

Evidence-Based Practice Treatment of Patients with Chronic Obstructive Pulmonary Disease

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Significance to the Improvement of Nursing Practice

According to a systematic review written by Eric Kleeup (2007) on Chronic Obstructive Pulmonary Disease (COPD), approximately 3.2 million Americans aged 65 and older have COPD. Kleeup's (2007) shocking statistic may be attributed to the quantity of people that smoke, as smoking is considered the primary cause of the disease. COPD is defined as a progressive lower respiratory disease that produces severe negative effects on the lives of those with the disease, including extreme difficulty breathing (dyspnea) and activity intolerance. By examining these hallmark characteristics of COPD, it is clear that the diagnosis of COPD will drastically alter a person's quality of life. The most vital task for healthcare providers is the management of the disease through the construction of a suitable treatment regimen that best improves the patient's comfort (Kleeup, 2007).

When a patient is newly diagnosed with COPD, what determines the next step in the treatment process? With this question at hand, a PICO question was produced that explores various treatment options. Our PICO question asks: In COPD patients 65 years and older, would a greater emphasis on smoking cessation yield a reduction of COPD symptoms and improve quality of life as compared to only utilizing home management methods like oxygen therapy and medication? For any treatment to be effective, patients must receive thorough, yet easily understood, education provided by knowledgeable healthcare providers, especially nurses (Kleeup, 2007). The population includes individuals with COPD who are 65 years or older, because according to Eric Kleeup (2007), those managing the symptoms are primarily older adults. The intervention pertains to a smoking cessation program, since those with COPD usually have a history of smoking and may even be current smokers. As such, once a diagnosis

has been made, it is crucial to encourage smoking cessation, since smoking only exacerbates the condition (Kleerup, 2007).

The significance of this particular PICO question lies in the importance of identifying which interventions are the most useful in preventing exacerbations of COPD, with the goal of maintaining quality of life. The other significant aspect of this research question is that it is paramount to know the advantages and disadvantages of these interventions so that patients can be educated, by competent health care providers, on how to manage their specific symptoms and the progression of the disease. For instance, medical professionals must place a high priority on patients' understanding of the prescribed medication regimen and lifestyle changes, along with the importance of smoking cessation. Without this pivotal education, patients will likely become re-hospitalized due to acute exacerbations that might have been avoided if proper initial education had been provided on how to manage treatments and when to report symptoms to the health care provider (Kleerup, 2007). Therefore, this research question will explore which treatment options are the most effective in alleviating the symptoms of COPD, how to improve quality of life in patients with the disorder, and also examine the importance of education concerning the management of COPD.

### Reviewing the Evidence

The research included four systematic reviews, two experimental research studies, and one qualitative research study. In the literature search, articles written before 2002 were not considered. One systematic review of the literature was retrieved from CINAHL, a database that compiles substantial nursing-based literature, as well as other literature that involves other allied health professions. The keywords: "COPD", "smoking cessation," and "quality of life" were used to find this systematic review. Another systematic review was retrieved through the

utilization of CINAHL. To gather additional information, the same keywords mentioned previously were used, along with “oxygen therapy.” Two other systematic reviews were retrieved from MEDLINE and Academic Search Premier by searching the terms “chronic obstructive pulmonary disease” and “smoking cessation” and the results were limited to systematic reviews. The two primary research articles were found through Academic Search Premier using the aforementioned key terms and phrases. The qualitative research article was found through Academic Search Premier by searching the previously mentioned key terms along with “smoking cessation motivation” in order to find research studies that focused on patients’ attitudes towards smoking cessation.

<p>Authors of Article, (Yr)</p> <p>Level of Evidence of Article (I-VI)</p>	<p>Authors of Article, (Yr)</p> <p>Level of Evidence of Article (I-VI)</p>	<p>Outline: A) Design B) Population C) Sampling method and size D) Description of interventions E) Instruments used and F) Outcomes measured</p>	<p>Major Findings/findings relevant to your project</p>	<p>Critique study/review for your project (what makes it strong or weak evidence for you to use)</p>
<p>Nazir, S.A. &amp; Erbland, M.L. (2009). Chronic obstructive pulmonary disease an update on diagnosis and management issues in older adults. <i>Drugs Aging</i>, 26(10), 815-825. Retrieved from: <a href="http://web.ebscohost.com.spot.lib.auburn.edu/ehost/detail?vid=3&amp;hid=19&amp;sid=099c6e71-54a0-442a-9747-e222a2668e87%40sessionmgr15&amp;bdata=JnNpdGU9ZWlv c3QtbGl2ZQ%3d%3d#db=aph&amp;AN=4">http://web.ebscohost.com.spot.lib.auburn.edu/ehost/detail?vid=3&amp;hid=19&amp;sid=099c6e71-54a0-442a-9747-e222a2668e87%40sessionmgr15&amp;bdata=JnNpdGU9ZWlv c3QtbGl2ZQ%3d%3d#db=aph&amp;AN=4</a></p>	<p>The purpose of this systematic review is to define COPD, state common risk factors for the disease, and to provide different management techniques to stabilize COPD. The review essentially gives a detailed description of most of the common management techniques and provides detailed evidence as to why one technique is better than the other. Overall, the review supplies readers with the knowledge that smoking cessation is</p>	<p>A. Systematic Review</p> <p>B. COPD patients, ages 65 years and older</p> <p>C. Researchers searched the PubMed database using the terms "COPD" and "elderly." From this, researchers selected 208 reference articles and studies in order to form this systematic review.</p> <p>D. Researchers studied the use of smoking cessation, pharmacological management, oxygen therapy, non-invasive ventilation, immunization, pulmonary rehabilitation, nutrition, and palliative care for elderly COPD patients.</p>	<p>As stated by Nazir and Erbland (2009), "A comprehensive multidisciplinary approach is needed to manage COPD in the elderly" (p. 817). Physicians, regardless of the patient's age, should encourage smoking cessation. Although the elderly have the lowest incidence of smoking cessation, cessation programs can decrease mortality and increase life expectancy (Nazir and Erbland, 2009).</p>	<p>Strengths:</p> <p>The systematic review gives a full account of COPD and the risk factors associated with the disease. Concurrently, the review also provides management interventions for the listed risk factors, primarily for smoking cessation. The review also provides reasoning and the importance of smoking cessation education in the elderly and the potential benefits associated with the intervention. The review provides the best-known evidence based practice for COPD and interventions used to manage it.</p> <p>Weaknesses: A possible weakness to the systematic</p>

<p><a href="#">6778508.</a></p> <p>Level I</p>	<p>paramount to other forms of management for the treatment of COPD.</p>	<p>Smoking cessation was targeted as the most beneficial intervention for the treatment of COPD.</p> <p>E. The use of instruments was not indicated by the authors in this systematic review.</p> <p>F. Outcomes of the systematic review determined that the elderly COPD population is becoming increasingly vulnerable to the ill effects of drug therapy. The review also states that smoking cessation should be considered a main objective for COPD management and that the psychosocial needs of patients should be taken into account.</p>		<p>review would be that it was published in 2009 and that there may be newer, more efficient interventions for smoking cessation. Another possible weakness would be that the systematic review is a compilation of other studies and the authors themselves did not initiate any of the studies. The authors did not mention the use of instruments, so this could also be a weakness of the systematic review in that the authors do not know how interventions or effectiveness was measured. The review may not include other useful interventions that can be found beyond searching the major databases. The interpretation of summarized results from the 208 different articles may also pose a limitation to the strength of the systematic review.</p>
<p>Wilson, J., Elborn, J., &amp; Fitzsimons D. (2011). 'It's not worth stopping now': why do</p>	<p>The purpose is to explore the experience of cigarette smokers with COPD who</p>	<p>A. The research study is considered to have a qualitative design in which the researchers used participants in a joint RCT</p>	<p>The findings of the study were relevant to our paper because they provided insight into the minds of COPD</p>	<p>Strengths: As a qualitative design, it can present insight into the feelings of the participants, specifically in COPD patients who have</p>

<p>smokers with chronic obstructive pulmonary disease continue to smoke? A qualitative study. <i>Journal Of Clinical Nursing</i>, 20(5/6), 819-827. doi:10.1111/j.1365-2702.2010.03319.x</p> <p>Level VI</p>	<p>have received smoking cessation support and their personal decision-making processes regarding their smoking behavior.</p>	<p>that implemented a smoking cessation program.</p> <p>B. The population consists of COPD patients who are heavy smokers, with a mean of a 33 pack-year smoking history.</p> <p>C. The researchers used a nonprobability purposive sampling method to select a total of 6 participants, all which fit specific criteria. The researchers selected 6 participants who had completed the interventions in the joint RCT study and had failed to stop smoking, each smoking throughout the period of 12 months before the follow-up.</p> <p>D. No interventions were utilized because the qualitative nature of the study, but the researchers collected data from the participants through semi-structured interviews in their homes. The interviews included a list of topics that the participants were asked</p>	<p>smokers and can possibly help with the development of more successful interventions that keep cessation attitudes in mind. Six key themes about smoking cessation attitudes and hindrances were identified from the participant interviews. These themes included the idea that it was too late and their disease was too advanced to stop smoking and the struggle to find the motivation and intrinsic willpower to stop. Participants also reported cyclical feelings of guilt for the damage to their health and their families that causes them to continue to smoke. The idea that a cigarette is a form of comfort and the participants' fear of losing that comfort also was identified.</p>	<p>been unsuccessful in smoking cessation. If the goal of COPD patients is to stop smoking, researchers and intervention developers must be aware of the patients' attitudes toward cessation and incorporate them into cessation. The article is also helpful in forming good evidence-based practice, as it must include the aspect of patient preference.</p> <p>Weaknesses: Due to the design of the study and the lower level of evidence, the article is considered to have weaker evidence.</p>
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		to elaborate on and each interview was recorded and transcribed by the researchers.		
<p>Tønnesen, P., Mikkelsen, K., &amp; Bremann, L. (2006). Nurse-conducted smoking cessation in patients with COPD using nicotine sublingual tablets and behavioral support. <i>Chest</i>, 130(2), 334-342. doi:10.1378/chest.130.2.334</p> <p>Level II</p>	<p>The purpose is to evaluate the efficacy of nicotine sublingual tablets as compared to a placebo, combined with either low or high behavioral support in regards to smoking cessation and quality of life improvements in COPD patients after 6 months and 12 months.</p>	<p>A. The researchers conducted a true experimental study, (specifically a randomized clinical trial) involving two experimental and two placebo control groups, each with random assignment.</p> <p>B. The population consists of patients over the age of 18, who have been diagnosed with COPD by a physician, and who smoke at least one cigarette a day.</p> <p>C. Nonprobability convenience sampling was used to obtain a sample size of 370, with each participant matching the eligibility criteria.</p> <p>D. For the intervention, the researchers implemented the use of nicotine sublingual tablets and either high or low level of support in each treatment group. Nicotine</p>	<p>The researchers found that smoking cessation rates were statistically significant, showing nicotine sublingual tablets as effective. The smoking cessation rates were 23% in the nicotine experimental group versus 10% in the placebo group at the end of six months. Again at twelve months, the nicotine cessation rates were higher, 17% as compared to 10% for the placebo group. The level of support was found to be statistically insignificant and had no evident effect on the difference in the rates of cessation between low and high support groups.</p>	<p>Strengths: This article has a level of evidence of II because of the nature of an experimental design. Therefore, this article provides strong evidence for our paper and is very applicable as our focus is on the need to include smoking cessation in management of COPD. This article provides strong evidence for a specific type of smoking cessation that can be used.</p> <p>Weaknesses: Even with the strong evidence supplied, there are threats to the internal and external validity of the study. Because of the sampling method (convenience sampling), the sample selected may not be fully representative of the population of interest and therefore be a threat to the external validity. Novelty reactive effect is a threat to external validity and</p>



		<p>sublingual tablet treatment consisted of the administration of 2 mg nicotine tablets while the placebo tablet treatment included administration of 3 µg tablets of capsaicin, dose dependent on the amount of cigarettes smoked per day. Low support treatment included four clinic visits and six phone calls made by trained nurses who provided counseling on smoking cessation. High support treatment included seven clinical visits and five phone calls.</p> <p>Instruments and assessments were used at the beginning of the study (baseline), at 6 months, and at 12 months in order to evaluate the reported change.</p> <p>E. A carbon monoxide analyzer was used to measure expired carbon monoxide levels and nicotine dependence was measured using the Fagerström Test of Nicotine Dependence. Motivation to</p>		<p>generalizability of results, as participants possibly wanted to be involved in the study for the benefits of the nicotine drug and with the expectation that the involvement will help them. Mortality proves to be a threat to internal validity because a total of twenty-two participants withdrew because of adverse effects and fourteen patients died during the course of the study for unrelated reasons. This loss of subjects can distort the results. One last weakness of the study is the sample size. The researchers reveal a power analysis with a power of 80% if they included 134 patients in each group of the study. The researchers did not meet this criterion, as they only included 370 subjects in all four groups combined. Because of the small sample, the sample may not be representative of the population and therefore hurt the generalizability of the results.</p>
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		<p>quit was assessed on a visual analog scale. St. George Respiratory Questionnaire was used to measure health-related quality of life in the aspect of disease symptoms, disease impact, and impairment of daily activities.</p> <p>F. The outcome measured was smoking cessation at 6 months and 12 months</p>		
<p>Coronini-Cronberg, S., Heffernan, C., &amp; Robinson, M. (2011). Effective smoking cessation interventions for COPD patients: a review of the evidence. <i>Journal of the Royal Society of Medicine Short Reports</i>, 2(10), 78. doi: 10.1258/shorts.2011.011089.</p> <p>Level I</p>	<p>The purpose of this review is to examine the effectiveness of different types of smoking cessation interventions for COPD patients</p>	<p>A. Systematic Literature Review</p> <p>B. COPD patients that participated in studies looking at smoking cessation interventions</p> <p>C. 14 qualitative and quantitative studies were reviewed. These studies include research articles, clinical practice guidelines, and systematic reviews.</p> <p>D. Studies implemented pharmacological and behavioral interventions as well as spirometry.</p>	<p>Pharmacological interventions such as Bupropion should be implemented to improve the success rate of smoking cessation amongst COPD patients.</p> <p>Behavioral interventions such as intensive one-to-one therapy counseling, when coupled with pharmacological interventions, can be an effective intervention for smoking cessation</p>	<p>Strengths: It is a recent article, which shows that it is based on current evidence. This systematic review examines multiple smoking cessation interventions. It gives a full picture of the reasoning behind the implementation for each intervention.</p> <p>Weaknesses: A possible weakness of this article is that is a systematic review. Therefore, researchers only examined others' studies. It would be stronger evidence if the researchers had also incorporated their own study.</p>

		<p>E. Quantitative papers were scored against the NICE Levels of Evidence standardizes hierarchy</p> <p>F. Smoking cessation duration was assessed by self-report or biochemical analysis. In qualitative studies, barriers to smoking cessation were identified.</p>		
<p>Luker, K. A., Chalmers, K. I., Caress, A. L., &amp; Salmon, M. P. (2007). Smoking cessation interventions in chronic obstructive pulmonary disease and the role of the family: a systematic literature review. <i>Journal of Advanced Nursing</i> 59(6), 559-568 doi: 10.1111/j.1365-2648.2007.04379.x.</p> <p>Level I</p>	<p>The purpose of this review is to examine the effect that family focused interventions influence the success rate of smoking cessation amongst COPD patients.</p>	<p>A. Systematic Literature Review</p> <p>B. COPD patients that participated in family-focused smoking cessation interventions</p> <p>C. Seven studies were included. These studies include electronic data sources, existing systematic reviews of smoking cessation interventions, and the grey literature.</p> <p>D. These studies looked at the effectiveness of family focused- smoking cessation programs. Studies were examined to see what family variables were included and</p>	<p>Family-focused interventions positively influence the success of smoking cessation amongst COPD patients.</p> <p>Family-focused interventions are rarely considered when tailoring an intervention to the individual patient</p>	<p>Strength: It is a recent article, which shows that it is based on current evidence. This article examines seven studies in order to get an adequate understanding of family centered smoking cessation programs.</p> <p>Weaknesses: The authors of this article did not conduct their own research study.</p>

		<p>if the variables were used to assess smoking cessation success</p> <p>E. All studies were reviewed by two reviewers (KL and AC).</p> <p>F. The outcomes showed that family centered smoking cessation programs can effectively improve success rates.</p>		
<p>Quantrill, S J., White, R.R., Crawford, A. A., Barry, J. S., Batra, S. S., Whyte, P. P., &amp; Roberts, C. M. (2007). Short burst oxygen therapy after activities of daily living in the home in chronic obstructive pulmonary disease <i>Thorax</i>, 62(8), 702-705. Doi:10.1136/thx.2006.063636</p>	<p>The purpose of this article is to determine whether short burst oxygen therapy after activities have clinical value for COPD patients.</p>	<p>A. True experimental</p> <p>B. Patients with COPD who regularly use short burst oxygen therapy at home</p> <p>C. The study used non-probability convenience sampling and used a sample size of 22.</p> <p>D. Patients were asked to perform two activities of daily living that they would normally need their short burst oxygen therapy for. After performing the</p>	<p>The study showed that short burst oxygen therapy after activities of daily living can shorten recovery time by 2 seconds. These results were not statistically significant.</p>	<p>Strengths: A strength of this article is that it is a newer topic to be researched. The researchers randomly selected participants and used different methods to ensure that each activity of daily living had equal opportunity to produce shortness of breath.</p> <p>Weaknesses: The sample size limited this study. Its small size was powered on a different outcome measure and was deemed to be inappropriate for this study.</p>

<p>Level II</p>		<p>activity, they were given either air or oxygen. After a 15-minute rest period, they switched to the other. Patients performed each activity until oxygen was needed.</p> <p>E. Recovery was measured subjectively and objectively. Subjectively, the patients reported when their breathing returned to normal. Objectively, patient's oxygen saturation and heart rate were monitored. Breathlessness was measured using a 10 cm visual analogue score. The patients were asked to score their breathlessness at the beginning and end of each activity and at the point of subjective recovery.</p> <p>F. Outcomes determined whether or not short burst oxygen therapy was effective. 5 patients (22.7%) correctly identified oxygen from air after both activities. The study showed that short burst oxygen therapy</p>		
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		shortened recovery time from 22 seconds to 20 seconds.		
<p>Kleerup, E. (2007). Quality indicators for the care of chronic obstructive pulmonary disease in vulnerable elders. <i>Journal Of The American Geriatrics Society</i>, 55(52), 270-276. doi:10.1111/j.1532-5415.2007.01332.x.</p> <p>Level I</p>	<p>The purpose of this article is to provide an overview of the quality indicators for the care of COPD in older adults that is currently available while providing supporting evidence and recommendations to be used in practice.</p>	<p>A. Systematic Review</p> <p>B. The author only chose research/articles on “vulnerable elders” aged 65 and older.</p> <p>C. Articles were identified through reference mining and from the author’s files on COPD in older persons. A total of 111 articles were considered in this review, and 13 guidelines were identified using a Web search. Three additional articles were included after peer review. A total of 97 articles and studies were used.</p> <p>D. Studies implemented pharmacological and behavioral interventions as well as spirometry and oxygen therapy.</p> <p>E. The instrument used was a panel process. Of the 13 potential quality indicators,</p>	<p>If an older adult has COPD (GOLD stage I), then he or she should be prescribed a rapid-acting bronchodilator, because short-acting bronchodilation can relieve dyspnea.</p> <p>If an older adult with COPD is given a new inhaler device, spacer, or nebulizer, then training to use the device should be documented, because specific training improves technique and optimizes the delivery of the drug to the lungs.</p> <p>If an older adult with moderate to very severe COPD (GOLD stage II–IV) has symptoms not controlled by as-needed</p>	<p>Strengths: This study is a systematic review of a large amount of information that evaluates the quality indicators for the care of COPD. The author is very knowledgeable on the information and he has an extensive database set up for the quality indicators of COPD in the elderly population. The review also provides management interventions for the listed risk factors and the evidence supporting the interventions. The review provides the best-known evidence based practice for COPD and interventions used to manage it.</p> <p>Weaknesses: The publication date of 2007 is a weakness because this may change the interventions used. Another possible weakness would be that the systematic review is a compilation of other studies and the authors</p>

		<p>10 were judged valid according to the expert panel process, and one new indicator was developed; three indicators were rejected. The literature summaries that support each of the indicators judged to be valid in the expert panel process are described.</p> <p>F. Outcomes include evaluating respiratory symptoms, smoke free-environment, smoking status, smoking cessation, screening for hypoxemia, rapid-acting bronchodilator, inhaler device training, long-acting bronchodilator, inhaled corticosteroids, and long-term oxygen therapy.</p>	<p>bronchodilator use or had two or more exacerbations in the previous year, then a long-acting bronchodilator should be prescribed, because long-acting bronchodilators provide more-consistent relief of symptoms than repetitively dosed short-acting bronchodilators and reduce the risk of exacerbations.</p> <p>If an older adult with severe to very severe COPD (GOLD stage III–IV) had two or more exacerbations requiring antibiotics or oral corticosteroids in the previous year, then (in addition to a long-acting bronchodilator) inhaled steroids (if not taking oral steroids) should be prescribed, because inhaled</p>	<p>themselves did not initiate any of the studies. Quality indicators are provided and supported with evidence but there is no instruction on how to implement them into practice. There is no information on which interventions or what combination proves to be the most successful in COPD patients.</p>
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			<p>corticosteroids reduce the frequency of exacerbations and mortality, and long-acting bronchodilators reduce exacerbations and improve symptoms.</p> <p>If an older adult with COPD has an arterial partial pressure of oxygen (PaO<sub>2</sub>) less than 55mmHg or an oxygen saturation of less than 88% (not during an exacerbation), then long-term oxygen therapy should be offered, because long-term oxygen therapy prolongs life.</p> <p>If an older adult with COPD is prescribed long-term oxygen therapy, then encouragement to use it for 18 hours per day or longer (including portable oxygen) should be documented,</p>	
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			<p>because 18 hours or longer is superior to shorter durations, and lack of portable oxygen may prevent patients from meeting the goal of 18 hours or longer or discourage them from continuing activities outside the home.</p> <p>According to Klerup, if a vulnerable elder with COPD does not use supplemental oxygen and has a post-bronchodilator FEV1 of less than 50% predicted (or unknown), then oxygenation (pulse oximetry or arterial blood gas) should be assessed annually, because correction of resting hypoxemia extends life (Klerup, 2007).</p>	
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## Synthesis Summary of Findings

### Smoking Cessation Approaches

According to Nazir and Erbland (2009), tobacco smoke is essentially the most significant risk factor for chronic obstructive pulmonary disease (COPD). Smoking cessation has been shown to reduce mortality and promote effective lung function, whereas oxygen therapy and pharmacological methods simply reduce the severity of signs and symptoms (Nazir & Erbland, 2009). As such, smoking cessation is targeted as the primary intervention for patients with COPD (Wilson, Elborn, & Fitzsimons, 2010).

#### Pharmacological measures.

According to Nazir and Erbland (2009), pharmacological drugs for smoking cessation include, but are not limited to, Varenicline, Nicotine and Bupropion. A randomized trial showed that Bupropion, when used with smoking cessation counseling, was more effective in achieving positive results as opposed to using a placebo. Bupropion is proven to be more cost-effective and produces better results than standard treatment (Coronini-Cronberg, Heffernan, & Robinson, 2011). The most popular smoking cessation drug known and available to the public is Nicotine. Nicotine presents in many different types, such as: gum, nasal spray, sublingual tablet, and transdermal patch. In an experimental control study by Tønnesen, Mikkelsen, and Bremann (2006), the use of nicotine sublingual tablets over placebo tablets was found to be more effective in regard to smoking cessation in long term, heavy smokers diagnosed with COPD. Lastly, Varenicline may be the most effective drug in the elderly for smoking cessation, since it boasts the most effective and longest cessation rates. However, Varenicline has been known to aggravate mental illnesses in the vulnerable elderly population and should be used carefully (Nazir & Erbland, 2009).

## Family focus.

In addition to pharmacological measures, one systematic review examines the effectiveness of smoking cessation interventions for COPD patients that are family-focused. Married and widowed patients have a higher rate of smoking cessation as opposed to divorced or single individuals. Also, the patient's significant other can improve cessation if he or she is not a smoker. Variables that influence cessation include marital status, smoking status of household members, attendance of a supportive person to counseling, and a significant other who does not want the patient to smoke. By considering the importance of family, healthcare providers are able to determine a more suitable smoking cessation intervention that is tailored to the specific patient (Luker, Chalmers, Caress, & Salmon, 2007).

## Patient motivation.

If successful smoking cessation programs are widely available to the public and individuals know the devastating effects of tobacco use on the pulmonary system, why do COPD patients continue to smoke? To begin, many COPD smokers think that it is too late and that the disease is too advanced to stop smoking now. Other hindrances regarding smoking cessation include the inability to find personal willpower and motivation to stop, as well as a cyclical feeling of guilt for their decision to smoke which in turn lowers their self esteem, making it even harder to quit. Patients who smoke and are diagnosed with COPD also have the tendency to view cigarettes as comforting and experience apprehension towards losing a comfort measure utilized previously (Wilson, Elborn, & Fitzsimons, 2010).

If a patient lacks motivation, educational smoking cessation programs will not have the opportunity to yield the potential effective results, like decreased mortality and increased lung function. In the healthcare setting, smoking cessation education is often averted in the elderly, since this age group appears to have the least desire associated with smoking cessation. Many

elderly individuals have been smoking since they were 12 to 13 years old and have no desire to quit, regardless of whether or not they have COPD. Physicians are often hesitant to promote smoking cessation in older adults, which may attribute to the declining rate of cessation in this age group (Nazir & Erbland, 2009). In order to increase success in smoking cessation and interventions, health care providers must understand more about their patients' attitudes towards smoking cessation and tailor the proposed interventions accordingly (Wilson, Elborn, & Fitzsimons, 2010).

### Home Management of COPD

While smoking cessation is the most significant intervention in the treatment of those with COPD, there are many other essential interventions that show a reduction in the progression of the disease and mortality among older adults. For example, inhaler device training, bronchodilators, inhaled corticosteroids, and oxygen should be implemented into practice so that quality of life in older adults with COPD can improve (Kleerup, 2007). Kleerup (2007) suggests that no single intervention alone alleviates all of the negative aspects of the disease, but a combination proves to be more beneficial as long as healthcare providers take the time to educate patients and find the best treatment combination possible.

#### Bronchodilators and inhaled corticosteroids.

Kleerup (2007) found that the use of rapid-acting bronchodilators improved quality of life by decreasing dyspnea and exercise intolerance. Additionally, long-acting bronchodilators provide more consistent relief of symptoms. Both long-acting bronchodilators and inhaled corticosteroids reduce the risk of exacerbations and hospitalizations in older adults, which is paramount in improving quality of life in COPD patients. Inhaled corticosteroids are specifically used in older COPD patients with a severe to very severe stage of the disease (Kleerup, 2007).

#### Oxygen therapy.

### *Short burst oxygen therapy.*

Short burst oxygen therapy (SBOT) involves COPD patients receiving breaths of oxygen quickly after shortness of breath develops during an activity in order to recover from the stress of the activity. The researchers were able to conclude that the intervention of SBOT did “shorten recovery time overall after activities of daily living in this highly selected patient group, but it is debatable whether this is of clinical significance” (Quantrill et al., 2007, p. 703). Researchers are continuing to try to modify oxygen interventions in order to help patients get the most out of their oxygen use (Quantrill et al., 2007).

### *Long-term oxygen therapy.*

Kleerup (2007) suggests that oxygen therapy is an encouraging intervention for older adults with a severe stage of COPD because oxygen has been proven to prolong life. Also, the older adult is able to breathe more efficiently because of the use of oxygen therapy, which decreases the occurrence of symptoms, such as dyspnea and activity intolerance, and improves overall quality of life. Vulnerable adults prescribed oxygen therapy should be encouraged to use long-term oxygen therapy for 18 hours per day or longer. Evidence suggests that 18 hours a day or more is superior and that the lack of portable oxygen may prevent patients from using the oxygen long enough and discourage them from performing activities outside the home (Kleerup, 2007).

### *Patient education.*

One chief principle that could improve compliance associated with medication or lifestyle changes is suitable education. For example, specific education concerning nebulizers or other devices ensures that the correct technique is used so that the optimal amount of medication is given appropriately. Therefore, it is vital that healthcare employees provide adequate teaching, while also allowing the patient to perform a return demonstration. According to evidence found

by Kleerup (2007), unless the patient portrays proper technique during a return demonstration, inhalation devices should not be prescribed for older adults. It is crucial to educate patients on how to manage oxygen therapy and how adhering to a specific regimen will improve harmful symptoms and quality of life (Kleerup, 2007).

### Improving Quality of Life

In conclusion, the research found that a smoking cessation program should be used in conjunction with home management because, “smoking cessation is the only intervention that prevents further decline in lung function in patients with early COPD, and it reduces the risk of death, heart disease, and lung cancer” (Kleerup, 2007, p. 272). Further research shows that a smoking cessation program reduces mortality while home management merely targets the symptoms (Nazir & Erbland, 2009). In relation to quality of life, home management and smoking cessation both show an improvement because one halts the progression of the disease and the other alleviates the negative daily symptoms. Factors that contribute to carrying out these interventions (motivation, education, and family focus) are also significant because these determine the response the patient displays and whether the response will improve quality of life. Therefore, the research demonstrates that home management should be provided with an emphasis on a smoking cessation program because of the improvement of quality of life (Kleerup, 2007).

### Consistency of Evidence

A. The four systematic reviews utilized in the construction of this paper each compiled a multitude of consistent literature concerning smoking cessation among COPD patients. All of the systematic reviews encouraged smoking cessation as the primary intervention in the management of COPD. However, unlike the other research studies, the qualitative article specifically covers patients’ motivation in regard to smoking cessation. Two of the systematic

reviews (Nazir & Erbland, 2009; Coronini-Cronberg, Heffernan, & Robinson, 2011) and a random controlled trial (Tønnesen, Mikkelsen, & Bremann, 2006) all concluded similar success rates of various pharmacological measures used for smoking cessation. In our literature review of COPD and smoking cessation, we researched similar studies that produced dependable, consistent results.

B. The construction of our three primary sources (one qualitative, one true experimental, and a randomized control trial) is important to evaluate. The experimental and RCT have well designed studies because they are considered to be a higher level of evidence. The qualitative study is not as well designed because it is a lower level of evidence. Wilson, Elborn, and Fitzsimons (2010) is a qualitative study, which is considered a lower level experiment, thus yielding weaker evidence. Tønnesen, Mikkelsen, and Bremann (2006) study contains threats to internal and external validity due to: the utilization of convenience sampling, mortality, novelty reactive effect, and the small sample size. Sample size and power outcome were inadequate in Quantrill et al. (2007).

C. According to all of the resources used in the construction of this paper, smoking cessation is of the utmost importance when it comes to the management of COPD. Without it, COPD patients' health deteriorates at a much faster rate (Nazir & Erbland, 2009). Smoking cessation can be achieved through a variety of mechanisms, including pharmacological tools and a family-focused approach (Luker, Chalmers, Caress, & Salmon, 2007). Also, the research strongly suggests that the patient's motivation concerning smoking cessation is a primary concern, and health care providers must take great care to provide individualized treatments accordingly (Wilson, Elborn, & Fitzsimons, 2010). Finally, our research encourages oxygen therapy (both long and short term), medications (like bronchodilators and corticosteroids), as well as patient education in order to best promote quality of life among COPD patients (Kleerup, 2007).

Among all of the articles reviewed in association with this paper, smoking cessation and improved quality of life through the aforementioned tactics were consistently presented as recommendations for practice.

D. The benefits of applying evidence-based practice recommendations for COPD management outweigh the risks of any method for patients dealing with the disease. Smoking cessation education, according to Nazir and Erbland (2009), should be among the top interventions for patients with COPD, especially those 65 years of age and older. Although this population of patients has the lowest rate of cessation known, individualized cessation education is the cornerstone of COPD management and may increase life expectancy more than any other intervention (Nazir and Erbland, 2009). The pharmacological aspect of evidence based practice recommendations consists of long-acting bronchodilators and inhaled corticosteroids because both work together to reduce mortality and exacerbations of COPD (Kleerup, 2007). Education on behalf of healthcare providers for patients with COPD should be administered whenever necessary to make the use of inhaler devices, nebulizers, and spacers as unambiguous as possible (Kleerup, 2007). Kleerup (2007) also offers that healthcare providers should address management of medications (such as corticosteroids and bronchodilators) with their patients to improve quality of life and decrease mortality rates in the elderly. Risk factors associated with evidence-based practice recommendations do not present as clearly as the obvious benefits stated.

E. Kleerup (2007) discusses the cost of various interventions for COPD management. A smoking cessation program with therapy per life year gained was found to cost less than \$5,200 in the United States. Many of the interventions recommended by this systematic review are significant because they are to reduce exacerbations in patients with COPD. This is because exacerbations account for 35-45% of healthcare costs for COPD. It was found that long-acting



bronchodilators are cost-effective or have only a slightly higher cost than routine use of short-acting bronchodilators because of the lower exacerbation rates. It was concluded through research that inhaled corticosteroid treatment in patients with Stage III or IV COPD was estimated to cost \$17,000 per quality-of-life year gained, and treatment of only Stage IV patients was estimated to cost \$11,100 per quality-of-life year gained. These were the only areas in which cost was discussed in relation to interventions (Kleerup, 2007).

### Recommendations for Evidence-Based Practice

As reported by Nazir and Erbland (2009), smoking cessation education should be delivered to the elderly population with COPD. Pharmacological agents and other forms of COPD management may be effective in the elderly, but often produce unwanted side effects and should be prescribed with caution. Most importantly, the promotion of smoking cessation programs should be the number one objective for physicians to cover with COPD patients. These programs effectively reduce mortality and improve lung function in an otherwise irreversible disease (Nazir & Erbland, 2009). Smoking cessation is considered to be Grade A in COPD management.

According to Coronini-Cronberg, Heffernan, and Robinson (2011), healthcare providers need to individualize their treatment in order to help COPD patients quit smoking and prevent the progression of the disease. By looking at the individual, physicians will be better able to help their patients realistically achieve their goals. Tailoring the smoking cessation plan to the individual is considered a Grade A in smoking cessation interventions.

According to Kleerup (2007), if a vulnerable elder with COPD does not use supplemental oxygen and has a post-bronchodilator FEV1 of less than 50% predicted (or unknown), then oxygenation (pulse oximetry or arterial blood gas) should be assessed annually, because

correction of resting hypoxemia extends life (Kleerup, 2007). Screening for hypoxemia is considered a Grade A intervention in COPD management.

As suggested by Kleerup (2007), if a vulnerable has COPD (GOLD stage I), then he or she should be prescribed a rapid-acting bronchodilator, because short-acting bronchodilators relieve dyspnea. If a vulnerable elder with moderate to very severe COPD (GOLD stage II–IV) has symptoms not controlled by as-needed bronchodilator use or had two or more exacerbations in the previous year, then a long-acting bronchodilator should be prescribed, because long-acting bronchodilators provide more consistent relief of symptoms than repetitively dosed short-acting bronchodilators and reduce the risk of exacerbations. Also, if a vulnerable elder with severe to very severe COPD (GOLD stage III–IV) has two or more exacerbations requiring antibiotics or oral corticosteroids in the previous year, then (in addition to a long-acting bronchodilator) inhaled steroids (if not taking oral steroids) should be prescribed, because inhaled corticosteroids reduce the frequency of exacerbations and mortality, and long-acting bronchodilators reduce exacerbations and improve symptoms (Kleerup, 2007). Medication management is considered Grade A in the management of COPD.

Kleerup (2007) also states that education should be adequately provided in all aspects of care for a vulnerable elder with COPD concerning the proper use of inhaler devices, nebulizers, and spacers with a return demonstration. Additionally, health care providers should teach patients the proper administration of other medications (such as bronchodilators and corticosteroids), the importance of compliance to a prescribed medication regimen to reduce exacerbations and improve quality of life, and the management of long-term oxygen therapy (Kleerup, 2007). Education related to treatment is a Grade A COPD intervention.

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