
Effects Of Air Pollution In China Towards COPD Patients.

COPD is a chronic obstructive pulmonary disease which makes it hard for its patients to breathe and the condition gets worse after a prolonged period. This chronic disease is the fourth leading cause of death globally, and it is predicted to be the third by 2030 (Hu G, Zhong N, Ran P, 2015). It was found that if patients are introduced to heavily polluted areas and settings, the symptoms and effects of COPD on the body worsen quicker than a patient living in a perfect and no air noxious environment. The review was further analyzed by finding information regarding COPD patients residing in China, because it is ranked number 16 in a list of the countries most air polluted (Statistic Brain, 2017). Keep in mind that the health effects of air pollution depend on the components and sources of pollutants, which varied with countries, seasons, and times (Jiang X-Q, Mei X-D, Feng D, 2016). Overall, a fundamental analysis of this public health issue was conducted within multiple articles from various sources.

After reviewing articles regarding this public health issue, there is an association between indoor/outdoor air pollution and chronic obstructive pulmonary disease (Jiang X-Q, Mei X-D, Feng D, 2016; Hu G, Zhong N, Ran P, 2015). The constant exposure to air pollutants can increase the prevalence and incidence of COPD symptoms (Hu G, Zhong N, Ran P, 2015). Air pollution affects these patients because the fine particles can penetrate deeply into the lung, irritate and corrode the alveolar wall, and consequently impair lung function, clinically leading to a cough, wheeze, respiratory disorders and other symptoms (Hu G, Zhong N, Ran P, 2015). Moreover, there is a 1.5 to 1.7 times more likely chance for a patient to experience COPD symptoms in a heavily polluted area versus a relatively clean area (Hu G, Zhong N, Ran P, 2015). Also, the COPD mortality risk is positively associated with air pollutant concentrations (Li, L., Yang, J., Song, Y., Chen, P., Ou, C, 2016). It was found that with an increase in particulate matter was associated with a 1.58% increase in COPD mortality over a lag of 0-15 days (Li, L., Yang, J., Song, Y., Chen, P., Ou, C, 2016). Furthermore, found from within various studies, the short-term and long-term exposure to air pollution can influence the mortality of COPD patients (Hu G, Zhong N, Ran P, 2015). Another alluring avenue researchers looked into, regarding COPD in patients, is that the associations of air pollution and COPD mortality differed by individual characteristics (Li, L., Yang, J., Song, Y., Chen, P., Ou, C, 2016). It was found that children and adults are equally affected and that patients with low educational attainment were more susceptible to air pollution exposure (Hu G, Zhong N, Ran P, 2015; Li, L., Yang, J., Song, Y., Chen, P., Ou, C, 2016). The low educational attainment pertains to people suffering from financial crisis, and they live in places that offer no protection from air pollutants. After reading the evidence and results from the different studies reviewed, the general idea that needs to be captured is there is a direct correlation between the quality of air patients with COPD are breathing and the rise of their symptoms and mortality.

The overall conclusions of these findings have a standard message towards this public health issue. There needs to be awareness to public health officials the detrimental effects of air pollutions to these patients. Furthermore, there need to be more future studies with more extended follow-up periods, more standardized definitions of COPD, and more refined and source-specific- exposure assessments (Hu G, Zhong N, Ran P, 2015). The additional studies performed could help alert officials in the area and the surrounding public. Also, more attention should be paid to these particular populations: older people, males, residents with low

educational attainment, these are the most vulnerable groups regarding air pollution (Li, L., Yang, J., Song, Y., Chen, P., Ou, C, 2016). Most importantly, public efforts to prevent COPD should include the reduction of ambient air pollution (Li, L., Yang, J., Song, Y., Chen, P., Ou, C, 2016; Rich, S. R, 2017). If public efforts cannot regulate ambient air pollution quick enough, there are some efficient pathways to reduce the detrimental effects of air pollution. People should be aware of the air quality and take extra measures such as reducing the time outdoor and wearing masks when necessary (Jiang X-Q, Mei X-D, Feng D, 2016). Moreover, reducing the air pollutants indoor, people should use clean fuels and improve the stoves to burn more efficiently and vent emissions to the outside (Jiang X-Q, Mei X-D, Feng D, 2016; Leader, D., RN, 2017). A common idea that can be concluded from the different sources is that the patients of COPD are severely affected. Due to the increase in air pollutant concentrations, the environment is one of the driving forces behind the growth of COPD drugs in China (Technavio reports on the COPD drugs market in China, 2016). From these specific results, it would be best for patients suffering from COPD to be aware of the indoor and outdoor environments they are placed in and have the general public and different industries come together to advocate awareness about air pollution since it will eventually impact the globe as a whole.

Next, after an in-depth review of significant studies about this public health issue, a comparison can be made of the information from the different types of articles mentioned and utilized in this paper. One of the primary comparisons of the information found was that it could have been used in a document. Each source had a level of credibility that satisfied the requirements for this particular paper. Some differences between the types of sources used are evident. In peer-reviewed articles, they demonstrate specific and quantitative evidence and results. However, widespread news articles are very general and concise. Furthermore, in the famous news articles, there is informal citing versus in peer-reviewed articles there is formal citing. When reading through each type of item, the peer-reviewed articles utilize a more extensive and colorful vocabulary where the popular articles use vocabulary that will satisfy their audience, typically that kind of materials do not use lots of fancy or big words. Overall, these sources provide the same information just different ways of conveying the information.

Reviewing information about China's COPD population from any source can be related to the content that is taught in an introductory public health course, like this one. One of the connections from one of China's public health issues to the PBH 105 course content is the entirety of chapter 21: "Clean Air: Is It Safe to Breathe?". This section discusses air pollution events, types of air pollutants, strategies to limit air pollution, indoor air quality, and effects of air pollution. As mentioned before, the particular matter is the main problem for patients with COPD (Hu G, Zhong N, Ran P, 2015). In chapter 21, particular matter is discussed as one of the types of air pollutants. Also, earlier, it was mentioned that indoor air could have an impact on patients, too. Chapter 21 refers information about indoor air quality that can affect COPD patients. Additionally, the strategies taught could be taught to some of China's industries and population that are contributing to the increase of particulate matter in the air around them. Another connection of this public issue can be correlated with chapter 11 material. Chapter 11 dives into what chronic diseases are and the biomedical basis of them. An evident connection between the public issue described and chapter 11 is that COPD is a chronic disease. In conclusion, there are much more points a general public health class's content can relate to current and multiple public health topics.