Introduction

Chronic Obstructive Pulmonary Disease (COPD) was reported to impact 14.5 million Americans in 2008; however, about 12 million adults have evidence of impaired lung function on spirometry that have not yet been diagnosed with COPD. (Centers for Disease Control CDC, 2012). COPD, which is more than 70% of those diagnosed, is a major public health concern. This discrepancy suggests COPD is under diagnosed in the United States, and throughout the world. The National Institute of Health (NIH) reports COPD is the nation’s fourth leading cause of death after heart disease, cancer, and stroke. COPD is projected to be the third leading cause of death in the U.S. by 2020 with a cost of approximately $30 Billion in direct healthcare cost and approximately $20 Billion in indirect cost associated with the disease. (Guarino, A. J., Ray, S. M., Finch, C. K., & Self, T. H., 2013). The clinical and economic burden of chronic obstructive pulmonary disease in the USA. ClinEconomics and outcomes research, 6, 235.

The purpose of this study is to determine any association between personality characteristic(s) of neuroticism and disease acceptance on Health Related Quality of Life (HRQOL) in patients with Chronic Obstructive Pulmonary Disease (COPD). There is a gap in knowledge in current literature on the key patient's acceptance of their disease and their personality characteristics effect on their quality of life. Hence mono this research.

Methodology

The correlation study examines the strength and type of relationship between the variables under study. The relationship between a specific personality type and the HRQOL in those with COPD will be examined from a quantitative perspective. Participants will be asked to complete the questionnaires on Personality Characteristics as measured using the Big Five Inventory (BFI). Disease Acceptance as measured using the Illness Cognition Questionnaire (ICQ), a demographics questionnaire, and Health-Related Quality of Life (HRQOL) using the Clinical COPD Questionnaire (CCQ).

Research Design

A quantitative correlational research design using ANOVA, and multiple regression by way of survey methodology will be used to test the four hypotheses, in an attempt to answer the four research questions. The correlation study examines the strength and type of relationship between the variables under study. The relationship between a specific personality type and the HRQOL in those with COPD will be examined from a quantitative perspective.

Study Population

The study population is those diagnosed with Chronic Obstructive Pulmonary Disease. The sample extracted from the target population, will consist of individuals diagnosed with Chronic Obstructive Pulmonary Disease who currently attend pulmonary rehabilitation program in Grants Pass, Oregon.

Statistical Analysis

Hypotheses one, two, and three will be tested using a regression analysis, in an attempt to answer research questions one, two, and three. Regression analysis is an extension of the simple regression in which an outcome is predicted by a linear combination of two or more predictor variables. The regression analysis will allow a predictive model of the dependent variables from multiple independent variables within the study. Hypothesis four will be tested using a mediated multiple regression, in an attempt to answer research question four. Mediated multiple regression is the hypothesized causal relationship between two variables. The intervening variable if often referred to M, indicating the mediator on the second variable. This mediates an indirect relationship between a predictor and an outcome.

Materials and Methods

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Results

The Relationship between Quality of Life and Disease Acceptance Mediated by Neurosis (N = 39)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>10.89</td>
<td>8.49</td>
<td>1.21</td>
<td>.22</td>
</tr>
<tr>
<td>Neurosis</td>
<td>3.56</td>
<td>0.63</td>
<td>.56</td>
<td>.57</td>
</tr>
<tr>
<td>ICQ</td>
<td>-0.27</td>
<td>0.26</td>
<td>-1.3</td>
<td>.20</td>
</tr>
</tbody>
</table>

Full Model: F (2, 36) = 24.29, p < .001. R² = .574

Disease Acceptance as measured using the Illness Cognition Questionnaire (ICQ), personality type and the HRQOL in those with COPD will be examined from a quantitative perspective. The study found that there was a significant negative correlation between HRQOL & disease acceptance, r = -0.42, p < .008. The second research question was what is the relationship between Quality of Life and Neurosis? There was a significant negative correlation between HRQOL and Neurosis, r = -0.43, p < .007. The third research question was what is the relationship between Neurosis and disease acceptance? The study analysis found a statistical significant negative correlation between Neurosis and disease acceptance, r = -0.45, p < .008. The fourth research question was does Neurosis mediate the relationship between Quality of Life and disease acceptance? The study found that Neurosis did mediate the relationship between HRQOL and disease acceptance. The analysis found using a Spearman and Pearson Correlation show significance between the DV of HRQOL and IV of Neurosis, r = .428, p < .008 and disease acceptance, r = .416, p < .007.

Conclusions

Research Question 1 asked, “RQ1: What is the relationship between Health-Related Quality of Life (HRQOL) and disease acceptance?” The correlation was significant (r = -0.44, p < .005) which provided support to reject the null hypothesis.

Research Question 2 asked, “RQ2: What is the relationship between Health-Related Quality of Life and Neurosis?” The correlation was significant (r = -0.75, p < .001) which provided support to reject the null hypothesis.

Research Question 3 asked, “RQ3: What is the relationship between Neurosis and disease acceptance?” The correlation was significant (r = -0.45, p < .005) which provided support to reject the null hypothesis.

Research Question 4 asked, “RQ4: Does Neurosis mediate the relationship between Health-Related Quality of Life (HRQOL) and disease acceptance?” The overall model was significant (p = .001) and accounted for 54.7% of the variance in quality of life. Inspection of the table found the mediating variable, neuroticism, to be significant (β = -.41, p < .001) while the predictor variable, disease acceptance (β = -.13, p = .30) was not significant. This combination of findings provided support to reject the null hypothesis.

Acknowledgements

The purpose of this study was to examine the relationship between personality characteristic, especially on the characteristic of Neuroticism and disease acceptance effect on the Health-Related Quality of Life (HRQOL) in those with Chronic Obstructive Pulmonary Disease (COPD).

A total of 39 participants were included in the study over a 14-day period at Three Rivers Medical Center in Grants Pass, Oregon. The participants had a diagnosis of COPD by their healthcare provider. Of those asked to participate 97 percent of agreed to participate in the study. The mean age of the study participants was 71 years old (N = 39, SD = 10.7). Of the participants 36 percent (N = 22) were male and 44 percent (N = 17) were female. The median pack years smoked for participants was 40 pack years. The median years since disease diagnosis was 11 years. The mean FEV1% was 44 percent (N = 39, SD = 15.4) of predicted based upon age, gender, and ethnicity. The mean FEV1 places the majority of participants in the moderate to severe stage of COPD based upon the current GOLD COPD classification. The social-economic status of the participants revealed that the majority did not have college education and income was below national average. Of the 39 participants in the study 10.3 percent (N = 4) had some High School but had not received a High School Diploma, 43.6 percent (N = 17) had a High School Diploma with no college attendance, 33 percent of participants (N = 13) had some college completed without obtaining a college degree, ten percent of participants (N = 4), had obtained a college degree, and two percent (N = 1) had a Post-Graduate Degree.

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