

Importance of Simulation in Respiratory Care Education in Saudi Arabia

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Abstract: Clinical education is essential to stimulate the students for critical thinking and to inculcate problem solving skills in them. An example emphasizing the importance of clinical education in the respiratory education is the fact that most of the four year programs begin their clinical education and clinical rotation from the very first semester so that the students get adjusted and accustomed to the clinical environment. Patient simulation is a relatively new teaching strategy which gives an opportunity to the learner to apply the theoretical knowledge and skills acquired in a way that imitates the realistic clinical situation. Simulation based education is becoming increasingly popular in Saudi Arabia as a result of the increasing healthcare workforce and the availability of the resources. There are Challenges associated with simulation like lack of multi-discipline, multi-paradigm and a multi-method training procedure. At the same time there is a resistance to accept the simulation strategy despite its advantages.

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1. INTRODUCTION

According to a survey conducted in 2011, there are about 451 academic programs, offering both baccalaureate and associate degrees, pertaining to respiratory care education in the United States. These programs have a wide range of services that the budding respiratory therapists are trained for. These include diagnostic as well as therapeutic services for cardiopulmonary diseases and other services for the diagnosis of sleeping disorders and other cardiac conditions. Therefore, clinical education is a significant and crucial component of the respiratory care education. This also shows that there is a need for efficient clinical instructors for facilitating the student's knowledge, skills, attitude to practice in the current multifaceted health care setting. Clinical education is essential to stimulate the students for critical thinking and to inculcate problem solving skills in them. The importance of clinical education in respiratory education program can be established from the "white Paper" that was published in 2010 by Coalition for Baccalaureate and Graduate Respiratory Therapy Education (CoBGRTE), stating that in a baccalaureate program, it is essential that about 937 hours should be dedicated to clinical rotations for the successful completion of the program. Another example emphasizing the importance of clinical education in the respiratory education is the fact that most of the four year programs begin their clinical education and clinical rotation from the very first semester so that the students get adjusted and accustomed to the clinical environment. (Albaqami, 2016)

A most appropriate method of delivering clinical education to the respiratory students is the use of clinical preceptorship. Most of the clinical skills associated with respiratory educations needs to be delivered at the patient bedside. Although clinical educators are competent to train the students, they may not be available at all times. It is in these situations that the students may be trained by volunteer preceptors who may be clinically competent in their skills but lack the tactics of a teacher. A study conducted by Cullen in 2005 pointed out that the preceptors may be unprepared to train or teach the students and may also suffer from shortage of time to manage both students and their patients thus suffering from burnout. It is therefore essential that the preceptors are provided appropriate orientation and training before the students are assigned to them so as to maintain high standard of clinical education in the respiratory education programs. (Alhaykan, 2015)

2. Simulation in Respiratory Care Education

Patient simulation is a relatively new teaching strategy which gives an opportunity to the learner to apply the theoretical knowledge and skills acquired in a way that imitates the realistic clinical situation. This is an interactive learning experience that is designed in a way that satisfies the educational needs of the healthcare professionals. This teaching strategy enhances the skills of the healthcare professionals and bridges the gap that exists between the novice health care professionals and the competent ones. Simulation uses devices, person or set of situations where in the learners would be able to practice the skills repetitively till they reach an appropriate level of proficiency in a manner that is completely risk-free and safe. The simulation teaching strategy ends in a debriefing session which allows the learners to collaborate, recap and clarify any doubts in

the lessons and skills learned during the activity. Simulation teaching strategy allows the learners to have a learner-centered educational experience and not a patient centered educational experience. (Al-Elq, 2010)

Respiratory care education uses simulation in the form of computer based or mannequin based techniques. Simulation would be able to help the respiratory student analyze the effect the intervention have on the patient, thus providing them with the opportunity to be exposed to the patient scenario and apply their clinical skills and knowledge without jeopardizing any risk on the patient. This strategy can be used in providing continued education for the current respiratory therapists so they can improve and update their skills and knowledge, ensuring high quality care for the patients. Using simulation allows the trainees to perform and analyze their errors in various respiratory procedures like endotracheal intubation, tracheostomy and bronchoscopy. A study conducted by Tuttle in 2007 demonstrated that simulation technology can be implicated in the teaching of mini Broncho-alveolar lavage procedure. Similarly, a study conducted by Dorton, Lintzenich and Evans in 2014 suggested that simulation was an essential method to master the procedure of Tracheostomy which is an important technique performed in the intensive care units frequently. The education provided to the non-surgical staff regarding tracheostomy is highly limited and their study was considered as the first one to use simulation for the teaching of the critical concepts of tracheostomy. Heffner in an article titled "Safety in Training and Learning in the Intensive Care Unit," stated that learning on patients using a trial and error method, endangering their lives, is not acceptable anymore and it is important that simulation practice be encouraged. Lighthall, reported the successful implementation of simulation in an ICU environment training the students about the management in critical care including respiratory crisis management. Use of simulation technology in the tracheostomy educational programs boosted the confidence of the care provider as well the communication between the team members. (Dorton, 2014)

In Saudi Arabia, tremendous efforts are taken to improve the healthcare and reach the goal of providing free and easily accessible health care services to the Saudi nationals as well as the expatriates working in the public sectors. Simulation based education is becoming increasingly popular in Saudi Arabia as a result of the increasing healthcare workforce and the availability of the resources. In 2014, International Conference on Advanced Clinical Simulation was conducted in Saudi where in the idea of establishment of an advanced simulation center was discussed. (Aldossary & Barriball, 2008)

3. Simulation Challenges

There are many challenges associated with simulation. There is a lack of multi-discipline, multi-paradigm and a multi-method training procedure. At the same time there is a resistance to accept the simulation strategy despite its advantages. This is due to the advanced and sophisticated technology which may be an obstacle for the common user. Inappropriate input data is yet another challenge which may result in the failing of the simulation strategy. The data needs to be accurate and real and not an approximate estimation. The healthcare facility methods are rather complex and forms a compound inter-organizational workflow process which may be difficult to be grasped by the simulation program implicated. Validation and verification is highly essential in simulation and requires for extensive research. (Barjis, 2011).

4. Conclusion

Simulation is highly crucial and important for the generation of competent health professionals. Therefore, their use in the educational programs is equally important. They help in perfection and enhancement of the skills and knowledge of the respiratory therapists. It would thus help in the delivery of competent and high standard health care to the patients.

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