associate Degree Only

Baccalaureate Degree Only

Associate Degree enrolled in a Degree Completion program

No preference on the degree (Associate OR Baccalaureate)

If "Other", please specify your hiring preference.

8. When hiring respiratory therapists for open STAFF positions at my institution, I only hire new graduates with a (choose only one)

CRT only

CRT waiting to take CSE exam

RRT only

Temporary license with no credential

Other

9. My new graduate associate degree hires possess all 69 competencies as outlined by the AARC's 2015 and Beyond initiative.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

N/A - I do not hire associate degree graduates

Other (please specify)

10. My new graduate baccalaureate degree hires possess all 69 competencies as outlined by the AARC's 2015 and Beyond initiative.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

N/A - I do not hire baccalaureate degree graduates

Other (please specify)

If "Other", please explain.

11. My new graduate associate degree hires complete their department orientation within the allotted time.

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

N/A - I do not hire associate degree graduates

Other

If "Other", please explain.

12. My new graduate baccalaureate degree hires complete their department orientation within the allotted time.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

N/A

Other

13. My associate degree new graduate skill sets are equal to my new baccalaureate degree graduate skill sets.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

N/A

14. If degree completion programs are available to my staff, they are likely to participate in these programs.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

15. I am more likely to hire new associate degree graduates that are already enrolled in a degree completion program.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

16. The current entry-level structure for the profession is adequate to meet my facility's needs.

Strongly agree

Agree

Neutral

Disagree

Strongly disagree

17. Does the amount of open positions in your respiratory department change your position on the associate versus baccalaureate entry-level perception?

Yes

No

N/A

If yes, please explain

18. Did the current Covid-19 pandemic change your position on the associate versus baccalaureate entry level perception?

Yes

No

If yes, please explain:

19. Did the pandemic for Covid-19 make you adjust your hiring practices temporarily?

Yes

No

N/A

20. During the Covid-19 pandemic, did you have enough respiratory therapists to meet the patient demands for your institution?

Yes

No