

The present chapter deals with the methodology used in the present study. Methodology is the backbone of any study as it covers the sample, design and the tools used in the study. If the tools are not suitable, reliable results can not be obtained. It is because of this problem that researchers try their best to employ flawless methodology. This view has been maintained in this study also, so that the objectives of the present study could properly be realized.

Whenever a study is planned to be conducted, a question arises in the mind how to collect data. It is an important question? Because data are the prime requisite of an empirical study. It provides factual information on conceptual constructs tapped in the study. They are more than facts or events. Actually they are a kind of set for deriving certain meaningful results with reference to objectives of study. They provide objective and sound bases for identification, comparison, classification. In empirical studies, validity, reliability, specification, objectivity and usability are the necessary characteristics of any research. Scientific data provide for wider applications and generalizations. Such data are extremely needed in all useful empirical researches. They are feasible for necessary use by going into the rigour of the processes in scientific and systematic manner which concerns the selection of sample, the selection and / or preparation of tools, the administration of tools, the scoring of answer-sheets and the recording of data for further analyses. These views were given due attention in the present study.

**Objectives -**

The present study was conducted with following objectives.

- (i) To compare the CHD patients with normal participants on stress and QoL scales.
- (ii) To ascertain stress and QoL in HT and normal patients.

- (iii) The compare combined disease group of patients (CDG) with normal participants on stress and QoL scales.
- (iv) To compare the CHD, HT and CDG patients on stress and QoL scales from gender point of view.
- (v) To evaluate the role of social support in stress and QoL for three CVD groups of patients.

**Hypotheses-**

Following hypotheses were empirically examined in the present study.

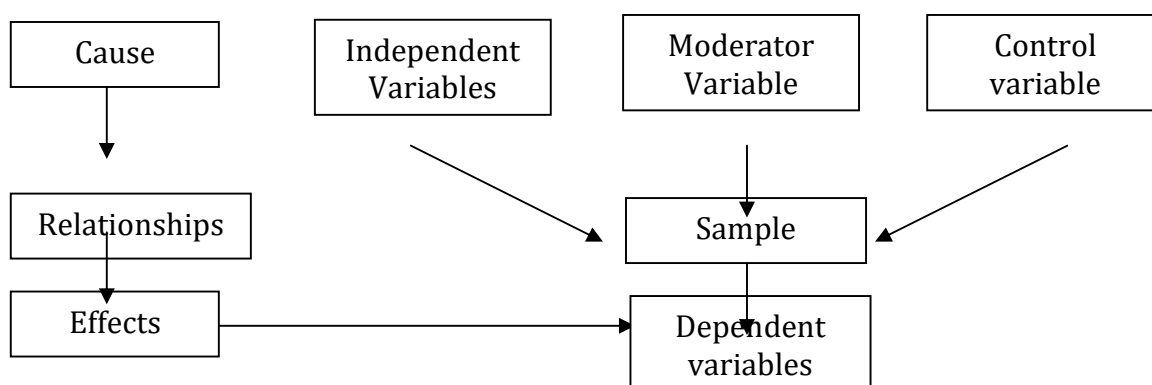
- H<sub>1</sub>- CHD patients would differ significantly from normal (control) participants in stress.
- H<sub>2</sub>- CHD patients would differ significantly from normal (Control) participants in QoL
- H<sub>3</sub>- Hypertension (HT) group of patients would differ significantly from normal participants in stress.
- H<sub>4</sub>- Hypertension (HT) group of patients would differ significantly from normal participants in QoL.
- H<sub>5</sub>- The combined disease group would differ significantly from normal participants in stress.
- H<sub>6</sub>- The combined disease group would differ significantly from normal participants in QoL.
- H<sub>7</sub>- The CVD groups would differ significantly in stress.
- H<sub>8</sub>- The CVD groups would differ significantly in quality of life.
- H<sub>9</sub>- The male and female CHD patients would differ significantly in stress.
- H<sub>10</sub>- The male and female CHD patients would differ significantly in QoL.
- H<sub>11</sub>- Male and female HT patients would differ significantly in stress.
- H<sub>12</sub>- Male and female HT patients would differ significantly in QoL.

- H<sub>13</sub>- The male and female combined disease groups would differ significantly in stress.
- H<sub>14</sub>- The male and female combined disease groups would differ significantly in QoL.
- H<sub>15</sub>- The CVD groups with high social support (HSG) and low social support (LSG) would differ significantly in stress.
- H<sub>16</sub>- The CVD groups with high social support (HSG) and low social support (LSG) would differ significantly in QoL.

**Design :-**

The present study is based on the design as illustrated in figure 4.1. The present study tapped cardiovascular disorders as the independent variable and group of dependent variables covered stress and quality of life. The participants were assigned to either of the three CVD (CHD, HT and CDG) groups for the purpose of comparison depending on their disease.

Besides, patients were also evaluated on the basis of gender on the scales of stress and QoL and role of social support in reducing the negative effects of stress and improving quality of life (QoL) in three CVD group was also ascertained. The model 4.2 presented here depicts the design of the study.



**Fig. 4.1** The independent, moderator and control variables are input variables. The first one is studied whereas third one is neutralized or eliminated. The dependent variable is effect or outcome

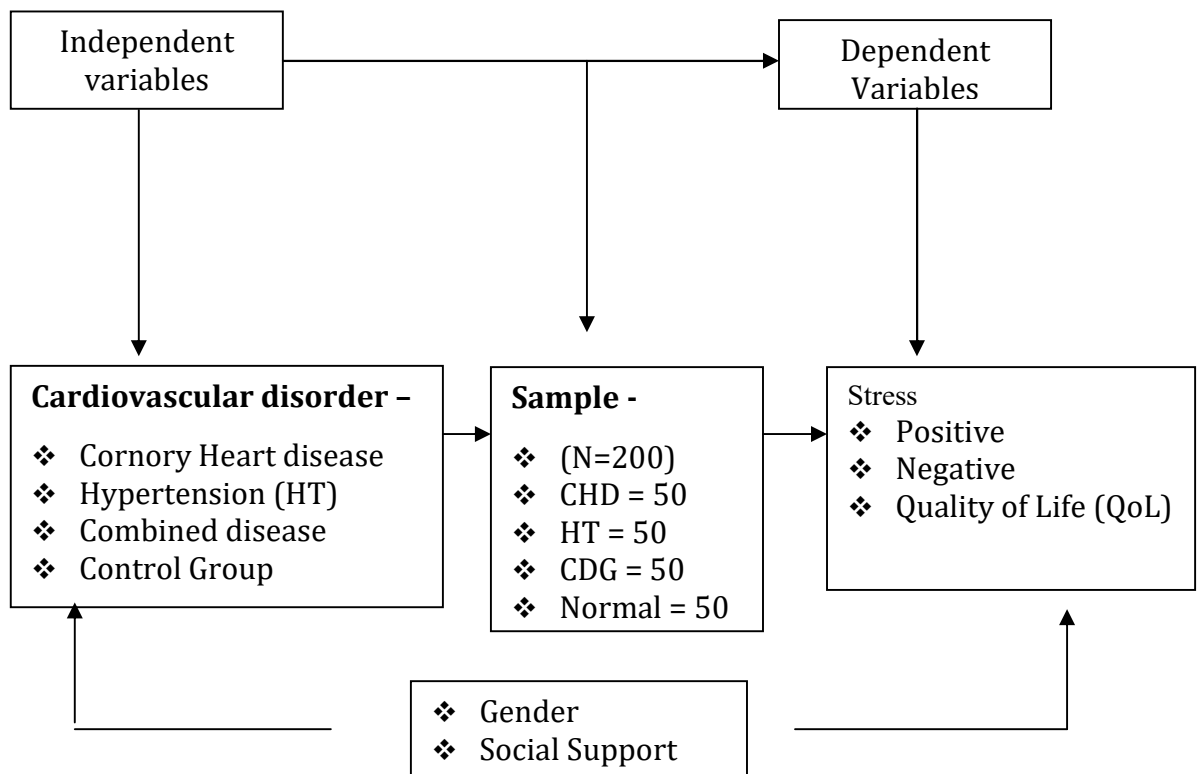


Fig. 4.2 : Layout of the Study

**Sample -**

The Sample comprised of 200 subjects 50 each in four groups i.e. coronary heart disease. (CHD), hypertension (HT), combined disease group and control group. The three patient groups were selected from local nursing homes and OPD registers of Govt. hospitals, while the control group was drawn out of the general population of Jaunpur city. Age of the subjects ranged from 25 to 70 years. The mean age being 49.35 years. The purposive random sampling technique was employed in data collection. Table 4.1 and figures 4.3 and 4.4 portrays the structure of the sample.

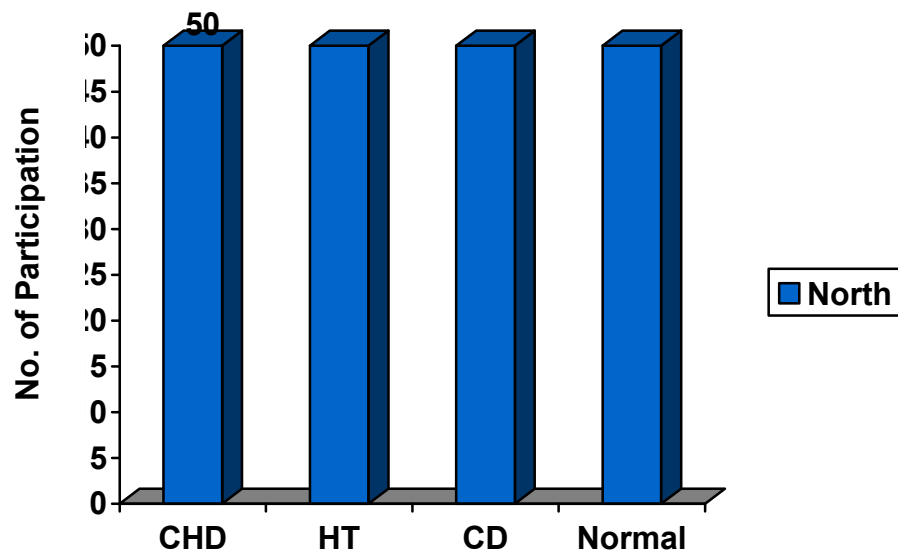


Fig. 4.3 Internal Structure of the Sample

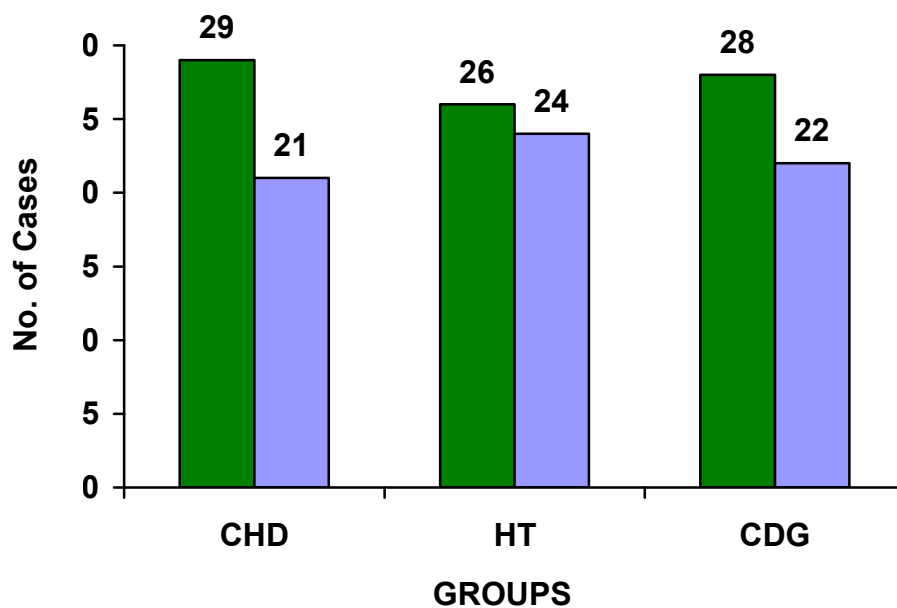


Fig.:4.4 structure of sample in terms of gender of participants

**Break down Analysis of the sample**

As state above, sample of the study consisted of 200 participants. This strength included 50 CHD, 50 HT and 50 combined disease groups of patients. Besides, 50 control (normal) participates were

also included for the comparison purposes. The breakup of the sample is given here in figure 4.3 and 4.4.

One thing may be made clear at this juncture that, it is not possible to study the universe (population) as a whole nor also desirable. So studies are conducted on samples. Investigations on representative sample provide scientific data and save from unnecessary use of time, money, and energy. Researches are, almost, invariably conducted on carefully selected representative samples. Data obtained from such samples have been found useful in deriving valid inferences and making fruitful generalizations. So, selecting a representative sample is a must.

**Table - 4.1 The following places of health care located at Jaunpur (U.P.) were visited for data collection -**

<b>S.No.</b>	<b>Centre</b>	<b>N</b>	<b>CHD</b>	<b>HT</b>	<b>CD</b>
1.	Krishna Heart Care	50	20	18	22
2.	District Hospital	50	15	15	10
3.	Asha Deep Hospital	50	15	17	18
	N =	150	50	50	50

Representativeness is the most desired and important characteristic of any sample for getting scientific data. No sample in social sciences can be absolutely representative in all characteristics nor it is strictly necessary. It is desired in utmost degree in terms of variables of study and it is possible too. Results from such a sample stand for the population and are useful in making generalizations.

There are various sampling designs available for us, such as random, stratified, quota, purposive, and the various combinations of these designs enable the researcher to select the most suitable design and apply it adequately for getting the representative sample to the proper degree of

efficiency. No single design or a combined set of designs is perfect and useful in all types of investigations. Suitability of designs depends on nature of problem, composition of subjects, nature of tools, scope of administrative facility, available resources, and cooperation of the participants. In the present study due care was taken for making the study scientific.

As regards what may be important features of the sample, the size of sample is an important matter of consideration. Size affects representativeness, feasibility, and reliability of data. Small samples, despite of careful stratification, lack in proper representation and very large samples do not go quite well with uniform application, even with good enthusiasm and keen involvement of the researcher. The size of sub-samples, too, needs sufficiency for utility. It has been evident from the empirical studies of multiple strata that sufficiently large sample stands for greater precisions specifically to provide for suitable number in each strata or sub-samples. Since, the study was designed to be carried out on sub-samples, also, hence the investigator preferred to work on a suitable sample. The participants divided into subgroups were matched except on the dimension they were to be compared. The respondents belonged to Jaunpur, U.P. (Eastern U.P.)

**Inclusion and Exclusion Criteria -**

The inclusion and exclusion criteria for the participants were as under :

**Inclusion Criteria -**

- (i) Only CVD patients were included for testing.
- (ii) Participants within the age range 25-70 year were included.
- (iii) Only outdoor patients were included.
- (iv) Only willing patients were included.
- (v) Study included only urban patients.

**Exclusion Criteria -**

- (i) Patients with health problems were not included.
- (ii) Patients aging below 25 or above 79 years were excluded.
- (iii) Indoor patients were excluded.
- (iv) Patients unwilling for testing were excluded.
- (v) Rural patients were not included.

**Tools :-**

The following tools were used to measure the dependent variables tapped in the present study.

**Life Experience Survey (LES Scale) -**

It is one of the most popular and improved version of social Re-adjustment Rating Scale (SRRS) which was basically developed by Holmes and Rahe (1967). They designed the scale to measure the amount of change related stress that people experience. The SRRS has been used all over the globe but the researches conducted later on indicated some major weaknesses in the above scale, so in order to remove the deficiency in the above scale some improved versions were published and the LES scale happens to be one of the very popular versions measuring the amount of stress.

The LES contains 47 items for general purpose and some blank points are given to express the unlisted changes. The section for students consists of 10 items.

The LES was developed to Sarason et.al. (1978). Its Hindi version was used in the present study.

**The Hindi version of LES scale :**

The Hindi version of LES scale, which has been used in the present study was developed by Singh (2003). It contains the some number of items in both the sections. The items of original LES scale were translated into Hindi and the appropriateness of the Hindi items was evaluated by language experts and the researchers conducting researches



in the concerned area. After examining the clarity, suitability and fluency of the items, the final draft of the Hindi version was prepared. The final form of the Hindi version of LES scale was administered on a sample of 200 adolescents and 100 disease affected patients to offer the norms to interpret the scores of respondents on the LES scale.

**Scoring :** The items of LES scale are accompanied by 7 categories of alternative responses ranging from extremely negative to extremely positive. Out of 7 alternative response categories 3 are negative, 3 are positive and the middle category indicates no affect, so it bears 0 values. The extremely negative, moderately negative and slightly negative categories are scored on the pattern of -3, -2 and -1 respectively. The positive category is also scored in the same style but values assigned to such categories are +1, +2, and +3 respectively for slightly positive, moderately positive and extremely positive categories.

To get the scores all the right sides are added and their sum is the total positive change scores. Similarly one may get the total negative changes scores by adding all the negative impacts rating. Adding their two values yields total change score. The meaning of the score of any respondent may be understood by comparing the mean of the person concerned with the range of scores given in the classification table 4.2. The reliability and validity of the Hindi version of LES scale are 0.86 and 0.79 respectively.

**Table 4.2 Classification: Norms for LES**

<b>Scoring Category</b>	<b>Negative Change</b>	<b>Positive Change</b>	<b>Total Change</b>
High	14 and above	16 and above	28 and above
Moderate	4-13	7-15	12-27
Low	0-3	0-6	0-11

Research to date suggests that the negative change score is the crucial one; positive change has not been forced to be good predictor of adaptation outcomes. Therefore, research has shown that negative change scores are related to a variety of negative adaptation outcomes.

Besides classificatory system norm in other forms may also be prepared to compare and interpret the scores of a respondents. The basic statistics such as mean and S.D. would be the easiest useful norms for this purpose. Similarly other types of norms may also be prepared for the convenience of the users of the LES scale. The table 4.3 presented here consists of the mean and S.D on LES scales for the subjects.

**Table 4.3 : Norms for Different groups**

<b>S.No.</b>	<b>Groups</b>	<b>N</b>	<b>M</b>	<b>S.D.</b>	<b>SEm</b>
<b>1.</b>	<b>Adult</b>				
	Male	180	40.50	12.6	0.835
	Female	140	35.60	9.50	0.805
<b>2.</b>	<b>Social Status</b>				
	Rural	130	33.70	8.20	0.719
	Urban	190	52.50	14.50	1.05
<b>3.</b>	<b>Age</b>				
	21-35	150	40.30	9.5	0.776
	36-50	140	29.80	7.6	0.084
	51+	30	15.60	4.01	0.733

Interpretation of the scores and mean of a subject on LES scale may be done on the basis of departure trend of the subject's score from the mean of the group. It has also been suggested that users of Hindi version of LES scale may develop their own norms keeping in view the need of the study. Besides individuals or groups can be also be assessed separately on

the positive and negatives aspects of stress. The three types of patients covered in this study have been compared from this point of view.

### **Measurement of Quality of life—**

Quality of life (QoL) was measured with P.G.I. Quality of life scale developed by Moudgil et al (1998). P.G.I Quality of life scale (Revised) has a number of earlier version which were tried on – different populations. Data were analysed and items were modified and simplified. The final form was prepared on the basis of significant and satisfactory items used in these versions (Moudgil et al 1986) It consists of 26 items. Item analysis is shown in table 4.4.

Each item has 5 levels of responses (ranging from low to high degree). In addition, P.G.I. Health questionnaire N.2 (Verma, 1978), P.G.I. Achievement value index (Menon et al1975a), P.G.I. Locus of control scale (Menon 1975b), Kuppuswamy's (1962), S.E.S. Scale-modified and PGI Well-being scale (Verma & Verma, 1989) were also administered for validation.

**Sample:-** The P.G.I. quality of life scale was standardized on 100 participants in the age range of 20-60 years of age (Mean age = 29.61 and S.D = 962), 75 of whom were males, of all education and varied income (Rs. 150 to 10500.00) groups. These subjects covered the entire range of scores as shown below.

### **Norms**

N = 100;      M = 93.60;      S.D = 14.89

### **Scoring -**

Number of Ticks in first column X1

Number of Ticks in Second column X2

Number of Ticks in Third column X3

Number of Ticks in Fourth column X4

Number of Ticks in Fifth column X5

All are added for total score-

Higher the score greater was the quality of life perceived by the subject / group.

**Reliability :-**

	=	<u>rho</u>
Inter - rater reliability	=	0.89
Inter- scorer reliability	=	0.99
Test-retest reliability (a week's interval)	=	0.79
Split-half-reliability (corrected for length)	=	0.72
Self- other rating	=	0.81

All these correlations are significant at 0.01 level. Thus the scale has satisfactory reliability.

**Validity :-** Face validity was established using expert clinical psychologists, who unanimously recognized it as a test of quality of life. For concurrent validity the P.G.I. quality of life scale was administered to 15 subjects, along with a number of other well standardized scales mentioned earlier. Results are given below. Divergent validities were established against the following questionnaires:

1. P.G.I. health questionnaire N.2
  - (a) Neuroticism = -0.26 n.s
  - (b) Lie = -0.02 n.s
2. P.G.I. Iocus of control scale = 0.24 n.s
3. Socio- economic status scale = 0.31 n.s

Convergent validities were obtained against the criterion measure of -

4. P.G.I. Achievement value Index = 0.57 p < 0.05
5. P.G.I. Well being scale = 0.54 p < 0.05

The expected results were obtained. The concept of quality of life is independent of degree of neuroticism, and locus of control (internal/external). It is also independent of socio-economic status of the person. It is also unaffected by the social desirability type of response bias (tendency to lie). On the other hand, as expected, it overlaps (but is not identical) with achievement value and subjective feelings of well being. Both divergent and convergent validities are thus established. In addition, the scale scores were unrelated to the subjects. age ( $r = 0.46, ns$ ) and education ( $r = 0.46, ns$ ). In other words it can be used with all education groups and all age levels (20 to 60 years age group at least as used in this study).

Therefore, it can be used with confidence in most situations, Hindi speaking population. Individuals standing can be judged on the basis of these scores groups can be compared over a period of time before and after interventions and also in different geographical areas of the country, including different localities (urban/rural) and belonging to different socioeconomic areas.

**Table 4.4**

**Item Analysis (Item Total Score Correlation) for PGI Quality of Life Scale (Revised form)**

Item No.	Top 1/3	Mid 1/3	Bottom 1/3	Total Scores	E 1/3 value	Item Applicable No. of subjects	Progression	Remarks
1.	110	95	85	290	0.17	89	Satisfactory	Acceptable
2	127	99	70	296	0.35	100	Satisfactory	Acceptable
3	114	83	47	244	0.41	100	Satisfactory	Acceptable
4	137	121	94	352	0.26	100	Satisfactory	Acceptable
5	65	57	51	173	0.20	41	Satisfactory	Acceptable

6	67	60	58	185	0.13	42	Low Discriminatory	Acceptable
7	132	131	103	366	0.22	81	Satisfactory	Acceptable
8	144	136	117	397	0.19	86	Satisfactory	Acceptable
9	158	147	104	409	0.33	99	Satisfactory	Acceptable
10	158	152	104	414	0.33	99	Satisfactory	Acceptable
11	153	118	891	362	0.38	100	Satisfactory	Acceptable
12	139	122	77	341	0.36	100	Satisfactory	Acceptable
13	143	118	77	338	0.40	100	Satisfactory	Acceptable
14	144	135	124	403	0.12	100	Low Discriminatory	Acceptable
15	158	139	110	407	0.29	100	Satisfactory	Acceptable
16	141	123	100	364	0.25	100	Satisfactory	Acceptable
17	154	139	128	421	0.16	100	Satisfactory	Acceptable
18	145	122	83	352	0.38	100	Satisfactory	Acceptable
19	112	99	73	284	0.24	100	Satisfactory	Acceptable
20	152	127	129	408	0.14	100	Low Discriminatory	Acceptable
21	120	106	96	322	0.15	100	Satisfactory	Acceptable
22	146	131	107	384	0.24	100	Satisfactory	Acceptable
23	114	96	68	278	0.28	100	Satisfactory	Acceptable
24	112	115	84	311	0.17	100	Satisfactory	Acceptable
25	135	120	65	320	0.42	100	Satisfactory	Acceptable
26	104	94	94	292	0.08	42	Low Discriminatory	Acceptable

### **Social Support Scale -**

The social support received by the participants was measured with PGI Social Support Scale by Nehra et.al. (1998). This scale consists of 18 items with four alternative responses (Most agreed to least agreed). The details of the scale are given as under. It is one of the most popular scales measuring social support.

**Tryouts for PGI Social Support Scale -** Pollack and Harris scale was tried out on Indian psychiatric patients by Nehra and Kulhara (1987). Their results indicated that 16 items had significant discriminating capacity and high test retest reliability. So it was decided to adapt it in Hindi.

The original questionnaire in English has 23 items out of which 19 items were translated in Hindi (16 items found suitable in the preliminary try out mentioned above and 3 week items were modified and included for another try out).

Thus 19 items were translated into Hindi by experts consisting of psychologists and psychiatrists from academic institutes of Chandigarh. Another expert back translated them into English. On the basis of semantic closeness and discussion held among the experts. Further editing was done scoring pattern (of 4 to most agreed to 1 to least agreed response) was retained. Thus, higher the score better is the perceived social support. For finding out possible weakness in items and for making necessary modifications, if needed item total correlations were computed using E 1/3 technique (similar to pnu-coefficient). Results are given in Table 4.5.

**Table 4.5**  
**Item Analysis (Item Total Score Correlation) for PGI Quality of Life**  
**Scale (Revised form)**

Item No.	Top 1/3	Mid 1/3	Bottom 1/3	E 1/3 value	Remarks
1.	68	63	51	25	Satisfactory
2	61	53	49	18	Progression good. So retained
3	65	61	53	18	Progression good. So retained
4	52	40	31	30	Satisfactory
5	45	29	26	27	Satisfactory
6	68	60	36	47	Satisfactory
7	58	46	40	26	Satisfactory
8	57	44	42	22	Satisfactory
9	59	51	51	12	Satisfactory
10	64	49	52	18	Can be improved
11	58	41	29	36	Satisfactory
12	60	55	47	19	Satisfactory
13	65	60	52	19	Satisfactory
14	51	31	25	38	Satisfactory
15	59	36	32	32	Satisfactory
16	56	43	54	02	Satisfactory
17	60	62	46	20	Satisfactory
18	67	60	49	26	Satisfactory
19	57	52	47	25	Satisfactory

Note- Item number 16 deleted, as not found suitable.



After deleting item No. 16 and modifying item No. 10, the 18 item final scale in Hindi was finalized. Item No.2, 4, 8, 9, 11, 12 and 18 are positively worded and scored as such but item no. 1, 3, 5, 6, 7, 10, 13, 14, 15, 16 and 17 are negative items and have to be scored in the reverse order. The total score indicates the amount of social support perceived by the individual. Higher score indicates more perceived social support.

**Reliability** – The 18 item scale was administered on 50 subjects and repeated after an interval of two weeks. Mean differences (using difference method) were in significant ( $t=0.64$  ns) and relative reliability was highly significant and satisfactory ( $r=0.59$ ,  $p < 0.1$ ).

**Validity** – The concurrent validity was established by (a) correlating scores on Hindi adaptation of PGI Social Support Questionnaire with that of clinician's independent judgement on 14 subjects. These ratings were done on a 4-point scale by a consultant psychiatrist. The scores ranged from full agreement to full disagreement. The obtained correlation of 0.80 was highly significant ( $p < 0.1$ ). (b) An external criterion was also selected, in the form of social support sub-scale from the family Interaction Pattern scale of Bhatti et.al. (1986). Both the scale were administered to 21 subjects. The correlation of -0.65 was highly significant ( $p < 0.01$ ). This correlation was expected to be negative as high social support was indicated by lower scores on Bhatti et.al. scales. (c) Each item was found to differentiate normals from neurotics at 0.01 level.

Norms : The normative data are given in the following table –

**Table 4.6**  
**Item Analysis (Item Total Score Correlation) for PGI Quality of Life**  
**Scale (Revised form)**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Reference</b>
Healthy normal adults	50	56.66	11.75	Nehra et.al. (1996)
Normal, female, adults	100	60.90	6.32	Nehra (1993)
Female, adult, neurotics	116	45.34	10.83	Nehra (1993)
Normal spouses of adult dysthymic patients	40	41.32	4.61	Sharma (1993)
Normal spouses of adult unipolar depressives	40	40.47	5.59	Sharma (1993)
Patients with major amputations of limbs	20	39.30	7.97	Balaji (1993)
Patients with major surgeries of limbs	20	41.10	5.73	Balaji (1993)
Married Schizophrenics	30	50.30	9.62	Kulhara et.al. (1998a)
Umarried Schizophrenics	30	47.70	9.42	Kulhara et.al. (1998a)
Good Responders to Lithium.	58	56.81	11.26	Kulhara et.al. (1998b)
Partial Poor responders to Lithium.	60	51.95	11.87	Kulhara et.al. (1998b)

### **Procedure -**

The psychological tools as described earlier were administered on the participants according to the instructions printed on the tests. The following precautions were taken before starting the testing sessions.

- (i) The participants were taken in full confidence before testing
- (ii) Warm rapport was established with them to create friendly climate.
- (iii) Instructions printed on the tests were made fully clear, before starting testing.
- (iv) Doubt, if any, in the participants was properly clarified.
- (v) They were clearly told that their responses would remain confidential so that they could respond without inhibition.
- (vi) After the testing sessions were over, they were allowed to move and warm thanks were extended to them.