A COMPARATIVE STUDY ON IMPACT OF CHEWING TOBACCO ON VITAL DATA AND LIPID PROFILE IN ADULTS

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ABSTRACT
BACKGROUND: To study the effect of chewing tobacco on vital data and lipid profile in adults.
AIM AND OBJECTIVES: -To study the effect of tobacco on lipid profile and to observe the changes in HR, BP, and after chewing tobacco.
MATERIALS AND METHODS: -The present study is conducted on male subjects of age between 25 to 35 years and weight between 50 to 70 kgs who were free of hypertension, diabetes, hypercholesterolemia, obesity and non-alcoholics dividing into 2 groups where in GROUP-1 Non-smokers and non-chewers of tobacco are included, in GROUP-2 smokers and non-chewers and non-smokers are included.
RESULTS: -Mean heart rate in group2 is greater than group1 by15%. The mean systolic blood pressure in group 2 is greater than group 1 by 12.29% and the mean systolic blood pressure of group 3 is greater than group 1 by 12.29%. The mean diastolic BP in group 2 is increased by 15% compared to group 1. The mean serum total cholesterol levels are group 2 subjects is 20.94% greater compared to group 1. The mean serum VLDL levels in group 2 subjects were 25.54% greater compared to group 1 subjects. The mean serum LDL cholesterol levels in group 2 were 36.54% higher compared to group 1 subjects. The mean serum HDL cholesterol levels in group 2 were 14.78% lesser compared to group 1 subjects. The mean serum triglyceride levels in group 2 were 24.40% greater compared to group 1 subjects.
CONCLUSION: -Tobacco usage has direct association with atherosclerosis and higher risk of coronary artery disease.

KEY WORDS: - tobacco chewing, lipids, blood pressure, atherosclerosis.

1. INTRODUCTION:

Smokeless tobacco is used orally in two ways: preparations are either placed in various parts of the mouth and sucked (dipping) or they are chewed. Smokeless tobacco products are made from dark or burley tobacco leaves, which are brown with golden highlights. These leaves are aged from one to three years to prepare chewing tobacco and for longer periods to produce snuff. 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. Smokeless tobacco products are often made at home but can also be purchased. Recently, a variety of smokeless tobacco products have been produced industrially on a large scale, commercially marketed and are available even in small plastic and aluminium foil packets. About 35–40% of tobacco consumption in India is in smokeless forms, mostly of the species Nicotiana rustica, while most smoking tobacco is N. tabacum. Samples of N. rustica have been found to contain higher concentrations of tobacco-specific nitrosamines than N. tabacum. There is some evidence that smokeless tobacco is a risk factor for hypertension and adverse blood lipid profile. tobacco chewers had higher values for total cholesterol, low-density lipoprotein cholesterol, very low-density lipoprotein-cholesterol and triglycerides, as compared to the no habit group. Thus tobacco chewing both demonstrated comparable adverse effects on lipid profile and could increase cardiovascular risk. 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 heart rate. The Significant changes among the tobacco chewers represent an imbalance in cardiovascular autonomic functions. So the present study is done to assess the effect of tobacco chewing on lipid profile and vital data.

AIM AND OBJECTIVES: -To study the effect of tobacco on lipid profile and to observe the changes in HR, BP, and after chewing tobacco.

2. MATERIALS AND METHODS

The Cross sectional study was conducted on male subjects of age between 25 to 40 years and weight between 50 to 75 kgs who were free of hypertension, diabetes, hypercholesterolemia, obesity and non-alcoholics dividing into 2 groups where in GROUP-1 Non-smokers and non-chewers of tobacco are included, in GROUP-2 non- smokers and chewers are included. Men and women of 20-40 years who were Chewing tobacco in a dose of average 200mg pack of gutka and chewed for 30 minutes daily were included in group 2 in the study. All patients with cardiac disorders, Thyroid disorders, Hypertension, Renal diseases, Chronic respiratory diseases, Pregnant women were excluded from the study.

3. RESULTS:

RESULTS AND ANALYSIS:- Data is reported as mean and standard deviation. The results are as follows-

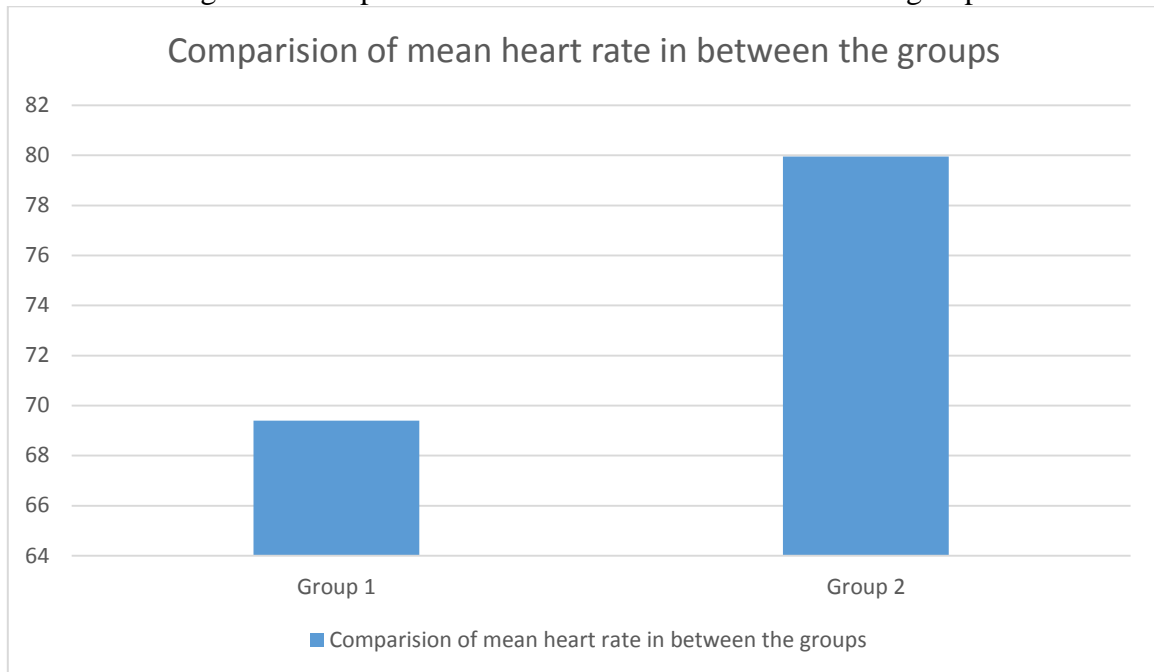Figure 1: Comparision of mean heart rate in between the groups

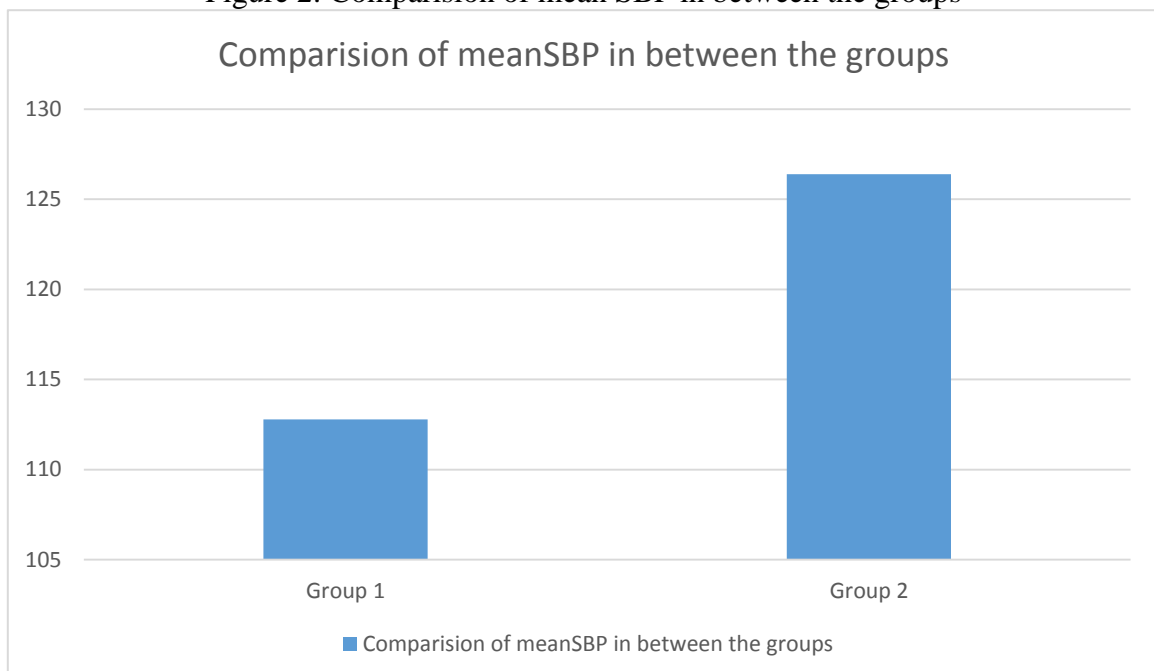Figure 2: Comparision of mean SBP in between the groups

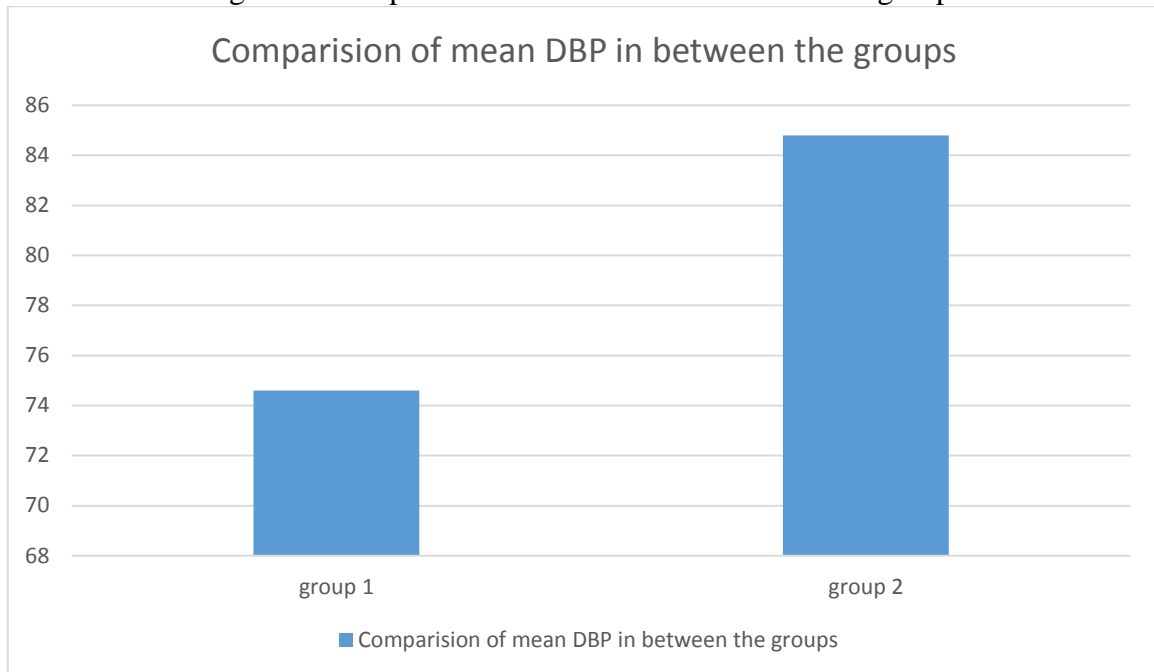Figure 3: Comparision of mean DBP in between the groups

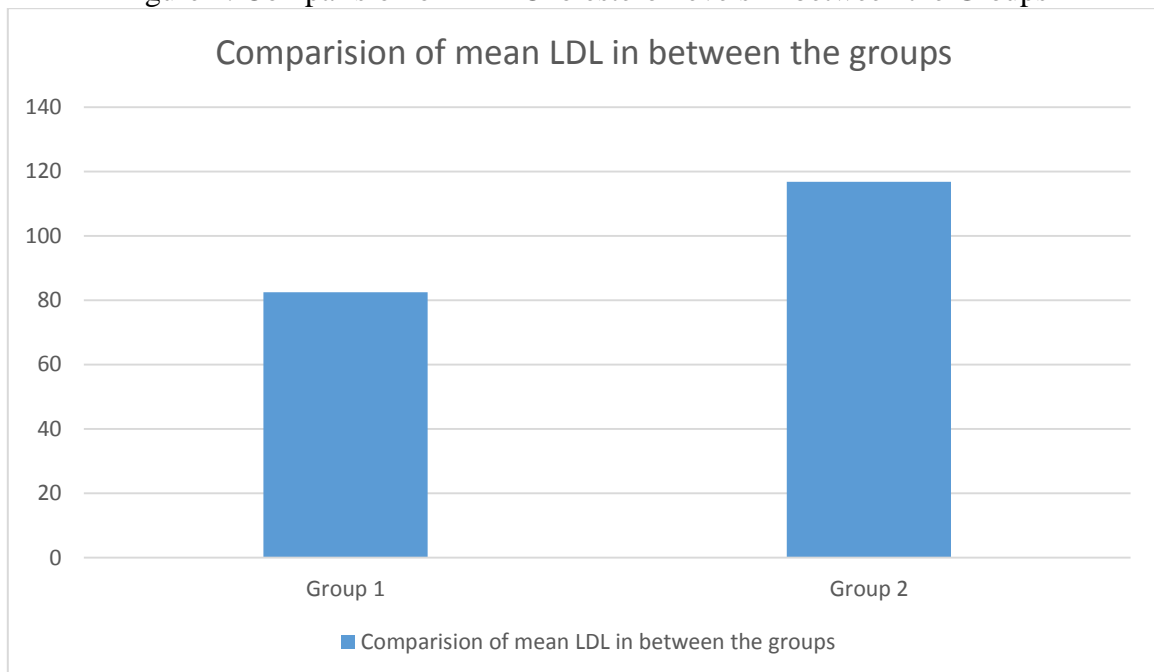Figure 4: Comparision of LDL Cholesterol levels in between the Groups

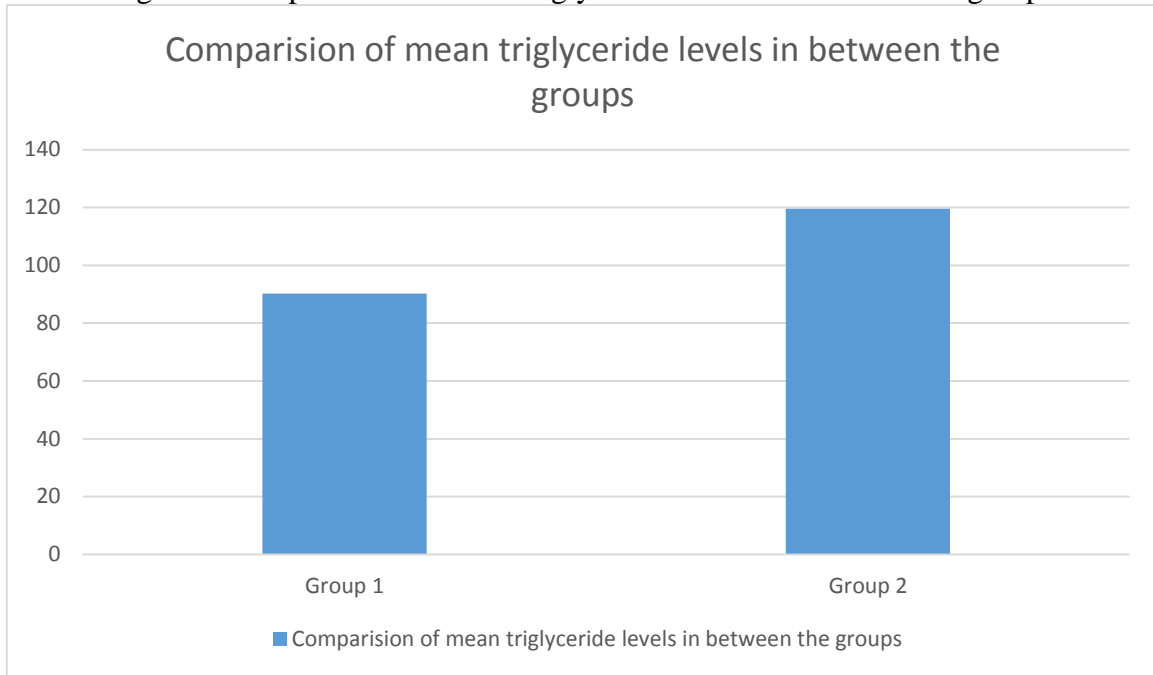Figure 5:Comparision of mean Triglycerides levels in between the groups

Comparision of mean triglyceride levels in between the groups

Figure 6: Comparision of HDL cholesterol levels in between the groups

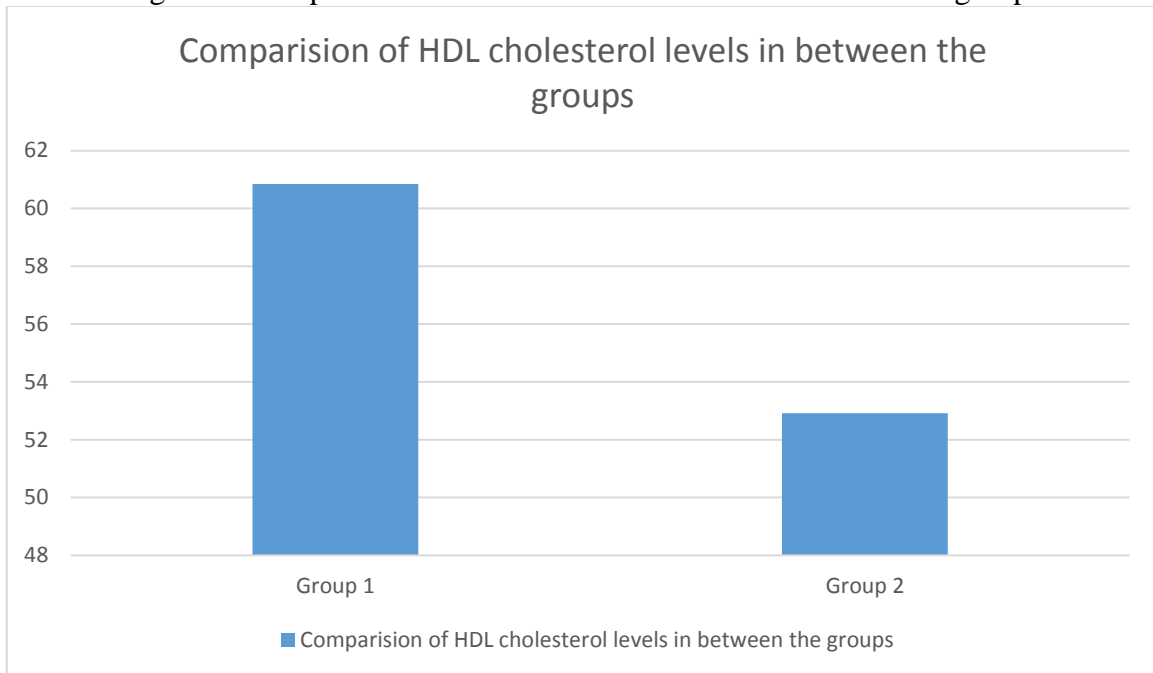Comparision of HDL cholesterol levels in between the groups

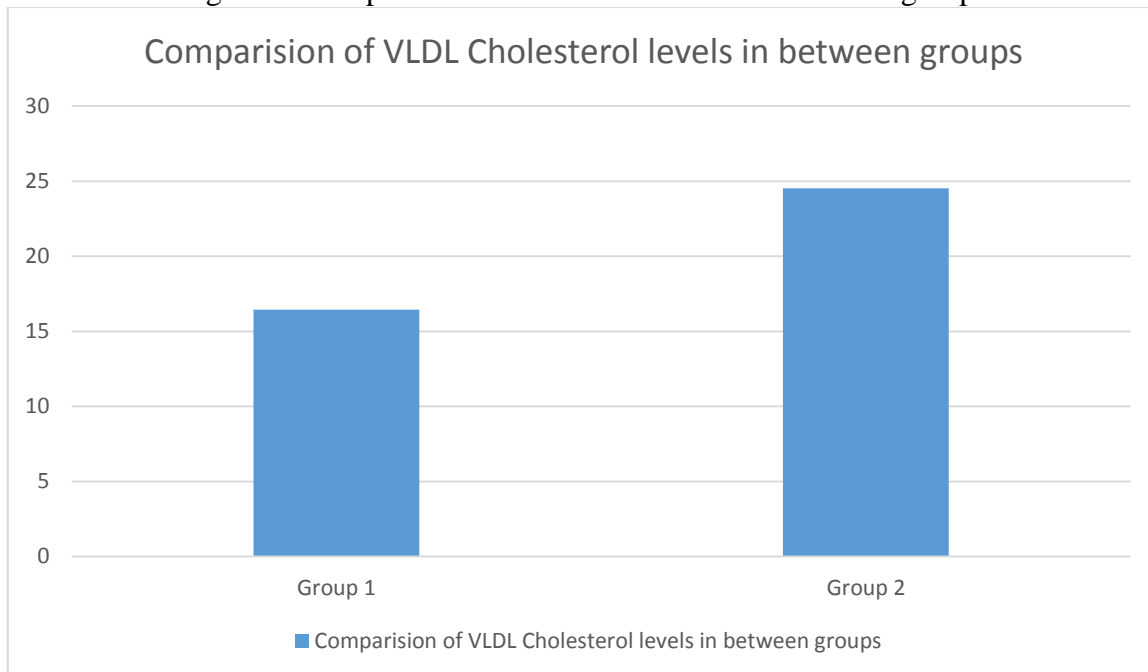Figure 7: Comparision of VLDL cholesterol in between groups

FIGURE 8: Comparision of total Cholesterol levels in between the groups

TABLE-1

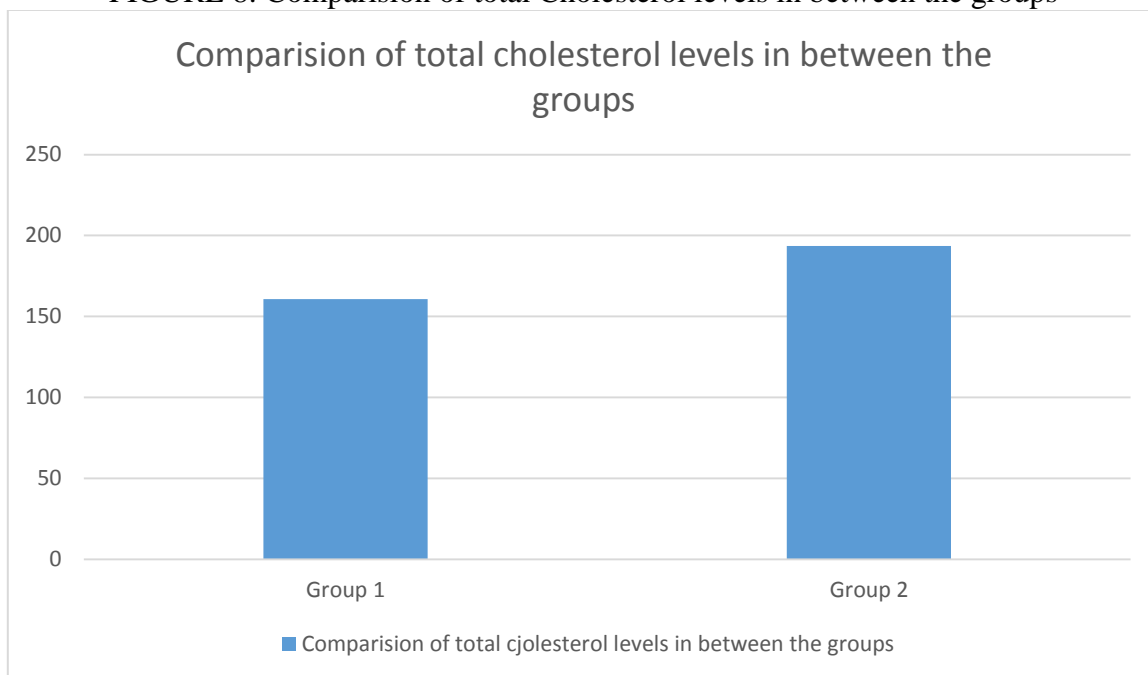|	GROUP 1	GROUP 2	P -value
Heart rate	69.40	79.96	<0.01
SBP	112.70	126.40	<0.01
DBP	74.60	84.80	<0.01
LDL	82.52	116.80	<0.01
TRIGLYCERIDES	90.20	119.60	<0.01
HDL	60.84	52.92	<0.01

| VLDL | 16.44 | 24.52 | <0.01 |
| Total cholesterol | 160.80 | 193.60 | <0.001 |

4. DISCUSSION

The mean heart rate of group 1 subjects is 69.40 beats/min and the mean heart rate in group 2 subjects is 79.96 beats/min. The mean SBP of group 1 subjects is 112.70 mmHg and the mean SBP of group 2 subjects were 126.40 mmHg. The mean DBP of group 1 subjects is 74.60 mmHg and the mean SBP of group 2 subjects were 84.80 mmHg.The mean LDL cholesterol levels for group 1 subjects is 82.52 mg/dl and for group 2 subjects the mean LDL cholesterol level is 116.80 mg/dl. The mean triglycerides levels for group 1 subjects is 90.20 mg/dl and for group 2 subjects the mean triglyceride level is 119.60 mg/dl. The mean HDL cholesterol levels for group 1 subjects is 60.84 mg/dl and for group 2 subjects the mean HDL cholesterol level is 52.92 mg/dl. The mean VLDL cholesterol levels for group 1 subjects is 16.44 mg/dl and for group 2 subjects the mean LDL cholesterol level is 24.52mg/dl. The mean total cholesterol levels for group 1 subjects is 160.80 mg/dl and for group 2 subjects the mean total cholesterol level is 193.60 mg/dl. Smokeless tobacco is used orally in two ways: preparations are either placed in various parts of the mouth and sucked (dipping) or they are chewed. Smokeless tobacco products are made from dark or burley tobacco leaves, which are brown with golden highlights. These leaves are aged from one to three years to prepare chewing tobacco and for longer periods to produce snuff. 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. Smokeless tobacco products are often made at home but can also be purchased. Recently, a variety of smokeless tobacco products have been produced industrially on a large scale, commercially marketed and are available even in small plastic and aluminium foil packets. Martin JS and Braith RW studied in 1977 about the acute effects of smokeless tobacco which showed significant increase in heart rate SBP and DBP.In the present study the temperatures of the tobacco chewing decreased after chewing tobacco. Previous investigators have found a consistent effect of tobacco on heart rate and temperature and respiratory rate. Gilbert and Pope, 1982, Myrsten in 1977 have reported and their studies showed similar results. Immediate effect of tobacco in the form of chewing was evaluated in 40 healthy males by name PK. Sharma. Healthy males who were given Pan containing 200mg. of tobacco to chew. Allen and Hats kami studied the immediate effects of chewing tobacco. The present study confirms their findings. The present study was consistent with WOLK et al.who previously reported that heart rate, peripheral blood pressure and respiratory rate were elevated after smokeless tobacco use.

5. CONCLUSION

Results showed statistically significant increments in heart rate, blood pressure as well as respiratory rate. The changes in cardiovascular and respiratory parameters following tobacco chewing in the study group was significant. Chewing tobacco is hazardous to health. Hence there is a dire need to raise smokeless tobacco awareness in the society.

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