

This chapter deals with statistical analyses and results obtained in the present study. It may be mentioned here again that the purpose of the present study was to compare the patients of cardiovascular disorders with normal participants (control group) from the point of view of stress and quality of life as experienced by them. Three groups of cardiovascular disorders were selected for this purpose; Coronary heart disease (CHD), Hypertension (HT) and Combined disease group (CDG). Besides, a matched control group was also used for the purpose of comparison. It was hypothesized that cardiovascular disorder groups and normal groups would score differently on the scales of stress and quality of life. So in order to realise the objectives of the present study, the scores of the different groups were subjected to suitable statistical methods. For example, mean, standard deviation, ANOVA and t-ratio were calculated to compare the different groups. The statistical methods used in the analyses of data are expected to yield results to arrive at suitable decision regarding the effects of cardiovascular disorders on stress and quality of life among the participants. Thus the results obtained are presented in separate sections.

Besides statistical presentation graphic methods have also been used to projected the data to compare the different group on the selected dependent variables i.e. stress and quality of life. The result obtained in the study are presented separately in the following sections –

- I. Coronary heart disease and stress
- II. Coronary heart disease and QoL.
- III. Hypertension and stress.
- IV. Hypertension and Quality of life.
- V. Combined disease and stress.
- VI. Combined disease and quality of life.

-
- VII. Comparison of CVD groups on stress scale.
 - VIII. Comparison of CVD groups on QoL scale.
 - IX. Gender of CHD patients, stress and QoL.
 - X. Gender of HT patients, stress and QoL.
 - XI. Gender of combined disease group, stress and QoL.
 - XII. Social support, stress and QoL.

Section-I

Coronary Heart Disease and Stress

This section contains the results relating to coronary heart disease (CHD) and stress. Coronary heart disease is one of the cardiovascular disorders that affects human life adversely. Table 5.1 shows the mean, S.D. and t-ratio for CHD and normal groups.

Table 5.1

Mean and SD of Coronary Heart Disease (CHD) group and Control Normal group on the Stress-positive effect.

S.No.	Group	Mean	SD	t	P
1.	CHD	8.4	6.6	16.2	0.01
2.	Normal	17.5	9.6		

It may be seen from table 5.1 that control group is more positively effected by positive events in life as compared to the CHD group. The t-ratio is significant at 0.01 level which suggests that CHD patient are less positively affected by the positive events in life.

As regard the negative impact of stress on CHD and normal groups it can be observed from table 5.2

Table 5.2

Mean and SD of Coronary Heart disease (CHD) group and Normal groups on the stress-negative effect.

S.No.	Group	Mean	SD	t	P
1.	CHD	27.00	9.6	5.42	0.01
2.	Normal	16.7	9.55		

It may be seen from table 5.2 that CHD group is more negatively affected by negative events in life as compared to the control (Normal) group. The t-ratio is significant at 0.01 level which suggests that the difference is real not the function of chance variable.

Section-II

Coronary Heart Disease & QoL

The results relating to CHD patients and normal participants on QoL scale are presented in table 5.3

Table 5.3

Mean and SD of Coronary Heart disease and Normal group on the Quality of life scale.

S.No.	Group	Mean	SD	t	P
1.	CHD	70.00	14.7	98	0.01
2.	Normal	97.50	11.00		

The comparative position of CHD and control group can be observed on table of 5.3 on quality of life scale. The control group has scored higher mean value on QoL scale as compared to CHD group. It means CHD groups is suffering more from life problems in comparison to control groups. Since the t-ratio is significant, the difference between the two mean is real, not the function of chance variable.

Section-III

HT and Stress

This sections contains the results obtained in the comparison case of HT and normal participants on stress scale. Table 5.4 shows the results

Table 5.4

Mean and SD of Hypertension (HT) group and Normal group on the stress-positive effect

S.No.	Group	Mean	SD	t	P
1.	Hypertension	10.25	4.23	7.37	0.01
2.	Normal	18.36	6.38		

Table 5.4 shows that HT group is less affected by positive evens in life as compared to the control group. The t-ratio is significant at 0.01 level which suggests hypertension patient are less positively affected by the positive evens in life.

Table 5.5

Mean and SD of Hypertension (HT) group and Normal group on the stress-negative effect

S.No.	Group	Mean	SD	t	P
1.	Hypertension	21.8	9.1	8.36	0.01
2.	Normal	16.7	9.55		

The comparative status of HT and normal groups on the negative aspect of stress can be observed from table 5.5. It is obvious that normal group is less affected by negative events in life as compared to the hypertension (HT) group. The t-ratio is significant at 0.01 level which suggests that hypertension patient are more negatively affected by the negative events in life. The difference between the two means is real, not the function of chance variable.

Section-IV

Hypertension & QoL

A comparison of HT and normal groups on QoL scale also produced significant difference.

Table 5.6

Mean and SD of Hypertension (HT) group and Normal group on the QoL scale.

S.No.	Group	Mean	SD	t	P
1.	Hypertension	78.40	10.45	60.5	0.01
2.	Normal	97.5	11.00		

The comparative position of hypertension and normal group can be observed on table of 5.6 on quality of life scale. The normal group has scored higher mean value on quality of life scale as compared to hypertension group. It means hypertension group is suffering more from problem in life in comparison to normal group. Since the t-ratio is significant, the difference between the two mean is real, not the function of chance variables.

Section-V

Combined Disease Group and Stress

Section-V contains the results for CDG and normal groups on stress scale. Results are presented in table 5.7 and 5.8.

Table 5.7

Mean and SD of combined disease group (CDG) and Normal group on stress-positive effect.

S.No.	Group	Mean	SD	t	P
1.	Combined	7.56	3.16	18.76	0.01
2.	Normal	17.6	6.52		

A perusal of table 5.7 makes it obvious that normal group is more positively effected by positive evens in life as compared to the combined group. The t-ratio is significant at 0.01 level which suggest that combined disease patient are relatively less positively effected by the positive events in life.

Table 5.8

Mean and SD of combined disease Group (CDG) and control group on the stress negative effect.

S.No.	Group	Mean	SD	t	P
1.	Combined	26.00	10.4	14.5	0.01
2.	Normal	16.7	7.55		

It may be seen from table 5.8 that normal group is relatively less affected by negative events in life as compared to the CDG group. The t-ratio is significant at 0.01 level which suggests that combined disease patients are more negatively affected by the negative events in life. The difference is real, not the function of chance variable.

Section-VI

Combined Disease Group & QoL

Table 5.9

Mean and S.D. of Combined disease group (CDG) and Normal group on the Quality of life scale

S.No.	Group	Mean	SD	t	P
1.	Combined	79.40	18.41	23.7	0.01
2.	Normal	97.7	11.00		

The comparative position of combined disease and control group can be observed from table of 5.9 on quality of life scale. The control group has scored higher mean value on quality of life scale as compared to combined disease group. It means CDG patients are suffering more from life problems in comparison to normal group. Since the t-ratio is significant, so,

the difference between the two means is real, not the function of chance variable.

Section-VII

Table 5.7

Cardiovascular Disorders, Stress and QoL

The mean scores of groups on the two aspects of stress and QoL once again may be noticed from table 5.10 and 5.11 and 5.12.

Table 5.10

Mean and S.D. of three CVD groups on Positive effects of stress

S.No.	CVD groups	M	S.D.
1.	CHD	8.40	6.60
2.	HT	10.25	4.23
3.	CDG	7.56	3.16

Table 5.11

Mean and S.D. of three CVD groups on Negative effects of stress

S.No.	CVD groups	M	S.D.
1.	CHD	27.00	9.60
2.	HT	21.80	9.10
3.	CDG	26.00	10.40

Table 5.12**Mean and S.D. of three CVD groups on QoL Scale**

S.No.	CVD groups	M	S.D.
1.	CHD	70.00	14.70
2.	HT	78.40	10.45
3.	CDG	79.40	18.41

There are three disease groups in this study and they were compared on the two aspect of stress namely positive effect and negative effect. In order to see the difference between these groups on stress scale, ANOVA was used and the result obtained are presented in two separate tables. Table 5.13 contains the summary of ANOVA for three CVD groups- positive effects. Table 5.13 shows that F-ratio between three CVD groups on stress positive effect. The F-ratio obtained in this case is 194.28.

Table 5.13**Summary of ANOVA between three CVD groups on Stress scale- Positive effect**

Sources of Variation	df	Sum of squares	Mean square	F	P
Between groups	2	7537	3768.5	194.28	01
Within groups	147	2851.28	19.39		
Total	149	10388.22	-		

The F-ratio is significant at 0.01 level which suggests that differences between three CVD groups on positive aspect are real, not the function of chance variable. It means the three CVD groups differ with one another in positive feelings of the stress scale.

Table 5.14

Significance of difference between means of three CVD groups on stress scale – Positive effects

S.No.	Groups compared	t	P
1.	CHD vs HT	0.94	NS
2.	CHD vs CDG	5.19	0.01
3.	HT vs CDG	4.00	0.01

The significance of difference between means of three CVD groups on the positive effects of stress may be observed from table 5.14. Two out of three t-ratios are significant.

Table 5.15 contains the summary of ANOVA between three group on negative effects. There are obvious difference between three groups in negative feelings. So the ANOVA was used to see the significance of difference between the above groups regarding the negative effects of stress on them. F-ratio has been found to be 138.84 and it is significant at 0.01 level.

Table 5.15

**Significance of difference between Means of three CVD groups on
Negative effects of stress**

Sources of Variation	df	Sum of squares	Mean square	F	P
Between groups	2	63019.48	31509.74	138.84	01
Within groups	147	33362.18	226.95		
Total	149	96381.66	-		

Table 5.16

**Summary of ANOVA between three CVD groups on Stress scale-
Negative effect**

S.No.	Groups compared	t	P
1.	CHD vs HT	2.29	05
2.	CHD vs CDG	0.73	NS
3.	HT vs CDG	2.14	05

It is obvious from table 5.16 that two-ratios between three CVD groups are significant. It means that difference between the three groups is real, not the function of chance factor. Table 5.16 shows significance of difference between three CVD groups.

Section-VIII

Cardiovascular Disease Groups and QoL-

Three study groups covered in this study were also compared on quality of life scale. In order to see the difference between the groups on quality of life scale, ANOVA was used and the result obtained are presented

in table 5.17. Table 5.17 shows the F-ratio (F=73.54) obtained between three CVD groups on QoL scale. It is significant 0.01 level.

Table 5.17

Summary of ANOVA between three CVD groups on stress QoL Scale

Sources of Variation	df	SS	MS	F	P
Between groups	2	26921785.00	134609.05	73.57	0.01
Within groups	147	26895887.00	182965.21		
Total	149	-	-		

The obtained F-ratio is significant at 0.01 level which suggests that three groups differ in the feeling of quality of life. So, the difference is not attributable to chance factor. Table 5.18 contains the t-ratios obtained between the means of three CVD groups on QoL scale.

Table 5.18

Significance of difference between means of three CVD groups on QoL scale

S.No.	Groups compared	t	P
1.	CHD vs HT	3.29	0.01
2.	CHD vs CDG	2.55	0.05
3.	HT vs CDG	0.33	NS

Section-IX

Gender of CHD patients, Stress & QoL

Whether gender difference influences stress and QoL feelings among coronary heart disease patients differentially? This question was also attempted to be answered. The results obtained from this point of view are recorded in tables 5.19 and 5.20.

Table 5.19

Gender of CHD patients and Stress

Effects	Male (N=29)		Female (N=12)		t	P
	M	SD	M	SD		
Positive	9.16	4.36	10.25	4.72	0.84	NS
Negative	25.42	7.66	28.85	8.02	1.66	NS

Table 5.20

Gender of CHD patients and QoL

S.No.	Gender	M	SD	t	P
1.	Male (29)	73.46	12.32	2.43	0.05
2.	Female (21)	65.18	11.89		

Table 5.19 shows that male and female CHD patients have not been found to differ significantly in stress-either positive or negative. But they differ significantly in QoL.

Section-X

Gender of HT patients, Stress and QoL

No gender effect was found on the scales of stress and quality of Life. The results obtained from this point of views are recorded in tables 5.21 and 5.22.

Table 5.21

Gender of HT patients & Stress

Effects	Male (N=26)		Female (N=24)		t	P
	M	SD	M	SD		
Positive	9.45	5.21	10.31	6.35	0.53	NS
Negative	19.29	7.86	23.76	10.42	1.75	NS

Table 5.22

Gender of HT patients and QoL

S.No.	Gender	M	SD	t	P
1.	Male (26)	80.26	12.66	0.49	NS
2.	Female (24)	78.45	13.08		

It is obvious from tables 5.21 and 5.22 that the two groups (M vs F) have not been found to differ significantly on stress as well quality of life scales.

Section-XI

Gender of CDG patients, Stress and QoL

The CDG patients also were compared from gender view point on stress and quality of life scale. Thus the results obtained are recorded in table 5.23 and 5.24.

Table 5.23

Gender of CDG patients & Stress effects

Effects	Male (N=28)		Female (N=22)		t	P
	M	SD	M	SD		
Positive	8.16	5.32	6.15	4.33	1.72	NS
Negative	24.41	6.70	29.02	8.78	2.06	0.05

Table 5.24

Gender of CDG and QoL

S.No.	Gender	M	SD	t	P
1.	Male (28)	84.32	15.35	1.17	NS
2.	Female (22)	77.10	13.42		

Table 5.23 shows that male and female combined disease groups (CDG) differ significantly in negative stress only. They also were not found to differ significantly on QoL scale. Thus gender has not been found to be an important variable in stress and quality of life among three CVD patients groups.

Section-XII

Social Support, Stress and QoL

Social support is said to function as a panacea for different types of health related problems. This assumption was empirically examined in the present study. The results obtained from this point of view are presented in tables 5.25 and 5.26. The patients were classified into two groups i.e., patients receiving high social support from their family and social networks and (HSG) and patients enjoying low social support (LSG). The PGI social support scale by Nehra et.al. (1998) was used for this purpose.

Table 5.25

Mean etc. of High Social Support Group (HSG) and Low Social Support Group (LSG) Cardiovascular patients on Stress scale

Group of Patients	HSG		LSG		t	P
	M	SD	M	SD		
CHD						
❖ Positive Effect	11.80	3.17	6.95	3.08	6.38	0.01
❖ Negative Effect	20.27	6.14	28.24	7.04	4.96	0.01
HT						
❖ Positive Effect	12.17	5.13	9.78	4.14	2.29	0.05
❖ Negative Effect	19.32	5.24	23.39	5.67	3.03	0.01
CDG						
❖ Positive Effect	10.29	3.40	8.15	4.08	2.35	0.05
❖ Negative Effect	21.26	6.41	24.82	8.77	1.94	NS

It is obvious from table 5.25 that social support has emerged as a strong determinant of stress—both the positive and negative effects. All but one t-ratios are significant, which demonstrate the differential effects of social support on stress. The results very clearly show that higher the social support received by the CVD patients, lower the effects of negative and higher the effects of related positive events. In only on comparison (i.e. CDG – HSG vs LSG : negative effects) significant difference has not been obtained. This is attributed to chance variable.

Social Support and QoL –

The effect of social support was also ascertained from the point of view of enhancement in quality of life (QoL). Here again social support emerged as a strong determinant of the feelings related to quality of life. Its role has been found to be very positive in reducing negative impacts of stress and promoting quality of life among CVD patients. Table 5.26 contains the results in this case of comparison.

Table 5.26

Mean etc. of High Social Support Group (HSG) and Low Social Support Group (LSG) Cardiovascular patients on QoL scale

Effects	Male (N=28)		Female (N=22)		t	P
	M	SD	M	SD		
CHD	74.29	12.66	59.85	10.26	4.84	0.01
HT	78.36	14.10	63.91	11.82	4.39	0.01
CDG	80.15	14.78	72.61	13.55	2.12	0.05

A perusal of table 5.26 makes it evident that the patients belonging to all the three patients groups (CHD, HT & CVD) receiving high and low social support differ significantly in their perception of quality of life (QoL). All the t-ratios are statistically significant. Hence the hypothesis is accepted.