An analysis of identifiable risk factors for obesity and diabetes in American adults

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Abstract

Obesity is postulated as a risk factor for several chronic conditions such as diabetes mellitus and cardiovascular disease, gallstones, gastro-esophageal reflux, musculoskeletal diseases such as osteoarthritis and gout, sleep apnea, and even certain between 2015 and 2016, 39% of American Adults were diagnosed as obese and more than 93 million adults in the U.S. were significantly affected by this growing trend [1]. The prevalence of obesity was higher among middle-aged adults (42.8%) than among younger adults (35.7%) [1]. An examination of potential risk factors which may be associated with the growth in adult obesity prevalence rates in America may be warranted as Obesity remains as one of the more serious or preventable diseases which often affect Americans in large proportions. As more research on obesity prevalence is conducted, there may also be more research initiatives applied to address negative health concerns which may both impact and be impacted by obesity rates in the U.S.

Research has found that obesity outcomes may be a related problem for a person who may have been diagnosed with diabetes, coronary heart disease, or snoring and other research has found that type 2 diabetes may be associated with an increase in visceral fat mass (i.e. abdominal fat) as opposed to general adiposity, and this is an outcome almost often associated with obesity [2,3]. Researchers at the Mexico Bariatric Center found that Obesity increases one's risk of diabetes, some cancers, heart disease, stroke, arthritis, gallstones, breathing problems, hypertension, and higher healthcare costs. It was also reported that obesity may only limit one's agility and fundamental human abilities, but obesity may also serve as a gateway for other medical and health concerns such as diabetes, hypertension, certain forms of cancer, and even death [4]. Because of these types of health outcomes, a more thorough analysis of the potential relationship between obesity prevalence and diabetes diagnosis among American adult populations may be needed. Such a research initiative should also include an examination of other possible factors or health concerns which may be related to both obesity and diabetes outcomes.

Method

A random sample (N = 3,045,180) of adult Americans was analyzed for this research study. A multiple linear regression model was applied to determine if five health indicators were found to be significant predictors for obesity (α = 0.05). The four health indicators which were examined in this research study were Hypertension, Diabetes, Drug Abuse, and Alcohol Abuse. In addition to the application of the regression model, a Pearson r analysis was conducted to examine the possible strength of the relationship between obesity and the four health indicators. A Pearson r analysis was also applied to determine

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the strength of the relationship between Diabetes and four health determinants, to include obesity diagnosis. The NIS data examined in this research study were collected from American hospitals in which 46 U.S. states were cooperative participants in providing state health related data [5].

Results

The findings from this research study provided evidence of high disease prevalence rates for each of the examined health outcomes (Table 1). The Pearson r analysis results revealed very strong significant relationships between obesity and the health outcomes of diabetes, substance abuse, and drug abuse (Table 2). The second Pearson r analysis produced very strong significant relationships between diabetes and disease outcomes of hypertension, obesity, substance abuse, and drug abuse (Table 3). In addition to these results from the Pearson r analyses, the results of this research study also verified a statistically significant multiple regression model ($F$=12.663, $p$<0.01) (Table 4) and found that health outcomes of hypertension, diabetes, alcohol abuse, and drug abuse, were each significant predictors of obesity in American adults (Table 5).

Discussion

Based on the results of this study, the researchers have concluded that specific attention should be given to address the importance of the implementation of a healthy diet and lifestyle to address the health outcomes for diabetes and obesity as well as the associated identifiable risk factors examined in this research study. One important note to make based on the findings which were assessed between the factors of alcohol abuse and drug abuse, is that both factors exist as a result of unhealthy behavior and engagement in such practices could be highly reduced through the implementation of behavioral health modification. Reducing both unhealthy and risk behaviors could be a critical step in addressing effective disease prevention strategies and in reducing disease outcome and mortality rates across communities.

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