Chapter – 3

Research Methodology
The research methodology used in this study is described in the present chapter. While selecting the methodology, a researcher is expected to pay due attention to all the aspects of research methodology, such as size and representativeness of the sample, selection, of variables, choice of research tools, approach to data collection, analysis of data and so on. This chapter contains the details about the above aspects.

No doubt, methodology happens to be the backbone of any research, hence due attention was paid to various aspects of methodology in order to obtain reliable results. The present study covered three types of patients suffering from psychophysiological disorders. These are H.B.P., CHD and Gastrointestinal patients. It was very difficult to identify such cases in large numbers and administered the tools for the collection of data, yet all possible efforts were made to approach as many patients as possible for the larger sample and greater generalizability of the findings and vice versa. So keeping in view the above attention size of the sample was finalized.

Besides, due attention was also paid into selection of the psychological tools for the measurement of variables. The three tools used in the present study are highly reliable and valid also.
**Hypothesis**

Every empirical study is planned to examine some hypotheses. As regard the present study, following hypotheses were tested in this study –

1. The H.B.P. patients and control (normal) subjects would differ significantly in depression.
2. The CHD patients and control subjects would differ significantly in depression.
3. The Gastrointestinal patients and control subjects would differ significantly in depression.
4. The H.B.P. patients and control subjects would differ significantly in death anxiety.
5. The CHD patients and control subjects would differ significantly in death anxiety.
6. The Gastrointestinal patients and control subject would differ significantly in death anxiety.
7. The H.B.P. patients and control subjects would differ significantly in quality of life.
8. The CHD patients and control subject would differ significantly in quality of life

9. The Gastrointestinal patients and control subject would differ significantly in quality of life

Sample

The sample of the present study was constituted with three types of patients-namely (Coronary heart disease) CHD, H.B.P. (Hypertension) and GI (Gastrointestinal problems) patients. Each group consisted of 100 patients. The patients were selected with co-operation from medical practitioner attached with Government hospital and private Nursing Home situated in Jaunpur city and its neighbouring areas. The stratified random sampling technique was used in collection of data. The patients who were properly diagnosed by medical practitioners and were suffering from the covered disorders for at least one year but having no otherwise symptoms served as the subject in the present study. Their age ranged from 30 years to 50+…………
years and the sample consisted of both, male and female patients.

Since it is a comparative study, a control (normal) group of subject (N = 100) was, therefore, also administered the selected scales, so that behavioural problems associated with patients groups could be compared with the normal subject. Both groups were properly matched from the point of view of other variables. The internal structure of the sample is presented in Fig. 3.1.

![Fig. 3.1: Structure of the sample](image)

**Design**

The three disorders were tapped as the causal (independent) variable and the group of dependent variables covered depression, anxiety and stress as variables.
Identification of Patients

The patients were identified with the co-operation of some medical practitioner of Jaunpur city and neighbouring area and also by personal contacts. In all 300 patient cases were scrutinised for the purpose of the present study.
Measurement of Dependent Variables

The following psychological tools were administered on patients as well as the normal or control group. The tests used in present study possess required psychometric properties (i.e., reliability and validity.)

Depression Scale

Depression in the subject was measured with T.S. Depression Scale developed by Thakur and Singh (1994). This scale consists of 60 items and each item is accompanied by five alternative responses namely always, often, generally, sometime and never. It contains positive as well as negative items. The positive items are scored on the patterns of 4321 and 0 respectively. While the negative items are scored in reverse order (0 to 4). The items numbered 3, 9, 18, 20, 22, 25, 27, 29, 35, 40, 42, 45, 46, 48, 51, 54, and 56 are negatively worded. This scale provides global score for the respondents. However scores for seven different areas may also be obtained by arewise scoring. The following table present the areas covered in the scale, items, related to different and the descriptive statistics for the sub-scales as well as for the total scale.

Areawise items of T-s Depression Scale and the norms
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Dimension</th>
<th>Items</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Apathy</td>
<td>2, 7, 13, 18, 19, 24, 40, 42, 46, 47, 56</td>
<td>18.26</td>
<td>4.66</td>
</tr>
<tr>
<td>2.</td>
<td>Sleep Disturbance</td>
<td>3, 26, 35, 37, 39</td>
<td>7.26</td>
<td>2.05</td>
</tr>
<tr>
<td>3.</td>
<td>Pessimism</td>
<td>8, 17, 20, 22, 25, 27, 41, 49, 54, 55, 58, 60</td>
<td>15.39</td>
<td>3.56</td>
</tr>
<tr>
<td>4.</td>
<td>Physical Exhaustion</td>
<td>4, 21, 32, 36, 45, 51</td>
<td>8.14</td>
<td>3.06</td>
</tr>
<tr>
<td>5.</td>
<td>Indecisiveness</td>
<td>9, 10, 29, 48, 59</td>
<td>6.22</td>
<td>2.65</td>
</tr>
<tr>
<td>6.</td>
<td>Dejection</td>
<td>1, 5, 11, 12, 15, 23, 28, 30, 34, 38, 43, 44, 50, 52</td>
<td>17.10</td>
<td>4.85</td>
</tr>
<tr>
<td>7.</td>
<td>Social</td>
<td>6, 14, 16, 33, 53, 57</td>
<td>8.06</td>
<td>2.16</td>
</tr>
<tr>
<td></td>
<td>Total Depression</td>
<td>All items</td>
<td>79.38</td>
<td>11.66</td>
</tr>
</tbody>
</table>
Reliability and Validity –

The reliability and validity of T-S depression scale are reported to be quite high. Its reliability co-efficient has been calculated by implying split-half and test-retest methods. The obtained co-efficient of correlations for reliability are given here in the following table. Its validity co-efficient has been found to be 0.78. Thus it is obvious that T-s Depression Scales possessed good psychometric characteristics, and can be comfortably used to ascertain the level of depression in the respondents.

Co-efficient of reliability for T-S Depression Scale

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Method of reliability</th>
<th>Co-efficient of correlation</th>
<th>T.S. Depression Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Test Retest Method</td>
<td>.87</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Split Half Method</td>
<td>.84</td>
<td></td>
</tr>
</tbody>
</table>

Norms –

As regards the norms to interpret the raw scores of a subject on T.S. Depression Scale, its author’s have provided mean and SD values as the norms for different sub-scales as well as the amount of depression and vice-versa. A comparison the score of a subject with
the mean score will indicate what may be the the level of depression (High or Low) in him or her. If the subject’s score is higher than the group’s mean, it would indicate the he or she suffers relatively less from depression. A researcher may develop his or her own norm keeping in view his or her requirements and the nature of sample. It would be more useful if larger sample is employed for developing the norms. Percentile norm may also be prepared to classify the subject into either of the categories such as low moderate or high depression category.

**Deth Anxiety Scale**

The feeling of death anxiety in the patients was assessed with Thakur Deat Anxiety Scale developed by G.P. Thakur and M. Thakur (1984). It consists of sixteen items. The sixteen items which had highest t value and were finally retained for the scale on the sixteen items eleven were positively worded and five were negatively worded.

**Scoring**

The final score had sixteen statements. Statement numbers 1, 2, 4, 5, 7, 9, 10, 12, 13, 15, and 16 were positively worded and number 3, 6, 8, 11 and 14 were negatively worded. Responses on the
positively worded statements would get 5, 4, 3, 2 and 1 for the “Quite true”, “true”, undecided” “false” and” “quite false” response categories. Further, responses on the negatively worded statements would get 1, 2, 3, 4 and 5 for “quite true” “true” “undecided”, “false” quite false” response categories. The maximum score, one could get on the scale, would be 80 and the minimum would be 16.

Table No. 1
“ Reliability Co-efficients”

<table>
<thead>
<tr>
<th>Types</th>
<th>N</th>
<th>Co-Efficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal consistency</td>
<td>206</td>
<td>0.78</td>
</tr>
<tr>
<td>Test retest reliability</td>
<td>65</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Internal consistency reliability co-efficients using Kuder Richardson formula was found to be 0.78 and a test retest reliability co-efficients with a gap of about twelve weeks on 65 Ss was 0.86. The reliability co-efficients, therefore, were considered satisfactory.
Validity

With a view to ascertaining validity coefficients of the death anxiety scale, the scale along with the Templer’s scale and McMordie scale was administered on a sample of 174 Indian subject. The product moment correlation co-efficients are reported in table 2.

Table-2
Correlations of thakur Death Anxiety Scale with other scales of Death Anxiety

<table>
<thead>
<tr>
<th>Scales of Death Anxiety</th>
<th>Correlation with Thakur Scale of Death Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Templer’s Death Anxiety Scale</td>
<td>0.75</td>
</tr>
<tr>
<td>McMordie Scale</td>
<td>0.78</td>
</tr>
</tbody>
</table>
It would be evident from table 2 that scale was a valid measure of death anxiety, the value of correlation were significant at or beyond 1 level of confidence

**Norms**

With a view to obtaining norms for the present scale, the scale was administered on a random sample of 1, 530 males and females of India of the Hindi speaking area. Quartile range was determined and score obtained up to Q, was put under the low death anxiety group, on and beyond Q₃ under the high death anxiety group and remaining in the middle death anxiety group. The details would be available in Table 3.

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<table>
<thead>
<tr>
<th>Scores on the TDAS</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-38</td>
<td>Low death anxiety group</td>
</tr>
</tbody>
</table>
It would be evident from table 3 that person obtaining scores in between 16 and 38 would belong to the low death anxiety group, between 39 and 55 to the middle death anxiety group and above 55 would be in the high death anxiety group.

**Quality of life**

The quality of life of the subject was measured P.G.I. Quality of life scale. It has been developed by Maudgil et. al. (1998). It consist of 26 items. Each item has 5 levels of responses (ranging from low to high degree). In addtion, P.G.I. Health Questionnaire N-2 (Verma, 1978), P.G.I. Achievement value index (Menon et. al., 1975a), P.G.I. Locus of Control Sclae (Menon 1975b), Kuppuswamy’s (1962) S.E.S. Scale-modified and PGI well-being scale (Verma & Verma, 1989) were also administered for validity studies. As this is a general scale for assessing quality of life, attempt was to have only the most general areas covered and not any disease specific disability items (there already exity quality of life scales for cancer patients, cardiac patients, epileptics, mental retardates, which may still be needed if disease specific study is undertaken for limited purpose).

<table>
<thead>
<tr>
<th>39-55</th>
<th>Middle death anxiety group</th>
</tr>
</thead>
<tbody>
<tr>
<td>56 and above</td>
<td>High death anxiety group</td>
</tr>
</tbody>
</table>
Norms are given in the form of Mean and S.D.

<table>
<thead>
<tr>
<th>Stat</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>93.60</td>
</tr>
<tr>
<td>S.D.</td>
<td>14.98</td>
</tr>
</tbody>
</table>

**Scoring Patterns:**

- Number of tickets in First Column $X_1$ 1,
- Number of tickets in Second Column $X_2$ 2,
- Number of tickets in Third Column $X_3$ 3,
- Number of tickets in Fourth Column $X_4$ 4,
- Number of tickets in Fifth Column $X_5$ 5,

All are added for the total score: Range of scores 26-130.

Higher the score, greater the quality of life perceived by the subject/group and vice versa.
Reliability:

Inter – rater reliability = \( \frac{\rho_{89}}{\rho_{89}} \)

- Inter – scorer reliability = .99
- Test – retest reliability = .79
  (a week’s interval)
- Split – half reliability = .72
  (correlated for length)
- Self – other rating = .81

All these correlations are significant at .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 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 = -.26 n.s.
b) Lie = -.2 n.s.

2. P.G.I. locus of control scale = .24 n.s.
3. Socio-economic status scale = .31 n.s.

Convergent validities were obtained against the criterion measure of:

4. P.G.I. Achievement value Index = .57 P < .05

5. P.G.I. Well being scale = .54 P < .05

The achievement results were obtained. The concept of quality of life is independent of degree of neuroticism, and locus of control (internal/external). It is also unaffected of socio-economic status of person. It is also unaffected by the social desirability type of 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 subject age (r = .46, n.s.) and education (r = .46, n.s.). 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).