# Study on the Relation of Body Mass-Index to Asthma

Name

Institution

## Introduction

The effects of Asthma on quality of life, health, and economic growth are quite substantial. According to the report that was given by the Centers for Disease Control and Prevention (CDCP) shows that over 34 million Americans are receiving diagnosis of Asthma during their lifetime and it is also important to note that asthma counts for close to 4,000 deaths every year. Different researchers have pointed out that there is a relation between the Body Mass-Index and Asthma and in adults and the adults (Centers for Disease Control and Prevention (CDC, 2011).

This paper will analyze a study that was conducted to find out if there is an association between body mass-index to asthma in both adults and children.

## The Body Mass Index as an Indicator or Predictor for Asthma

The reason why this study was chosen is that it used for the purposes of quantifying the relationship between the body mass in index that is measured in terms of Kilogram per meter square and in middle-aged men and women as well as evaluation of change in body mass index as a risk factor (Rzehak et al., 2013). The incidences of Asthma was estimated from a data that was gathered on redeemed prescriptions of anti-asthmatic drugs during the periods between the years 2004 and 2007, the data was retrieved from the nationwide Norwegian Prescription Database. The other reason why this study design was chosen was due to the fact that it had a well elaborated discussion as far as the relationship between the body mass index and asthma in both children and adults (Hjellvik, Tverdal & Furu, 2010).

**The Statistical Measure that would be used to describe the Association between Body Mass Index and Asthma in Children and Adults**

In the study, the researchers used a statistical method called Poisson regression. The Poisson regression is also referred to as the GLM model where there is a random component that is specified by the distribution of Poisson of the response variable which is a count (Zou, 2004). This statistical method is used when all of the explanatory variables are quite discrete, and logarithmic linear model is equal to this model. In this study the, the Poisson regression model was used to estimate the relationship between the effect variable which is body mass index and resulting variable which in this case is the incident of asthma. The incident of asthma was tested among the current smokers, ex-smokers, and non-smokers (Suh et al., 2011). The estimation was done using generalized linear model (GLM) the function which is used in the statistical package. It is important to note that the effect variables are entered categorical, and also as continuous. Poison Regression estimations are adjusted for age that is year of birth was used as a continuous variable; while physical activity, education, sex, area of residence, and disability pension as categorical variables. The interaction between sex and the body mass index which is effect variable, were tested through inclusion of relevant interaction terms in the model apart from the confounders that have been listed above. Finally, the effect variables were entered as continuous (Hjellvik, Tverdal & Furu, 2010).

**Subject Selection**

The study was conducted among males and females that were born between 1952 and 1959. The total number of people that were invited to participate in the health survey was 159,331 of which 70 and 82 percent were males and females respectively turned up for the

survey. It is important to note that the number of women that were invited was 107, 001males and 102, 911 females. The participants were asked a question about asthma history and they were to give answers of yes or no. a total of number of 8,638 people answered yes and they were set aside. The other 4,325 were also set aside for other reasons probably they had other health issues. The sum of the people that were used for analysis was 118, 723 of which 62, 783 were females and 55,940 were females. The body mass index was calculated as kilograms per height in meters squared. During the survey a total of 114, 577 subjects were asked to report their minimum and maximum weights during the five years before the study was conducted. In addition to that, the following variables were added from the health surveys smokers current, ex, and non-smokers (Hjellvik, Tverdal & Furu, 2010).

**Measurement of Asthma Issues**

The incidences of asthma were estimated from a data that was retrieved from a data on redeemed prescriptions of asthmatic drugs that was conducted between the years 2004 and 2007. It is important to remember that the research was conducted among the citizens of Norway. Since January 1, 2004, most of pharmacies in Norway have been legally obliged to send all of the asthmatic prescriptions electronically to the Institution of Public Health in Norway. This institute has got all of information about individuals who have been able to receive asthmatic drugs from pharmacies. Most importantly to remember is that all of these drugs are classified based on a system known as Anatomic Therapeutic Chemical. Some of the information that is collected are collected from the patients are based on a unique identification number (Hjellvik, Tverdal & Furu, 2010).

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