MedCrave
Step into the World of Research
Journal of Lung, Pulmonary & Respiratory Research

Research Article
Open Access
CrossMark

Comprehensive pulmonary rehabilitation improves health care quality of life

Abstract

The purpose of this paper is to show the need and importance of comprehensive pulmonary rehabilitation programs. The paper is written to convince non-health care related individuals of this fact and references studies by referable institutions. The information in this paper is the newest information that was release as of February 2012.

Keywords: surgeon general, the surgeon general of the united states is a physician and is the nation's leading spokesperson on matters of public health, hypoxemia= low blood oxygen level, mainstreamed= geared towards everyone, gold standard= accepted recognized measure used in medical community, accelerometer= an instrument for measuring acceleration to gauge movement

Volume 1 Issue 4 - 2014

Kenyatta M Cade
Reading Health Systems, USA

Correspondence: Kenyatta M Cade, Reading Health Systems, West Reading, Pa. 19611, USA, Tel 484-818-2782, Email kenyattacade@yahoo.com

Received: August 22, 2014 | **Published:** August 22, 2014

Abbreviations: AACVPR, American association of cardiovascular and pulmonary rehabilitation; ACSM, American college of sports medicine; ADL's, actives of daily living; CDC, center for disease control; COPD, chronic obstructive pulmonary disease; HRQL, health related quality of life; PRP, pulmonary rehabilitation program

Introduction

COPD is the third leading cause of death in the US, and the federal govenerment has known as early as 1957 that smoking was harmful, but has failed to alert the general public adequately. "On June 12, 1957, Surgeon General Leroy E. Burney declared it the official position of the U. S. Public Health Service that the evidence pointed to a causal relationship between smoking and lung cancer".[1] The first time the public was made aware of the harmful effects of smoking was January 11, 1964, which was a Saturday and was covered in all the major Sunday papers.[1] The Surgeon General chose a Saturday to alert the public because he wanted to lessen the effect it had on the stock market. The cigarette industry is so large and has very strong lobbyists in congress and contributes large sums of money that it appears to have caused the congress to mute its' voice and has contributed indirectly to the deaths and disabilities caused by smoking. In 1965, the Congress required cigarette packages to carry a warning and it wasn't until 1970 that it was made in the name of the Surgeon General, the same year television and radio ads where banned.[1] It was 13years between acknowledgment and the first public safety announcements appeared on cigarette packages and 40years until the first major settlement by Phillip Morris.[2]

Cigarette smoking has a long history and began with the first settlers that came to America and smoked with the Native Americans. This was seen as a positive from the newcomers trying to make friends. It was later grown in mass quantities and shipped to Europe. Tobacco made the southern part of the US very rich and continued until the class action lawsuits, now most of the tobacco crop is sold overseas. Cigarette makers until 1990 had bombarded the public with magazine ads and gave free samples and prizes to win new smokers. Research by the Centers for Disease Control (CDC) has shown the least educated and the least financially stable individuals smoke at a higher percentage than other groups.[3] There is no research as to why this exists, perhaps because these are the people to least trust authority.

I believe we die how we live and we determine our human condition. The illnesses that plague our society today are a result of the lifestyle we choose. Chronic Obstructive Pulmonary Disease (COPD) is one of the most preventable illnesses but is a leading cause of death and disability in the US. It must be brought to the public's attention so that it can be managed effectively. A comprehensive pulmonary rehabilitation program (PRP) for people with COPD enhances its' participants' lives by providing education, psychological support, and increasing activities of daily living.

"Smoking by pregnant women may result in fatal injury, premature birth, and low birth weights".[4] "My wife died at 46, who would have thought that 23 was middle age, she died from smoking".[5] These are the public safety announcements that to days' society see on cigarette packs and the latter is a commercial that began showing on television late 2011. This is the educational information that the public is being bombarded with, and it has proven ineffective based on the current epidemic of preventable lung disease. They inform the viewer that smoking is not healthy but neither mentions that smoking is the leading cause of COPD or what COPD is. Is this an effective way to educate the public? What understanding is the public to gather from this information? I will explore later in this paper how a PRP educate participants'.

Education is given with a team approach. An interdisciplinary team is assembled and consist but is not limited to a Medical Director (must be a physician), program coordinator (Respiratory therapist or Registered Nurse), Physical Therapist, Occupational Therapist, Pharmacist, and Dietitian. The Medical Director provides oversight and is given the opportunity to observe things not seen during an office visit. Some things able to be observed are hypoxemia with ambulation, if there is a cardiac effect, and orthopedic concerns.

The physical therapist is present to observe and address any gait abnormalities and advise if there are any concerns of the impact of a specific activity would have on current or past injuries. The physical therapist can offer modification or different exercise for individual clients. Occupational therapy is involved to assess ADL's. The assessment includes but is not limited to dressing, bathing, eating and preparing meals. Occupational therapy is sometimes tasked with teaching relaxation techniques. The pharmacist role is assessing

medication compliance. This person reviews all medication both prescribed and over the counter. The pharmacist is to educate and alert both the client and medical provider of any drug interactions. The most important task during this assessment is to assure medication is taken properly and safely. A dietitian is often involved because people with chronic illness often do not meet their nutritional needs. The COPD population has an increased demand of energy to breathe. Sometimes that demand is so high the person lacks the energy to eat thus causing weight and muscle loss. The opposite can occur, a sedentary life style can cause weight gain, and this does not mean the individual is in a better position than the anorexic. It means the individual has been affected in a different way. A social worker or physiologist is normally not a team member. One can be alerted and added to the services if any one of the team members identifies a need for one.

During the intake process clients with whom one-on-one instruction is needed should be identified, because most education takes place in small group settings. The educational component of the PRP is normally tasked to the respiratory therapists who are the principle instructors that client interaction occurs. Education is provided via lectures, demonstration and interactive performance. Disease specific education is provided by respiratory therapist because they are the experts in respiratory physiology.

Participants gain psychosocial support by attending a program with others who suffer with COPD, in a supportive environment with other people going through the same issues, which includes being short of breath, but could range as far as sexual dysfunction, and giving a voice to the unspoken worries that many with COPD suffer. A comprehensive dyspnea self-assessment is completed which allows individuals to express anger, disappointment, and write a wish list of lost but wanted activities. "The struggle to control symptoms and the need to cut back on activities contribute to depression in many people with COPD".[6]

Activities of daily living (ADL's) is the most important predictor of disease severity, mental state, and social functioning, this is called health-related quality of life (HRQL), a subjective result which value is determined individually. One major complaint as to why individuals with COPD are not compliant with their medications is dissatisfaction with the results. They remain SOB, fatigued, and not able to do on a daily basis what they once were able.[7] "Pulmonary rehabilitation has consistently shown to reduce dyspnea and fatigue at rest as well as the intensity of dyspnea with exercise. The reasons for this improvement are not entirely clear, but reversing the reconditioning process and reducing dynamic hyperinflation are the major mechanisms".[7]

PRP are now given the monumental task of educating clients with the correct information. For years the education that individuals received came from the media. Although the Surgeon General made countless public safety announcements, the cigarette industry were able to craft messages that were more attention getting and sounded more pleasant than the bland truth. The educational programs that PRP design are individual based. This is achieved through extensive interviews, before entering a rehabilitation program there is a lot of prep work and education is a team approach.

Individuals agree to enter a six to twelve week program and meet between two and three times a week. The Clients prospective is the PRP presents a team approach with variety of health related fields involved with each individuals care. Education is mainstreamed and disseminated in the least complicated manner from physical therapy, occupational therapy, respiratory therapy, pharmacy and nutrition, as well as psychological and social services if needed. Physical therapy teaches proper body mechanics along with pursed lip and diaphramic breathing and they will help develop an exercise program for individuals with orthopedic issues. Occupational therapy teaches energy conservation and relaxation. Respiratory therapy teaches about each lung disease and its management. Pharmacy reviews every drug each individual takes and provides education and will notify physicians of drugs that should not be prescribed together. An individual nutritional consult will be offered to anyone with a body mass index above 35 (morbidly obese) or below 20 (mal nourished). A psychological consult will be offered to anyone with signs and symptoms of depression or anxiety not already being treated and social services will be called if anyone had an unsafe home environment that staff became aware of. This is the core of the education every participant is given and over the length of the program the respiratory therapist reinforces any lessons given.

Psychosocial issues can affect individual ability to learn and participate in PRP. These issues include but are not limited to cognitive impairment, depression and anxiety. Cognitive impairment is prevalent in individuals with COPD, it is thought to secondary to chronic hypoxemia (low blood oxygen level).[8] This impairment can affect the ability to manage medications, understand instructions and recognize danger. There are no studies to date to address how many individuals with lung disease suffer from cognitive impairment. In an attempt to minimize the impact this has PRP staff practice repetition with verbal, hands-on, written, and demonstrative instructions and significant others and families members participation is encouraged.

Depression is an adjustment disorder and can be associated with stressful life events and is common in people with chronic disease. PRP are given the task of adequately screening for depression. A recent study done by Primary Care Evaluation of Mental Disorders (PRIME-MD) found that adequate screening only required two questions. The two questions has to ask something to the affect, in the past month have you felt little interest in doing things, depressed, or hopeless.[8] A positive answer to one or both of the prior questions especially at the end of rehabilitation warrants a referral for further evaluation by a mental health professional.

Anxiety is related to depression and is often seen in the same individuals. Anxiety can be explained as feeling of impending doom. Individuals with chronic illness have these feelings because they have experienced things beyond their control. Anxiety is like depression it can be mild or can escalate as far as crippling individuals emotionally. Generally people with a support system have less anxiety and depression and PRP has shown to help lessen the effects of both.[8]

PRP is a nonpharmacologic approach to management of COPD. "Pulmonary rehabilitation has been defined by the American Thoracic Society and the European Respiratory Society as an evidence-based, multidisciplinary and comprehensive intervention for patients with chronic respiratory disease who are symptomatic and have decreased daily life activities".[7] HRQL improvement is at the core of any PRP and it is important to get patients to take ownership of their lung disease and assume responsibility for management of their disease.[7]

A multi institutional study was completed over a two year period that highlighted daily walking intensity as a predictor of HRQL. The results of the study are significant enough that results have been released ahead of print.

Citation: Cade KM. Comprehensive pulmonary rehabilitation improves health care quality of life. *J Lung Pulm Respir Res*. 2014;1(4):93–95.
DOI: 10.15406/jlprr.2014.01.00020

Conclusion

The results of the present study do not constitute endorsement by ACSM and there are no conflicts of interest to declare. Daiana Stolz was supported by a grant from the Swiss national Foundation.[9] Additional funding was granted by the Clinic of Pulmonary Medicine and Respiratory Cell Research, University Hospital Basel, Department of Sports Medicine, Institute of Exercise and Health Sciences, University of Basel, and Swiss Tropical Public Health Institute, Basel, Switzerland. The sponsors of this investigator-initiated project had no involvement in design and conduct of the study, collection, management, analysis, and interpretation of the data, nor in the preparation, review, and approval of the manuscript or decision to submit the manuscript.[10,11]

Patients met with a group of researchers every six months over a two year period. The patients filled out questionnaires pre and post the study. During their third visit the patients received a device called an accelerometer to attach to them. The device was removed only to shower and sleep and could not measure upper body movement. The patients wore the device for eight days and the first and last day did not count. At the completion of the study it was found the more active patients according to the accelerometer had reported via the questionnaires a higher HRQL.

Although smoking is a life choice, I assert that people, who began smoking before 1964, did not have the information to make an informed decision. Furthermore, due to many government conspiracy theories and the clever advertisement of the tobacco industry people who began to smoke after 1964, were given confusing information and lacked the ability to make an informed decision. It was not until the 1980's that cigarette smoking is seen as an addiction that could require medical treatment and most cessation programs are not paid for by health insurance. As a society we are faced with millions afflicted with COPD from smoking and to help lower the cost of health care we must invest in prevention and pulmonary rehabilitation. Until our society reaches a point when no one smokes, PRP is our best tool we have to improve HRQL and decrease health care utilization, thus reducing cost.

The revelations I attest to above became evident while I worked in a PRP. I was able to connect subjective with quantitative results. At the beginning and end of each individualized program each participant is presented with a detailed questionnaire called a dyspnea assessment, it has a Borg scale included ranging from zero to ten, zero being without any difficulty and ten being unable to complete due to SOB or fatigue. The Gold Standard for assessing outcomes of PRP is a six minute walk prior and post rehabilitation. This test requires the individual to walk as far as they can in six minutes, they can rest, use walking aids and oxygen. During this time distance, pain, fatigue, and SOB are assessed. This is done post rehabilitation as well.

I noticed overtime some clients would make statements of feeling able to breathe better or complete house whole chores. These statements were documented and placed on their monthly reporting sheet to the appropriate referring physician along with frequency and duration of exercise and tolerance perception according to the client. I also noticed that clients who did not make such statements but completed the program would walk farther and have fewer difficulties during their post six minute walk. I noticed during the two year process it took for Reading Health System's Pulmonary Rehabilitation program to become certified the average percentage of distance walking increased. PRP is an under-utilized due to lack of education and availability. I hope this paper enlightens people who are in a position to refer clients and make health care institutions aware of the need and desire for services.

Acknowledgements

None.

Conflict of interest

The author declares no conflict of interest.

References

1. Profiles in Science, National Library of Medicine. The Reports of the Surgeon General the 1964 Report on Smoking and health; 2012.
2. Phillip Morris Industries; 2012.
3. Smoking problem Millions of people in the US still smoke; 2010.
4. Gogek J. Alcohol, tobacco and other drugs; 2010.
5. Very Sad Anti-Smoking Ad; 2011.
6. Terry P. *Lung Disorders COPD: Treating Emphysema and Bronchitis*. 2007. p. 26–30.
7. Lareau S, Nici L. Outcomes Obtained with Pulmonary Rehabilitation; 2012.
8. American Association of Cardiovascular and Pulmonary Rehabilitation. Promoting; 2011
9. *Health & Preventing Disease*. 4th ed. Human Kinetics, Illinois, USA.
10. Bernasconi M, Tamm M, Bingisser R, et al. Midregional proatrial natriuretic peptide predicts survival in exacerbations of COPD. *Chest*. 2011;140(1):91–99.
11. Jehn M, Schindler C, Meyer A, et al. Daily walking intensity as a predictor of quality of life in patients with COPD. *Medicine & Science in Sports & Exercise*. 2012;44(7):1212–1218.