CHAPTER-3

Methodology
In the present research investigation the major objective was to study how Emotional Intelligence, Anger Expression and Peer Relationships predict depression among students. The three predictor variables and components of each of these variables include Emotional Intelligence, components of Emotional Intelligence being (i) Perceiving and Understanding emotions, (ii) Expressing and Labeling emotions, and (iii) Managing and Regulating emotions, components of Anger Expression being (i) Anger-In, (ii) Anger-Out, (iii) Anger-Control and (iv) Anger-Total, and Peer Relationships with two components, viz. (i) Peer Attachment Related Anxiety and (ii) Peer Attachment Related Avoidance. Depression was studied as criterion variable.

**DESIGN:** A design which would appropriately study the prediction of depression with respect to the above mentioned ten variables should be used. Hence, a correlational design was used by the researcher. As it was also important to study whether any of the predictor variables were having their effect in terms of their interaction, a factorial design (2 x 2 x 2) was further used. The role of gender, family structure and urban-rural status were also taken into consideration. Regression analysis was therefore conducted on males/females, subjects from joint/nuclear families and subjects from urban/rural regions separately.

**SAMPLE:** The sample was comprised of 242 students taken from various faculties or departments of Aligarh Muslim University viz. MBA, Engineering, Arts, Social Sciences, Commerce, Science etc. The average age of the students was 21.44 years and standard deviation was 2.48. Although strict random sampling is almost impossible in social science research because often individuals who should be in the sample do not consent to participate or withdraw in the midst of the research, an attempt was made to draw out the sample through random procedures. Many subjects
did not consent or were not available therefore they had to be excluded. We took all precautions to ensure that sample was drawn objectively and systematically.

<table>
<thead>
<tr>
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<th>MALE (N=130)</th>
<th>FEMALE (N=112)</th>
<th>TOTAL (N=242)</th>
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<tbody>
<tr>
<td>Joint Family</td>
<td>84</td>
<td>66</td>
<td>150</td>
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<tr>
<td>Nuclear Family</td>
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<tr>
<td>Rural</td>
<td>43</td>
<td>34</td>
<td>77</td>
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TOOLS: The following measures were used for assessing the subject’s level of depression, Emotional Intelligence, Anger Expression and Peer Relationships.

1) **Beck’s Depression Inventory-II (BDI-II):** constructed by Beck, Steer and Brown (1996) had been used to assess the respondents’ level of depression. The scale assesses depression as experienced during the course of past two weeks. It is a 21 item self report measure; responses were rated on a four point scale ranging from 0-3 and are intended to rate intensity of depression, with 3 representing greatest intensity. Although on two items (16 & 18) there were seven options to indicate either increase or decrease of appetite and sleep, the pattern is such that scoring remains the same. The individual items include questions regarding the respondents’ mood, satisfaction, view of future, guilt, self deprecation, suicidality, body image, vegetative symptoms and libido. In order to obtain a total score, the score for each of the 21 questions had been summed up. Total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate, and 29-63 is severe.
BDI has a high coefficient alpha (0.92 for out patients and 0.93 for college students), its construct validity has been established, and it is able to differentiate depressed from non depressed patients. It has a test-retest reliability of 0.93. With regard to construct validity, the convergent validity of the BDI-II was assessed by administration of BDI-IA and BDI-II to two subsamples of outpatients, yielding a correlation of 0.93 (p<0.001). The Cronbach’s alpha was further calculated by the present researcher and was found to be 0.821.

2) Emotional Intelligence, Skills & Competence Questionnaire (EISCQ): by Taksic (2000a) was used to assess Emotional Intelligence. It was constructed using Mayer & Salovey model of Emotional Intelligence. It is a 5-point self report questionnaire with ‘1’ for ‘Never’, ‘2’ for ‘Seldom’, ‘3’ for ‘Occasionally’, ‘4’ for ‘Usually’ and ‘5’ for ‘Always’. The factor analytic studies revealed 3 latent dimensions: (a) perceiving & understanding emotion, (b) expressing & labeling emotion, and (c) managing & regulating emotion.

EISCQ consists of 45 items divided into the three subscales. Perceive and Understand Emotion scale has 15 items and the coefficient of reliability was between 0.85 and 0.90; Express and Label Emotion scale has 14 items with a range of reliability between 0.79 and 0.82; Manage & Regulate Emotion scale has 16 items and internal consistency ranged from 0.71 to 0.78. The reliability of overall Emotional Intelligence was between 0.88 and 0.92. The present researcher further calculated Cronbach’s alpha and it was found to be 0.85. Responses were added on each dimension to get the total score on all the three dimensions; and the total score on EISCQ was calculated by summing up the scores of dimensions.
There were many correlations with relevant constructs performed in searching for convergent-divergent validity, as well as other important type of validity. EISCQ was usually positively correlated with positive outcomes like well-being, life satisfaction and resiliency.

3) **Anger Expression (Ax) Scale:** constructed by Spialberger, Johnson, Jacobs, Krasner, Oesterle, and Worden (1985) was used to measure Anger Expression. In this scale, three dimensions of anger are measured, namely Anger-In, Anger-Out and Anger-Control. Anger-In refers to how often angry feelings 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 comprised of 20 items and yields four different scores. The Anger Expression score, which is based on all 20 items, provides a general index of how often anger is aroused and experienced or suppressed. The three Ax subscales assess individual differences in the tendency to: (1) express anger towards other people or objects in the environment (Ax-Out), (2) experience but hold in (suppress) angry feelings (Ax-In); (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 from 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 20 items anger expression (Ax/Ex) scale and the eight item Anger-In and Anger-Out subscales were evaluated by computing alpha coefficients and item remainder correlations. The item remainder correlations for the Ax/Ex scale were based on all 20 items comprising these subscales. The alpha ranged from 0.73 to 0.84 and was highest for the Ax-In subscale. Although somewhat lower, the alphas for the Ax-Out subscale were nevertheless reasonably satisfactory for a brief 8 item inventory. The Cronbach Alpha as calculated by the present researcher was 0.70.

In order to determine the validity of Anger Expression (Ax) scale the authors of this scale administered a modified form of 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 perpetuated by authority figures such as police officers, a landlord, and angry boss.

The analysis of 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 subscales.
4) **Experiences in Close Relationships – Revised (ECR-R):** is a revised version of Brennan, Clark & Shaver’s (1998) Experiences in Close Relationships (ECR) Questionnaire and was used to measure peer relationships. The items on the ECR-R (Fraley, Waller & Brennan, 2000) were selected using techniques based on Item Response Theory, but were selected from the same item pool as those from the ECR. ECR-R was designed to assess individual differences with respect to attachment-related anxiety (i.e. the extent to which people are insecure vs. secure about the extent to which their partner’s availability and responsiveness) and attachment-related avoidance (i.e. the extent to which people are uncomfortable being close to others vs. secure depending on others). Basically, it was developed to measure adult attachment within romantic relationships in past and present. Therefore when reference is made to the other person with whom relationship is evaluated in the scale, the term ‘partner’ is invariably used. Within our cultural milieu, such open romantic relationships during adolescence are not very common. Therefore in the present investigation we were interested in measuring the attachment within peer relationships or relationships with friends, so the term ‘partner’ was replaced by friend in the items as well as in the instructions. The Cronbach alpha of the scale was calculated by the present researcher and was found to be 0.805 which is high.

ECR-R Questionnaire comprised of 36 items and the first 18 items being related to attachment-related anxiety and items 19-36 comprise the attachment-related avoidance. Each item is rated on a 7 point Likert type scale where 1= strongly disagree and 7=strongly agree. To obtain a score for attachment related anxiety, the responses to items 1-18 were averaged, and to
obtain the score for attachment related avoidance, responses to items 19-36 were averaged; but before computing the average the answers to the items which are reverse-keyed (item no. 9, 11, 20, 22, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36) were re-keyed. The maximum score of the scale is 252 and the minimum score is 36. The reliability of the original ECR-R scale was found to exceed 0.90, and the reliability of the reworded ECR-R questionnaire as calculated by the researcher is also similar to the original one. Studies using the ECR have provided support for its validity, i.e., attachment related anxiety and attachment related avoidance have been found to be positively associated with self-concealment and personal problems (Lopez et al., 2002), negative mood (Wei, Russell, & Zakalik, 2004) and depression (Zakalik, & Wei, 2006) but negatively associated with social self-efficacy and emotional self-awarenes (Mallinckrodt & Wei, 2005) and basic psychological need satisfaction (Wei, Shaffer, Young & Zakalik, 2005) in college students.

PROCEDURE: Each subject was approached personally, and after due establishment of rapport, subjects who were willing to participate were given the questionnaire. They were assured that the information given by them will be kept confidential and their responses will be used only for research purposes. Subjects were instructed by the researcher to give honest responses.

All questionnaires had different sets of instructions. For BDI, subjects were instructed to read each group of statements carefully and pick out the one statement in each group that best described the way they have been feeling during the past two weeks, and then circle the number beside the selected statements. If several statements in the group seem to apply equally well then they should circle the highest number for that group, but more than one statement for any group should not be chosen.
For EISCQ, subjects were instructed to read each statement carefully and without thinking too much answer how much the given statements are relevant to them by circling one response against each statement. Anger Expression (Ax) scale and ECR-R also had the same set of instructions.

The administrations of the questionnaires took 30-45 minutes (approximately) and were administered in just one sitting. The subjects were then thanked and asked to leave.

**STATISTICAL ANALYSIS:** Since a major purpose of the study was to find out the predictor variables for depression, multiple regression was applied. Q-Q plot was plotted for the dependent variable to fulfill the assumption of normality for ANOVA. Three-way ANOVA (2 x 2 x 2) was used to find out whether the interaction of certain predictor variables exercised their effect on depression. t-test was applied to compare male and female students on their mean scores of Depression, Emotional Intelligence and its components, Anger expression and Peer relationships to find significant differences. Students coming from nuclear & joint families and from rural & urban regions were also compared in terms of Depression, Emotional Intelligence and its components, Anger expression and Peer relationships, using t-test.