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

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Khalid Alwadeai

Summer 2015

A NEEDS AND VALUE ASSESSMENT IN DEVELOPING A SAUDI BOARD OF
RESPIRATORY THERAPY

By

Khalid S. Alwadeai, RRT-NPS

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In

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Georgia State University

Atlanta, Georgia

2015

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By

Khalid S. Alwadeai, BSRC, RRT-NPS

(Under the Direction of Dr. Lynda T. Goodfellow)

ABSTRACT

BACKGROUND: RT was primarily introduced in Saudi Arabia by military hospitals beginning in the late 1970s. Currently, Saudi Arabia does not have a certification board for RT and, therefore, all of the RTs in Saudi Arabia who graduated from national colleges do not have credentials. **PURPOSE:** The purpose of the study was to evaluate the need for developing a board for RT in Saudi Arabia, and also to determine how Saudi RTs perceived the value of certification board for RT. **METHODS:** Data were collected through a descriptive survey. The survey was used to examine the assessment of need to develop SBRT, and to determine how Saudi RTs perceived the value of certification. The web- link survey was e-mailed to all RTs who are member of the Saudi Society for Respiratory Care (SCRC), which has total of 750 members. The survey consisted of two parts: Assessment of need for SBRT, and perceived value certification tool (PVCT). **RESULTS:** two hundreds and forty responded with a response rate of 32%. Eighty percent of the participants were male, and 18% were female. Fifty three percent of the participants identified themselves as credentialed RTs, and 46% participants were non-credentialed RTs. The participants' degree level reported was Associate degree (13%), Bachelor's degree (63%), Master's degree (21%), and Doctoral degree (3%). Ninety percent of the participants work for the government institutions, whereas 10 % work for the private institutions. There was no statistically significant difference at the level of 0.05 between credentialed RTs and non-credentialed in terms of the perception towards the development of SBRT ($z = -1.81, p = .071$). There is also no statistically significant difference between credentialed and non-credentialed ($p = .779$) at the level of .05 in terms of how they perceived the certification value. **CONCLUSION:** These findings can provide SRTs the opportunity to promote and discuss the development of the KSA certification board within the field of RT.

ABRIVIATIONS

RT: Respiratory Therapy

RTs: Respiratory Therapists

SRT/s: Saudi Respiratory Therapist/s

KSA: Kingdom of Saudi Arabia

SCHS: Saudi Commission for Health Sciences

SCRC: Saudi Society for Respiratory Care

SBRT: Saudi Board for Respiratory Therapy

WHO: World Health Organization

NBRC: National Board for Respiratory Care

PVCT: Perceived Value of Certification Tool

CCI: Competency and Credentialing Institute

ICU: Intensive Care Unit

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CHAPTER I

INTRODUCTION

The health care system in the Kingdom of Saudi Arabia (KSA) has improved in the last two decades. According to the World Health Organization (WHO), the Saudi Arabian health care system ranks 26th in the world (Almalki, Fitzgerald, & Clark, 2011). Today, allied health professions, including respiratory therapy (RT), are vital components of the Saudi Arabian health care system. RT was primarily introduced in KSA by military hospitals beginning in the late 1970s (Alotaibi, 2015). Nowadays, there is a high demand in the health care system for RT services due to the importance of respiratory therapists (RTs) in the clinical setting. Thus, both the government and private sector have participated in RT education by establishing many new RT educational programs and thereby increasing the number of RT graduates in Saudi Arabia (Telmesani, Zaini, & Ghazi, 2011)

RT in KSA is facing numerous challenges. These include, the severe shortage of national RTs; the rapid increase in the number of RT schools over a short period of time; the influx of expatriate RTs who work in KSA to cover the shortage of staff; the award of scholarships to hundreds of students who study RT abroad; and the absence of available national guidelines for minimal acceptable competencies of RT graduates (Bajammal et al., 2008). In addition, the rising demand for RTs is a remarkable challenge nationwide. Currently, the estimated number of RTs needed to cover the intensive care units (ICU) in the general hospitals in KSA is about 2,428 RTs(Alotaibi, 2015). In fact, this shortage of staff in RT has put tremendous pressure on the Saudi health care system. Therefore, many governmental and private educational programs have been established to meet the huge demand for RTs.

All RT educational programs in KSA have a curriculum committee. The committee has the authority to develop the curriculum structure, educational objectives and the methods of teaching, which are based on either conventional education [face to face] or problem-based learning approach (Telmesani et al., 2011). Furthermore, each educational program has its methods of evaluating the student's knowledge and competency. However, the methods of evaluating the students are quite different from one school to another. These differences in curriculum structure, educational objectives, methods of teaching and methods of evaluation among the RT schools have led to differences in RTs graduates' knowledge and skills. From this standpoint, each RT school has an obligation toward developing a curriculum that takes into consideration the essential knowledge, skills, and professional attitudes needed to meet the goals of the health care standards, and to achieve better clinical outcomes. (Telmesani et al., 2011). Therefore, the presence of a certification board for RT will help the RT programs to establish a curriculum that takes into consideration the knowledge and skills necessary for RT students. Moreover, the certification board exams will also provide guidance to what the RT curriculum needs to cover in order to meet the required standards to practice RT.

Having a certification board in any field is very important to one's professional's career. A certification board can be defined as "when the practitioners are certified by an organization as possessing expertise within an area of specialization that exceeds the basic qualification for licensure" (Robiner, Dixon, Miner, & Hong, 2012). While many countries have certification boards in RT, which certify therapists and regulate practices within the profession, the KSA does not have a RT certification board. Certification boards are believed to work as a protection for the public and patients from malpractice and unqualified practitioners (Finch, Simon, & Nezu, 2006). The potential value of the certification board is associated with better clinical outcomes

and patient care; and increases the responsibility and accountability of the RTs. Likewise, they are also coupled with a better appreciation and distinction inside the profession (Connor & Hamilton, 2010). Based on this notion, the credentialed healthcare worker is considered to be more knowledgeable in comparison to the non-credentialed; subsequently, the patient outcomes should be improved (Grosch, 2006)(Jefte DB & Andriole DA, 2011). Therefore, RTs who gain the necessary knowledge by preparing for a board certification exam, can demonstrate their competency and qualifications to practice RT.

BACKGROUND

Respiratory therapy is recognized as an allied health profession providing assistance in the diagnosis, treatment, and health promotion of patients with respiratory diseases. The first integrated body of RTs was in the state of Illinois in 1946 at the University of Chicago, and in 1964 in Canada (Litwin, 2006; Mussa, 2008; Myers, 2013). According to Weilacher's history of the American Association for Respiratory Care (AARC), before, 1974, the treatment modalities of respiratory care were not based on clinical studies, but rather it was based mainly on clinical impressions (Mussa, 2008). RTs are health care professionals whose responsibilities include diagnostic assessment, management, education, evaluation and rehabilitation of patients with disorders of the cardiopulmonary system (Harris et al. with Parker, Xinggang Liu, 2013). With that being said, RT is a profession that is distinct from medicine, and other healthcare professions (Mussa, 2008). The RT profession has flourished on innovation and change in which it becomes a skilled practice that manages equipment such as life support devices for critically ill patients, and the provision of invasive and noninvasive mechanical ventilation in all care settings.

In KSA, there are approximately 1,477 RTs (Alotaibi, 2015). Only 15% of them have the National Board for Respiratory Care (NBRC) credentials, and 70% of the total numbers are bachelor's degree holders (Alotaibi, 2015). All Saudi RT students who graduated from United States (US) universities are eligible to attempt the NBRC exams, while the SRT students who graduated from KSA universities are not. In 1993, the Saudi Commission for Health Sciences (SCHS) was established by royal decree to control and regulate the registration process of all health care professionals, and to verify the credentials of the foreign health care workers. However, it has limited responsibility for monitoring and supervising the health care professions and practitioners (Bahammam et al., 2013).

The demand for the RT profession is increasing all over the world. Many countries such as the United States and Canada have recognized RT as an essential department in clinical settings and at the educational level, whereas many countries have recognized it in different levels.

PURPOSE

The purpose of the study was to determine the need for developing a board for RT in KSA, and also to evaluate how Saudi RTs perceive the value of a certification board for RT. Certification board is an important tool to improve health care outcomes and to regulate the practice of RT profession. Implication of SBRT for RTs' long term is to improve the RT profession in KSA.

The long-term goal of developing a national board for RT in KSA is to improve patient care and clinical outcomes. Another goal is to regulate the practice of respiratory therapy in KSA by credentialing SRTs.

SIGNIFICANCE

A certification board is needed for evaluating the competency of RT practice in KSA. A certification board of respiratory therapy is in response to the need for regulating the respiratory therapy profession in Saudi Arabia. The lack of a unified and dependable evaluation system in Saudi RT colleges is an area of great concern. This is significant because there is no known investigation of the need to develop a national board for respiratory therapy in KSA, and how the SRTs perceive the value of certification. This study aims to determine whether there is a need and desire for such a certification board or not. In addition, it was designed to determine the differences in perceived value of certification between credentialed RTs and non-credentialed RTs.

The following research questions were addressed to guide the acquisition of data required to meet the requirements of the purpose

Research Questions

- 1- What is the level of support and the attitudes of Saudi Respiratory Therapists for the development of RT certification board in Saudi Arabia?
- 2- Are there any differences in perception for the need of developing a Saudi RT certification board between credentialed RTs and non-credentialed RTs?
- 3- Are there any differences in valuing the certification board between credentialed RTs and non-credentialed RTs?

Summary

To conclude, having a board certification in any field is assumed to be the cornerstone for any professional's career. This chapter inclusively discusses the history and the current status of respiratory therapy in KSA. Furthermore, it describes the need to explore the development of a

Saudi national board for respiratory therapy.

CHAPTER II

REVIEW OF THE LITERATURE

INTRODUCTION

The following literature review covered many aspects of the values of board certification in health care for the past two decades. A computerized search of databases accessed for this review includes: PubMed, CINAHL, CINAHL with full text, Ovid and EBSCOhost, MEDLINE, MEDLINE with full text, and the Georgia State University (GSU) computerized library catalog. Search keywords used were: respiratory care, board certification, healthcare board, perceived value for the board, board certification and nursing, board certification as predictive measure, board certification and clinical outcome, and difference between certified and noncertified. Results included a wide spectrum of articles that discussed the impact of the board in numerous health professions, references in the content of scholarly journals and research articles were followed as well. This review examined the literature related to certification boards in nursing, certification boards and patient outcomes, and the need for RT certification board in KSA.

Certification Boards in Nursing Profession

Numerous studies have explored the potential benefits to healthcare practitioners who are registered and how the employment of registered practitioners benefits the work environment. The benefits of certification can be summarized as personal accomplishment, job satisfaction, validation of knowledge, commitment to professionalism, challenge, and job opportunities (Gaberson, Schroeter, Killen, & Valentine, 2003); and also certification is related to a sense of accomplishment and satisfaction (Byrne, Valentine, & Carter, 2004). Certification has also been

linked with a high sense of professionalism that can be described as attitudes of self-regulation and independence (Wynd, 2003).

Certification board in the nursing profession started in 1946 when the American Association of Nurse Anesthetists (AANA) created a method to acknowledge personal accomplishment and skilled performance in nursing practice (Gaberson et al., 2003). Registered nurses have been shown to have greater job related power and more insight of empowerment (Piazza, Donahue, Dykes, Griffin, & Fitzpatrick, 2006). Coleman et al. (1999) recognized that the primary reasons for becoming registered are for pursuing a personal challenge, a craving to be recognized as a specialist, and for career advancement (E. A. Coleman et al., 1999).

Redd and Alexander (1997) conducted a study of 83 staff nurses in two different acute care hospitals to explore job performance and self-esteem levels of registered and non-registered staff nurses. A list of the subjects' immediate supervisors was collected from the participants; consent forms and then the supervisors were asked to evaluate each subject's performance. Participants' supervisors evaluated nursing using the Schwirian six dimension scale: leadership, critical care, teaching or collaboration, planning or evaluation, interpersonal relations or communication and professional development. The researchers found that results of the supervisors' rating of staff performance showed no significant difference between the performance scores of registered and non-registered nurses. Yet, the supervisors did score the registered nurses higher in performance scores for planning, evaluation and teaching, collaboration. The researchers, in addition, stated that the registered nurses were also found to have higher self-esteem. Personal achievement and professional growth were the most frequently reported reasons for seeking certification. Therefore, the researchers concluded that registered

nurses perform better than non- registered nurses, especially in teaching and collaboration, and planning and evaluation (Redd & Alexander, 1997).

Gaberson and her colleagues conducted a descriptive study of 1389 registered nurses selected from the Certification Board Perioperative Nursing (CBPN) to determine the perceived value of certification in perioperative nursing. They found that 90% or more of the registered perioperative nurses expressed agreement or strong agreement with Perceived Value of Certification Tool (PVCT) value statements related to personal accomplishment, professional satisfaction, specialized knowledge, professional growth, attainment of a practice standard, professional commitment, professional challenge, and credibility enhancement. Moreover, between 50% and 85% of registered nurses agreed or Strongly agreed with value statements related to confidence in clinical abilities, level of clinical competence, accountability, marketability, autonomy, consumer confidence, and recognition from peers, other health professionals, and employers. In addition, only 30.7% of registered nurses agreed or strongly agreed with the value statement that certification increases salary (Gaberson et al., 2003).

In a study by Fitzpatrick and her colleagues, they investigated the relationship between American Association of Critical-Care Nurses' (AACNs') specialty certification and empowerment and, secondarily, examined this variable as related to intent to leave the current position and the nursing profession. They concluded that nurses with AACN certification have greater empowerment and intend to leave their positions or nursing profession less than nurses who do not have AACN certification (Fitzpatrick, Campo, Graham, & Lavandero, 2010). Similarly, in a study done by Piazza et al. (2006), they concluded that registered nurses had access to job related power and opportunity structures more than non-registered nurses.

Additionally, certification promotes recognition of the expertise that will lead in turn is empowering. Moreover, health institutions that support and recognize these achievements of registered nurses, may experience less turnover and improved retention rate (Piazza et al., 2006). One survey study conducted by Cary surveyed 19,452 nurses from United States, Canada and US territories to examine how certification contributed to nurses' personal and professional development and to their practice and how registered nurses affect the work environment as viewed by employers. She found a large portion of the respondents (72%) received at least one or more benefits from their certification status such as recognition, promotion, increased pay, or job security. In addition, participants identified benefits of certification to be recognition of colleagues, and public recognition of their certificate status, such as in awards ceremony. These nurses reported that certification provided autonomy and enhanced collaboration, as well as allowing them to assert control over their work (Cary, 2001).

Bekemeier et al. (2007) investigated the extent to which Public Health Nurses (PHNs) see value in credentialing and perceived specific barriers related to a public health nursing credential. They found that the participants vastly agreed (90.1%) with the personal value of credentialing part of the Perceived Value of Certification Tool (PVCT) tool (Bekemeier, 2007). In a study to explore similarities and differences in certification value among perioperative nurses who are registered, non-registered, or administrators by using the PVCT, Sechrist et al (2006) asserted that registered nurses perceived greater value in certification than do those who are non-registered. In addition, administrators perceived a greater value in registered nurses than non-registered nurses (Sechrist, Valentine, & Berlin, 2006). The nurses' managers have a positive perception toward specialty nursing certification. Stromborg et al (2005) conducted a survey study of 139 nurse managers to investigate the perception of nurse managers about specialty

nursing certification. They found that the nurse managers prefer to hire registered nurses. 85% of the participants indicated they would hire a registered nurse over a non-registered nurse. Additionally, they would assign a patient with complicated problems to a registered nurse (47.6%). They found, in addition, that 58% of the nurse managers believe that they see differences in performance of registered nurses; 29% did not. Interestingly, participants said, that 30% of patient and families are satisfied by the care provided by registered nurses as opposed to care provided by non-registered nurses (Stromborg et al., 2005).

However, in one study there was no difference between registered and non-registered in regards of nurses' job perception (Hughes et al., 2001). Hughes et al. (2001) conducted a cross-sectional survey study of 1,217 staff nurses, 703 of which were registered, and 514 were non-registered, to examine relationships between oncology nursing certification and oncology nurses' job perceptions. Hughes and her colleagues found that the job perception of oncology nurses was positive and did not differ on the basis of certification status. Yet, the decision to join a nursing organization, in itself, may reflect a sense of professional commitment and career orientation that is associated with positive job perception (Hughes et al., 2001). Nevertheless, no financial benefits, a lack of institutional reward of the board certificate, lack of time and lack of experience, were more likely to be the barrier for the nurses to obtain the credential (Bekemeier, 2007; Byrne et al., 2004; Cary, 2001; McClain, Richardson, & Wyatt, 2004).

Certification Boards and Patient Outcomes

Certification board has become a mandatory requirement for some of the specialty fields in many clinical settings. It is used as an indicator for quality assurance (Frank-Stromborg et al., 2002). The role of the clinician's knowledge and skills play a significant role in terms of the prevention or mitigation the complication and ultimately reduce the risk of causing harm to the

patients (Kendall-Gallagher & Blegen, 2009). Many studies have attempted to document the relationship between board certification and patient outcomes.

Frank-Stromborg et al. (2002) used a retrospective chart review methodology of 20 oncology nurses (OCNs) in which 7 were registered and 13 non-registered, along with a review of 181 patients' medical records, to investigate the effect of oncology nursing certification on sensitive patient outcomes of symptom management (pain and fatigue), adverse events such as infection, decubitus ulcers, and recurrent admission to the hospital. It was hypothesized that oncology registered nurses would have better outcomes in terms of patient care. The data did not, however, support this hypothesis. They concluded that there is no difference in terms of patient outcomes of symptom management between the oncology registered and non-registered nurses. The study, however, demonstrated valuable information regarding the need for additional studies in the association between patients care and board certification (Frank-Stromborg et al., 2002).

Coleman et al (2010) compared registered nurses with non-registered nurses for symptom management of pain, nausea and vomiting, nurse satisfaction, and patient satisfaction to examine the effect of oncology nursing certification on nursing-sensitive patient outcomes. They included 93 oncology nurses of which 54 were registered and 270 patients with cancer. Results showed that registered nurses recorded higher scores than non-registered on the instruments that measured attitudes and knowledge of pain and nausea management. Moreover, by reviewing the medical records, registered nurses followed the National Comprehensive Cancer Network's guidelines for chemotherapy-induced nausea and vomiting management more than non-registered nurses (E. Coleman et al., 2010).

Kendall-Gallagher and Biegen conducted a secondary data analysis study to investigate the possible relationship between the number of registered critical care nurses and adverse

patient events in a sample of 48 intensive care units from a random sample of 29 hospitals from across the United States. Data were collected regarding the number of registered nurses, organizational and nurse characteristics (magnet status, certification, education, experience, skill mix and total hours of nursing care per patient day) and 6 adverse patient events (medication errors, falls, skin breakdown and 3 types of hospital-acquired infections). The authors found that the proportion of intensive care nurses who hold the certified critical nurse registry credential had an inverse relationship to patient safety (Kendall-Gallagher & Blegen, 2009). These findings indicate that registered nurses are associated with better patient care, and clinical outcome.

In a retrospective study done by Boltz et al. (2013) to explore the extent of nursing certification association with nursing sensitivity quality indicators in units that primarily serve older patients. They found a lower percentage of registered nurses in any nursing specialty were more likely to have falls (Boltz, Capezuti, Wagner, Rosenberg, & Secic, 2013). In another study, Newhouse and colleagues examined the effects of specialty certification and other factors on patient in terms of mortality rate, complication and length of stay. The estimated likelihood of complications decreased by eight percent for every ten percent increase in the proportion of nurses who were registered in perioperative nursing (Newhouse, Johantgen, Pronovost, & Johnson, 2010).

The Need for RT Certification Board in KSA

Professional certification programs have been established to determine if the practitioners have attained a level of knowledge and skills in a specific practice above the minimum requirements for licensure or registration (Gaberson et al., 2003). It is accepted that certification board demonstrates that the practitioners have maintained a minimum level of qualification and skills to perform the job (Schroeter, Byrne, Klink, Beier, & McAndrew, 2012).

Certification board is one measure of validating the practitioners' knowledge in any particular area of healthcare. It also demonstrates predictive information in terms of the quality of care provided by the practitioners (Kendall-Gallagher & Blegen, 2009; Silber et al., 2002). One of the goals of certification board and examinations is to ensure that new graduates are competent and able to provide treatment safely and effectively (Sharp, Bashook, Lipsky, Horowitz, & Miller, 2002).

For the RT profession, credentials provided by the NBRC such as the Registered Respiratory Therapist (RRT) are acknowledged to be the "standard of excellence". Barnes et al. (2011) conducted a survey study of 1,011 RT educational program directors, RT department directors, and deans of health science divisions. The study indicates that 81% of the RT department directors prefer the RRT credential being needed to practice RT, and 68% of RT educational program directors prefer the RRT to practice RT (Barnes, Kacmarek, Kageler, Morris, & Durbin, 2011). These findings indicated that credentials are preferred, and probably required by some institutions to practice RT.

Currently, Saudi Arabia does not have a RT certification board. Other countries, however, are considering the successful passage of a board exam as a mandatory requirement to practice RT. Since board certification is recognized by most healthcare professions as a method to ensure patient's access to competent practitioners, certification has become an obligatory requirement for many healthcare settings. Certification boards have become an assurance indicator of quality for the healthcare institutions (Frank-Stromborg et al., 2002). In a descriptive study by Livingood and his colleagues, they investigated the feasibility and desirability of public health credentials with 374 public health leaders on credentialing of the public health workforce. Forty five percent of the participants supported national certification efforts, 30% were undecided and 25% were opposed. The authors concluded that the majority of the public health

leaders participating in the study were in favor of public health credentialing (Livingood Jr., Woodhouse, & Godin, 1995). Livingood et al. (2001) summarized the studies related to health education certification and found that a majority of the studies predicted a positive result from certification boards at the organizational level. Overall, employers are in favor of health education certification (Livingood & Auld, 2001).

Although many studies have shown the advantages of the certification board, one study has criticized certification boards. Criticisms of credentialing include disproving of the benefits and concerns about exclusiveness whereby qualified practitioners might be excluded as a result of the inadequacies of testing (Thomas, 1987).

In spite of the absence of the RT certification board in KSA, the SCHS provides RT licensure examination for the new graduates. Licensure demonstrates a minimal professional practice standards and competencies that RTs should have before entry to the RT profession. The board certification implies a high level of knowledge by therapists who have shown skills in an area of practice. Moreover, credentialing is a voluntarily process, whereas licensing is mandatory (McClain et al., 2004; Niebuhr & Biel, 2007; Sechrist et al., 2006; Williams & Counts, 2013).

CONCLUSION

The presence of documenting competence and quality of care by providing a national board for specialty certification examinations has been the cornerstone for any professions (Mussa, 2008; Robiner et al., 2012). Board certification value for the certificate's is associated with more confidence and self-esteem (Redd & Alexander, 1997). Likewise, certification board demonstrates that the practitioners have maintained the minimum level, or probably a higher level of qualification (Schroeter et al., 2012). Although many studies have assumed certification board is associated with better patient outcomes, none of them have confirmed that assumption.

(Boltz et al., 2013; E. Coleman et al., 2010; Frank-Stromborg et al., 2002; Kendall-Gallagher & Blegen, 2009; Newhouse et al., 2010). Even though there is no difference in terms of patient outcomes of symptom management between registered and non-registered practitioners, registered practitioners have recorded higher than non-registered on the instruments that measured attitudes and knowledge of disease symptoms. Nonetheless, the association between patients care and certification board is still an area of great concern and in need for additional investigation (Boltz et al., 2013; E. Coleman et al., 2010; Frank-Stromborg et al., 2002; Kendall-Gallagher & Blegen, 2009). Correspondingly, most of the RT directors in the US are agreeable that the RRT credentials should be required to practice and considered entry into the profession (Barnes, Gale, Kacmarek, & Kageler, 2010; Barnes et al., 2011; Kacmarek, Barnes, & Durbin, 2012)

CHAPTER III

METHODOLOGY

INTRODUCTION

This study will explore the need to develop a Saudi board for Respiratory Therapy, as well as investigating how RTs in Saudi Arabia perceive the value of board certification in terms of intrinsic values and extrinsic values. The intrinsic value includes validation of knowledge, clinical competence, attainment of practice standards, professional credibility, professional commitment, professional autonomy, accountability, confidence in clinical abilities, personal satisfaction, professional challenge, and professional growth. The extrinsic value includes recognition from employers, peers, and other health professionals, marketability, consumer confidence, and salary. For this reason, the study was conducted by using an online survey to answer the research questions. The survey included two parts in which the first part will determine the perception of the Saudi RTs to develop a certification board, and the second part is to measure the perceived value of the certification board.

Research Questions

In this study, the following questions will be addressed and answered.

- 1- What is the level of support and the attitudes of Saudi Respiratory Therapists for the development of RT certification board in Saudi Arabia?
- 2- Are there any differences in perception for the need of developing a Saudi RT certification board between credentialed RTs and non-credentialed RTs?
- 3- Are there any differences in valuing the certification board between credentialed RTs and non-credentialed RTs?

Instrumentation

Two instruments were used in this study. The first instrument was developed to measure the assessment of need for a respiratory therapy certification board in Saudi Arabia. A panel of respiratory therapy education experts consisting of three professors applied both face and content validity. The committee reviewed the tool for this study and made suggestions regarding wording format. The first instrument (Assessment of Needs) was reviewed and validated for both face and content validity (Appendix A).

The assessment of need consists of four category, *Desirability*, *Preparation*, *Requirements*, and *Attitudes*. *Desirability* means to what extent both groups (credentialed and non-credentialed) are in favor of developing a SBRT. *Preparation*, is defined by how the certification board process will look like in terms of the availability of a study guide for the certification exam, including how the certification examination content will become part of the college education curriculum, who should write the certification exam, who should be responsible to administer the test and to administer the credentials, and also the cost of the certification board exam. It also includes how often should SRTs to be recertified. *Requirements* means who is going to be eligible to attempt the exam and what are the regulations for the certification exam. It includes which degree level should attempt the certification exam, and how much experience should the RTs have before attempting the certification exam, and whether the certification should be required for licensure. *Attitude* is how the SRTs feel that they will be recognized and awarded if they become credentialed.

The second instrument was the Perceived Value of Certification[®] Tool (PVCT), which was developed by the Competency and Credentialing Institute (Byrne et al., 2004; Gaberson et al., 2003; Sechrist et al., 2006). Therefore, permission was attained from CCI to allow use of the

survey instrument. After permission of use was granted, we used the PVCT that contains 18 items to evaluate how RTs in KSA perceive the value of certification board. The (PVCT) consists of two categories, intrinsic and extrinsic values. The intrinsic value includes validation of knowledge, clinical competence, attainment of practice standards, professional credibility, professional commitment, professional autonomy, accountability, confidence in clinical abilities, personal satisfaction, professional challenge, and professional growth. The extrinsic value includes, recognition from employers, peers, and other health professionals, marketability, consumer confidence, and salary. Respondents indicated their level of agreement or disagreement with the items on a five-point Likert-type scale (4= strongly agree, 3= agree, 2= disagree, 1= strongly disagree, 0= no opinion).

The reliability of the PVCT reflected good reliability in previous published studies with an internal consistency reliability (Cronbach α) of 0.94 (Gaberson et al., 2003). Reliability refers to the consistency of the scores for each participants and if the test questions are consistent in meaning to all participants (Williams & Counts, 2013). While validity describes the extent to which an instrument tool measure what it was designed to measure (Williams & Counts, 2013). The Cronbach's Alpha Reliability was calculated for this assessment and resulted in (Cronbach's α) Reliability of 0.79 with 15 items. For the PVCT, three composite scores were created for the purpose of research. Internal consistency was examined on these scores to establish reliability. The PVCT survey has (Cronbach's α) Reliability of 0.96 with 18 items (Table 1).

Table 1 Means, standard Deviation, and Cronbach's Alpha Reliability got the Needs Assessment measure and the three composite scores of the PVCT

Score	<i>M</i>	<i>SD</i>	No. of Items	Alpha
Needs Assessment measure	39.70	7.29	15	.79
Total PCVT measure	55.90	11.55	18	.96
Intrinsic	37.65	7.53	12	.95
Extrinsic	18.36	4.23	6	.82

Demographic characteristics were obtained through questions about age, gender, educational background, work position, type of institution employed, years of experience and types of credentials obtained.

Participants and Survey administration

The Georgia State University (GSU) Institutional Review Board reviewed this study for the protection of the rights of human participants (Appendix B). SRTs who are members of the Saudi Society for Respiratory Care (SCRC) were surveyed. However, RT students who had no experience to work as a respiratory therapist were excluded from the study. The on-line survey was e-mailed to the total of 750 SRTs through the SCRC database. The initial e-mail included a cover letter that explained the purpose of the study (Appendix C). The cover letter reflected a basic appeal for the respondents' participation. The survey was available for completion for two weeks. After one week of the initial mailing of the survey, a follow-up e-mail reminder was sent to remind participants to complete the survey to maximize the response rate.

Data Analysis

Data were analyzed electronically with SPSS* (version 23) using descriptive statistics, which included means, ranges, standard deviation, and frequencies. By utilizing the PVCT total score for all participant, the means, and standard deviation were calculated for all participants.

Levene's test for equality of variance was calculated as to whether responses were evenly distributed. Lastly, Mann-whitney *U* test was employed to determine the differences in perception to develop SBRT between credentialed and non-credentialed. T-tests were calculated based on the mean of each group to determine the differences between credentialed and non-credentialed on how they perceive the value of certification. Frequency statistics were used to analyze responses to additional questions related to demographic information.

Conclusion

This chapter described the methodology used to conduct the study. Sample, instruments, and data analyses were explained. The study included two parts in which the first part was the assessment of need to develop SBRT, and the second part was the perceived value of certification.

CHAPTER IV

RESULTS

INTRODUCTION

The purpose of this study was to evaluate the need for developing a board for RT in Saudi Arabia, and also to determine how SRTs perceived the value of certification board for RT. In this study, the difference in perceiving the value of the board certification in RT between credentialed RTs and non-credentialed RTs was investigated. The results of the study are presented based on the order of the following research questions

- 1- What is the level of support and the attitudes of Saudi Respiratory Therapists for the development of RT certification board in Saudi Arabia?
- 2- Are there any differences in perception for the need of developing a Saudi RT certification board between credentialed RTs and non-credentialed RTs?
- 3- Are there any differences in valuing the certification board between credentialed RTs and non-credentialed RTs?

Demographics

Data were collected from the respondents and screened for missing responses. Descriptive statistics were conducted to describe the demographics of the sample. The total sample size was 750 RTs, which included credentialed and non-credentialed RTs. From this sample, 240 responses were obtained and the response rate was 32%. Of the 240 responses, (126) 53% of the respondents identified themselves as credentialed RTs, and 111 (46%) respondents were non-credentialed RTs. A large majority of the respondents were male 195 (81%), and 44 (18%) were

female. The age of the respondents were: 56% 21-30, 35% 31-40, 8% 41-50, and the mean was 30.52 (SD 6.52) with 1.0% of respondents not reporting their age.

Most of the respondents were RTs 128 (53%). Fifteen percent of the respondents were supervisors (n=37), 14% were academic faculty (n=33), 7% were managers (n=17), 5% were clinical instructors (n=12), and 5% identified themselves with other. Respondents had an Associate degree or higher. Sixty three percent had Bachelor's degrees (n=150), 51 of the respondents had Master's degrees (21%), 30 of the respondents had Associate degrees (12%), and 8 of the respondents had Doctoral or post-graduate degrees (3%). The mean for the years of work experience reported was 4.1 years (SD 0.97). Students were excluded since they do not have any work experience.

The majority of respondents (90%, n=215) were working for government medical or educational institutions and (9%, n=22) were working in the private sector (Table 2).

Table 2. *Frequencies and Percentages for Sample Demographics*

Demographic	<i>n</i>	<i>%</i>
Gender		
Male	195	81
Female	44	18
No Response	1	1
Age		
21-30	135	56
31-40	84	35
41-50	17	8
No Response	4	1
Work Institution		
Government	215	90
Private	22	9
No Response	3	1
Highest level of school or degree		
Associate degree	30	12
Bachelor degree	150	63
Master's degree or graduate degree	51	21
Doctoral or post-graduate degree	8	3
No Response	1	1
Certified Respiratory Therapist or Registered Respiratory Therapist		
Yes	126	53
No	111	46
No Response	3	1
Work Position		
Respiratory Therapist	128	53
Academic Faculty	33	14
Supervisor	37	15
Clinical Instructor	12	5
Manager	17	7
Other	11	5
No response	2	1
Demographic	<i>M</i>	<i>SD</i>
Years of experience	4.10	0.97
Age	30.52	6.52

n = 240

FINDINGS

Research Question One

What is the level of support and attitudes to develop a respiratory therapy certification board in Saudi Arabia?

To determine the level of support to develop a SBRT, a descriptive analysis was conducted.

Levels of support were determined through four sub categories: Desirability, Preparation, Requirements, and Attitudes.

Desirability: The majority of the respondents including credentialed RTs and non-credentialed RTs are in favor of developing a SBRT. A mean of 3.49 ($SD = 11.55$) indicates the desirability level among the respondents (Table 3).

Table 3. Means, Standard Deviation, and Frequencies for the Desirability Composite

Question	<i>M</i>	<i>SD</i>	N	%
<i>Desirability</i>				
Support development	3.49	.78		
Strongly Agree			153	64
Agree			57	24
Disagree			24	10
Strongly Disagree			6	2
Support Type of process				
Exam			102	43
CEU credits			134	56
No Opinion			4	1

n= 240

Preparations: The respondents were supportive of providing the test takers a study guide for the certification exam with mean of 3.25 ($SD 0.73$). In addition, they were in favor of including the certification examination content into the college education curriculum ($M = 3.05$; $SD = 0.81$), and also the majority of the respondents (71%) were supportive of the RT academic professors write the certification exam ($M = 3.08$; $SD = 0.84$). Moreover, seventy percent of the respondents support the SCHS to be the institution to administer the test and to administer the credentials

($M=2.98$; $SD= 0.89$). The monetary amount of 523 Saudi Riyal (SR) was the mean cost that the RT should pay for the certification exam. In terms of including the RT sub-acute specialties such as Home care and Pulmonary Function Test (PFT), seventy percent supported including these specialties into one certification exam ($M=2.98$; $SD= 0.83$). In addition, 4 years was the mean years when asked regarding recertification time (Table 4).

Table 4. Means, Standard Deviation, and Frequencies for the Preparation Composite

Question	<i>M</i>	<i>SD</i>	N	%
<i>Preparation</i>				
Recertification time (in years)	3.92	1.82		
Availability of study guide	3.25	.73		
Strongly Agree			95	40
Agree			114	46
Disagree			23	10
Strongly Disagree			6	3
No Opinion			2	1
Should be required for licensure	3.09	.82		
Strongly Agree			81	34
Agree			94	39
Disagree			49	20
Strongly Disagree			6	3
No Opinion			10	4
Included in College curriculum	3.05	.81		
Strongly Agree			73	30
Agree			112	47
Disagree			42	18
Strongly Disagree			10	4
No Opinion			3	1
RT professors should write exam	3.08	.84		
Strongly Agree			86	36
Agree			85	35
Disagree			58	24
Strongly Disagree			5	2
No opinion			6	3
SCHS administer the exam	2.98	.89		
Strongly Agree			78	33
Agree			87	37
Disagree			56	23
Strongly Disagree			13	5
No Opinion			6	2
RT sub-acute care included	2.98	.83		
Strongly Agree			78	28
Agree			87	42
Disagree			56	23
Strongly Disagree			13	4
No Opinion			9	3

n= 240

Requirements: The majority of the respondents (79%) were supportive of the certification exam being available and required by all degree levels. However, 20% of the respondents disagreed to address the certification exam to all degree levels and should be addressed to the Associate degree (6%) and Bachelor degree (13%). There were no differences between the respondents in terms of the experience required by the RT to attempt the certification exam. Forty nine percent of the respondents believe that the RT should have experience before attempting the certification exam versus 49% of the respondents believe that experience should not be required for the exam. Approximately 2 years (1.83 years), of experience should be required before attempting the certification exam. The majority of the respondents were supportive that certification exams should be required for licensure (Table 5).

Table 5. Means, Standard Deviation, and Frequencies for the Requirements Composite

Question	<i>M</i>	<i>SD</i>	N	%
<i>Requirements</i>				
Cost	523	675.65		
Available to all degree levels	3.21	.83		
Strongly Agree			105	44
Agree			85	35
Disagree			42	18
Strongly Disagree			7	2
No Opinion			1	1
To whom should certification be addressed*				
Associate Degree			14	6
Bachelor's Degree			31	13
Master's Degree			2	.80
Doctoral Degree			2	.80
No response			191	79.4
Experience required	2.65	.86		
Strongly Agree			46	19
Agree			73	30
Disagree			103	43
Strongly Disagree			13	6
No Opinion			5	2
How many years?	1.83	1.24		

n= 240

***Note:** Only respondents who disagreed or strongly disagreed to “Should certification be available to all degree level?” answered, “To whom should certification be addressed”.

Attitudes: The majority of the respondents ($M = 3.07$; $SD = .81$) believed that their employer should recognize them, and believe that they should receive a pay raise for being certified ($M = 3.42$; $SD = .77$). Moreover, they state that passing the certification exam will promote them as being more professional ($M = 3.36$, $SD = .76$) (Table 6)

Table 6. Means, Standard Deviation, and Frequencies for the Attitudes Composite

Question	<i>M</i>	<i>SD</i>	N	%
<i>Attitudes</i>				
Pay Raise	3.42	.77		
Strongly Agree			132	55
Agree			71	30
Disagree			25	10
Strongly Disagree			5	2
No Opinion			7	3
Promote	3.36	.76		
Strongly Agree			118	49
Agree			84	35
Disagree			24	10
Strongly Disagree			5	2
No Opinion			9	4
Will be recognized by employer	3.07	.81		
Strongly Agree			77	32
Agree			102	43
Disagree			44	18
Strongly Disagree			8	3
No Opinion			9	4

n= 240

Research Question Two

Are there any differences in perception for the need of respiratory therapy certification board between credentialed RTs and non-credentialed RTs?

To examine differences in perception of need to develop SBRT between credentialed and non-credentialed, independent t-tests were conducted. However, due to the violation of assumption as discovered in the data, the Mann-whitney *U* test was employed. While the independent t-test showed a significant difference between credentialed and non-credentialed ($p = .020$) at the significance level of .05, the Levene's tests for equality of variance presented that the variances were not equal between credentialed and non-credentialed respondents (Table 7).

Table 7. *Independent T-tests for Credentialed Versus Non-Credentialed Perception of Need on the Development of Certification Board*

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances not assumed	9.546	.002	-2.35	171.29	.020	-2.04000	.86653	-3.75045	-.32955

By applying Mann-whitney *U* test, there was no statistically significant difference between credentialed RTs and non-credentialed in terms of the perception towards the development of a SBRT ($z = -1.81, p = .071$). Credentialed RTs had a mean rank of 110.7, while non-credentialed had a mean rank of 95.80, indicating that credentialed RTs support the development of the SBRT more than the non-credentialed. However, it was not statically significant (Table 8).

Table 8. *Mann-Whitney U Test for Credentialed Versus Non-Credentialed Perception of Needs on the Development of Certification Board*

Certification	Mean rank	<i>z</i>	<i>p</i>
Credentialed	110.77	-1.81	.071
Non-credentialed	95.80		

Research Question Three

Are there any difference in perception of certification board between credentialed RTs and non-credentialed RTs?

First, the agreement level was assessed for each of the PVCT statements. By using the PVCT, credentialed and non-credentialed present a high level of agreement with all value statements. Respondents' agreement reached 70% and higher for all value statements. However, the "certification increases salary" statement scored the lowest agreement among all statements (70%), yet, it was expected as is consistent with previous studies (Gaberson et al., 2003; Sechrist et al., 2006). The respondents in this study "Agree" and "Strongly Agree" to all values as shown below (Table 9)

Table 9. Responses in rank order of Agreement in PVCT Statements Between Credentialed and Non-Credentialed RTs

PVCT Value Statement	M	SD	Percentage of Non-Credentialed Respondents (N=111) “Strongly Agree” and “Agree”	Percentage of Credentialed Respondents (N=126) “Strongly Agree” and “Agree”
<i>Intrinsic Factors</i>				
Provides personal satisfaction	3.41	.73	91%	83%
Enhances feeling of personal accomplishment	3.36	.74	91%	84%
Indicates professional growth	3.28	.64	97%	94%
Enhances professional credibility	3.19	.79	85%	81%
Validates specialized knowledge	3.11	.72	79%	82%
Provides evidence of professional commitment	3.10	.77	79%	75%
Provides professional challenge	3.10	.85	79%	75%
Enhances personal confidence in clinical abilities	3.09	.83	78%	78%
Indicates attainment of a practice standard	3.08	.77	80%	79%
Enhances professional autonomy	3.04	.77	75%	77%
Indicates level of clinical competence	3.01	.80	78%	75%
Provides evidence of accountability	3.00	.85	72%	76%
<i>Extrinsic Factors</i>				
Increases marketability	3.12	.75	82%	75%
Promotes recognition from peers	3.08	.81	76%	78%
Promotes recognition from other health professionals	3.06	.84	75%	77%
Promotes recognition from employers	3.04	.86	78%	76%
Increases consumer confidence	3.04	.82	77%	75%
Increases salary	3.04	.91	72%	70%

n = 240

To determine the difference between credentialed and non-credentialed on how they perceive the value of the certification board, independent t-tests were conducted. While the independent t-test shows no statistically significant difference between credentialed and non-credentialed ($p = .779$) at the significance level of .05, the Levene’s tests for equality of variance presented that the variances were equal between credentialed and non-credentialed respondents (See Table 10).

Table 10. *Independent T-Tests for Credentialed Versus Non-Credentialed of PVCT*

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.429	.233	-.281	201	.779	-.45809	1.63055	-3.67327	2.75709

Credentialed respondents ($M= 56.04$, $SD= 12.35$) had a higher PVCT scores than the non-credentialed respondents ($M= 55.58$, $SD= 10.5$) (Table 11). However, there was no statistically significant difference between the two groups at the level of 0.05.

$T(201)= -281$, $P=0.779$

Table 11. *Results of T-Tests and Descriptive Statistics for PVCT by Credential Status*

	Credential Status						95% CI for Mean Difference	t	df
	Credentialed			Non-Credentialed					
	M	SD	n	M	SD	n			
PVCT Score	56.05	12.36	111	55.58	10.53	99	-3.67, 2.76	-.281	201

CONCLUSION

SRTs have shown support to develop a SBRT, and their attitudes and expectations toward the certification board reveal that they want to be recognized and awarded. There were no differences in supporting the development of the SBRT between credentialed RTs and non-

credentialed RTs. In addition, there were no differences between credentialed and non-credentialed in terms of the how they perceive the value of the certification board.

CHAPTER V

DISCUSSION

INTRODUCTION

This study examined the assessment of need to develop a SBRT and also to determine how SRTs perceived the value of certification board. Moreover, the differences between credentialed and non-credentialed in perception of supporting the development of the SBRT, and their perception in the value of the credentialing were examined. This chapter will discuss the findings to include an overview of the study, implications for research, recommendations for future research, limitations of the study, and conclusion.

Overview of the study

The purpose of the study was mainly to assess the need of devolving the SBRT, and to determine the perception of value certification for SRTs. Therefore; I will be overviewing those two elements of the study. However, this study was guided by the following questions:

- 1- What is the level of support and the attitudes of Saudi Respiratory Therapists for the development of RT certification board in Saudi Arabia?
- 2- Are there any differences in perception for the need of developing a Saudi RT certification board between credentialed RTs and non-credentialed RTs?
- 3- Are there any differences in valuing the certification board between credentialed RTs and non-credentialed RTs?

Two survey instruments were used to conduct this study. An assessment of need survey tool was developed to answer questions one and two. To answer question three, permission to use a PVCT survey instrument developed by the credential competency institution was obtained.

Two hundreds and forty SRTs participated in the study of which (53%) were credentialed and (46 %) were not credentialed. The majority of the respondents were male (81%). Fifty three percent of the respondents identified their work position as RTs (53%). The mean age of the respondents was approximately 30 years, and the mean for the length of experience was 4.10 years. We speculate that we might have different results if older, and experienced SRTs have participated in the study. Age and length of experience are correlated with professionalism (Wynd, 2003).

Assessment of need to develop SBRT

The first research question “*what is the level of support and the attitudes of SRTs to develop a respiratory therapy certification board in Saudi Arabia?*”

Since board certification is a method to evaluate practioners, certification boards are essential for many healthcare fields. It was clear that the majority (88%) of the respondents in this study were in favor of developing a SBRT regulated by the SCHS. For the credentialing preparation process, they believe that academic faculty should write the credentialing exam questions, and the exam should be monitored and regulated by the SCHS.

Seventy seven percent of the respondents believe the content of the exam questions should be incorporated into RT program curriculum. In terms of the recertification, the average recertification time should be 4 years. Yet, 56% were in favor of continuing education units (CEU) to recertify, while 43% of the respondents were in favor of recertification. These results are consistent with previous study that the large percent of respondents were in favor of continuing education for recertification (Allen & Girard, 1992)

The respondents’ attitudes toward the certification overwhelmingly support the development of the SBRT. They believe that certification will promote them professionally and

is an indication of their commitment. Respondents support all degree levels attempting the certification exam and do not specify the certification exam to a specific degree level. In a study by Allen and Girard, respondents disagreed with a baccalaureate degree only to be required for certification (Allen & Girard, 1992). This finding is consistent to this study.

The second research question” *Are there any differences in perception for the need to develop a respiratory therapy certification board between credentialed RTs and non-credentialed RTs?* The results showed that there is no statistically significant difference between credentialed RTs and non-credentialed in terms of the perception towards the development of the SBRT. However, by looking at the mean for the credentialed and non-credentialed SRTs, credentialed SRTs support the development of the SBRT more than the non-credentialed. This finding was found to be related to a previously published study where there was no differences between credentialed and non-credentialed nurses towards certification (Haskins, Hnatiuk, & Yoder, 2011).

Perceived value of the certification

The third research question “*Are there any difference in perception of certification board between credentialed RTs and non-credentialed RTs?*” Although there was no significant difference between credentialed RTs and non-credentialed RTs in terms of perception of the value of certification, credentialed RTs had a higher mean of agreement level for the total scores more than non-credentialed RTs. This was different from other studies that showed that there are differences between credentialed and non-credentialed. Niebuhr et al. (2007) found that certified respondents had a higher percentage of agreement with the value statements (Niebuhr & Biel, 2007). Sechrist et al. (2006) found significant differences between credentialed and non-credentialed nurses (Sechrist et al., 2006). As predicted, of the 18-certification value

statements “ Certification increases salary” had the lowest score of all value statements due to the unified salary scale that all governmental institutions in Saudi Arabia follow. However, private institutions are still paying more for those who are credentialed. This finding supports previously published studies on the value of certification (Byrne et al., 2004; Gaberson et al., 2003; Niebuhr & Biel, 2007; Sechrist et al., 2006).

The percentage of agreement with value statements of all respondents (credentialed and non-credentialed) in this study is parallel to the percentage of agreement in the study by Gaberson et al. (2003) In both studies, more than 90% of respondents agreed with the value statement related to personal growth.

The extrinsic composite scores are lower in agreement than the intrinsic composite among all respondents. This finding supports previously published studies on the value of certification (Byrne et al., 2004; Gaberson et al., 2003; Niebuhr & Biel, 2007; Sechrist et al., 2006). Between 70% to 80% of credentialed and non-credentialed participants agreed with the extrinsic value statements related to recognition from employers, peers, and other health professionals, increases consumer confidence, and increases salary. The non-credentialed SRTs (82%) scored higher than credentialed (75%) in the statement” increases marketability”. This finding is supported by a previously published study (Gaberson et al., 2003).

As mentioned in the literature review, all RTs in KSA must be registered with SCHS to receive a licensure to practice RT. However, credential is not a required competency to practice RT. Credential implies a high level of skills and knowledge, and guarantees a minimal level of competency and patient’s safety in KSA hospitals.

Implications

The results of this study assess the need to develop a SBRT, and work as a foundation for any future project to establish a certification board in Saudi Arabia. Moreover, it provides information of how SRTs perceive the value of a certification board and consequently the value to develop a SBRT. In addition, it also increases the awareness of the value of certification in the RT profession for other international societies. The development of a certification board requires a systematic governmental approach with the assistance of relevant experts for development and implementation. This study adds to the literature on certification as related to both assessment of need for certification and the perception to the value of certification

Recommendations for Future Research

Further research is recommended. Replication of this study is recommended in order to generalize the findings of this study with a larger sample size and may include medical administrators. In addition, the goals related to certification are connecting the value of certification to the regulation the SRTs within the profession and health outcomes. Therefore, the relationship between certification and health outcomes is recommended.

Limitations of the Study

As the sample is drawn from members of the SCRC, these findings are not generalizable to the broader field of RT profession. Had the survey been distributed to all hospitals, it would be broader and possibly generalizable. Another limitation is that all RT types of credentials were included together and there was no effort made to distinguish between the types of credentials. Respondents were not asked to specify their type of credential if they were credentialed. Since the survey was e-mailed to participants, it is limited by the ability of the participants to check

their e-mail. Moreover, there was a possibility that the survey was sent to the junk mail and therefore the response rate might have been affected.

Conclusion

There are no published studies that have specifically surveyed the SRTs population and reviewed issues related to certification. Notably, certification can be used as a standard for entry into the RT practice, validation of competence, recognition of excellence, and for regulation (Smolenski, 2005). The perception of SRTs presented many supportive characteristics related to the development of a certification board. The findings of this study increase the knowledge about what certification represents to the SRTs in both personal and professional levels, therefore, providing the insight into the need for certification board. These findings can provide SRTs the opportunity to promote and discuss the development of the KSA certification board within the field of RT.

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Appendix A: Survey Instruments

Dear Participant:

This part of the survey aims to investigate the need to develop a Saudi Board for Respiratory Therapy. Please choose the answer based on your opinion. Your response is appreciated. We assure you the confidentiality of the data.

Part 1:

1- Do you support the development of RT certification in Saudi Arabia?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

2- Should certification be available to all degree levels?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

If disagree, to whom should certification be addressed?

Associate degree holder

Baccalaureate degree holder

Master degree holder

Doctoral degree holder

- 3- Prior to certification, do you think RTs should have experience before attempting the certification exam?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

If agree, how many years of experience should the RT have before the certification exam? Please specify your answer

- 4- Do you support the creation of a core curriculum document to be made available with a study guide for those wishing to attempt the certification examination?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

- 5- Do you think the certificate examination questions should be included in the college educational curriculum?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

6- Do you think RT academic professors should write the certification exam questions?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

7- If there is a certification exam, would you favor a certification exam or Continuous Education Units (CEU) for re-certification?

Certification exam

CEU

8- In Saudi Riyal, what do you think the approximate cost of the initial certification examination should be?

9- Do you think that the Saudi Commission for Health Sciences (SCHS) should be the agency that administers the certification examination?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

10- Do you think that RT sub-acute care specialties should be included in one certification exam test such as PFT, SDS or Homecare?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

11- After the initial certification, what do you think the recertification time should be?

12- Should the certification be required for licensure?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

13- Do you think your employer will recognize RTs who successfully pass the certification exam?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

14- Do you think RTs should receive a pay raise if they successfully pass the certification exam?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

15- Will passing a certification exam promote you as being more professional?

Strongly agree

Agree

Disagree

Strongly disagree

No opinion

Part 2

Below are statements that relate to perceived values of certification adopted from © Competency and Credentialing Institute (CCI). Please indicate the degree to which you agree or disagree with the statements.

SA= Strongly agree, A= Agree, D= Disagree, SD= Strongly disagree, NO= No Opinion

Validates specialized knowledge	SA	A	D	SD	NO
Indicates level of clinical competence	SA	A	D	SD	NO
Indicates attainment of a practice standard	SA	A	D	SD	NO
Enhances professional credibility	SA	A	D	SD	NO
Promotes recognition from peers	SA	A	D	SD	NO
Promotes recognition from other health professionals	SA	A	D	SD	NO
Promotes recognition from employers	SA	A	D	SD	NO
Increase consumer confidence	SA	A	D	SD	NO
Enhance feeling of personal accomplishment	SA	A	D	SD	NO
Enhances personal confidence in clinical abilities	SA	A	D	SD	NO
Provides personal satisfaction	SA	A	D	SD	NO
Provides professional challenge	SA	A	D	SD	NO
Enhances professional autonomy	SA	A	D	SD	NO
Indicates professional growth	SA	A	D	SD	NO
Provides evidence of professional commitment	SA	A	D	SD	NO
Provides evidence of accountability	SA	A	D	SD	NO
Increases marketability	SA	A	D	SD	NO
Increases salary	SA	A	D	SD	NO

Part 3

Demographical questions:

1- Indicate your age

2- Indicate your gender

Male

Female

3- What is your highest education degree?

Associate degree (i.e. AA, AS, AAS)

Bachelor's degree (i.e. BA, BS, BHS)

Master's' degree (i.e. MA, MS, MHS)

Doctoral degree (i.e. PhD, EdD, ScD, MD)

4- What type of institution do you work for?

Governmental institution

Private institution

5- Indicate your work position title

Respiratory therapist

Senior respiratory therapist

Supervisor

Clinical instructor

Head of department

Deputy

If you do not see your title please indicate it in the blank area

6- Are you Certified Respiratory Therapist (CRT) or Registered Respiratory Therapist (RRT)?

Yes

No

7- How many years of experience?

Thank you for taking the time to provide your opinions and input. Are there any comments you want to add? Please comment below.

Appendix B: IRB



INSTITUTIONAL REVIEW BOARD

Mail: P.O. Box 3999
Atlanta, Georgia 30302-3999
Phone: 404/413-3500
Fax: 404/413-3504

In Person: Dahlberg Hall
30 Courtland St, Suite 217

April 30, 2015

Principal Investigator: Lynda T Goodfellow

Study Department: GSU - Georgia State University, GSU - Respiratory Therapy

Study Title: A Needs and Value Assessment in Developing a Saudi Board of
Respiratory Therapy. Submission Type: Exempt Protocol Category 2

IRB Number: H15462

Reference Number: 332859

Approval Date: 04/30/2015

Expiration Date: 04/29/2018

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

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

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

Exempt protocols must be renewed at the end of three years if the study is ongoing. When the study is complete, a Study Closure Form must be submitted to the IRB.

Any unanticipated/adverse events or problems resulting from this investigation must be reported immediately to the University Institutional Review Board. For more information, please visit our website at www.gsu.edu/irb.

Sincerely,


Susan Vogtner, IRB Member

Federal Wide Assurance Number: 00000129

Appendix C: Cover Letter

Dear Respiratory therapist.

You are hereby invited to participate in a research study entitled “ A Needs and Value assessment in Developing a Saudi Board for Respiratory Therapy” to explore the need the needs to develop a Saudi board for respiratory therapy and to explore the value of the board to the respiratory therapists.

Khalid Alwadeai is conducting this research as part of the requirements of the Master degree in respiratory therapy from the department of Respiratory Therapy at Georgia State University, under the guidance of Dr. Lynda Goodfellow, Associate Dean of the School of Nursing and Health Professions. You will receive no direct benefit from participating in this study, but the information gained will be beneficial to the respiratory therapy profession in Saudi Arabia to assess the need and desire to develop a Saudi Board for respiratory therapy.

Your participation in this study is absolutely voluntary and you can refuse to participate or stop taking the survey at anytime without penalty or loss of benefits to which you are otherwise entitled. Should you decide to participate you will be asked to complete the following survey, which should take approximately 15 minutes or less to complete.

Your response will be used for research purposes and will be strictly confidential. In order to protect your confidentiality, no names or codes will be used to identify you. Surveys will be destroyed after all surveys have been collected. Your completion and submission of the survey indicate your consent to participate in this research. You may withdraw at any time by not completing or submitting a blank survey.

The information from this research may be publish in journals and presented at professional meetings. This research does not cost the participant in any way. There is no known

risk associated with participation. We do not predict this study causing any harm or discomfort. However, should you be uncomfortable about completing the survey, simply submit a blank survey.

If you have any questions about this research, please contact Khalid Alwadeai at kalwadeai1@student.gsu.edu or Dr. Lynda Goodfellow at LTGoodfellow@gsu.edu. The department's mailing address can be found at the bottom of this page. You may also contact the Georgia State University IRB for more information.

Please note: completion and submission of this survey implies that you have read this information and consent to participate in the research.

Thank you in advance for your cooperation. Your participation makes an important contribution to the future of the respiratory therapy profession in Saudi Arabia.

Sincerely,

Khalid Alwadeai

Dept. of Respiratory Therapy

Georgia State University

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