Chapter – 3

Methodology
The present chapter deals with statement of problem, objectives, hypotheses and the details about the sample selected for the study and also about the features of the tools of measurement used to assess the extent of various variables included under study.

**Statement of the Problem**

Today, while India is trying to achieve the target of education for all, educationists are facing a number of problems related to academic stress, examination anxiety and negative consequences of these on mental health. Adolescents in India face a highly competitive examination system for university / college entrance and professional degree institutes as well. There is constant pressure to excel in these examinations. Mental health of adolescents depends upon their coping strategies they adopt to combat stress. Emotional intelligence is one of the important factors that may help the person to cope with stress successfully. The relationship between emotional intelligence and psychological adjustment variables such as depression, anxiety and overall physical and mental health has been well documented in adult samples. Very few studies have been designed to understand stress, coping processes and its relationship with emotional intelligence among adolescence in Indian sample. Those studies, which are conducted on Indian sample, do not indicate any consistent trend about...
the role of cognitive appraisal and coping behavior in the experience of stress among adolescents. The role of differences has also been neglected in the cognitive appraisal and coping strategies. This issue was addressed in early work of Folkman and Lazarus (1980). Lazarus considered the role of positive and negative affect in stress perception, but the only problem he mentioned was unidimensional construct of trait is not very promising. Tellegen (1982) mentioned that positive emotionality and negative emotionality are highly relevant in perceiving stress. In the present study, stress is treated as being a result of person - environment transaction. It occurs when the adolescents encounters a situation that is relevant to his/her well being and perceived by him or her as taxing his/her resources. There are three key factors to stress in this process: primary appraisal, secondary appraisal and coping. Individuals who primarily appraise situation as threatening, challenging and involving loss/harm, those who secondarily appraise situation as uncontrollable and unchangeable, and who use inappropriate coping strategies should suffer the highest levels of stress. Therefore, adolescence student respond differently to various situations according to their past experiences, coping resources and emotion intelligence. Furthermore, the stressfulness of a situation is expected to vary according to the individuals’ perception of that specific situation. Few empirical researches have explored the relationships between emotional intelligence, coping and mental health in adolescents (Taylor, 2001). Review of literature suggested that there is lack of empirical researches in India on the role of emotional intelligence in coping with stress and its relationship with psychological health.
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Therefore, in the present investigation not only the coping strategies used by adolescents and their relationship with psychological health have been investigated, an attempt has been made to understand the contribution of emotional intelligence in the prediction of stress and psychological health. The major objective of this investigation was to examine the stress, coping behavior, and psychological health in relation to emotional intelligence.

Objectives of the Study

The objectives of the study are given below:

1. To examine gender difference regarding the level of stress, coping behavior, psychological health, and emotional intelligence among adolescents.

2. To examine the nature of the relationship of emotional intelligence with various stresses, coping behaviors (cognitive appraisal and coping strategies) and psychological health among adolescents.

3. To study the nature of the relationship of psychological health with various stresses and coping behavior (cognitive appraisal and coping strategies) among adolescents.

4. To examine the main effect and interactive effects of sex and family structure on the level of stress, psychological health, and emotional intelligence among adolescents.

5. To study the significance of emotional intelligence in predicting stress, psychological health, and coping behavior (cognitive appraisal and coping strategies) among adolescents.

6. To study the significance of stress in predicting psychological health among adolescents.
Hypotheses

Following general hypotheses were formulated for the present study:

H-1: There would be significant gender difference in experience of stress among adolescents.

H-2: There would be significant gender difference in emotional Intelligence of adolescents.

H-3: There would be significant gender difference in psychological health of adolescents.

H-4: There would be significant gender difference on cognitive appraisal of adolescents.

H-5: There would be significant gender difference on coping styles of adolescents.

H-6: Emotional intelligence would be negatively correlated with stress in adolescents.

H-7: Emotional intelligence would be associated with cognitive appraisals among adolescents.

H-8: Emotional intelligence would be associated with coping strategy among adolescents.

H-9: Emotional Intelligence would be negatively correlated with psychological health problems in adolescents.

H-10: Stress would be positively correlated with psychological health problems in adolescents.

H-11: There would be significant relationship between cognitive appraisal and psychological health among adolescents.
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H-12: There would be significant relationship between coping strategy and psychological health among adolescents.

H-13: There would be no significant effect of gender, family structure and their interaction on stress among adolescents.

H-14: There would be no significant effect of gender, family structure and their interaction on psychological health of adolescents.

H-15: There would be no significant effect of gender, family structure and their interaction on emotional intelligence of adolescents.

H-16: There would be significant contribution of emotional intelligence in predicting stress among adolescents.

H-17: There would be significant contribution of stress in predicting psychological health among adolescents.

H-18: There would be significant contribution of emotional intelligence in predicting psychological health among adolescents.

H-19: Emotional intelligence would be significant predictor of cognitive appraisals among adolescents.

H-20: Emotional intelligence would be significant predictor of coping strategies among adolescents.

Measures

Following measures were employed in the present investigation:

1. Student's Stress Scale (SS Scale)
2. Ways of Coping with Stress Questionnaire (WCSQ)
3. Emotional Intelligence Scale (EIS)
4. Hindi adaptation of General Health Questionnaire (GHQ - 28)

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(1) **Student’s Stress Scale (SS Scale):**

This scale was constructed and standardized by Bhatia and Pathak (1999). It consists of 30 items with five point rating scale. The scale measures different types of stresses of an individual:

- a) Academic Stress (AS)
- b) Financial Stress (FS)
- c) Vocational Stress (VS)
- d) Family Stress (FaS)
- e) Social Stress (SS)
- f) Emotional Stress (ES)

The total score for each area of stress ranges from 5 to 25, whereas, the grand total of the stress ranges from 30 to 150. Higher scores on scale reveal the greater degree of stress. The reliability coefficient was determined by test-retest method. The test-retest reliability coefficient for each area of the scale was found as follows:

**Test-Retest Reliability Coefficients**

<table>
<thead>
<tr>
<th>Stress Area</th>
<th>Test-retest Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Stress</td>
<td>0.80</td>
</tr>
<tr>
<td>Financial Stress</td>
<td>0.71</td>
</tr>
<tr>
<td>Vocational Stress</td>
<td>0.78</td>
</tr>
<tr>
<td>Family Stress</td>
<td>0.73</td>
</tr>
<tr>
<td>Social Stress</td>
<td>0.75</td>
</tr>
<tr>
<td>Emotional Stress</td>
<td>0.77</td>
</tr>
<tr>
<td>Total</td>
<td>0.79</td>
</tr>
</tbody>
</table>
The validity of the scale was obtained by correlating the scale with some external criterion that the Bisht Battery of stress scales by Abha Rani Bisht. Both the scales were administered to a sample of 100 subjects and correlation was found out between different areas which were common in both the scales, indicated positive and significant correlation. A coefficient of correlation has been obtained 0.75 on the total stress scores, which is high and significant.

(2) **Ways of Coping with Stress Questionnaire (WCSQ):**

WCSQ is based on the model of stress and coping proposed by Lazarus and Folkman (1984). The WCSQ was developed by Singh (2000) for research purpose. The Alpha Coefficients of the WCSQ comprising the ten scenarios is given below:

<table>
<thead>
<tr>
<th>Coping Behavior</th>
<th>Reliability Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threat</td>
<td>0.85</td>
</tr>
<tr>
<td>Loss</td>
<td>0.86</td>
</tr>
<tr>
<td>Challenge</td>
<td>0.85</td>
</tr>
<tr>
<td>Controllable</td>
<td>0.76</td>
</tr>
<tr>
<td>Changeable</td>
<td>0.79</td>
</tr>
<tr>
<td>Detaching</td>
<td>0.73</td>
</tr>
<tr>
<td>Distracting</td>
<td>0.80</td>
</tr>
<tr>
<td>Support - seeking</td>
<td>0.79</td>
</tr>
<tr>
<td>Problem - solving</td>
<td>0.76</td>
</tr>
<tr>
<td>Change - thoughts</td>
<td>0.90</td>
</tr>
<tr>
<td>Aggression</td>
<td>0.89</td>
</tr>
<tr>
<td>Self - criticism</td>
<td>0.88</td>
</tr>
<tr>
<td>Experience scores</td>
<td>0.78</td>
</tr>
</tbody>
</table>
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The following scenarios covered by WCSQ:

- Academic work pressure
- Preparation for exam and books are not available
- Could not change the subject of interest and studying another subjects
- Language problem
- No individual interaction with teacher
- School / college problem
- Career insecurity
- Economic problems
- Feeling lonely
- Social interaction problem

For each scenario the respondent is asked to respond how he would appraise this situation (threat, loss and challenge), whether he/she perceives the situation as controllable or changeable? What kind of coping strategies he would utilize in these situations, and finally he / she is asked to report about how stress he would experience in that particular situation. The description of response is given below. It consists of three main aspects: (1) appraisal (2) coping strategy and (3) experience scores.

(1) Appraisal is described as the evaluative process which inspires the person environment stressful transaction with meaning. There are three (threat, loss and challenge) types of primary appraisal; the person evaluates whether he/she has anything at stake in this encounter. Two (controllable and changeable) types of secondary appraisal, the person evaluate what if any thing can be done to overcome or prevent threat harm or to improve the prospects for benefit. The description of responses of primary and secondary appraisal is given below:
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How threatened would you feel? How much would you feel that something unpleasant or harmful was about to happen to you? What feeling of loss would you have? How much you feel you had lost something important? This might be something material, like money or possessions or nonmaterial like a friendship or yourself-esteem. How challenge would you feel? How much would you feel that you had something to gain from situation, even if it was difficult to achieve? Whether or not you would feel in control of the situation or controllable. Whether or not you would feel in control of the situation or changeable.

(2) Coping is defined as the person's constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the person's resources (Lazarus and Folkman, 1984). There are seven types of coping strategy. The description of coping strategy is given below:

a) Detaching, e.g., ignore the demand (problem), try not think about it, don't take it seriously.

b) Distracting, e.g., wishful thinking, watch TV, drink, smoke or take drugs.

c) Seeking support from others, e.g., talk to someone about the problem, ask someone for help, contact family etc.

d) Problem - solving, e.g., concentrate on the problem, make plan to action and follow it, do something to change the situation.

e) Change of thoughts, e.g., minimize the importance of demand, learn from the situation etc.

f) Aggression, e.g., shouting or swearing at colleagues or others, fights for what is wanted.

g) Self - criticism, e.g., blame oneself, feels the problem is ones own fault etc.
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(3) Experience scores, seriousness of stress experienced by the person in each scenario. The severity of stress caused by each situation.

Scoring

First, each of five appraisals are scored in five point scale range from (5) which indicates the strong presence of feeling to (1) which indicates the absence of that feeling. Second, the score on each coping strategy ranged from 1 to 4 for four alternative responses, i.e. not at all, used a little, used something and used a lot. Third, experience scores caused by each situation (scenario) is scored in five points scale ranging from (5) very serious to (1) not serious at all.

(3) Emotional Intelligence Scale (EIS):

This scale was constructed by Hyde, Pethe, & Dhar (2002). It constituted 34 items. Ten factors of emotional intelligence included in this scale that are self-awareness, empathy, self-motivation, emotional stability, managing relations, integrity, self-development, value orientation, commitment and altruistic behavior. The reliability of the scale was determined by calculating reliability coefficient on a sample of 200 subjects. The split-half reliability coefficient was found to be 0.88. The scale has high content validity. It is evident from the assessment of judges/experts that items of the scale are directly related to the concept of Emotional intelligence. Validity of the scale is 0.93. Brief introduction of factors of emotional intelligence:

A. **Self-awareness** is being aware of one-self and is measured by items 6, 12, 18, 29. These items are “I can continue to do what I believe in even under severe criticism,” “I have my priorities clear,”
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"I believe in myself, and "I have built rapport and made and maintained personal friendships with work associates." This factor is the strongest and explains 26.8 percent variance and has a total factor load of 2.77. The correlation of this factor with total score is 0.66.

B. **Empathy** is feeling and understanding the other person and is measured by items 9, 10, 15, 20 and 25. These are "I pay attention to the worries and concerns of others, "I can listen to someone without the urge to say something, "I try to see the other person's point of view," I can stay focused under pressure, and "I am able to handle multiple demands." These factors explain 7.3 percent variance with a total factor load of 3.11. The correlation of the factor with total score is 0.70.

C. **Self motivation** is being motivated internally and is measured by 2, 4, 7, 8, 31 and 34. These items are "People tell me that I am an inspiration for them,"I am able to make intelligent decisions using a healthy balance of emotions and reason, 'I am able to assess the situation and then behave, 'I can concentrate on the task at hand in spite of disturbances, "I think feelings should be managed, and I believe that happiness is an attitude." This factor accounts for 6.3 percent variance and a total factor load of is 3.28. Its correlation with total score is 0.77.

D. **Emotional stability** is measured by items 14, 19, 26 and 28. There are "I do not mix unnecessary emotions with issues at hand, "I am able to stay composed in both good and bad situations, "I comfortable and open to novel ideas and new information, and "I
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am persistent in pursuing goals despite obstacles and setbacks.” This factor explains 6.0 percent variance with a total factor load of 2.51. The correlation of this factor with total score is 0.75.

E. Managing relations is measured by 1, 5, 11, and 17. The statements that measure this factor are “I can encourage others to work even when things are not favourable, “I do not depend on others’ encouragement to do my work well, “I am perceived as friendly and outgoing, and “I can see the brighter side of any situation”. This factor explains 5.3 percent variance with a total factor load of 2.38. The correlation of this factor with total score is 0.67.

F. Integrity is measured by items 16, 27, and 32. “I can stand up for my beliefs, “I Pursue goals beyond what is required of me, and I am aware of my weakness” are statements that measure this factor. This factor explains 4.6 percent variance with a total factor load of 1.88.

G. Self-development is measured by items 30 and 33 which are “I am able to identify and separate my emotions and “I feel that I must develop myself even when my job does not demands it” and explains 4.1 percent variance with a total load of 1.37.

H. Value orientation is measured by items 21 and 22. The statements are ‘I am able to maintain the standards of honesty and integrity, and “I am able to confront unethical actions in others” and explain 4.1 percent variance with a total factor load of 1.29.

I. Commitment is measured by the items 23 and 24. “I am able to meet commitments and keep promises, and “I am organized and careful in my work.” Measure this factor. This factor accounts for 3.6 percent variance with total factor load of 1.39.
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**J. Altruistic** behavior is measured by the items 3 and 13. The items are “I am able to encourage people to take initiative, and “I can handle conflicts around me.” It explains 3.0 percent variance with a total factor load of 1.3.

**(4) Hindi Adaptation of General Health Questionnaire (GHQ-28):**

The GHQ is constructed by Goldberg and Hollies (1979). Hindi adaptation of GHQ was done by Singh (2000) for research purpose. It detects symptoms of non-psychotic psychological disturbances. This is a measure of pure state that measures how much a subject feels that his/her present state is unlike his/her usual state. It consists 28-items, which were divided into four sub-scales such as anxiety, depression, somatic symptoms and social dysfunction. This is a four-point rating scale in which each item is scored from 1 to 4. The lower scores on each sub-scale indicate the level of anxiety, depression, somatic symptoms and social dysfunction.

**Alpha Reliability of the GHQ**

<table>
<thead>
<tr>
<th>Sub-Scale</th>
<th>Reliability Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>0.78</td>
</tr>
<tr>
<td>Depression</td>
<td>0.84</td>
</tr>
<tr>
<td>Somatic symptoms</td>
<td>0.79</td>
</tr>
<tr>
<td>Social Dysfunction</td>
<td>0.75</td>
</tr>
</tbody>
</table>
Sample

The present study was conducted on a sample of 300 adolescents in which 150 male and 150 female adolescents selected from various school / college of Varanasi city. Their age groups ranging from 14 to 19 years with mean age of 16.5 years. Random sampling method was employed for the purpose.

Data Collection

To collect the data consent was taken from the heads of the college / school and adolescents were contacted individually. Each questionnaire was administered as per instructions provided in its respective manuals. Before starting each test, directions given on the front page were read out before the respondents. An attempt was made to establish rapport with the students before administration of the questionnaires.

The S. S. Scale was first given to the students and necessary information was obtained there on, followed by the WCSQ, Hindi adaptation of the GHQ and E.I. Scale. Demographic information was also obtained through personal data sheet. Rest of the five minutes was given after completion of each questionnaire whenever the need was felt. It was tried to get all the questionnaires completed in a single session. The presentation order for all the questionnaires was kept constant for all the respondents. Usually adolescents took 45 to 60 minutes to complete all the questionnaires. After the completion of the data, scoring was done according to the procedure given in the respective manuals.
**Statistical Analysis**

To test the formulated hypotheses, the obtained data were analyzed in terms of mean, standard deviation, t - ratio, coefficient of correlation, two way ANOVA and multiple regression analysis.

A t - test was performed for find out the gender difference in various stresses, psychological health, cognitive appraisals, coping behaviors and emotional intelligence scores among adolescents. Coefficient of correlation was calculated to examine the nature of relationships between stress and psychological health, emotional intelligence and cognitive appraisals, emotional intelligence and coping behaviors, emotional intelligence and psychological health, cognitive appraisal and psychological health, and coping behaviors and psychological health. Two ways ANOVA was computed to examine the effects of gender, family structure and their interaction on various stresses, anxiety, depression, social dysfunction, somatic symptoms and over all psychological health. Two way ANOVA was also performed for find out the effects of gender, family structure and their interaction on self - awareness, emotional stability, managing relation, integrity, self - development, value - orientation, commitment, altruistic behavior and total emotional intelligence score.

Multiple regression analysis was worked out to examine the predictive effects of stress on psychological health, emotional intelligence on stress, emotional intelligence on coping behavior (appraisals and coping strategies) and emotional intelligence on psychological health.