Respiratory Therapist Burnout, Perceptions, and Beliefs

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Background: Respiratory therapists (RTs) deliver care to patients experiencing both acute and chronic lung diseases. It is key for RTs to provide patient education to their patients to optimize patient outcomes of those affected by lung conditions. However, there are many factors that interfere with the RTs' patient education sessions. The beliefs and attitudes of RTs may have a significant impact on the quality of patient education received by patients and family members. In healthcare environments where RTs are feeling burned out, patient education may suffer consequently. Increased professional burnout is associated with absenteeism, physical illness, emotional problems, poor job performance and negative attitudes for the healthcare professionals in general (Piko, 2006). The literature currently places little attention on the prevalence of respiratory therapists' burnout, perceptions, and beliefs. This needs assessment investigates respiratory therapists' burnout, perceptions, and beliefs with the intention to provide strategies to improve RT practice and patient education.

Methods: A 47-item survey was collected from 12 RTs at UPMC Somerset located in Somerset, Pennsylvania measuring the RT's attitudes, beliefs, and perceptions on burnout and patient education.

Analysis: Descriptive statistics was utilized to determine the relationship between the five Respiratory Therapist patient education domains (education environment, healthcare organization,

interdisciplinary teamwork, documentation of patient activities, and RT beliefs and knowledge), and burnout levels, with attention to National Board of Respiratory Care (NBRC) specialized credentials, and gender.

Conclusions: Results indicate RTs at UPMC Somerset have a low level of burnout and a high level of job satisfaction. Patient education domain scores were consistently high in the education environment, healthcare organization, documentation of patient activities, and RT beliefs and knowledge domains, indicating those areas as strengths of the RTs. However, interdisciplinary teamwork was the lowest scoring domain in all comparisons, indicating it as a perceived weakness by the RTs. Those who maintain NBRC specialized credentials have higher scores in all five domains compared to non-specialized credential holders. Females scored higher in each of the five domains than their male counterparts. Additionally, this needs assessment provides implications for future inquiry and future practice for hospitals, UPMC Somerset, and academic RT programs. The implications focus on enhancing the interdisciplinary teamwork of the RTs and RT students through various mediums recommended in literature.

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1.0 Introduction

Respiratory therapists (RTs) deliver care to patients experiencing both acute and chronic lung diseases. RTs treat diverse patient populations ranging from neonatal, pediatric, to adult (AARC, n.d.). Respiratory therapy began over 60 years ago, comprised of individuals assisting with hospital patient care by changing oxygen tanks and placing patients on various forms of oxygen therapy (Kacmarek et al., 2009).

Since its conception, the RT role has evolved with healthcare to address patient needs. The American Association for Respiratory Care (AARC, n.d.) defines RTs' responsibilities to include interviewing and assessing patients, collaborating with physicians in patient care and diagnosis, analyzing arterial blood samples, managing mechanical ventilation, educating patients, and responding to emergencies. A significant RT responsibility and area of expertise is in patient education for inhaler use (AARC, n.d.).

According to the American Association for Respiratory Care (AARC, n.d.), while RTs are primarily in the hospital setting caring for patients with respiratory diseases, they are increasingly found in healthcare settings ranging from short-term and long-term hospitals, skilled nursing facilities, rehabilitation centers, and home care settings. They work in intensive care units managing ventilators, emergency departments, neonatal and pediatric units, operating rooms, patient transport teams, and various other areas in the hospital setting, delivering various modalities. Other additional areas of employment are in sleep laboratories, pulmonary rehabilitation facilities, pulmonary function labs, and physician offices (AARC, n.d.).

1.1 Problem Area

Professional burnout is a psychological construct widely explored in the healthcare literature. No standard definition exists for burnout, but researchers refer to burnout as a syndrome that affects workers in the service industry who experience feelings of emotional exhaustion, depersonalization, and lack of achievement with job accomplishments (Maslach & Jackson, 1981). The consequences associated with professional burnout affect both healthcare professionals and recipients. Increased professional burnout is associated with absenteeism, physical illness, emotional problems, poor job performance and negative attitudes for the healthcare professionals in general (Piko, 2006). Negative attitudes have been associated with those experiencing burnout (Kahill, 1988). Healthcare recipients can experience a decrease in quality of care provided and poor communication from healthcare providers as a result of the healthcare professional's burnout. Common causes leading to burnout are overwhelming and hard work with no clear goals, being powerless to change something important, and forcing oneself to make the impossible happen.

1.2 Statement of Problem of Practice

According to Maslach and Jackson (1981), a component of burnout is acting callous, as if the patient deserves their disease. RTs are subjected to job stressors and may experience the effects of burnout. RTs may feel that no matter how well they educate the patient, regardless of their effort, the patient will only be readmitted. RTs may not be fully aware of the significance burnout can have on their role in patient education. It is challenging but critical to determine RTs burnout and its potential impact on RTs' patient education efforts. The effects of burnout on clinicians

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have been reported to be a lack of patience, lack of energy, poor communication and listening, withdrawing from others, poorer patient outcomes, and poor attitudes of others, both patients and colleagues (Salyers, Flanagan, Firmin, & Rollins, 2015).

As an RT, I can relate to burnout syndrome. I have witnessed a wide range of acuity regarding death and dying of patients, whether it be in the Emergency Department assisting with trauma, in the Intensive Care Unit or Palliative Care floor. It was taxing and I had to develop thickened skin to help shield me from emotion. A patient's death could easily become just one less treatment in my mind. The constant mental and physical strain of attempting to "beat the clock" every day to complete treatment rounds while trying to maintain both quality and quantity was also very trying at times. Often it was challenging to educate patients properly, if at all. Also, where I worked, it sometimes felt as though other clinicians did not respect RTs, which gave the impression of being undervalued and underappreciated for our efforts.

The combination of working in a stressful environment, managing acutely ill patients, and attempting to provide quality care for a large number of patients was draining. All the while, feeling underappreciated for the work provided left me feeling emotionally exhausted. However, after reading literature on burnout syndrome, I realize I may not have been the only one. Within the walls of the department, I can recall hearing RT's referring to COPD patients and stating, "They will be back, no matter what we do for them." Moreover, there was little room to grow professionally. While there were opportunities for earning continuing education credits, I could not move up in the organization unless I aspired to be an RT supervisor or manager. Online job postings within the facility almost always required the applicant to be a registered nurse, even if the job did not deal with nursing. This felt unfair and gave little hope to increase the potential of reaching personal accomplishments. The organizations work environment has a greater impact on

the attitudes and behaviors of an employee than their own predispositions and personality (Spence Laschinger, Leiter, Day, & Gilin, 2009).

The respiratory therapy profession is demanding and has high levels of stress, especially when treating the acute ill in hospital settings. The quality of patient education may suffer if the clinician is emotionally drained. I realize this was only my experience, and others may or may not feel this way. However, if burnout is occurring, it should be known so it can be addressed and not affect patient care.

Variations in the prevalence and severity of professional burnout are reported among healthcare professionals and appear to be impacted by different factors. The literature currently places little attention on the prevalence of respiratory therapists' burnout, perceptions, and beliefs. Proposed is a needs assessment to investigate respiratory therapists' burnout, perceptions, and beliefs. The needs assessment will provide implications for future inquiry and future RT practice.

2.0 Literature Review

2.1 Healthcare Provider Burnout

Healthcare providers are at high risk for occupational stressors and overtime; these stressors result in burnout (Piko, 2006). Burnout is associated with three main factors: emotional exhaustion, personal accomplishment, and depersonalization (Maslach & Jackson, 1981). As a result of burnout, an organization will experience increased employee turnover (Maslach & Jackson, 1981).

Emotional exhaustion is employees feeling as though they psychologically cannot do their job anymore. The personal accomplishment aspect is when staff members feel dissatisfied with their accomplishments at work. Those experiencing depersonalization lose their compassion for their patients as burnout may cause the clinician to feel as though the patient deserves their illness (Chiu & Tsai, 2006; Maslach & Jackson, 1981).

According to Copanitsanou, Fotos, and Brokalaki, (2007), patients of clinicians working in a positive environment experience greater satisfaction in their care. Additionally, there is less turnover and burnout as well as higher job satisfaction experienced by clinicians (Copanitsanou, Fotos & Brokalaki, 2007). One stressor for clinicians is the expectation to increase productivity and report high workloads; however, this has a negative impact on patient care (Kieft, de Bouwer, Francke, &Delnoij, 2014). When clinicians have adequate staffing to provide patient care, there is an improvement in the relationship between nurses and physicians and improved patient satisfaction (Vahey, Aiken, Sloane, Clarke & Vargas, 2004).

Decreasing burnout lowers the risk of turnover and improves patient satisfaction (Vahey, Aiken, Sloane, Clarke & Vargas, 2004). Positive attitudes can be achieved with workplace empowerment, which is directly related to decreased burnout (Spence Laschinger, Leiter, Day, & Gilin, 2009). An attitude is defined as the psychological tendency expressed by evaluating a particular entity with some degree of favor or disfavor (Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017). The attitude of healthcare providers is a primary indicator of burnout as they become callous, cynical, or negative towards patients (Salyers, Flanagan, Firmin, & Rollins, 2015).

When workers are unable to adapt and cope with the high stressors experienced at work, there is a decrease in positive organizational attitudes, leading to decreased job satisfaction (Alarcon, 2011). Job satisfaction, organizational commitment, and turnover are all individual attitudes as a result of the employee's work environment. When demands on the worker increase and resources decrease, there is an increase in burnout and turnover intentions, while job satisfaction and the employee's commitment to the organization decrease (Alarcon, 2011). Burnout caused by a clinician's work environment causes a decrease in professionalism, decreases patient satisfaction, and has an adverse effect on patient safety (Panagioti et al., 2018).

Burnout influences attitudes adversely. According to Spence Laschinger, Leiter, Day, and Gilin, (2009), workers may act out rudely and become disrespectful as a way to retaliate at their organization. Intentionally reduced effort and work quality, as well as the disrespectful and impolite behaviors that are characteristic of employee burnout weaken the efficiency of an entire unit. Predictors of job satisfaction are communication between administration and co-workers, autonomy, and a feeling of obligation toward one's organization.

According to Geurts, Schaufeli, and De Jonge, (1998), social exchange models state employees expect equity from their organization in return for their services to the organization. A

psychological contract exists between the employee and the organization, and the employee expects contributions proportional to their efforts. When this does not occur, the employee feels the effects of inequity as the costs of the exchange outweigh the benefits they receive.

Attitudes formed by clinicians as a result of burnout relate directly to patient satisfaction (Salyers, Flanagan, Firmin, & Rollins, 2015). High levels of burnout are associated with lower patient satisfaction. Additionally, when high levels of burnout exist amongst healthcare providers, there is a higher rate of hospitalizations (Salyers, Flanagan, Firmin, & Rollins, 2015).

2.2 Respiratory Therapy Patient Education - Primary Responsibility

A primary responsibility of RTs is patient education on inhaled medications used to treat and manage Chronic Obstructive Pulmonary Disease (COPD). RTs provide information on the medications and inhalers, foster positive attitudes toward the use of inhaled medications, and teach skills to promote the effective use of inhalers by patients (Fromer, L., & Cooper, C. B., 2008). RTs working with patients face challenges such as low patient health literacy and understanding, incorrect patient and family member information, beliefs of inhaler medications and inhalers, inconsistent patient follow-up on their use of inhalers, as well as diverse patient learning styles, capacity, and abilities (Fink & Rubin, 2005). It is reported that upwards of sixty-eight percent of patients misuse their inhaled medications (Fink & Rubin, 2005). From the RTs' point of view, Fink and Rubin (2005) report RTs' lack of time available to properly teach patients how to use their inhalers, the lack of sufficient material and instructional methods during patient teaching, not being acquainted with the range of available inhalers and their uses, and not following-up with patients.

RTs have a significant role as patient educators (Hess, MacIntyre, Galvin, & Mishoe, 2016). Patients are dependent on clinicians and require more assistance and education. Therefore, the patient is dependent on the RT and is likely to have very little understanding of the material to be learned. If the RT only recites information to the patient, no learning is occurring. That said, regardless of where patient education is taking place, a specific sequential order is followed for the patient to learn. This process involves a series of steps to teach the patient or caregiver with the RT conveying a positive attitude and care for the patient (Hess, MacIntyre, Galvin, & Mishoe, 2016).

The first step for the RT is to assess the need for patient education. This entails determining whether the patient is ready to be educated, determining the existing knowledge of the patient, determining if the patient wants to know anything in particular, current misunderstandings, and the educational needs of the patient and the family (Hess, MacIntyre, Galvin, & Mishoe, 2016). Likewise, is a frank assessment of factors that may limit a patient's willingness to learn. For example, patient denial, mental or physical impairments, as well as language barriers, are all limiting factors. These factors impact patients' motivation and engagement in the learning process (Hess, MacIntyre, Galvin, & Mishoe, 2016).

The second step in the patient education process is planning. This means developing an individualized care plan for the patient. The plan includes setting goals for the patient, creating objectives, and determining which learning domains to utilize such as affective, psychomotor, or cognitive. Furthermore, the information that will be instructed needs to be created for that individual patient (Hess, MacIntyre, Galvin, & Mishoe, 2016).

Goals are statements of expected outcomes of education sessions and the patient's learning process that was created based on the needs of that patient. This helps keep the patient invested in

making needed changes in their behavior and provides the patient with a clear direction. Additionally, RTs determine objectives for the patient. Objectives are more specific than goals and are smaller steps in helping the patient reach the set goal. The objectives should be measurable so the respiratory therapist can see if the patient is meeting the set objective (Hess, MacIntyre, Galvin, & Mishoe, 2016).

The third step in the process is implementation. At this stage, the RT is teaching the subject. While there are many different ways to educate a patient, the RT needs to consider which instructional method to use, what type of learning will be occurring, the amount of time required for the session, and the learning needs of the other staff members for that patient. Implementing the chosen education plan and learning domains has advantages and disadvantages and can be completed in various ways. These include lecturing to the patient, participating in a guided discussion which is a modified lecture, demonstrations, printed material such as brochures, handouts, or pamphlets for the patient, role-playing, drills and behavioral contracting (Hess, MacIntyre, Galvin, & Mishoe, 2016).

The fourth step is evaluation. Evaluation is when the RT determines whether the patient understands what has been taught and if learning has taken place. This can be accomplished through demonstration or whichever method was chosen by the RT during the planning stage. Regardless of how the RT chooses to evaluate the patient, there should be a way to measure whether the patient education session was successful and if learning objectives have been met. Additionally, the RT must be able to document the RT's involvement in teaching the patient. This involves recording when the teaching took place, what was taught, methods of instruction, and the response of the individual and their learning (Hess, MacIntyre, Galvin, & Mishoe, 2016).

To help the RT better communicate with their patients, the RTs employ six strategies (Hess, MacIntyre, Galvin, & Mishoe, 2016). First, while the RT may be stating the same information over and over, the RT must not go into autopilot. Therefore, the RT must remember to slow down when conversing with the patient. The patient may need time to process information as he or she may be overwhelmed. Secondly, the RT needs to speak in layman's terms to the patient. Third, the RT may find it helpful to use drawings, pamphlets, or video clips to convey information to their patients. Regardless of the method, it should be chosen to suit each patient's learning style. Fourth, the RT should limit the amount of information they provide to the patient during each education session. The RT must focus on what tasks the patient needs to perform and then, with each reoccurring visit, have the patient learn more and more with each encounter. Educating the patient with each session creates repetition and reinforcement. The fifth strategy for the RT is the use of the teach-back technique. This means the patient is given the opportunity to demonstrate to the RT what has been taught. The RT is then able to assess the patient's level of understanding. The sixth strategy is for the RT to build a rapport with the patient and to create a shame-free environment. If not, the patient may not feel comfortable asking the RT any questions they have, leading the RT to believe the patient has a greater understanding than they do (Hess, MacIntyre, Galvin, & Mishoe, 2016).

2.3 Respiratory Therapists' Education and Training

RTs assess, monitor, assist in diagnosis, and treat patients suffering from dysfunctions of the cardiopulmonary system, including any form of disease or disorder that impacts breathing and lung capacity. Respiratory therapy continues to be a vital part of patient care due to rising

incidences of chronic lung conditions and diseases, such as chronic bronchitis, COPD, and emphysema.

According to the American Lung Association, COPD is the third leading cause of death in America. It is also estimated that nearly 24 million U.S. adults have evidence of impaired lung function. Further, it is estimated that 10.1 million Americans reported a physician diagnosis of chronic bronchitis in 2011, and an estimated 4.7 million Americans have been diagnosed with emphysema at some point in their lives ("respiratory therapist license," n.d.).

A college education in Respiratory therapy is a standard requirement in the field. All states that license respiratory therapists (except Alaska) require RT license candidates to complete an accredited degree program in respiratory care recognized by the Commission on Accreditation for Respiratory Care (CoARC). To date, there are 441 accredited CoARC programs across the U.S. Nearly all states have at least one campus location that houses a CoARC-accredited program. The vast majority of CoARC-accredited respiratory therapy degree programs result in an associate's degree (AS, AAS) or a bachelor's degree (BS), while far fewer result in a master's degree. The minimum requirement for licensure in all states that license respiratory therapists is an associate's degree that includes two full academic calendar years of study and a clinical experience. Bachelor's degree programs, however, are gaining in popularity to meet the demand of today's employers, many of which look for an RT with more advanced education ("respiratory therapist license," n.d.).

National certification through the National Board for Respiratory Care, Inc. (NBRC) is a standard requirement and the basis for licensing among all state Boards of Respiratory Care.

After completing a CoARC-approved respiratory therapy degree program, candidates for state licensure must take and pass the Therapist Multiple-Choice (TMC) examination to earn the

certified respiratory therapist (CRT) examination, which is the basis for licensing in nearly all states. In some states, graduates of associate-level respiratory care programs and students of bachelor's programs that have completed requisite coursework may apply for temporary licensure before taking the CRT exam, which allows them to begin working in the field while preparing to take the examination ("respiratory therapist license," n.d.).

RTs frequently pursue the registered respiratory therapist (RRT) credential, the advanced-level credential in the field of respiratory care. As of January 2015, the RRT credential became the standard for licensing in Ohio and California, and other states are likely to follow suit in the coming years. It is imperative for respiratory therapists to understand that, although their state licensing board may require them to possess only the CRT credential for initial licensure, many employers are now demanding that candidates for respiratory therapy jobs possess the RRT credential, as well. For example, it is common for respiratory therapists working in a critical care setting to be required to possess the RRT. ("respiratory therapist license," n.d.)

Regardless of the degree earned, all CoARC-accredited programs aim to produce graduates proficient in certain vital areas including respiratory care, biomedical/natural sciences and social/behavioral sciences. All accredited programs include specified respiratory care content to include curriculum that covers: care of the adult, pediatric, and newborn patient, provision of healthcare services to patients with transmissible diseases, community respiratory health, fundamental principles of evaluating current scientific literature, disease management, and legal and ethical aspects of respiratory care practice. Respiratory therapy programs include classroom, laboratory, and clinical experiences designed to promote an understanding of all aspects of respiratory care. Coursework in an accredited respiratory care degree program includes courses in cardiopulmonary physiology, neonatal respiratory care, clinical application of respiratory care,

pharmacology and respiratory health promotion/disease prevention ("respiratory therapist license," n.d.).

At the end of their education and training, RTs enter the field well aware of the barriers and challenges they face to provide information on the medications and inhalers, foster positive attitudes toward the use of inhaled medications and teach skills to promote the effective use of inhalers by patients (Fromer, & Cooper, 2008). Transitioning and advancing in health professions where patient education is a priority, Bergh, Bergh, and Friberg, (2007) suggest five domains of perceptions and beliefs to assess and understand health professionals' practice. The domains provide a framework to assess allied health professionals' attitudes, including RTs that can provide information to improve RT practice and prevent burnout. The five domains are patient education belief and knowledge, education environment, healthcare organization, interdisciplinary teamwork, and patient education activity documentation.

2.3.1 Patient Education Beliefs and Knowledge

RTs are health professionals for the provision of patient education and are expected to incorporate patient education into all aspects of their practice (Tomey, 2009; Virtanen, Leino-Kilpi, & Salantera, 2007). Eriksson and Nilsson (2008) found that allied health professionals were aware of the importance of practical experience, pedagogical competence, and being up-to-date to establish trusting relationships with patients to support their learning and self-management (Berglund, 2011; Redman, 2013). However, MacDonald, Rogers, Blakeman, and Bower (2008) found that allied health professionals were more confident in dealing with patients in the early stages of illness, particularly around the time of diagnosis than working with them over the long term to encourage effective self-management. Research has also shown that allied health

professionals seem to lack resources beyond personal experience and intuitive ways of working to encourage effective patient self-management. However, after attending a 2-day workshop on patient education, for example, nurses were better prepared to provide patient education in accordance with patient-centered communication (Lamiani & Furey, 2009).

According to Bergh, Persson, Karlsson, and Friberg (2014) the impact of patient education beliefs and knowledge on health professionals is best understood by exploring their attitudes and beliefs on determining patients' educational needs, ensuring patient understanding, making patient education a priority, pursuing continuing education, meeting obligations and being competent in their practice. When comparing clinicians and patients, these two groups differ in their beliefs, knowledge, and attitude, which can result in a source of confusion and even conflict in the care provided (Nam, Chesla, Stotts, Kroon, & Janson, 2011). According to Nam, Chesla, Stotts, Kroon, and Janson (2011), the clinician's attitude is a major factor in how well the patient will adhere to their treatment. For example, when a patient is diagnosed, the patient's attitude regarding their diagnosis is directly affected by the practitioner's attitude at that given time. Therefore, if a physician does not convey the seriousness of a condition and importance in adhering to treatment and instead dismisses it in an effort to limit panic, the patient may think their condition is not serious (Nam, Chesla, Stotts, Kroon, & Janson, 2011).

If physicians' attitudes can affect the patients' perceptions on their modalities, this could have an effect on respiratory treatments as well. RTs are obligated to the patients in ensuring they provide quality services. For example, while inhalers are a conventional method used to administer medication, there may be a misconception that the inhalers are easy to administer. Only two of forty medical textbooks reviewed by the authors Fink and Rubin included steps for administering inhalers. Many different types of inhalers have different mechanisms of action

requiring various steps to follow in administering them correctly. Because 39% to 67% of physicians, nurses and respiratory therapists are unable to adequately explain to the patient how to properly administer their inhaler, up to 68% of patients prescribed inhalers misuse them, reducing the likelihood of the drug treating the disease (Fink & Rubin, 2005).

If there is a perception amongst clinicians that inhalers are easy to use, therefore offsetting the importance of educating the patient, this may be conveyed to the patient. Additionally, the clinicians who do not utilize inhalers may have a false sense of knowledge administering medications with such devices and may require competency checks.

Hanania, Wittman, Kesten, and Chapman (1994) surveyed physicians, registered nurses, and respiratory therapists to determine each group's knowledge and demonstration of proper technique from a metered-dose inhaler (MDI) with a spacer and a dry-powdered inhaler. At the conclusion of the study, it was determined that RTs have the most considerable knowledge of these inhalers at 67% (+ or – 5%) while Physicians came in second with 48% (+ or – 7%) and in last was Registered Nurses with 39% (+ or – 7 percent). As for the demonstration portion of the study, RTs scored significantly higher than other professionals as RTs had more formal training in inhaled medications than both the Physician and Registered Nurses.

Therefore, RTs need to be competent in how to use inhalers and to educate their patients in proper usage to prevent misinformation and misuse. Since RTs specialize in inhaled medications, they have an obligation to ensure the patient understands their modalities and continuing their education can better prepare the RT in their competency.

The healthcare industry has been structured with various regulations and laws to ensure competent providers as a form of a social contract to society (Cruess & Cruess, 2008). The obligation to provide competent care can be seen in the various licensing and certifications

healthcare providers must earn in order to practice. The general public, including patient populations, expects healthcare providers to provide competent care and to be treated by competent individuals. Another way to help assure clinicians are competent in their skills is through continuing education.

According to Mazmanian and Davis (2002), continuing education is a method to improve the knowledge and skills of practitioners by utilizing strategies to cause change and influence behaviors. There are various types of continuing education interventions, including attending conferences, educational materials such as guidelines, and reach visits. It is important for clinicians to realize they need to improve their knowledge and skills. While testing providers on information works for physicians, another method that can be used to improve the knowledge and skills of participants is the attendance of interactive workshops that provide participants with hands-on experience. More continued education in certain areas such as pharmacology is needed to help eliminate the lack of confidence clinicians have in educating patients on their medications (King, 2004). Regardless of the manner in which continuing education credits are earned, they need to be obtained on a continual basis, not occasionally (Mazmanian & Davis, 2002).

When looking at the perceptions of nurses on being a patient educator, it was found that 92% of the nurses participating in the study believe patient education is a priority (Marcum, Ridenour, Shaff, Hammons, & Taylor, 2002). Patient education was improved when there was more time available to teach and an availability of handouts and other resources. The nurses reported it was more challenging to teach patients when there was not enough time, staff, and when patients did not respond to teaching (Marcum, Ridenour, Shaff, Hammons, & Taylor, 2002). That lack of time to complete work is a source of stress for the clinician and leads to burnout as high

stress working environments have a greater risk of employee burnout and turnover (Kim & Stoner, 2008).

With professional development, there is an increase in the practitioner's autonomy and job satisfaction (Hart & Rotem, 1995). Continuing education is perceived as important and clinical educators need to be aware of the characteristics of an adult learner to understand their beliefs, values, and needs (Govranos & Newton, 2014). Continuing education is needed to enhance patient care and requires the support of the healthcare organization to facilitate a culture of learning (Govranos & Newton, 2014). Continuing education is linked to decreasing burnout (Lee, Stewart, Brown, 2008).

2.3.2 Education Environment

The educational environment is the way in which and the space where the RT interacts with patients is constructed (Li, 2015). In most situations, it is the hospital room but may also include and not be limited to outpatient clinics, urgent care centers, emergency rooms, and patients' homes. It is concerned with the pedagogic choices by the organization that impact the RT and patient interaction.

According to Bergh, Persson, Karlsson, and Friberg (2014), the impact of the patient education environment (i.e. hospital room) on the health professionals is best understood by exploring their attitudes and beliefs on the amount of time spent educating patients, existing disturbances in patient care, and patient involvement. The education environment of a patient's room in a hospital setting is similar to the education environment of a classroom. One environment parallel is the learner-centered environment. According to the National Research Council (2000),

learner-centered environments take into consideration the skills, beliefs, attitudes, and knowledge of students.

According to Epstein, Fiscella, Lesser, and Stange, (2010), patient-centered care is not providing the patient with their wants or requests. It takes into consideration the values, needs, and preferences of the patient and ensures those components are used to guide the decisions for the care of that particular patient (Epstein, Fiscella, Lesser, & Stange, 2010). Patient-centered care is focused on enhancing the relationship between the clinicians and patient which assists the patient and family members in making clinical decisions and provides the patient with time to make and maintain behavioral changes (Epstein, Fiscella, Lesser, & Stange, 2010).

Patient-centered care is not time-consuming and does not take any longer than the time currently spent on patient care (Epstein, Fiscella, Lesser, & Stange, 2010). With patient-centered care, the clinicians know the patients well and prepare information, so it is understandable. Educators using the learner-centered approach prepare information that is developed specifically for the learner through conversations and observations (National Research Council, 2000).

Providing a knowledge-centered environment ensures the patient understands the material that has been presented and the educator must focus on information and activities that patients must learn (National Research Council, 2000). The idea is to enable the patient to comprehend new information. The education provided in the healthcare environment must have a way of receiving assessment as part of a continual basis (National Research Council, 2000).

Patient involvement is another area assessed in this domain. When utilizing patient-centered care, patients are more likely to maintain behavioral changes and decrease barriers associated with behavior changes, resulting in improved outcomes (Miller, 2016). According to Miller (2016), patients, as well as their caregivers, need to be involved in achieving patient-

centered care. Strategies used for self-efficacy improve patient confidence, but this is greatly affected by the patient's motivation. Therefore, patients with self-efficacy should be targeted to improve behavioral changes (Robinson-Smith & Robinson-Pizzi, 2003). According to Rau (2005), to improve patient self-management, clinicians need to develop a partnership with patients as this can increase adherence. When there is an improvement in communication between patients and clinicians, the clinician can better identify possible reasons for non-compliance or patient misunderstandings, which may prevent successful self-management (Rau, 2005). While patient education is essential, Markum, Ridenour, Shaff, Hammons, and Taylor (2002), found in their study 92% of nurses did not complete patient education due to staffing arrangements, lack of time, and the patient's receptiveness to being educated. There is a greater improvement in patient outcomes when there is an increase in the time spent with patients (Westbrook, Duffield, Li, & Creswick 2011).

In a study conducted by Aghakhani, Ranjbar, Rahbar, and Beheshti (2012), clinicians felt there was not enough time for them to conduct patient education. Clinicians know patient education is important, but believe it is challenging to accomplish effectively as their shift is very busy (Smith & Zsohar, 2013).

Clinicians encounter frequent changes in their tasks and experience interruptions in patient care (Westbrook, Duffield, Li, & Creswick, 2011). Clinicians can be interrupted as often as 7.5 times during a shift (Weigl, Beck, Wehler, & Schneider, 2017). The most common source of the interruptions experienced was from other health professionals and calls to their work phones and beepers (Weigl, Beck, Wehler, & Schneider, 2017; Weigl, Müller, Angerer, & Hoffmann, 2014). Interruptions may disrupt the time a clinician spends with a patient.

There is a positive correlation between the time a clinician spends educating a patient and the patient's retention rate (White, Garbez, Carroll, Brinker, & Howie-Esquivel, 2013). While it has obvious benefit, still not enough time is spent educating patients. Alibhai, Han, and Naglie, (1999) report in their study that physicians spent 10.5 minutes, while pharmacists spent 5.3 minutes educating patients on their medication. In order for the patient to understand their medication and adhere to the drug, clinicians must spend 15 minutes in each education session (Alibhai, Han, & Naglie, 1999). Therefore, the learning environment needs to be one which is free of distraction and where the patient feels his or her needs, skills, beliefs, attitudes, and knowledge are considered.

2.3.3 Healthcare Organization

The hospital environment is the primary environment where the RT works. As with other organizations, hospitals have policies set to standardize the rules and attitudes of their employees. While policies are relevant, the setting in which these rules are used requires consideration. RTs work in many different patient care settings such as basic patient floors, intensive care units, emergency departments, rehabilitation facilities, and so on. The scope of the RTs' job differs depending on what services are provided. Therefore, the level of acuity and types of patient care will vary significantly upon which size facility an RT is employed. The therapists will have different skillsets and needs depending on their day-to-day work environment. According to Bergh, Persson, Karlsson, and Friberg (2014), the impact of a healthcare organization on a health professional is best understood by exploring their attitudes and beliefs on the compliance of staff, managerial support, the responsibility to provide patient education, and professional development.

Guidelines help clinicians make decisions and improve the care received by patients (Woolf, Grol, Hutchinson, Eccles, & Grimshaw, 1999). Guidelines provide the clinician with

instructions of various modalities such as what, how, and when certain types of care are to be performed. Guidelines serve to ensure better consistency in the care provided to the patient, regardless of where the care was received. To aid in patient education, guidelines may determine how the clinician is to provide educational content to the patient.

Printed educational materials are defined as either printed or written handouts such as pamphlets, informational sheets that provide information to a patient or family member regarding prevention, diagnosis, and treatment of a disease (Bernier, 1993). Printed education materials allow for consistency in the information provided. They are also more cost-effective, portable, and easier to update content (Bernier, 1993). Sprague et al. (1999), found a lack of materials and time spent with the patient as barriers to patient education. The reasons or barriers for preventing clinicians from adequately educating their patients is a lack of available time (Alibhai, Han, and Naglie, 1999; Schmitz et al., 2018). The second-largest barrier was the lack of demonstration inhalers available to teach the patients (Schmitz et al., 2018). Another barrier to patient education is poor communication of discharge planning (Alibhai, Han, & Naglie, (1999). The attitudes of clinicians towards using printed education material is improved as usage was increased when they were given the opportunity to redesign the currently used material (Grudniewicz, Bhattacharyya, McKibbon, & Straus, 2015).

The organization needs a consistent way of utilizing teaching resources to promote active learning in their patients. Patient education and classroom learning share common goals of attempting to transport information to a student or patient by merely providing content to the individual who then passively memorizes the information (Michel, Cater III, & Varela, 2009). Passive learning occurs in a classroom when the instructor presents large quantities of information to the students in a short amount of time (Michel, Cater III, & Varela, 2009). To parallel traditional

classroom education to patient education, patients are provided a large amount of information in a short amount of time during their hospitalization. According to Michel, Cater III, and Varela (2009), students are not likely to retain the information after the class has ended. So again, to compare with patients, these individuals are less likely to retain the information presented by the clinician. Active learning strategies have a more significant, positive impact on individuals' learning rather than passive learning strategies (Michel, Cater III, & Varela, 2009). Therefore, getting the patient to participate in their learning and not just providing material or lectures to the individual will provide better patient education outcomes. Patient material should not be generic but instead tailored to that patient, to meet their individual needs (Kreuter, Bull, Clark, & Oswald, 1999). While there is evidence that active learning strategies are best practice in teaching, it is still not always used in clinical settings. Schmitz et al., (2018), shows the education techniques utilized were poor, as only a small percentage of the clinicians allowed the patient to demonstrate and that when it came to reassess the patient's technique, it was determined that 76% of the time it was completed verbally.

When clinicians have a perception of strong organizational support, it improves their job satisfaction (Abou, 2017). Clinicians are more likely to be satisfied with their job when they have greater control of their job and autonomy and have the support of leadership and other clinicians (Duffield, Roche, O'Brian-Pallas, Catling-Paul, & King, 2009). According to DiMaglio et al., (2005), when clinicians have improved interaction and group cohesion, there is an improvement in job satisfaction and decreased turnover rates.

The support of management does matter and has an impact on clinicians. Those who have managerial staff supporting them have lower burnout rates compared to clinicians who do not have the support of management (Lee, Medford, & Halim, 2015; Seltzer and Numerof, 1988). When

an employee experiences a supervisor who exhibits abusive supervision, the employee's attitude will develop into one of resentment and opposition. The employee will have a desire to punish the supervisor by retaliating. This can be accomplished by manipulating the supervisor with forceful and persuasive means. This behavior is more common when employees do not like a supervisor. The more abusive a supervisor was perceived by staff the greater tendency for burnout exists among the employees (Yagil, 2006).

According to Foote, Seipel, Johnson, and Duffy, (2005), the attitudes of staff members and the clarity of their role has a positive effect on their commitment to the organization's policies. However, healthcare workers do not always comply with policies. In a study conducted by Dekker et al., (2017), the leading causes for noncompliance was a lack of clear expectations, poor attitudes towards the policy, a lack of resources to comply with the policy, and the belief that the policy was a waste of time.

Clinicians need to take the time required to educate patients in their inhaled medication administration, and this can be done by advocating for such to those in positions of management and legislation (Fink and Rubin, 2005). It is not solely the responsibility of the respiratory therapist, nurse, physician, or pharmacist to teach patients proper inhaler technique. It is every clinician's job to educate the patient on their inhaled medication and not rely on another professional to do so. This will help prevent patients from "slipping through the cracks."

The methods being used to educate patients must be reviewed by management to ensure all therapists are educating patients consistently and that the most effective methods are being used. For example, only using verbal education is not sufficient for patients (Marcus, 2014). To improve how staff educates, the staff educators to need to be aware of the best methods in teaching patients so they can be taught to staff members and enforced, rather than uncontrolled and left up

to the provider. Additionally, when assessing staff competence, more is involved than ensuring staff members are competent, but also measuring the ability of the practitioner to apply their skills in their own clinical environment (Ten Cate, Snell, & Carraccio, 2010).

Continuing education is defined as scheduled sessions to build on the professional knowledge and improve health outcomes of the public (Furze & Pearcey, 1999). Some clinicians obtain continuing education credits to meet the required hours to maintain their license to practice (Griscti & Jacono, 2006). However, numerous studies found that clinicians attend continuing education offerings to improve their knowledge. Interactive sessions are more effective in changing professional practice compared to only didactic continuing education seminars (Bellolio & Stead, 2008; 2009). It is difficult for clinicians to keep pace with clinical competencies when there is a lack of educational opportunities (Baernholdt & Mark, 2009). Continuing education effects burnout levels. According to Lee, Stewart, Brown (2008), while there have been strategies identified to decrease burnout amongst clinicians, one is participating in continued education.

2.3.4 Interdisciplinary Teamwork

A critical aspect of providing care to patients involves healthcare providers working as a team. According to Fertman, Dotson, Mazzocco, and Reitz (2005), interdisciplinary teams work together in a cooperative manner which allows for the integration of each member's perspective based on their professional background. The members of an interdisciplinary team involving pulmonary patients may vary between facilities and patient acuity and disease state. While the interdisciplinary team primarily involves RTs, Registered Nurses and Physicians, other allied health professionals such as physical and occupational therapists, social workers, clinical nutritionists, psychologists, nurse practitioners, and exercise physiologists also play a role. Each

facility is different and may include RTs as team members in patient care. However, this may not be the case at all facilities and instead allows for limited teamwork involvement.   An interdisciplinary team is one in which participants collaborate in order to provide the best patient care (Hall & Weaver, 2001). According to Bergh, Persson, Karlsson, and Friberg (2014) the impact of interdisciplinary teamwork on health professionals is best understood by exploring attitudes and beliefs on role determination of (other) providers in patient education, understanding the RT's role in patient education, the importance of teamwork, discussing with colleagues how to improve inhaler teachings, and determining what the patient learned from physicians and nursing education.

Teamwork is essential for RTs to collaborate and create an environment for change. The Stoller et al., (2010) study was conducted at a time when the Cleveland Clinic was looking to create a more cohesive environment for its four Respiratory departments. The authors created staff buy-in by getting leaders and RTs from each department involved in making changes to improve each of the four departments.   The employees provided input regarding the changes and development of the new outcomes for the departments. The employees were engaged and had ownership in the process, further increasing the RTs' desire for a successful outcome (Stoller et al., 2010).

RTs need to work together as a team and cooperate with other departments for better outcomes for patients. The teamwork domain can help identify where communication breakdowns exist with other healthcare workers in regards to patient education.

Teamwork is also vital in not only improving communication but improving the relationship among healthcare workers to improve job satisfaction and reduce burnout. In their study of how autonomy can boost job satisfaction, Genet, Firestone, and Volsko, (2015)

implemented a RT-led round in the morning before the regular multidisciplinary round and found with more autonomy and leadership delegated to RTs, there was improved staff morale, job satisfaction, and enhanced communication between different team members to better patient care. When clinicians experience emotional exhaustion, a component to burnout syndrome, team-based interventions are less likely to engage with a team in positive interpersonal teamwork (Welp, Meier, & Manser, 2016). To have an effective team, clinician burnout must be addressed. Otherwise, the negativity will interfere with the team (Welp, Meier, & Manser, 2016).

While there are differences in the level of agreement among clinicians, there is a general consensus that team approaches to patient care benefit patients (Liepzig et al., 2002). Healthcare providers agree that teamwork is a productive use of time. However, these results are of consensus, some professions felt more positively about teamwork than others (Liepzig et al., 2002). Thomas, Sexton, and Helmreich (2003), also found that attitudes on teamwork differed between health providers as nurses and physicians have dissimilar attitudes which may be from differences among the group members such as differing authority, training, gender, and the overall environmental culture of the facility between the two groups (Thomas, Sexton, & Helmreich, 2003).

2.3.5 Patient Education Activity Documentation

Documentation is completed after working with every patient, but the manner in which this charting is done is often inconsistent among staff members. Staff members may not chart the same procedure as others in their department. For example, the patient education tab in the charting program may have a detailed checklist that the RT can use as a guide to know what information needs to be documented. However, if the charting system relies more on annotation from the RT, there is a greater chance of inconsistent data charted. These providers need to have retraining

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sessions so they all understand the expectations of what and how to chart their activities. According to Bergh, Persson, Karlsson, and Friberg (2014) the impact of patient education activity documentation on health professionals is best understood by exploring their attitudes and beliefs on patients' evaluations, learning objectives, discussions, patient education and education needs.

Electronic health records (EHR) is the digital version of paper charting maintained in the past. This form of documentation is more efficient in the manner it can instantly retrieve patient information and display updated patient information in real-time. EHRs can share information between different healthcare sites and healthcare providers who have access to this technology (What is an electronic health record (EHR)?, n.d.). It is crucial to include documentation of patient education within a patient's EHR to ensure consistency and communication regarding their needs, learning styles, learning objectives, educational methods used, and evaluation results.

A study of 100 participants conducted by Moody, Slocumb, Berg and Jackson (2004), shows 81% feel EHRs are more help than hindrance to patient care. From the population sampled, as much as 75% feel documentation was improved by electronic documentation, 54% feel EHRs decrease the threats to privacy compared to paper charting, 36% agree that EHRs decrease the workload, and 76% agree that EHRs will lead to improved patient care. Clinicians do not want to return to paper charting but there is a growing sense that EHRs are a major source of burnout (Downing, Bates, & Longhurst, 2018). Clinicians spend a significant portion of their day using EHRs and it is a primary source of burnout. The amount of time clinicians must spend on documentation decreases job satisfaction and increases burnout (Shanafelt et al., 2016).

In a study conducted by Kossman and Scheidenhelm (2008), nurses perceive EHRs as being time-consuming, as they spend most of their shift using EHRs, and while the participants state EHRs are a hindrance, they also comment EHRs improve their work. The participants

mention it is more efficient than paper charting. EHRs improve patient information availability and decreases the time to access and document data. Nurses believe that EHRs improve patient safety as they assist in preventing medication errors, requiring clinicians to document all patient data and displaying any allergy alerts (Kossman & Scheidenhelm, 2008). Nurses feel more organized as the system prompts reminders allowing the nurses to rely less on their memory, making it less likely for them to forget (Kossman & Scheidenhelm, 2008; Lee, 2006). Overall, nurses prefer EHRs over paper documentation (Kossman & Scheidenhelm, 2008).

The drawbacks reported were EHRs can slow down clinicians when computer system issues arise such as system speed and downtimes (Kossman & Scheidenhelm, 2008). Also, the lack of available computers to chart delays nurses' productivity. Clinicians report they feel they spend more time with the computer than with their patients. Additionally, they feel there is a decrease in interdisciplinary teamwork due to limited communication between physicians and nurses as it has been an inconvenience to locate notes on the computer and the physicians being unfamiliar with the EHR system. Clinicians feel the quality of care has decreased with EHRs due to less time being spent with patients (Kossman & Scheidenhelm, 2008).

A. Bergh, C. Bergh, and Friberg, (2007), additionally state the content provided by nurses in their documentation was not specific and may allude to a lack of awareness to patient teaching and charting as the clinician's documentation did not always clearly demonstrate what happened in patient care situations. Managers must become aware as to how their staff members are documenting and if patient education is not only being performed but also documented.

Documenting patient education serves many functions. If properly documented, other clinicians would know what topics were already discussed with the patient or their family. Also documented would be which topic or topics need to be repeated to reinforce critical points. This

helps save time. Additionally, should any issue occur with patient education, the provider's documentation would prove when the education was done, what was taught and by whom. The study conducted by Cook et al., (2008), utilized one week of electronic medical records consisting of 240 inpatients or 26.7%. Out of all the clinicians involved in patient education, nursing had the most patient education entries with a total of 160 entries. The other clinicians with the most frequent entries were physical therapy with 26, respiratory therapy and cardiology with 22, nutrition with 11 entries and 8 with pharmacy and 1 with occupational therapy. The most common technique used in patient education was verbal instruction with 175 entries while the demonstration technique was done only 16 times. It was noted that even fewer patient education sessions were completed with handouts and demonstrations. As for whom the healthcare providers educated, 173 entries reflected that only the patient was educated and only 23 entries included both patient and family members. The medication was among the most common topics discussed during patient education sessions, totaling 97 entries.

According to Gunningberg, Lindholm, Carlsson, and Sjöden (2000), if the clinician is not well versed in the prevention and treatment of the condition, documentation may lack on the part of the healthcare provider. For example, nurses did not document the prevention and treatment of pressure ulcers. The possible reasoning for the lack of documentation is that the nurse did not correctly identify the ulcers as a common potential problem with the patient's current state. If the RT knows how to educate the patient, another possibility for not charting would be the lack of time available to do so (Nam, Chesla, Stotts, Kroon, & Janson, 2011).

2.4 UPMC Somerset Hospital

UPMC Somerset employs around 850 employees in nearly 56 different departments, making it one of the largest employers in Somerset County (History, 2019). One of the many departments housed in UPMC Somerset is the Respiratory Care Department. UPMC Somerset is a 118-bed community hospital located in Somerset, Pennsylvania with 160 physicians and dentists with hospital privileges. UPMC Somerset treats roughly 3,900 inpatients and over 140,000 outpatients on a yearly basis. Since its conception in 1921, UPMC Somerset has been building on their facility and making improvements required to better treat its community (History, 2019). In the recent merger with UPMC, Somerset hospital has been receiving referrals from Pittsburgh physicians which allows Somerset natives to receive excellent care closer to home. As part of UPMC, UPMC Somerset has more buying power by using the same vendors as the other UPMC facilities. Additionally, UPMC Somerset is poised to receive equipment from other medical centers in the UPMC system when available.

3.0 Methods

3.1 Inquiry Questions

The inquiry questions are:

1. What are UPMC Somerset Hospital respiratory therapists' level of job perception and beliefs?

2. What is UPMC Somerset Hospital respiratory therapists' level of burnout?

3. What is the relationship between UPMC Somerset Hospital respiratory therapists' burnout and job perception and beliefs?

3.2 Design

The inquiry design is a needs assessment to investigate respiratory therapists' burnout, perceptions, and beliefs. The needs assessment will recommend strategies to improve education and support for RTs working in a hospital setting.

3.3 Setting

The experiences of an RT can differ at each hospital. RTs arrive to their department at the beginning of their shift to receive a shift report from the RT who previously had their coverage area. The RT's area can range from one unit, such as intensive care, or consist of multiple floors.

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The patient load is divided up and distributed to each RT to keep the workload as fair as possible. The amount of treatments differs per round and shift and is dependent on the time of year. For example, there are more therapies to be completed in the winter months as opposed to during the summer. This fluctuation in treatments may cause the RT supervisor to flex RTs who otherwise would be staffed with little work to do. The RT flexed will have to use their accrued paid time off or vacation day to be paid for that shift. On the other hand, if there are not enough RTs to complete treatment rounds and if someone will not volunteer to come into work, someone will be mandated to stay and work overtime hours.

When an RT arrives to work and receives report, they take their given treatment load and retrieve the medication needed to administer to their patients. The RT will then report to their area and begin administering treatments. A treatment round may last about two hours. In this time frame, the RT has to maintain a steady pace to complete all treatments scheduled in that time period. A nebulizer treatment takes about 10 minutes to complete. It can be difficult to deliver treatments without stacking, which means giving more than one treatment at a time. While a computer is required to scan the patient's armband, medication, and armband again, once completed, the RT can begin another patient's treatment before the first patient's nebulizer is finished. If a RT has 30 nebulizer treatments due in a round and if a treatment takes 10 minutes, it would take 5 hours if done one treatment at a time. However, these 30 treatments need completed in 2 hours, so shortcuts will be made, affecting the time spent with the patient. Sometimes an RT will complete their round and call the other RTs to help complete treatments. It is not uncommon for RTs to miss lunches or breaks.

RTs are often interrupted from their routine with patient transports when the patient is on a ventilator or non-invasive machine. Additionally, there are the occasional rapid responses, code

blue and trauma calls that require an RT. A more frequently experienced interruption to patient care is from basic nursing procedures such as medication administration, bathing and getting behind the kitchen staff distributing trays. Therefore, the RT is dependent on others in their department to help them complete treatment rounds, should they get behind.

Again, while some facilities solely employ RTs to work in individual units, this is not the case everywhere. Instead, the RT will visit many different floors to complete their workload. Often the nursing staff does not know the RT's name since they do not see the RT continually. The RT is often referred to as "respiratory" or "hey, respiratory." It does not make the RT feel as though they belong or part of the care team. Registered nurses will call to request a breathing treatment and are either not aware or do not care that the RT has multiple areas to cover and will be demanding for the RT to be there "sooner than later." When this occurs, the RT will have to cut another patient's treatment short and run to another area to give the requested treatment. On a general pulmonary floor, this occurs less since the nurses know the RTs, as it is a hefty treatment floor. At times, it feels as though the RT is not valued until a patient is not responding and the RT rushes in to perform CPR. Then the nursing staff is happy to see "respiratory." This is not a complaint but rather a concern that RTs are not always valued. RTs are well-trained health providers. When the work environment becomes busy, it is easy for RTs be disrespected and it is challenging to perform in a toxic environment.

When the end of the shift nears, the treatment load is redistributed to be as fair as possible. Redistribution of the workload is done by either a supervisor, manager, or staff RT. Once the incoming RT clocks in, the RT who previously had the area will give report. This can take place in the department or at the bedside. For example, report for patients in an intensive care unit is

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typically done bedside and report for patients on basic nursing floors is completed in the RT department.

3.4 Participants

There were 23 RTs recruited at UPMC Somerset. They are employed in the following ways, 16 RTs work on the floors and units, 3 RTs in the sleep study lab, 3 RTs in the pulmonary function lab, and 1 RT in pulmonary rehabilitation. From the 23 RTs, there are three lead RT's who act as a shift supervisor. The number of therapists scheduled per shift consists of 2 to 3 therapists on day shift, 2 on evenings, and 2 covering night shift. Twelve of the twenty-three RTs participated in the project. The RT's work directly with patients affected by chronic lung disease, making the patient another stakeholder. Another group involved in the care of pulmonary patients is registered nurses. Nurses have a significant role in patient care and must be considered, as their cooperation and teamwork are needed. Finally, the medical center is a stakeholder as it needs to prevent readmissions or risk losing financial reimbursements while improving the patient's quality of life.

3.5 Instruments

The study measures are two instruments and an interview protocol. The Respiratory Therapist Patient Education Questionnaire instrument is rooted in the work of Bergh, Johansson, Persson, Karlsson, and Friberg, (2015). The original work for nurses was modified to reflect the

work of respiratory therapists. This questionnaire consists of five domains, each with seven questions. The questions in the domains use the same five-point Likert-scale throughout, ranging from 1 (Never) to 5 (Always). The scores range from a minimum of seven (7) points to a maximum of 35 points. Each of the five domains is scored independently. Content validity was established through an extensive literature review of respiratory therapist job components, practice and responsibilities. After, an expert panel consisting of respiratory therapist, expert practitioners, and academic researchers, including the Respiratory Care Educator of the University of Duke Medical Center reviewed the domain areas and items. Their expert feedback and recommendations were used to formulate the questionnaire. Finally, the questionnaire was piloted with practicing hospital-based RT, not at the participating inquiry site, to refine the instrument implementation and delivery.

The Respiratory Therapist Burnout Inventory measures respiratory therapist job burnout. This instrument is rooted in the work of Maslach and Jackson, (1981) and the abbreviated burnout inventory as used by West, Dyrbye, Sloan, and Shanafelt, (2009). Modifications were made to each of the seven questions to reflect the hospital site where the respiratory therapists will complete the inventory. The Respiratory Therapist Burnout Inventory consists of seven questions in total. One question is regarding the emotional exhaustion of the RT. The second question is about the depersonalization of the RT, and the last five questions reflect RTs personal accomplishments. The burnout inventory uses a seven-point Likert-scale ranging from 0 (Never) to 6 (Every Day). For the first two questions regarding emotional exhaustion and depersonalization, the higher the number of points present, the greater the likelihood burnout exists. The questions of the abbreviated burnout inventory are not intended to replace the full MBI, these questions can be used as a substitute to be integrated onto longer assessments to gain insight of a possible burnout where

the full MBI 22-question survey cannot be applied easily (West, Dyrbye, Sloan, & Shanafelt, 2009). These questions provide a glimpse at the burnout level of respondents, should the researcher require more insight on burnout, the full MBI should be utilized. In a study conducted by West, Dyrbye, Sloan, and Shanafelt, (2009), the abbreviated MBI results of their sample population compared positively to the results of the original MBI. Ayyala, Ahmed, F, Ruzal-Shapiro, and Taylor, (2019) utilized the abbreviated version of the MBI and compared their findings to the results of Maslach's questionnaire involving individuals in medical professions.

The Respiratory Therapist Interview Protocol is adapted from the Respiratory Therapist Patient Education Questionnaire. The development of these questions was assisted by the expert panel reviewers who examined both the RTPEQ instrument. These questions are designed to gain more insight about the RTs and organizations with an emphasis on patient education.

3.6 Data Collection

Approval for this quality improvement project was granted by the UPMC's Quality Improvement Review Committee. The Cardiopulmonary Manager at UPMC Somerset was contacted to schedule a staff meeting prior to distributing the survey to the staff. The project was explained to the staff members and their participation was requested. It was also stated in the staff meeting there would an opportunity to participate in a follow-up interview to collect their feedback and insight on practice. However, the interviews were cancelled as a result of the COVID-19 restrictions. Additionally, the informative interview with the Cardiopulmonary Manager at UPMC Somerset originally planned to learn about the administration's perceptions on patient education also had to be cancelled due to the COVID-19 restrictions.

After the meeting, the Cardiopulmonary Manager was sent the survey link and a memo introducing the initiative and asking employees to participate in the anonymous survey, which was estimated to take 5 to 10 minutes. It was stated to the staff the goal is to improve RT services at UPMC Somerset and the RT field. The results will be shared with the administration and the staff. SurveyMonkey was permitted to be used since UPMC Somerset was not yet fully integrated into the UPMC system. Otherwise the survey would have been administered on UPMC's platform. The staff was instructed to complete the survey during their regularly scheduled shift. The consent form was embedded in the survey allowing participants to opt out as well as provided contact information for the primary investigator for any questions. As an incentive, it was communicated participants would be eligible for an Amazon eGift card, in raffle drawing, if their email address was provided in the survey. The winners were chosen at random.

Prior to the restrictions of the COVID-19 pandemic, it was planned to conduct an informative interview with the Cardiopulmonary manager at UPMC Somerset to using exit interview questions to learn about what administration's perceptions on patient education. It was also planned to work with the Cardiopulmonary Manager to identify interviewees by providing another mailing to the manager. The manager of the cardiopulmonary department at UPMC Somerset was to distribute the mailing to the staff members to recruit five to six RTs to participate in the follow-up interview. Those willing to participate in a follow-up interview would have been contacted and a date and time were to be arranged. The interviews were to be conducted in a private room at their place of work during their regularly scheduled shift. The interviews would then be recorded and transcribed verbatim. All individuals were to be kept anonymous and the results would have been shared with the Respiratory Department and Administration via a memo after the data had been analyzed. The collected data was to be kept on site in a locked drawer in

the Cardiopulmonary manager's office. Those who would have participated in the questionnaires were to be placed in a drawing for an Amazon eGift card and the five to six RTs who given an Amazon eGift card for their effort. To help eliminate bias, it was planned to have an RT, not employed at UPMC Somerset who reviewed the instruments to be an expert reviewer to review data and coding.

3.7 Data Analysis

Raw data was transferred from SurveyMonkey and placed directly in a Word document once cleaned and de-identified to begin descriptive analysis (mean and median) for RTPEQ total sample, NBRC credentials, and gender.

The originally planned interviews would have consisted of a thematic analysis of the interview transcripts. A thematic analysis was proposed for analyzing the data collected during the interview stage.

The primary investigator is a registered respiratory therapist in the State of Pennsylvania and views this work through the lens as such. While working in the field of respiratory therapy, he has experienced and observed other RTs experience symptoms of burnout. He has also observed poor patient education procedures being utilized for patients on inhaled medications for chronic lung conditions. The instruments discussed in this work are to be utilized by RTs to obtain a "snapshot" of their facility's current patient education practices and bring awareness to areas needing improvement.

In regard to the relationship between burnout and the five domains of the RTPEQ, the hypothesis is that RTs with high levels of burnout will have poor attitudes and beliefs towards

patient education. The five domains of the RTPEQ will each be analyzed and compared to determine weakness and strengths among the five domains, which can then be addressed to improve patient care in those areas. Once data has been collected and analyzed, findings will be presented to the Director of Cardiopulmonary Services with recommendations for improvement based on current literature.

4.0 Results

Data analysis consists of descriptive statistics reporting comparisons of the instruments' mean and median scores for the total sample and selected demographic characteristics shown in Table 4.1. The study population is Respiratory Therapists employed at UPMC Somerset. There were 15 responses in total. 3 responses were disqualified due to only agreeing to the consent question but being entirely incomplete, leaving a total of 12 participants.

4.1 Population Descriptive Statistics: Gender, credentials, experience

Of the 12 respondents, the majority were female (75%) and 25% were male. The majority of the Respiratory Therapists sampled are Registered Respiratory Therapists (RRT) (91%) while 8% are Certified Respiratory Therapist (CRT). The RRT is a higher credential than the CRT credential.

The majority, or 10, of survey respondents reported they have worked at UPMC Somerset for as long as they have been in practice (83%) with the exception of two respondents or 16% of the department. Of the two participants who have more experience as an RT than they have experience working at UPMC Somerset, one is female (8%) and one is male (8%). Of the 83% who have practiced as an RT for 10 or more years, 58% are female and 25% are male. Out of the 9 RTs who worked at UPMC Somerset for 10 or more years, 7 (58%) are female and 2 (16%) are male therapists.

Table 4.1 Sample Descriptive Statistics: gender, credentials, experience

Gender	Females 75% (9)		Males 25% (3)			
CRT vs. RRT Credential	CRTs 8% (1)		RRTs 91% (11)			
Years of Experience as RT	<1 year		1-10 years		>10 years	
	Females 0% (0)	Males 0% (0)	Females 16% (2)	Males 0% (0)	Females 58% (7)	Males 25% (3)
Years of Experience as RT at UPMC Somerset	<1 year		1-10 years		>10 years	
	Females 8% (1)	Males 0% (0)	Females 8% (1)	Males 8% (1)	Females 58% (7)	Males 16% (2)

The National Board of Respiratory Care offers specialized credentials to enhance Respiratory Therapists' knowledge in specialized areas of practice shown in Table 4.2. Three (25%) of the twelve respondents have earned specialized credentials. Of the three, two (16%) are female and one (8%) is male. One female holds both the Registered Pulmonary Function Technologist (RPFT) and Neonatal/Pediatric Specialist credentials. It is important to note, the RPFT is a higher credential than the CPFT as the CPFT is a requirement to earn the RPFT credential. The other two Respiratory Therapists have both earned the Neonatal/Pediatric Specialist (NPS) credential. Those three (25%) of the twelve respondents maintain the NPS credential illustrating a higher understanding of care for that patient population. Additionally, of the nine respondents who do not hold a specialized credential, 77% are female and 22% are male.

Table 4.2 NBRC Specialized Credentials (n=12)

Credential Type	Females	Males
Certified Pulmonary Function Technologist (CPFT)	0% (0)	0% (0)
Registered Pulmonary Function Technologist (RPFT)	8% (1)	0% (0)
Adult Critical Care Specialist (ACCS)	0% (0)	0% (0)
Neonatal/Pediatric Specialist (NPS)	16% (2)	8% (1)
Sleep Disorders Specialist (SDS)	0% (0)	0% (0)

4.2 RTPEQ Total Sample Scores

The Respiratory Therapist Patient Education Questionnaire instrument is rooted in the work of Bergh, Johansson, Persson, Karlsson, and Friberg, (2015). The original work for nurses was modified to reflect the work of respiratory therapists. This questionnaire consists of five domains, each with seven questions. The questions in the domains use the same five-point Likert-scale throughout, ranging from 1 (Never) to 5 (Always). The domain scores range from a minimum of seven (7) points to a maximum of thirty-five (35) points. Each of the five domains is scored independently.

The mean scores and ranges were calculated (Table 4.3). The highest mean score was the Documentation of Patient Activities domain (31.2). The lowest mean score was Interdisciplinary Teamwork (23.3). The other three domains scores are Education Environment (29.1), RT Beliefs and Knowledge (29.3) and the Healthcare Environment (29.1). The Healthcare Organization and Interdisciplinary Teamwork have the greatest variability among scores as both domains have the

highest range (15). The domain with the smallest range is the Education Environment (10) making

it the most consistently scored domain.

Table 4.3 RTPEQ Total Sample Mean Scores (n=12)

Domains	μ (SD)
Education Environment	29.1 (2.9)
Healthcare Organization	28.7 (4.4)
Interdisciplinary Teamwork	23.3 (5.6)
Documentation of Patient Activities	30.2 (4.6)
RT Beliefs and Knowledge	29.3 (3.9)

The RTPEQ domain median was highest in the Documentation of Patient Activities

domain (32.5) while the Interdisciplinary Teamwork domain had the lowest median score (24)

(Figure 4.1). The median scores for the other three remaining domains are Education Environment

(29), Healthcare Organization (29) and RT Beliefs and Knowledge (30).
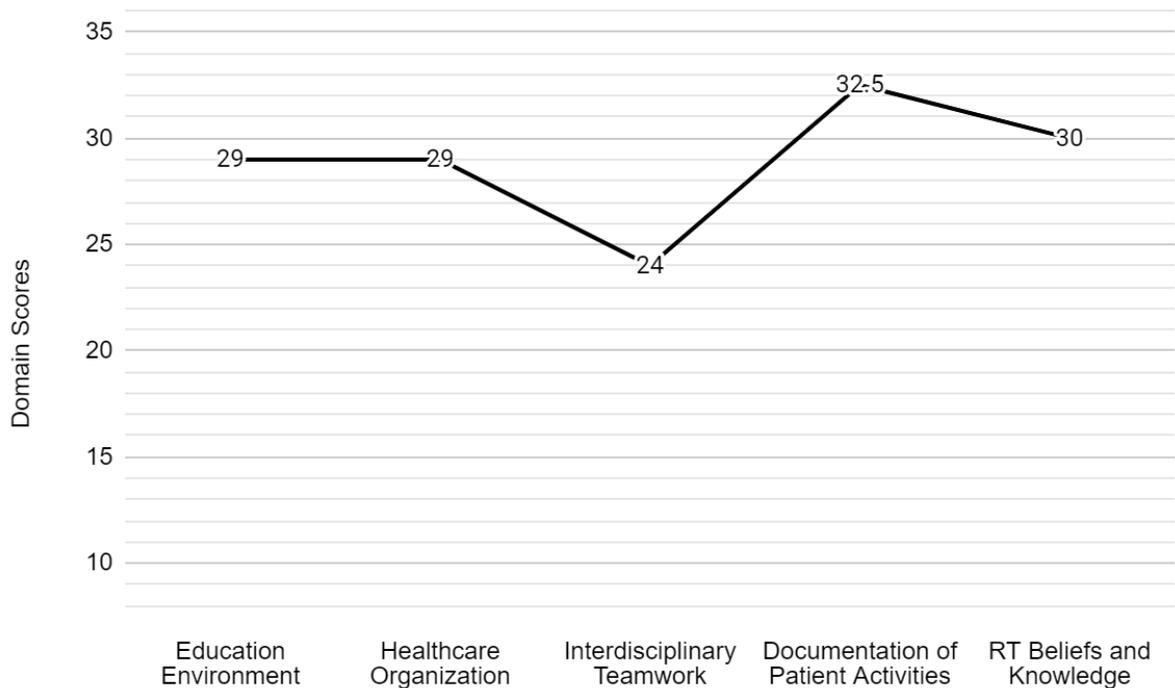
Figure 4.1 RTPEQ Domain Median for Total Sample

4.3 RTPEQ Domain Gender Scores

Using the demographic information, the mean scores of participant responses were calculated by gender (Table 4.4). The greatest discrepancy between the groups was found in the Interdisciplinary Teamwork domain where the females scored (24.4) and the males scored (20). The next largest difference was in the RT Beliefs and Knowledge domain with (30) for females and (27.3) for males. The next largest gap between the two groups was with the Healthcare organization where females scored higher than males (29.1 and 27.6) respectively. Documentation of Patient Activities domain had a slight variance (30.7) for females and (29) for males. The Education Environment scores were very similar at (29.1) for females and (29.3) for males.

Table 4.4 RTPEQ Domain Mean Scores by Gender (n=12)

Domains	Female μ Score (SD) (n=9)	Male μ Score (SD) (n=3)
Education Environment	29.1 (3.0)	29.3 (3.2)
Healthcare Organization	29.1 (4.9)	27.6 (3.0)
Interdisciplinary Teamwork	24.4 (5.0)	20 (6.9)
Documentation of Patient Activities	30.7 (5.0)	29 (3.6)
RT Beliefs and Knowledge	30 (3.7)	27.3 (4.9)

The median scores of the RTPEQ domains shows both genders identified the Documentation of Patient Activities domain as the strongest domain (33) for females and (28) for males (Figure 4.2). Males also scored the Education Environment at (28) making it a tie for the strongest domain in the male group. Additionally, Interdisciplinary Teamwork is the lowest scoring domain among genders, (24) for females and (16) for males making it the weakest domain.
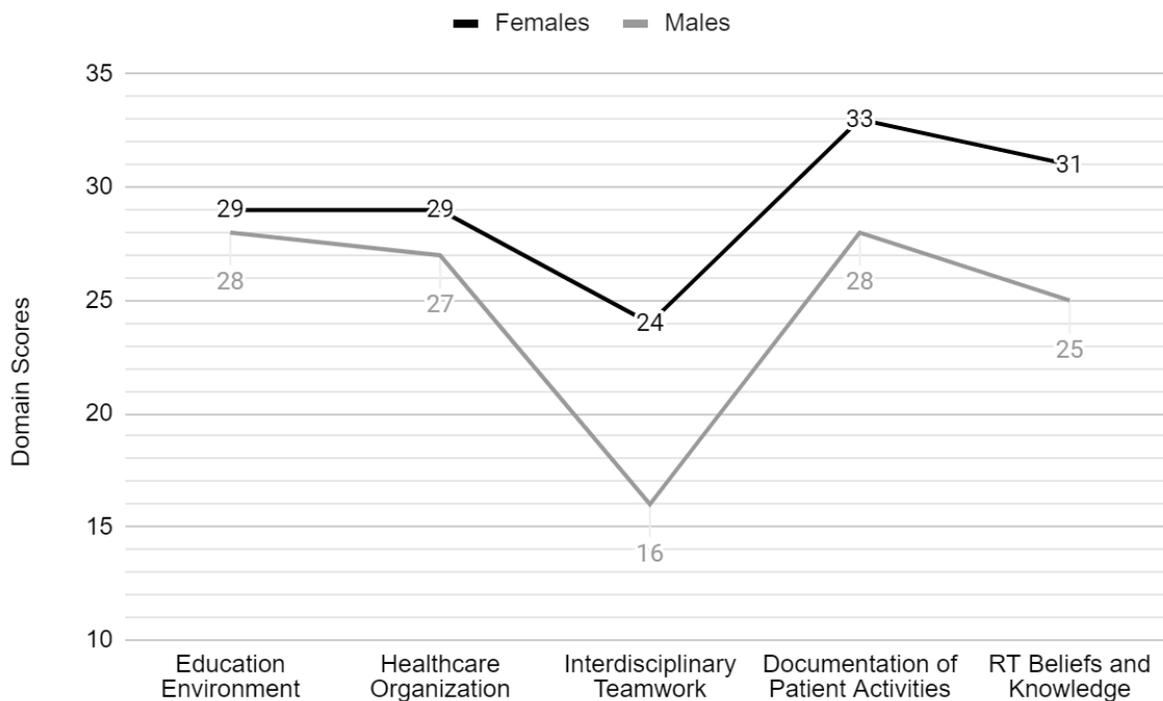
Figure 4.2 RTPEQ Domain Medians by Gender

4.4 RTPEQ Domain Advanced Credential Holders VS. Non-Advanced Credential Holders Scores

The demographic section of the RTPEQ was used to create two groups, one who obtained advanced credentials and another without any advanced credentials (Table 4.5). These two groups were then compared. The highest mean score for the Advanced Credential holders was RT Beliefs and Knowledge (30.3) and the lowest mean score for this group was Interdisciplinary Teamwork (26.3). The highest mean score of those without advanced credentials was Documentation of Patient Activities (30.1) and the lowest mean score was Interdisciplinary Teamwork (22.3). Interdisciplinary Teamwork is lowest scored domain for both groups.

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Table 4.5 RTPEQ Total Sample Mean Scores by Advanced VS. Non-Advanced Credentials (n=12)

Domains	Advanced Credential μ Score (SD) (n=3)	No Advanced Credential μ Score (SD) (n=9)
Education Environment	29.6 (3.0)	28.5 (2.6)
Healthcare Organization	28.6 (7.7)	28.7 (3.4)
Interdisciplinary Teamwork	26.3 (4.7)	19.6 (5.7)
Documentation of Patient Activities	30 (6.0)	30.4 (4.5)
RT Beliefs and Knowledge	30.3 (3.7)	29 (4.2)

The RTPEQ Medians for both Advanced Credential Holders and Non-Advanced Credential Holders show Interdisciplinary Teamwork (28 and 24 respectively) as the lowest scoring domain (Figure 4.3). Also shown is a comparable elevation for both groups in the Documentation of Patient Activities domain, making it the strongest domain for both groups.
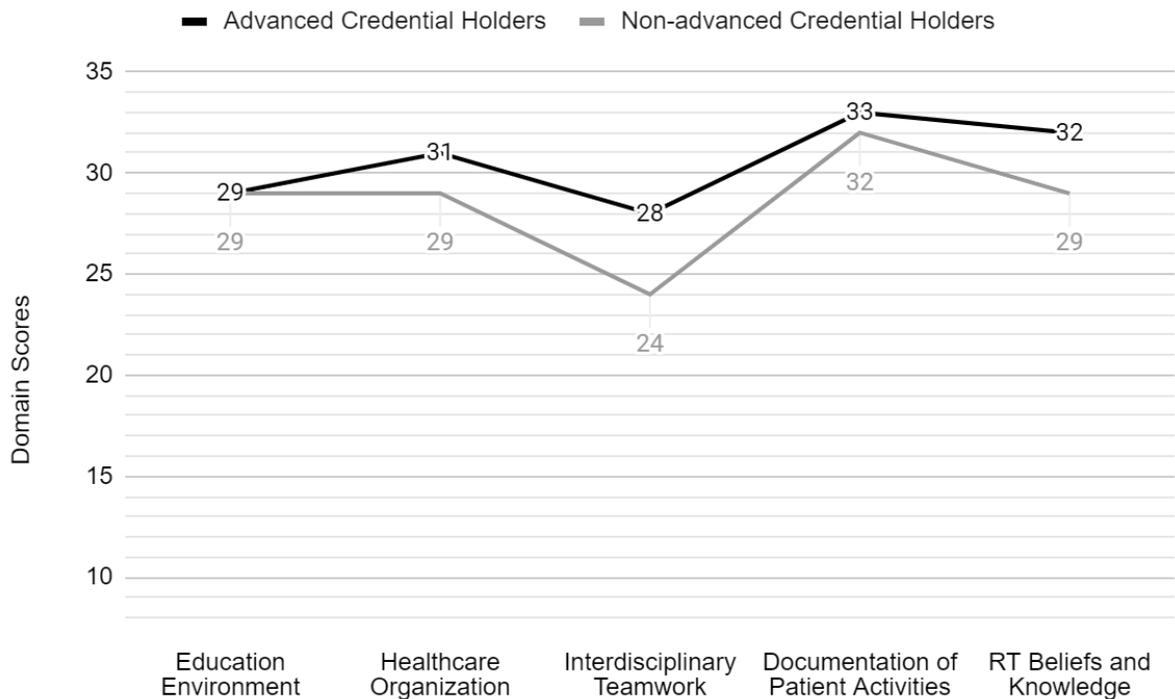
Figure 4.3 RTPEQ Domain Medians for Advanced VS. Non-Advanced Credentials

4.5 RT Burnout Inventory: Total Sample

The Respiratory Therapist Burnout Inventory measures respiratory therapist job burnout. This instrument is rooted in the work of Maslach and Jackson, (1981) and the abbreviated burnout inventory as used by West, Dyrbye, Sloan, and Shanafelt, (2009). The Respiratory Therapist Burnout Inventory consists of seven questions in total. The first question is regarding the emotional exhaustion of the RT. The second question is about the depersonalization of the RT, and the last five questions reflect RTs personal accomplishments. The burnout inventory uses a seven-point Likert-scale ranging from 0 (Never) to 6 (Every Day). For the first two questions concerning emotional exhaustion and depersonalization, the higher the number of points present,

the greater the likelihood of burnout exists. For the remainder of the 5 questions (personal accomplishment), the lower the score the greater the presence of burnout. Since working with a small sample, the mean and median scores were calculated to determine the strengths and weaknesses present in each Respiratory Therapist Burnout Inventory Domain.

The Mean and Standard Deviation were calculated and are displayed for each of the three Burnout Inventory Domains (Table 4.6). Due to the small sample size, each response was analyzed separately. The RT Emotional Exhaustion is calculated based on one question and the RT Depersonalization is calculated on the basis of one question. The maximum score the RT Emotional Exhaustion and RT Depersonalization domains could have are six and the minimum score possible is zero. RT Personal Accomplishment is calculated using the sum of five questions. The maximum score for the RT Personal Accomplishment domain is thirty with a possible minimum score of zero. Since there is not an equal number of questions for each domain, there is a varying degree in the scores.

Both the RT Emotional Exhaustion and RT Depersonalization domains have low scores (1.6) and (1.3) respectively which indicate a low possibility for burnout in the RT department. However, the ranges in the RT Emotional Exhaustion and RT Depersonalization domains show a participant scored these domains as a five. Therefore, while the group as a whole has a low perception of burnout, this indicates at least one therapist may be feeling burned out at their job. The RT Personal Accomplishment shows the majority of RTs believe they are feeling accomplished in their work and less burnout present with a total score of (24.5). However, the range suggests with a (14), there is at least one RT who may be feeling burnout out and less accomplished.

Table 4.6 Respiratory Therapist Burnout Inventory Total Sample Mean Scores (n=12)

Domains	μ (SD)
RT Emotional Exhaustion	1.6 (1.3)
RT Depersonalization	1.3 (1.6)
RT Personal Accomplishment	24.5 (4.8)

RT Depersonalization had the lowest score (1) and RT Emotional Exhaustion was close behind with a (2) (Figure 4.4).
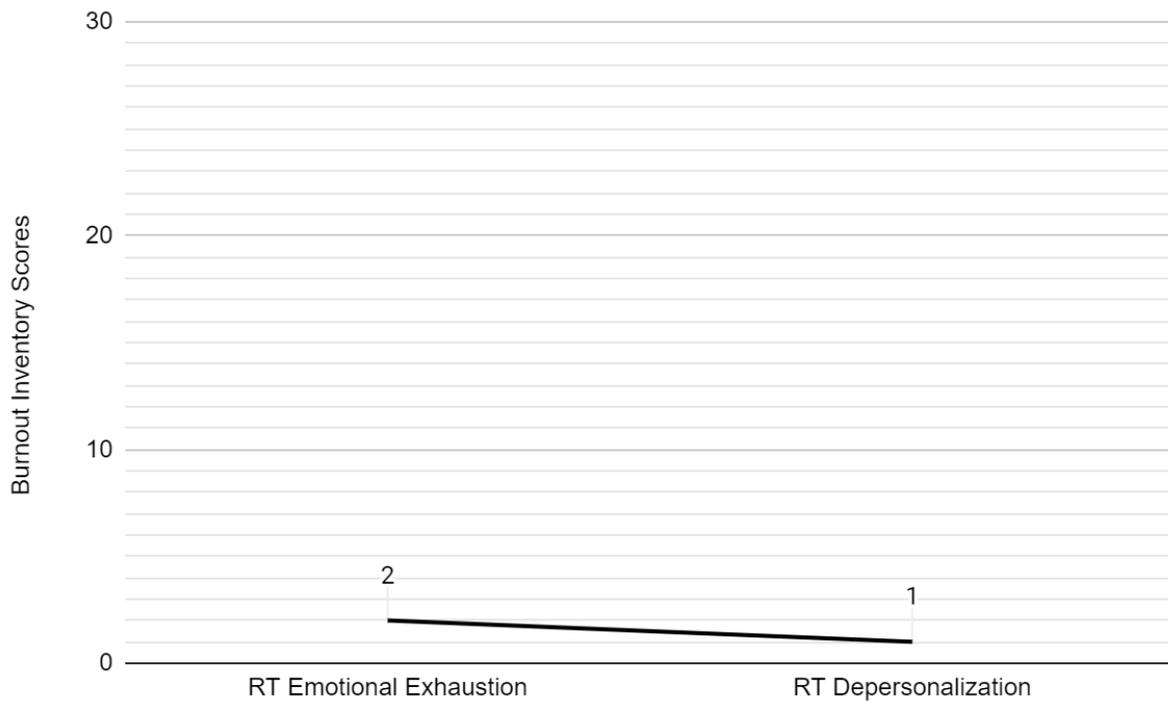
Figure 4.4 Respiratory Therapist Burnout Inventory Domain Medians for Total Sample (RT Emotional Exhaustion and RT Personal Accomplishment)

The median score for RT Personal Accomplishment also shows a less likelihood of burnout present throughout the RT department with a score of (25.5).
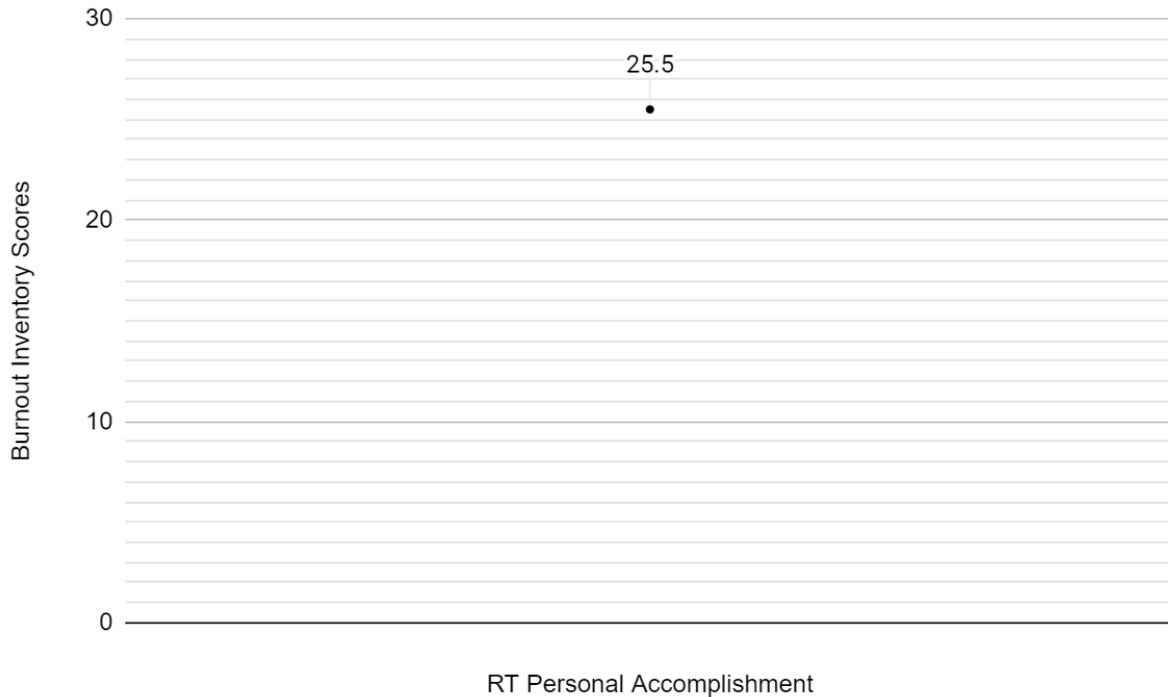
Figure 4.5 Respiratory Therapist Burnout Inventory Domain Medians for Total Sample (RT Personal Accomplishment)

4.6 RT Burnout Inventory: Gender Scores

The mean and range for the Respiratory Burnout Inventory Scores were analyzed based on participants' gender (Table 4.7). These two groups scored very consistently throughout each of the three domains. Males (3) scored higher than Females (2.5) in the RT Emotional Exhaustion Domain. For the RT Personalization domain, Males (.66) scored lower than females (1.5). Both scores for the Emotional Exhaustion and Depersonalization domains are low and indicate a

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minimal level of burnout overall. In the RT Personal Accomplishment domain, both genders have

high scores indicating they feel accomplished in their work with males scoring (26.3), which is

slightly higher than females (24).

Table 4.7 Respiratory Therapist Burnouot Inventory Mean Scores for Gender (n=12)

Domains	Female μ Score (SD) (n=9)	Male μ Score (SD) (n=3)
RT Emotional Exhaustion	2.5 (1.2)	3 (1.7)
RT Depersonalization	1.5 (1.8)	.66 (0.5)
RT Personal Accomplishment	24 (5.4)	26.3 (2.5)

The RT Burnout Inventory for RT Depersonalization and RT Personal Accomplishment

domains are very similar (Figure 4.6). The RT Depersonalization domain had a score of 1 for both

genders suggesting a low level of burnout in that area.
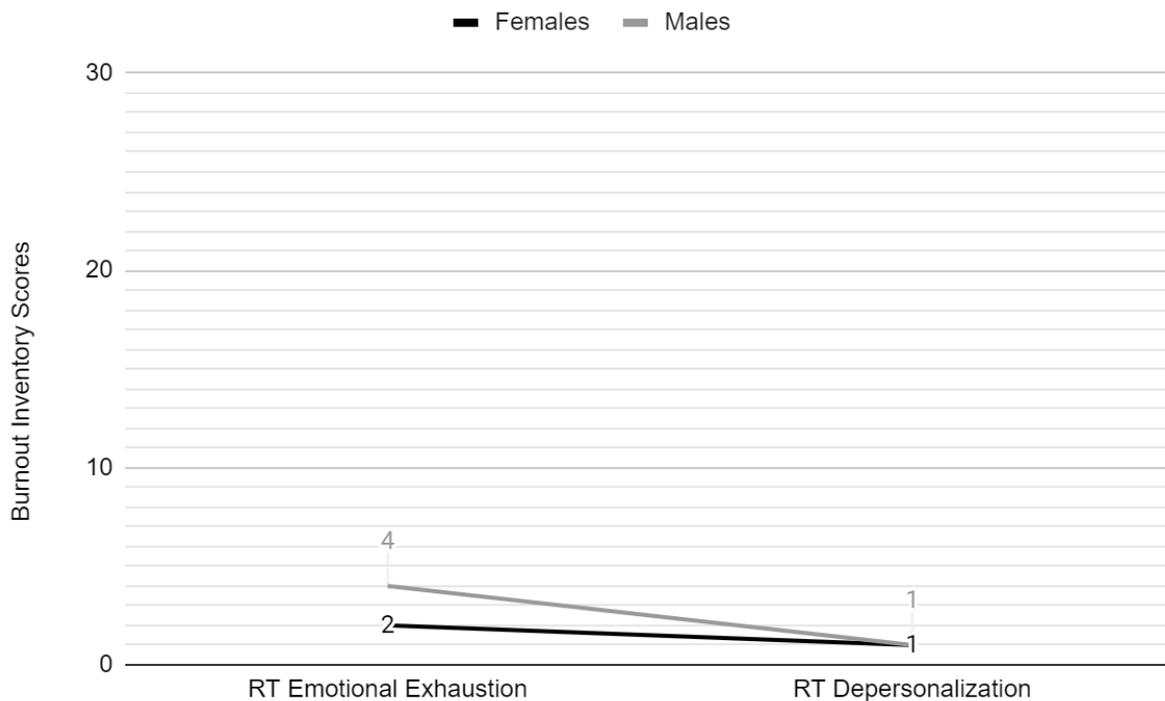
Figure 4.6 Respiratory Therapist Burnout Inventory Domain Medians for Gender (RT Depersonalization and RT Depersonalization)

Females scored a 25 for the RT Personal Accomplishment domain while males scored just above with 26 (Figure 4.7). This indicates both genders feel accomplished at work in their role as an RT. The RT Emotional Exhaustion domain is where there was a slight gap between genders. Males scored a 4 indicating a slightly higher feeling of burnout than females at 2.

Figure 4.7 Respiratory Therapist Burnout Inventory Domain Medians for Gender (Job Satisfaction)

4.7 RT Burnout Inventory: Advanced Credential Holders VS. Non-Advanced Credential Holders

Two groups were formed by those holding advanced credentials and those without (Table 4.8). The non-credential holders have a higher score in the RT Emotional Exhaustion domain (3) as well as in the RT Depersonalization domain (1.5). This indicates a higher burnout possibility in this group compared to the advanced credential holder group who scored lower in the RT Emotional Exhaustion (1.6) and RT Depersonalization (.66) domains.

As for the RT Personal Accomplishment domain, the advanced credential holders scored lower (23.3) than the non-advanced credential holders (25) indicating more feelings of personal accomplishment being had by the non-advanced credential holders.

Table 4.8 Respiratory Therapist Burnout Inventory Mean Scores for Advanced Credential Holders VS. Non-Advanced Credential Holders (n=12)

Domains	Advanced Credential μ Score (SD) (n=3)	No Advanced Credential μ Score (SD) (n=9)
RT Emotional Exhaustion	1.6 (1.1)	3 (1.2)
RT Depersonalization	.66 (0.5)	1.5 (1.8)
RT Personal Accomplishment	23.3 (3.0)	25 (5.4)

The median scores were calculated for the Advanced and Non-advanced credential holders (Figure 4.8). The median score is (1) for both the RT Emotional Exhaustion domain and for RT Depersonalization domain for the Advanced Credential holders. The median score for the non-advanced credential holder is (2) for the RT Emotional Exhaustion domain and (1) for the RT Depersonalization domain.
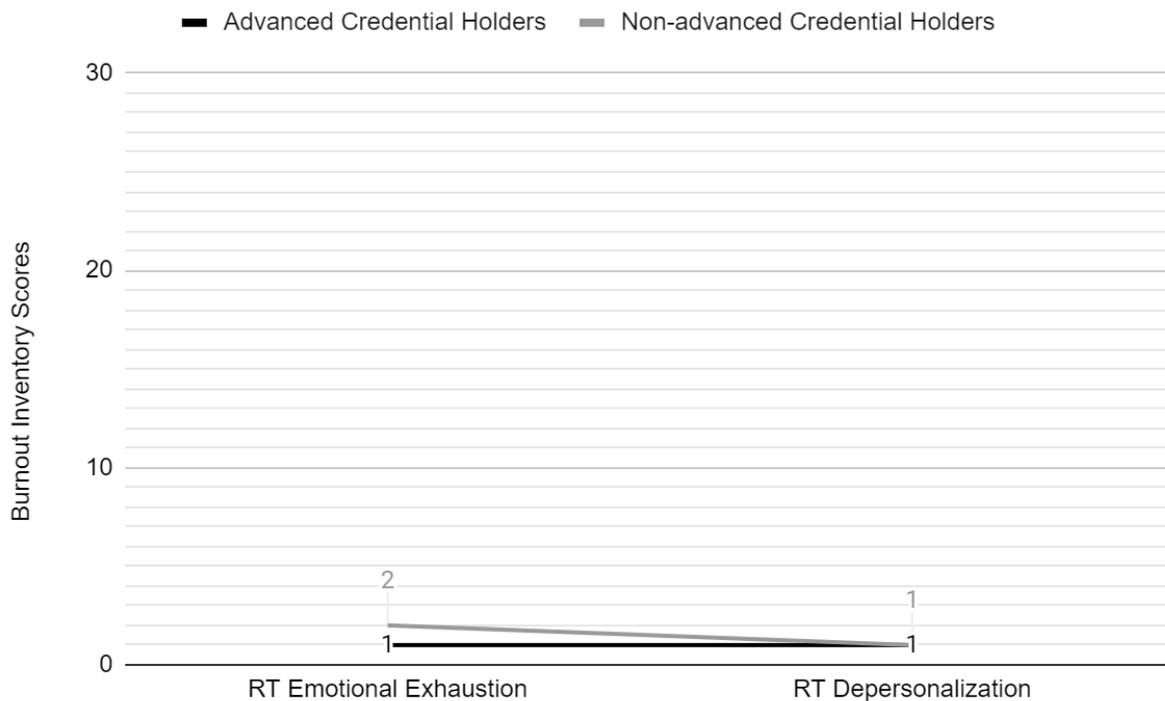
Figure 4.8 Respiratory Therapist Burnout Inventory Domain Medians for Advanced Credential Holders VS. Non-advanced Credential Holders (RT Emotional Exhaustion and RT Depersonalization)

The median score for advanced credential holders is lower in the RT Personal Accomplishment domain than non-advanced credential holders with scores of (24) and (26) respectively (Figure 4.9). This indicates both groups have low levels of burnout however, the non-advanced credential holders feel more personal accomplishment at the job.
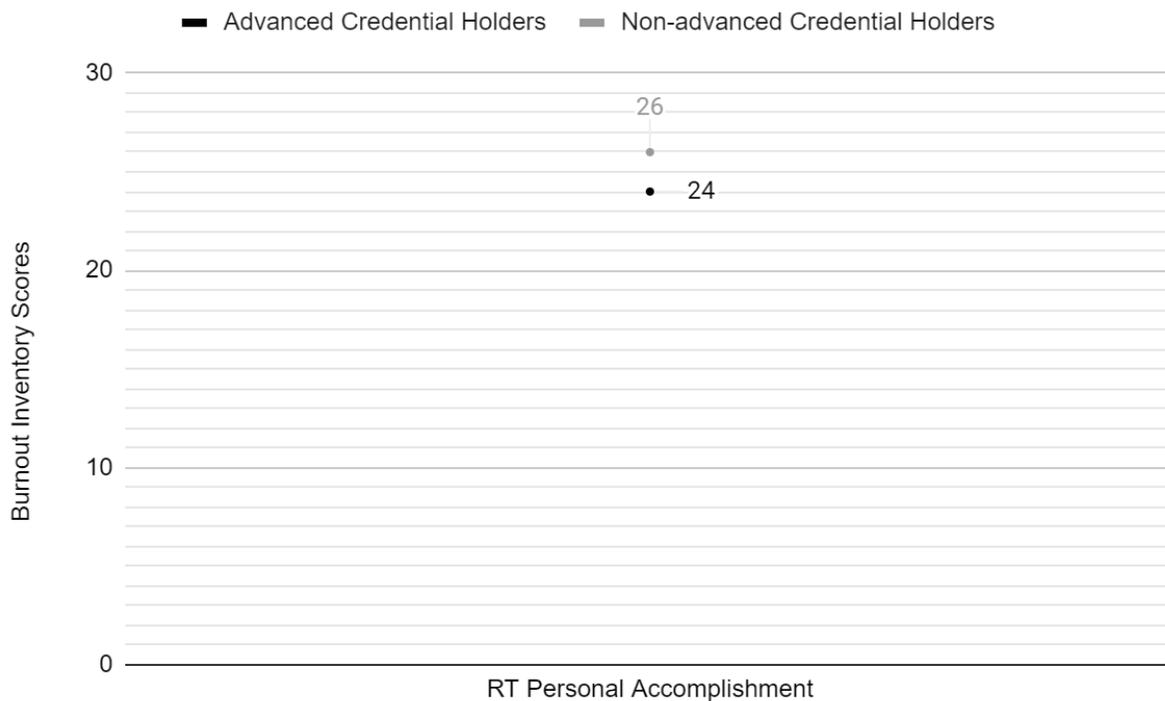
Figure 4.9 Respiratory Therapist Burnout Inventory Domain Medians for Advanced Credential Holders VS. Non-advanced Credential Holders (RT personal Accomplishment)

The RTPEQ domain scores and personal accomplishment scores are high, and the burnout scores are low (Figure 4.10). This addresses the third inquiry question on the comparison between the RT's burnout and job perceptions and beliefs. The RTs overall have a high level of attitudes and beliefs and low burnout. However, the weakest domain continues to be the Interdisciplinary Teamwork domain.
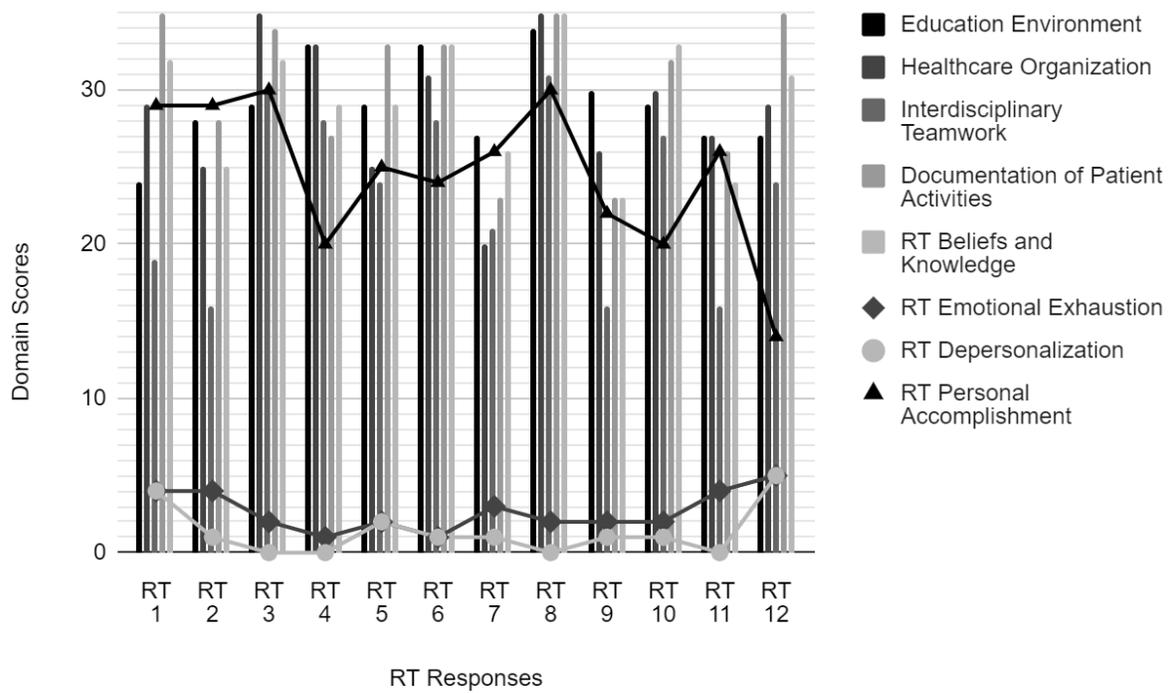
Figure 4.10 Comparison of RTPEQ and RT Burnout Inventory

5.0 Summary

5.1 Findings

The inquiry yielded findings in three areas: burnout among RTs, RT attitude and impact on practice, and the relationship between RT attitudes and burnout.

5.1.1 Burnout Among RTs

RT burnout is a concern always, but even more so with the COVID-19 pandemic. Burnout levels today are higher than ever before with nearly half of all nurses and physicians being affected by burnout (Masoud, Mosca, & Bryan, 2019). Nurses and physicians are not alone, as the majority of surgeons also have the highest burnout levels today than ever before (Patti, Schlottmann, & Sarr, 2018). This is due to an array of mounting factors, such as keeping pace with advances in technology and patient expectations. This is compounded by the difficulties faced in billing and clinicians' work interfering with their home-life, resulting in being overworked with lesser autonomy (Patti, et al., 2018). According to Akman, Ozturk, Bektas, Ayar, and Armstrong, (2016), pediatric nurses experience very high levels of burnout which is contributed to by job satisfaction, marital status, age, and number of assigned patients. However, it was concluded that job satisfaction, the education of participants as well as the years of work, working status, number of shifts worked and income did not have any effect on burnout levels in other studies (Akman, et al., 2016). Respiratory Therapists, like nurses and physicians work with advanced modalities in a host of different stressful environments as found in the Intensive Care Units. This finding is also

maintained by Gillespie, and Melby, (2003) who state there are higher rates of emotional exhaustion in those working in acute care settings. While Somerset does have an intensive care unit, being a smaller hospital with limited ability, compared to much larger facilities, the stress level may be lower in comparison. While in the work of Guntupalli, Wachtel, Mallampalli, and Surani, (2014), it was noted RNs have higher overall burnout level when compared to RTs. However, Respiratory Therapists are also very susceptible to the effects of a high-stress working environment as Respiratory Therapists and nurses have the highest prevalence of burnout working in the Intensive Care Unit and Step-Down Units (Fumis, Amarante, de Fátima Nascimento, & Junior, 2017). Likewise, Respiratory Therapists and nurses scored moderate to severe levels of burnout in both the emotional exhaustion and depersonalization domain as well as low scores for the personal achievement domain (Guntupalli, et al., 2014).

While burnout levels are continually high throughout healthcare and Respiratory Therapists, this is not the case for UPMC Somerset Respiratory Therapists. Burnout scores for emotional exhaustion and depersonalization were low and job satisfaction was high. This finding is similar to that of Patrick and Lavery (2007) where there was a significantly low level of burnout amongst a sampled nursing population. In the study by Patrick and Lavery (2007), it was found working manageable hours without the added pressure of overtime were beneficial as increased working pressure and workers given unexpected overtime increases burnout in the emotional exhaustion and depersonalization domains. This could be a contributing factor for the low burnout rate as there may be little mandatory overtime accompanied with agreeable working hours.

5.1.2 RT Attitudes and Impact on RT Practice

Shie et al., (2011) found the attitudes of RTs are adversely affected by the lack of RT-driven protocols, high workloads, and being managed by those in other professions and result in low attitudes toward teamwork, safety, and job satisfaction. In a survey conducted by Grandhige, Timmer, O'Neill, Binney, and Quest (2016) analyzing the beliefs and attitudes of RTs, it was determined RTs want to be included in the care planning process for their patients as RTs develop relationships with their patients and become distressed when major decisions in their patient's care is made without their inclusion.

The RTs at UPMC Somerset do not show significant indication of burnout and have a high level of job satisfaction and therefore are very likely to have a positive attitude toward patient care. The female RTs at UPMC Somerset scored higher in the beliefs and knowledge domain indicating more confidence in their knowledge of patient education. This does not agree with previous work that found males are more comfortable with patient education than females and males feel more strongly about educating patients on more than their own care (Trocino, Byers, & Peach, 1997). A study by Aghakhani, Nia, Ranjbar, Rahbar, and Beheshti, (2012), found their participants, who were mostly female, did not believe patient education was their duty nor did they value patient education. This is not the case in the sampled RT sample at UPMC Somerset as females, who were also the majority, scored higher in their beliefs and knowledge in respiratory therapy patient education.

Advances in education make a difference in the beliefs and knowledge of clinicians in the UPMC Somerset RTs. Those RTs who hold advanced specialized credentials scored higher in their beliefs and knowledge compared to those with no specialized credentials. This finding agrees with the literature of Trocino, et al., (1997), as those with a higher academic degree (a bachelor's

degree compared to an associate's degree) are more comfortable educating patients. Those with a higher degree agreed they had a greater emphasis on patient education in their academic program, leading to more confidence. Those working night shift were not as comfortable with patient education and felt patient education was less of a priority compared to those working daylight. Additionally, the clinicians with higher credentials believe patient education is a team effort and patient education regarding care and diagnosis is not only the physician's responsibility (Trocino, et al., 1997).

5.1.3 Relationship Between RT Attitudes and Burnout

Attitudes are the tendencies of individuals to evaluate an object or symbol in a specific way with an affective or predisposition response or behavior (Weissman, A. N., & Beck, A. T., 1978). Our experiences from our past have taught us to label situations in certain ways as part of our social learning (Weissman, A. N., & Beck, A. T., 1978). Burnout and low job satisfaction is known to adversely affect the attitudes of service workers (Kahill, 1988; Maslach & Jackson, 1981). Piko, (2006) maintains absenteeism, physical illness, emotional problems, poor job performance and negative attitudes develop as a result burnout.

There is a strong correlation between the attitudes of workers and burnout experienced by clinicians (Kahill, 1988; Maslach & Jackson, 1981; Piko, 2006). Overall, the RTs burnout level at UPMC Somerset is low. This is an uncommon feat in today's healthcare environment which has the highest level of burnout in its history. Anecdotally, when visiting smaller rural hospitals and comparing them to larger hospitals, there is a friendly, warmer environment associated with smaller facilities such as UPMC Somerset. As a result of the low burnout scores, the attitudes of the RTs at UPMC Somerset would reflect a positive one since there is a direct correlation with

burnout and attitude. When a clinician is burned out, their attitude is adversely affected. When there is a high level of burnout present, the patient care attitude of a clinician suffers (Baer, et al., 2017). Burnout results in poor attitudes, short tempers, blaming, and poor interpersonal relationships (Gillespie, Melby, (2003); Keidel, (2002). It has been shown, however, those who are less burned out show more positive attitudes at work and have more empathy towards their patients (Àstrom, Nilsson, Norberg, & Winblad, 1990). The RTs at UPMC show positive attitudes and empathy towards their patients, making for a better patient care environment. This may be rooted in the small, warmer atmosphere of the site. Rural hospitals have less complex technological procedures and equipment than urban hospitals (Baernholdt & Mark, 2009). This may be a source of less stress experienced at work. This may be a reason as to why older RTs do not leave the facility, as it could be a greater challenge to adapt to another, more advanced hospital environment, resulting in less turnover of UPMC staff members. Therefore, those RTs are comfortable in their working environment and do not want to leave.

When the data was compared amongst those with and without specialized credentials, both groups had very low burnout rates. This does not reflect the finding from Baernholdt and Mark (2009), that less education has been associated with poorer work environments. This is not consistent with the data of this project as the majority of the participants had the same credentials, with only three pursuing further education of specialized areas of Respiratory Care. The UPMC RTs did not show burnout effecting one gender more than the other. This supports the work of Guntupalli et al., (2014), which found gender had no effect on burnout.

5.2 Limitations

The inquiry has a number of limitations. A small sample size limited the available statistical analysis. There was no comparison group to compare the findings with other RT groups. Instead, the results were compared to other existing health profession studies in patient education and burnout. Although both content and validity were established through peer review, further statistical analysis to establish the reliability would enhance the results. While unlikely, there is a possibility that a sample of RTs may have already burned out to the point where they chose not to participate or have already quit their job. Finally, the original study design was impacted as the additional follow-up interviews were canceled as a result of COVID-19 restrictions.

5.3 Implications for further Inquiry

There are five implications for further inquiry for RT Burnout and Patient Education.

5.3.1 Larger Sample Size

Going forward, a larger sample size of Respiratory Therapists would be recruited. The RTPEQ is grounded in the work of NPEQ by Bergh, Persson, Karlsson, and Friberg, (2014), which utilized 701 participants. RTs could be recruited through the utilization of professional journals and other professional platforms to seek a much larger audience of RTs. Another possibility would be to target the RT departments of large health systems. This project could be completed system-wide in a large health care network. While this project currently focused its efforts at one hospital

within the UPMC Health System, UPMC is comprised of 40 hospitals, making it the largest non-governmental employer in the state of Pennsylvania (UPMC Facts & Stats: Health Care Provider & Insurer-Pittsburgh, Pa., n.d.). Therefore, this project could be implemented system-wide to reach a much larger sample of Respiratory Therapists. Another route would be to reach out to research collaboratives at the National and State levels which appeal to a large population of Respiratory Therapists and lastly, reach out to the graduates of a long-standing Academic Respiratory Program and contact past graduates to participate.

5.3.2 Comparison Group

While this project did not have a comparison group, it would be ideal to compare RTs beliefs, perceptions on patient education, and burnout with other RTs. This can be done in several ways. The first is comparing RTs employed at other small hospital settings to better understand similar contributing factors affecting their patient education and burnout. Secondly, comparing RTs employed at large academic medical centers to RTs at other large facilities to determine commonalities and differences in that level of environment. Third is to compare a group of RTs employed at a large medical centers with RTs working at small medical centers to make a clearer picture as to what are the major impacting factors in patient education and burnout amongst RTs between those two environments. Fumis, Amarante, de Fátima Nascimento, & Junior, 2017; Gillespie, and Melby, 2003), found higher burnout rates in those working in acute care and therefore, the higher acuity of care found at large facilities could be a root of burnout and increased stress, adversely affecting patient education, as opposed to lesser acuity of care at small rural hospitals.

5.3.3 Questions for Future Inquiry

Based on this work, the interdisciplinary teamwork is low at UPMC Somerset. There are three areas of questioning where more information is required. The following would be obtained through follow-up interviews.

First, it needs to be determined whether the low interdisciplinary teamwork score is rooted interdepartmentally or with other healthcare personnel, i.e. nurses and physicians. A better understanding of the RTs teamwork dynamics is needed.

Second, those maintaining advanced credentials have a greater score in the interdisciplinary teamwork domain in comparison to those without. However, only three of the respondents hold advanced credentials. While it is beneficial to obtain specialized credentials in certain areas of care, more insight is needed to understand why so few RTs possess advanced credentials. It is possible for the RTs to perceive advanced credentials with little value due to the small hospital size and level of acuity. Furthermore, the RTs may be unwilling to pay for the costs associated with advanced credential testing if there is no financial advantage to holding specialized credentials. Also, more information is needed to determine why the specialized credential holders have a greater perception of teamwork.

Third, interdisciplinary teamwork was the lowest domain for both genders. However, females had a higher interdisciplinary teamwork score than males. The RT manager is also female and may be a factor. Further exploration of the differences in gender is needed to determine the reasoning for this outcome.

5.3.4 Demographic Modification

The RTPEQ demographic section excluded shifts and hours worked. In reviewing the numerous pieces of literature on burnout, a common theme was hours and shifts worked. It has been recognized that the schedule and hours an employee works can have an impact on their attitude and burnout level. When an employee is forced to work unexpected hours, it has a negative effect on their burnout level (Patrick, & Lavery, (2007). As healthcare workers continue to work long shifts, it can cause them to be more susceptible to burnout and decrease the patient's satisfaction of care, so it is optimal not to work longer than 12-hour shifts (Stimpfel, Sloane, & Aiken, 2012).

5.3.5 Further Development of the Instrument

Some initial work in the instrument's content validity has been completed. In addition to this work, I want to take the following four actions. First, concurrent validity relates to this work as it has obtained the results of the RT's beliefs and perceptions on the current work attitudes. The RTPEQ instrument has been modified to RTs and with an abbreviated burnout inventory. These changes make it unlike the original works. However, to further explore the concurrent validity, the RTPEQ can be paired with Maslach's full burnout inventory rather than the abbreviated version and re-administered to the RT department. The results will be compared to the original RTPEQ results to determine if a certain trait, in this case, burnout and job satisfaction, is consistent with the original material's findings.

Secondly, predictive validity is also worth further investigating. It would be valuable for this tool to accurately predict the attitudes and beliefs of RTs regarding burnout and patient

education to make corrective actions earlier. This can be accomplished by managers administering the survey to staff members to determine their attitudes and perceptions on patient education and burnout levels and then administer the instrument again in a year. However, this type of validity is very complex as there are many contributing factors in a hospital setting which influence the RTs perceptions and attitudes.

Third, to determine the reliability of the work, the Coefficient of Stability (test-retest) would be used. This would be achieved by re-administering the survey to the same RT group. The scores from the second test would then be compared to results of the first to determine consistencies of the responses.

Fourth is the factor analysis of the RTPEQ. The RTPEQ is rooted in Nursing Patient-Education Questionnaire (NPEQ) developed by Bergh, Johansson, Persson, Karlsson, and Friberg, (2015). Items of the RTPEQ will be further explored to determine their accuracy in measuring the domain topic.

5.4 Implications for Practice

There are three implications for future practice for general health facilities, UPMC Somerset, and the University of Pittsburgh at Johnstown RT program.

5.4.1 Implications for General Healthcare Facilities

According to O'leary, Sehgal, Terrell, Williams, & High Performance Teams and the Hospital of the Future Project Team. (2012), teamwork is defined as two or more people working

together for a common goal. Teamwork, however, is challenging in the healthcare environment as there are many moving parts to patient care. This includes multiple people working with the same patients each shift. The barriers to teamwork are common and many. The hierarchy of clinicians causes a constant struggle as physicians believe they are collaborating well with others lower authority. However, those in lesser authority feel otherwise (O'Leary, et al., 2012).

O'Leary et al., (2012) further explain that assessing teamwork is difficult to accomplish. The first technique is to utilize self-assessments. While simple to administer, they do not necessarily show the skills the individuals used with their teams. The second method is using a peer-assessment which gives an individual a greater perspective on their teamwork skills. The third measurement is to directly observe the clinicians working in teams by using a check-off sheet, known as a behaviorally anchored rating scale (BARS).

The following are three actions highlighted in the work of O'Leary et al., (2012). While there are four total interventions, only three will be discussed as the team trainings intervention is less likely to have an effect compared to the other actions. The first intervention is the localization of physicians which entails assigning continually assigning physicians to specific floors or units instead of randomly throughout the facility. While this may already be done at small hospitals due to their limited size, it has been shown to improve communication between physicians and clinicians when the staff constantly interacts with a particular physician. Second, it is a misconception that those who work within the same proximity all share the same perception on the patient's care (O'Leary et al., 2012). This is remedied by using daily goals of care. Daily goals of care is completed through interdisciplinary rounding at the patient's bedside. This has been proven to improve the care team's understanding of the patient's care goals. The third intervention is interdisciplinary rounding which is when members responsible for treating the patient meet

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together at the patient's bedside to discuss the patient's status and plans for the patient's care. This has been shown to significantly improve communication, teamwork, patient care, and patient outcomes (O'Leary et al., 2012).

5.4.2 Implications for UPMC Somerset RTs

While UPMC Somerset RTs have low burnout and high job satisfaction, the following are three actions to maintain those levels while improving interdisciplinary teamwork. First, the roles and responsibilities of all involved in educating the patient must be clearly communicated through policy and protocols to improve interdisciplinary teamwork and consistent patient education (Weller, Boyd, & Cumin, 2014). This does not mean collecting policies in a binder and keeping them on a department shelf, but rather training staff in utilizing the policies introducing the polices to new staff members to ensure successful long-term outcomes (Rosen, et al., 2018). Based on the survey results, a stronger channel in communication between the pharmacy and RT department at UPMC Somerset is needed to ensure new respiratory drugs being dispensed at the facility can be added to policies and protocols and so the RTs can be educated on the new medication be administering to patients.

Second, the findings support RT-led rounding to improve interdisciplinary teamwork (Genet, Firestone, and Volsko, 2015). In a study by Genet, et al., (2015), RT-led rounding resulted in a significant increase in communication and teamwork among RTs nurses and physicians. Additionally, patient medical orders were implemented at a much faster rate than before. The autonomy allowed with RT-led rounding gives the RTs purpose and will help maintain the RTs job satisfaction and low burnout levels.

Third, is ensuring the availability of teaching materials to all RTs. Based on the survey results, there is a discrepancy in the RTs beliefs as to what material is available to them for patient education. While some RTs felt material for patient education was always available to them, other RTs felt this was not the case. Therefore, the availability of these materials may be known to some but not all RTs due to the lack of communication in the department. This may be the result of only communicating information to only some of the RTs. The manager must be aware of who is in their inner circle. The inner circle is the employees with the closest relationship to the manager and as a result, feel more comfortable communicating due to feeling safe (Burris, Rodgers, Mannix, Hendron, & Oldroyd, 2009). Those not close to the manager, or those in the outer circle, will be less inclined to communicate with the manager (Burris et al., 2009). When all of the RT are heard, there is a greater sense of buy-in by the individual resulting in more commitment by employees (French-Bravo, & Crow, 2015).

5.4.3 Implications for the University of Pittsburgh at Johnstown RT Program

RT programs can influence the attitudes of interdisciplinary teamwork in future RTs. Recommended are four actions to be taken by the program. The first is to introduce interdisciplinary teamwork at an early stage in their school's curriculum. For the RT program at Pitt-Johnstown, this will be integrated into the curriculum of the introductory course into the program, RT Techniques 1.

Second, according to Howe, Hyer, Mellor, Lindeman, and Luptak, (2001), didactic and clinical experiences with the following methods and demonstrations of teamwork can be executed throughout the program. This is accomplished in the form of workshops, case studies, learning modules, training videos and discussion, as well as clinical simulations to impact the attitudes and

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beliefs on interdisciplinary teamwork (Gregorian, 2005).   The variety of options provides instructors with flexibility in implementing the best option for their course.

Third, is conducting clinical simulations with the students in the University's nursing program.   Simulation allows real world events to be created artificially, and when properly conducted, it enhances the clinical skills and abilities of its participants (Al-Elq, 2010). Interdisciplinary clinical simulations improve teamwork enhancing positive patient outcomes (Marshall & Flanagan, 2010). While clinical simulation is typically completed interdepartmentally at Pitt-Johnstown, developing simulation to include both RT students and nursing students will allow both disciplines to enhance their interdisciplinary teamwork skills, beliefs, and perceptions.

Fourth, is to utilize dramatized role playing to improve teamwork and communication (Negri et al., 2017). At the University of Pittsburgh at Johnstown, the theatre department can be utilized to provide dramatized clinical scenarios while both RT and Nursing programs collaborate to provide patient care. The theatre student would be prepared by the RT and RN instructor days before the simulation to prepare in their role. The day of the simulation, the theatre student would be instructed to act out the specific patient scenario while the RT and RN students have to utilize their skills and work together to treat the individual playing the patient role.

Appendix A Recruitment Script

Hello, my name is Kurtis Pierce. I am a doctoral student at the University of Pittsburgh in the School of Education. I am also the Director of Clinical Education for Respiratory Care at Pitt-Johnstown. I am conducting a project on respiratory therapy patient education improvement regarding respiratory therapist perceptions, beliefs, and burnout at UPMC Somerset, and I am inviting you to participate because you practice respiratory therapy at this facility.

Participation in this project includes taking a survey about your perceptions and beliefs toward patient education, a Respiratory Therapist Burnout Inventory , and a patient demographic survey, taking a total of about 10 minutes. Additionally, for those who have completed the survey, there is an opportunity to also participate in a follow-up interview about your view of patient education provided by respiratory therapists at UPMC Somerset. This optional portion will take approximately 20 to 25 minutes.

Those who participate in both the questionnaire and interview will be entered to win an Amazon eGift card, if an email address is provided.

If you have any questions project, I can be reached at 814-418-0236 or kpierce.pitt.edu. To participate, please follow the link provided.

Your time is greatly appreciated. Thank you.

Kurtis Pierce

TITLE OF QUALITY IMPROVEMENT PROJECT
Respiratory Therapist Burnout, Perceptions and Beliefs

PRIMARY INVESTIGATORS
Kurtis Pierce

PURPOSE OF QUALITY IMPROVEMENT PROJECT
The purpose of this project is to examine the relationship between the perceptions, beliefs, and burnout of the Respiratory Therapist and patient education at UPMC Somerset. You are being asked to take part in a quality improvement project. Before you decide to participate in this project, it is important that you understand why the project is being done and what it will involve. Please read the following information carefully. Please contact the investigator if you have any questions, if something is not clear, or if you need more information.

PROJECT PROCEDURES
You will be answering questions related to the perceptions, beliefs, and burnout in regards to patient education. The project will involve a list of interview questions that will take approximately 10 minutes to complete.

RISKS
There is minimal risk involved in this project. You may experience some emotional stress while participating in the survey. There will be no physical risk involved during the project. You may decline to answer any or all questions and you may terminate your involvement at any time if you choose.

BENEFITS
There will be no direct benefit to you for your participation in this project. However, we hope that the information obtained from this project will bring attention to the importance of determining the effect of RT job burnout on patient education.

CONFIDENTIALITY
Your responses to this interview will remain confidential. Please do not write any identifying information on your survey. Every effort will be made by the investigator to preserve your confidentiality including the following:
Assigning code numbers for participants that will be used on all research notes and documents
Storage of data, transcriptions, and any other identifying participant information in a locked file cabinet at a UPMC facility and/or UPMC computer.
Participant data will be kept confidential except in cases where the investigator is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

CONTACT INFORMATION
If you have questions at any time about this quality improvement project, or if you experience adverse effects as the result of participating in this project, you may contact the investigator at kpierce@pitt.edu or by phone at 814-418-0236. If you have questions regarding your rights as a participant in this project, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact Jeanette Croner, Director of Quality at cronerjr@upmc.edu.

VOLUNTARY PARTICIPATION
Your participation in this project is voluntary. It is up to you to decide whether or not to take part in this project. If you decide to take part in this project, you will be asked to choose "Yes, I agree to consent" with the consent form. After you agree to participate to the consent form, you are still free to withdraw at any time and without giving any reason. Withdrawing from this project will not affect the relationship you have, if any, with the investigator. If you withdraw from the project before data collection is completed, your data will not be used and will be kept in a locked and secure location and destroyed at a later time.

CONSENT
I have read, and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I voluntarily agree to take part in this project.
  oYes
  oNo

Appendix C Respiratory Therapy Patient Education Questionnaire (RTPEQ)

Directions: Complete the following questions in relation to a typical day of treating patients as a UPMC Somerset respiratory therapist on a scale of 1 to 5 (1 = never to 5 = always).	
Domains	**Questions**
Education Environment •Time RTs spend educating the patient •Time RTs spend explaining information •Existing disturbances in patient education •Patient involvement	I have time to explain information to my patients during my shift. 1----------------------2------------------3------------------4--------------------5 Never　　　Almost Never　　　Sometimes　　　Almost Always　　　Always I have time to demonstrate patient techniques during my shift. 1----------------------2------------------3------------------4--------------------5 Never　　　Almost Never　　　Sometimes　　　Almost Always　　　Always I have time to observe patient techniques during my shift. 1----------------------2------------------3------------------4--------------------5 Never　　　Almost Never　　　Sometimes　　　Almost Always　　　Always I can demonstrate patient techniques with the patient undisturbed. 1----------------------2------------------3------------------4--------------------5 Never　　　Almost Never　　　Sometimes　　　Almost Always　　　Always I can observe patient techniques with the patient without distraction. 1----------------------2------------------3------------------4--------------------5 Never　　　Almost Never　　　Sometimes　　　Almost Always　　　Always I believe I understand how to administer inhalers properly. 1----------------------2------------------3------------------4--------------------5 Never　　　Almost Never　　　Sometimes　　　Almost Always　　　Always

	I believe patients are involved in making decisions in their care. 1---------------------2-----------------3-----------------4--------------------5 Never Almost Never Sometimes Almost Always Always
Healthcare Organization •Policies/Guidelines supporting patient education •Assess staff compliance •Management Support •Determining responsibility for providing patient education •Professional development •Material available to educate patients	UPMC Somerset provides written policies/formal guidelines for teaching/demonstrating technique. 1---------------------2-----------------3-----------------4--------------------5 Never Almost Never Sometimes Almost Always Always UPMC Somerset has a system available for assessing staff compliance in patient education. 1---------------------2-----------------3-----------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, all RT staff members are responsible for providing patient education. 1---------------------2-----------------3-----------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, my manager offers professional development in the area of patient education. 1---------------------2-----------------3-----------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, I have access to teaching/information materials. 1---------------------2-----------------3-----------------4--------------------5 Never Almost Never Sometimes Almost Always Always

	At UPMC Somerset, I use teaching/information materials when educating my patients. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset an educational needs assessment is required for the patient when first admitted into the facility. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always
Interdisciplinary Teamwork •Determining the role of other providers in patient education •Understanding the RTs role in patient education •Discuss with colleagues how to improve inhaler teachings •Working with pharmacy/hospital formulary •Determining what the patient learned from physicians and nursing education •Importance of teamwork	At UPMC Somerset, Physicians provide patients with respiratory-related education regarding their patient's needs. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, Registered Nurses provide patients with respiratory-related education regarding their patient's needs. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, I discuss with colleagues how to best teach inhaler techniques. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, our department discusses upcoming changes to our hospital's formulary with the pharmacy to ensure we are up to date on new inhalers to be utilized at our facility. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, our department discusses the respiratory therapist's role in patient education. 1---------------------2------------------3------------------4--------------------5 Never Almost Never Sometimes Almost Always Always

	At UPMC Somerset, cooperating with other professionals in patient education is important. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always At UPMC Somerset, it is important that the respiratory therapist is responsible for coordinating patient education between different professional groups for respiratory patients. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always
Documentation of Patient Education Activities •Documentation and patient education •Documentation and patient evaluation •Documentation and learning objectives •Documentation of patient discussion •Understanding of documenting patient education •Documenting the patient's education needs	I document respiratory therapy activities related to patient education in the patient's chart. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I document the respiratory therapy evaluation of patient education in the patient's chart. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I document learning objectives for patient education in the patient's chart. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I know how to document the patient's need for patient education in the patient's chart. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I know how to document what was discussed during patient education sessions in the patient's chart. 1----------------------2-------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always

	I know how to document patient teaching in the patient's chart.
	1---------------------2------------------3------------------4---------------------5
	Never Almost Never Sometimes Almost Always Always
	I document the patient's need for additional patient education in the patient's chart.
	1---------------------2------------------3------------------4---------------------5
	Never Almost Never Sometimes Almost Always Always
RT Beliefs and Knowledge •Determining the patient's educational needs •Ensuring patient understanding •RTs continuing education •RTs obligations •RTs competency •RT patient education priority	I make sure the patient understands their respiratory medications/diseases during each treatment. 1---------------------2------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I follow the development of patient education knowledge in scientific literature. 1---------------------2------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I follow the development of patient education knowledge in professional literature. Never Almost Never Sometimes Almost Always Always I know what my obligation is in patient teaching and information at UPMC Somerset. 1---------------------2------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I am competent in delivering patient education at UPMC Somerset. 1---------------------2------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always I believe patient teaching has a high priority during my shift. 1---------------------2------------------3------------------4---------------------5 Never Almost Never Sometimes Almost Always Always

	I believe patient teaching is an important responsibility for a respiratory therapist.
	1----------------------2------------------3------------------4---------------------5
	Never Almost Never Sometimes Almost Always Always

Appendix D Respiratory Therapist Burnout Inventory

Directions: Complete the following questions in relation to a typical day of treating patients as a UPMC Somerset respiratory therapist on a scale of 0 to 6 (1 = Never to 6 = Every day).

Independent Variables (Career Development and Advancement)	Emotional Exhaustion I feel burned out from my work at UPMC Somerset. 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week 5. A few times a week 6. Every day Depersonalization I have become more callous towards people since I started at UPMC Somerset. 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week 5. A few times a week 6. Every day Personal Accomplishment At UPMC Somerset, I am able to solve problems. 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week 5. A few times a week 6. Every day At UPMC Somerset, I contribute to my department 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week

- Emotional Exhaustion of RT
- Depersonalization of RT
- Personal Accomplishment of RT

	5. A few times a week 6. Every day At UPMC Somerset, I am good at doing my job. 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week 5. A few times a week 6. Every day At UPMC Somerset, I have had worthwhile accomplishments. 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week 5. A few times a week 6. Every day At UPMC Somerset, I am contributing to patient care. 0--------------1--------------2--------------3--------------4--------------5--------------6 0. Never 1. A few times a year or less 2. Once a month or less 3. A few times a month 4. Once a week 5. A few times a week 6. Every day

Appendix E Participant Demographics

1. What is your gender?
   - ○ Female
   - ○ Male
   - ○ Other
   - ○ Prefer not to answer

2. Are you a CRT or RRT?
   - ○ CRT
   - ○ RRT

3. Check all that apply. Do you have any specialized credentials from the NBRC?
   - ○ CPFT
   - ○ RPFT
   - ○ RRT-ACCS
   - ○ RRT-NPS
   - ○ CRT-SDS
   - ○ RRT-SDS

4. How many years of experience do you have as an RT?
   - ○ <1 year
   - ○ 1-5 years
   - ○ 6-10 years
   - ○ 11-15 years
   - ○ >20 years

5. How many years of experience do you have working in respiratory therapy at UPMC Somerset?
   - ○ <1 year
   - ○ 1-5 years
   - ○ 6-10 years
   - ○ 11-15 years
   - ○ >20 years

Thank you for your support. It is greatly appreciated. If you would like to participate in the drawing for the Amazon eGift card, please provide your email address.

Email:

Appendix F Respiratory Staff Member Interview Protocol

1.What are challenges faced by RTs in patient education?

2.What are problems experienced by RTs regarding patient education?

3.What do you feel about the current patient education environment at UPMC Somerset?

4.What is easy about educating patients at UPMC Somerset?

5.What is a burden experienced during patient education?

6.What supports do you have regarding patient education?

7.What is helpful for you during patient education?

8.What challenges do you have with interdisciplinary teamwork?

9.What supports do you have with interdisciplinary teamwork?

10.What if anything, do you need more of for you to better do your work at UPMC Somerset?

Appendix G Director of Cardiopulmonary Services Respiratory Therapist Interview

Protocol

1.What is the RT's role in patient education at your facility?

2.Prompt: What is the process used to educate patients?

3.What are the barriers in patient education?

4.How does your department ensure the patient education provided by RTs is consistent among all RTs?

5. Prompt: Are there in-services specifically on patient education?

6. How does the UPMC Respiratory department use teamwork to educate other departments to educate patients in respiratory modalities?

7. What is the department's patient education documentation process?

8. What challenges do your staff have with interdisciplinary teamwork?

9. What supports do your staff have with interdisciplinary teamwork?

10. Is there any additional information that you would like to share regarding your experience on patient education at your facility?

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