

CHAPTER 4

ANTHROPOMETRIC & PHYSIOMETRIC MEASUREMENTS AND INDICES

In this chapter it has been tried to present the six anthropometric and two physiometric measurements of the aged males and females of different age categories. The anthropometric measurements are height (cms), weight (kg), chest circumference (cms), waist circumference (cms), hip circumference (cms), and calf circumference (cms) and the physiometric measurements considered are systolic blood pressure (Hg/mm) and diastolic blood pressure (Hg/mm).

Table 4.1
Anthropometric and physiometric measurements and indices of the aged males and females

Anthropometric & physiometric measurements	Male (N=250) MEAN SD		Female (N=250) MEAN SD	
	Height(cm)	159.27±6.65		153.66±7.67
Weight(kg)	49.19±6.57		46.62±6.89	
Chest circumference	79.44±4.74		81.88±7.31	
Waist circumference	82.82±5.24		83.24±7.42	
Hip circumference	85.27±6.10		87.7±8.65	
Calf circumference	21.82±2.25		22.0±2.29	
Systolic Blood Pressure (Hg/mm)	122.6±18.76		120.4±19.03	
Diastolic Blood Pressure (Hg/mm)	87.90±14.34		85.04±12.68	
Indices				
Body Mass Index	19.40±2.39		19.72±2.36	
Waist/Hip Ratio	0.97±0.02		0.95±0.03	

Table 4.2

Age wise anthropometric & physiometric measurements and indices of the aged males

Anthropometric & physiometric measurements	55-59 (N=120) MEAN SD	60-64 (N=50) MEAN SD	65-69 (N=30) MEAN SD	70-74 (N=20) MEAN SD	75+ (N=30) MEAN SD
Height(cm)	161.11±5.78	160.00±7.38	157.89±6.40	158.25±6.26	152.74±4.68
Weight(kg)	50.45±6.85	50.24±5.55	51.27±4.16	45.95±6.46	42.47±3.71
Chest circumference	79.88±4.76	80.88±4.10	81.53±3.43	77.95±4.39	74.2±2.89
Waist circumference	84.21±5.05	82.82±4.13	84.07±4.49	81.0±5.54	77.23±4.28
Hip circumference	86.88±6.38	85.5±4.65	86.27±4.39	82.9±5.75	79.0±4.31
Calf circumference	22.4±2.13	22.28±1.77	22.27±1.53	20.45±1.93	19.17±2.05
Systolic Blood Pressure (Hg/mm)	121.83±18.92	121.0±17.87	126.33±17.23	123.5±20.07	124.0±20.61
Diastolic Blood Pressure (Hg/mm)	89.05±16.11	85.8±12.63	89.0±10.29	85.5±12.76	87.33±14.13
Indices					
Body Mass Index	19.45±2.44	19.69±2.44	20.64±2.11	18.36±2.41	18.22±1.56
Waist/Hip Ratio	0.97±0.02	0.96±0.02	0.97±0.02	0.98±0.01	0.97±0.01

Table 4.3

Age wise anthropometric & physiometric measurements and indices of the aged females

Anthropometric & physiometric measurements	50-54 (N=95) MEAN SD	55-59 (N=30) MEANSD	60-64 (N=35) MEAN SD	65-69 (N=25)MEAN SD	70-74 (N=40) MEAN SD	75+ (N=25) MEAN SD
Height(cm)	154.70±8.05	155.50±8.13	153.39±9.25	153.87±6.21	153.30±6.29	148.22±3.46
Weight(kg)	47.91±6.99	48.6±8.29	47.26±7.46	47.04±4.95	44.58±6.03	41.36±2.64
Chest circumference	84.4±7.39	83.8±7.46	81.77±7.17	81.32±6.47	79.68±5.32	74.2±3.76
Waist circumference	85.06±6.93	83.33±6.81	86.26±8.54	82.92±6.49	81.28±5.47	74.56±6.01
Hip circumference	90.45±7.77	88.73±8.63	91.26±8.54	87.28±6.98	84.15±6.08	77.12±7.04
Calf circumference	23.84±2.42	22.7±2.78	23.26±	21.88±2.62	20.68±2.77	17.48±2.94
Systolic Blood Pressure (Hg/mm)	119.47±17.83	122.67±19.82	124.86±20.77	120.8±21.59	120.5±18.11	114.4±18.73
Diastolic Blood Pressure (Hg/mm)	87.05±12.71	84.67±12.24	86.57±15.89	82.8±14.29	81.5±9.75	83.6±9.52
Indices						
Body Mass Index	20.00±2.44	20.06±2.93	20.06±2.59	18.88±1.88	18.93±2.09	18.83±0.99
Waist/Hip Ratio	0.94±0.02	0.94±0.02	0.95±0.04	0.95±0.02	0.97±0.03	0.97±0.02

Table 4.4**Distribution of height (cms) of the aged males**

Age group (in years)	Height (cms)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
55-59	161.11	0.53	5.78	0.37	3.59	0.23	120
60-64	160.00	1.04	7.38	0.74	4.61	0.46	50
65-69	157.89	1.17	6.40	0.83	4.05	0.52	30
70-74	158.25	1.40	6.26	0.99	3.96	0.63	20
75+	152.74	0.85	4.68	0.60	3.06	0.39	30
Total	159.24	0.42	6.64	0.29	4.17	0.19	250

Table 4.5**Distribution of height (cms) of the aged females**

Age group (in years)	Height (cms)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
50-54	154.7	0.83	8.05	0.58	5.20	0.38	95
55-59	155.50	1.48	8.13	1.05	5.23	0.67	30
60-64	153.39	1.56	9.25	1.11	6.03	0.70	35
65-69	153.87	1.24	6.21	0.88	4.04	0.57	25
70-74	153.30	0.99	6.29	0.70	4.10	0.46	40
75+	148.22	0.69	3.46	0.49	2.33	0.33	25
Total	153.66	0.49	7.67	0.34	4.99	0.22	250

The table 4.4 shows the mean value of height among the aged males according to age categories. The highest mean value for height is found in the 55-59 years age group and the lowest is in the age group of 75 and above 75 years age group. From the table it is seen that the mean value of height among the aged male is gradually decreasing from lower to higher age group. In the 55-59 years age group it is 161.11cms; in 60-64 years age group it is 160.0cms; in the 65-69 years age group it is 157.89cms; in 70-74 years age group it is 158.25cms and in the 75 years and above age group it is 152.74cms.

The table 4.5 shows the mean values of height among in the aged females. The mean value for height of the aged females is 153.66cms. In age wise distribution the highest value is found among in the 55-59 years age group and lowest is found in the 75 years and above age group. In 55-59 years age group the mean value for height is 155.50cms and in the 75 years and above age group it is 148.22cms. In the aged females also it is seen that the mean value for height is decreasing from the age group 70 years onwards.



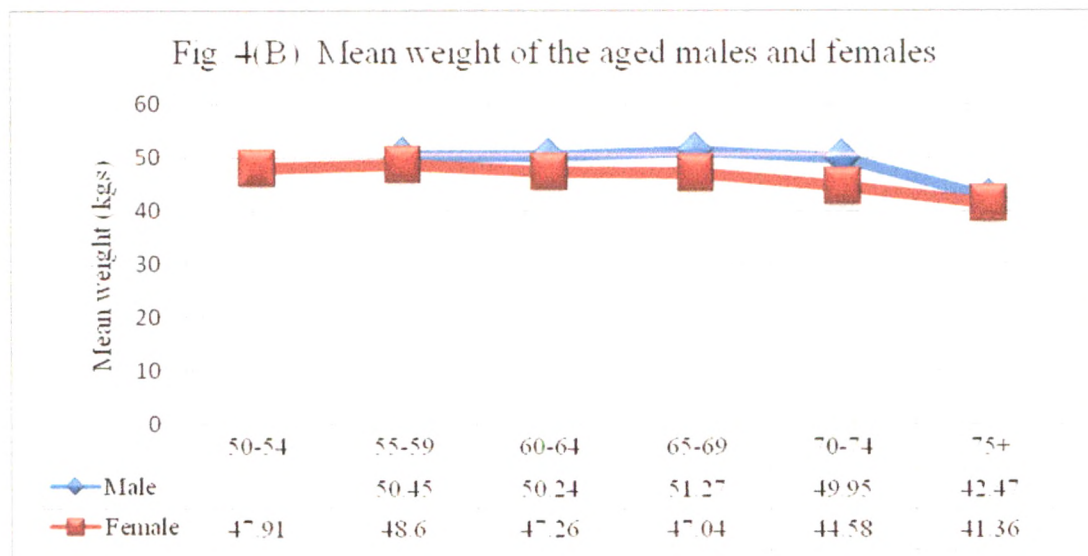


Table 4.6
Distribution of weight (kg) of the aged males

Age group(in years)	Weight (kg)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
55-59	50.45	0.63	6.85	0.44	13.58	0.88	
60-64	50.24	0.78	5.53	0.55	11.01	1.10	50
65-69	51.27	0.76	4.16	0.54	8.11	1.05	30
70-74	49.95	1.45	6.46	1.02	12.93	2.05	20
75+	42.47	0.68	3.71	0.48	8.74	1.13	30
Total	49.12	0.41	6.50	0.29	13.23	0.59	250

The table 4.6 shows the mean value of the weight (kg) of the aged males according to age categories. In age wise distribution, the highest mean value for weight is 51.27 kg and lowest mean value is 42.47 kg and it is found among in the 65-69 years age group and 75 years and above age group respectively. From the table it is observed that the mean value of weight among the aged males is gradually decreasing from lower to higher age group. In the 55-59 years age group the mean value of weight is 50.45kg; in 60-64 years age group it is 50.24kg; in 65-69 years age group it

The table 4.8 shows the distribution of mean value of the chest circumference of the males. From the table it is seen that the highest mean value of chest circumference is 81.53 cms and it is found in the 65-69 years age group and the lowest chest circumference is 74.2 cms and it is found in the 75 years and above 75 years age group.

Table 4.9

Distribution of chest circumference (cms) of the aged females

Age group(in years)	Chest circumference (cms)						Number of individuals
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		
50-54	84.4	0.76	7.39	0.54	8.75	0.63	95
55-59	83.9	1.36	7.46	0.96	8.89	1.15	30
60-64	81.77	1.2	7.17	0.86	8.77	1.05	35
65-69	81.32	1.29	6.47	0.91	7.96	1.13	25
70-74	79.68	0.84	5.32	0.59	6.67	0.75	40
75+	74.2	0.75	3.76	0.53	5.07	0.72	25

The table 4.9 shows the distribution of mean value of chest circumference of the aged females. From the table it is seen that the highest mean value of chest circumference is 84.4 cms and it is found in the 50-54 years age group and lowest mean value is 74.2 cms and it is found in the 75 years and above 75 years of age group.

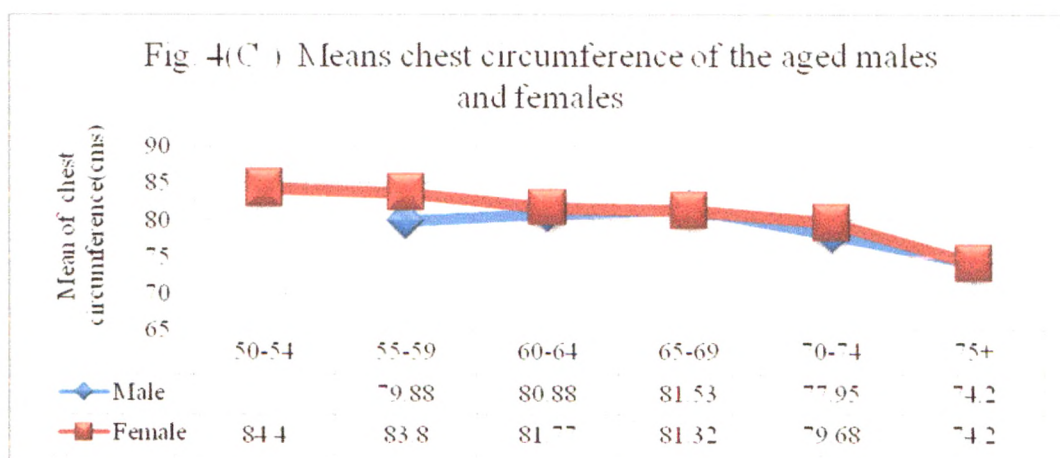


Table 4.10**Distribution of waist circumference (cms) of the aged males**

Age group (in years)	Waist circumference (cms)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
55-59	84.21	0.46	5.05	0.33	5.99	0.39	120
60-64	82.82	0.58	4.13	0.41	4.99	0.49	50
65-69	84.07	0.82	4.49	0.58	5.34	0.69	30
70-74	81.0	1.24	5.54	0.88	6.83	1.08	20
75+	77.23	0.78	4.28	0.55	5.54	0.71	30

The table 4.10 shows the distribution of mean value of waist circumference of the aged males. From the table it is seen that the highest mean value of waist circumference is 84.21 cms and it is found in the 55-59 years age group and lowest mean value is 77.23 cms and it is found in the 75 years and above 75 years age group.

Table 4.11**Distribution of waist circumference (cms) of the aged females**

Age group (in years)	Waist circumference (cms)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
50-54	85.06	0.71	6.93	0.50	8.15	0.59	95
55-59	83.33	1.24	6.81	0.88	8.17	1.05	30
60-64	86.26	1.45	8.54	1.02	9.90	1.18	35
65-69	82.92	1.29	6.49	0.92	7.82	1.11	25
70-74	81.28	0.87	5.47	0.61	6.72	0.75	40
75+	74.56	1.20	6.01	0.85	8.06	1.14	25

The table 4.11 shows the mean value of waist circumference of the aged females. From the table it is seen that the highest mean value of waist circumference is 86.26 cms and it is found in the 60-64 years of age group and lowest mean value is 74.56 and it is found in the 75 years and above 75 years of age group.

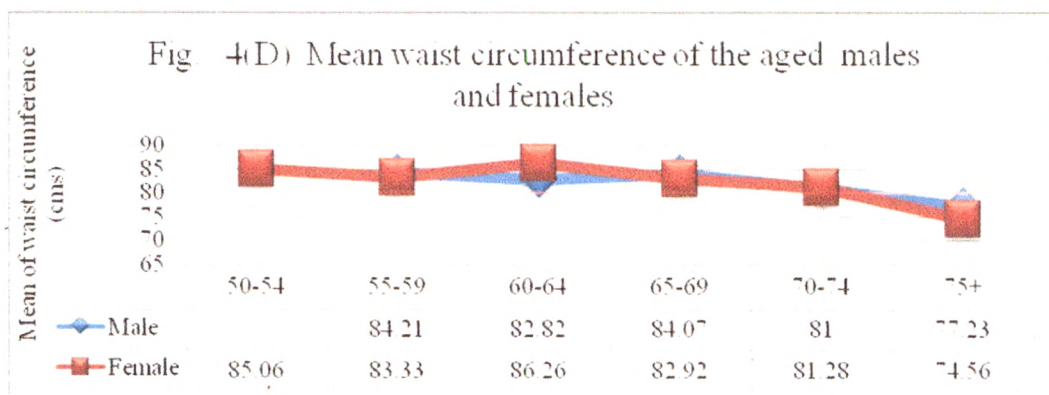


Table 4.12

Distribution of hip circumference (cms) of the aged males

Age group (in years)	Hip circumference (cms)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
55-59	86.88	0.58	6.38	0.41	7.34	0.47	
60-64	85.5	0.66	4.65	0.46	5.44	0.54	50
65-69	86.27	0.80	4.39	0.57	5.09	0.66	30
70-74	82.9	1.29	5.75	0.91	6.94	1.09	20
75+	79.0	0.79	4.31	0.56	5.45	0.70	30

The table 4.12 shows the mean value of hip-circumference of the aged males. From the table it is seen that the highest mean value of hip-circumference is 96.88 cms and it is found in the age group 55-59 years and lowest mean value is 79.0 cms and it is found in the 75 years and above 75 years age group.

Table 4.13

Distribution of hip circumference (cms) of the aged females

Age group(in years)	Hip circumference (cms)						
	Mean ±SE		Std Deviation ±SE		C.V ±SE		Number of individuals
50-54	90.45	0.79	7.77	0.56	8.59	0.62	95
55-59	88.73	1.57	8.63	1.11	9.73	1.26	30
60-64	91.26	1.45	8.54	1.02	9.36	1.12	35
65-69	87.28	1.39	6.98	0.99	7.99	1.13	25
70-74	84.15	0.96	6.08	0.68	7.22	0.81	40
75+	77.12	1.41	7.04	0.99	9.13	1.29	25

The table 4.13 shows the distribution of mean value of hip-circumference of the aged females. The highest mean value of hip-circumference is 91.26cms and it is found in the 60-64 years age group and lowest mean value is 77.12cms and it is found in the 75 years and above 75 years age group.

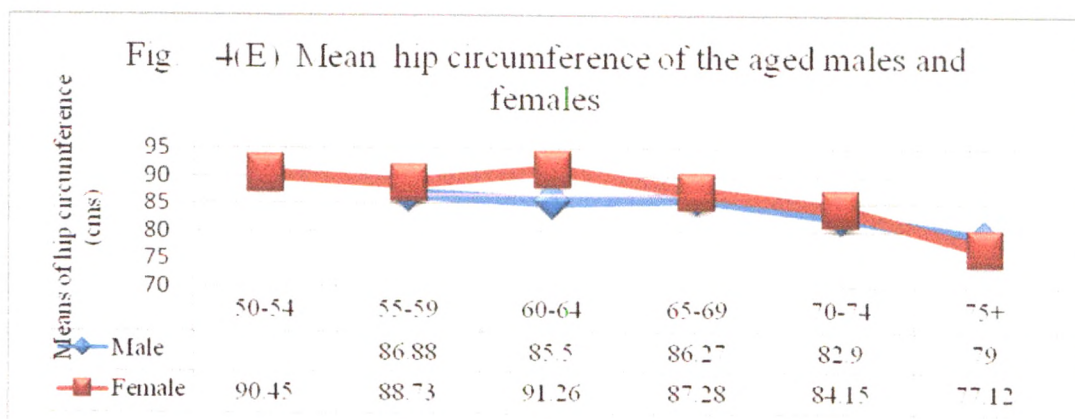


Table 4.14

Distribution of calf circumference (cms) of the aged males

Age group (in years)	Calf circumference (cms)						
	Mean ±SE		Std Deviation ±SE		C.V ±SE		Number of individuals
55-59	22.4	0.19	2.13	0.14	9.51	0.61	120
60-64	22.28	0.25	1.77	0.18	7.94	0.79	50
65-69	22.27	0.28	1.53	0.19	6.89	0.89	30
70-74	20.45	0.43	1.93	0.30	9.44	1.49	20
75+	19.17	0.37	2.05	0.26	10.69	1.38	30

The table 4.14 shows the mean value of the calf-circumference of the aged males. From the table it is seen that the highest mean value is 22.28cms and it is found in the 60-64 years age group and lowest mean value is 19.17 cms and it is found 75 years and above 75 years age group.

Table 4.15

Distribution of calf circumference (cms) of the aged females

Age group(in years)	Calf circumference (cms)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
50-54	23.84	0.25	2.42	0.17	10.15	0.74	95
55-59	22.7	0.51	2.78	0.36	12.25	1.58	30
60-64	23.26	0.37	2.19	0.26	9.41	1.12	35
65-69	21.88	0.52	2.62	0.37	11.97	1.69	25
70-74	20.68	0.44	2.77	0.31	13.39	1.49	40
75+	17.48	0.59	2.94	0.41	16.82	2.38	25

The table 4.15 shows the mean value of calf-circumference of the aged females. From the table it is seen that the highest mean value is 23.84 cms and it is found in the 50-54 years age group and the lowest mean value is 17.48 cms and it is found in the 75 years and above 75 years age group.

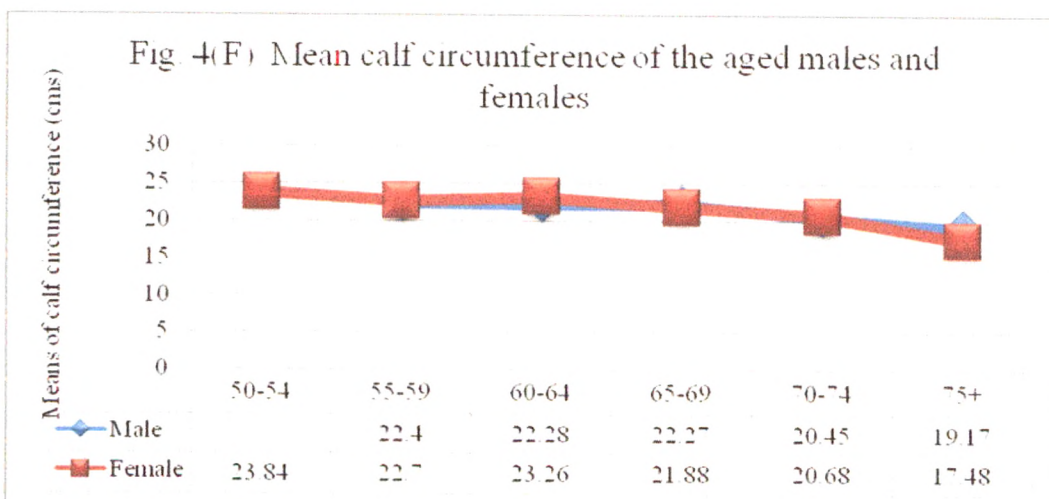


Table 4.16**Distribution of systolic blood pressure (Hg/mm) of the aged males**

Age group (in years)	Systolic blood pressure (Hg/mm)						Number of individuals
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		
55-59	121.83	1.73	18.92	1.22	15.53	0.99	120
60-64	121.0	2.53	17.87	1.79	14.77	1.48	50
65-69	126.33	3.14	17.23	2.23	13.64	1.76	30
70-74	123.5	4.49	20.07	3.17	16.25	2.57	20
75+	124.0	3.76	20.61	2.66	16.62	2.15	30

The table 4.16 shows the mean value of systolic blood pressure of the aged males. From the table it is seen that the highest mean value of systolic blood pressure is 126.33 and it is found in the 65-59 years age group and the lowest mean value is 121.0 and it is found in the 60-64 years age group.

Table 4.17**Distribution of systolic blood pressure (Hg/mm) of the aged females**

Age group (in years)	Systolic blood pressure (Hg/mm)						Number of individuals
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		
50-54	119.47	1.83	17.83	1.29	14.92	1.08	95
55-59	122.67	3.62	19.82	2.56	16.16	2.09	30
60-64	124.86	3.52	20.77	2.48	16.63	1.99	35
65-69	120.8	4.32	21.59	3.05	17.87	2.53	25
70-74	120.5	2.87	18.11	2.02	15.03	1.68	40
75+	114.4	3.75	18.73	2.65	16.37	2.31	25

The table 4.17 shows the mean value of systolic blood pressure of the aged females. From the table it is seen that the highest mean value is 124.86 and it is found

in the 60-64 years age group and lowest mean value is 114.4 and it is found in the 75 years and above 75 years age group.

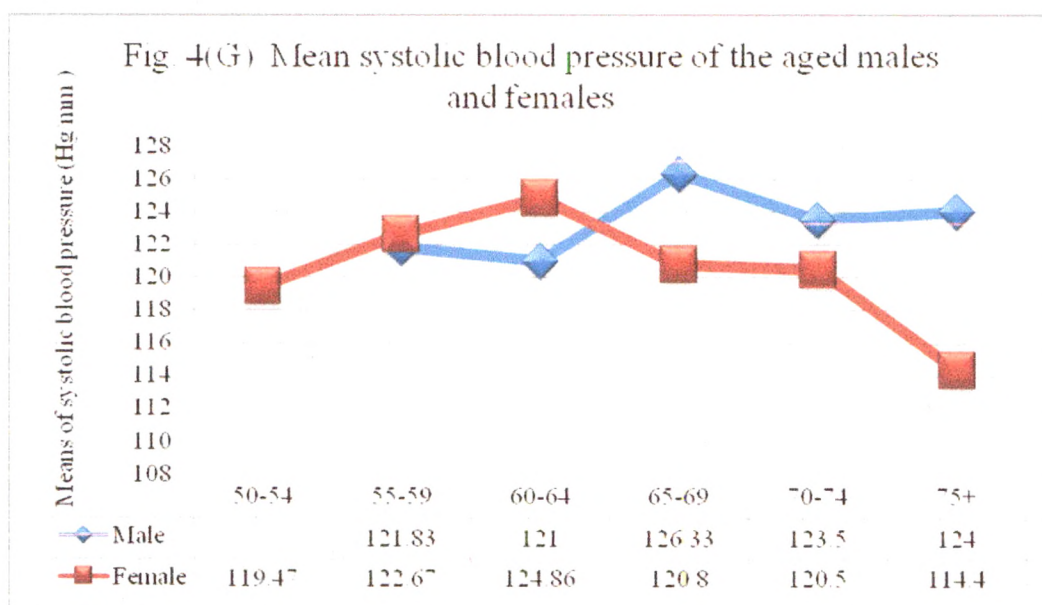


Table 4.18

Distribution of diastolic blood pressure (Hg/mm) of the aged males

Age group(in years)	Diastolic blood pressure (Hg/mm)						
	Mean \pm SE		Std Deviation \pm SE		C.V \pm SE		Number of individuals
55-59	89.05	1.47	16.11	1.04	18.09	1.17	120
60-64	85.8	1.79	12.63	1.26	14.72	1.47	50
65-69	89.0	1.88	10.29	1.33	11.56	1.49	30
70-74	85.5	2.85	12.76	2.02	14.92	2.36	20
75+	87.33	2.58	14.13	1.82	16.18	2.09	30

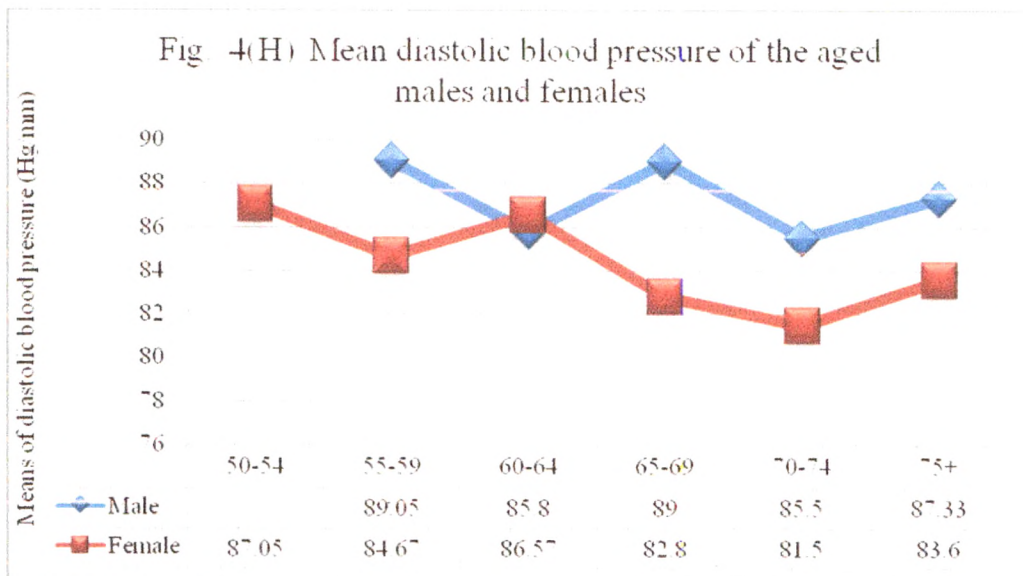
The table 4.18 shows the mean value of the diastolic blood pressure of the aged males. From the table it is seen that the highest mean value of diastolic blood pressure is 89.05 and it is found in the 55-59 years age group and lowest mean value is 85.5 and it is found in the 70-74 years age group.

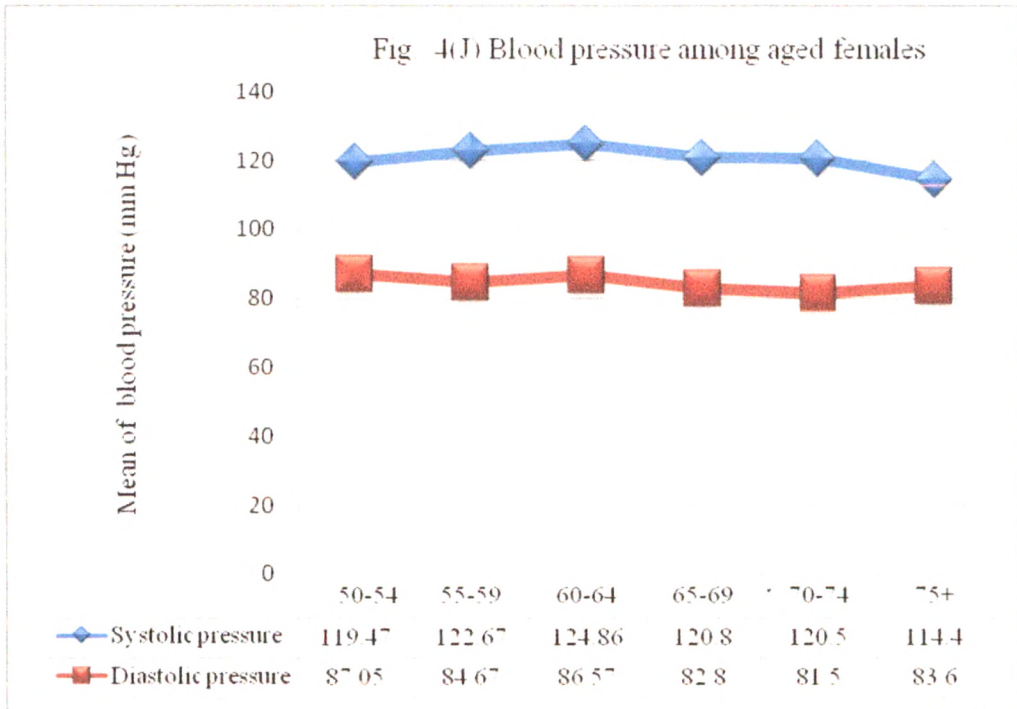
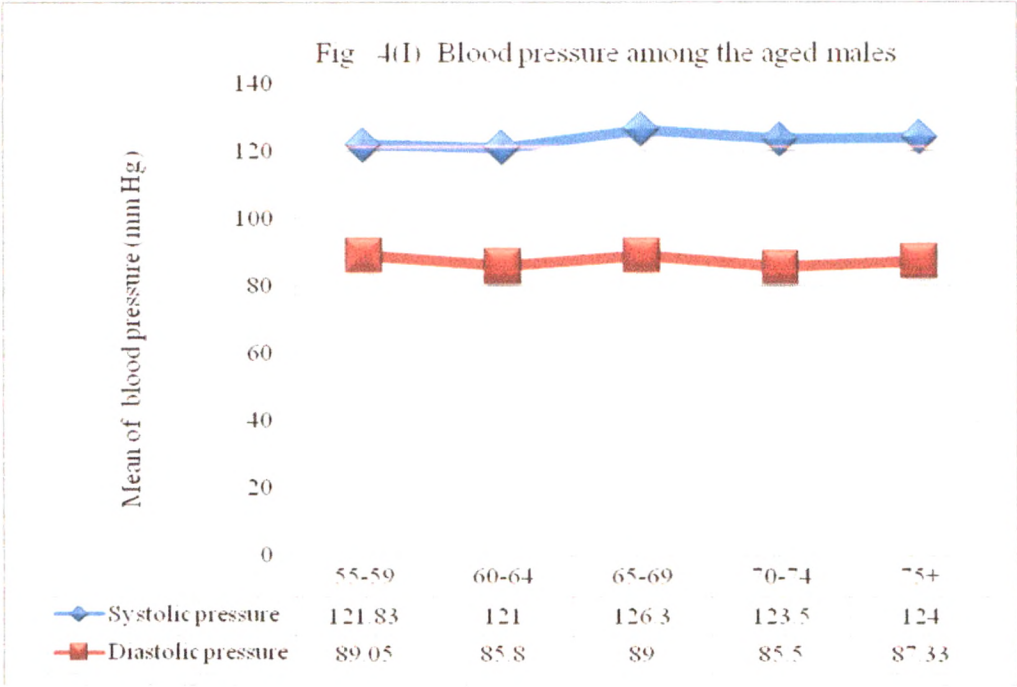
Table 4.19

Distribution of diastolic blood pressure (Hg/mm) of the aged females

Age group(in years)	Diastolic blood pressure (Hg/mm)						Number of individuals
	Mean ±SE		Std Deviation ±SE		C.V ±SE		
50-54	87.05	1.30	12.71	0.92	14.60	1.06	95
55-59	84.67	2.23	12.24	1.58	14.46	1.87	30
60-64	86.57	2.69	15.89	1.89	18.35	2.19	35
65-69	82.8	2.86	14.29	2.02	17.26	2.44	25
70-74	81.5	1.55	9.75	1.09	11.96	1.34	40
75+	83.6	1.90	9.52	1.35	11.39	1.61	25

The table 4.19 shows the mean value of diastolic blood pressure of the aged females. From the table it is seen that the highest mean value of diastolic blood pressure is 87.05 and it is found in the 50-54 years of age group and the lowest mean value is 81.05 and it is found in the 70-74 years age group.

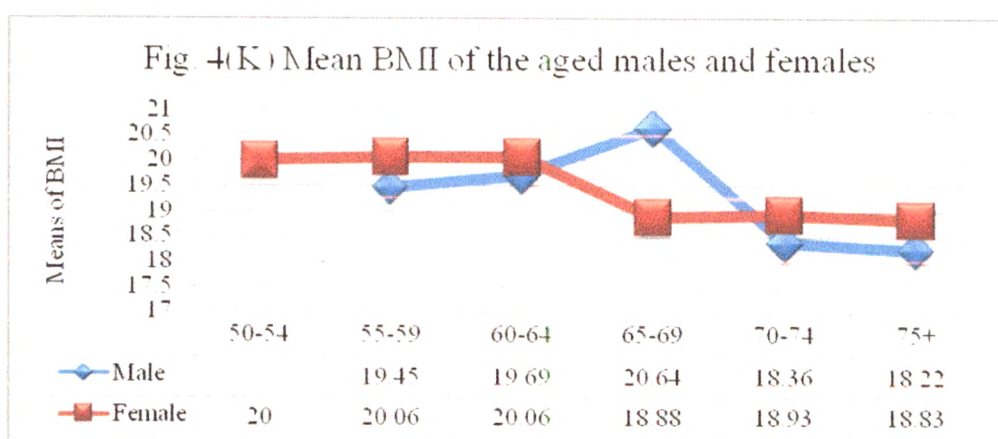




Body Mass Index

The mean value of Body Mass Index (BMI) of the aged males is 19.40 (Table 4.1). In age wise distribution of the aged persons (Table 4.2) it is seen that in 55-59 age group it is 19.45, 60-64 it is 19.69, 65-69 it is 20.64, 70-74 it is 18.36 and 75 years and above 75 years age group it is 18.22 respectively.

Among the aged females the mean value of Body Mass Index is 19.72 (Table 4.1). In age wise distributions (Table 4.3) it is found that among the 50-54 age group it is 20.00, in 55-59 years age group it is 20.06, in 60-64 years age group it is 20.06, in 65-69 years age group it is 18.88, in 70-74 years age group it is 18.93 and in 75 years and above 75 years age group age group it is 18.83 respectively.



Waist/hip ratio

The mean value of waist/hip ratio of the aged male is 0.97 (Table 4.1). In the 55-59 age group the mean value of waist/hip ratio is 0.97, in 60-64 years age group it is 0.96, in 65-69 years age group it is 0.97, in 70-74 years age group it is 0.98 and in 75 years and above 75 years age group it is 0.97.

On the other hand among the females the mean value is 0.95 (Table 4.1). In age wise classification of the mean value of waist/hip ratio it is found that among in the 50-54 age group it is 0.94, in 55-59 years age group it is 0.94, in 60-64 years age group it is 0.95, in 65-69 years age group it is 0.95, in 70-74 years age group it is 0.97 and 75 years and above age group it is 0.97

Fig. 4(L) Mean Waist hip ratio of the aged males and females

