CHAPTER-III
RESEARCH METHODOLOGY

The main purpose of this chapter is to provide details regarding selection of the sample, tools used, procedure undertaken and statistical techniques applied. It is significant to emphasize that the empirical verifications of the purposed hypothesis, however, is dependent firstly on the reliable measurement of the variables of ultimate interest and secondly on the methods and procedures employed for deriving conclusion. This required:

a. selection of an adequate sample.
b. selection of appropriate tools that could be profitably used for reliable measures.
c. administration and scoring of tests.
d. selection of a suitable statistical techniques for analyzing the data.

Thus it seems appropriate to describe the sample, the tools used and the method and procedure employed in completing the research being reported. This chapter comprises of the description of the sample used for collecting reliable measures pertaining to the objectives of study, information concerning different tests, description of the procedure followed for the administration and scoring of different tests. Finally this chapter includes the procedure followed for the analysis of data.

Participants

The sample comprised of 500 adolescents (250 males and 250 females). The age of the participants ranged from 14 to 18.
years. Participants were randomly chosen from different schools of Chandigarh and Haryana. Participants who were the part of research also satisfied the following conditions:

1. They were living with their parents.
2. There was no evidence of drug addiction or alcoholism.
3. They were not currently in treatment for any diagnosed psychiatric disorder.

For this purpose information was obtained from there teachers, classmates and parents.

**Instruments used:**

Following instruments were used to detect the intent of suicide ideation, hopelessness, depression and psychoticism among participants.

A. **The Scale for Suicide Ideation**
   (Beck, Kovacs, Weissman, 1979).

B. **Beck Depression Inventory**
   (Beck, Ward, Mendelson, Mock, & Erbough, 1961).

C. **Beck Hopelessness scale**
   (Beck, Weissman, Lester, & Trexler, 1974).

D. **Eysenck personality questionnaire**
   (Eysenck & Eysenck, 1975).

(A) **The Scale For Suicide Ideation**
   (Beck, Kovacs, & Weissman, 1979).

Since suicide is one of the leading causes of death in the present time, the measurement of suicide risk and the Identification of persons likely to make fatal or non-fatal suicide attempts remain high priorities. In recent years, these goals have been pursued
primarily through the assessment of psychological, psychiatric, and demographic variables. According to extensive reviews of the literature (Brown & Sheran, 1972; Lester, 1974, 1970), standard psychological tests such as the Rorschach, the TAT, and the MMPI cannot differentiate suicidal from non-suicidal individuals and have not been found to be useful predictors of suicidal risk. These same reviewers suggest that at the present time, the best predictors of the criterion behavior are specially constructed scales that encompass various attributes of suicidal behaviors (Cf. Beck, Kovacs, & Weissman, 1979, p. 343).

In recent years, the bulk of the work in suicidology has been targeted on two of the three populations, namely attempted suicide and completed suicides. The third category of suicidal behaviors, namely suicide ideators are individuals who currently have plans and wishes to commit suicide but have not made any recent overt suicide attempt (Beck, et al., 1972). Since suicide ideation logically precedes a suicide attempt or completed suicide, it seems appropriate to focus on the intensity, pervasiveness and characteristics of the ideation and wish in order to assess current suicidal intention and potentiality to predict later suicidal risk.

The development of the scale for suicide ideation was prompted by the need for a valid research instrument to identify suicidal individuals and to investigate meaningful correlates of suicidal ideation. The scale for suicide ideation was designed to quantify the intensity of current conscious suicidal intent by scaling various dimensions of self-destruction, thoughts or wishes. Suicidal ideation also encompasses “suicidal threats” that have been expressed in overt behaviour or verbalized to others. The authors
emphasized, that at present, scale for suicide ideation is primarily a research tool to be employed in the investigation of suicidal thoughts and its correlates (p. 344).

The items on the scale were partly clinically derived and partly rationally derived. Systematic observations and interviews of suicidal patients yielded a list of salient preoccupations concerns and wishes and thinking and behaviour patterns. Those area were then selected which seemed to reflect the spectrum of suicidal preoccupations more frequently observed in the patients' verbalizations and behaviours.

Previously reported research studies yielded additional content areas. An initially derived 30-item scale was administered to 35 suicidal patients. Those items were eliminated that were found to overlap other items, that were unwieldy or that were difficult to score. On the basis of this selection process the clarity and wording of the remaining items were improved and a 19-item scale was constructed. Each item consist of three alternative statements graded in intensity from 0 to 2. The total score is computed by adding the individual item scores. Thus, the possible range of score is 0 to 38.

The items assess the extent of suicidal thoughts and their characteristics as well as the patients attitude towards them, the extent of the wish to die, the desire to make an actual suicide attempt and details of plans (if any), internal deterrents to an active attempt, and subjective feelings of control and / or courage regarding a proposed attempt.

The internal consistency of the SSI was evaluated through two methods. First, an item analysis showed that 16 of the 19
coefficients were significant. The second method of evaluating internal consistency was the determination of coefficient alpha, KR-20 (Cronbach, 1951). For the 90 cases, a reliability coefficient of .89 was obtained.

With respect to interrater reliability, twenty-five of the 90 consecutively admitted patients were seen concurrently by two clinicians who alternated in interviewing successive patients. Following the interview, each clinician independently completed the SSI. The interrater reliability coefficient was .83 (p<.001). Puri (1988) after administering this scale to the university students in India found coefficient alpha (KR-20) to be equal to .90. Concurrent validity of the SSI was evaluated by determining how well the scale correlated with other measures of suicide ideation or suicidal risk such as clinical evaluation and psychological inventory scores.

The SSI scores were also compared to the “self-harm” item of the Beck Depression Inventory (BDI: Beck, 1972), independently obtained by a research assistant. The correlation between ideation scores and the BDI-items was .41(p<.001). The relatively low correlation may reflect the limited range (0-3) on the BDI-items.

Since the SSI was partly designed as a research screening instrument, it may be expected to discriminate between groups who, on a priori basis can be assumed to differ in degree of suicidal intent. Comparisons of SSI scores of the 90-patients hospitalized for suicidal ideation (M=9.43, SD=8.44) and 50 out-patients who sought psychiatric treatment for their depression (M=4.42, SD=5.77) yielded a significant between group difference, t=4.14, p<.001. The two groups were similar in degree of depression as measured by
the Beck Depression Inventory, \( t = .67, \text{ NS} \). Evidence for the construct validity was also obtained.

SSI provides an ideal tool as an independent variable in the investigation of psychological and clinical correlates of suicidal ideation. It may also be employed as a dependent variable measure in studies that assess the efficacy of treatment intervention with suicidal individuals. At the present time, the SSI appears to have real potential as a research instrument. It may be used not only as an independent variable to discriminate among individuals varying in degree of suicidal ideation but also as a dependent measure to quantify change resulting from treatment interventions. Moreover, the scale may also be of help to the clinician in the systematic gathering and quantification of data relevant to the patients’ or clients’ thoughts, plans and wishes about suicide (Cf. Beck, Kovacs, & Weissman, 1979, p.351).

(B) Beck Depression Inventory


The Beck Depression Inventory in its various forms (Beck, & Beck 1972; Beck, 1972, 1967; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is one of the most frequently used self-report depression inventories in contemporary clinical research. Originally designed to be “interviewer” assisted, current practice appears to be to allow respondents on a paper and pencil type form of the BDI. Although the inventory was designed as a clinical instrument, in practice it is frequently employed in studies using college population, dichotomizing students into “depressed” and “non depressed” groups based on self-administered BDI responses obtained during large screening sessions.
The Beck Depression Inventory (BDI: Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) is a 21-item self-report test for assessing the severity of depressive symptomatology. The scale consists of items containing four alternative statements, and each item scores on a 0 to 3 basis for severity (range:0—63). The BDI has been demonstrated to correlate satisfactorily with ratings of severity made by independent clinicians (Beck, 1967; Beck et al., 1961) and has a split half reliability of .93 (Beck et al., 1961).

A series of validity and reliability studies (Pichot & Lemperiere, 1974; Beck, 1967) generally support the BDI as a measure of depressive severity (e.g., 0-9, normal; 10-18, mild; 19-25, moderate; and 26 and above, moderately severe to severe). The BDI was selected to provide an index of severity of depression.

The inventory has also been factor analysed by several investigators, and has been used for the detection of depression in groups of unselected psychiatric patients and among medical inpatients. In practice, the range of cut off scores in research is highly variable. A review of literature involving the BDI revealed that the criteria for non-depressed groups ranged from ≤ 2 (Carson & Adams, 1980) to ≤ 13 (Roth & Rehm, 1980) on the standard length inventory. On the short form of the inventory (Beck & Beck, 1972), cutoffs for the depressed categories ranged from 7 (Kilpatrick – Tobak & Roth, 1978) to <21 (Johnson & Crockett, 1982). Clearly a subject designated as depressed in one study may not be similarly designated in another.

Focusing on the use of the BDI with college students, Sacco (1981) challenged the test–retest reliability of the BDI depression inventory. His concerns about the temporal stability of
the BDI are based largely on his experience with classifying college students as depressed on the day using their BDI scores only to have their classification change on readministering the BDI on the another day (Sacco & Hokanson, 1978). According to Sacco, failure to assess depression level just prior to conducting an experiment thus leads to misleading if not invalid results. Sacco’s concern about the test–retest reliability of the BDI are not without rebuttal. Using non-depressed college students, Miller & Seligman (1973) reported a test-retest reliability coefficient \( r \) of .74 after a three month interval, and Pehm (1976) reported \( r \) of .75 after one month. Oliver & Burkham (1979) reported a test–retest coefficient of .78 for college students over a week’s period. Retesting psychiatrically hospitalized adolescents, Strober, Green, & Carlson (1981) reported an \( r \) of .69.

Gallagher, Nies, & Thompson (1982) reported even more impressive test-retest coefficient with normal \( r = .86 \) and depressed \( r = .79 \) elderly. The time interval between administrations for the latter study ranged from 6-21 days although the published reliability coefficients are impressive, they do not specifically address Sacco’s concern about the ability of the BDI to classify an individual within the same depression category on the two occasions.

Hatzenbuehler, Parpal, & Matthews (1983) while classifying college students as depressed or non-depressed found that where as the overall test-retest reliability coefficients were acceptable, particularly when both administrations of the BDI occurred on the same day, the consistency of classification of
The subjects into the mild and moderate levels of depression was poor.

Schaeffer et al., (1985) found alpha coefficients for the BDI measures of men to be .94 (psychiatric ward) and .88 (chemical dependency ward).

These studies clearly suggest that although the published reliability coefficients are impressive; they specifically do not address Sacco’s (1981) and Hatzendbuenhler et al.,(1983) concern about the ability of the BDI to classify an individual within the same depression category on two occasions.

The present study however, did not attempt to use BDI for the purpose for classifying subjects into different groups on the basis of the individual's depression level. The BDI was selected to provide a single measure of severity of depression.

(C) Hopelessness Scale

(HS: Beck, Weissman, Lester, & Trexler, 1974).

Considerable work in recent years has focused on the importance of hopelessness in a variety of psychopathological conditions. The major cognitive theories of depression, reformulated learned helplessness theory (Abramson, Seligman, & Teasdale, 1978) and Beck’s (1976, 1967) cognitive model, emphasize the importance of hopelessness about the future in the etiology, maintenance and treatment of depression. Empirical research has demonstrated that depressed individuals endorse hopeless statements about the future more than do non-depressed individuals (Minkoff, Bergman, Beck & Beck, 1973). Thus, hopelessness has been identified as one of the core characteristics of depression and has been implicated in a variety of other
conditions such as suicide, schizophrenia, alcoholism and physical illness.

Although a number of measures of attitude toward the future have been developed, they have not been designed to quantify hopelessness specifically (Gunn & Pearlman, 1970; Crumbaugh & Maholick, 1969; Stein, Sarbin, & Kulik, 1968). In order to facilitate the study of hopelessness in various psychopathological conditions, Beck constructed an instrument designed to reflect the respondent's negative expectancies.

Two sources were utilized in selecting items for the 20-item true/false Hopelessness Scale (HS). Nine items were selected from a test of attitudes. About the future structure in a semantic differential format. These items were then revised to make them appropriate for the present test. The remaining 11 items were drawn from a pool of pessimistic statements made by psychiatric patients who were adjudged by clinicians to appear hopeless. Those statements were selected which seemed to reflect different facets of the spectrum of negative attitudes about the future and which recurred frequently in the patients' verbalizations.

The final format consisted of 20 (true-false) statements, of which 9 were keyed false and 11 were keyed true. For every statement, each response was assigned a score of 0 or 1 and the total "hopelessness score" was the sum of the scores on the individual items. Thus the possible range of scores is from 0 to 20. This measure has been evaluated in a number of studies (e.g., Upmanyu & Upmanyu, 1994; Upmanyu & Reen, 1991) and has been found to be reliable, sensitive, and easily administered.
Eysenck Personality Questionnaire (EPQ) was first published in 1975 and is the most recent in a series of relatively short questionnaires designed to measure the basic dimensions of personality proposed by Eysenck (1952, 1947) some 40 years ago. It is one of the most widely used personality questionnaire and extensively studied in many countries including India. The present questionnaire is the outgrowth of several predecessors: Maudsley Medical Questionnaire (Eysenck, 1952), Maudsley Personality Inventory (MPI: Eysenck, 1962). The Eysenck personality inventory (EPI : Eysenck & Eysenck, 1968). The EPQ incorporates a new P-scale of 25 items which measures at moderate scores, a "toughmindedness" dimension and at extreme scores a "psychotic predisposition". The other scales are “E” (21 items) which measures extroversion, “N” (23 items) which measures emotionality, and an “L” scale (21 items) which measures a tendency of "fake good" and some degree of social naivete (Eysenck & Eysenck, 1975). Thus this questionnaire contains, in addition to E,N and L-scales, which measures extraversion, neuroticism and dissimulation respectively , a P-scale of 25 items aimed at measuring a third dimension or psychoticism.

H.J.Eysenck & M.Eysenck (1985,pp.14-15) have pictured the subtraits of E,N and P as follows:- E:sociable, lively, active, assertive, sensation seeking, carefree, dominant, surgent and venturesome; N: anxious, depressed, guilt feelings, low self-esteem, tense, irrational, shy, moody and emotional; and P: aggressive,
cold, egocentric, impersonal, impulsive, antisocial, unempathic, creative, and tough-minded.

Note that sensation seeking is regarded as a subtrait of E and impulsiveness is subsumed under P. The treatment of impulsiveness reflects a change from the earlier view that both impulsivity and sociability make up the supertrait of E (S. Eysenck & H. Eysenck, 1963). Carrigan (1960) questioned this structural hypothesis, suggesting that sociability and impulsivity form two orthogonal factors. Correlations between the sensation seeking and EPQ scales (summarized in Zuckerman, 1979) suggest that sensation seeking scales are related to both E and P, although recent findings suggest more of a leaning to P.

A range of studies has compared the earlier versions of the Eysenckian scales. The EPI and EPQ have been compared among college students by Pearson (1979), Rocklin & Revelle (1981), Campbell & Reynolds (1982) and Campbell & Heller (1987). The long EPQ-R psychoticism scale has been compared with the EPQ among 16 year olds by Torrubia & Muntaner (1987).

The general conclusion is that these various versions of the scales intercorrelate satisfactorily. At the same time, there is the recognition that the nature of extraversion is changing in the more recent versions of the scales (Claridge, 1983). While in the EPI extraversion clearly contained the two components of impulsivity and sociability (Eysenck & Eysenck, 1963), in the EPQ, extraversion has been largely refined of the impulsivity items, which in turn have been attracted to the newer dimension of psychoticism (Eysenck & Eysenck, 1976). This shift in the composition of extraversion leads to a different pattern of correlations between the various editions of the...
The questionnaire was developed using the results of large scale factor analysis and Eysenck & Eysenck (1976, pp. 53-54) have claimed that their 4 factors appear in both first and higher order solutions. Among the first item factor analysis of the EPQ by researchers other than the Eysenck were those undertaken by Loo (1979), Helmes (1980), Barret & Kline (1980), and McKenzie (1988). Loo's study failed to locate Eysenck's factors at either the first or higher orders. Helmes, while finding that the scale means, standard deviations and internal consistencies were comparable to those already published, found lower reliabilities for the P and L-scales; the P scale in particular had values of Cronbach's of 0.59 for males and 0.45 for females. Compared with published norms of 0.74 and 0.71 respectively. Helmes also observed highly skewed distributions of the P-scores and managed to retrieve only 14 of the 25 P-items at the first order. The third item-factor analysis, by Barret & Kline (1980), was the most comprehensive and provided a wealth of details on both the scale scores and factor structure. Using principal components analysis followed by a direct oblimin rotation (Jennrich & Sampson, 1966) the researchers recovered practically all the E, N and L-items at the second order. However, although P as a factor did appear in most of the samples analysed, there was no clear recovery of the substantial majority of P-items in the female samples. In a later study, Barret & Kline (1982) concluded that the factor structure of the EPQ was replicable and that the factors appeared with remarkable clarity, the only exception being the low level of retrieval of P-items in some of the samples.
analysed. McKenzie (1988) concluded that “the analysis provide conclusive confirmation that Eysenck’s 4 factors of P, E, N and L, are real, reliable and replicable across populations and sexes, that they can be located at the first order and that both P and N are sensitive to dissimulation” (p.809).

Eysenck & Eysenck’s psychoticism (P) scale has been the subject of continued concern. Bishop (1977) made an appraisal of P-scale. The author concluded: “in their most recent work, Eysenck and Eysenck clearly states that the P scale measures the predisposition to psychosis, and that only a very small proportion of people with high P scores are likely to develop a psychosis (p.5). In this case, the P scale cannot be used alone as a diagnostic tool, since it does not discriminate the mentally ill from the healthy. The value of the P scale therefore rests on its validity as a measure of predisposition to psychosis. It is shown that validation data presented by Eysenck and Eysenck are at best unconvincing and, at worst, contrary to their hypothesis.

Eysenck (1977) in a brief rejoinder to Bishop’s critique of the Eysenck Personality Questionnaire, and in particular the concept of psychoticism (P), emphasized that when all the evidence now available is taken into account and when the theory is seen in its proper development, the criticisms advanced by Bishop will be seen not to be tenable. The author concluded that there is much evidence for the validity of the concept of psychoticism and for the validity of the questionnaire measurement of P.

Block (1977) emphasized: the reply by Eysenck (1977) to Bishop’s (1977) criticism of the psychoticism (P) scale of the Eysenck & Eysenck Personality Questionnaire (EPQ: Eysenck &
Eysenck (1975) relies heavily for its rebuttal on information and argument contained in a new book by the Eysenck (Eysenck & Eysenck, 1976). This volume, unavailable to Bishop for her critique, contains data and reasoning that go well beyond what earlier was presented in the EPQ manual. However, evaluation of this new additional evidence does not provide reassurance against the concerns expressed by Bishop and held by others (e.g., Davis, 1974). The author concluded that more work is needed on the P-scales before it is offered for use to the scientific and professional communities.

In brief, despite important concerns mentioned in the preceding paragraphs, Eysenck Personality Questionnaire which is fairly reliable and valid has been extensively used for deriving measures pertaining to psychoticism, neuroticism, extraversion, and dissimulation.

**Data collection**

The tests were administered in a uniform sequence as follows:

1. Suicide Ideation Scale.
2. Beck Depression Inventory
4. Eysenck Personality Questionnaire.

All the questionnaire were presented one after the other with standard instructions for each questionnaire. The tests were administered to subjects in group of 15-20 subjects The general testing conditions were satisfactory. Sincere efforts were made to establish rapport with the subjects in order to elicit reliable and authentic information. All of them were assured that the information
given by them would be kept confidential and would be used for research purpose only.

Necessary instruction were given to the subjects; doubts were removed before permitting them to take the test. After each session, incomplete forms were located immediately, so that the particular participant could complete the left out question(s).

**Scoring of the tests**

The tests were scored strictly in accordance with the procedure suggested by the authors. Hand scoring was done by using separate keys for respective tests in the study. Suicide Ideation Scale, Beck Depression Inventory, Beck Hopelessness Scale were used as a measure of suicidal thoughts, depressive tendencies and hopelessness desires. The Eysenck Personality Questionnaire was scored for measures pertaining to psychoticism, neuroticism, extraversion, and social desirability.*

Thus, as a result of scoring different tests 8 types of scores were available for each subject.

a) Two measures of suicidal ideation, namely suicide desire and suicide preparation.

b) One measure each of depression and hopelessness and,

c) Four measures of personality referring to psychoticism, neuroticism, extraversion and social desirability.

**Analysis**

The data were analysed to obtain the following information:

1. Frequency distribution, mean, median, standard deviation, skewness, kurtosis for different variables.

---

* Only P-scales scores were included in the study.
2. 2x2x2* analysis of variance was employed to examine the effect of hopelessness, depression and psychoticism on two different dimensions of suicide ideation.

In the first instance, participants were classified into 8 groups on the basis of high vs. low scores on hopelessness, depression and psychoticism. This was done by using median as the cut off point.

The following 8 groups were formed:-

<table>
<thead>
<tr>
<th>Group 1</th>
<th>High Hopelessness</th>
<th>High Psychoticism</th>
<th>High Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 2</td>
<td>High Hopelessness</td>
<td>High Psychoticism</td>
<td>Low Depression</td>
</tr>
<tr>
<td>Group 3</td>
<td>High Hopelessness</td>
<td>Low Psychoticism</td>
<td>High Depression</td>
</tr>
<tr>
<td>Group 4</td>
<td>High Hopelessness</td>
<td>Low Psychoticism</td>
<td>Low Depression</td>
</tr>
<tr>
<td>Group 5</td>
<td>Low Hopelessness</td>
<td>High Psychoticism</td>
<td>High Depression</td>
</tr>
<tr>
<td>Group 6</td>
<td>Low Hopelessness</td>
<td>High Psychoticism</td>
<td>Low Depression</td>
</tr>
<tr>
<td>Group 7</td>
<td>Low Hopelessness</td>
<td>Low Psychoticism</td>
<td>High Depression</td>
</tr>
<tr>
<td>Group 8</td>
<td>Low Hopelessness</td>
<td>Low Psychoticism</td>
<td>Low Depression</td>
</tr>
</tbody>
</table>

Suicide ideation (desire and preparation) was used as a dependent measures to ascertain the effect of hopelessness, depression and psychoticism.

*Hopelessness
Depression
Psychoticism