

## A STUDY ON IMPACT OF SMOKELESS TOBACCO ON BLOOD PRESSURE

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**ABSTRACT:** Smokeless tobacco use in India has various concerns. It is commonly used and increasingly so, especially as new forms of smokeless tobacco have been emerging over the last few decades. The present study is done to observe the impact of smokeless tobacco on vital data. A cross-sectional study is done on 200 males and females of age group 20-40 years who take tobacco for a minimum period of 2 years. Chewing tobacco in a dose of average 200mg pack of chewable tobacco and chewed for 30 minutes. All patients with cardiac disorders, Thyroid disorders, Hypertension, Renal diseases, Chronic respiratory diseases. Pregnant and lactating women were excluded from the study. The systolic and diastolic blood pressure changes were recorded before and after having smokeless tobacco. The results revealed that there are significant changes in blood pressure before and after chewing tobacco highlighting there is need for control of this hazardous cultural practice so as to avoid cardiovascular and cerebrovascular accidents in future.

### INTRODUCTION:

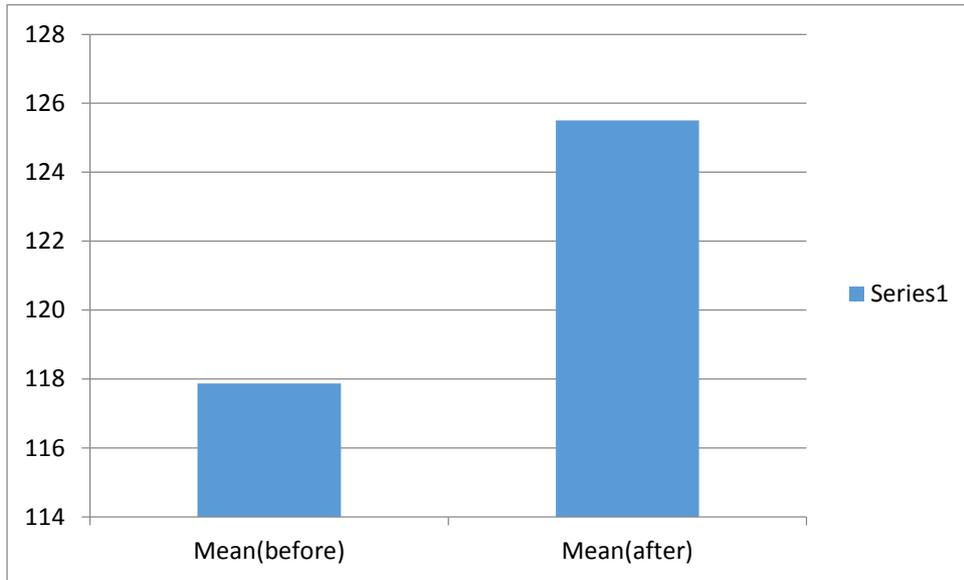
Oral use of smokeless tobacco is widely prevalent in India. The different forms include chewing, sucking and applying tobacco preparations to the teeth and gums. (2) Smokeless tobacco products are often made at home but can also be purchased. Smokeless tobacco use in India has various concerns. It is commonly used and increasingly so, especially as new forms of smokeless tobacco have been emerging over the last few decades, enticing new consumers. Increasing use has been reported not only among men, but also among such vulnerable groups as children, teenagers, women of reproductive age. In India, per capita smokeless tobacco consumption has increased among the poor between 1961 and 2000 in both rural and urban areas. (1). It is expected that there will be 8 million tobacco related deaths yearly by 2020, the major increase occurring in developing countries. (3) It has been estimated that of the people alive today, approximately 500 million will die from tobacco-related illness. In the United States alone tobacco is responsible for more than 4,00,000 deaths per year. The risk of development of disease is related to the intensity of exposure. Smokeless tobacco use is not given a priority during planning and management of comprehensive tobacco control. In developing countries policy makers need to be appraised that smokeless tobacco use is equally implacable for society, environment and health of individual and community. So the present study is done to observe the impact of smokeless tobacco on vital data.

**AIM AND OBJECTIVES:** To observe the changes in Blood Pressure due to smokeless tobacco.

**MATERIALS AND METHODS:** A cross-sectional study is done on 200 males and females of age group 20-40 years who take tobacco for a minimum period of 2 years. Chewing tobacco in a dose of average 200mg pack of chewable tobacco and chewed for 30 minutes. All patients with cardiac disorders, Thyroid disorders, Hypertension, Renal diseases, Chronic respiratory diseases. Pregnant and lactating women were excluded from the study.

**RESULTS:**

TABLE 1: systolic Blood Pressure recorded before and after chewing tobacco



Systolic B.P shows a significant increase of  $P < 0.001$

FIGURE 1: Pie-diagram showing systolic Blood Pressure recorded before and after chewing tobacco

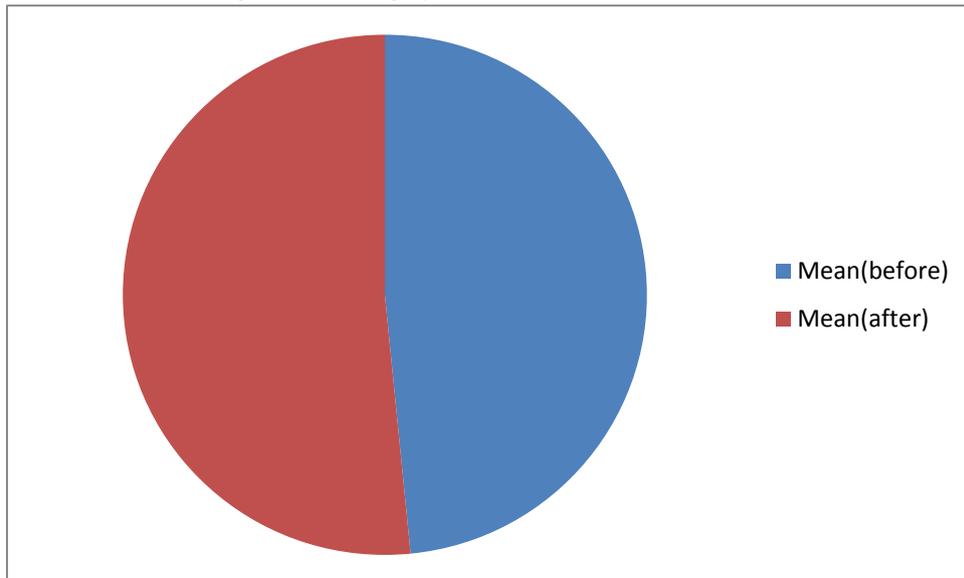


FIGURE 2: DIASTOLIC BLOOD PRESSURE CHANGES BEFORE AND AFTER CHEWING TOBACCO

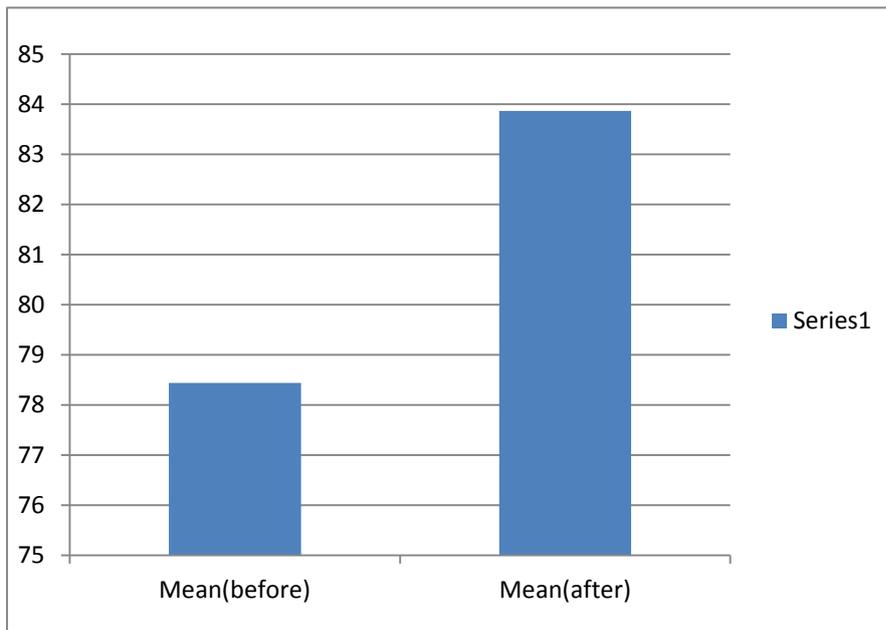
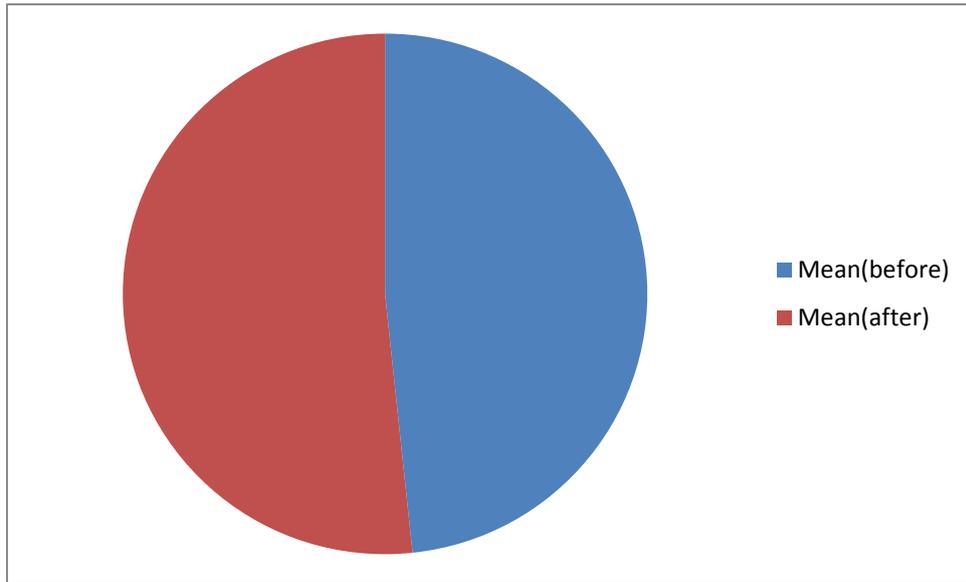


TABLE 2: DIASTOLIC BLOOD PRESSURE CHANGES BEFORE AND AFTER CHEWING TOBACCO

Diastolic B.P shows a significant increase of  $P < 0.001$

TABLE 3: VARIATIONS IN BLOOD PRESSURE BEFORE AND AFTER TOBACCO CHEWING

VARIABLE	BEFORE CHEWING TOBACCO mmHg	AFTER CHEWING TOBACCO IN mmHg	P-VALUE	INFERENCE
SYSTOLIC BP	118.87	125.67	<0.001	significant
DIASTOLIC BP	78.57	83.97	<0.001	significant

### DISCUSSION:

In the present study the blood pressure in smokeless tobacco users increased from mean systolic B.P of 118.87 mm Hg. before chewing to 125.67mm Hg. after chewing. Diastolic BP increased from 78.57mm Hg.to 83.97 mm Hg. After chewing indicating that Nicotine influence on vascular tone.SBP was significantly elevated on an average of 6.8 mm Hg. DBP was significantly elevated on an average of 5.4 mm Hg. In a study by Martin JS and Braith RW et al, about the acute effects of smokeless tobacco which showed significant increase in heart rate SBP and DBP.In a study by Coeving DW: Yama toto T:1963 et al revealed that the short term administration of oral tobacco will usually results in an increase of about 5-10mon/teg of Blood pressure and 15-25 bpm increase in HR which is in agreement with our study. Nadeau RA; James TN. 1967 et al, observed that Tobacco stimulates the autonomic ganglia and peripheral sensory receptors mainly in the heart. Stimulation of these receptors elicits various autonomic nervous reflex responses mainly tachycardia, increased cardiac output and increased arterial Blood pressure which is in correlation with our study. Nicotine dependence is the most prevalent, deadliest, costliest, yet most potentially treatable of the substance dependencies. Cultural acceptance of tobacco uses and its licit status makes it one of the biggest preventable hazards. Several components of tobacco contribute to the cardio vascular effects of which most of the acute effects are caused by carbon monoxide and nicotine. Carbon monoxide reduces the oxygen delivery to the tissues and increases vascular permeability However the major determinant of acute cardiovascular effects is due to Nicotine. Tobacco has an effect on the neurons system as well as cardiovascular system due to presence of nicotine. It has got an effect on the peripheral chemoreceptor (carotid and aortic bodies) and the modularly centers, which influence the blood pressure. The Significant changes among the tobacco chewers represent an imbalance in cardiovascular autonomic functions. Toxic chemicals in smokeless tobacco, including arsenic and formaldehyde, contribute to cancer of the mouth, leukoplakia (4) (White, leathery patch inside the mouth where skin has been irritated by tobacco juice), heart disease; gum disease, and tooth decay. Spit tobacco permanently discolors teeth, and as the gums recede, teeth will fall out A study from India revealed that the habit of using *khaini* increased the risk of hypertension. Another study found statistically significant increments in heart rate and blood pressure following the chewing of betel quid with tobacco for 15–30min.

**CONCLUSION:** Immediate effect of tobacco in the form of chewing a pack containing 200 mg of tobacco evaluated in 200 healthy individuals. Blood pressure measured twice for each subject once before chewing and again immediately after completion of chewing. Results showed statistically significant increments in blood pressure following tobacco chewing in the study group. Chewing tobacco is leads to significant increases in blood pressure which is a major risk factor atherosclerosis and cardiovascular disease. Hence there is a dire need to raise smokeless tobacco awareness in the society.

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