CHAPTER - III

Methodology
Before undertaking any research it is important that the researcher examine his or her research problem, aims and objectives, so that it can be appropriately planned as to how these objectives can best be achieved.

There are a large number of variables, which can be taken up for study but the researcher must select a limited number in order to study them in a scientifically appropriate manner. Of these myriad variables anxiety sensitivity is one such variable, which has not been taken up for study in the many contexts where it may be relevant, partly because it has been understood recently after the work of Reiss and McNally (1985). The researcher felt that anxiety sensitivity, together with variables like competence and anger direction would be important in understanding loneliness and this is the main purpose and objective of our study.

In the present research, the main thrust is to throw light on the phenomena of loneliness by exploring how anxiety sensitivity, feelings of competence and anger-direction contribute to the experience of loneliness.

Appropriate research questions have been framed and are given in Chapter 2. While the main concern of the investigator is definitely to understand the three variables, that is anxiety sensitivity, competence and anger direction in terms of the way they contribute to loneliness, the researcher felt that each of these variables particularly anxiety sensitivity are such that more light needs to
be thrown on them. Therefore the investigator included in the research questions, some questions which added to our understanding of these variables also.

As stated above four important variables had to be studied by the researcher. Appropriate tools to measure anxiety sensitivity and anger direction were available but for loneliness and competence no appropriate measure was available.

It was therefore necessary that appropriate questionnaire be designed by the researcher to measure loneliness and competence.

The construction of a questionnaire should be undertaken with great care. According to Kelly (1969) and Hassan (1997) there are three strategies for construction of questionnaires:

   a) Rational-theoretical

   b) Empirical

   c) Factor analytic

The investigator felt that the rational-theoretical approach was most appropriate in the present context. In rational-theoretical approach, common sense or a theory of personality becomes the basis of decision of what is to be assessed, what items are to be initially included in the pool of items to be considered for inclusion in the instrument, what responses are to be considered as the evidence of presence / absence of a trait. When a psychologist proceeds
to develop an instrument for measuring personality characteristics which he himself conceptualized on his own, thinking about what items should be used for eliciting individual's responses and which response, 'True' or 'False', be considered as indicative of presence of the trait, this procedure is known as rational approach. But when the decision regarding the trait to be assessed, items to be used for the assessment of the trait, the evaluation of responses, and other phases of the construction of an instrument are governed by theoretical system, we have theoretical approach. Since either of these approaches, to the exclusion of the other, does not yield the best results, both rational and theoretical approach are taken together to give the best possible tool of measurement.

The following steps are involved in developing rational theoretical instrument:

i) **Defining the construct:**

In this, the definition of the trait is to be enunciated. If the psychologist is depending upon some theoretical formulation in deciding what he has to measure, then the investigator can take out the definition from the theoretical system.

ii) **Editing and improving language of items:**

Since one of the fundamental assumptions of rational-theoretical approach is that responses given by a subject are the verbal representation of
his mental interior, the items in the instrument should convey the same meaning to all the subjects so as to have a sample of their same kind of mental interior. To ensure that all the subjects get the same meaning of statements, the statements should be easy to understand and not open to more than one interpretation. Some informal criteria for the editing of statements given by Edwards (1969) can be used for the selection of items. The criteria are:

- Avoid statements, which can be interpreted in more than one way.
- Avoid statements, which are likely to be endorsed by every one or almost by no one.
- Select statements that cover the entire range of variations along the continuum.
- Keep language of statement simple, clear and direct.
- Statements should be short, rarely exceeding twenty words.
- Each statement should contain one complete reference of feeling or behavior.
- Statements should avoid universals such as ‘always’, ‘all’, ‘none’, ‘never’, etc. because universals introduce ambiguity.
- Words such as ‘only’, ‘just’, ‘merely’ and others of similar nature should be used with care and moderation in writing statements.
• As far as possible statements should be in the form of simple rather than complex sentences.

• Avoid words that are not understood by those who have to give responses.

• Avoid use of double negatives.

iii) Determining item homogeneity:

A rational-theoretical instrument is developed to assess individual differences in respect to the trait to be assessed. The total score obtained by adding the scores assigned to individual items should have the contribution of only one source but this is possible only when all the items comprising the scale are consistent due to their being the measure of the same characteristic.

The above procedures had to be followed in developing questionnaire for measuring "Loneliness" and "Competence".

SAMPLE

The sample comprised of 153 adult subjects, 63 males and 90 females. Drawing of sample through random procedures is undoubtedly desirable but even in pure experimental research it is a difficult proposition. According to Broota (1989) "randomization is necessary to ensure validity of independence assumptions, in practice, it is generally difficult to follow dictates set forth by the
theory of random sampling. Usually we include, as subjects those members of the population that are easily accessible to us."

It is therefore advisable that the researcher should draw subjects at random from those subjects that are easily accessible to him. In the present research the sample was drawn in terms of subjects accessible but to ensure that no bias was involved in the selection of sample.

In spite of the attempt to ensure that equal number of males and females should form part of the sample, there was ultimately a disparity as less males were willing to participate and some forms had to be discarded due to being incomplete.

**TOOLS OF STUDY**

1. **Loneliness Questionnaire:**

   As stated earlier, there was no appropriate scale available for studying loneliness, so it was necessary that the researcher design an appropriate tool. For the construction of the scale the researcher used rational theoretical approach.

   The first step was defining of construct.

   With the help of literature and various studies the researcher defined loneliness in terms of emotional distress, alienation (self or enforced), seclusion,
change factors, interpersonal associations, larger than life picture, fear, shyness, shallowness, abandonment and preferential importance.

A pool of items, which reflected each of the factors defining loneliness, was created with the help of many research scholars, and teachers of the department. Initially almost eighty questions were formulated. Each item highlighted a situation reflecting a particular factor. Experts subjected these questions to scrutiny. Their comments were incorporated, further adjusting the construction and wording of statements. Some questions were deliberately introduced and some disguised to check for the authenticity and seriousness of respondents. Many unrelated questions were deleted.

Editing and improving language of items was the next step. This exercise was diligently followed and the next step undertaken was screening and rewording of items, which was done with the help of experienced researchers. So, in the end fifty questions were retained in the questionnaire.

The investigator had also to determine item homogeneity. In order to do this, the researcher conducted a pilot study (pretest) on identified samples. This meant testing the loneliness scale on ten individuals, who on the basis of observation could be identified as very lonely and ten individuals who could be identified as very low on loneliness.

When scores of the two groups were analyzed it was observed that both sets of observations were significantly, very different from the other set.
which did not contribute to the total score, were also identified with the help of the results obtained. Eighteen items were deleted and so that number of questions was reduced to a total of 32 questions.

2. Competence Scale:-

Again no appropriate scale was available for studying competence, so it was necessary that the researcher design an appropriate tool. Again for the construction of the scale the researcher used rational theoretical approach:

The first step was defining the concept. The concept of competence which emerged from the literature included self confidence, self-esteem, assertiveness, self-reliance, self-control, buoyancy, realistic-openness to experience, tolerant, principled responsibility, initiative, feelings of control over impulses, clarity about identity and psychological health.

A pool of items, which reflected each of the factors defining competence, was created with the help of researchers and professors of the department. Initially almost 75 questions were formulated. Each item highlighted a situation reflecting a particular factor. Experts, and researchers subjected these questions to scrutiny. Their comments were incorporated resulting in modification of some of the statements with their respective traits. Some questions were deliberately introduced and some disguised to check for the authenticity and seriousness of a respondent.
Editing and improving language of items was also done. This exercise was diligently followed and the help of experienced researcher in screening and rewording was taken. So, in the end after further screening out on the basis of step explained in the next paragraph, 40 questions were retained in the questionnaire.

Item homogeneity was also determined. In order to do this, the researcher conducted a pretest method on live identified samples. This consists of testing the competence scale on ten individuals, who on observation and prior knowledge were highly competent and ten individuals who were not competent. The results of these two groups were analyzed, and it was observed that on a large number of items both groups differed in a marked way. Only 40 items were retained.

3. **Anxiety Sensitivity Scale:**

The Reiss-Epstein-Gursky Anxiety Sensitivity Index (ASI) is a measure of the fear of anxiety. The scale can be used for the following purposes:

1. To obtain information relevant to the diagnosis of agoraphobia, panic disorder, or posttraumatic stress disorder. Each of these disorders is associated with very high ASI scores.

2. To identify patients with high anxiety sensitivity. There is evidence that high anxiety sensitivity may be a risk factor for the occurrence of anxiety disorders (Reiss, 1991), drinking problems (Stewart and Pihl,
1991), and relapse from effective treatment for anxiety disorders (Jones and Barlow, 1991). Clinicians should consider the possibility of planning treatments to reduce anxiety sensitivity.

3. To measure the fear of anxiety in research studies on anxiety, fear, and stress related phenomena. The ASI is widely used in research studies on anxiety disorders and related phenomena.

The ASI contains sixteen (16) items. Each item is presented with a five-phrase answer format varying from “Very little” to “Very much”. The respondent chooses the one phrase that best represents the extent to which he/she agrees with the item. Each item is scored on a 0 to 4 point scale: Very little (scored as 0), a little (1), some (2), much (3), and very much (4). The individual’s ASI score is the sum of the points for all 16 items. The lowest possible ASI score is 0 and the highest is 64. The total ASI score is used for comparison with norms.

The ASI may be administered individually or in groups. The instructions, which are printed at the top of the ASI test form, are self-explanatory.

Instructions- “Circle the one phrase that best represents the extent to which you agree with the item. In any of the items concern something that is not part of your experience (e.g., “It scares me when I feel shaky” for someone who has never trembled or had the “shakes”), answer on the basis of how you think you might feel if you had such an experience otherwise, answer all items on the basis of your own experience”.
Norms have been determined for clinical as well as non-clinical populations by many investigators, norms obtained for non-clinical population are given in Appendix Table A.

The reliability of the scale is also very high. Peterson and Heilbronner (1987) analyzed data from 119-college students who had identified themselves as being anxious. The alpha coefficient for the ASI was 0.88, and the Guttman split-half reliability coefficient was 0.85. Telch, Shermis, and Lucas (1989) reported a Cronbach alpha coefficient of 0.82 for a sample of 840 college students. Cox, Endler, Norton, and Swinson (1991) reported an alpha coefficient of 0.87 for combined samples of 275 college students and 52 patients with panic disorder or agoraphobia. Taylor, Koch, and Crockett (1991) reported an alpha coefficient of 0.91 for 93 psychiatric out patients and 0.84 for 142 spider phobic college students; more recently, Taylor, Koch, Mc Nally, Crockett, reported an alpha coefficient of 0.90 for a sample of 327 psychiatric patients. The repeated replication of alpha coefficient in the 0.80 to 0.90 ranges indicates a high degree of internal consistency for items on the ASI.

Test re-test reliability was measured by Reiss et al., (1986) who calculate two week test–retest reliability for a sample of 127 college students at $r = 0.75$ (Reiss et al., (1986). The finding of a two-week test-retest reliability of 0.75 is satisfactory for an anxiety measure.
Mailer and Reiss (1992) reported a three-year test-retest correlation of 0.71 for a sample of 48 college students. The finding is high and has been interpreted as evidence that the ASI measures a stable personality trait (Reiss, 1991). The data thus suggests that the ASI has a satisfactory degree of internal consistency as well as a satisfactory degree of test-retest reliability.

Both factor validity and validity by criterion group comparisons was determined criterion Group Comparisons – A number of studies have found that ASI scores are associated with diagnostic conditions in accordance with theoretical expectations (Reiss and McNally, 1985; Reiss, 1991). A large number of studies were conducted to compute criterion validity (McNally and Lorenz, 1987; Reiss et al., 1986; McNally and Leudke, Besyner, Peterson, Bohm, and Lips, 1987; Cox, Endler, and Swinson, 1991; Jones and Prassas 1991; Otto, Pollack, Sacks, and Rosenbaum, Rapee, Brown, Martin, and Barlow, Stewart, Knize, and Pihl, Taylor, Koch and McNally; Freud 1924; Goldstein and Chambles, 1978; Saviotti et al; Evans, 1972; Frankl, 1959; Reiss and McNally; Peterson and Heilbronner, 1987) In summary the criterion validity of the ASI is exceptional.

The factor structure of the ASI was evaluated in 7 studies (Reiss et al.; 1986; Stewart, Dubois-Nguyen, and Pihl, 1990; Telch, Shermis, and Lucas, 1989; Taylor, Koch and Crockett, 1991; Jones and Prassas, 1991; Jones and Barlow, 1991). In the first study, Reiss et al. (1986) obtained replicate evidence that the ASI has a single-factor structure. In each of 2 samples analyzed 13 to
16 items loaded at 0.4 or more on the first factor. Stewart, Dubois-Nguyen, and Phil (1990) also found that 13 to 16 items loaded at 0.4 or more on the first factor. Both Reis et al (1986) and Stewart et al (1990) concluded that the ASI can be used as a single factor instrument. Tayler, Koch, Mc Nally, and Crockett also concluded that a single-factor score is the most valuable approach.

4. **Anger Scale:**

Anger may be defined as an emotion characterized by strong feelings of displeasure, which triggered by real or imagined wrong (Davidoff, 1987). Berkowitz (1962) considers that anger refers to an emotional state presumably resulting from frustration, which when congruent with a suitable cue instigates aggressive responses. It is maintained by certain authors that aggression in the form of an offensive attack reflects an underlying emotional state, consisting at least a primitive of what we call in humans anger (Blanchard and Blanchard, 1984).

In the present investigation, anger was measured through Anger Expression (Ax) Scale developed by Spielberger, Johnson, Jacobs, Krasner, Oesterle, and Worden (1985).

As a first step in constructing the Ax scale, Spielberger and his associates (1985), formulated a working expression of anger. In formulating this definition, it was deemed essential to distinguish between anger as an emotional state (S-Anger), how often angry feelings were experienced (T-Anger), and the behaviors
that people engage in when they feel angry or furious. On the basis of previous research, it was assumed that anger expression could be most meaningfully defined in terms of a single bipolar dimension, for which the behaviors ranged from strong inhibition or suppression of angry feelings to the extreme expression of anger toward other persons or the environment.

Another important factor that influenced the procedures used in developing the Anger Expression (Ax) scale was to try to assess individual differences in anger expression as a personality trait, rather than the intensity of the expression of anger at a particular moment in time.

Although Spielberger and associates (1985) originally intended to develop a unidimensional, bipolar measure of anger expression, the results of the statistical analyses suggested that the Ax items were tapping two relatively independent underlying dimensions. Thus, rather than assessing a single, continuous bipolar anger-in, anger-out scale, the Ax items seemed to define two relatively independent anger-in and anger-out dimensions. Ultimately, the anger scale that was constructed measured, three dimensions of anger, namely anger-in, anger-out and anger-control.

Anger-in refers to how often angry feeling are experienced but not expressed. Whereas anger-out refers to the extent that an individual engages in aggressive behaviors when motivated by angry feelings. And anger-control may be defined as a tendency not to become angry.
The anger expression (Ax) scale comprises of 20 items and yields four different scores. The anger expression (Ax-Ex) score, which is based on all 20 items, provides a general index of how often anger is aroused and expressed or suppressed. The three Ax sub-scales assess individual differences in the tendency to: (1) express anger toward other people or objects in the environment (Ax-out); (2) experience but hold in (suppress) angry feeling (Ax-in); and (3) control the experience and expression of anger (Ax-con). Anger-in and anger-out comprise 8 items each, and anger-control comprises 4 items.

There are four response categories for each item, viz. almost never, sometimes, often and almost always, with scores ranging between 1 to 4 respectively. In computing Ax/Ex scores (i.e., Anger-total) a constant (C=16) is added to eliminate negative scores. Ax/Ex scores can be calculated by using the following equation:

\[ Ax/Ex = Ax/Out + Ax/In - Ax/Con + 16 \]

Reliability of Ax scale has been established by the authors. The internal consistency of the 20-item Anger Expression (Ax/Ex) scale and the 8-item Anger-in and Anger-out sub-scales were evaluated by computing alpha coefficients and item-remainder correlations. The item remainder correlation for the Ax/Ex scale were based on all 20-items comprising these sub-scales. The alphas ranged from 0.73 to 0.84 and were highest for the Ax/In sub-scale. Although somewhat
lower, the alphas for the Ax/Out sub-scale were nevertheless reasonably satisfactory for a brief 8-item inventory.

In order to determine the validity of Anger Expression (Ax) scale, the authors administered a modified form of a Harburg and others (1973) questionnaire during the same testing sessions in which the high school students responded to the Ax scale. The original Harburg questionnaire was designed to measure "coping patterns and suppressed hostility" on the basis of subjects responses to a series of Vignettes relating to injustices perpetrated by authority figures such as police officers, a landlord, an angry boss.

The analysis of the Ax scores of students classified as "anger-in" and "anger-out" on the basis of the modified Harburg procedure provides evidence of the concurrent and construct validity of the Ax and its sub-scales.

PROCEDURE

Administration of questionnaire/scale is not a routine, mechanical task, it is one of the most important activities in the conduct of research. It has to be conducted with sensitivity and because the subjects serious and genuine reactions will come if rapport is established and confidence in the researchers integrity and respectful confidentiality is also there, so vividly, it also becomes very interesting, to interact with individuals. The researcher had a rich variety of experience while collecting data, as result of personal interaction with the
subjects. Four scales had to be administered and they were administered individually. On the average two sittings with each respondent were arranged because it is taxing and not very desirable that four questionnaire are filled in one sitting, was first put at ease by the researcher, then after a healthy trustful relationship was established. The session of questions commenced. This was very vital because subjects were very apprehensive and did not want to respond to certain questions, which they felt were probing into there personal sphere. An important part of questionnaire administration is ensuring the subjects clear understanding of the question. Individual administration took care of this, as the subject made queries whenever desired.

The administering of scales/questionnaire is a great learning experience for a research scholar. It may be a taxing venture to motivate respondents and to ensure that they respond similarly, but it pays rich dividends for the research scholar, in creating a feeling that honest and genuine research has been conducted.