

# JIGNASA - STUDENTS STUDY PROJECT

(2019-2020)

**TITLE:** “Comparative analyses of certain health risk factors employing Quetelet Indices and allied methods of Faculty members, Non-Teaching staff and UG students of Government Degree College, Hayathnagar, Ranga Reddy District.”



**SUBJECT** : ZOOLOGY

**STUDENT PARTICIPANTS** :

1. **N. VANAJA**, B.Sc. BZCA I Semester (EM)
2. **S. KALYAN**, B.Sc. BZC I Semester (EM)
3. **R. ANUSHA**, B.Sc. BZC I Semester (EM)
4. **MD. ASAD**, B.Sc. BZC I Semester (EM)
5. **T. CHANDANA SIRI**, B.Sc. BZC I Semester (EM)

**MENTOR** : **Dr. N. Rajkumar**, M.Sc., Ph.D., ADBI, SET  
Asst. Prof. of Zoology

**COLLEGE** : Govt. Degree College, Hayathnagar,  
Ranga Reddy District – 501505

## DECLARATION

We hereby declare that the Students Study Project entitled “Comparative analyses of certain health risk factors employing Quetelet Indices and allied methods of Faculty members, Non-Teaching staff and UG students of Government Degree College, Hayathnagar, Ranga Reddy District" is submitted by us is original project work and it has been carried out under the supervision and guidance of Dr. N. Rajkumar, Asst. Prof. of Zoology, GDC, Hayathnagar.”

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Place: Hayathnagar

Date: 22-11-2019

## ACKNOWLEDGEMENTS

We would like to express our sincere thanks to Dr. N. Rajkumar, Asst. Prof. of Zoology for his vital support, guidance and encouragement, without which, this project would not have come forth. We would also express our thanks to Sri B. Sreenivas Reddy, Asst. Prof. of Zoology for helpful discussions for making this project and we take this opportunity to thank Sri. Dr. J. Rajaram, Principal of our college for vital support and encouragement.

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Place: Hayathnagar

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## CERTIFICATE

This is to certify that the study project titled "Comparative analyses of certain health risk factors employing Quetelet Indices and allied methods of Faculty members, Non-Teaching staff and UG students of Government Degree College, Hayathnagar, Ranga Reddy District" submitted is a bonafide project done by

1. N. VANAJA, B.Sc. BZCA I Semester (EM)
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**Hayathnagar**

Date: 22-11-2019

In-Charge. Dept. of Zoology  
Sri B. Sreenivas Reddy  
Asst.Prof. of Zoology  
Govt. Degree College,  
Hayathnagar

**Title** : Comparative analyses of certain health risk factors employing Quetelet Indices and allied methods of Faculty members, Non-Teaching staff and UG students of Government Degree College, Hayathnagar, Ranga Reddy District.

**Hypothesis** : To test whether the subjects under study are healthy or unhealthy.

**Aims & Objectives:**

1. Determination of weight status of the subjects i.e. Underweight, Normal weight (healthy), Overweight or Obese.
2. Assessment of certain risk factors associated with obesity viz., blood pressure, body fat percentage etc.
3. Data collection of subjects regarding Exercise and Physical inactivity etc.
4. Comparative analyses of Quetelet indices between
  - A) Teaching and Non-Teaching Staff
  - B) UG Students of B.A., B.Com & B.Sc Courses
  - C) Male and Female subjects
5. Suggestions and Corrective measures for a healthy lifestyle based on the findings of the study.

## **REVIEW OF LITERATURE:**

Body mass index (BMI) is a measure of body fat based on height and weight. It is a useful indicator of underweight, healthy weight, overweight or obese of the subject under investigation. It is a good gauge of one's risk for diseases that can occur with more body fat.

It was initially developed by **Lambert Adolphe Jacques Quetelet**, a Belgian astronomer, mathematician, statistician and sociologist. He called it as "social physics" (1830-1850). BMI is also known as Quetelet Index. **Ancel Keys**, an American scientist in the area of diet and health, has introduced the term "Body Mass Index" in his paper published in 'Journal of chronic diseases' in July 1972. In France, Israel, Italy and Spain, legislation has been introduced banning usage of fashion show models having a BMI below 18. This is done in order to fight anorexia (an emotional disorder characterized by an obsessive desire to lose weight by refusing to eat) among models and people interested in fashion.

## **RESEARCH METHODOLOGY:**

**Study Setting:** The present study was undertaken to assess the Quetelet indices and associated parameters of the Faculty members, Non-Teaching Staff and undergraduate students of B.A., B.Com and B.Sc., of Government Degree College, Hayathnagar, Ranga Reddy district of Telangana State.

**Sampling:** The sample size taken for this investigation was 50 each (large sample i.e. >30) from the undergraduate students of B.A., B.Com and B.Sc. Courses while the total staff members participated in this study was 39 i.e. 25 from Teaching Staff and 14 from Non-Teaching Staff members.

**Research Methodology:** The study project was designed to estimate the Quetelet indices or Body Mass Indices of the subjects under study and categorize them as underweight, normal weight or healthy weight, overweight and obese. In order to calculate the BMI of the subjects, weight in kilograms and height in centimeters were collected using **Weighing machine** and a **measuring tape** and an **online tool** (BMI calculator) was employed for this purpose.

This study also included the estimation of other parameters such as **Blood Pressure, Pulse, Body fat percentage, Ideal weight**. The blood pressure and pulse were measured using **Automatic Blood pressure monitor model HEM-7111(Omron)**. Body fat percentage was calculated using **online tool** (body fat calculator) involving **gender, age, weight, height, girths of neck, waist and hip** in cm. Ideal weight was estimated by using Ideal weight calculator involving age, gender, height in cm based on popular formulas such as Robinson(1983), Miller (1983) etc.



**Measuring Tape**



**Weighing Machine**



**Automatic Blood Pressure and Pulse Monitor**

**Model HEM-7111(Omron)**



**Monitoring of BP and Pulse of Non-Teaching Staff**



**Measuring Body Weight and Height of Teaching Staff Member**



Table No. 1. Primary Data collected from Teaching Staff of Government Degree College, Hayathnagar, Ranga Reddy District, Telangana State

S. No	Name of the Subject	Subject	Gender	DOB	Age in Yrs	Wt (Kg)	Ht (Cm)	BMI	BP	Neck Cm	Waist Cm	Hip Cm	Body Fat %	Exercise (Y/N)	Phys Inactivity Y/N	Ideal wt (Kg)	Pulse
1	Sri B. Srinivas Reddy	Zoology	Male	02-02-1973	46	78	173	26.1	138/82	43	99	103	23.8	Yes	No	65.7	90
2	Dr. N. Rajkumar	Zoology	Male	10-01-1969	50	74	170	25.6	107/73	40	106	108	30.6	No	Yes	63	99
3	Dr. T. Srinivasulu	Mathematics	Male	22/04/1977	42	80	167	28.7	129/68	42	108	112	31.1	No	Yes	60.3	95
4	Sri B. Ravinder	Economics	Male	06-04-1970	49	72	170	24.9	132/80	41	100	104	26.3	Yes	No	63	81
5	Dr. D. V. Rao	Chemistry	Male	16/06/1970	49	70	167	25.1	158/91	42	91	103	19.9	Yes	No	60.3	89
6	Dr. E. Shanker	Commerce	Male	02-10-1981	38	73	166	26.5	137/75	41	94	104	23	Yes	No	59.4	69
7	Sri G. Praveenkumar	English	Male	18/09/1983	36	80	172	27	131/75	32	106	109	34.7	No	Yes	64.8	81
8	Dr. P. Upender	Chemistry	Male	05-10-1985	34	65	172	22	120/78	40	87	99	17.4	Yes	No	64.8	68
9	Dr. B. Rajitha	Chemistry	Female	27/07/1975	44	55	150	24.4	110/70	32	85	104	41	Yes	No	45	85
10	Smt. K. Harika	Physics	Female	14/10/1984	35	60	166	21.8	120/74	32	64	96	22	No	Yes	59.4	64
11	Dr. Ratnamanjula	Botany	Female	08-05-1973	46	92	160	35.9	111/69	33	107	127	56.8	No	Yes	54	101
12	G. Hrudaya Raj	English	Male	09-10-1982	37	77	173	25.7	188/122	49	97	107	18	Yes	No	65.7	98
13	Sri D.S.S.R. Krishna	English	Male	17/08/1973	46	66	170	22.8	140/81	41	94	97	22.2	Yes	No	63	57
14	Dr. B. Kiritam	History	Male	09-01-1969	50	81	168	28.7	172/90	40	98	104	26	No	Yes	61.2	70
15	Dr. Imtiazuddin Farooqi	Commerce	Male	01-12-1970	49	65	167	23.3	138/81	42	88	101	17.5	No	Yes	60.3	79
16	Dr. Bala Srinivas	Economics	Male	07-02-1981	39	71	175	23.2	126/88	41	92	102	19.9	Yes	No	67.5	79
17	Sri S. Subramanyam	Commerce	Male	06-08-1965	54	76	169	26.6	148/80	40	105	108	30.2	No	Yes	62.1	83
18	Sri M. Samuel Praveen	Political Science	Male	04-04-1969	50	80	172	27.7	141/88	39	92	106	21.9	Yes	No	64.8	74
19	Dr. N. Mallesh	History	Male	07-04-1971	48	64	160	25	118/70	41	90	99	21.1	No	Yes	54	96
20	Dr. S. Dhanraj	Commerce	Male	21/6/1979	40	95	174	31.4	155/93	38	110	121	33.2	No	Yes	66.6	79
21	Dr. K. Suresh	Telugu	Male	08-08-1969	50	75	162	28.6	126/77	41	103	97	29.7	No	Yes	55.8	77
22	Sri Y.V. Rama Rao	Computer Applications	Male	15/6/74	45	68	156	27.9	120/83	40	99	106	28.9	Yes	No	50.4	94

2	Sri G. Narender Reddy	Mathematics	Male	21/5/82	37	81	166	29.4	121/66	41	103	107	28.9	No	Yes	59.4	75
2	Sri A. Amarender	Library Science	Male	17/03/1969	50	70	170	24.2	146/84	41	94	102	22.2	No	Yes	63	82
2	Smt P. Manemma	Library Science	Female	25/7/1972	47	85	155	35.4	128/82	35	106	125	56.4	No	Yes	49.5	109

Table No. 2 Primary Data collected from Non-Teaching Staff of Government Degree College, Hayathnagar, Ranga Reddy District, Telangana State

S.No	Name of the Subject	Designation	Gender	DOB	Age in Yrs	Wt (Kg)	Ht (Cm)	BMI	BP	Nec k Cm	Wai st Cm	Hi p Cm	Bod y Fat %	Exe r- cise (Y/ N)	Physic al Inactiv ity Y/N	Ide al wt	Pul se
1	Sri V. Mehar	A.O.	Male	06-05-1967	52	70	163	26.3	144/82	38	93	98	24.9	No	Yes	56.7	96
2	Sri G. Laxminarayana Goud	Jr. Asst.	Male	15/4/1980	39	81	159	32	132/75	40	107	106	33.3	No	Yes	53.1	74
3	Sri B. Anjaiah	Record Asst.	Male	05-10-1986	33	50	163	18.8	119/70	36	73	88	10.4	No	Yes	56.7	84
4	Sri K. Vinay kumar	Lab Asst	Male	06-04-1986	33	55	152	23.8	137/92	39	80	93	16.1	No	Yes	46.8	97
5	Smt. S. Radhika	OS	Female	23/7/1983	36	75	159	29.7	115/74	35	97	116	47.7	No	Yes	53.1	86
6	Sri Uday K. Naik	OS	Male	31/3/1972	48	75	155	31.2	117/68	42	106	113	32.3	No	Yes	49.5	96
7	Smt. P.V. Laxmi	Store Keeper	Female	30/7/1967	52	65	156	26.7	144/89	34	103	113	50.3	Yes	No	50.4	79
8	Smt. Ch. Vijaya	Sr. Asst	Female	06-12-1980	39	83	156	34.1	142/85	39	117	114	54.5	Yes	No	50.4	77
9	Sri G. Mukesh kumar	OS	Male	17/12/1981	37	77	172	26	152/98	43	38	40	25.9	Yes	No	64.8	52
10	Sri S. Mahesh	OS	Male	06-10-1993	26	67	170	23.2	139/74	36	89	99	22.2	No	Yes	63	95
11	Sri G. Nagaraj	Store Keeper	Male	08-01-1984	35	91	167	32.6	137/85	46	109	108	29.3	Yes	No	60.3	94
12	Sri D. Saikumar	OS	Male	08-07-1997	22	70	166	25.4	106/66	40	90	99	20.8	Yes	No	59.4	80
13	Ms. B. Kalyani	OS	Female	06-10-1992	27	78	160	30.5	120/73	34	85	100	35.2	No	Yes	54	112
14	Sri B. Sudhakar	Waterman	Male	20/2/1980	39	90	171	30.8	123/82	42	112	114	32.7	Yes	No	63.9	105

Table No. 3 Primary Data collected from B.Sc. Students of Government Degree College, Hayathnagar, Ranga Reddy District, Telangana State

S.No	Name of the Subject	Gender	DOB	Age in Yrs	Wt (Kg)	Ht (Cm)	BMI	BP	Nec k Cm	Wais t Cm	Hi p C m	Bod y Fat %	Exer -cise (Y/N)	Physical Inactivit y Y/N	Idea l wt	Puls e
1	A. Anand	Male	19/9/2002	17	55	172	18.64	133/85	37	72	92	6.9	No	Yes	64.8	94
2	B. Yakambram	Male	16/6/2000	19	48	158	19.2	112/47	37	73	86	10.3	No	Yes	52.2	77
3	Md. Asadh	Male	30/6/2000	19	55	178	17.4	133/65	38	66	89	0	Yes	No	70.2	77
4	D. Naveen	Male	25/5/2000	19	47	155	19.6	119/70	37	69	87	6.7	No	Yes	49.5	81
5	P. Kotes	Male	15/4/2000	19	57	168	20.2	130/88	38	76	94	12.8	No	Yes	61.2	94
6	K. Manasa	Femal e	06-08-2002	17	34	152	14.7	112/68	28	56	75	11.1	No	Yes	46.8	105
7	J. Manasa	Femal e	27/11/2001	18	30	156	12.2	114/65	29	56	71	6.9	No	Yes	50.5	80
8	N. Vanaja	Femal e	25/6/2000	19	39	150	17.3	140/86	31	64	86	21.3	No	Yes	45	96
9	K. Pavithra	Femal e	07-05-2001	19	55	156	22.6	124/72	34	74	88	24.7	No	Yes	50.4	118
10	R. Anusha	Femal e	19/4/2000	18	50	152	21.6	94/62	30	72	90	27.9	No	Yes	46.8	81
11	G. Karunakar	Male	13/11/1998	21	55	169	19.3	126/72	41	80	93	11.2	No	Yes	62.1	111
12	M. Arunkumar	Male	06-09-1999	20	75	172	25.4	145/73	40	91	100	20.5	No	Yes	64.8	93
13	R. Srikanth	Male	07-03-2000	19	42	169	14.7	112/47	33	68	58	7.4	Yes	No	37.8	77
14	A. Anil kumar	Male	06-04-2000	19	43	160	16.8	115/50	37	66	81	2.4	No	Yes	38.7	78
15	R. Naveen kumar	Male	11-07-1999	20	40	157	16.2	102/62	37	74	84	11.5	Yes	No	36	70
16	M. Subhashini	Femal e	21/9/2000	19	39	148	17.8	99/70	31	67	83	21.9	No	Yes	35.1	97
17	M. Ramya	Femal e	22/7/2001	18	39	156	16	111/64	31	72	81	21.4	No	Yes	50.4	79
18	S. Kalyan	Male	18/8/1999	20	55	164	20.4	108/68	35	74	88	12.1	No	Yes	57.6	89
19	P. Praveen	Male	31/12/2001	18	60	170	20.8	144/77	35	80	96	16.2	Yes	No	63	87
20	V. Parushuram	Male	14/6/2002	18	50	167	17.9	137/67	35	71	88	8.7	Yes	No	60.3	108
21	K. Shailaja	Femal e	13/2/2000	19	38	153	16.2	101/67	33	67	81	18.2	No	Yes	47.7	75
22	T. Chandana Siri	Femal e	22/10/2002	18	55	170	19	125/76	33	75	91	23.6	No	Yes	63	100
23	K. Ramesh	Male	03-04-2002	18	54	78	17	107/65	35	76	87	11.5	Yes	No	70.2	105
24	K. Ganesh	Male	03-05-2000	19	55	175	18	143/63	36	76	91	11.1	y	No	67.5	80
25	B. Anjaneyulu	Male	06-10-2000	19	52	175	17	117/63	35	65	86	1.1	y	No	67.5	64
26	N. Chinamma	Femal e	05-10-2001	18	40	151	17.5	88/57	32	72	85	24.4	No	Yes	45.9	105
27	A. Deepika	Femal e	07-06-2002	17	39	152	16.9	114/65	32	72	85	24.1	No	Yes	46.8	108
28	K. Santosha	Femal e	17/8/2000	19	42	155	17.5	114/74	30	64	82	18.2	No	Yes	49.5	102
29	B. Soundarya	Femal e	23/3/1999	20	42	153	17.9	140/73	30	67	89	24.4	No	Yes	47.7	113
30	Jayashree Sana	Femal e	15/5/2000	19	55	152	23.8	112/72	32	77	100	34.6	No	Yes	46.8	83
31	K. Deepa	Femal e	15/11/1997	21	35	145	16.6	89/53	29	70	79	23.4	No	Yes	40.5	83
32	B. Manisha	Femal e	08-08-2000	19	50	159	19.8	158/110	32	72	86	22.7	No	Yes	53.1	81
33	M. Deepika	Femal e	17/1/2000	19	44	158	18.1	132/71	31	69	90	24.7	No	Yes	50.4	119
34	Sushmitha	Femal e	10-12-2000	19	45	141	22.6	110/60	34	70	89	27.4	No	Yes	36.9	105
35	Ramadevi	Femal e	16/1/2000	19	38	152	16.4	109/53	29	66	86	23	No	Yes	46.8	109
36	Swathi	Femal e	19/10/2000	19	40	150	17.8	146/62	30	66	91	25.8	No	Yes	45	53
37	Swamydas	Male	14/6/1999	20	49	171	15.3	116/68	35	66	85	2.9	No	Yes	63.9	93
38	Y. Anil	Male	15/5/1999	20	45	169	15.8	126/69	33	70	82	9.4	No	Yes	62.1	103

39	P. Sumanth	Male	24/11/1999	20	48	163	18.5	105/64	35	66	85	4.2	Yes	No	56.7	100
40	N. Akhil	Male	14/3/2000	19	60	169	21	148/90	38	91	102	22.4	No	Yes	62.1	113
41	G. Sanjay	Male	05-02-1998	21	61	166	22.1	119/73	39	83	93	16.1	No	Yes	59.4	88
42	Sai kalyan	Male	30/10/1999	20	60	167	21.5	127/80	36	77	97	13.4	Yes	No	60.3	100
43	K. Ramanji	Male	16/8/2000	20	73	170	25.3	151/66	41	64	109	0	Yes	No	63	92
44	B. Venkatesh	Male	18/6/2000	20	60	167	21.5	146/72	38	80	92	14.2	No	Yes	60.3	90
45	T. Naresh	Male	06-12-2000	20	45	161	17.4	110/53	38	66	85	1.1	No	Yes	54.9	87
46	P. Shekar	Male	08-04-1996	23	56	167	21.1	125/68	37	75	89	11.3	Yes	No	60.3	105
47	P. Prashant	Male	12-06-2001	17	68	176	22	102/60	38	93	100	22.6	Yes	No	68.4	96
48	V. Balarajesh	Male	15/4/2001	18	58	182	17.5	125/67	36	80	93	13.4	No	Yes	73.8	76
49	K. shiva	Male	08-10-2000	19	49	176	15.8	121/67	38	75	91	8.2	No	Yes	68.4	98
50	G. Mahender	Male	15/1/1999	21	51	170	17.6	130/65	35	77	89	13.7	No	Yes	63	77

Table No.4 Primary Data collected from B.A. Students of Government Degree College, Hayathnagar, Ranga Reddy District, Telangana State

S.No	Name of the Subject	Gender	DOB	Age in Yrs	Wt (Kg)	Ht (Cm)	BM I	BP	Nec k Cm	Wais t Cm	Hi p Cm	Bod y Fat %	Exer- cise (Y/N)	Physical Inactivit y Y/N	Idea l Wt	Puls e
1	V. Shirisha	Femal e	13/7/2001	18	46	164	17.1	119/68	33	73	88	22.5	Yes	No	57.6	93
2	Ch. Divyarani	Femal e	18/2/99	20	54	155	22.5	105/67	32	92	98	40	Yes	No	49.5	75
3	P. Varalaxmi	Femal e	17/7/2001	18	51	154	24.3	99/60	33	88	94	36	Yes	No	48.6	89
4	N. Pavan	Male	03-05-2001	18	51	172	17.2	125/75	33	69	88	7.9	Yes	No	64.8	92
5	B. Bhargavi	Femal e	07-07-2001	18	49	162	18.7	111/71	33	80	88	26.7	Yes	No	55.8	85
6	N. Laxmi	Femal e	02-05-2001	18	40	154	16.9	118/69	30	78	86	28.4	No	Yes	48.6	93
7	B. Ratnakar	Male	14/5/2002	17	67	181	20.5	143/70	37	79	102	11.9	Yes	No	72.9	87
8	R. Venkatesh	Male	04-12-1999	20	65	172	22	107/63	40	80	97	11.6	Yes	No	64.8	69
9	G. Veeranjanelu	Male	15/10/1999	20	54	167	19.4	153/68	38	72	93	6.7	Yes	No	60.3	97
10	M. Naveen	Male	26/6/1999	20	54	164	20.1	135/72	37	76	92	12.1	No	Yes	57.6	90
11	N. Chintu	Male	08-06-2002	17	49	169	17.2	166/73	37	69	89	4.3	No	Yes	62.1	143
12	H. Neelesh	Male	29/12/1997	22	55	160	21.5	120/67	39	73	91	7.9	Yes	No	54	78
13	J. Shivakumar	Male	03-10-2002	17	51	163	19.2	121/68	35	73	86	11.3	Yes	No	57	91
14	D. Laxman	Male	11-04-1999	19	74	177	23.6	108/63	38	79	98	11.7	Yes	No	69.3	85
15	St. Nazir	Male	07-08-2002	18	58	168	20.5	106/53	38	76	85	10.5	Yes	No	61.2	77
16	M. Siddhu	Male	02-12-2001	18	78	167	28	128/74	39	90	97	21.3	No	Yes	60.3	89
17	Ch. Rahul	Male	12-04-2000	19	50	171	17.1	120/73	33	69	89	8.1	Yes	No	63.9	91
18	B. Vishnu	Male	18/6/2001	19	65	183	19.4	128/68	36	72	82	6.1	Yes	No	74.7	85
19	J. Vinay	Male	14/2/1999	20	64	170	22.1	102/67	40	81	97	12.8	No	Yes	63	106
20	Ch. Shivalingam	Male	08-05-1998	21	49	170	17	106/52	33	68	89	7.2	Yes	No	63	84
21	G. Paripurna	Femal e	14/5/2000	19	40	153	17.1	102/67	36	65	85	17.6	Yes	No	47.7	95
22	M. Santosh	Male	01-11-2000	19	48	161	18.5	127/58	36	66	83	3.4	Yes	No	54.9	79
23	K. Kiranteja	Male	06-12-1996	23	71	180	21.9	150/78	39	89	96	18.4	Yes	No	72	85
24	Ch. Ashok	Male	29/5/2001	18	70	179	21.8	110/6	37	82	94	3.2	Yes	No	62.1	88

								9								
25	K. Sandeep	Male	06-05-2002	18	48	165	17.6	127/53	36	71	87	8.1	No	Yes	58.5	83
26	K. Surendra	Male	09-12-2001	19	38	123	25.1	115/69	33	67	80	14.5	No	Yes	20.7	90
27	A. Shanmukh	Male	16/10/2001	19	60	176	19.4	133/56	35	73	94	9.1	No	Yes	68.4	110
28	G. Suresh	Male	15/3/2000	19	68	171	23.3	146/84	41	77	94	8.1	No	Yes	63.9	80
29	A. Shekar	Male	08-08-1999	20	69	167	24.7	123/67	40	84	98	15.9	No	Yes	60.3	102
30	R. Shivakumar	Male	03-10-1999	20	73	170	25.3	152/80	36	89	120	22.2	No	Yes	63	76
31	M. Suresh	Male	02-02-2000	19	45	168	15.9	120/70	32	72	84	12.3	No	Yes	61.2	95
32	R. Jagan	Male	24/10/1998	21	79	183	23.6	104/53	68	94	103	23.4	Yes	No	74.7	68
33	K. Ashwini	Female	25/01/2001	19	70	164	26	84/69	33	85	108	38.3	No	Yes	57.6	95
34	V. Chandrakala	Female	06-05-1995	24	54	173	18	128/77	31	73	95	24.8	No	Yes	65.7	105
35	G. Raghavendra	Male	26/5/1999	20	60	187	17.2	120/73	38	75	95	6.5	No	Yes	78.3	81
36	E. Azadh	Male	15/8/2000	19	45	175	14.7	132/67	36	72	90	7.4	Yes	No	67.5	86
37	B. Pushpalatha	Female	26/6/2002	17	45	152	19.5	122/70	31	64	76	8.4	Yes	No	46.8	109
38	N. Prasad	Male	02-01-1999	18	53	163	19.9	112/51	36	70	88	7.4	No	Yes	56.7	78
39	E. Sagar	Male	15/5/2001	18	75	174	24.8	127/68	37	91	104	22.2	No	Yes	66.6	84
40	Ravi Nayak	Male	16/3/2002	17	50	172	16.9	113/61	33	68	82	6.9	Yes	No	64.8	91
41	R. Sandeep	Male	14/8/2002	17	45	158	18	112/65	33	65	80	6.2	Yes	No	52.2	93
42	K. Pandu Nayak	Male	15/6/2002	17	60	166	21.8	115/64	34	77	90	15.3	No	Yes	59.4	82
43	R. Sharada	Female	20/5/1998	21	50	144	24.1	135/80	33	72	82	24.3	No	Yes	39.6	114
44	K. Shiva Ganesh	Male	19/2/2002	17	73	170	25.3	112/68	37	89	105	21.5	No	Yes	63	86
45	B. Naresh	Male	13/4/1999	20	51	158	20.4	124/74	34	67	90	7.3	No	Yes	52.2	116
46	V. Ganesh	Male	26/1/2001	19	51	174	16.8	151/86	32	72	88	11.3	Yes	No	66.6	83
47	G. Harish	Male	19/4/1999	20	57	168	20.2	132/66	35	79	93	15.7	No	Yes	61.2	80
48	S. Nagaraju	Male	07-01-1998	21	70	165	25.1	147/65	38	90	102	22.4	Yes	No	58.5	88
49	K. Swapna	Female	28/3/1999	20	50	147	23.1	112/56	34	76	98	33.6	No	Yes	42.3	83
50	B. Renuka	Female	26/1/1999	20	52	154	21.9	110/69	33	88	96	37	No	Yes	48.6	88

Table No. 5 Primary Data collected from B.Com. Students of Government Degree College, Hayathnagar, Ranga Reddy District, Telangana State

S.No	Name of the Subject	Gender	DOB	Age in Yrs	Wt (Kg)	Ht (Cm)	BM I	BP	Nec k Cm	Wais t Cm	Hi p Cm	Bod y Fat %	Exer- cise (Y/N)	Physical Inactivit y Y/N	Idea l Wt	Puls e
1	N. Swapna	Female	04-01-2001	18	51	150	22.7	96/54	33	85	91	34.2	No	Yes	45	89
2	P. Rupesh	Male	30/3/2002	17	68	174	22.5	132/59	39	81	97	13	Yes	No	66.6	64
3	Y. Raju	Male	15/8/1999	20	60	165	22	179/66	36	76	91	12.8	No	Yes	58.5	77
4	S. Yamini	Female	31/7/2001	18	60	156	24.7	100/58	35	79	101	33	No	Yes	50.4	92
5	N. Pavithra	Female	09-02-2001	18	43	157	17.4	115/70	29	68	87	23.3	No	Yes	51.3	79
6	S. Bhavani	Female	06-10-2001	18	39	152	16.9	104/72	29	63	84	20.2	No	Yes	46.8	87
7	A.V. Ganesh	Male	09-03-2000	19	53	166	19.2	123/67	34	70	90	8.9	No	Yes	59.4	115
8	Y. Charankumar	Male	21/5/1998	21	75	188	21.2	106/50	39	82	102	11.6	Yes	No	79.2	66
9	K. Manichand	Male	22/2/2000	19	55	166	20	107/62	36	77	93	13.5	No	Yes	59.4	92
10	M. Naveen	Male	16/7/2000	19	56	170	19.4	124/57	38	76	89	10.1	Yes	No	63	75
11	A. Mallesh	Male	06-04-1998	21	59	171	20.2	139/76	38	76	96	10	No	Yes	63.9	97
12	K. Naresh	Male	25/3/2000	19	54	178	17	123/54	36	76	91	10.6	No	Yes	70	88
13	A. Narender	Male	11-12-1998	21	50	178	15.2	124/67	30	74	80	14	No	Yes	70.2	79
14	K. Pavan Kalyan	Male	01-12-1999	20	45	164	16.7	131/51	35	67	80	5.1	Yes	No	57.6	89
15	T. Anila	Female	05-10-2000	19	45	164	16.7	114/59	31	70	85	20.3	Yes	No	57.6	105
16	L. Sushmitha	Female	08-10-2000	19	53	167	19	133/64	34	80	90	25.9	Yes	No	60.3	54
17	B. Mahesh	Male	10-07-2000	19	55	168	19.5	128/68	35	67	80	4.5	No	Yes	61.2	60
18	Sd. Afreen	Female	15-07-1999	20	43	158	17.2	104/46	35	79	101	33.4	Yes	No	52.2	89
19	K. Kalpana	Female	09-06-1999	20	35	148	16	120/70	26	63	78	19.6	No	Yes	43.2	85
20	U. Sridhar	Male	04-01-2001	18	67	176	21.6	122/70	37	80	100	13.5	No	Yes	68.4	75
21	R. Harish	Male	14/5/2000	19	47	164	17.5	139/70	33	72	89	12.1	Yes	No	57.6	87
22	N. Shivaramakrishna	Male	29/5/2001	18	64	167	22.9	153/107	36	78	92	14.2	No	Yes	60.3	92
23	N. Saikiran	Male	15/4/2000	19	80	178	25.2	148/135	39	95	105	22.9	No	Yes	70.2	113
24	G. Aravind	Male	14/10/2000	19	45	162	17.1	112/63	33	72	85	12.5	No	Yes	55.8	90
25	B. Lokesh	Male	29/11/2000	18	54	179	16.9	121/64	36	76	91	10.5	No	Yes	71.1	74
26	T. Ganesh	Male	12-03-2000	19	64	168	22.7	111/62	35	88	97	22.6	Yes	No	61.2	80
27	T. Rahul	Male	20/8/2001	18	54	175	17.6	116/70	35	72	89	8.4	Yes	No	67.5	83
28	C. Mogulappa	Male	06-01-1999	20	65	180	20.1	124/70	37	74	89	7.6	No	Yes	72	82
29	N. Uma	Female	07-02-1999	20	40	155	16.6	107/53	30	69	87	23.8	No	Yes	49.5	107
30	G. Swathi	Female	06-10-2001	18	46	158	18.4	127/69	30	74	85	24.6	Yes	No	52.2	89
31	S. Giri	Male	06-10-2000	19	55	160	21.5	144/87	36	76	90	13.7	No	Yes	54	85
32	N. Manjula	Female	22/12/2000	18	45	157	18.3	113/61	34	64	72	9.2	No	Yes	51.3	80
33	P. Lavanya	Female	19/7/2001	18	50	151	21.9	102/63	31	79	92	32.4	No	Yes	45.9	99
34	M. Shankar	Male	13/7/2000	19	74	173	24.7	121/70	38	87	98	18.8	No	Yes	65.7	79
35	J. Lingaswamy	Male	04-11-2000	19	50	177	16	117/62	38	68	85	0.8	No	Yes	69.3	68
36	G. Kavya	Female	15/12/1998	21	36	152	15.6	112/74	31	60	71	9.2	No	Yes	47	132

37	C. Anuradha	Female	16/6/1999	20	40	148	18.3	110/74	34	65	78	16	No	Yes	43.2	104
38	P. Nani	Male	01-05-1999	20	55	176	17.8	125/66	34	72	87	9.1	Yes	No	68.4	109
39	K. Saikumar	Male	15/10/1999	20	78	167	28	137/80	40	92	103	22.1	Yes	No	60.3	94
40	A. Latha	Female	13/7/1999	20	52	151	22.8	107/66	33	74	86	25.5	Yes	No	45.9	93
41	P. Somesh	Male	04-05-2000	19	60	170	20.8	143/70	37	76	89	11.1	No	Yes	63	74
42	G. Ramya	Female	15/6/1999	20	36	146	16.9	110/83	29	64	80	20.2	No	Yes	41.4	106
43	G. Sai Sushma	Female	03-03-1999	20	65	162	24.8	106/67	35	96	109	43.3	No	Yes	55.8	109
44	J. Yellesh	Male	08-10-2002	17	55	166	20	123/72	36	74	91	10.8	No	Yes	59.4	81
45	G. Veneela	Female	24/8/2002	17	44	160	17.2	106/57	30	63	79	14.5	No	Yes	54	103
46	R. Aruna	Female	03-12-2002	17	55	152	23.8	170/72	34	76	95	30.6	No	Yes	46.8	96
47	D. Kurmuthy	Male	13/2/2002	17	62	167	22.2	110/58	35	84	97	19.9	Yes	No	60.3	75
48	S. Jyothsna	Female	20/5/1999	20	61	160	23.8	118/67	32	86	93	33.3	No	Yes	54	90
49	R. Chantu	Male	26/5/2001	18	47	168	16.7	129/54	36	66	88	2.2	Yes	No	61.2	94
50	K. Raju	Male	26/5/2000	19	57	168	20.2	170/87	37	80	92	14.9	Yes	No	61.2	97

**Table 6. BMI TABLE FOR ADULTS (Age 18 or Older)**  
(According to WHO Recommendations)

Category	BMI Range in Kg/m <sup>2</sup>
Severe thinness	< 16
Moderate thinness	16 - 17
Mild thinness	17 - 18.5
Normal	18.5 - 25
Overweight	25 - 30
Obese Class I	30 - 35
Obese Class II	35 - 40
Obese Class III	> 40

**Table 7. IDEAL BLOOD PRESSURE ACCORDING TO AGE CHART**

<b>Age in Yrs</b>	<b>Female</b>	<b>Male</b>
<2	80/34 to 120/75	83/38 to 117/76
3	100/59	100/61
4	102/62	101/64
5	104/65	103/66
6	105/68	104/68
7	106/70	106/69
8	107/71	108/71
9	109/72	110/72
10	111/73	112/73
11	113/74	114/74
12	115/74	116/75
13	117/75	117/76
14	120/75	119/77
15	120/76	120/78
16	120/78	120/78
17	120/80	120/78
18	120/80	120/80
19-24	120/79	120/79
25-29	120/80	121/80
30-35	122/81	123/82
36-39	123/82	124/83



40-45	124/83	125/83
46-49	126/84	127/84
50-55	129/85	128/85
56-59	130/86	131/87
60+	134/84	135/88

**Table 8. BLOOD PRESSURE CHART**

<b>SYSTOLE</b>	<b>DIASTOLE</b>	<b>CATEGORY</b>
210	120	Stage 4 of High BP
180	110	Stage 3 of High BP
160	100	Stage 2 of High BP
140	90	Stage 1 of High BP
130	85	High Normal BP
120	80	Normal BP
110	75	Low Normal BP
90	60	Borderline Low BP
60	40	Too Low BP
50	33	Dangerously Low BP

**Table 9. AMERICAN COUNCIL ON EXERCISE  
BODY FAT CATEGORIZATION**

<b>Description</b>	<b>Women</b>	<b>Men</b>
Essential Fat	10 - 13 %	8 - 14 %
Athletes	14 - 20 %	6 - 13 %
Fitness	21 - 24 %	14 - 17 %
Average	25 - 31 %	18 - 25 %
Obese	32 + %	25+ %

## **RESULTS / FINDINGS:**

A random sample of 50 students each from B.A., B.Com, B.Sc was chosen including males and females while sample size of Teaching and Non-Teaching Staff was about 39 altogether i.e. 25 Teaching Staff members and 14 Non-Teaching Staff Members.

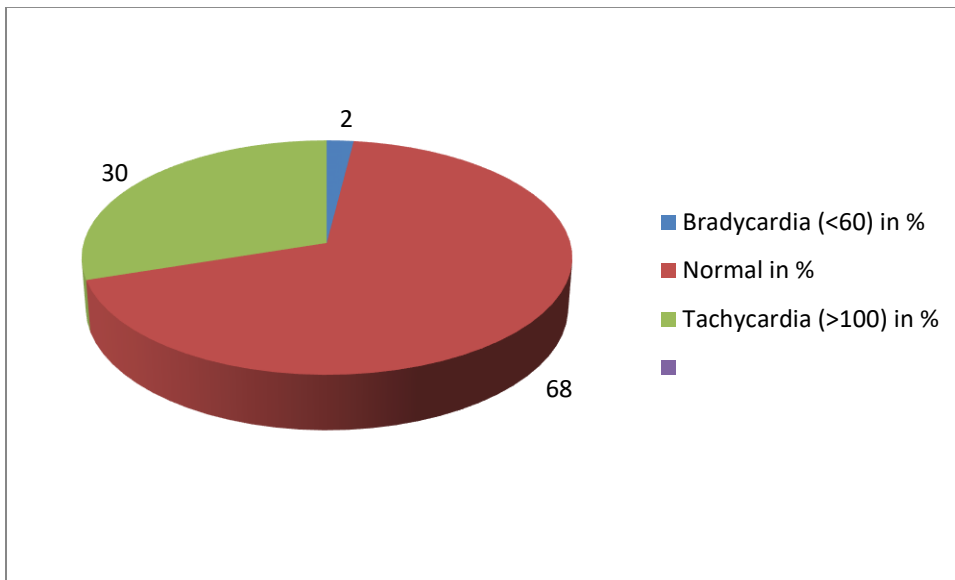
The analysis of **Body Mass Indices** results of Teaching Staff indicate that about 60% of them are Overweight category, 8% under Obese category while 32% of them were under normal or healthy weight category (refer Chart 1). Similarly the results of BMI indices of Non-Teaching Staff reflect the fact that about 79% fall under overweight category while 21% under healthy weight category (refer Chart 2). On comparative analyses, it is evident that B.A. Students showed highest percent (12%) under overweight category while B.Sc. students displayed highest percent (56%) under Underweight category. The descending order of Normal weight category is B.A.(58%), B.Com(52%) and B.Sc. students(40%)(refer Charts 3,4,5).

The analysis of **Blood Pressure** results of Teaching Staff indicate that about 44% of them are under High BP category while 56% of them were under normal BP category (refer Chart 6). Similarly the results of BP of Non-Teaching Staff reflect the fact that about 50% fall under High BP category while 50% under normal BP category (refer Chart 7). On comparative analyses, it is evident that B.Sc. students showed highest percent (22%) under High BP category followed by B.Com(20%) and B.A.(16%) while B.Sc. students displayed highest percent (8%) under Low BP category followed by B.A. and B.Com(4% each). The descending order of Normal BP category is B.A.(80%), B.Com(76%) and B.Sc. students(70%)(refer Charts 8,9,10).

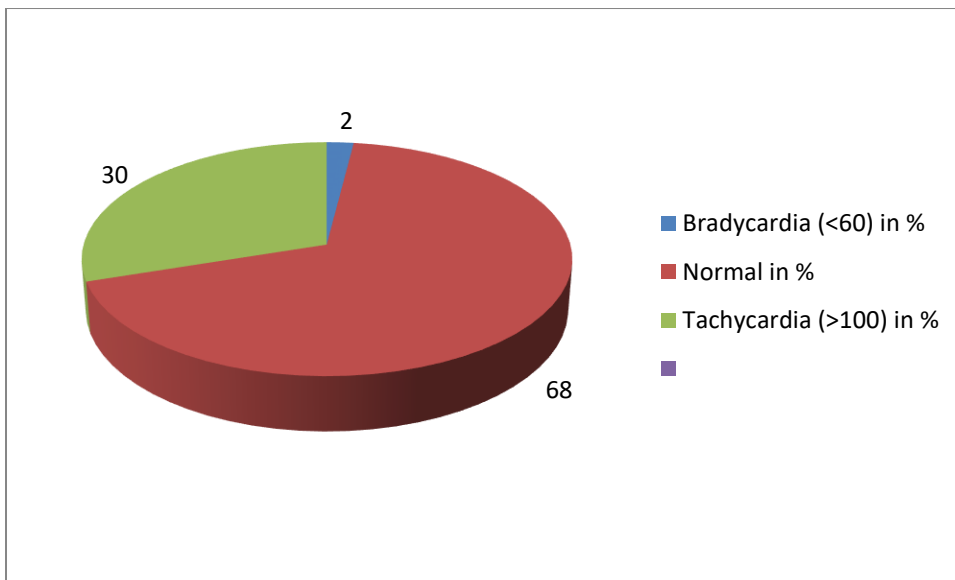
The analysis of **Body fat %** results of Teaching Staff indicate that about 44% of them are under Obese category while 48% of them were under Average category and 8% under Fitness category (refer Chart 11). Similarly the results of Body fat % of Non-Teaching Staff reflect the fact that about 71% fall under Obese category while 21% under Average category and 7% under Fitness category (refer Chart 12). On comparative analyses, it is evident that B.Com. students showed highest percent (12%) under Obese category followed by B.A. and B.Sc.(6% each) while B.A. and B.Com students displayed highest percent (20%) under Average category followed by B.Sc. The descending order of Fitness category was B.Sc. The descending order of Athletes category was B.A.(56%), B.Com(38%) and B.Sc. students(30%)The descending order of Essential Fat category was B.Sc.(20%), B.Com(14%) and B.A. students(6%). (refer Charts 13,14,15)

The analysis of Pulse results of Teaching Staff indicate that about 8% of them are falling under Tachycardia(heart beat greater than 100) category, 4% under Bradycardia (less than 60) category while 88% of them were under normal pulse category (refer Chart 16). Similarly the results of Pulse results of Non-Teaching Staff reflect the fact that about 14% fall under Tachycardia category while 7% under Bradycardia category while 79% of them are under Normal pulse category (refer Chart 17). On comparative analyses, it is evident that B.Sc. Students showed highest percent (30%) under Tachycardia category followed by B.Com (20%) and B.A. (16%). Under Normal pulse category the descending order was 84% of B.A., followed by 78% B.Com and 68% B.Sc. students. On the other hand, 2% each of B.Com and B.Sc students exhibited Bradycardia while B.A. students showed no results under that category (refer Charts 18,19,20).

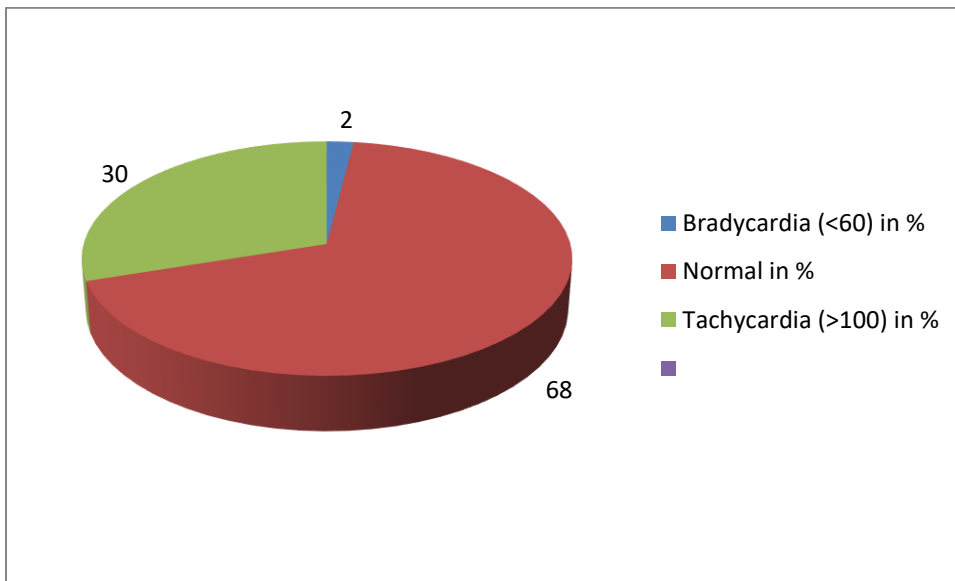
**Chart 1.** Pie Chart showing various **weight categories in % based on BMI Results of Teaching Staff Members** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



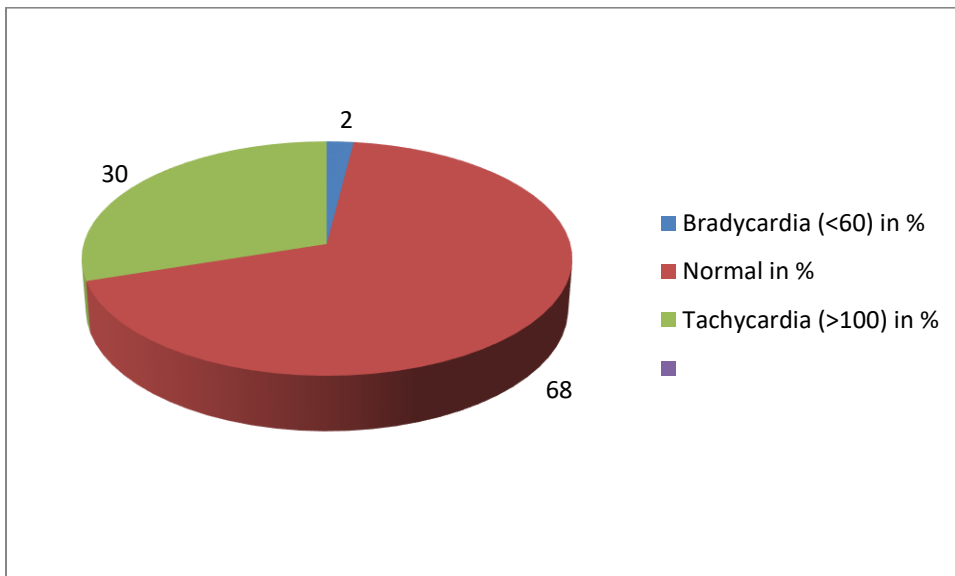
**Chart 2.** Pie Chart showing various **weight categories in % based on BMI Results of Non-Teaching Staff Members** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



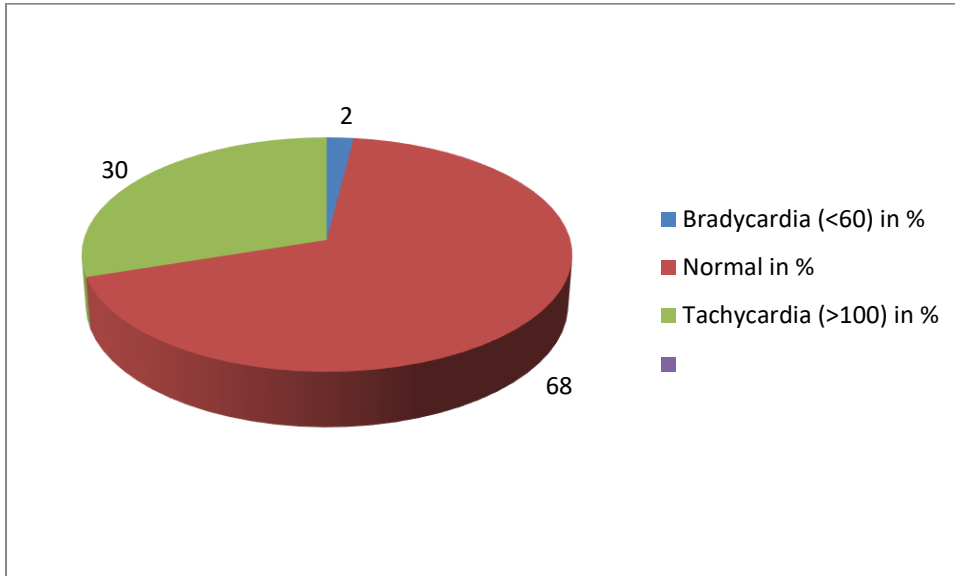
**Chart 3.** Pie Chart showing various **weight categories in % based on BMI Results of B.A. Students** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



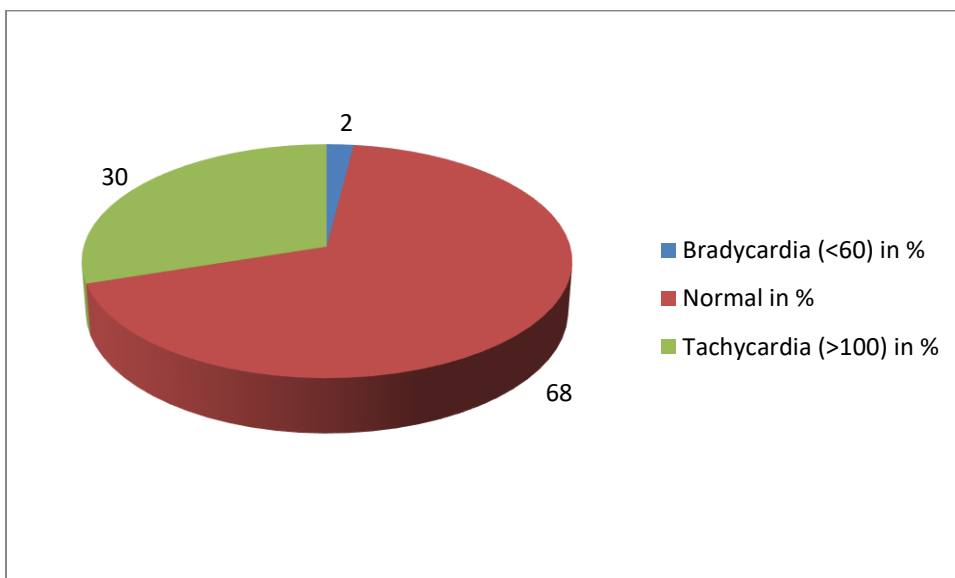
**Chart 4.** Pie Chart showing various **weight categories in % based on BMI Results of B. Com Students** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



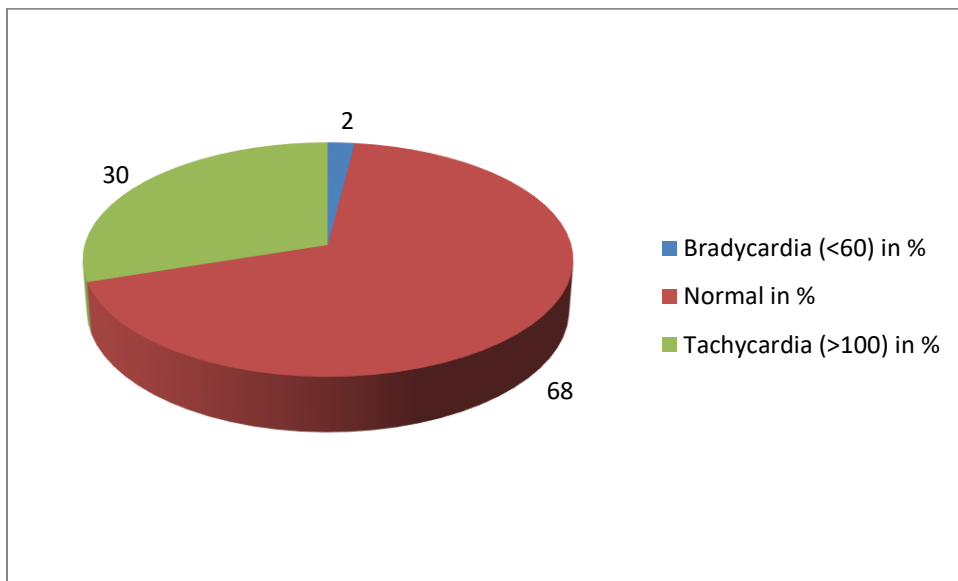
**Chart 5.** Pie Chart showing various **weight categories in % based on BMI Results of B.Sc. Students** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



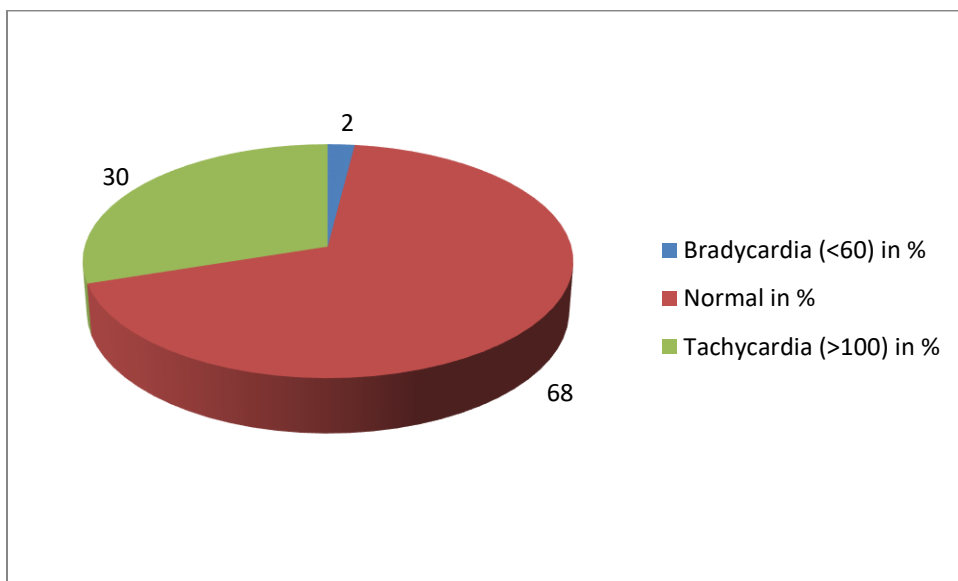
**Chart 6.** Pie Chart showing various **Blood Pressure categories in % based on BP Results of Teaching Staff Members** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



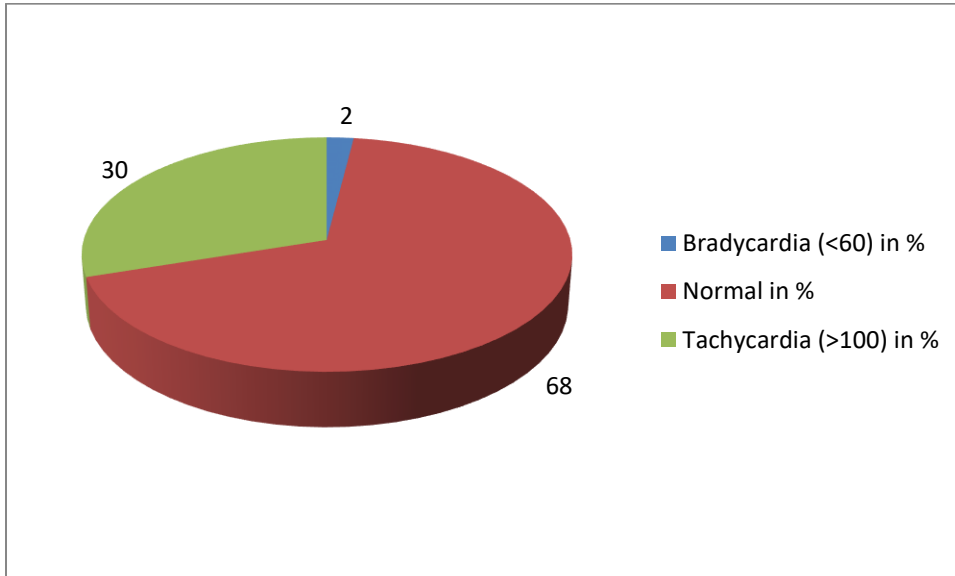
**Chart 7.** Pie Chart showing various Blood Pressure categories in % based on BP Results of Non-Teaching Staff Members of Government Degree College, Hayathnagar, Ranga Reddy Dist.



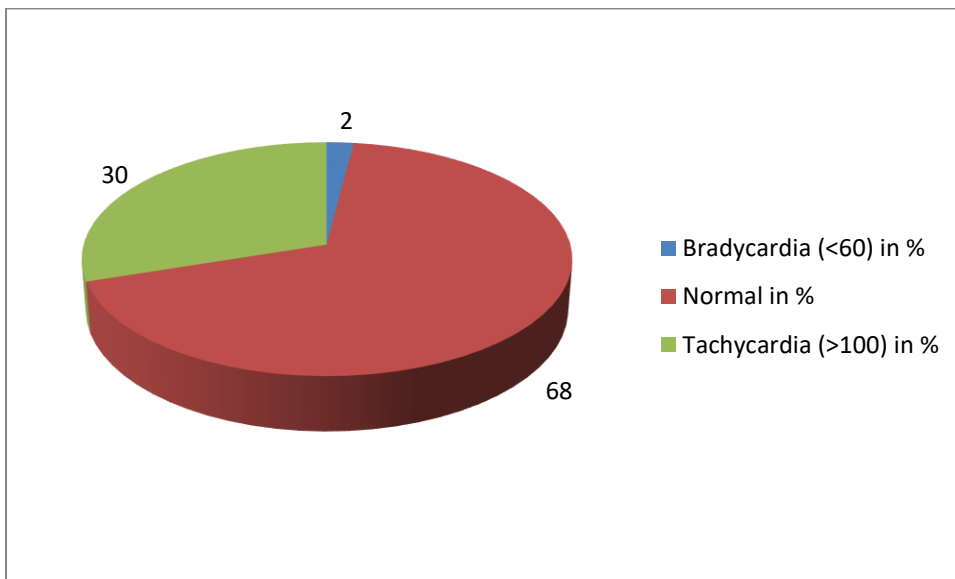
**Chart 8.** Pie Chart showing various Blood Pressure categories in % based on BP Results of B.A. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.



**Chart 9.** Pie Chart showing various Blood Pressure categories in % based on BP Results of B.Com. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.

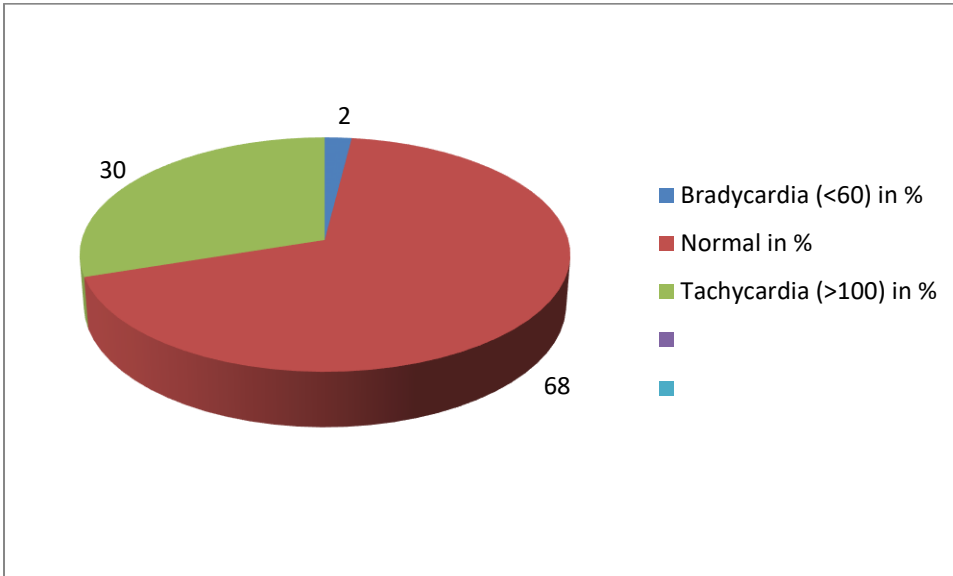


**Chart 10.** Pie Chart showing various Blood Pressure categories in % based on BP Results of B.Sc. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.

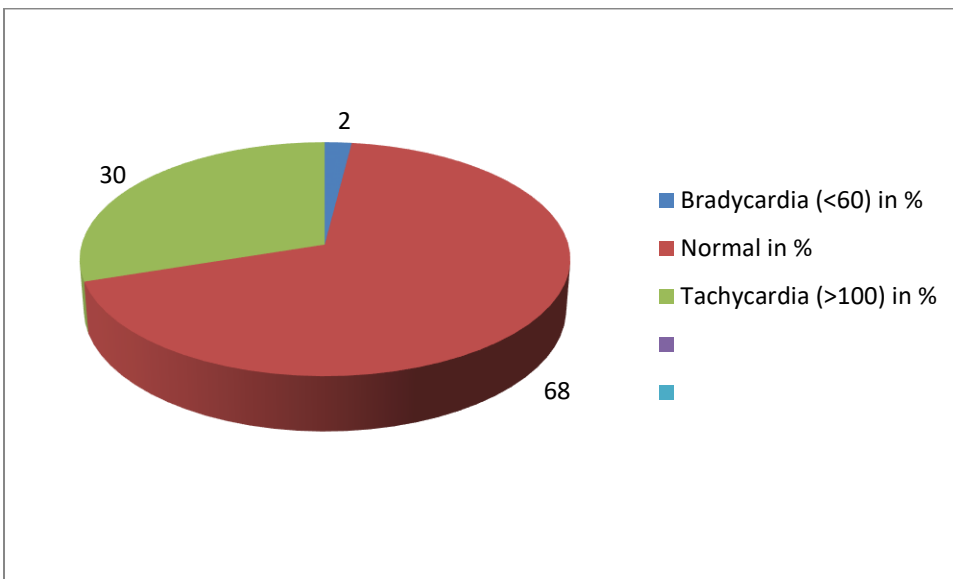




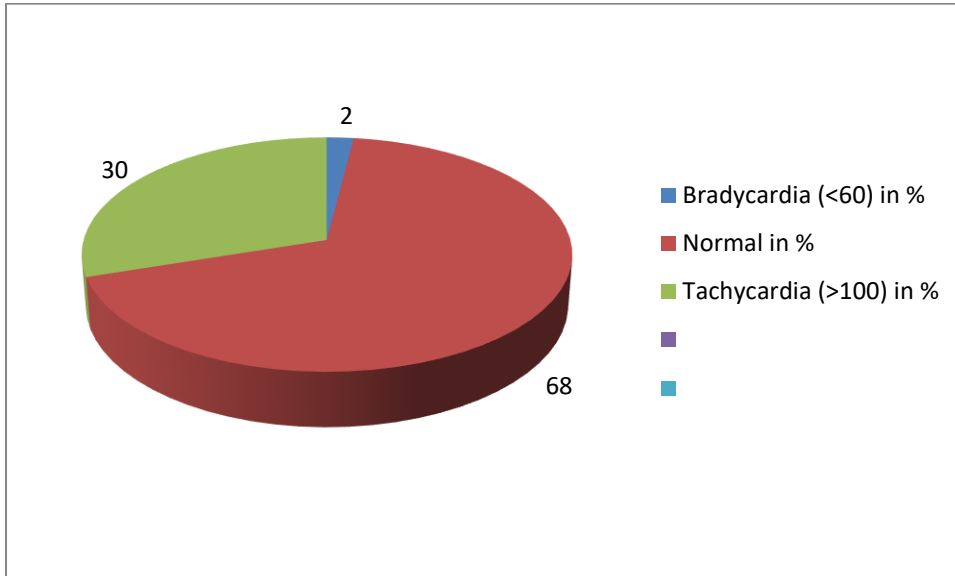
**Chart 11.** Pie Chart showing various Body Fat categories based on Body Fat % Results of Teaching Staff Members of Government Degree College, Hayathnagar, Ranga Reddy Dist.



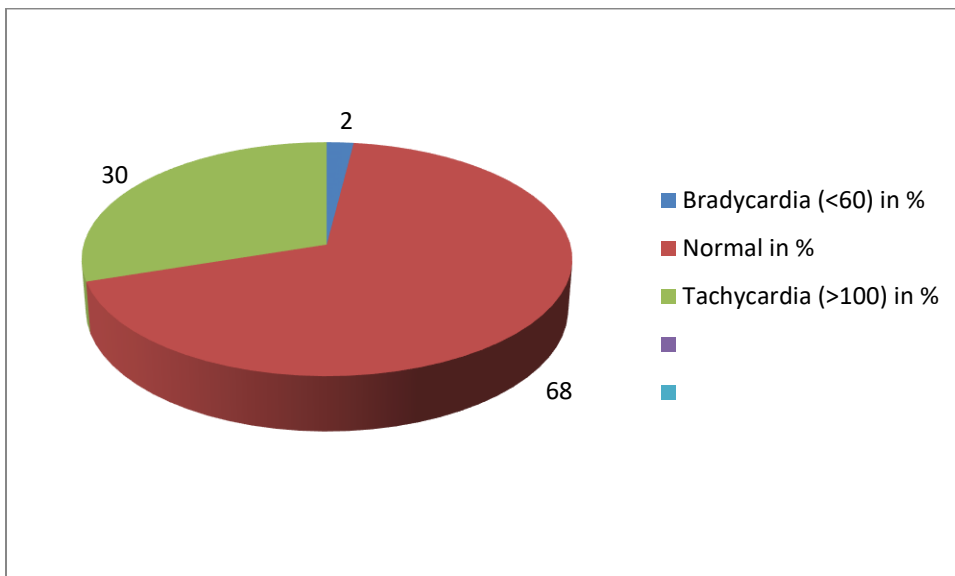
**Chart 12.** Pie Chart showing various Body Fat categories based on Body Fat % Results of Non-Teaching Staff Members of Government Degree College, Hayathnagar, Ranga Reddy Dist.



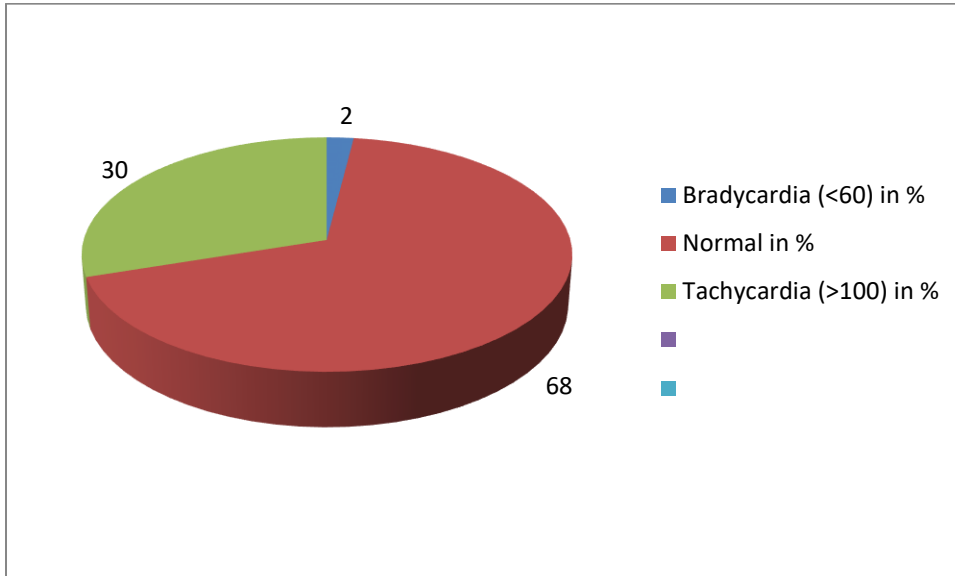
**Chart 13.** Pie Chart showing various Body Fat categories based on Body Fat % Results of B.A. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.



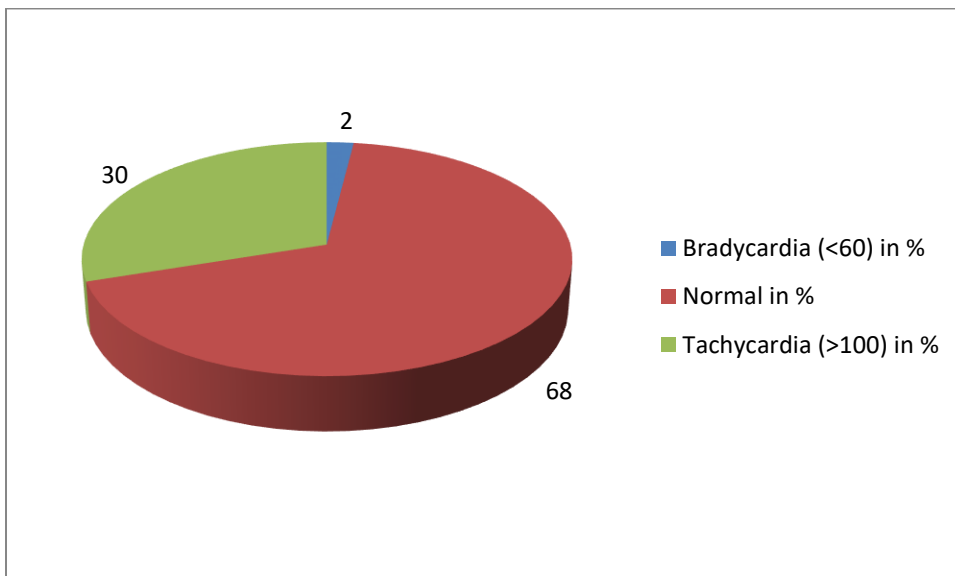
**Chart 14.** Pie Chart showing various Body Fat categories based on Body Fat % Results of B.Com. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.



**Chart 15.** Pie Chart showing various Body Fat categories based on Body Fat % Results of B.Sc. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.

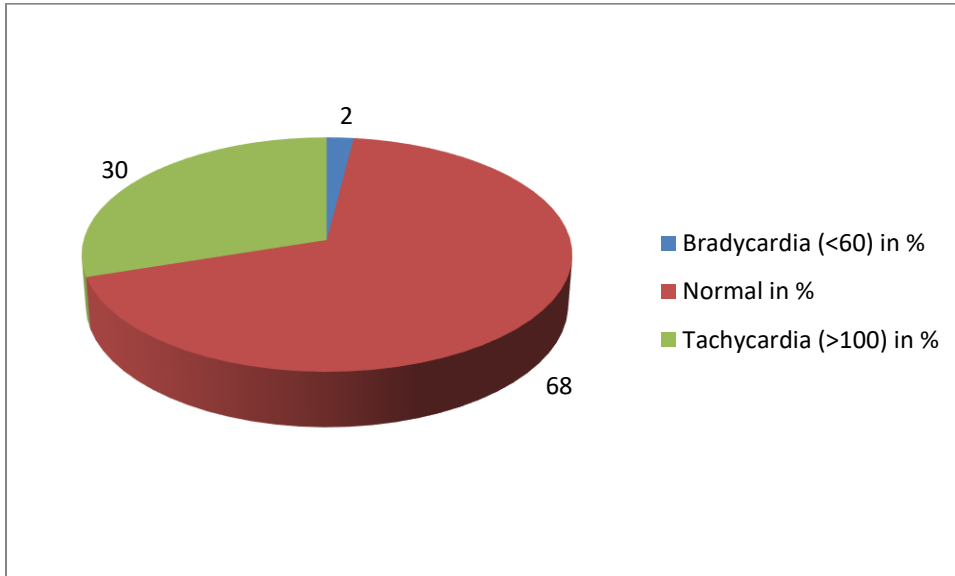


**Chart 16.** Pie Chart showing various Pulse categories based on Heart Beats per minute Results of Teaching Staff Members of Government Degree College, Hayathnagar, Ranga Reddy Dist.

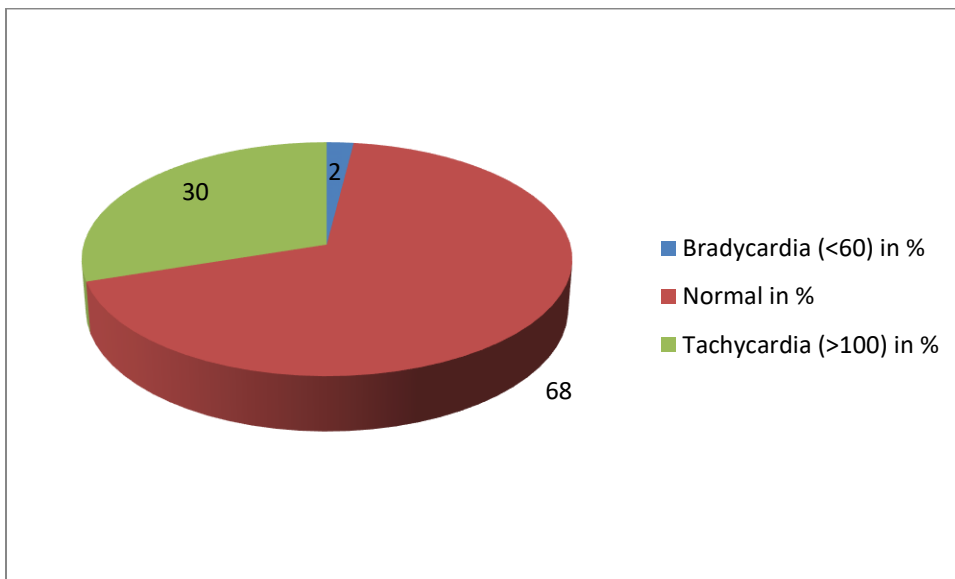


**Chart 17.** Pie Chart showing various Pulse categories based on Heart Beats per minute Results of Teaching Staff Members of Government Degree College, Hayathnagar, Ranga Reddy Dist.

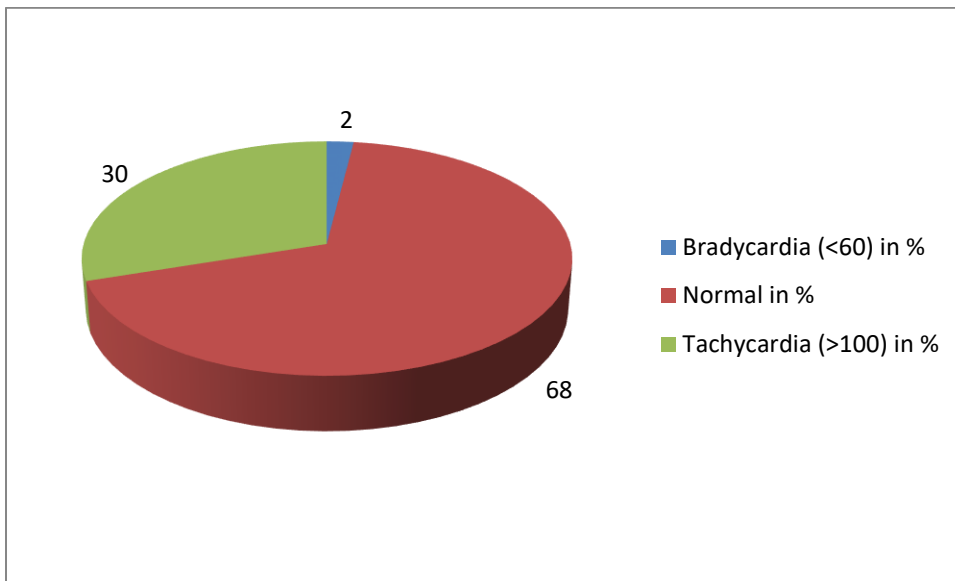
Non-



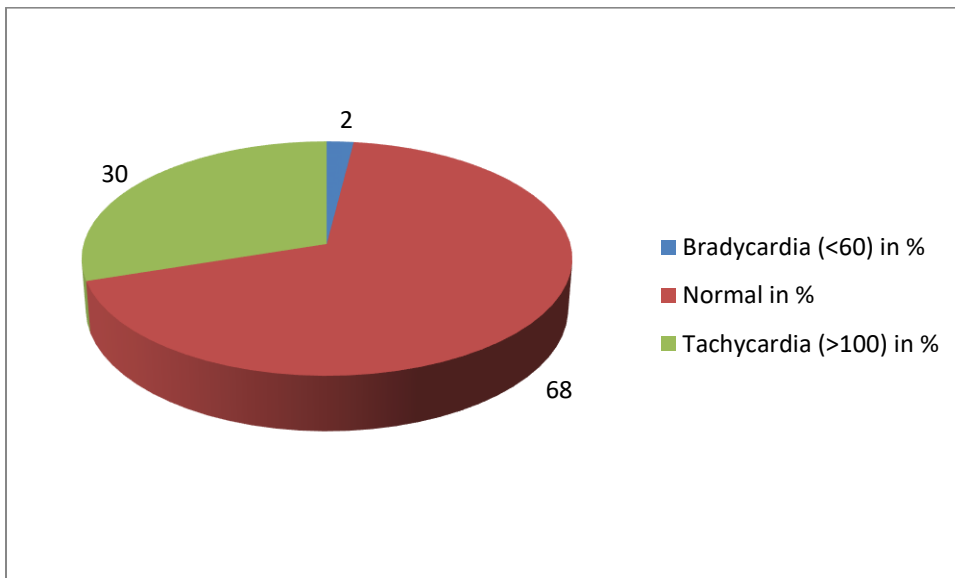
**Chart 18.** Pie Chart showing various Pulse categories based on Heart Beats per minute Results of B.A. Students of Government Degree College, Hayathnagar, Ranga Reddy Dist.



**Chart 19.** Pie Chart showing **various Pulse categories based on Heart Beats per minute Results of B.Com. Students** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



**Chart 20.** Pie Chart showing **various Pulse categories based on Heart Beats per minute Results of B.Sc. Students** of Government Degree College, Hayathnagar, Ranga Reddy Dist.



## **CONCLUSIONS AND SUGGESTIONS :**

1. Those subjects under overweight and obese categories should manage their diet, do regular exercise to burn their fat and follow Yoga for a healthy lifestyle.
2. In order to maintain a normal blood pressure, care should be taken about salt intake (not to exceed 5 gm per person per day) and sufficient hydration should be managed.
3. Regular checkups of BMI, waist circumference, body fat percentage helps us to reach and maintain target weights in relation to our height and age.
4. For a healthy heart, the intake of Low Density Lipoproteins( LDL) cholesterol(bad) should be decreased while the intake of High Density Lipoproteins(HDL) cholesterol (good) should be increased to optimum levels. Increase fiber-rich foods in your diet.
5. Control stress levels by participating in games, sports, yoga and meditation.

## **REFERENCES:**

1. Slideshare.net/rkalidasan/body-mass-index-78583650.
2. Cdc.gov/obesity/downloads/bmiforpractioners.pdf.
3. Who.int/publications/cra/chapters/volume/0497-0596.pdf.
4. Who.int/nutrition/publications/bmi-asia-strategies.pdf.
5. En.wikipedia.org/wiki/Body-mass-index.
6. Webmd.com/heart-disease/heart-failure/qa/what-is-the-definition-of-body-mass-index.
7. Medicinenet.com/script/main/art.asp?articlekey=16125.
8. Calculator.net
9. [www.health.harvard.edu/staying-healthy/abdominal-fat-and-what-to-do-about-it](http://www.health.harvard.edu/staying-healthy/abdominal-fat-and-what-to-do-about-it).
10. [www.cdc.gov/obesity/data/index.html](http://www.cdc.gov/obesity/data/index.html).

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