

VISUALISATION PROJECT ON HEART ATTACK

ATTACK

MDS202439

05.10.2024

INTRODUCTION:

WE HAVE A DATA SET ON THE HEART ATTACK PATIENTS.

VARIABLES - AGE , SMOKING STATUS, CHOLESTEROL LEVEL, GENDER , BLOOD PRESSURE, TREATMENT, CHEST PAIN TYPE, DIABETES

No. OF OBSERVATIONS - 1000

ABSTRACT:

HERE, I'VE PLOTTED DIFFERENT VARIABLES AGAINST DIFFERENT VARIABLES TO FIND A POSSIBLE CORRELATION . OUR AIM IS TO FIND OUT DIFFERENT FACTORS AND THEIR EFFECT ON EACH OTHER FOR HEART ATTACK PATIENTS IN ORDER TO JUSTIFY OUR CLAIMS/ ANSWER THE QUESTIONS.

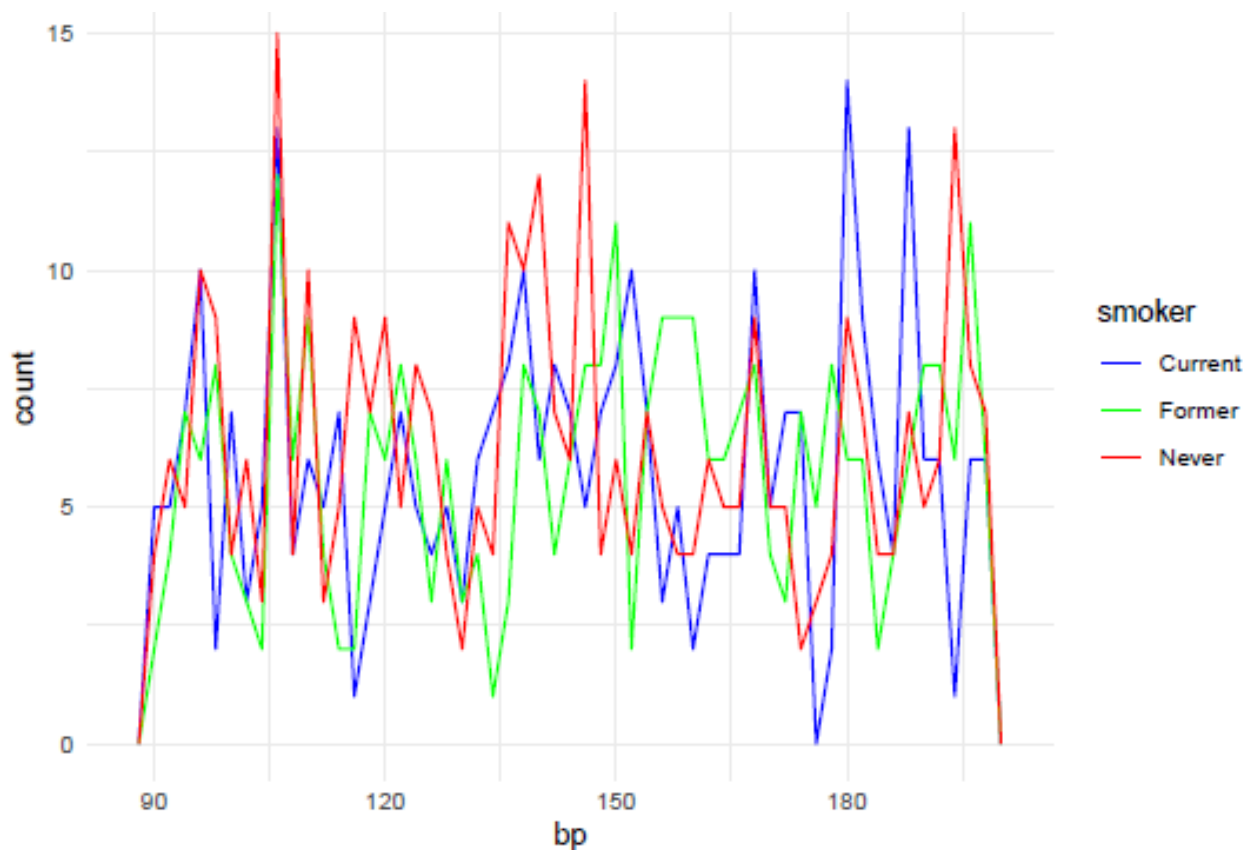
DIFFERENT PLOTS:



DOES SMOKING CAUSE HEART-ATTACK?

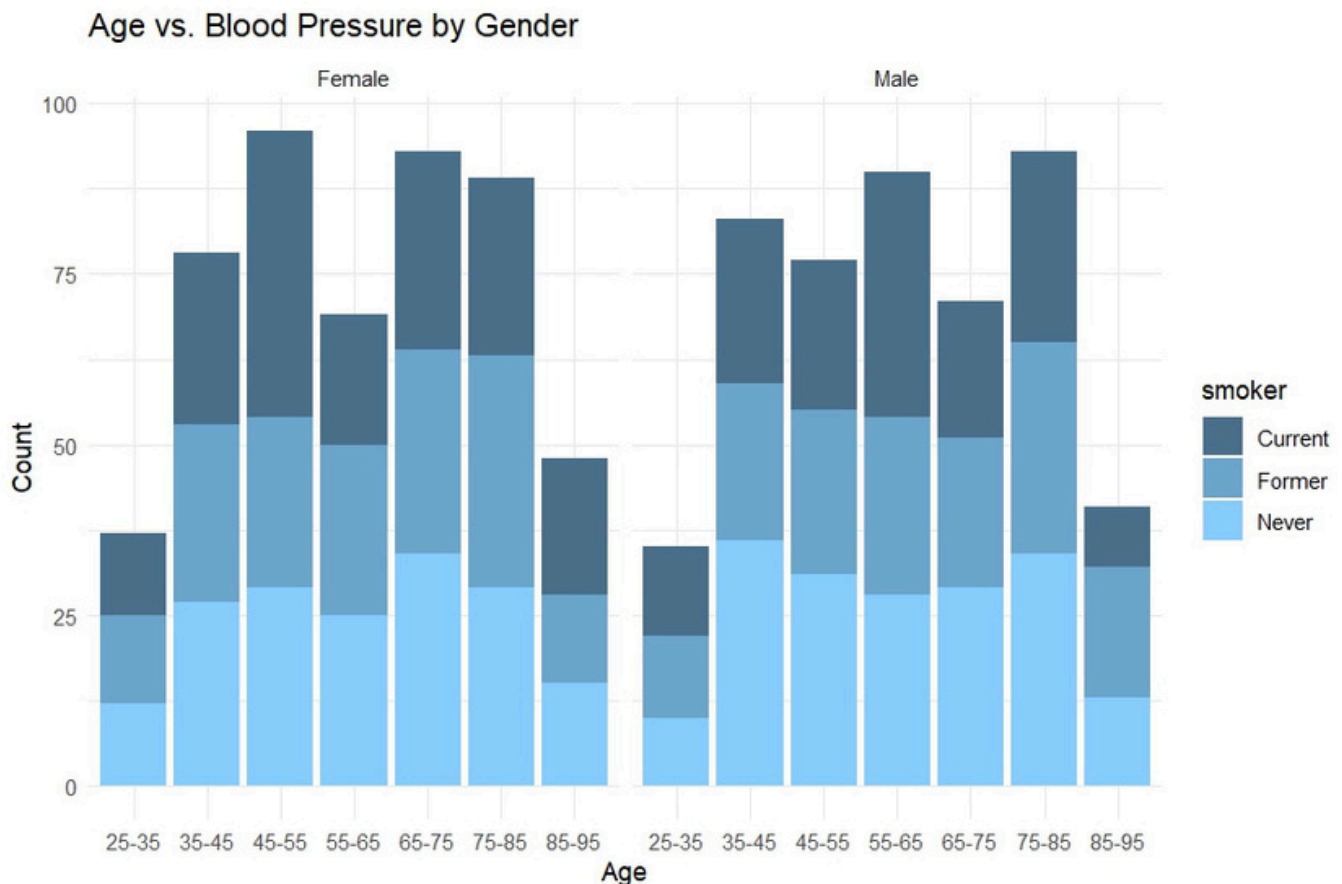
EVALUATING DIFFERENT CORRELATIONS BETWEEN SMOKING AND OTHER FACTORS OF OF HEART ATTACK

THE FOLLOWING PLOT SUGGESTS FREQUENCY POLYGON OF BLOOD PRESSURE BASED ON DIFFERENT SMOKING STATUS



WE CAN OBSERVE HIGH PEAKS OF BLUE I.E CURRENT SMOKERS WITH HIGH BLOOD PRESSURE ARE HAVING HIGHER CHANCES OF HEART ATTACKS, ALTHOUGH THERE IS NO DIRECT CORRELATION, PEOPLE WHO HAVE NEVER SMOKED BUT WITH HIGH BP ARE PRONE TO HEART ATTACKS AS WELL. THIS SUGGESTS THAT SMOKING MAY CONTRIBUTE TO HIGHER BLOOD PRESSURE, WHICH IS A KNOWN RISK FACTOR FOR HEART ATTACKS. HOWEVER, NON-SMOKERS WITH HIGH BLOOD PRESSURE ARE ALSO AT RISK.

HEART ATTACKS IN 50S- IS SMOKING THE REASON?

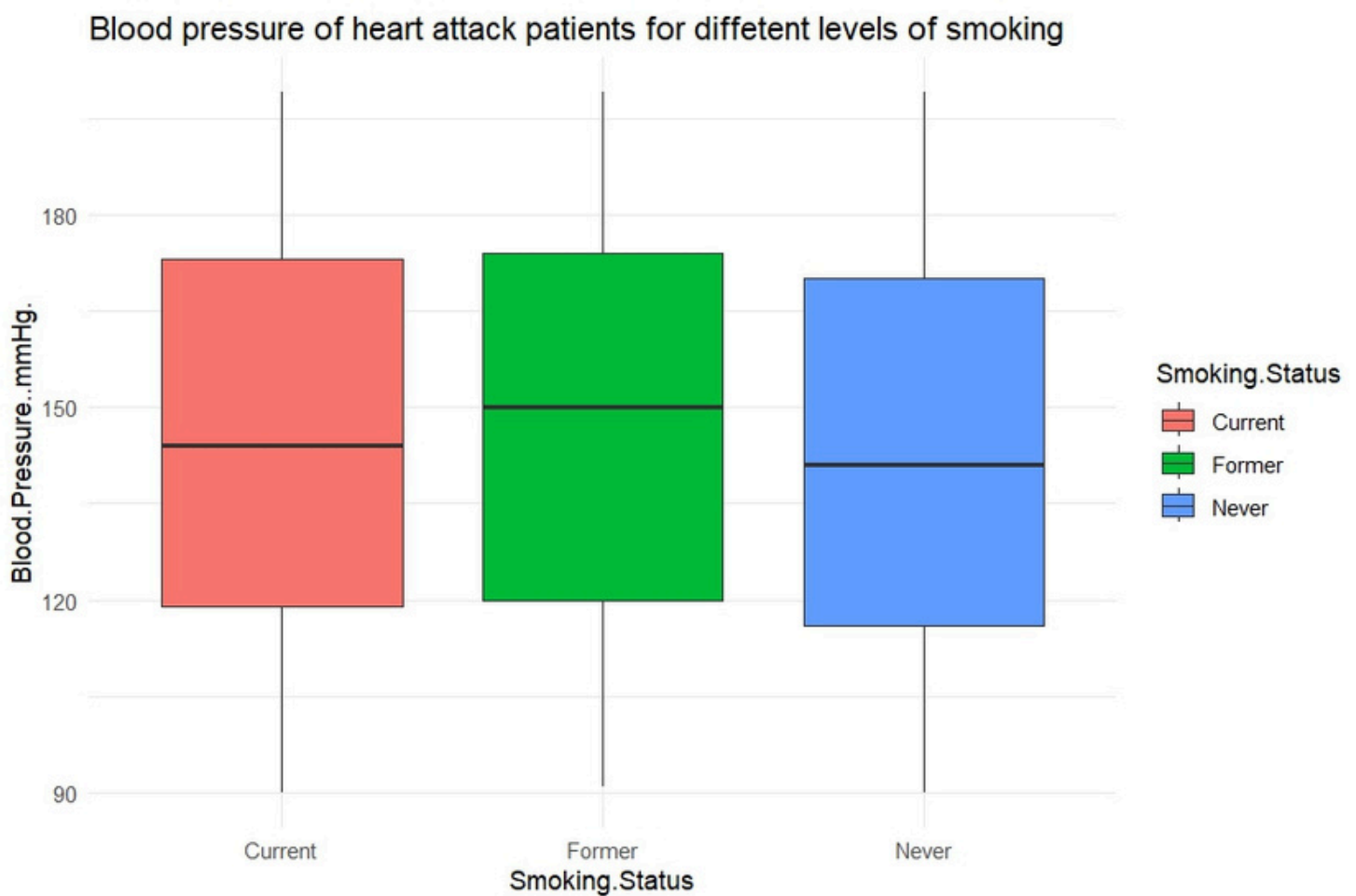


IN THE FOLLOWING PLOT IF WE DO NOT CONSIDER CURRENT SMOKERS ,MOST FEMALES ARE IN THE AGE RANGE 65-75 AND MOST MALES ARE IN THE AGE RANGE 75-85.

STATISTICALLY NON-SMOKERS ARE MORE LIKELY TO HAVE A HEART ATTACK IN THEIR 70s

DUE TO SMOKING , WE OBSERVE HIGH PEAKS AT 45-55 FOR FEMALES AND 55-65 FOR MALES. THE DATA SUGGESTS THAT SMOKING HABITS ARE MORE COMMON AMONG MIDDLE-AGED PATIENTS, POTENTIALLY CONTRIBUTING TO A HIGHER INCIDENCE OF HEART ATTACKS IN THESE AGE GROUPS.

HIGH BLOOD PRESSURE LEADING TO HEART ATTACK- COULD SMOKING BE A CAUSE?



WE'VE PLOTTED THE QUARTILES, MEDIAN OF BLOOD PRESSURE OF OUR HEART ATTACK PATIENTS
CATEGORIZED BY SMOKING LEVELS

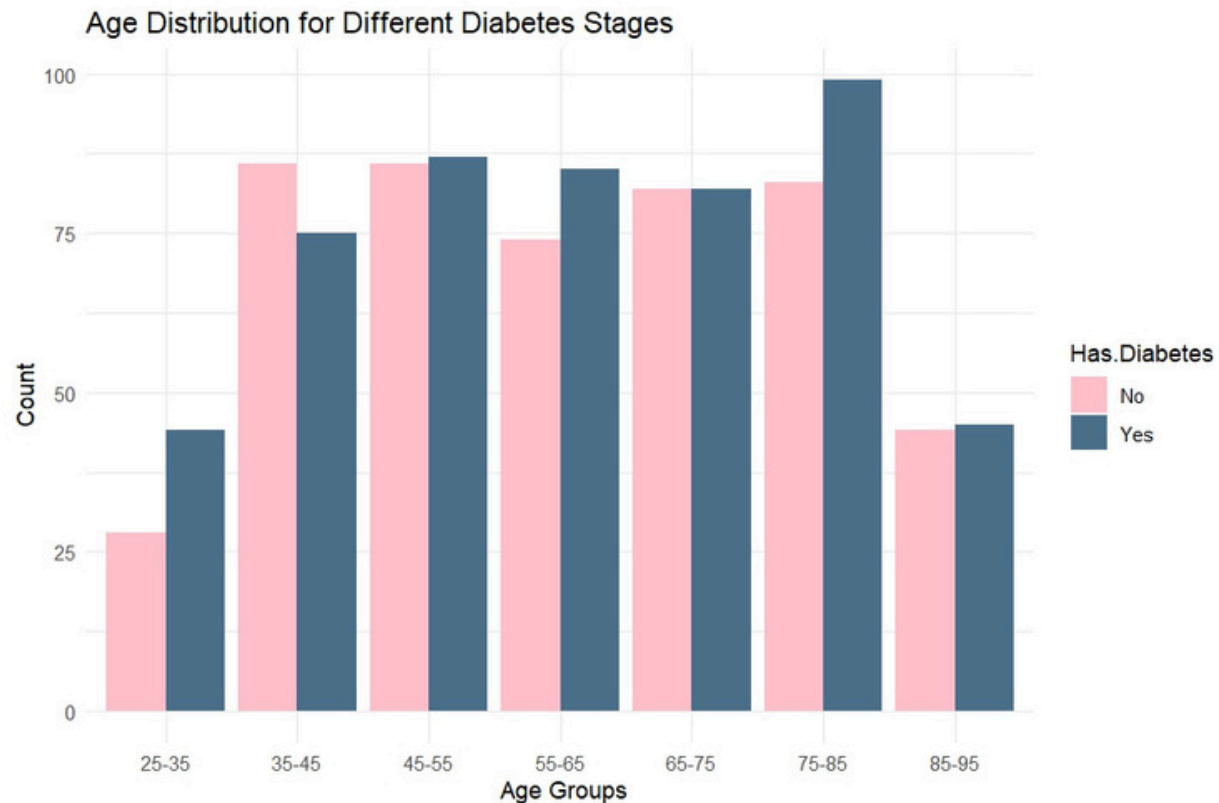
AMONG HEART ATTACK PATIENTS, NON-SMOKERS HAVE SIGNIFICANTLY LOWER
BLOOD PRESSURE THAN OTHERS.

SMOKING CESSATION MAY HELP REDUCE BLOOD PRESSURE AND, CONSEQUENTLY, LOWER THE RISK
OF HEART ATTACKS IN BOTH CURRENT AND FORMER SMOKERS.

SMOKING IS CAUSING HIGH BLOOD PRESSURE AMONG MIDDLE AND PEOPLE AND HENCE CAUSING HIGH
RISE IN HEART ATTACKS

ARE DIABETIC PATIENTS HIGH AT RISK?

THE ENTIRE DATA SET OF HEART ATTACK PATIENTS HAS BEEN DIVIDED INTO DIFFERENT AGE GROUPS , LATER EACH AGE GROUP HAS BEEN PLOTTED CATEGORICALLY FOR DIABETIC AND NON-DIABETIC PEOPLE

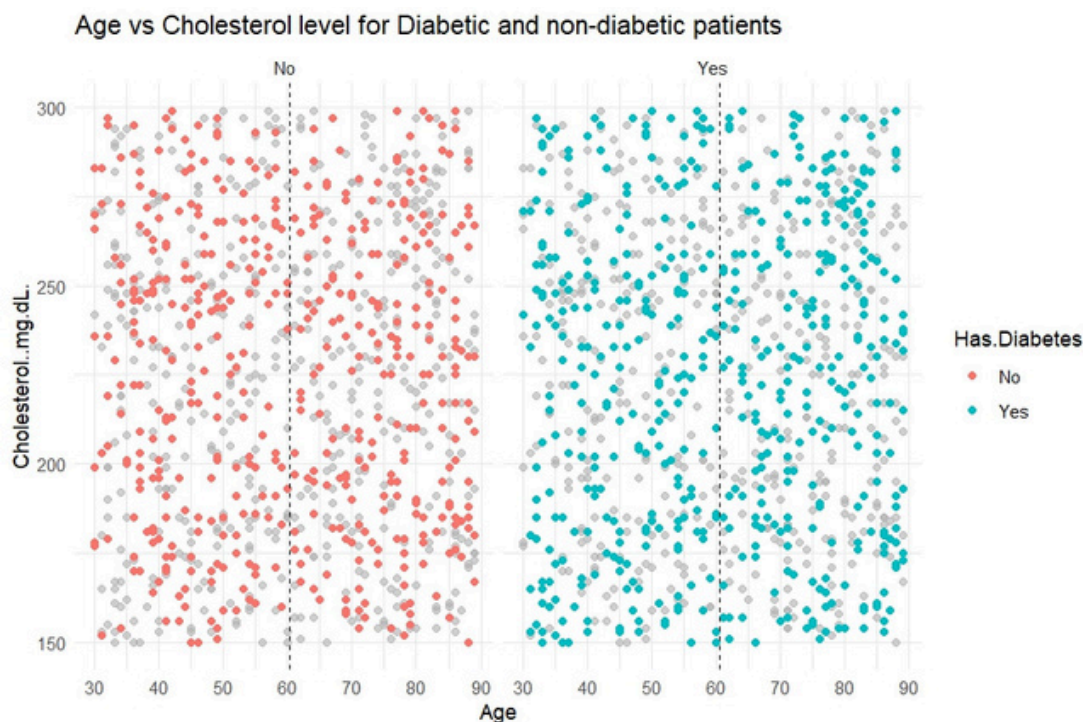


STATISTICALLY FROM OUR ANALYSIS,

HAVING DIABETES RESULTS IN MORE TENDENCY TO HAVE A HEART ATTACK FOR A SPECIFIC AGE GROUP

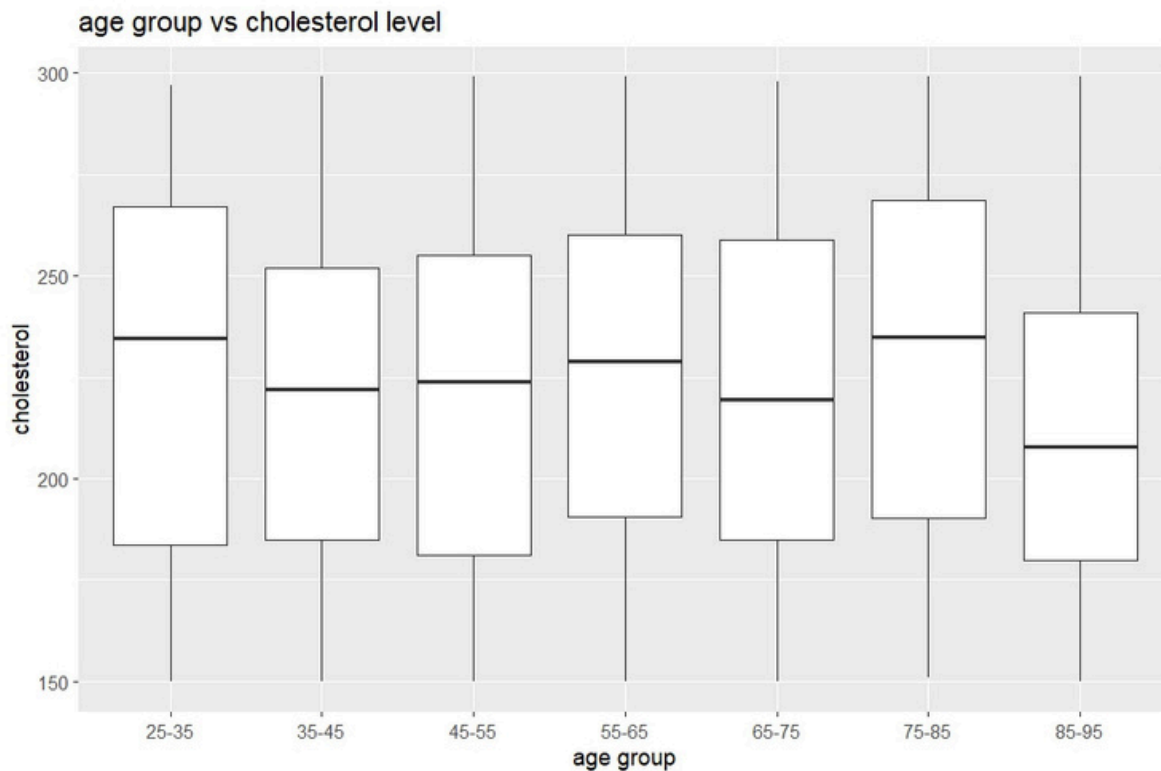
(HIGH COUNTS FOR DIABETIC PATIENTS FOR ALL THE AGE GROUPS EXCEPT ONE).

THE DATA SUGGESTS THAT DIABETES COULD BE A CONTRIBUTING FACTOR TO HEART ATTACKS IN THESE PATIENTS. CERTAINLY A WELL-KNOWN FACT THAT A DIABETIC PATIENT HAS A HIGHER TENDENCY TO GET A HEART ATTACK THAN A NORMAL PERSON.



ALTHOUGH THERE IS NO DIRECT CORRELATION BUT FOR AGE>60 DIABETIC PEOPLE HAVE HIGHER TENDENCIES OF GETTING A HEART-ATTACK , SPECIALLY WITH HIGH CHOLESTEROL LEVEL AS EVIDENT FROM THE CLUSTER OF POINTS IN THE LEFT GRAPH"

WHAT IS THE GENERAL CHOLESTEROL LEVEL AMONG HEART ATTACK PATIENTS?



MOSTLY PEOPLE HAVE CHOLESTEROL LEVEL AROUND 200-250 MG/DL.

WHILE THE MAJORITY OF HEART ATTACK PATIENTS HAVE CHOLESTEROL LEVELS WITHIN THE NORMAL RANGE, A SUBSET OF OLDER PATIENTS HAS EXTREMELY HIGH CHOLESTEROL, WHICH MAY INCREASE THEIR RISK.

THE QUARTILE FOR EACH GROUP OF PATIENTS LIES WITHIN THE RANGE, HOWEVER THE OLDER AGE RANGE PATIENTS ARE LIKELY TO HAVE SIGNIFICANTLY LOW AND HIGH PRESSURE.

CONCLUSION:

FROM OUR ANALYSIS

WE CAN SEE CLEAR EVIDENCES OF SMOKING AND DIABETES BEING ONE OF THE MOST CRUCIAL FACTORS OF HEART ATTACK.

**HIGH RISE IN DIABETES CAUSES HIGH BLOOD PRESSURE THAT LEADS TO HEART ATTACK ,
SIMILARLY, SMOKING CAN LEAD TO HIGH BLOOD PRESSURE AND HENCE TO HIGH CHANCES OF HEART ATTACK**