4.0 METHODOLOGY

The main aim of the present study is to test whether rejection sensitivity mediates the link between attachment pattern and psycho-social adjustment in early adolescence.

4.1 OPERATIONAL DEFINITIONS

**Rejection Sensitivity:** The extend to which children (1) anxiously or angrily expect rejection, (2) feel disliked or rejected following an ambiguously intentioned rejection, and (3) overreact to rejection, as measured using the Rejection Sensitivity Questionnaire.

**Attachment pattern:** The pattern of close relationship between parent and child, as perceived by the child. Attachment pattern is studied in terms attachment security and attachment styles. For the study, attachment security is defined as adolescents’ perceptions of the positive and negative affective/cognitive dimension of relationships with their parents -- particularly how well these figures serve as sources of psychological security by assessing degree of mutual trust; quality of communication; and extent of anger and alienation, using Inventory of Parent and Peer Attachment (Armsden and Greenberg, 1987). Attachment styles are defined as ways in which the adolescents relate to parents as measured using the Attachment style towards parents subscale of Behavioural Systems Questionnaire.

**Psycho-social adjustment:** Psycho-social adjustment is operationally defined in terms of the scores on various subscales of Child Behaviour Checklist -Youth Self Report and Parent Report Form.

**Early Adolescence:** The developmental period extending from 12 to 14 years of age.
4.2 TOOLS:

The study is to be conducted using the following tools:

- Semi Structured Interview Schedule (Developed by the researcher)
- Children’s Rejection Sensitivity Questionnaire (Downey, 1998)
- Inventory of Parent and Peer Attachment (Armsden and Greenberg, 1987)
- Behavioural Systems Questionnaire (Furman & Wehner, 2001).
- Child Behaviour Checklist- YSR (Achenbach, 1991)
- Child Behaviour Checklist- Parent Report Form (Achenbach, 1991)

4.3 DESCRIPTION OF TOOLS

- Semi Structured Interview Schedule- Parent Form (Developed by the researcher)

  The schedule was prepared by the researcher to collect socio-demographic information related to the adolescent. Information concerning developmental history, past health problems, current physical condition, childhood neurotic symptoms etc were collected from parents. The schedule also included questions concerning the stressors in the adolescent’s life and family.

- Children’s Rejection Sensitivity Questionnaire (CRSQ; Downey et al. 1998)

  CRSQ consists of 12 hypothetical situations involving interactions with peers and teachers. It measures defensive expectation of rejection from peers and teachers. Each of the 12 scenarios is read out loudly to the adolescents and then they answer three questions related to that situation. For example, one of the vignettes in CRSQ is: “Now imagine that you're back in class. Your teacher asks for a volunteer to help plan a party for your class. Lots of kids raise their hands. You wonder if the teacher will choose YOU”. The three questions that follow the vignette are as follows: 1) “How NERVOUS would you feel, RIGHT THEN, about whether or not the teacher will choose you?” gives the anticipatory anxiety 2) “How ANGRY would you feel, RIGHT THEN, about whether or not the teacher will choose you to read?” gives the anticipatory anger and 3) “Do you think the teacher will choose YOU?” gives the expectation of rejection. The responses are indicated on a 6-point scale. Higher scores indicate greater expectation of rejection and higher negative affect accompanying it.
The scores for anxious and angry expectations of rejection are calculated as follows: A separate anxious expectation of rejection score was generated for each of the 12 vignettes by multiplying the expected likelihood of rejection by the degree of anxiety over its occurrence for each situation, and then averaging across all 12 situations. Similarly, averaging across the 12 situations the product of expected likelihood of anger and the degree of anger over it, would give the angry expectation of rejection score. A total score on RS can be computed by adding the scores for anxious and angry expectations of rejection and dividing it by two.

Psychometric properties are well established. The questionnaire has high 4 weeks test-retest reliability (0.85 or above). The components of CRSQ show good internal reliability and stability over a period of 1 year. The scale has not been used in Indian population in earlier studies. In the present study, the two components- the anxious expectation of rejection (Cronbach’s $\alpha = 0.79$) and the angry expectation of rejection (Cronbach’s $\alpha = 0.81$) have high internal reliability.

*Inventory of Parent and Peer Attachment (Armsden and Greenberg, 1987)*

Adolescents completed attachment to mother and father scale of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) The measure assesses adolescents’ perceptions of the positive and negative affective/cognitive dimension of relationships with their parents and close friends -- particularly how well these figures serve as sources of psychological security. The parent scale consists of items that assess adolescent perceptions of trust, communication, and alienation within the parent-adolescent relationship. The degree of mutual trust in a relationship designates a level of security in the ability of attachment figures to understand and respect an individual’s needs and desires (e.g., “My mother respects my feelings”); Quality of communication is determined by an attachment figure’s sensitivity and responsivity to a person’s emotional states and concerns (e.g., “I tell my father about my problems and troubles”); the extent of anger and alienation in an attachment relationship refers both to anger toward and to emotional detachment from the person’s attachment figure(e.g., “My mother does not understand what I am going through these days”). The mother and father scales have 25 items each. The instrument is a self-report questionnaire with a five point Likert-scale response format. Participants are asked to rate each of 25 items on a 5-point scale with responses of 5 = almost always or always true, 4 = often true, 3
= sometimes true, 2 = not very often true, or 1 = almost never or never true. A summary score of quality of the parent/adolescent attachment is derived by determining the degree of trust and communication relative to alienation. Each adolescent’s ratings on the 19 items to assess trust and communication are added together, and the ratings for the 6 alienation items are reverse-scored and added to the trust plus communication sum to provide an overall rating of the adolescents’ perceived quality of parent/adolescent attachment. Thus, higher scores reflect secure attachment.

The reliability and validity of the scale has been established. The development samples were 16 to 20 years of age; however the IPPA has been used successfully in several studies with adolescents as young as 12. Armsden and Greenberg (1987) have reported high test-retest reliability over 3 weeks (r = 0.93) for parent attachment scores. Papini et al. (1991) reported Cronbach \( \alpha \) values of .89 and .88 for Mother and Father subscales. With respect to validity, Armsden and Greenberg (1987) found parent IPPA attachment scores to correlate significantly with levels of family support, conflict, and cohesiveness and with a tendency to seek the parents in times of need. Scores on the IPPA have also been found to be associated with a number of personality variables. The scale has been used in Indian population in earlier studies. In the present sample, the internal reliability (Cronbach’s alpha) is 0.85 (Attachment to mother section) and 0.87 (Attachment to father section).

**Behavioural Systems Questionnaire (BSQ; Furman & Wehner, 2001).**

BSQ has 3 parallel versions used to measure adolescent’s self-perceptions of relational styles with parents, romantic partners and friends. For each of the three types of relationships, relational styles were measured by assessing perceptions of how they approach attachment, caregiving of the other, and affiliation in that particular type of relationship. For each type of relationship, secure, dismissing, and preoccupied styles were assessed with 15 five-point Likert items. Internal consistencies of the three style scores for each of the three relationships were all satisfactory, all Cronbach \( \alpha \)s > 0.85. For the purpose of the study, only the relational styles of attachment to parents subscale was used. The scale has not been used in Indian population in earlier studies. Internal reliability of both the subscales were above 0.7 in the present sample.
Child Behaviour Checklist /6-18 and Youth Self Report (CBCL/6-18 & YSR; Achenbach, T.M., & Rescorla, L.A., 2001)

These are two 119 item checklists. The YSR can be filled out by adolescent as a self-report checklist and the Parent form allow the parent to rate the adolescent. Each of the 119 behaviour problem items can be scored on a 3 point scale, where 0 = not true, 1 = somewhat or sometimes true and 2 = very or often true. The respondents are instructed to base their ratings on the previous six months period. The Internalizing Scale consists of 3 subscales: Withdrawn, Somatic complaints and Depressed. The Externalizing Scale has 2 subscales: Delinquent Behaviour and Aggressive Behavior. Three subscales are designed as neither Internalizing nor Externalizing; Social Problems, Thought Problems and Attention Problems. The remaining items are grouped under Other Problems. A total problem score can be obtained by adding scores on the 119 items.

The psychometric properties are well established. The 7-day test-retest reliability r was 0.70 for 11 to 14 year olds. Criterion-related validity has been assessed in terms of ability to distinguish between demographically matched clinically referred and non-referred youth. The YSR is recommended to identify standardized profiles of clinical levels of dysfunction. It is useful as an icebreaker, can aid in planning intervention and can be re-administered to assess changes in self-reported functioning. It has been used worldwide in numerous research studies and for clinical purposes. CBCL has been used in Indian epidemiological and therapeutic studies (Dalal, 1989; Rozario, 1988; Sinha, 1997). In the present study, the Cronbach’s alpha for each of the subscales lie between: 0.64 – 0.85.

4.4 SAMPLE SIZE AND SAMPLING METHOD

A sample consisting of 406 school-going adolescents (boys and girls) who meet the criteria were included in the study. Sample size was estimated as follow:

4.4.1 SAMPLE SIZE ESTIMATION:

Minimum required sample size for studying the relationship between the following variables were calculated based on statistics obtained in related earlier studies.

Table 4.1 Correlations between study variables obtained from earlier studies for estimation of minimum sample size.
<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation (from earlier studies)</th>
<th>Minimum required sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attachment to Mother</td>
<td>0.60</td>
<td>25</td>
</tr>
<tr>
<td>Attachment to Father</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment pattern</td>
<td>-0.29</td>
<td>100</td>
</tr>
<tr>
<td>Psychosocial Problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment pattern (to Mother)</td>
<td>-0.16</td>
<td>310</td>
</tr>
<tr>
<td>Rejection Sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment pattern (to Father)</td>
<td>-0.22</td>
<td>160</td>
</tr>
<tr>
<td>Rejection Sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rejection Sensitivity</td>
<td>-0.24</td>
<td>140</td>
</tr>
<tr>
<td>Psychosocial adjustment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Formula used to calculate the minimum required sample size:

\[
n = \frac{(Z_\alpha + Z_\beta \sqrt{1 - r^2})^2 + 2}{r}
\]

\[
= \frac{(1.96 + 0.84 \sqrt{1 - r^2})^2 + 2}{r}
\]

For 95% confidence interval, \(Z_\alpha = 1.96\)

For 80% power, \(Z_\beta = 0.84\)

Based on the above calculation, a minimum sample size of 400 (200 boys & 200 girls) was fixed for the present study. To compensate for non-consenting subjects, a total was fixed as 500 participants \((n' = n / 1 - 0.2 = 400/0.8 = 500)\)

**Ratio of Schools from each type of School**

All Government, government aided and self-financing schools in the Kanayannur Taluk were listed. Based on the number of schools under each of these three categories, a ratio of 3:3:5 was fixed to include 3 government, 3 aided and 5 self-financing schools. Thus a total of 11 schools were included in the study.
Table 4.2 Number of Government, Aided and Self-financing schools in Kanayannur Taluk of Ernakulam District and the ratio fixed to select schools for the study.

<table>
<thead>
<tr>
<th>School Type</th>
<th>Mixed</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
</table>

4.4.2 SAMPLING METHOD:

The population to be studied consisted of early adolescents studying in the 8th std in regular schools in Kanayannur Taluk, Ernakulam District, Kerala State, India. All three categories of schools- Government, Aided and Self-financing- were included to ensure that sample consisted of adolescents from all socio-economic strata. From the list of above schools, 11 schools included in the study were randomly selected depending upon the ratio in which they are distributed among the three categories of schools. In each of the 11 schools included in the study, all adolescents from the randomly selected class who got consent from their parents were included.

4.4.3 INCLUSION CRITERIA:

- Adolescents aged 12-14 yrs.
- Adolescents who are attending regular school
- Adolescents who are able to read, speak and understand English or Malayalam.

4.4.4 EXCLUSION CRITERIA:

- Adolescents whose parents were divorced or separated.
- Adolescents whose either of the parents had expired.
- Adolescents who were not given consent by the parent.
4.5 PROCEDURE:

The study is cross-sectional in design and was carried out in two phases, the pilot study and the main study.

4.5.1 PILOT STUDY:

Scales which have not been used in Indian context had to be standardized before using them for data collection. All scales were translated to Malayalam also, to be administered to adolescents more comfortable in Malayalam. The scales were back translated to English to ensure validity.

During the first phase of the pilot study, data was collected from 68 students belonging to 3 different schools- 22 were administered English alone, 24 were administered Malayalam alone and another 22 were administered both English and Malayalam. The pilot study helped achieve the following objectives.

1. To examine the applicability of the selected tools.
2. To examine the applicability of the Malayalam translation of the selected tools.
3. To modify the terms and phrases the adolescents find difficult.
4. To establish the time required for the administration.
5. To establish the best order of administration of tools.
6. To help the investigator to familiarize with the administration.

The sample consisted of 68 school students belonging to 8th std from the following three schools:

1. Amritha vidhyalaya - 22 students – English questionnaire only
   10 students – English followed by Malayalam Questionnaire with a gap of 3 weeks
2. Al-Ammeen Public school - 12 students_ Malayalam followed by English Questionnaire with a gap of 3 weeks
3. Govt. High school - 24 students-Malayalam Questionnaire only

During administration, words difficult for the children, sentences that were difficult to understand etc were noted and modified.

Mismatches between Responses to English & Malayalam Questionnaires
As part of standardizing the Malayalam translations of questionnaires, mismatches between responses to English & Malayalam questionnaires were identified and questions with significant mismatch were modified or retranslated to reduce mismatches in future. Malayalam/English synonyms were provided in both versions for words that children found difficult for during pilot study.

**Observations about Mismatches**

1. Mismatches greater for more subjective questions – for which the respondent has difficulty giving a definite answer.
   
   E.g.: I feel too guilty (12 mismatches)
   
   I am afraid of going to school (1 mismatch)
2. Increase in mismatches when greater no: of alternatives.
3. Mismatches with more than one jump comparatively less.
4. Mismatches more in the EM group than ME group.
5. Mismatches found when words that were difficult to understand were present.
6. Mismatches found when severity suggested.
   
   E.g.: I am hot tempered
   
   Anike valarae choodan svabavamane.
7. Under reporting in the first administration.

**Possible Causes of Mismatches**

1. Presence of greater no: of graded alternatives (rating) rather than Yes/No questions.
2. Subjective nature of questions.
3. Better standard of subjects in ME group resulting in less mismatches in this group than EM group.
4. Probability of different parent answering the second time.
5. Difficulty in understanding certain terms in either of the languages.
6. Incorrect translation resulting in
   
   a) Conveying different meaning
   
   b) Suggesting different severity of the construct
7. Under reporting the first time due to less rapport between the children and administrator
Ways to Rectify

1. Re-translate questions that have mismatches due to incorrect translation.
2. Correct the translation to avoid discrepancy in meaning or severity.
3. Provide Mal/Eng words in both versions for words that were found to be difficult for children during pilot study.
4. Insist on both parents discussing and answering together or collect information as to who has answered the parent form.
5. Allowing the subject to choose which ever language they find more comfortable.

As a second phase of pilot study, both English & Malayalam questionnaires were administered in a sample of 10 students with a gap of 3 weeks. This was done to ascertain that the mismatches had reduced after the modifications were made.

Assisi Vidhyanikethan Public school - 5 students- English followed by Malayalam Questionnaire with a gap of 3 weeks
- 5 students- Malayalam followed by English Questionnaire with a gap of 3 weeks

Table 4.3 No: of Questions with Mismatches between Responses to English & Malayalam Questionnaires

<table>
<thead>
<tr>
<th>Questionnaire (Possible responses)</th>
<th>No: of jumps</th>
<th>Pilot I (s=22)</th>
<th>Pilot II (s=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBCL-P 012 (3)</td>
<td>&gt;1</td>
<td>25 (119)</td>
<td>3 (119)</td>
</tr>
<tr>
<td>CBCL-YSR 012 (3)</td>
<td>&gt;1</td>
<td>21 (119)</td>
<td>2 (119)</td>
</tr>
<tr>
<td>CRSQ-I 123456 (6)</td>
<td>&gt;2</td>
<td>20 (36)</td>
<td>2 (36)</td>
</tr>
<tr>
<td>IPPA-Mother 12345 (5)</td>
<td>&gt;2</td>
<td>9 (25)</td>
<td>1 (25)</td>
</tr>
<tr>
<td>IPPA-Father 12345 (5)</td>
<td>&gt;2</td>
<td>6 (25)</td>
<td>1 (25)</td>
</tr>
<tr>
<td>BSQ-Mother 12345 (5)</td>
<td>&gt;2</td>
<td>7 (15)</td>
<td>2 (15)</td>
</tr>
<tr>
<td>BSQ-Father 12345 (5)</td>
<td>&gt;2</td>
<td>6 (15)</td>
<td>1 (15)</td>
</tr>
</tbody>
</table>

4.5.2 MAIN STUDY:
The main study was conducted on 406 adolescents in groups of 10 from the selected schools in Kanayannur Taluk.

Main study consisted of the following main steps:

- Listing the Schools that constitute the sampling frame. They were listed in 3 categories – Unaided, Aided & Government Schools.
- Randomly selecting from each group, the schools to be included in the study.
- The number from each group calculated based on the ratio of the distribution of schools
- Main Data collection from the 11 selected schools. Unaided (5), Aided (3) & Government (3) Schools.

Main data collection involved the following steps:

- Consent was taken from the Principal and the respective class teacher.
- All students of the randomly selected division from 8th std classes were given the consent form
- Informed consent was obtained from their parents by sending the consent forms through the adolescent. Only those with consent are included in the study.
- Data was collected from the adolescents in groups of 10 without compromising on their class activities.
- The questionnaires to be filled by parents were sent through the adolescents and collected the next day.
- All essential ethical considerations were followed while conducting the research.

4.6 PARTICIPANTS

Participants for the study came from 11 randomly selected schools in the Kanayannur Taluk of Ernakulam District, Kerala State, India. Three categories of schools- Government, Aided and Self-financing- were included to ensure that sample consisted of adolescents from all socio-economic strata. All adolescents from the randomly selected class who got consent from their parents were included. Out of 501 adolescents who were given the consent form, 438 agreed to participate on whom the questionnaires were administered. The data from 18 participants was excluded from
analysis because they had parents who were divorced or separated or one of the parents had expired and hence did not meet the inclusion criteria. Parents of 12 adolescents did not return the completed demographic data sheet. Hence the final sample consisted of 406 Indian adolescent boys and girls between the ages 12-14 yrs.

Table 4.4 shows the distribution of data collected from the 11 selected schools.

<table>
<thead>
<tr>
<th>Schoolname</th>
<th>Consent forms</th>
<th>Tested</th>
<th>Complete</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHHS, Mulunthuruthy</td>
<td>70</td>
<td>62</td>
<td>60</td>
<td>59</td>
</tr>
<tr>
<td>SRV, Govt Boys</td>
<td>50</td>
<td>35</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td>GGHSS, Tripunitura</td>
<td>29</td>
<td>27</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>Govt School - Total</td>
<td>149</td>
<td>124</td>
<td>118</td>
<td>110</td>
</tr>
<tr>
<td>St.George, Arakkunnam</td>
<td>36</td>
<td>33</td>
<td>32</td>
<td>31</td>
</tr>
<tr>
<td>St.George, Edapally</td>
<td>35</td>
<td>29</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>St.Teresas GHS</td>
<td>52</td>
<td>46</td>
<td>46</td>
<td>45</td>
</tr>
<tr>
<td>Aided - Total</td>
<td>123</td>
<td>108</td>
<td>107</td>
<td>103</td>
</tr>
<tr>
<td>Nalanda Public</td>
<td>40</td>
<td>38</td>
<td>38</td>
<td>37</td>
</tr>
<tr>
<td>Amrita Vidhyalaya</td>
<td>58</td>
<td>51</td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>Marthoma Pub School</td>
<td>52</td>
<td>44</td>
<td>44</td>
<td>42</td>
</tr>
<tr>
<td>Rajagiri HSS</td>
<td>40</td>
<td>38</td>
<td>36</td>
<td>34</td>
</tr>
<tr>
<td>St.Joseph HSS</td>
<td>39</td>
<td>35</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Unaided - Total</td>
<td>229</td>
<td>206</td>
<td>201</td>
<td>193</td>
</tr>
<tr>
<td>Total</td>
<td>501</td>
<td>438</td>
<td>426</td>
<td>406</td>
</tr>
</tbody>
</table>
Location of 11 selected schools in Kanayannur Taluk, Ernakulam District

Figure 4.1 shows the location of the 11 randomly selected schools in Kanayannur Taluk of Ernakulam District. (The schools are numbered as shown in table 4.4)

Demographic data of the sample is presented in Table 4.5. The sample consisted of boys (56.2 %) and girls (43.8 %). While 52.5 % of the adolescents were studying in government schools, 47.5 % were studying in private schools. Majority of the adolescents belonged to Hindu (51%) and Christian (40.6%) religions, and the rest
belonged to Muslim (7.4%) and other (1%) religions. Eighty-five percent of the children came from nuclear families and most of their fathers were employed (99.3 %) while majority of mothers were unemployed (69.7 %).

Table 4.5 Socio- Demographic Description of Adolescent Characteristics in the Sample

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12yrs –13yrs</td>
<td>217</td>
<td>53.4</td>
</tr>
<tr>
<td>13yrs –14yrs</td>
<td>189</td>
<td>46.6</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>228</td>
<td>56.2</td>
</tr>
<tr>
<td>Girls</td>
<td>178</td>
<td>43.8</td>
</tr>
<tr>
<td>School type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>110</td>
<td>27.1</td>
</tr>
<tr>
<td>Govt. Aided</td>
<td>103</td>
<td>25.4</td>
</tr>
<tr>
<td>Private</td>
<td>193</td>
<td>47.5</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindu</td>
<td>207</td>
<td>51.0</td>
</tr>
<tr>
<td>Christian</td>
<td>165</td>
<td>40.6</td>
</tr>
<tr>
<td>Muslim</td>
<td>30</td>
<td>7.4</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>1.0</td>
</tr>
</tbody>
</table>

4.7 STATISTICAL ANALYSIS:

- Frequencies and percentages for categorical variables and mean and standard deviation of study variables were calculated.

- Pearson’s correlation coefficient and regression analysis were computed to study the relation between the concerned variables. Categorical variables such as gender and type of school were also included in the analysis by converting them into dummy variables.

- Mediation analysis and Sobel’s test was done between variables to study the mediating link.

- Statistical significance of the differences in mean scores of the variables between gender, between types of schools etc was tested applying students ‘t’ test and 2-way ANOVA.