Government Degree College, Shadnagar, Ranga Reddy

Department of Zoology

Best Practice

"Monitoring of Lifestyle Patterns of stakeholders from GDC, Shadnagar for a Healthy Society"

Objectives:

1. To assess the risks (blood pressure, random blood sugar level and lipid profile) associated with lifestyle based Non-Communicable Diseases viz., Hypertension, Diabetes mellitus, Obesity, Stroke and Myocardial infarction etc.

2. To evaluate certain general health parameters, such as Temperature, Pulse, Haemoglobin percentage, Weight, Height, Body Mass Index and Blood group typing.

3. To make suggestions and recommendations to reduce the risks of lifestyle patterns that lead to Noncommunicable diseases and premature deaths.

Context:

Noncommunicable diseases such as cardiovascular diseases, stroke, diabetes, overweight and obesity are collectively responsible for 74% of deaths worldwide. More than 75% of premature deaths occur in low-income and mid-income countries. The major risk factors for NCDs include lifestyle patterns like physical inactivity, unhealthy diets, tobacco use and harmful use of alcohol. The socioeconomic costs associated with NCDs make the prevention and control of these diseases a major development imperative for the 21st century.

As most of the chronic noncommunicable diseases can be prevented and modified to reduce the devastating health consequences for individuals, families and communities, an urgent action is needed for surveillance, control and prevention of NCDs to meet the global targets for a healthy society. In the present modern times, the lifestyle has become mechanical, stressful

with lot of hustle and bustle and passing each day like a rat race without reviewing and paying attention to our health. Often, public in general resort to modern way of lifestyle with changing times like resorting to fastfood, bakery items, icecreams, cooldrinks, physical inactivity, smoking, boozing, drug use, irregular sleeping habits, feeding habits etc. The urban population suffer from overweight and obesity while rural population suffer from underweight and deficiency diseases etc. In order to monitor and evaluate the risk factors associated with noncommunicable diseases, this practice of health check-ups and assessment of lifestyle pattern was initiated to reduce the premature and untimely deaths that we are witnessing very often in the present times.

The Practice: The stakeholders of this Higher Educational Institute that constituted the sample group included about 46 undergraduate students and 15 Teaching and Non-Teaching Staff who volunteered to participate in this monitoring and evaluation programme. This programme included certain physical and physiological tests associated with the risks of noncommunicable diseases like body weight, height, calculation of BMI (Body Mass Index), random blood glucose, blood pressure, temperature, pulse, blood group, lipid profile covering total cholesterol, triglycerides, HDL-C(High Density Lipoprotein Cholesterol), LDL-C(Low Density Lipoprotein Cholesterol), VLDL-C(Very Low Density Lipoprotein Cholesterol) etc. The aforesaid parameters were tested with suitable scientific methods in collaboration with local diagnostic centre, Shadnagar. The empirical data was collected and the results were analysed and the findings were interpreted in the light of normal reference values and graphically represented using pie charts. The students and staff participated with lot of excitement and enthusiasm.

Problems encountered and Resources required: With the available equipment and resources, we have assessed certain parameters such as height, weight, BMI calculation, blood pressure, pulse, temperature, blood group typing at our college itself. For other physiological and hematological parameters, we have taken the help of local diagnostic centre for collecting blood samples and analysing lipid profile assays at a nominal cost. We could not extend this evaluation to all the students and staff due to lack of advanced equipment like automatic analyzer and economic reasons.

Evidence of Success: This practice has triggered a lot of enthusiasm and excitement in all the stakeholders of this Higher Educational Institution to know their current health status and created a sense of health consciousness. The findings of this monitoring program revealed several health insights and enabled them to initiate certain changes in their lifestyle patterns for a better, productive and healthy society.

Students measuring Height in cm of the Subjects under study using Measuring Tape

Student measuring Weight in Kg using Weighing Machine of the Subjects
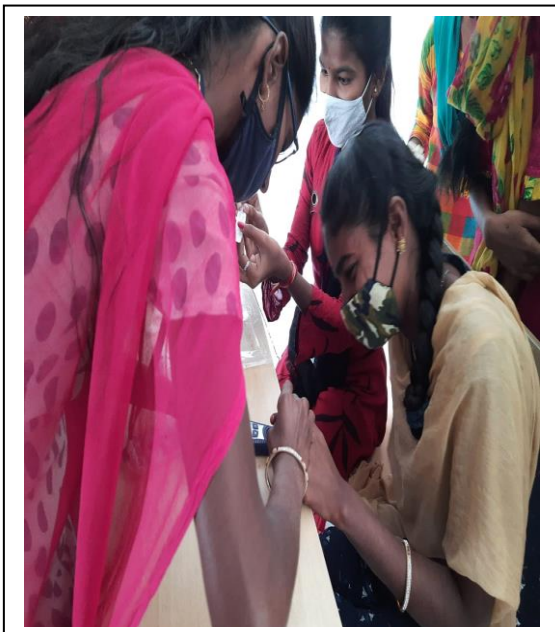
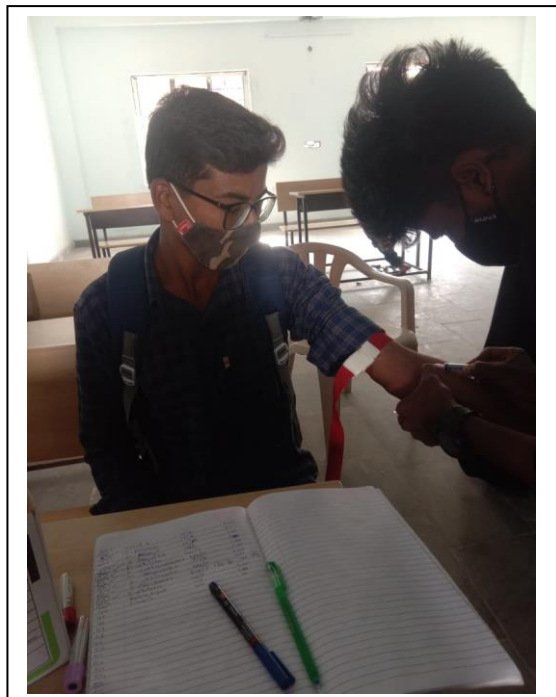Students measuring Random Blood Glucose using Glucometer

Technician from Local Diagnostic Centre drawing blood sample from students for haematological parameters

Students measuring Random Blood Glucose using Glucometer

Technician from Local Diagnostic Centre drawing blood sample for hematological parameters

Students measuring Height in cm of the Staff
using Measuring Tape

Students measuring Blood Pressure & Pulse of   the

Staff using Automatic BP Monitoring Machine

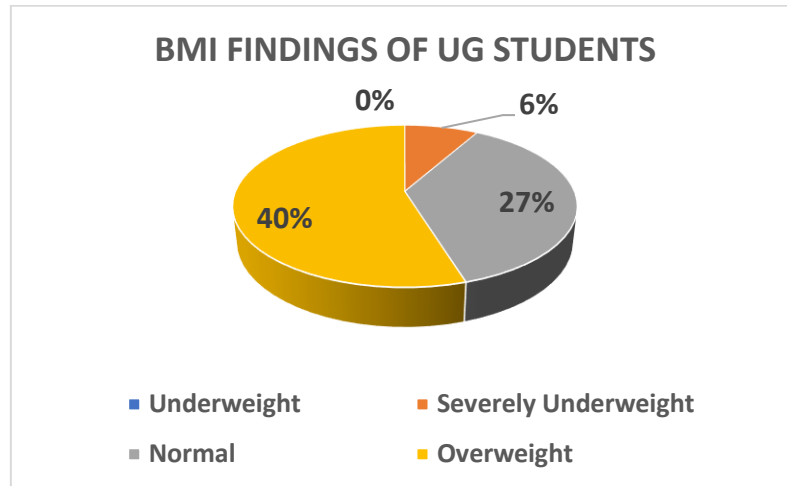**Figure #1: Pie Chart showing BMI Findings of select UG Students in Percentage**

BMI FINDINGS OF UG STUDENTS

0%   6%

40%

27%

- Underweight
- Severely Underweight
- Normal
- Overweight

Figure #2: Pie Chart showing Blood Pressure Status of select UG Students in Percentage

BLOOD PRESSURE CATEGORIES OF STUDENTS IN PERCENTAGE

3%   0%

17%

80%

- Normal
- Prehypertension
- Stage 1 Hypertension
- Stage 2 Hypertension
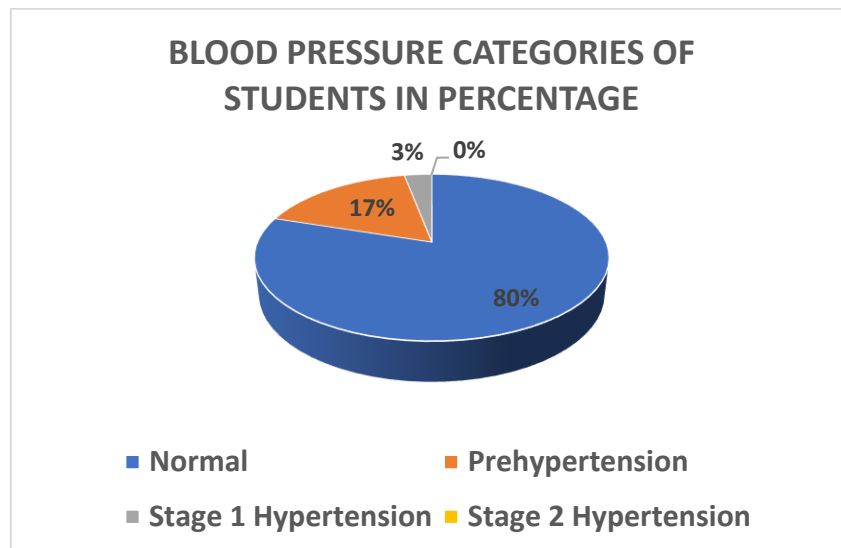
Figure #3: Pie Chart showing Pulse Categories of select UG Students in Percentage

Pulse Categories in Percentage of Students

- Low
- Normal
- High

3%
30%
67%
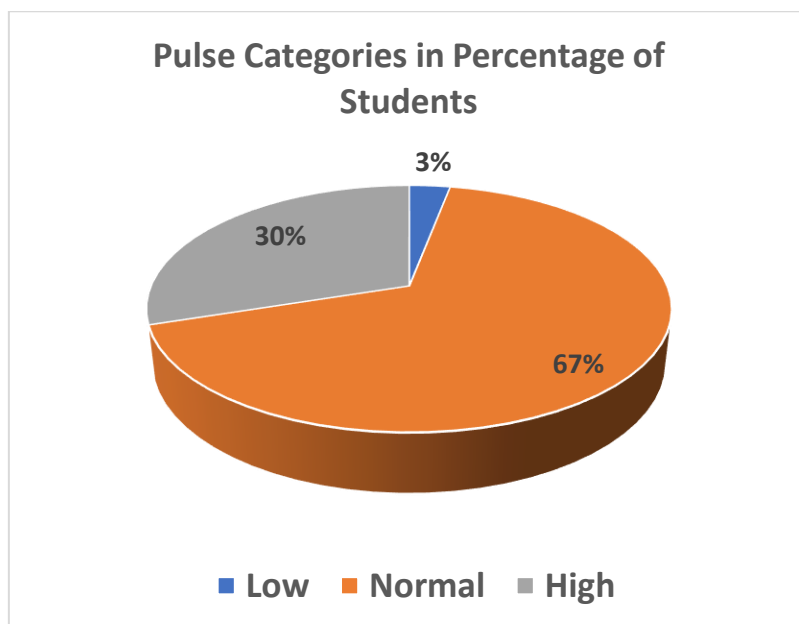
Figure # 4: Pie Chart showing Blood Group Analysis of select UG Students in Percentage

BLOOD GROUP ANALYSIS OF UG STUDENTS

- A+
- B+
- AB+
- O+

20%
28%
52%
0%
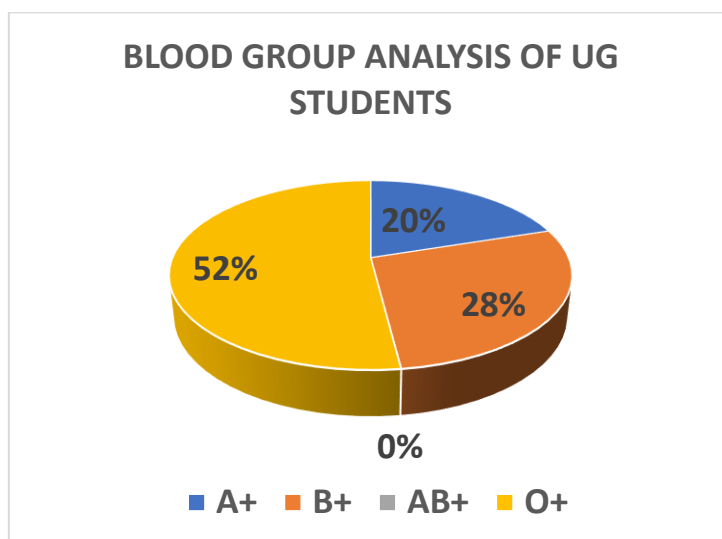
Figure # 5: Pie Chart showing BMI Findings of Staff in Percentage

BMI FINDINGS OF STAFF

0%   6%
27%   27%
40%

- Underweight
- Severely Underweight
- Normal
- Overweight
- Moderately Obese
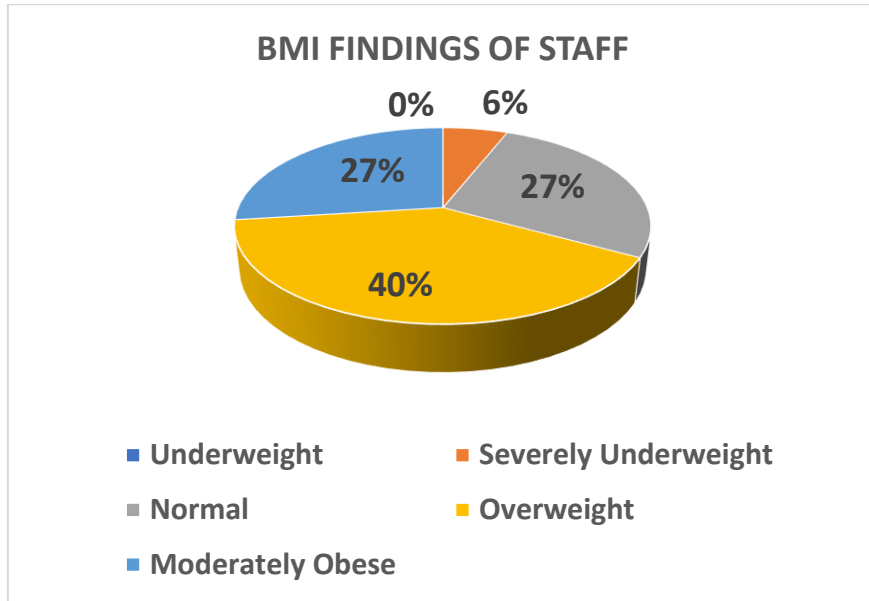
Figure # 6: Pie Chart showing Blood Pressure Status of Staff in Percentage

BLOOD PRESSURE CATEGORIES OF STAFF

7%
13%
20%
60%

- Normal
- Prehypertension
- Stage 1 Hypertension
- Stage 2 Hypertension
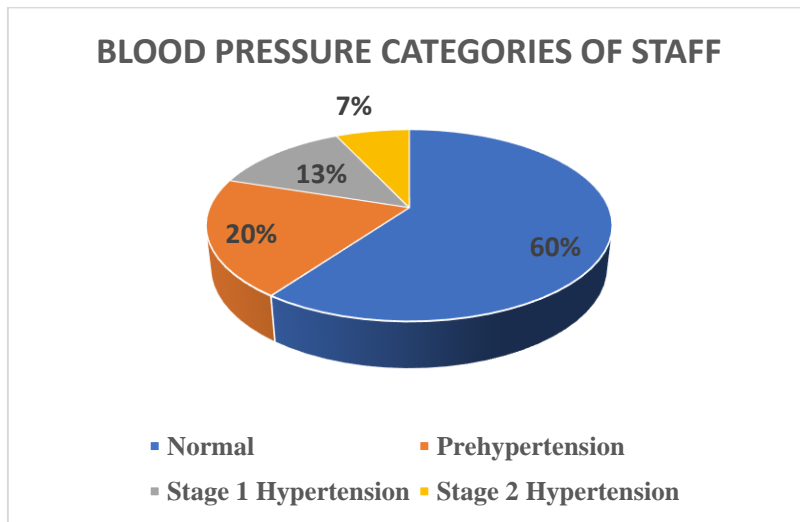
Figure # 7: Pie Chart showing Pulse Categories of Staff in Percentage

PULSE CATEGORIES OF STAFF IN PERCENTAGE

0% 7%

93%

■ Low ■ Normal ■ High
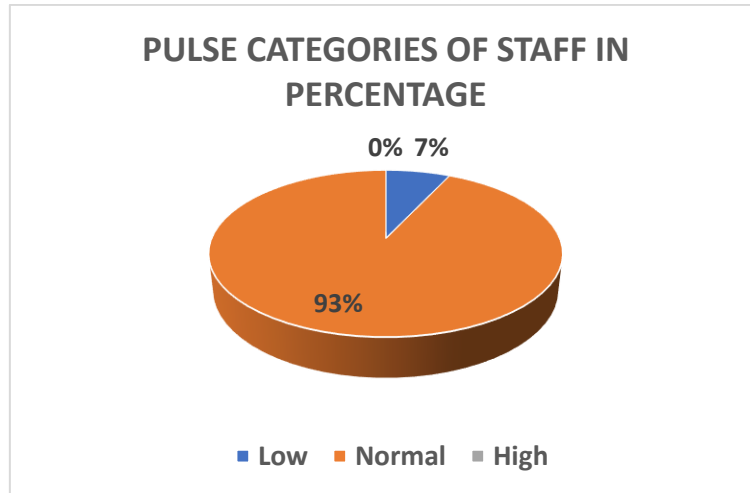
Figure # 8: Pie Chart showing Blood Group Analysis of Staff in Percentage

BLOOD GROUP ANALYSIS OF STAFF
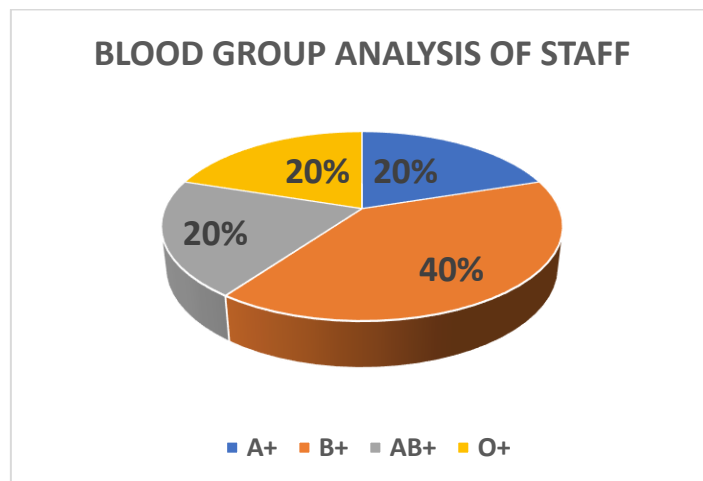
20% 20%

20%

40%

■ A+ ■ B+ ■ AB+ ■ O+

Figure # 9: Pie Chart showing Lipid Profile Status of UG Students in Percentage

Total Cholesterol Status of Students in Percentage

2%
28%
70%

■ **Normal** ■ **Low** ■ **High**

Triglycerides Status of Students in Percentage

0% 4%
96%

■ Normal ■ Low ■ High

HDL Cholesterol Status in Women

0% 20%
80%

■ Normal ■ Low ■ High

LDL Cholesterol Status in Students in Percentage

11%
0%
89%

■ **Normal** ■ **Low** ■ **High**

VLDL Cholesterol Status in Students in Percentage
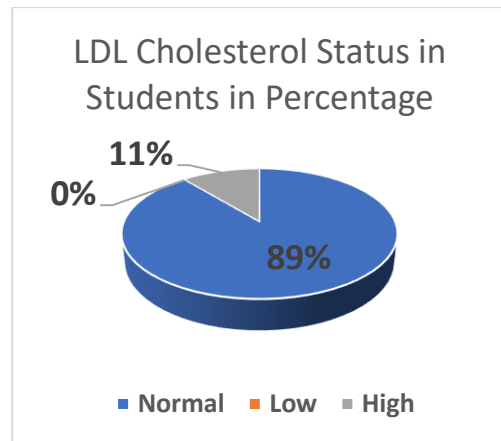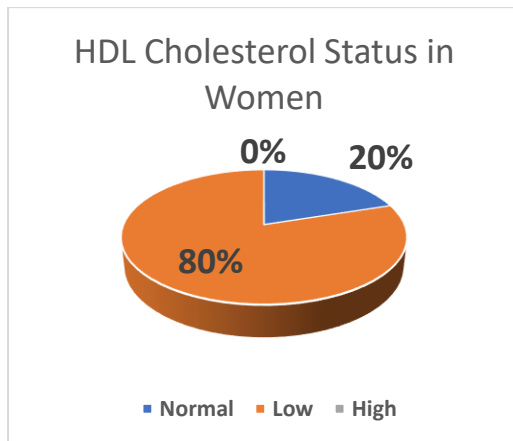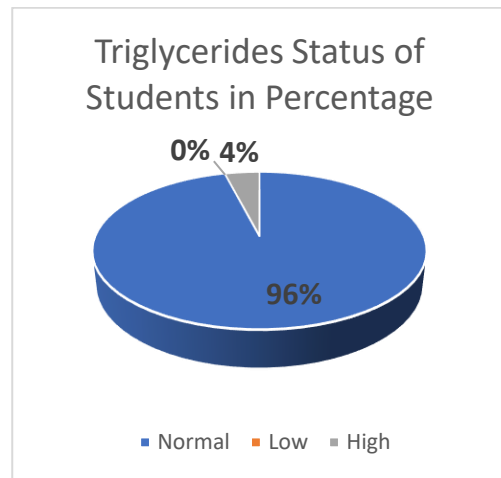
0% 4%
96%

■ **Normal** ■ **Low** ■ **High**
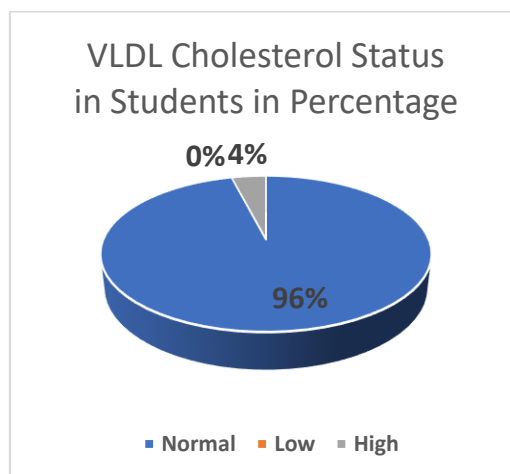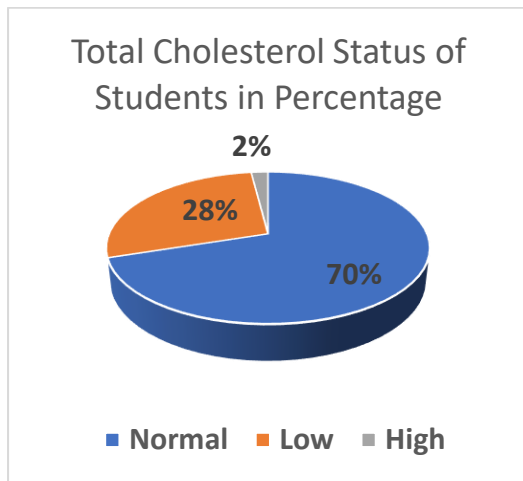
Figure #10: Pie Chart showing Haemoglobin Status of select UG Students in Percentage

Haemoglobin Percentage in Male Students

12%

19%

69%

■ Normal ■ Low ■ High

Haemoglobin Percentage in Female Students
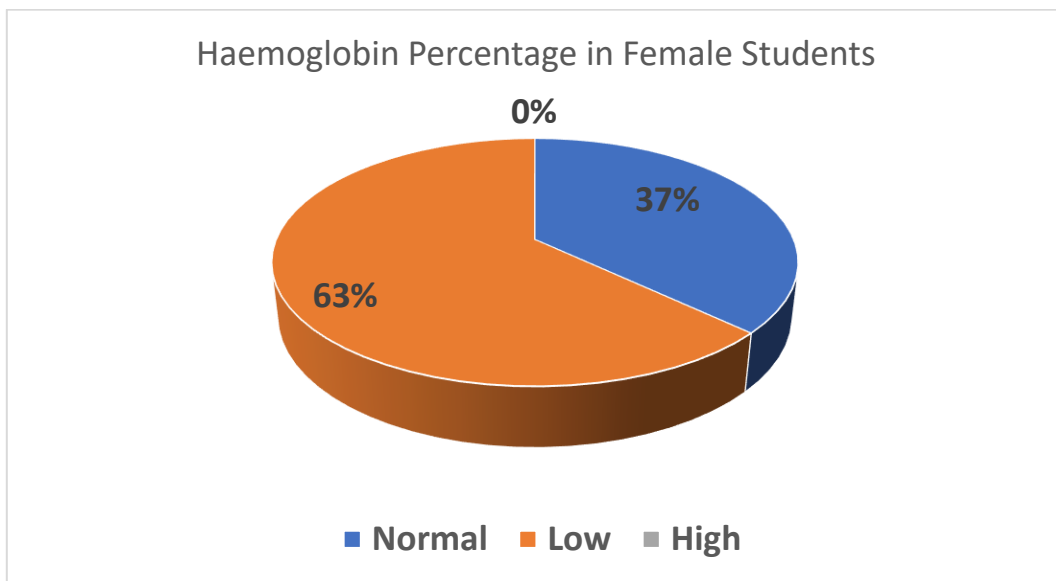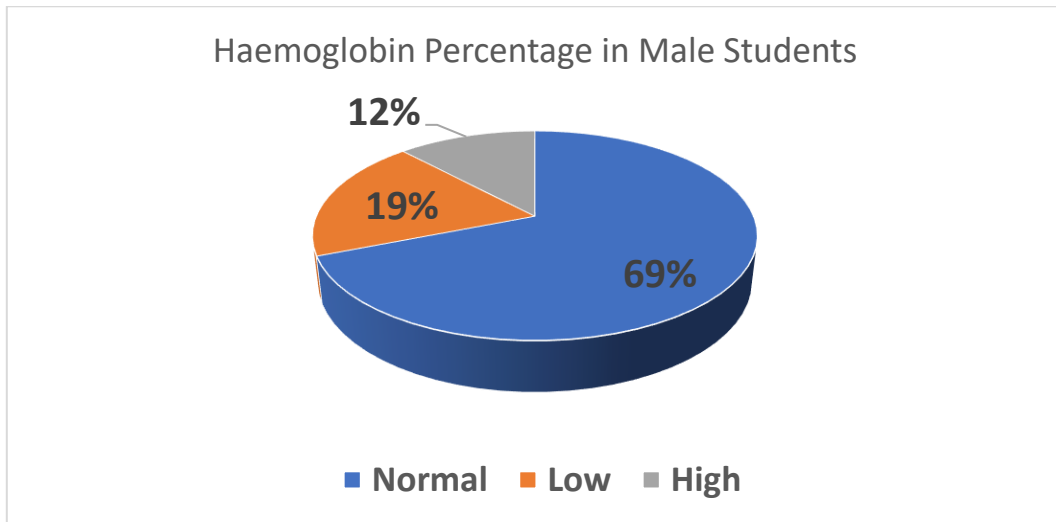
0%

37%

63%

■ Normal ■ Low ■ High

Figure #11: Pie Chart showing Lipid Profile Status of Staff in Percentage

TOTAL CHOLESTEROL STATUS OF STAFF

7% 0%

93%

■ Normal   ■ Low   ■ High

TRIGLYCERIDES STATUS OF STAFF

0%   20%

80%

■ Normal   ■ Low   ■ High

LDL CHOLESTEROL STATUS IN STAFF

0%   0%

13%

87%

■ Optimal   ■ Near Optimal   ■ Low   ■ High

VLDL CHOLESTEROL STATUS IN STAFF

6% 0%

27%

67%

■ Low   ■ Normal   ■ High   ■ Borderline High
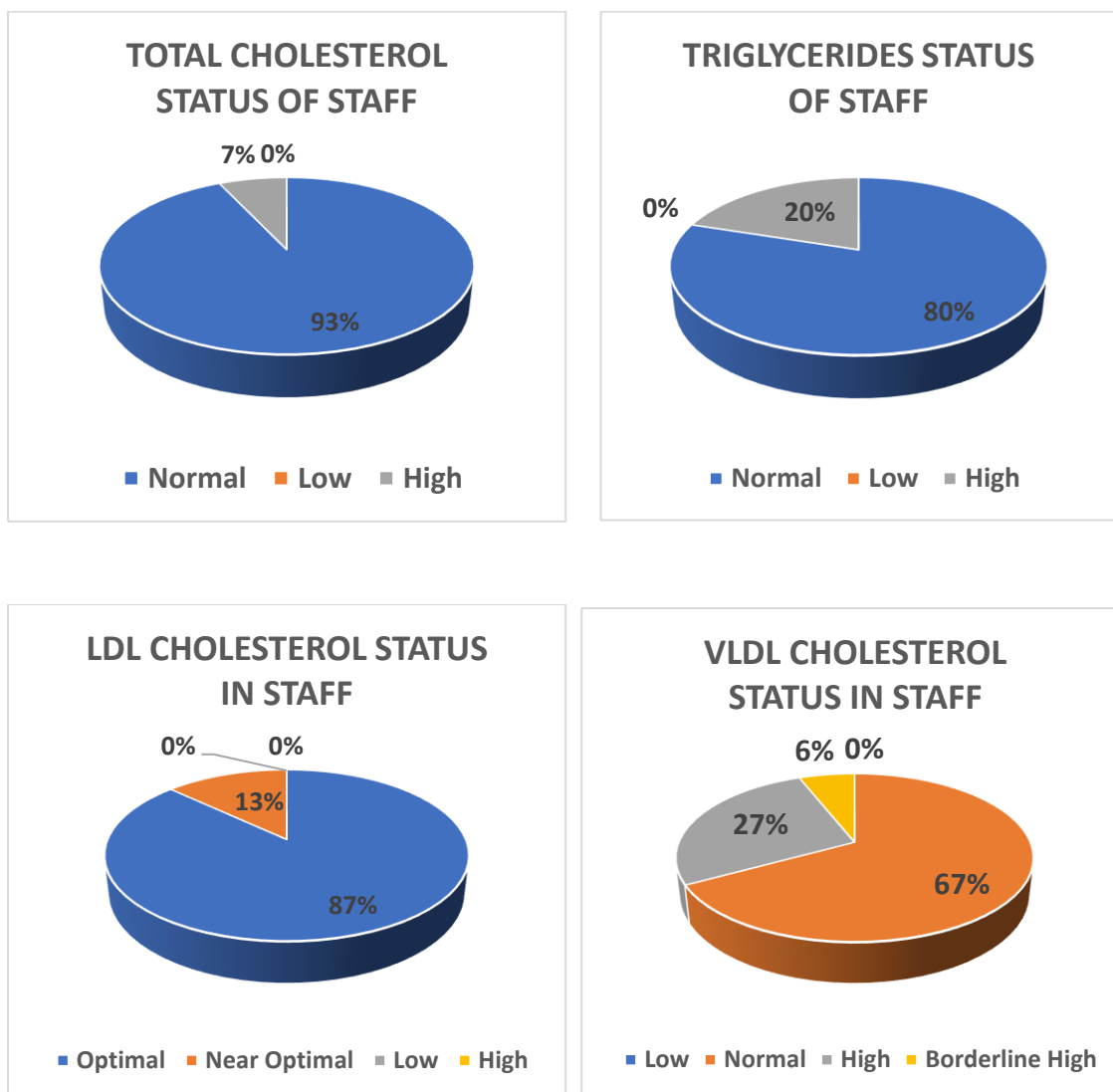
Figure #12: Pie Chart showing Haemoglobin Status of Staff in Percentage

HAEMOGLOBIN STATUS OF MALE STAFF

0%

22%

78%

■ Normal ■ Low ■ High

HAEMOGLOBIN STATUS OF FEMALE STAFF

33%

17%

50%

■ Normal ■ Low ■ High
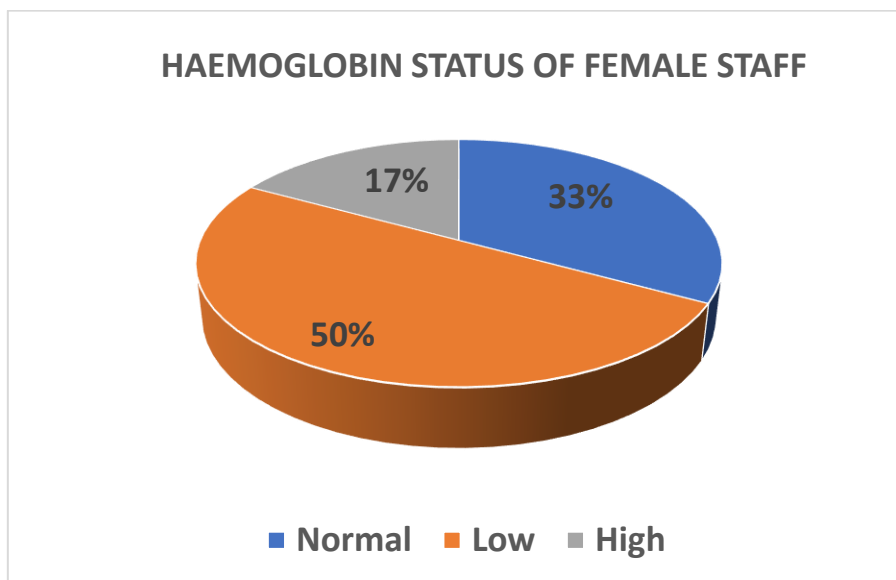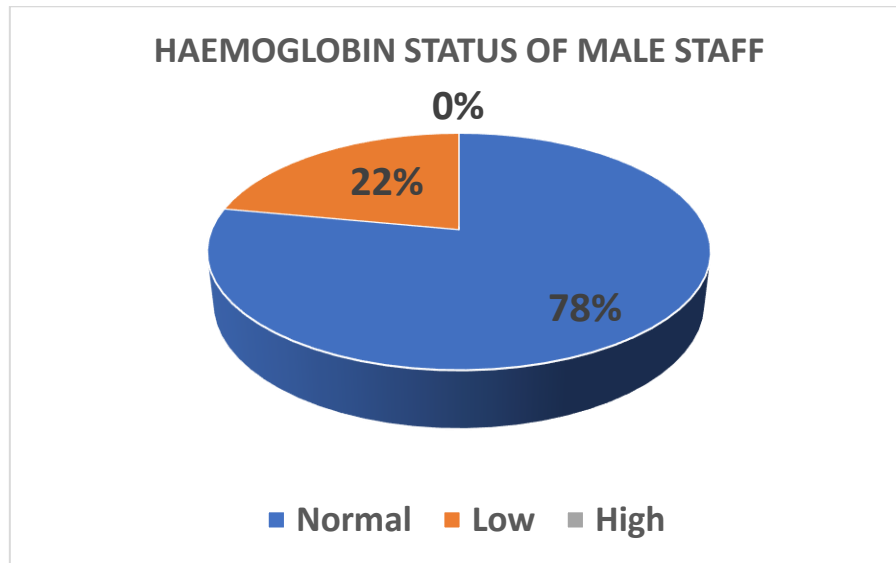
CONCLUSIONS AND RECOMMENDATIONS

1. About 37% of the students were underweight, 28% were severely underweight, 31% were normal category while 4% were overweight.

2. None of the students were in diabetic range.

3. Around 80% of the students showed normal blood pressure values, 17% of the them belong to Prehypertension category while 3% of them were falling under Hypertension Stage1.

4. About 67% of the students showed normal pulse rate, 30% of them exhibited higher pulse rate while only 3% showed lower pulse rate.

5. About 52% of the students were O positive, 28% of them were B positive, while 20% of them were A positive and none of them showed AB blood group.

6. About 40% of the staff were overweight, 27% were moderately obese, 27% were normal while 6% were severely underweight.

7. None of the staff members were in diabetic range.

8. About 60% of the staff showed normal blood pressure values, 20% of the them showed Prehypertension, 13% of them showed Hypertension Stage1 while 7% exhibited Stage 2 Hypertension.

9. None of the staff members were febrile.

10. About 93% of the staff showed normal pulse rate, 7% of them exhibited lower pulse rate while none of them showed higher pulse rate.

11. The staff with B positive were 40% , while A positive, AB positive and O positive blood groups were 20% each.

12. The normal total cholesterol values were shown by 70 % of the students, 28 % displayed lower values while 2 % indicated higher values.

13. About 96 % of the students showed normal values of Triglycerides while 4 % of them showed higher values.

14. All male students showed normal values of HDL-C while 80 % of female students exhibited lower levels of HDL-C, 20 % of them were in the normal range.

15. About 89 % of the students showed normal values of LDL-C while 11 % of the students indicated higher levels of LDL-C.

16. About 96 % of the students showed normal values of VLDL-C while 4 % of the students exhibited higher levels of VLDL-C.

17. About 69 % of the male students were in normal haemoglobin range, 19 % of them were anaemic while 12 % of them were in the higher range. Similarly, 63 % of the female students were anaemic while 37 % of them were in normal range.

18. About 93 % of the staff showed normal values of Total Cholesterol while 7 % indicated higher values.

19. About 80 % of the staff showed normal values of Triglycerides while 20 % of them showed higher values.

20. All male staff showed normal values of HDL-C while all female staff exhibited lower levels of HDL-C.

21. About 87 % of the staff showed optimal values of LDL-C while 13 % of the staff exhibited near optimal levels of LDL-C.

22. Around 67 % of the staff showed normal values of VLDL-C, 27 % of the staff exhibited higher levels of VLDL-C while 6% of them showed borderline high.

23. About 78 % of the male staff were in normal range of Hb, 22 % of them were anaemic. Similarly, 50 % of the female staff were anaemic while 33 % of them were in normal range while 17% of them were in the higher range.

Recommendations:

1. Those subjects who are underweight should take balanced diet in right proportion.

2. Those subjects who are overweight or obese should do exercise regularly, control the diet according to their age, type of work and physiological condition.

3. Those subjects who are in prehypertension or in stage 1 or stage 2 of hypertension should reduce the salt intake, pickles, stress. They should take minimum eight glasses of water per day.

4. Subjects with high bad cholesterol (LDL-C, VLDL-C), Triglycerides and total cholesterol should avoid or reduce the intake of saturated fats like dalda, vanaspathi, ghee, prawns, red meat and trans-fat substances like potato chips etc. They can consume 2 or 3 garlic pieces daily to reduce the cholesterol.

5. Those subjects who are anaemic, should take more iron rich food like spinach, dates, jaggery, soyabeans etc.