

## A study on the correlation between Body Mass Index of overweight/obese, Total Physical Activity and Cardiovascular risk factors with special reference to dyslipidaemia in adult women

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### Abstract

Over weight and obesity increase the risk of cardiovascular diseases through many cardiac risk factors including dyslipidemia, hypertension, and diabetes. Hence, the study was carried out to analyze the correlation between Body Mass Index (BMI) of overweight/obesity with Total Physical Activity (TPA) and Dyslipidemia. Aged 18- 60 years overweight BMI between 25 -29.9 Kg/m<sup>2</sup> or obese BMI over 30 Kg/m<sup>2</sup> women were included in the study. Totally 121 overweight/obese women were participated in this study. Pregnant and disabled females were excluded. Total Cholesterol (TC), High-Density Lipoprotein (HDL), Triglyceride (TG) and Low-Density Lipoprotein (LDL) were investigated. TPA was analyzed as a separate variable. TC and LDL provided significant relationship between each other and HDL with TG and LDL gave weak negative relationships. TG was inversely associated with LDL. The highest physically inactivity (41.3%) was found in the age group 41-60 years and also the highest elevated TC (26.9%) and the highest abnormal LDL (25%) were found in the same age group. Similarly higher physically inactivity (33.9%) was found 31 – 40 years. In this age group elevated TC (19.2%) , the highest abnormal HDL (29.7 %) and the highest abnormal LDL (25%) were found. TPA inversely associates with TC. In this study over 50% overweight/obese adult women found more than one abnormal cholesterol levels such as elevated TC, elevated TG, elevated LDL and low HDL. 90 % participants were noted in sedentary level in activity. Therefore a study on wide range of the population is highly needed to come to a definite conclusion on the prediction of the relationship in between the overweight /obese, TPA and dyslipidaemia.

### Introduction

Obesity/over weight is one of the important causative factor of all non communicable diseases. The rates of non-communicable diseases have been increasing alarmingly even in Sri Lanka during the last several years[1]. According

to research statistics for Asians, the percentage of Sri Lankan adults in the overweight, obese and centrally obese categories were 25.2%, 9.2% and 26.2%, respectively [2]. Obesity increases risk of Cardiovascular Diseases (CVD) through many cardiac risk factors including hypertension, diabetes and dyslipidemia [3]. CVD is the leading cause of death in high-income countries and even low- and middle-income countries [4] and has a strong relationship exists between blood cholesterol levels and deaths [5]. Further, in the past three decades numerous clinical and epidemiologic studies have shown repeatedly that an elevated blood cholesterol level is one of the major modifiable risk factors associated with the development of Coronary Heart Diseases (CHD)[6].

Coronary heart disease risk factors are conditions or habits that raise the risk of CHD and heart attack. These risk factors also increase the chance that existing CHD will worsen[7]. Development of CHD is influenced by a number of risk factors. The main modifiable risk factors for CHD are elevated blood cholesterol, high triglyceride with low HDL, elevated blood pressure, diabetes, excessive stress etc[8]. This study is specifically focused on CV risk factors of dyslipidaemia.

Body Mass Index (BMI) has been widely used to categorize the level of obesity. Increasing BMI has been related to health risks and deaths rates in many studies [3]. Waist Circumference (WC), a simple marker for central obesity, has also been reported to reflect cardiovascular risks [9]. Similar to BMI, the link with WC and related health risk is influenced by age, gender and ethnic differences, so that the

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