METHODOLOGY

The present investigation was designed to test various hypotheses concerning “Study of negative cognition, personality and family environment as correlates of suicide ideation in non-depressed college students”. The empirical verification of the proposed hypotheses, however, is dependent, firstly on the reliable measurements of the variables of ultimate interest; and secondly, on the methods and procedures employed for deriving conclusions. This required:

(1) Selection of an adequate sample.

(2) Selection of appropriate tools that could be profitably used for reliable measures.

(3) Selecting suitable statistical techniques for analyzing the data.

Thus, it is pertinent to describe the sample, the specific tools, and the methods and procedures employed in completing the research being reported.

The description of the sample providing data for testing the proposed hypotheses is given in the subsequent pages. This chapter also describes the tools which have been used for collecting data; in addition the information concerning administration and scoring of the tests used is also given in subsequent pages. Moreover, the procedure of analysis has also been discussed in this chapter.

SAMPLE

1 The final sample for the current study was drawn by using **multistage sampling technique.** In the first stage, an initial sample comprised of **1200 college students** (600 males, 600 females). The age of the participants ranged from 20-25 years (S.D= 0.87).

The reasons for selecting college students refer to the fact that college students are at the elevated risk of suicidal thoughts and behaviors, perhaps because of the numerous developmental challenges (internal) and psychosocial changes (external) they experience. These challenges include exploring or developing their identity (e.g., making career choices), navigating the transition from a state of full dependence to a

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* The variables referring to marital status, employment status, educational status, living situation and age were controlled in the sense that participants were unmarried, unemployed college students of more or less similar age. Moreover, all participants lived off campus with their families.
state of semi dependence on their parents, creating social relationships in a different environment, managing the financial burden of increasingly high college tuition and leaving their primary support system.

Further, the reasons for selecting Government colleges pertain to the differential availability of infrastructure and socio-cultural climate in these colleges in comparison to Government aided colleges / private colleges. It was considered as an essential factor. Further, the sample of the current study was delimited to Ludhiana because of the following reasons:

1. Research on suicide ideation among college students of Ludhiana is relatively scant.

2. There is a marked differential salience of social processes, cultural factors and industrial conditions.

3. There is mushroom growth of industries rooted in extreme migration from different places, leading to emotional consequences of homelessness. Goodman and colleagues use “trauma theory” to explain the psychological stress experienced by adults who become homeless (Goodman, Saxe, & Harvey, 1991). They suggest that experiencing homelessness is traumatic in three ways:
   A. First, the process of becoming homeless may produce symptoms of psychological distress.
   B. Second, the condition of homelessness due to migration is incredibly stressful.
   C. Also, if the individual is already experiencing distress, the experience will almost certainly exacerbate existing symptoms.

4. There is a mushroom growth of population due to industrial explosion.

The initial sample comprising of 1200 college students was administered Zung self-rating Depression Scale (Appendix I) for assessing the severity of depressive symptomatology. The depression scores of 600 males and 600 females are shown in Appendix II. In the second stage, following statistical criterion of P_{20} as the cut off point, 100 male and 100 female non-depressed college students scoring below P_{20} were selected. This
was done in the context of the focal theme of the current study which is concerned with non-depressed college students.

The following considerations were also kept in view:

A. Exclusion criterion

a. The subjects satisfying the criterion of psychiatric diagnoses (e.g., depressive disorders, bipolar disorders, and alcohol and drug-use disorders) were excluded.

b. The subjects satisfying the criterion of psychiatric history (e.g., previous psychiatric treatment) were excluded.

c. The older subjects were also excluded.

d. The subjects belonging to broken families were excluded.

e. The subjects with the family history of suicide were also excluded.

f. The subjects residing in hostels were excluded.

B. Inclusion criterion

a. The study was delimited to the college students of Ludhiana (Punjab) due to the paucity of research in this specific area of suicide in that region.

b. The subjects in the age range of 20-25 years were included.

c. The subjects who were willing to participate in the research were included.

C. Ethical consideration

a. Confidentiality of information given by participants was maintained.

b. Cooperation of the participants was sought.

c. Avoiding duplication.

DESCRIPTION OF THE TESTS

The following tests were used:

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

(B) Beck Hopelessness Scale (Beck et al., 1974).

(C) Affective Dysregulation Sub- Scale (Mezzich et al., 2001).

(D) Family Environment Scale (Moos & Moos, 1994).
(E) Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975).
(F) Automatic Thought Questionnaire (Hollon & Kendall, 1980).
(G) Revised Life Orientation Scale (Scheier & Carver, 1985).
(H) Social Support Questionnaire (Sarason, Levine, & Basham, 1983).

(A) The Scale for Suicide Ideation (SSI: Beck et al., 1979)

Concept:- Since suicide is one of the leading causes of death in the present time, the measurement of suicidal 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, 1970, 1974), standard psychological tests such as 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 behaviour are specifically constructed scales that encompass various attributes of suicidal behaviours (Beck et al., 1979).

In recent years, the bulk of the work in suicidology has been targeted on two of the three populations, namely attempted suicides and completed suicides. The third category of suicidal behaviours, namely suicide ideators are individuals who currently have plans and wishes to commit suicide but have not made any recent attempt. 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. Suicide ideation was assessed with the help of Suicide Ideation Scale. It was used to assess suicide ideation status. The scale is a self-report measure designed to assess a variety of self-injurious thoughts and behaviours, including suicidal ideation in a broad perspective. It provides a global measure of suicide ideation as well as two measures referring to planning, preparation, and action.

Content and Scoring:- SSI is a 19-item measure developed to tap the current intensity of the patients specific attitudes, behaviours and plans to commit suicide. Each item consists of three options, graded according to the intensity of the suicidality using a 3-point scale ranging from 0 to 2. The ratings are summed to yield a total
score ranging from 0-38. Individual items assess characteristics such as wish to die, desire to make an active or passive suicide attempt, duration and frequency of ideation, sense of control over making an attempt, number of deterrents and amount of actual preparation for a contemplated attempt. The first 5 items are used to screen for attitude towards living and dying, and only patients who report a desire to make an active (Item No 4) or passive (Item No 5), suicide attempt are rated on items no 6-19. In the present study, a global score of suicide ideation was computed by adding across the 19 items (reverse coded as needed), with higher scores indicating higher suicide ideation.

**Internal Consistency:** The internal consistency of the SSI was evaluated through an item analysis technique which showed that each item had a positive correlation with the total scale score and 16 of the 19 coefficients were significant.

**Reliability:** 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:** It was evaluated by determining how well the scale scores correlated with other measures referring to suicidal ideation or suicidal risk, such as clinical evaluations and psychological inventory scores.

The Scale for Suicide Ideation has been widely used to assess self-injurious thoughts and behaviors in community and clinical/ non-clinical samples of youth and its psychometric properties have been previously established in the Indian set up. (Upmanyu, 2008).

**(B) Beck Hopelessness Scale (Beck et al., 1974)**

**Concept:** The Beck Hopelessness Scale (BHS) was used to assess participant hopelessness. According to Shneidman (1996), hopelessness is the most common emotion experienced among suicidal persons. Hopelessness has been identified as a strong predictor of suicide even among different cultures (Zeyrek et al., 2009). Hopelessness is defined as the “expectation that negative events will occur or that positive events will not occur” added to a sense of helplessness or powerlessness regarding one’s ability to change the impending outcome (Abela et al., 2007).

**Content and Scoring:** Two sources were utilized in selecting items for the 20-item true-false Hopelessness Scale. Nine items were selected from a test of
attitudes about the future structured in a semantic differential format (Heimberg, 1961). 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. The statement which seemed to reflect different facets of the spectrum of negative attitudes about the future and which recurred frequently in the patients’ verbalizations were selected (Beck et al., 1974).

The final scale consists of 20 items questionnaire designed to assess the extent of positive and negative beliefs about the future. Each statement reflects a positive or negative attitude regarding the future. This test is designed for adolescents and adults aged 6 - 80 years. The person is asked to decide about each sentence whether it describes his/her attitude for the last week including that day. If the statement is true for the subject, he should write true next to it. There are 7 reversed items: 1,5,6,8,13,15 and 19. Scores 4-8 indicates mild hopelessness, 9-14 indicates moderate hopelessness and 15-20 indicates severe hopelessness. The BHS total score ranges from 0-20. Higher scores indicate greater hopelessness.

**Internal Consistency**: The internal consistency of the scale was analysed by means of coefficient alpha (KR-20), which yielded a reliability coefficient of .93. The item-total correlation coefficient ranged from .39 to .76. Moreover, the scale showed a relatively high correlation with the clinical ratings of hopelessness and others self administered measures of hopelessness.

**Reliability and Validity**: The reliability and validity data presented for the hopelessness scale are deemed sufficient to justify its use on a continuing basis. This measure has been evaluated in a number of studies (and has been found to be reliable, sensitive, and easily administered). The manual reports KR-20 coefficients ranging from .82 to .93. The manual states that when 21 patients with mixed diagnoses were tested at the Center for Cognitive Therapy both during an intake evaluation and one week later, before beginning their therapy, the correlation between their scores on the two occasions was .69. In another sample of patients from the Center for Cognitive Therapy (N= 99), the test- retest reliability over a 6 week span was .66. Both of these test- retest coefficients are statistically significant. Its psychometric properties have been found to be satisfactory in the Indian set up (Upmanyu, 2008).
(C) Affective Dysregulation Sub- Scale (Mezzich et al., 2001)

**Concept:**- Affective Dysregulation is a term used in mental health community to refer to an emotional response that is poorly modulated and does not fall within the conventionally accepted range of emotive responses. It can be associated with an experience of early psychological trauma, brain injury or chronic maltreatment and associated disorders such as reactive attachment disorder.

**Content and Scoring:**- Affective dysregulation sub-scale is a 28- items subscale of Dysregulation Inventory (DI) developed by Mezzich et al., (2001). The DI measures several temperamental characteristics associated with increased risk for developing substance use disorders (Mezzich et al., 2001).

Respondents are asked to indicate how often each statement is true in describing their behavior. Responses are scored from 0 for “never true” to 3 for “always true”. Scores are summed for the 28 items comprising the affective dysregulation subscale. Higher scores on the affective dysregulation subscale (DI- A) indicate high emotional reactivity and low control over one’s emotional state.

**Reliability:**- The psychometric properties of dysregulation inventory shows that affect dysregulation correlated significantly with the affective difficult temperament index, assessed by the Dimensions of Temperament Scale (Windle & Lerner, 1986) and the State Trait Anxiety Scale Score (Spielberger, Edwards, Lushene, Momtouri, & Platzek, 1973) in the Centre for Education and Drug Abuse Research (CEDAR) and the female adolescent samples. The Item Response Theory (IRT) analyses revealed that the DI scales have superior reliability as indicated by the marginal reliability coefficients (Embretson & Reise, 2000). In the CEDAR and female adolescents sample, the marginal reliability coefficients ranged from .90 to .97. In the sample of undergraduates, the coefficients ranged from .86 to .93. In the Peruvian sample, they ranged from .67 to .87. In the Indian set up, Khan et al., (2014) has found substantial evidence for the psychometric characteristics of Affective Dysregulation Sub-Scale.

**Validity:**- Concurrent validity (Cronbach, 1970) was determined by correlating the score of the affect DI scale with established measures obtained simultaneously from the subjects. The affect dysregulation reported by self and mother in the CEDAR sample and by self in the female adolescent sample correlated with depressive and anxiety, recorded with the Kiddie schedule for affective
disorders- epidemiological version (K- SAD- E) interview (Orvaschel, Puig- Antich, Chambers, Tabrizi, & Johnson, 1982).

(D) **Family Environment Scale (FES: Moos & Moos, 1994)**

**Concept:-** The Family Environment Scale (FES) is one of the 10 social climate scales. The family environment scale is composed of 10 subscales that measure the actual, preferred and expected social environment of families. These ten FES subscales assess three underlying sets of dimensions: relationship dimension, personal growth (or goal oriented) dimension and system maintenance dimension. The relationship and system maintenance dimensions primarily reflect internal family functioning, whereas the personal growth dimension primarily reflects the linkage between the family and the larger social context.

**The FES has three forms**

- The Real Form (Form R) measures people’s perception of their current family environment.
- The Ideal Form (Form I) measures people’s preferences about an ideal family environment.
- The Expectation Form (Form E) measures people’s expectations about family environment.

In the present study, the author used Family Environment Scale (The Real Form). Form R comprising of 90 true- false items helps people to describe their current family as they perceive it. Clinicians and consultants recommended use of this form to:-

- Understand individual’s perceptions of their conjugal and nuclear families, for example, as part of family counseling or educational programs.
- Formulate clinical case descriptions and understand the impact of the family on adaptation.
- Monitor change and promote improvement in families.
- Describe and compare family climates and contrast partner’s perceptions or parent’s and children’s perceptions.
- Predict and measure the outcome of treatment.
- Focus on how families adapt to life transitions and crises.
- Understand the impact of family on children and adolescent.

**Content and Scoring**

Family Environment Scale consists of ten subscales with three basic dimensions.

(I) **Relationship Dimension**

1. Cohesion: The degree of commitment, help and support family members provide for each other.
2. Expressiveness: The extent to which family members are encouraged to express their feelings directly.
3. Conflict: The amount of openly expressed anger and conflict among family members.

(II) **Personal Growth Dimension**

4. Independence: The extent to which family members are assertive, self-sufficient and take their own decisions.
5. Achievement Orientation: How many activities (such as school and work) are cast into an achievement-oriented or competitive framework.
6. Intellectual-cultural orientation: The level of interest in political, intellectual and cultural activities.
7. Active-recreational orientation: The amount of participation in social and recreational activities.
8. Moral-religious emphasis: The emphasis on ethical and religious issues and values.

(III) **System Maintenance Dimension**

9. Organization: The degree of importance of clear organization and structure in planning family activities and responsibilities.
10. Control: How much set rules and procedures are used to run family life.

**Internal Consistency:** While the scale has been traditionally used to assess family environment from different perspectives within the family (Cole & McPherson, 1993), the scale has also been used to assess the family environment...
from just one family member’s perspective (Nelson, 1984). The internal consistency (Cronbach’s alpha coefficient) ranges from .61 to .78 for ten subscales.

(E)  **Eysenck Personality Questionnaire- Revised (Eysenck & Eysenck, 1975)**

**Concept:** Eysenck’s earlier measure of personality, i.e., Eysenck Personality Inventory was concerned with three major dimensions: Extraversion (E), Neuroticism (N) and Social desirability (L). The EPQ in addition to the E, N, and L scales provides an additional scale to measure psychoticism (P), also called “tough-mindedness”.

**Content and Scoring:** EPQ- R comprises of 90 items concerning 4 independent Dimensions-

1. P – Scale (25 items)
2. E – Scale (21 items)
3. N – Scale (23 items)
4. L – Scale (21 items)

EPQ-R could be administered in oral or written form. Before administration of the EPQ-R, the following instructions were given in addition to the instructions in the manual. “Please, quickly answer each question by putting tick mark in the box following ‘yes’ or ‘no’. Don’t take much time to think while answering.” For instance, an item of P Scale of EPQ-R read as follows: “Do you lock up your house carefully at night”? Scoring of the P- Scale was performed as per the key of the scale and instructions given in the manual. Total score ranges from 0 to 25. The highest score is 25.

**Reliability:** Barrett and Kline (1982) concluded that the factor structure of the EPQ-R was replicable and that the factor appeared with remarkable clarity, the only exception being the low level of retrieval of P- items in some of the samples analyzed. McKenzie (1988) concluded that “the analysis provide conclusive confirmation that Eysenck’s 4 factors, P, E, N and L are real, reliable and replicable across populations and sexes, that can be located at the first order and that both P and N are sensitive to dissimulation”.

**Validity:** The value of the P scale 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.
Upmanyu, Bhardwaj and Singh (1996) found substantial evidence for the validity of P scale among non-clinical sample in India.

(F) Automatic Thought Questionnaire (Hollon & Kendall, 1980)

Concept:- Automatic Thought Questionnaire was developed to identify and assess the frequency of automatic negative self-statements which are linked to depression. Each statement is a negative thought and the respondent is to rate how often the thought has surfaced in the past week on a scale from 1 (not at all) to 5 (all the time). It is based on the concept of Beck’s cognitive triad, referring to self, future and world.

Content and Scoring:- The Automatic Thought Questionnaire is a self-report questionnaire that asks subjects to rate on a 5-point scale how often they have experienced 30 depression related cognitions during the past week (Hollon & Kendall, 1980). The items are rated on a 5-point scale: 1= “not at all”, 2 = “sometimes”, 3 = “moderately often”, 4 = “often”, and 5 = “all the time”. Examples of typical items are: “I am no good”, “My life is a mess”, “I am a failure”, “I am worthless”, and “My future is bleak”. Factor analysis has indicated a four factor solution: personal maladjustment and desire to change (e.g., what’s the matter with me?). Negative expectation and negative self-concept (e.g., my future is bleak), low self-esteem (e.g., I am worthless), and giving up/hopelessness (e.g., It’s just not worth it) (Hollon & Kendall, 1980) are central to negative automatic thoughts. As usual, scores on the 30 items are summed to give total score for ATQ Negative. It yields a score ranging from 30 to 150, with higher scores indicating more frequent negative thoughts.

Reliability and Validity:- Hollon & Kendall (1980) reported high internal reliability, strong correlation with severity of depression and good item total statistics. In 348 college students, the Automatic Thought Questionnaire correlated significantly with both the Beck Depression Inventory and the Minnesota Multiphasic Personality Inventory – Depression Scale, the coefficients of correlation ranged from .45 to .70. Also using a college sample, Dobson and Breiter (1983), and Harrell and Ryan (1983) also reported high internal reliability and correlation with severity of depression. The scale has been shown to differentiate depressed and non-
depressed samples (Dobson & Breiter, 1983) and to have greater specificity to depression than the Dysfucntional Attitude Scale (Hollon, Kendall, & Lumry, 1986). The Questionnaire has been used in Indian set up and demonstrated to possess the adequate psychometric characteristics (Upmanyu & Reen, 1991).

(G) Revised- Life Orientation Scale (Scheier & Carver, 1985)

Concept:- Accumulating evidence from a variety of sources suggests that dispositional optimism is beneficial for physical and psychological well-being. Aspinwall and Taylor (1992) have shown that optimistic persons adjust more favorably to important life transitions than do persons who are more pessimistic in outlook. Also, optimists differ from pessimists in their stable coping tendencies (Carver, Scheir, & Weintraub, 1989) and in the kinds of coping responses that they spontaneously generate when given hypothetical coping situations (Scheir, Weintraub, & Carver, 1986).

Content and Scoring:- Revised- Life Orientation Test was used to measure Optimism (Scheier & Carver, 1985). R- LOT is a ten- item self- report measure assessing generalized expectancies for positive versus negative outcomes. Respondents were asked to indicate their degree of agreement with statements such as “In uncertain times, I usually expect the best” and “ I hardly ever expect things to go my way” using a 5- point response scale ranging from 0 to 4. The following response format was used-

0 = strongly disagree
1 = disagree
2 = neutral
3 = agree
4 = strongly agree

Also, 6 of the 10 items on R- LOT are used to derive the optimism score. Four of the items are filler items and are not used in scoring. Of the 6 items that are scored, 3 are keyed in a positive direction and 3 are keyed in a negative direction. Negative worded items (items 3, 7, 9) are reverse coded before scoring. Responses to these items are then summed with participant’s responses to Items 1, 4, and 10 to compute an overall optimism score. Thus, scores can range from 0 to 24.
**Internal Consistency:** Item-scale correlations ranged from .43 to .63, suggesting that each item is partially measuring the same underlying construct. Also, Cronbach’s Alpha for entire six items was .78 suggesting that R-LOT exhibits an acceptable level of internal consistency.

**Reliability:** To investigate the test-retest reliability of the R-LOT, the scores for different samples of college undergraduates who completed the scale at two points in time separated by different time-intervals were examined. The test-retest intervals for the four groups were 4 months (N= 96), 12 months (N= 96), 24 months (N= 52) and 28 months (N= 21). The test-retest correlations were .68, .60, .56 and .79 respectively. Taken together, these findings suggest that R-LOT is fairly stable across time.

**(H) Social Support Questionnaire (SSQ: Sarason et al., 1983)**

**Concept:** Social support has been defined as “those social interactions or relationships that provide individuals with actual assistance that embed individuals within a social system believed to provide love, caring or sense of attachment to a valued social group or dyad (Hobfoll & Stokes, 1988).

**Content and Scoring:** Social Support Questionnaire developed by Sarason et al., (1983) consists of 27 items. Each item asks a question which requires answer in two parts. The items ask the subject

- To list the people to whom they can turn on.

- To indicate how satisfied they are with these social supports on a 6 point Likert scale.

An example will make its scoring pattern easy to understand:

Whom you can really count on to listen to you when you need to talk?

NONE 1) 2) 3) 4) 5) 6)

How Satisfied 6) Very satisfied 5) Fairly satisfied 4) A little satisfied

3) A little dissatisfied 2) Fairly dissatisfied 1) Very dissatisfied

The SSQ yields two scores:

1. Perceived availability of the number of supportive persons listed (SSQ-N).

2. Satisfaction with available support (SSQ-S).
The number of score for each item of the SSQ is the number of support persons listed. The social support available to deal with a given problem is rated on the scale ranging from “very satisfied” to “very dissatisfied”. This yields a satisfaction score for each item which ranges between 1 and 6.

**Reliability:** This questionnaire has been found to have a number of desirable psychometric properties. It was found to have:

1. Stability over a 4 week period of time.
2. High internal consistency among items.

The authors concluded that the modest correlation between SSQ- N and SSQ-S provides a strong basis for analyzing social support and its components. Kumari and Sharma (1990) concluded that very high SSQ- N/SSQ-S correlation observed in Indian culture raises some doubt about the cross-cultural generalizability. Sarason et al. (1983) claim that social support is not a unitary concept when assessed by the SSQ, and that perceived availability of support and satisfaction with that is available are worth of study and separate analysis. The authors concluded that factor analysis of the two SSQ- scores in Indian and other Asian cultures will, however, be desirable before a firm statement on this issue can be made. However, SSQ is a useful questionnaire for research aiming at examining the role of social support.

**Validity:** In a study conducted by Liverjani (2003), factorial validity of SSQ was found satisfactory. For the purpose of factor analysis, SSQ was administered to the total sample (N= 372), and to the orthopaedically (N= 182) and visually (N= 190) handicapped students in Iran. Factor 1 i.e. SSQ- S factor was characterized by significant loadings on all twenty seven measures of SSQ-S and range of significant loadings was found to be from 0.54 to 0.97 for measure of SSQ- S. Factor 2 was also characterized by loading on 24 of 27 measures of SSQ- N. The range of significant loadings was found to be from 0.44 to 0.99 for the measure of SSQ- N. Thus all loadings for the measures of SSQ-S and SSQ- N were found to be positive and were identified as factor of SSQ- N and SSQ- S.

**ADMINISTRATION OF TESTS**

Administration of tests required eight sessions. The tests were administered in uniform sequence, generally on eight consecutive days. In the first session, “Scale for
Suicide Ideation” was administered. In the second session, “Beck Hopelessness Scale” was completed. In the third session, “Affective Dysregulation Sub-Scale” was administered, while “Family Environment Scale” was administered in the fourth session. Also during the fifth session, “Eysenck Personality Questionnaire” was completed. “Social Support Questionnaire” was completed during the sixth session. “Automatic Thought Questionnaire” and “Revised-Life Orientation Scale” were administered during the seventh and eighth sessions, respectively. Sufficient time gap was imposed in between the administration of two tests so that the effect of fatigue, if any may be dissipated.

The testing sessions were conducted in the classrooms with adequate facilities for ventilation and proper sitting arrangements. The tests were administered to subjects in groups of 15 to 20 subjects in accordance with the instructions given by authors of the tests.

Strict supervision was done to see that the subjects do not discuss or take help from each other while taking the tests. The general testing conditions were satisfactory. Sincere efforts were made to establish rapport with the subjects in order to elicit reliable and authentic information. Subjects were told that the information was being collected purely for research purpose. They were also assured that the information to be collected would remain strictly confidential and presented only in a form in which no person would be identified. The promise of privacy appears to have gone a long way in establishing psychological rapport, since a large number of subjects contacted the investigator later on and enquired about their performance in the tests used. Cooperation of various principals and lecturers also helped in drawing out reliable information from the subjects.

The instructions for different tests were read aloud to the group comprising of fifteen to twenty subjects. The instructions in typed form were also provided to the subjects. The doubts of the subjects were removed before permitting them to take the test. Each form was checked to see if any omission was there and if so, the particular subject was asked to complete that question or questions.
SCORING OF THE TESTS

The tests were scored strictly in accordance with the procedure suggested by the authors. Following the procedure given in the manuals, “Scale for Suicide Ideation” was scored pertaining to the level of suicide ideation in the subjects.

“Eysenck Personality Questionnaire- Revised” was scored for Extraversion, Psychoticism, Neuroticism and Lie Scale measures respectively which were labeled as E, P, N and L. “Beck Hopelessness Scale” was scored for the measure pertaining to hopelessness about future perspectives of life. “Affective Dysregulation Sub- Scale” was used to measure several temperamental characteristics and a measure of affective/emotional dysregulation was scored using the questionnaire. “Family Environment Scale” was scored for a measure of current family environment and its functioning including sub- scales such as Cohesion, Expressiveness, Conflict, Independence, Achievement- Orientation, Intellectual- Cultural Orientation, Active- Recreational Orientation, Moral- Religious Emphasis, Organization and Control. “Social Support Questionnaire” was scored to measure interpersonal transaction involving concern and information about oneself and the environment. “Revised- Life Orientation Scale” was scored for Optimism. “Automatic Thought Questionnaire” was also scored to identify and assess the frequency of automatic negative self- statements which are linked to depression.

Thus, as a result of scoring different tests, twenty one measures of non-depressed college students as mentioned below were obtained-

1. Four measures concerning extraversion, neuroticism, psychoticism and social desirability.
2. One measures each of hopelessness and suicide ideation.
3. One measure each of emotional dysregulation.
4. One measure of optimism.
5. One measure to assess automatic negative thoughts.
6. Ten measures concerning cohesion, expressiveness, conflict, independence, achievement- orientation, intellectual-cultural orientation, active- recreational orientation, moral- religious emphasis, organization and control.
7. Two measures of social support referring to quantitative and qualitative social support.
ANALYSES

The data were analyzed to obtain the following information –

1. Frequency distributions, mean, median, standard deviation, skewness and kurtosis for different measures, separately for males and females.

2. Intercorrelations among different variables separately for males and females.

3. Structural relationship among different variables separately for males and females.