# RESULTS AND STATISTICS

### Table no. 2

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Control</th>
<th>Smokers</th>
<th>Dipping tobacco users</th>
<th>Control</th>
<th>Smokers</th>
<th>Dipping tobacco users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Systolic blood pressure in mm of Hg</td>
<td></td>
<td>Diastolic blood pressure in mm of Hg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-20 Years</td>
<td>117.96 ± 0.55</td>
<td>122.72 ± 0.52</td>
<td>124.2 ± 0.55</td>
<td>77.8 ± 0.46</td>
<td>82.48 ± 0.39</td>
<td>83.8 ± 0.38</td>
</tr>
<tr>
<td>21-30 Years</td>
<td>120 ± 0.50</td>
<td>124.04 ± 0.49</td>
<td>126 ± 0.44</td>
<td>80.32 ± 0.43</td>
<td>84.12 ± 0.40</td>
<td>85.32 ± 0.35</td>
</tr>
<tr>
<td>31-40 Years</td>
<td>122.56 ± 0.50</td>
<td>125.84 ± 0.43</td>
<td>131.16 ± 0.57</td>
<td>81.56 ± 0.39</td>
<td>85.76 ± 0.31</td>
<td>90.28 ± 0.44</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>125.24 ± 0.47</td>
<td>130.4 ± 0.40</td>
<td>142.8 ± 1.01</td>
<td>85 ± 0.46</td>
<td>86.68 ± 0.40</td>
<td>91.32 ± 0.57</td>
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</tbody>
</table>

### Table no. 3

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Control</th>
<th>Smokers</th>
<th>Dipping tobacco users</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pulse rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-20 Years</td>
<td>83.88 ±0.88</td>
<td>88.66 ± 1.22</td>
<td>89.24 ±0.87</td>
</tr>
<tr>
<td>21-30 Years</td>
<td>76.9 ± 0.85</td>
<td>82.52 ± 1.04</td>
<td>87.42 ± 0.95</td>
</tr>
<tr>
<td>31-40 Years</td>
<td>74.18 ± 0.75</td>
<td>80.42 ± 0.75</td>
<td>87.8 ± 0.88</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>74.9 ± 0.68</td>
<td>81.66 ± 0.78</td>
<td>87.9 ± 0.69</td>
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</tbody>
</table>
This graph shows the effect of smoking and dipping tobacco versus non-tobacco users in the age group of 11-20 years. Total subjects recorded for systolic blood pressure in the age group eleven to twenty is one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E systolic blood pressure for the non-tobacco users are 117.98 ± 0.55 mm of Hg. The average ± S.E systolic blood pressure for the smokers is 122.72 ± 0.52 mm of Hg. The average ± S.E systolic blood pressure for the dipping tobacco users is 124.2 ± 0.55 mm of Hg. are represent in table no.2 and graph no.33.
Table no.2 and graph no.34 are showing systolic blood pressures in control versus smokers of 11-20 years of age. The mean ± standard error for controls and smokers is 117.96 ± 0.55 mm of Hg and 122.72 ± 0.52 mm of Hg respectively. The values of smokers are significantly higher for the age group 11-20 years compared to control.
Table no. 2 and graph no.35 depicts systolic blood pressures values in control versus dipping tobacco users in 11-20 years of age. The mean ± standard error for controls and dipping tobacco users is 117.96 ± 0.55 mm of Hg and 124.2 ± 0.55 mm of Hg respectively. The values of dipping tobacco users are not significantly lower for the age group 11-20 years compared to control.

Graph 36

Table no. 2 and graph no.36 represent of systolic blood pressures values in smokers versus dipping tobacco users of 11-20 years of age. The mean ± standard error for smokers and dipping tobacco users is 122.72 ± 0.52 mm of Hg and 124.2 ± 0.55 mm of Hg respectively. The values of dipping tobacco users are significantly lower for the age group 11-20 years compared to smokers.
Total subjects recorded for systolic blood pressure in the age group 21-30 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E systolic blood pressure for the non-tobacco users are 120 ± 0.050 mm of Hg. The average ± S.E systolic blood pressure for the smokers is 124.04 ± 0.049 mm of Hg. The average ± S.E systolic blood pressure for the dipping tobacco users is 126 ± 0.044 mm of Hg. are represents in table no.2 and graph no 37.
Table no.2 and graph no.38 are showing systolic blood pressures values in control versus smokers of 21-30 years of age. The mean ± standard error for controls and smokers is 120 ± 0.50 mm of Hg and 124.04 ± 0.49 mm of Hg respectively. As compared to control the values of smokers are not significantly lower for the age group 21-30 years.

Graph 39
Table no.2 and graph no.39 represents systolic blood pressures values in control versus smokers of 21-30 years of age. The mean ± standard error for controls and smokers is 120 ± 0.50 mm of Hg and 126± 0.49 mm of Hg respectively. The values of dipping tobacco users are not significantly lower for the age group 21-30 years compared to control.

**Graph 40**

The effect of tobacco on systolic BP(mm of Hg) between smokers and dipping tobacco users in the age group 21-30 years

Table no.2 Graph no.40 represents systolic blood pressures values in smokers versus dipping tobacco users of 21-30 years of age. The mean ± standard error for smokers and dipping tobacco users 124.04 ± 0.49 mm of Hg and 126 ± 0.44 mm of Hg respectively. For the age group 21-30 years the values of dipping tobacco users are not significantly lower for the age group 21-30 years compared to smokers.
Total subjects recorded for systolic blood pressure in the age group thirty one to forty are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E systolic blood pressure for the non-tobacco users are 122.56 ± 0.050 mm of Hg. The average ± S.E systolic blood pressure for the smokers is 125.84 ± 0.043 mm of Hg. The average ± S.E systolic blood pressure for the dipping tobacco users is 131.16 ± 0.057 mm of Hg are represented in table no. 2 and graph no. 41.
Table no.2 and graph no.42 represents systolic blood pressures values in control versus smokers of 31-40 years of age. The mean ± standard error for controls and smokers are 122.56 ± 0.50 mm of Hg and 125.84 ± 0.43 mm of Hg respectively. As compared to control the values of smokers are significantly lower for the age group 31-40 years.
Table no. 2 and graph no.43 represents systolic blood pressures values in control versus dipping tobacco user of 31-40 years of age. The mean ± standard error for controls and dipping tobacco users is 122.56 ± 0.50 mm of Hg and 131.16 ± 0.57 mm of Hg respectively. For the age group 31-40 years the values of dipping tobacco users are significantly lower as compared to control.

Graph 44

The effect of tobacco on systolic BP(mm of Hg) between smokers and dipping tobacco users in the age group 31-40 years

Table no.2 and graph no.44 represents systolic blood pressures values in smokers versus dipping tobacco user of 31-40 years of age. The mean ± standard error for smokers and dipping tobacco users is 125.84 ± 0.43 mm of Hg and 131.16 ± 0.57 mm of Hg respectively. For the age group of 31-40 years the values of dipping tobacco users are significantly lower as compared to smokers.
Total subjects recorded for systolic blood pressure in the age group 41-50 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E systolic blood pressure for the non-tobacco users are 125.24 ± 0.047 mm of Hg. The average ± S.E systolic blood pressure for the smokers is 130.40 ± 0.040 mm of Hg. The average ± S.E systolic blood pressure for the dipping tobacco users is 142.8 ± 1.01 mm of Hg. are represented in table no.2 and graph no. 45
Table no.2 and graph no.46 represents systolic blood pressures values in control versus smokers of 41-50 years of age. The mean ± standard error for controls and smokers is 125.24 ± 0.47 mm of Hg and 130.4 ± 0.40 mm of Hg respectively. The values of smokers are significantly lower for the age group 41-50 years compared to control.

Graph 47
Table no.2 and graph no.47 depicts systolic blood pressures values in control versus dipping in 41-50 year of age. The mean ± standard error for controls and dipping tobacco users is 125.24 ± 0.47 mm of Hg and 142.8 ± 1.01 mm of Hg respectively. The values of control are significantly lower for the age group 41-50 years compared to dipping tobacco users.

Graph 48

![Graph showing systolic blood pressure comparison between smokers and dipping tobacco users](image)

Table no.2 and graph no.48 represents systolic blood pressures values in smokers versus dipping tobacco users of 41-50 years of age. The mean ± standard error for smokers and dipping tobacco users is 130.4 ± 0.47 mm of Hg and 142.8 ± 1.01 mm of Hg respectively. The values of smokers are significantly lower for the age group 41-50 years compared to dipping tobacco users.
Total subjects recorded for diastolic blood pressure in the age group 11-20 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average $\pm$ S.E diastolic blood pressure for the non-tobacco users is $77.8 \pm 0.46$ mm of Hg. The average $\pm$ S.E diastolic blood pressure for the smokers’ is $82.48 \pm 0.39$ mm of Hg. The average $\pm$ S.E diastolic blood pressure for the dipping tobacco users is $83.6 \pm 0.38$ mm of Hg. are represented by table no.2 and graph no. 49.
Table no.2 and graph no.50 represents diastolic blood pressures values in control versus smokers of 11-20 years of age. The mean ± standard error for controls and smokers is $77.8 \pm 0.46$ mm of Hg and $82.48 \pm 0.39$ mm of Hg respectively. The values of smokers are significantly lower for the age group 11-20 years compared to control.

**Graph 51**
Table no.2 and graph no.51 shows diastolic blood pressures values in control versus dipping tobacco users of 11-20 years of age. The mean ± standard error for controls and dipping tobacco users is 77.8 ± 0.46 mm of Hg and 83.6 ± 0.38 mm of Hg respectively. The values of dipping tobacco users are significantly lower for the age group 11-20 years compared to control.

Graph 52

The effect of tobacco on diastolic BP (mm of Hg) between smokers and dipping tobacco users in the age group 11-20 years

Table no.2 and graph no.52 depicts diastolic blood pressures values in smokers versus dipping tobacco users is 11-20 years of age. The mean ± standard error for smokers and dipping tobacco users is 82.48 ± 0.46 mm of Hg and 83.6 ± 0.38 mm of Hg respectively. The values of dipping tobacco users are significantly lower for the age group 11-20 years compared to smokers.
Total subjects recorded for diastolic systolic blood pressure in the age group 21-30 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E diastolic blood pressure for the non-a tobacco user is 80.32 ± 0.43 mm of Hg. The average ± S.E diastolic blood pressure for the smokers is 84.12 ± 0.40 mm of Hg. The average ± S.E diastolic blood pressure for the dipping tobacco users is 85.32 ± 0.35 mm of Hg, are represented by table no.2 and graph no. 53.
Graph no.54

Table no.2 and graph no.54 are showing diastolic blood pressures values in control versus smokers of 21-30 Years of age. The mean ± standard error for controls and smokers is 80.32 ± 0.43 mm of Hg and 84.12± 0.40 mm of Hg respectively. As compared to control the values of smokers are significantly lower for the age group 21-30 years.

Graph 55
Table no. 2 and graph no. 55 represents diastolic blood pressures values in control versus dipping tobacco of 21-30 years of age. The mean ± standard error for controls and dipping tobacco is $80.32 \pm 0.43$ mm of Hg and $85.32 \pm 0.35$ mm of Hg respectively. The values of dipping tobacco are not significantly lower for the age group 21-30 years compared to control.

Table no. 2 and graph no. 56 represents diastolic blood pressures values in smokers versus dipping tobacco of 21-30 years of age. The mean ± standard error for smokers and dipping tobacco is $84.12 \pm 0.40$ mm of Hg and $85.32 \pm 0.35$ mm of Hg respectively. The values of dipping tobacco users are significantly lower for the age group 21-30 years compared to smokers.
Total subjects recorded for diastolic blood pressure in the age group 31-40 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average $\pm$ S.E diastolic blood pressure for the non-tobacco users are $81.56 \pm 0.39$ mm of Hg. The average $\pm$ S.E diastolic blood pressure for the smokers is $85.76 \pm 0.031$ mm of Hg. The average $\pm$ S.E diastolic blood pressure for the dipping tobacco users is $90.28 \pm 0.44$ mm of Hg. are represented by table no. 2 and graph no. 57.
Table no.2 and graph no. 58 represents diastolic blood pressures values in control versus smokers of 31-40 years of age. The mean ± standard error for controls and smokers is $81.56 \pm 0.39$ mm of Hg and $85.76 \pm 0.31$mm of Hg respectively. The values of smokers are not significantly lower for the age group 31-40 years compared to control.

Graph 59
Table no.2 and graph no. 59 represents diastolic blood pressures values in control versus dipping tobacco users of 31-40 years of age. The mean ± standard error for controls and dipping tobacco users is 81.56 ± 0.39 mm of Hg and 90.28 ± 0.44 mm of Hg respectively. The values of dipping tobacco users are not significantly lower for the age group 31-40 years compared to control.

Graph 60

Table no.2 and graph no.60 represents diastolic blood pressures values in smokers versus dipping tobacco users of 31-40 years of age. The mean ± standard error for smokers and dipping tobacco users is 85.76 ± 0.31 mm of Hg and 90.28 ± 0.44 mm of Hg respectively. The values of smokers are significantly lower for the age group 31-40 years compared to dipping tobacco users.
Total subjects recorded for diastolic blood pressure in the age group 41-50 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E diastolic blood pressure for the non-tobacco users are 85 ± 0.46 mm of Hg. The average ± S.E diastolic blood pressure for the smokers is 86.68 ± 0.40 mm of Hg. The average ± S.E diastolic blood pressure for the dipping tobacco users is 91.32 ± 0.57 mm of Hg. are represented by table no. 2 and graph no. 61.
Table no.2 and graph no. 62 represents diastolic blood pressures values in control versus smokers of 41-50 years of age. The mean ± standard error for controls and smokers is mm of Hg so 85 ± 0.46 mm of Hg and 86.68 ± 0.40 mm of Hg respectively. The values of smokers are significantly lower for the age group 41-50 years compared to control.

Graph 63
Table no. 2 and graph no. 63 depicts comparisons between control subjects and dipping tobacco users between the age group of 41-50 years. The standard error for controls and dipping tobacco users is for this age group is $85 \pm 0.46$ mm of Hg and $91.32 \pm 0.57$ mm of Hg. The values of control are significantly lower for the age group 41-50 years compared to dipping tobacco users.

Graph-64

Table no. 2 and graph no. 64 are showing comparisons between smokers and dipping tobacco users between the age group 41-50 years. The mean \pm standard error for smokers and dipping tobacco users is $86.68 \pm 0.40$ mm of Hg and $91.32 \pm 0.57$ mm of Hg respectively so. The values of smokers are significantly lower for the age group 41-50 years compared to dipping tobacco users.
Total subjects recorded for pulse rate in the age group 11-20 years are one hundred and fifty subjects out of which there are fifty controls, fifty smokers and fifty dipping tobacco users. Among these one hundred and thirty subjects were between the age of sixteen to twenty and the rest were between eleven to fifteen.

The average ± S.E pulse rate for the non-tobacco users is 83.88 ± 0.88 bpm. The average ± S.E pulse rate for the smokers is 88.66 ± 1.22 bpm. The average ± S.E pulse rate for the dipping tobacco users is 89.24 ± 0.87 bpm. are represented by table no. 3 and graph no. 65.
Table no. 3 and graph no. 66 represents pulse rate values in control versus smokers of 11-20 years of age. The mean ± standard error for controls and smokers is 83.88 ± 0.88 bpm and 88.66 ± 1.22 bpm respectively. The values of smokers are not significantly lower for the age group 11-20 years compared to control.
Table no. 3 and graph no. 67 depicts pulse rate values in control versus dipping tobacco users of 11-20 years of age. The mean ± standard error for controls and dipping tobacco users is 83.88 ±0.88 bpm and 89.24 ±0.87 bpm respectively. The values of dipping tobacco users are not significantly lower for the age group 11-20 years compared to control.

Graph 68

Table no. 3 and graph no.68 shows pulse rate values in smokers versus dipping tobacco users of 11-20 years of age. The mean ± standard error for smokers and dipping tobacco users is 88.66 ± 1.22 and 89.24 ± 0.87 bpm respectively. For the age group of 11-20 years the values of dipping tobacco users are not significantly lower as compared to smokers.
Total subjects recorded for pulse rate in the age group 21-30 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E pulse rate for the non-tobacco users are 76.9 ± 0.85 bpm. The average pulse rate for the smokers is 82.52 ± 1.04 bpm. The average pulse rate for the dipping tobacco users is 87.42 ± 0.95 bpm. are represented by table no. 3 and graph no. 69.
Table no. 3 and graph no. 70 presents pulse rate values in control versus smokers of 21-30 years of age. The mean ± standard error for controls and smokers are 76.9 ± 0.85 bpm and 82.52 ± 1.04 bpm respectively. As compared to control the values of smokers are not significantly lower for the age group 21-30 years.
Table no. 3 and graph no. 71 shows the pulse rate values in control versus dipping tobacco users of 21-30 years of age. The mean ± standard error for controls and dipping tobacco users is 76.9 ± 0.85 bpm and 87.42 ± 0.95 bpm respectively. For the age of 21-30 years the values of dipping tobacco users are not significantly lower as compared to control.

Graph 72

The effect of tobacco on pulse rate between smokers and dipping tobacco users between the age group 21-30 years

Table no. 3 and graph no. 72 represents pulse rate values in smokers versus dipping tobacco users of 21-30 years of age. The mean ± standard error for smokers and dipping tobacco users is 82.52 ± 1.04 bpm and 87.42 ± 0.95 bpm respectively. The values of dipping tobacco users are significantly lower for the age group 21-30 years compared to smokers.
Total subjects recorded for pulse rate in the age group 31-40 years are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average ± S.E pulse rate for the non-tobacco users are 74.18 ± 0.75 bpm. The average ± S.E pulse rate for the smokers is 80.42 ± 0.75 bpm. The average ± S.E pulse rate for the dipping tobacco users is 87.8 ± 0.84 bpm. are represented by table no. 3 and graph no. 73.
Table no. 3 and graph no. 74 depicts pulse rate values in control versus smokers of 31-40 years of age. The mean ± standard error for controls and smokers is 74.18 ± 0.75 bpm and 80.42 ± 0.75 bpm respectively. The values of smokers are significantly lower for the age group 31-40 years compared to control.
Table no. 3 and graph no. 75 represents pulse rate values in control versus dipping tobacco users of 31-40 years of age. The mean ± standard error for controls and dipping tobacco users is 74.18 ± 0.75 bpm and 87.8 ± 0.88 bpm respectively. The values of smokers are not significantly lower for the age group 31-40 years compared to dipping tobacco users.

Graph76

Table no. 3 and graph no. 76 shows the pulse rate values in smokers versus dipping tobacco users of 31-40 years of age. The mean ± standard error for smokers and dipping tobacco users is 80.42 ± 0.75 bpm and 87.8 ± 0.88 bpm respectively. The values of smokers are significantly lower for the age group 31-40 years compared to dipping tobacco users.
Total subjects recorded for pulse rate in the age group 41-50 are one hundred and fifty subjects out of whom there are fifty controls, fifty smokers and fifty dipping tobacco users.

The average $\pm$ S.E pulse rate for the non-tobacco users are $74.9 \pm 0.68$ bpm. The average $\pm$ S.E pulse rate for the smokers is $81.66 \pm 0.79$ bpm. The average $\pm$ S.E pulse rate for the dipping tobacco users is $87.9 \pm 0.69$ bpm. are represented by table no. 3 and graph no. 77.
Table no. 3 and graph no. 78 represents the pulse rate values in control versus smokers of 41-50 years of age. The mean ± standard error for controls and smokers is 74.9 ± 0.68 bpm and 81.66 ± 0.78 bpm respectively. The values of smokers are significantly lower for the age group 41-50 years compared to control.
Table no. 3 and graph no. 79 represents pulse rate values in control versus dipping tobacco users of 41-50 years of age. The mean ± standard error for controls and dipping tobacco users is 74.9 ± 0.68 bpm and 87.9 ± 0.69 bpm respectively. The values of dipping tobacco users are significantly lower for the age group 41-50 years compared to control.

Graph 80

Table no. 3 and graph no. 80 represents the pulse rate values in dipping tobacco users versus smokers of 41-50 years of age. The mean ± standard error for smokers and dipping tobacco users is 81.66 ± 0.78 bpm and 87.9 ± 0.69 bpm respectively. The values of dipping tobacco users are significantly lower for the age group 41-50 years compared to smokers.
## DISCUSSION

### Systolic blood pressure

<table>
<thead>
<tr>
<th>Age group</th>
<th>Control versus smokers</th>
<th>Smokers versus dipping tobacco users</th>
<th>Smokers versus dipping tobacco users</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-20 years</td>
<td>Significant</td>
<td>Non Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>21-30 years</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>31-40 years</td>
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<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>41-50 years</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
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</tbody>
</table>

### Diastolic blood pressure

<table>
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<tr>
<th>Age group</th>
<th>Control versus smokers</th>
<th>Smokers versus dipping tobacco users</th>
<th>Smokers versus dipping tobacco users</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-20 years</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>21-30 years</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>31-40 years</td>
<td>Non Significant</td>
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<td>Significant</td>
</tr>
<tr>
<td>41-50 years</td>
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### Pulse Rate

<table>
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<th>Age group</th>
<th>Control versus smokers</th>
<th>Smokers versus dipping tobacco users</th>
<th>Smokers versus dipping tobacco users</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-20 years</td>
<td>Non Significant</td>
<td>Non Significant</td>
<td>Significant</td>
</tr>
<tr>
<td>21-30 years</td>
<td>Significant</td>
<td>Non Significant</td>
<td>Significant</td>
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<tr>
<td>31-40 years</td>
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<tr>
<td>41-50 years</td>
<td>Significant</td>
<td>Significant</td>
<td>Significant</td>
</tr>
</tbody>
</table>
**Systolic blood pressure**

(i) Dipping differs significantly from control and smokers. Smokers differ significantly from control.

(ii) All age groups differ significantly from each other.

(iii) Systolic blood pressure increase with age in age group of control, smokers and dipping.

(iv) Systolic blood pressure is highest in dippers followed by smokers and control in each group

**Diastolic blood pressure**

(i) Dipping differs significantly from control and smokers. Smokers differ significantly from control.

(ii) All age groups differ significantly from each other.

(iii) Diastolic blood pressure increase with age in age group of control, smokers and dipping.

(iv) Diastolic blood pressure is highest in dippers followed by smokers and control in each group

**Pulse rate**

(i) Dipping differs significantly from control and smokers. Smokers differ significantly from control.

(ii) All age groups differ significantly from each other.

(iii) Pulse rate increase with age in age group of control, smokers and dipping.

(iv) Pulse rate is highest in dippers followed by smokers and control in each group
Presentation of average (mean + S.E) blood pressure and pulse rate for control smokers and dipping groups under age group 11 to 20 yrs, 21 to 30 yrs, 31 to 40 yrs and 41 to 50 yrs.

All the four age groups differ significantly from each other as regards the systolic blood pressure. With increase in age, there is increase in systolic blood pressure in control, smokers and dipping. Age group 41 to 45 years showed highest systolic blood pressure.

In each age group systolic blood pressure for dipping tobacco users and smokers differed significantly from control. Dipping tobacco users showed significantly higher systolic blood pressure than in smokers group.


As regards the diastolic blood pressure in this study all the four age groups differ significantly. Age groups from 41 to 50 yrs of age showed highest diastolic blood pressure. In each age group, dipping tobacco users showed the highest diastolic blood pressure and differed significantly from smokers and control. Smokers group differed significantly from control.

Shahrukhi et al (2006) reported slightly higher but not significantly different diastolic blood pressure in smokers, nicotine gum and placebo group.
While Dietrich et al (2007) reported 1.9% higher diastolic blood pressure in subjects exposed to ETS ≥2 hrs/day. Pope et al (2001) reported increase in diastolic blood pressure in exposed group as compared to control.

Age group differ significantly in pulse rate. Similarly dipping tobacco users, smokers and control differed significantly from each other as regards the pulse rate. In each age group dipping tobacco users is having pulse rate as compared to smokers and control. As age increases, pulse rate increases in control, smokers and dipping tobacco users. The increase is highest in elder group.


Dietrich et al (2007) reported that there were trends higher pulse rate and diastolic blood pressure with higher ETS exposure.

Significant Increase in Blood pressure in dipping tobacco users and smokers in each age group is due to the fact that epinephrine has delayed sympathetic effect on skeletal muscles. Epinephrine eventually causes vasodilatation and increased blood pressure after a delay because it has to travel long distances through the blood from adrenal medulla to reach the β-2 adrenergic receptors on target cells. (Anderson et al 2012)

Increased pulse rates may have been seen in the subjects due to a more immediate onset of nor-epinephrine binding (which is also
sympathetically released) to $\alpha_1$-adrenergic receptors (Anderson et al 2012)