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Utilization of pulmonary rehabilitation for everyone

Abstract

Knowledge and therapy for patients with respiratory illnesses has been ongoing in the medical world. Assisting with the patient's quality of life and possible recovery is a type of rehab that includes education as well as monitored exercise. This rehab notably labeled Pulmonary Rehab is managed by healthcare workers with the intent on assisting the patient to not only get up and move, but to remain social. Quarantine and the threat of being infected with Covid-19 put a halt to programs like this. As people were searching for ways to see their physicians for appointments and telehealth was approved for most, it was not for Pulmonary Rehab. These patients that had been placed in a program to ensure they would have interaction, were now just shut in their homes. Pulmonary Rehab should be open to all not being approved now because of insurance or other details such as financial or telehealth issues.

Keywords: chronic obstructive pulmonary disease, pulmonary rehab, social cognitive theory, social activity, lung function (FEV1, FVC), covid-19, quarantine

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Abbreviations: COPD, chronic obstructive pulmonary disease; PR, pulmonary rehab; SCT, social cognitive theory

Introduction

Pulmonary Rehabilitation is used to treat patients with chronic lung diseases such as Chronic Obstructive Pulmonary Disease (COPD) or pulmonary fibrosis. Literature has suggested that pulmonary rehabilitation, a nonpharmacological treatment, could help to decrease the symptoms that lead to illness exacerbation, hospital readmissions and decreased quality of life.[1] The significance of improving quality and quantity of life for chronic lung disease patients can be crucial and pulmonary rehabilitation should be available to everyone.

Since the 1960's there have been teams of healthcare workers that were involved with delivering a type of rehabilitation focused on the pulmonary patient. Throughout the time since then there have been doubts on the effectiveness of the programs and if a pulmonary patient should be utilizing movements that cause shortness of breath. Pulmonary rehabilitation has been proven to be an important and life improving procedure.

Target population

According to 2018 data, there was a large percentage of pulmonary patients with asthma and COPD totaling around 66% of the clients with lung disease. The rest of the clients were a range from smokers, Cystic Fibrosis, Tuberculosis and those diagnosed with other pulmonary issues.[2] (Pulmonary issues being defined as an obstructive or restrictive lung disease or a heart related issue such as pulmonary hypertension). Pulmonary rehabilitation programs have been sparse in many geographical regions and have been utilized by more white participants than any other race. Although the race of the attendant was labeled, there are regions all over the country that may not have accessibility to pulmonary rehabs. The inclusion of more programs across the United States and the increase of insurance coverage would increase the numbers of pulmonary rehabs and increase the pulmonary disease patient's chance to regain the quality of life they once knew before the dyspnea (shortness of breath) and lack of ability to get out of their houses.[3]There are many factors inhibiting a chance in improving the quality of life for those with pulmonary issues. Medically supervised education and exercise plan for those suffering from chronic respiratory conditions are being denied due to occupation, race, and disease process, and insurance coverage. The insurance agencies of those involved or the patients trying to gain access to pulmonary rehabilitation often state that a patient must meet certain lung tests to show a severe decline in lung function and then the patient will be responsible for a percentage of the payment of the service. For example, a Medicare patient will be responsible for 20% of the bill for treatment at a pulmonary rehabilitation program.[4,5] For a patient on a fixed income no matter what age, race, or geographical area it can be a difficult payment to make.

This population of people are in need of these services not only for the improvement of quality of life, but also to reduce the hospitalizations and strain on hospitals and insurance companies With the populations identified, the biggest issues involved are race, payment, lung function, and a subsequent issue is the number of programs available to patients in the United States. Whether it is a disease process, race, gender, or location, all people should have access to a Pulmonary Rehab.

Intervention

A study published in the European Research Journal focused on the management strategy for COPD patients and its effectiveness being undermined by poor patient uptake and completion. The patients that were admitted to the programs were all given the same testing as others with the diagnosis of COPD. The study then concluded which patients would remain in the programs and which patients would gain positive outcomes. Although there were positive outcomes, lack of completion was consistently a high number. This is because some patients neglect to complete the program when feeling better, some pass away, and others develop immunity problems and cannot be around other people. One intervention that was done was to include a tablet computer so the patient could track their training and training results and with this inclusion of technology there was an increased completion rate of 11%.[6] This would be an example of showing consideration to the patient by giving them the tools they need to be successful in improving their quality of life. Technology can also provide a virtual telehealth type of pulmonary rehab so patients can be evaluated and monitored from home. With implementation of changes in programs, the patients and the administration will be able to see

positive evidenced based interventions for pulmonary rehabilitation programs. The interventions must be shared with the intent to better the establishment of guidelines for insurance companies, different ethnic and socioeconomic communities, disease processes, and occupations with environmental hazards.

Social Cognitive Theory (SCT) is one intervention that utilizes empowerment of patients through this type of intervention to increase the daily activity of patients with COPD.[7] This intervention works for the COPD patient and the patients with breathing problems associated with work related pulmonary disease. The chronic effects of greatest concern in studies of firefighters have been lung cancer, heart disease, and chronic obstructive pulmonary diseases.[8] With this known, and the ability to add the SCT to the treatment it can assist patients in maintaining a level of dignity. SCT allows for the patient to have reciprocal determinism (how the person will interact with others), but also shows the response to the program and how they will perform. While learning this new behavior of learning how to eat, exercise, and maintain life they will be in the behavioral capability stage. This is the step where the patient is educated on what has happened to them and what has led to the lung disease they now have. This education enlightens the individual on the damage that has been done and what steps are going to be taken to assist them. The observational learning part of the SCT is just what it says. They will be observing others working out and maintaining a new normal of life, but not being held to the confines of their homes. By observing this and watching then doing the same they will be able to see they can finish the tasks as well. To do this they will have to have reinforcements. That is where the educators come in to reinforce the patient that they are doing well and instruct on things that they need help with. These reinforcements will be a change that a patient must make to have success after the program, because they will be returning to the environment where they may have developed the bad habits. As with any new thing there are always expectations. Some will have high expectations of being able to walk or run, while others will have low expectations of not being able to do anything. Most of the time this is from what they have been seeing now, of not being able to breathe from just performing simple tasks. The reminder to the patient is that there is value in what they are doing and that in the end they will come out much stronger not only physically but mentally as well. With those that are starting with negative attitudes there is a chance to turn that around and build their self-esteem.

The education program in pulmonary rehab is designed to be patient specific. The education is made to impact five possible patient domains including knowledge, perception of benefit, health beliefs, health behaviors, and health outcomes.[2]

Self-efficacy is a huge part of the learning environment. The intervention of the SCT can be explained by how the programs work. Pulmonary rehabilitation education and social interaction fall under the Social Cognitive Theory. The patients are able to meet with a group of people suffering from pulmonary issues they can relate with. These patients are observing others and assessing that the abilities they must have to be able to improve the quality of their life as well as being educated by medically trained individuals on certain topics. The ability to join a group and socialize is a reinforcement of this behavior while still being in the presence of people. This is the positive reinforcement that these patients need to build on the positivity of their disease processes that can lead to mental and/or physical failure, such as depression or the thoughts that they cannot do any type of strenuous activities. The personnel model the behaviors that the patient will need to follow and give the patient the knowledge they need to lead a healthier lifestyle. One of the types of education given to the patient is in the form of a book so that the patient and caregivers will have a reference. When starting the rehabilitation process patients are placed on a structured program so they will be able to reproduce the benefits of the program and acquire the behavior to reproduce once they have graduated. When the patient has seen the benefits of the program, they have the motivation to learn and a definite reason to maintain the behavior they have started. It can be compared to a person who may not have lung issues, but once they start exercising, see the benefits of weight loss or better health.

The one thing that patients most benefit from in a pulmonary rehab program is the environment. When a patient suffers from lung issues, the last thing they want to do is attempt to walk to the house or walk across a parking lot to a facility where they will have to do more exerting movements. The behavior they have adopted is to be still so they will not become short of breath, and with that have missed out on many social aspects of life. The social aspects they have missed out on are going out to eat with friends, walking around the block, grocery shopping, or even traveling to see friends or family outside of the patient's area. Pulmonary rehab can provide a positive environment, people to socialize with, opportunities to discuss issues they have in common, and most important a chance to learn behaviors to keep them on track to being able to enjoy life. The ability to enjoy these things are in relation to the outcome of expectations, and these remain positive as well as the expectations. Self-efficacy may be low at first, but this is what the program was developed for: the renewing of education, the freedom developed when the patients participate and to show that they are able to do more than they thought was possible. The renewing of the patient is made possible by mastering the challenges that they are given and the observation of the others that are suffering from the same things they are dealing with.

Conclusion

The current times that we are living in are opening our eyes more and more to the need of improvement in our treatment of respiratory illnesses. Although pulmonary rehab was started around the mid 1900's there is a growing trend of respiratory needs with better education on environmental hazards, chronic diseases, and the newly introduced virus Covid-19. The lasting effects of all these mentioned do not just take a toll on the lungs they also affect the mental and social quality of the people affected.

Looking to the future, with the increase in the number of pulmonary rehabs needed there will be better care given to those in need. Those that are not able to have the quality of life to walk to their mailbox or even go from there chair to their bed or restroom due to lung disease have misery with each day. With the addition of quarantine in our lives these people are truly shut off from the world. Those that were attending a class now are stuck at home. The inclusion of pulmonary rehab as an extension of telehealth would also enhance patient uptake into pulmonary programs and maintain those that were currently participating in programs. This is something that cannot be ignored. For the future of our society and the positive outcomes that it can have, pulmonary rehab must be made available to all that are willing to attend and be a staple for improving the lives of so many that can build on the opportunity and improve their quality of life. The quality of life will then manifest a positive turn with the ability to observe, have motivation and a structured educational program for the patient are implemented.

Although there are some predisposing factors that can be involved such as occupation or genetic issues, the ones that play a key role are the ones dealing with attitudes and the belief that a patient is never going

to be better.[9] One of the most important factors is the administrative and policy assessment for pulmonary rehabilitation programs. The need is to have the policies and information to overcome the factors in play to keep these programs running with positive outcomes after they have started. If there is an issue with insurance for a patient coming to the program then there is always the appeal process to possibly lead to a peer-to-peer conversation with the insurance company to explain why this therapy is needed and how it provides a better quality of life and possibly less hospitalizations saving the insurance company those incurring payments. Patients that are not able to afford the payments that are associated with the program can be offered scholarships so they can attend the program. The only stipulations that go with the scholarships are that they must maintain a certain attendance and maintain progression throughout the program whether it is for physical or mental health. For patients that are borderline on meeting the requirements for the program such as lung functions, there are the social aspects and to look at what level the lungs have been declining. Although lung disease is not irreversible, there would be a chance that the progression could be minimized. The education that is given could convince the patient that the habits they have should be stopped, therefore slowing the progression.

Having investigated the mapping, we can start by establishing multiple groups that will have a positive outcome with the pulmonary rehabilitation program being started for the community. The outcomes must be stated, although they will be different for all depending on what disease process is going on. There must be measurable objective put in place to ensure success of the program. These measurements are the objectives of change. For example, a patient that started the program and was not able to walk throughout the entire grocery store without being short of breath, after being in the program, can walk with the assistance of the shopping cart and finish all of their shopping with minimal shortness of breath. The program plan must have evidence-based theories that will show that there is a way for the community to be improved. Pulmonary rehabilitation has been studied for years to show the improvements that can be made to those that are admitted into a program. These studies will improve the patient outcome and ease the financial burdens that can be placed on insurance companies and family members.

The materials needed for the program must be prepared and plans designed to start the program then the staff and those in charge of the program must be found to guarantee a start to a successful program. When the patient is in the program, they are evaluated daily and after the rehabilitation to confirm there is positivity in the program. Although some of the questions of the patient are subjective there is an underlying objective answer to assist in the progression of the patient.

Through proper planning, education of the need and implementation in areas of need, pulmonary rehabilitation can be an effective and integral addition to the patient, patient's family, caregivers and the community. This anchors my theory that increasing pulmonary rehabilitation practices and providing sufficient availability is something every lung disease patient deserves.

Acknowledgments

None.

Conflicts of interest

The author declares there are no conflicts of interest.

References

1. Otuwa C. Evidence–based pulmonary rehabilitation reduces hospital readmissions in adults with COPD. 2018.
2. Blackstock F. Education in pulmonary rehabilitation – learning about learning. November 07, 2020.
3. Rodriguez T. The challenges of pulmonary rehab in facilities may be overcome in the home. 2019.
4. Pulmonary rehabilitation programs. 2020.
5. Spitzer KA, Stefan MS, Priya A, et al. A geographic analysis of racial disparities in use of pulmonary rehabilitation after hospitalization for COPD exacerbation. *Chest.* 2020;157(5):1130–1137.
6. Jones A, Taylor A, Gowler H, et al. Systematic review of interventions to improve patient uptake and completion of pulmonary rehabilitation in COPD. *ERJ Open Res.* 2017;3(1):00089-2016.
7. Aliakbari F, Alipour FM, Tavassoli E, et al. The effect of empowerment program based on the social cognitive theory on the activity of daily living in patients with chronic obstructive pulmonary disease. *J Educ Health Promot.* 2020;9:146.
8. Guidotti TL, Clough VM. Occupational health concerns of firefighting. *Annu Rev Public Health*. 1992;13:151-171.
9. Green LW, Kreuter MW. *Health program planning: an educational and ecological approach*. 4th edn. NY: McGraw–Hill Higher Education, 2005.