

Department of Zoology
Dr.BRR Government College Jadcherla

Student Study Project

On

**“A Study project on calculating the
Body Mass Index (BMI) of selected
students and staff members of
Dr.BRR Government college
jadcherla”**

Academic Year 2021-22



**Dr. BRR GOVERNMENT DEGREE COLLEGE JADCHERLA-
509301**

(Accredited with B⁺⁺ by NAAC)

Dr. CH.Appiya Chinnamma, M.Sc., Ph.D.
Principal

The department of Zoology has conducted student study projects during the academic year 2021-22

Title: "A Study project on calculating the Body Mass Index (BMI) of selected students and staff members of Dr.BRR Government college jadcherla"

Place of Work: Dr.BRR Bevernment Degree College Jadcherla T.S

Members of The Group Project:

1. J.Pavani B.Sc(BZC) II Year H.T.No. 20033006445537
2. B.Anusha B.Sc(BZC) II Year H.T.No. 20033006445510
3. K.Ashwini B.Sc(BZC) II Year H.T.No. 20033006445551
4. D.Alekhya B.Sc(BZC) II Year H.T.No. 20033006445526
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6. P.Vani B.Sc(BZC) II Year H.T.No. 20033006445583

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Dr. BRR Government Degree College
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**Dr. BRR GOVERNMENT DEGREE COLLEGE JADCHERLA-
514301**

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Department of Zoology

Dr. BRR Government Degree College Jadcherla

A Group Project

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6. P. Vani B.Sc(BZC) II Year H.T.No. 20033006445583

Supervised By

K. Neeraja ,Asst. Professor of Zoology

Supervisor

In-Charge of the Department

Principal



**Dr. BRR GOVERNMENT DEGREE COLLEGE JADCHERLA-
509301**

(Accredited with B⁺⁺ by NAAC)

Dr. CH. Appiya Chinnamma, M.Sc., Ph.D.
Principal

Student Study Project Certificate

CERTIFICATE

This to certify that, the project work "A Study project on calculating the Body Mass Index (BMI) of selected students and staff members of Dr. BRR Government college Jadcherla" is a bonafide work done by J. Pavani, B. Anusha, K. Ashwini, D. Alekhya, A. Bhavyasri and P. Vani the students of B.Sc (BZC) IV semester under my supervision in Zoology at the Department of Zoology Dr. BRR Government Degree College Jadcherla during the academic year 2021-22 and the work has not been submitted to any other college or university either part or full for the award of any degree.

Place

Jadcherla

Date:

11/12/2022

Neeraja

k. Neeraja

Asst, Prof, of Zoology

DEPARTMENT OF ZOOLOGY
DE.BRR GOVERNMENT DEGREE COLLEGE JADCHERLA

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- 7.

Acknowledgements:

The members of this project extend thanks to Dr.CH.Appiya Chinnamma, Principal for permitting to conduct this project.

The team is indebted to all the zoological student community for allowing us to use Animal album

Special thanks are due to K.Neeraja, lecturer in Zoology and Smt.K.Subhashini Asst.Prof, of Zoology for their help and advice to complete this project.

Finally thanks are also due to Sri B.Ravinder Rao,HOD for guiding the team to during period the project.

Objectives:

To Promote interest in research aptitude among students

To promote the concept of BMI

To bring awareness on healthy lifestyle

To find out healthy status of the students of Dr.BRR Government Degree college Jadcherla

ABSTRACT

Health is a state of mental, physical and social well-being in which disease and infirmity are absent. Body Mass Index (BMI) may be a value derived from the mass (weight) and height of a person. The BMI is defined as the body mass divided by the square of the body height, and is universally expressed in units of kg/m^2 , resulting from mass in kilograms and height in metres. In this study we are focusing on the student's health based on body mass index of Dr.BRR Government Degree College Jadcjerla from January 2021 to February 2021. The BMI (Body Mass Index) using the values like height and weight of a group of male and female students. BMI (Body Mass Index) was calculated to compare the health status of male and female students individually. We used the python software to estimate the values of correlation coefficient and linear regression. From this study we are representing that most of the students in both male and female have normal weight according to their actual height and also have normal height.

1. Introduction

The BMI is a convenient rule of thumb used to widely categorize someone as underweight, regular weight, overweight or obese based on tissue mass (muscle, fat and bone) and height. Commonly regular BMI levels are underweight (below 18.5kg/m^2), regular weight (18.5 to 25), overweight (25 to 30), and obese (over 30). BMIs below 20 and over 25 had been related with better all-reasons mortality, with the chance growing with distance from the 20–25 range. Obesity is described because the presence of a frame mass index ($\text{BMI} \geq 30$) and is taken into consideration to be one of the quickest developing health issues within the current world. A look at completed in the United States amongst youngsters and children elderly 6 - 19 years in 2001 - 2002 confirmed that 31.5% had been at hazard for obese or had been obese, and 16.5% had been overweight in comparison with 29.9% and 15.0%, respectively in 1999 - 2000. Another look at completed in England confirmed that the superiority of obese and weight problems amongst boys elderly 7 - eleven years become 17% and for ladies within the equal age organization,

the superiority become 23.6%. In the United Arab Emirates, the superiority within the age organization of 5 - 17 years becomes 21.5% for obese and 13.7% for weight problems. A look at completed in Saudi Arabia in a pattern of male faculty youngsters 6 - 18 years of age confirmed that eleven.7% of them had been obese and 15.8% of them had been overweight.

The impact of Dengue fever in Thanjavur district based on the statistical study by Dr.R.Arumugam et. al.,[9]. A statistical study was made for the production of Crops before and after Gaja cyclone within the delta region by Dr.Arumugam.R et.al.. Applications mobile learning through statistical approach in the higher educational institutions was discussed by M.Rajathi and R.Arumugam. The impact of COVID-19 at Mayiladuthurai district, Tamilnadu based on the statistical study was made by M.Harikumaran, Dr.R.Arumugam and M.Rajathi. A statistical study on Intelligence Quotient (IQ) test among women and men within the age Group of 20 and 30 in Thanjavur district was discussed by R.Arumugam et.al. Some applications of manpower with various stages in Business using stochastic models discussed by R.Arumugam et. al.Previous research has validated that in one of a kind advanced countries, the bulk of folks reveal constrained records regarding weight problems co-morbidities and the knowledge is even much less whilst asking approximately weight problems as a acknowledged risk element for cancer.

2. Methods and Materials

The survey was conducted in Dr.BRR Government Degree College Jadcherla. In the total of 203 students have signed up of which 75 are male and 128 are female students. The weight in kilograms of each student was calculated using a high precision digital balance scale. The use of digital scale has two advantages. Firstly it provides high precision data; secondly it reduces parallax errors. The heights have been measured using a wall measure tape of Average 0.01 inch precision and converted into centimeters. During this step the maximum stretching of the body was insured without any shoes. And also the Body Mass index (BMI) of the students was calculated to compare the health status of male and female students.

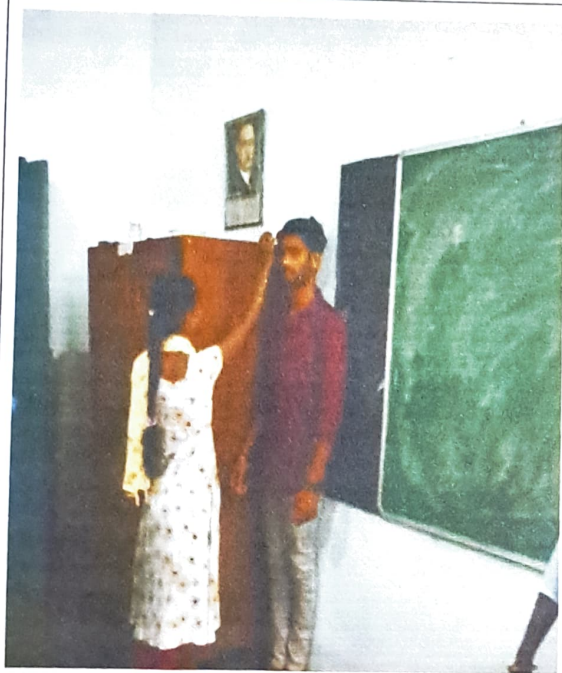
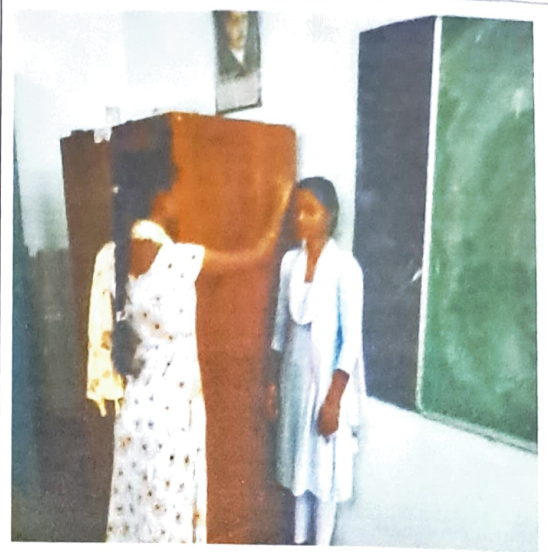






Fig.1: Group members collecting the data of BMI from Selected members

Sr	Name	Age	Height	Weight	BMI (kg/m ²)
1	S. Laxmi	19	5.4 (169)	48	16.2
2	G. Anjali	21	5.1	35	13.5
3	K. Pavani	19	4.7	42	19.5
4	Atula Begum	17	5.1	42	16.2
5	P. Chalanga	18	4.8	20	8.5
6	K. Pragna	17	4.6	20	9.5
7	J. Tarani	17	5	35	14
8	K. Shrawan	17	5.1	45	17.2
9	M. N. Smitra	20	5.3	35	12.5
10	P. Veni	20	4.8	38	16.2
11	Javala Anand	18	5.0	39	15.6
12	K. Adithi	19	5	35	14
13	B. Anusha	19	5.2	35	13.2
14	M. Anshu	20	5.3	30	10.5
15	A. Sarathi	18	5.2	42	16.2
16	G. Manisha	18	5.2	35	12.8
17	J. Shresha	18	4.9	35	14.5
18	G. Anup. Srinivas	17	5.1	30	11.5
19	K. Anusha	19	5.3	35	12.5
20	S. Anand	20	5.2	38	14.2
21	P. S. Anand	21	5.2	35	12.8
22	A. Anand	19	5.1	32	12.2
23	J. Anand	19	5.1	40	15.4
24	S. Anand	18	5.1	45	17.2
25	G. Anand	20	5.2	30	11.5
26	M. Anand	20	5.2	35	12.8
27	P. Anand	19	5.1	35	13.2
28	S. Anand	19	5.1	35	13.2
29	K. Anand	19	5.1	35	13.2
30	M. Anand	19	5.1	35	13.2
31	J. Anand	19	5.1	35	13.2
32	M. Anand	19	5.1	35	13.2
33	L. Shashikala	19	4.8	34	14.5
34	S. Veerababu	19	5.4	46	15.3
35	B. Srinu	(18)	5.6	40	16.2
36	V. Jyothi	(18)	5.2	45	20
37	P. Ashok Reddy	(19)	5.7	54	20.5
38	M. Bhavana	(19)	5.5	43	15.4
39	B. Manohar	(19)	5.2	35	12.8
40	T. Venkatesh	(18)	5.2	45	16.2
41	P. Kavitha	(19)	5.2	28	10.5
42	K. Ramesh Kumar	(19)	5.3	40	14.2
43	P. Keerthi	(19)	5.1	35	13.2
44	P. N. Jyothi	(18)	5.2	50	23
45	M. Venkatesh	(18)	5.3	40	14.2
46	S. Chandrababu	(18)	5.2	20	7.5
47	K. Anand	(18)	5.7	50	15.2
48	J. Poojitha	(18)	5.4	46	11.9
49	P. Suresh	(18)	5.5	60	21.5
50	P. Lakshmi	(19)	5.6	56	17.3
51	K. Anand	(18)	5.6	46	14.5
52	P. Anand	(18)	5.3	50	20.0
53	J. Vijayalakshmi	(18)	5.7	43	13.2
54	K. Anand	18	5.0	47	23.3
55	S. Anand	19	5.0	44	17.0
56	T. Anand	19	5.0	46	18.7
57	A. Anand	18	5.0	40	16.0
58	K. Anand	19	5.1	47	17.5
59	G. Anand	18	5.0	38	15.5
60	P. Anand	18	4.7	40	18.5
61	J. Anand	18	5.1	40	15.4
62	K. Anand	19	5.2	45	16.2
63	P. Anand	19	5.0	40	16.0
64	M. Anand	18	4.8	35	15.5

S.No	Name	Age	Height	Weight	BMI
65	P. Sathya	20	5.2	45	16.8
66	B. Manjula	18	5.2	45	16.8
67	A. Anand	19	5.2	45	16.8
68	P. Lakshmi	19	5.2	45	16.8
69	A. Sathya	20	5.2	45	16.8
70	T. Anand	19	5.2	45	16.8
71	G. Anand	20	5.2	45	16.8
72	K. Anand	19	5.2	45	16.8
73	B. Anand	19	5.2	45	16.8
74	D. Anand	19	5.2	45	16.8
75	R. Anand	19	5.2	45	16.8
76	P. Anand	21	5.2	45	16.8
77	S. Anand	21	5.2	45	16.8
78	P. Anand	20	5.2	45	16.8
79	C. Anand	19	5.2	45	16.8
80	M. Anand	20	5.2	45	16.8
81	T. Anand	20	5.2	45	16.8
82	K. Anand	20	5.2	45	16.8
83	G. Anand	20	5.2	45	16.8
84	P. Anand	20	5.2	45	16.8
85	R. Anand	20	5.2	45	16.8
86	P. Anand	20	5.2	45	16.8
87	S. Anand	20	5.2	45	16.8
88	P. Anand	20	5.2	45	16.8
89	S. Anand	20	5.2	45	16.8
90	A. Anand	20	5.2	45	16.8
91	C. Anand	21	5.2	45	16.8
92	G. Anand	20	5.2	45	16.8
93	K. Anand	19	5.2	45	16.8
94	P. Anand	19	5.2	45	16.8
95	B. Anand	19	5.2	45	16.8
96	D. Anand	19	5.2	45	16.8
97	R. Anand	19	5.2	45	16.8
98	P. Anand	19	5.2	45	16.8
99	S. Anand	19	5.2	45	16.8
100	J. Anand	18	5.2	45	16.8

S.No	Name	Age	Height	Weight	BMI
101	P. Anand	19	5.2	45	16.8
102	B. Anand	20	5.2	45	16.8
103	G. Anand	20	5.2	45	16.8
104	K. Anand	20	5.2	45	16.8
105	T. Anand	20	5.2	45	16.8
106	V. Anand	19	5.2	45	16.8
107	M. Anand	19	5.2	45	16.8
108	G. Anand	19	5.2	45	16.8
109	S. Anand	19	5.2	45	16.8
110	C. Anand	20	5.2	45	16.8
111	A. Anand	20	5.2	45	16.8
112	G. Anand	20	5.2	45	16.8
113	P. Anand	20	5.2	45	16.8
114	S. Anand	19	5.2	45	16.8
115	P. Anand	20	5.2	45	16.8
116	M. Anand	20	5.2	45	16.8
117	K. Anand	19	5.2	45	16.8
118	S. Anand	21	5.2	45	16.8
119	C. Anand	20	5.2	45	16.8
120	K. Anand	20	5.2	45	16.8
121	B. Anand	20	5.2	45	16.8
122	A. Anand	19	5.2	45	16.8
123	P. Anand	17	5.2	45	16.8
124	M. Anand	21	5.2	45	16.8
125	V. Anand	18	5.2	45	16.8
126	C. Anand	18	5.2	45	16.8
127	M. Anand	15	5.2	45	16.8
128	N. Anand	22	5.2	45	16.8

S.No	Name	Age	Height	Weight	BMI
129	V. Vijetha	19	5.2	45	16.8
130	Sadiya Begum	18	5.4	45	16.7
131	V. Shrinitha	19	5.4	45	16.7
132	V. Srinu	19	5.6	48	16.6
133	V. Prathap	19	5.2	47	18.8
134	S. Raju	17	5.7	49	16.3
135	V. Arjun	19	5.8	50	14.5
136	P. Samithi	20	5.8	45	17.3
137	K. Anusha	20	5.0	40	17.3
138	K. Kumar	27	6.0	65	10.6
139	B. Shrinitha	22	4.8	40	20.6
140	B. Adhikar	18	5.5	50	17.9
141	M. Siddharth	18	5.6	45	15.5
142	B. Gnanesh	19	5.3	42	16.2
143	B. Srikanth	25	5.6	50	17.3
144	M. Gnanesh	21	5.1	50	20.8
145	K. Anusha	28	4.6	36	19.2
146	B. Soni	19	5.4	35	13.0
147	D. Shanthi	17	4.5	40	21.3
148	C. Srikanth	20	5.3	59	22.7
149	V. Anand	20	5.9	49	15.3
150	K. Kumar	20	5.5	50	17.9
151	J. Jaipal	20	5.1	23	26.9
152	K. Lakshmi	21	5.8	55	17.7
153	M. Deepthi	19	5.3	47	18.1
154	K. Sathya	21	5	35	22.4
155	M. Sathya	18	5.1	53	22.0
156	E. Anand	18	5	45	18.7
157	E. Anand	17	4.8	35	18.0
158	V. Anand	19	4.8	35	18.0
159	P. Anand	18	4.8	32	16.4
160	M. Anand	18	4.8	45	18.7

S.No	Name	Age	Height	Weight	BMI
161	L. Rajeshwari	19	5.3	45	17.3
162	N. Anand	19	4.8	34	17.5
163	D. Prathiba	20	5	45	19.4
164	C. Anand	20	5.3	41	15.8
165	A. Sravan	20	4.5	30	16.0
166	G. Harika	20	5.3	50	19.3
167	V. Gosi	20	5.3	45	17.6
168	K. Anand	19	5.2	45	17.6
169	K. Anand	38	5.3	64	24.7
170	K. Anand	17	5	61	26.4
171	G. Swathi	19	4.8	34	17.5
172	R. Anand	20	4.8	40	20.6
173	M. Anand	19	5.5	50	17.9
174	A. Anand	20	5.3	53	20.4
175	K. Anand	19	5.4	40	14.9
176	K. Anand	21	5.0	55	23.9
177	M. Anand	20	5.4	43	16.0
178	K. Anand	20	4.9	40	18.0
179	B. Anand	19	5.0	43	18.6
180	B. Anand	20	4.8	40	20.6
181	A. Anand	20	4.9	40	18.0
182	M. Anand	18	4.5	58	20.8
183	K. Anand	19	5.1	45	18.7
184	J. Anand	19	5.4	45	16.7
185	M. Anand	18	5.0	47	21.2
186	J. Anand	19	5.1	43	17.9
187	S. Anand	18	4.9	39	17.5
188	K. Anand	18	5.2	50	20.0
189	K. Anand	18	4.6	40	20.4
190	A. Anand	18	5	40	17.5
191	C. Anand	18	5.1	40	16.6
192	B. Anand	18	5.1	38	15.8
193	G. Anand	18	5	50	21.6

S.NO	Name	Age	Height	Weight	BMI
194	J. Nandini	18	5	40	17.3
195	K. Aravind	17	5.6	49	16.9
196	S. Pajal	17	5.6	49	16.9
197	A. Sravani	20	5.0	45	19.4
198	J. Radha	18	5.0	38	16.4
199	E. Shrivani	18	4.9	39	17.5
200	B. Gayatri	18	4.9	46	20.7
201	R. Gopal	19	5.8	64	20.7
202	M. Shiva	19	5.9	60	18.7
203	B. Srinivasulu	43	5.9	65	20.3

Fig.2: data of BMI of Selected members

Table 1: BMI range among the selected members of Dr. BRR GDC Jadcherla

BMI	Number of individuals
Less than 16	51
16-17	52
18-18.4	12
18.5-24.9	73
25	07
26-29	06
30	1
30-34	1
Total	203

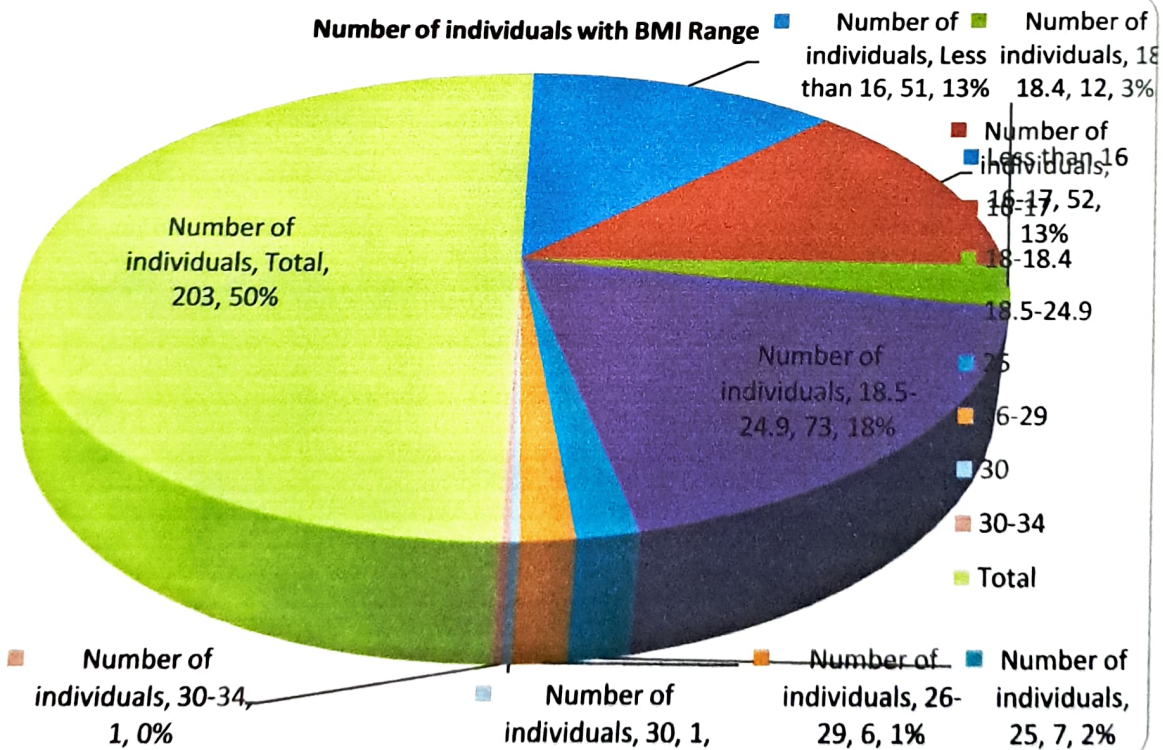


Fig 3: graph indicating the ranges of BMI among theselected members of DR BRR GDC Jadcherla

3. Analysis

Correlation analysis is a statistical method used to evaluate the strength of relationship between two quantitative variables. A high correlation means that two or more variables have a strong relationship with each other, while a weak correlation means that the variables are hardly related. In other words, it is the process of studying the strength of that relationship with available statistical data.

Correlation Coefficient and Linear Regression between Student's Height and Weight

Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. It can be utilized to assess the strength of the relationship between variables and for modeling the future relationship between them. This technique is strictly connected to the linear regression analysis that is a statistical approach for modeling the association between a dependent variable, called response, and one or more explanatory or independent variables. Regression analysis method is the most widely used in multivariate statistical analysis. This paper not only introduces the correlation coefficient and linear regression in height and weight and also calculates BMI to compare the health status of male and female students individually.

Data Analysis

The height and weight of the students were recorded in centimeters and kilograms which were used to calculate the Body Mass Index of each student. BMI is given by

$$\text{BMI} = \frac{\text{Weight}}{h_{cm}^2}$$

BMI is attempting to estimate the amount of body fat mass of a person. It

is an indicator of health risk factor.

Results:

Body Mass Index reflects the health status of an individual. The BMI values sensitize the people to get their Body mass corrected. In the present study, The Table 1 represents the height and weight for the students in the academic year 2021-22.

Averages BMI between the height and weight values are 25.1 to 49. BMI Below 16 is 25.1%, BMI 16-17 is 25.6%, BMI 18-18.4 is 5.9% BMI 18.5-24.9 is 36% BMI 25 is 3.5%, BMI 26-29 is 2.95% BMI 30-34 is 0.98% All the values of BMI are below 35, it means that the height and weight for both male and female remains healthy. A high BMI can be a sign of too much fat in the body, while a low BMI can be a sign of too little fat in the body. The higher BMI, the greater chances of developing certain serious conditions, such as heart disease, high blood pressure, breathing problems and diabetes. A very low BMI can also cause health problems, including bone loss, decreased immune function, anemia etc. The maintaining of the healthy weight is so important for the overall health of the body and also helps to prevent and control many of the diseases. Many people from overweight never develop the diabetes. Statistically, obesity has been proven and to increase the risk of diabetes and also sleeping disordered breathing.

Conclusion

From this study, it is observed that the average height and weight of students were normal. It is also observed that the average BMI of female students is a little bit higher than male students. The averages of BMI of both male and female students are in the normal weight limit. So it can be said that the students have a healthy lifestyle.

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