

# Is there any relationship between blood pressure and obesity?

## Abstract

Objective of the present studies was to evaluate the relationship between blood pressure and obesity. The circulation of blood throughout of our body or it is the pressure that is generated in the blood vessels of the body. Normal blood pressure of our body is about 120/80. Systolic is the highest blood pressure and diastolic is lowest blood pressure. Obesity is a condition of being overweight. There are many factors which causes a person to become obese i.e. lack of sleep, lack of physical activity and use of some medications. For the measurement of blood pressure, a sphygmomanometer device is used. We performed a survey among different people of Bahauddin Zakariya University, Multan, Pakistan for the evaluation of blood pressure and obesity. It was concluded from this survey that there was a significant relationship between blood pressure and obesity.

**Keywords:** blood pressure, diuretics, obesity, hypothyroidism

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## Introduction

The circulation of blood throughout of our body or it is the pressure that is generated in the blood vessels of the body. Blood pressure is mostly related to the rate of heart beats and flexibility in the walls of arteries. Normal blood pressure of our body is about 120/80. There are two types of blood pressure such as systolic and diastolic. Systolic is the highest blood pressure and diastolic is lowest blood pressure. Systolic blood pressure is the pressure when our body pumps more blood in the arteries and in the diastolic blood pressure our heart relaxes between our heart beats. If our blood pressure is 140/90 then 140 means we have systolic blood pressure of 140mmHg and diastolic pressure is said to be 90mmHg. Systolic blood pressure is often caused by smoking, unhealthy habits and not exercising properly. It can lead to the serious consequences such as kidney diseases and heart diseases. High blood pressure can be controlled by changing our lifestyle or proper medication. While diastolic pressure is caused by the dehydration and heart failure. It can also be treated by using water pills (diuretics), which remove large amount of water and sodium from our body and other suggestions of doctor.<sup>1</sup> Obesity is a condition of being overweight. It mostly occurs when our body uses too much calories. Obesity is called epidemic disease which causes the death of many people. The risk of obesity is higher in adulthood than childhood. There are many factors which causes a person to become obese i.e. lack of sleep, lack of physical activity and use of some medications. In certain cases some health problems can also lead to the obesity. For example hypothyroidism in which our thyroid gland slows down our metabolism that causes obesity and weakness in our body. Obesity has many side effects on our health and it can lead to the various health problems such as stroke, cancers, gallstones and irregularity in periods. An obese person may experience depression and feelings of discrimination. For the prevention of this disease we should do exercise regularly after eating fast foods and changing the diet pattern. Short periods of dietary changes cannot remove obesity permanently. Special care should be taken to prevent this disease.<sup>2</sup> Objective of the present studies was to evaluate the relationship between blood pressure and obesity.

## Material and methods

For the measurement of blood pressure, a sphygmomanometer device is used. Blood pressure can be measured over the brachial

artery. For measuring blood pressure we wrapped the blood pressure cuff over the upper arm of our body and pressed the stethoscope bell. After pressing the bell, we inflated the cuff. Air was released from the cuff and we can hear the sound with the help of stethoscope. In this way we can record the pressure difference.

## Project design

For the evaluation of blood pressure and obesity, we performed a survey among different people of Bahauddin Zakariya University, Multan, Pakistan. Total of 190 people took part in this survey. Different people told their blood pressures with respect to obesity by using a device i.e. sphygmomanometer.

## Statistical analysis

Micro-soft Excel and t-test was used for the statistical investigation.

## Results and discussion

### Table 1 for systolic blood pressure

Obese females with systolic blood pressure had an average value of 117 and standard deviation was about 11.79. Similarly obese males had an average value of 110.66 with standard deviation was 11.27. And non obese males and females had an average and standard deviation values which were given in the table below. Overall p-value is less than 0.05. So results were significant p-value >0.05\*.

**Table 1** Systolic blood pressure

Gender	Obese	Non obese	p-value
Female	117±11.79	104±116.80	0.94
Male	110.66±11.27	130.59±12.93	0.005*
Combined	116.07±11.80	120.87±18.43	0.04*

### Table 2 for diastolic blood pressure

In the diastolic blood pressure both male and females (obese and non obese) had their own average and standard deviation values which were given in the following table. In this case p-value was 0.009 and this value was less than 0.05. So results were significant p-value >0.05\*. Questionnaire based studies in the recent researches

have given an important advancement. Similar researches can be done by David A Leon, Ilona Koupilova, Denny vagero and Jose Ribeiro, Sandra Guerra, A Pinto.<sup>3-10</sup>

**Table 2** Diastolic blood pressure

Gender	Obese	Non obese	p-value
Female	75.31±8.33	73.59±12.74	0.36
Male	61.5±8.66	75±11.96	0.009*
Combined	73.29±9.63	74.01±12.49	0.69

## Conclusion

It was concluded from above cases that there was a significant relationship between blood pressure and obesity and it had some influence over obesity.

## Acknowledgments

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## Conflicts of interest

The author declares there is no conflicts of interest.

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