CHAPTER 3

METHOD

3.1 Need for the Study

India has the largest number of adolescents in the world. If an informal survey of the concerns that parents have about their adolescents would be taken; the foremost concern would be with regard to their academic achievement. Hence, a study on the correlates of academic achievement would be very relevant. Various correlates have been studied. The relationship of academic achievement with intelligence has been well established. What could be the other factors which play a significant role in the academic achievement of an adolescent?

As a practicing counselor, the researcher has observed that adolescents are not as focused on their academic achievement, as their parents are. Lack of harmony and stress are observed in families due to these conflicting values. Counselling sessions with adolescents revealed that several adolescents were performing poorly, despite having good IQ scores. It was also observed that, factors such as negative perception of parents; inability to control ones negative emotions; difficulty in maintaining positive relationships with peers; were issues that were on the adolescents mind.

The idea of studying the emotional and social intelligence of adolescents, along with their perceptions of relationship with parents; and further ascertaining their role in academic achievement was born out of the above observations. The most interesting aspect of the above forms of intelligence is that they can be cultivated, which poses tremendous possibilities for counselors, educators and parents. The role of both these forms of intelligence – emotional and social, in academic achievement has not been explored much; and forms the cornerstone of this research.
Parental attitude and the nature of the relationship between the parents and adolescents play a very significant role in the personality development of adolescents. A child may have high intelligence, emotional intelligence, and social intelligence; but still exhibit poor academic achievement. Most dysfunctional behavior in adolescents can be traced to issues with the adolescent’s perception of parental behavior. Perception is reality! Parents may be pouring their heart and soul into parenting adolescents; believing that all the actions they take is in the best interests of the child; but the adolescents’ perception maybe completely different. Advice, caring, restrictions; could be perceived as lack of trust in the adolescent; as criticism; as interference etc. These negative perceptions play a counterproductive role in academic achievement of adolescents. Counselling parents to change their attitude and behavior is very effective in terms of bringing about the desired changes in adolescents. Since perceived parental relationship plays such a pivotal role in an adolescent’s life, any research on adolescent behaviour would be incomplete without its inclusion. Most research focuses on the correlation between parental relationship and academic achievement; ignoring the fact that perception is often more important than reality.

Numerous studies have proved that intelligence is correlated with academic achievement. Since, it is proven that IQ has a strong genetic base; this research fact does not help from a counselling standpoint. Counselling cannot help an adolescent increase his IQ. But, counselling can definitely help adolescents improve their emotional and social intelligence. Hence, if the current research can prove that emotional and social intelligence play a role in the academic achievement of adolescent; it will have tremendous implications for counselling.

Counselors can develop intervention plans to assess and improve the emotional intelligence, social intelligence, and perceived relationship with parents. This in turn will
help the adolescents to improve their academic achievement, leading to more harmony and less stress at home.

3.2 Objectives of the Study

1. To study the significance of difference between adolescents with high and low academic achievement as far as their Intelligence, Emotional Intelligence, Social Intelligence and Perceived Parental Relationship are concerned.

2. To study the significance of influence of some demographic factors such as gender, parental education, occupation, income, birth order, type of family, on Intelligence, Emotional Intelligence, Social Intelligence, and Perceived Parental Relationship of Adolescents.

3.3 Research Questions

1. Do adolescents with high academic achievement have significantly higher Intelligence, Emotional Intelligence, Social Intelligence, and favourable Perceived Parental Relationship than adolescents with low academic achievement?

2. Do the demographic factors such as gender, parental education, occupation, income, birth order, and type of family of adolescents; have a significant influence on their Intelligence, Emotional Intelligence, Social Intelligence, and Perceived Parental Relationship?

3.4 Hypotheses

$H_{a_1}$ Adolescents with high academic achievement will have significantly higher Intelligence, Emotional Intelligence, Social Intelligence, and favorable Perceived Parental Relationship than adolescents with low academic achievement

$H_{a_{1,1}}$ Adolescents with high academic achievement will have significantly higher Intelligence than adolescents with low academic achievement
Ha\textsubscript{1.2} Adolescents with high academic achievement will have significantly higher Emotional Intelligence than adolescents with low academic achievement.

Ha\textsubscript{1.3} Adolescents with high academic achievement will have significantly higher Social Intelligence than adolescents with low academic achievement.

Ha\textsubscript{1.4} Adolescents with high academic achievement will have significantly more favorable Perceived Parental Relationship than adolescents with low academic achievement.

Ha\textsubscript{2} Demographic factors such as gender, parental education, occupation, income, birth order, and type of family, of adolescents have a significant influence on their Intelligence, Emotional Intelligence, Social Intelligence, and Perceived Parental Relationship.

Ha\textsubscript{2.1} Demographic factors such as gender, parental education, occupation, income, birth order, and type of family of adolescents, have a significant influence on their Intelligence.

Ha\textsubscript{2.2} Demographic factors such as gender, parental education, occupation, income, birth order, and type of family of adolescents, have a significant influence on their Emotional Intelligence.

Ha\textsubscript{2.3} Demographic factors such as gender, parental education, occupation, income, birth order, and type of family of adolescents, have a significant influence on their Social Intelligence.

Ha\textsubscript{2.4} Demographic factors such as gender, parental education, occupation, income, birth order, and type of family of adolescents, have a significant influence on Perceived Parental relationship.
3.5 Research Design

The primary objective of this study is to investigate the role of certain psychological variables in the academic achievement of adolescents. The psychological variables being examined are Intelligence, Emotional Intelligence, Social Intelligence, and Perceived Parental Relationship. These variables are considered as the Dependent Variables. This is a comparative study of low and high achievers. The level of Academic Achievement is the Independent variable in the study.

The impact of Demographic factors such as gender, birth order, early background, caste, type of family, and education & occupation of parents on the Psychological variables such as Intelligence, Emotional Intelligence, Social Intelligence, and Perceived Parental Relationship of high and low achievers is also studied. All the demographic factors are treated as Independent Variables and the psychological variables are the Dependent Variables.

3.5.1 Operational Definitions of Variables:

All the variables examined in this study are operationally defined as follows:

- Academic achievement is defined in terms of the understanding, memorizing, and recalling of learned material; which is assessed periodically. The output, which is expressed in the form of marks is Academic Achievement. A student, who consistently scores high marks in exams, would be considered a high academic achiever.

- Intelligence has been defined through various perspectives. In this research, it is defined as the ability to grasp concepts quickly, think logically, infer and recall accurately. These are the essential features of cognitive ability.
• Emotional Intelligence is the ability to understand one’s own and others emotions, as well as the ability to manage these emotions appropriately, according to varying situations.

• Social Intelligence may be defined as social awareness and a capacity to manage complex social interactions, through healthy interpersonal relations.

• Perceived Parental Relationship refers to the perceptions that children have about their parents’ behavior and attitude towards them.

3.5.2 Sample

A purposive sample of 200 low achievers and 200 high achievers was selected from various schools. The sample was selected from adolescents studying in VIIIth and IXth standards. Male adolescents were 247 in number and female adolescents were 153.

In order to maintain statistical credibility, the following inclusion and exclusion criteria were followed:

**Inclusion Criteria**

• Adolescents studying in 8th and 9th standards were selected.

• Adolescents with more than 75% marks as an average of the past two semesters were included in the high achievers category.

• Adolescents with less than 50% marks as an average of the past two semesters were included in the low achievers category.

• Adolescents studying in co-educational schools in Belgaum, which are following the State syllabus, were included.

• Adolescents studying only in English medium schools were selected.
Exclusion Criteria

- Adolescents from convent, CBSE, and ICSE schools were excluded.
- Adolescents with average marks (between 50 and 75%) were excluded.
- Adolescents studying in vernacular medium schools were excluded.

3.6 Measures

3.6.1 Intelligence Scale

Ravens Standard Progressive Matrices (SPM) (1938) was used to assess the intelligence of the adolescents. This test was designed to measure a person’s ability to form perceptual relations and to reason by analogy, independent of language and formal schooling, and may be used with persons ranging in age from 8 years to adult.

The SPM consists of 60 items arranged in five sets (A, B, C, D, & E) of 12 items each. Internal consistency studies, using either the split-half method corrected for length or KR20, estimates result in values ranging from 0.60 to 0.98, with a median of 0.90. The median test-retest coefficient value is approximately 0.82. The majority of studies which have factor analyzed the SPM along with other cognitive measures in Western cultures report loadings higher than 0.75 on a general factor. Concurrent validity coefficients between the SPM and the Stanford-Binet and Weschler scales range between 0.54 and 0.88, with the majority in the 0.70s and 0.80s respectively.

3.6.2 Emotional Intelligence Scale

Schuttes Emotional Intelligence Scale, normed for Indian conditions by Thingujam, N.S. and Ram, U (2000) was used for assessing the Emotional Intelligence of the adolescent sample. Emotional Intelligence Scale (EIS, Schutte et al, 1998) consists of 33 items to be responded to on a 5-point scale, which ranges from “strongly agree” to
“strongly disagree”. Cronbach’s alpha is 0.90 and test-retest reliability over two week interval is 0.78. As a part of validation studies, EI was negatively correlated with alexithymia, pessimism, depression, impulsivity; positively correlated with greater attention to feelings, greater clarity of feeling, mood repair. This scale has been widely used by Indian researchers.

### 3.6.3 Social Intelligence Scale

Chadha and Ganesan’s (2004) Social Intelligence Scale was used to measure the social intelligence of the adolescent sample. This scale measures social intelligence in eight areas: patience, cooperativeness, confidence level, sensitivity, recognition of social environment, tactfulness, sense of humour, and memory. The scale has a total of 66 multiple choice items. The split-half reliability coefficients for the 8 dimensions ranged from 0.89 to 0.96. Test-Retest reliability coefficients for the 8 dimensions ranged from 0.84 to 0.97. Cross Validation correlation ranged from 0.75 to 0.95 for the 8 dimensions. The dimensions are as follows:

- **Patience** – Calm endurance under stressful situations
- **Cooperativeness** – Ability to interact with others in a pleasant way; to be able to view matters from all angles.
- **Confidence level** – Firm trust in oneself and ones chances
- **Sensitivity** – To be acutely aware of and responsive to human behaviour
- **Recognition of social environment** – Ability to perceive the nature and atmosphere of the existing situation
- **Tactfulness** – Delicate perception of the right thing to say and do
• Sense of humour – Capacity to feel and cause amusement; to be able to see the lighter side of life.

• Memory – Ability to remember all relevant issues; names and faces of people.

3.6.4 Perceived Parenting Scale

Bharadwaj’s (1998) Parenting Scale was used to assess the perceived parenting of adolescents. This scale consists of 40 items. It is intended to measure perceptions of the individual (perceived parenting) on one's own feeling as to how one is brought up by one's parents on eight dichotomous modes of parenting: rejection vs. acceptance, carelessness vs. protection, neglect vs. indulgence, utopian expectations vs. realism, lenient standard vs. moralism, freedom vs. discipline, faulty role expectations vs. realistic role expectations, and marital conflict vs. marital adjustment. It measures the role of mothering, fathering and parenting as a whole. It is applicable for children above the age of ten.

The test-retest reliability coefficient across the various modes of parenting ranges from 0.54 to 0.79. The concurrent validity coefficient ranges from 0.38 to 0.75 across the various modes of parenting. The eight dichotomous modes of parenting:

• Rejection vs. acceptance: Rejection of parents manifests itself through excessive criticism, harsh and inconsistent punishment, denial of love and affection. Parental acceptance implies an attitude of love and warmth towards the child.

• Carelessness vs. protection: Carelessness refers to inadequate heed paid to child’s activities. Protection connotes a sense of “being there” for the child.

• Neglect vs. indulgence: Neglectful behaviour manifests itself through lack of attention and avoidance of the genuine needs of the child. Indulgence refers to a parent’s willingness to please the child to a reasonable extent.
• Utopian expectations vs. realism: Utopian expectations are exhibited through high expectations of performance from a child, irrespective of his capacities. Realism signifies taking into consideration the objective realities pertaining to both, the child’s capabilities and outside world while setting up and expecting his level of performance.

• Lenient standard vs. moralism: Lenient standards are viewed as a negative parameter wherein parents permit children to deviate from ethical and moral behaviour. Moralism refers to the inculcation of the doctrines of duties of life.

• Freedom vs. discipline: Freedom refers to absence of restraints, allowing the child to be the sole decision maker of his activities. Discipline refers to the enforcement of certain important rules.

• Faulty role expectations vs. realistic role expectations: Faulty role expectations refer to unpredictable expectations from children which would lead to confused children. Realistic role expectations lead to children who have clarity about what their parents expect from them.

• Marital conflict vs. marital adjustment: Marital conflict refers to a state of constant disagreement and unpleasantness between the parents. Marital adjustment refers to a state of understanding and harmony between the parents.

The psychometric details regarding this tool are provided in Appendices B.

3.7 Pilot Study

A pilot study was carried out to ascertain the suitability of the above tools. The study was conducted on adolescent students of M.V Herwadkar School, a state school in Belgaum, Karnataka. The sample size was 80; with equal number of high and low achievers. The sample was selected on the basis of the academic performance of the past
two semesters. Students with an average of more than 75% were selected in the high
achievers group and students with an average of less than 50% were selected in the low
achievers group.

Students were tested over a period of one month across four sessions. Testing
groups consisted of twenty students each, to ensure that all student queries would be
attended to. Students were administered only two tests in one session to avoid test
boredom and to optimize test results reliability. The other two tests were administered a
week later. Students were also asked to fill out a personal data form; to collect
demographic details about income, family background, caste, parental education and
occupation etc.

### 3.8 Data Collection

The investigator selected three schools which fit the inclusion criteria. Data was
collected from more than 400 students. Results for the exams conducted in the previous
years was obtained from the office, to select students who fit the criteria of high achievers
(more than 75%) and low achievers (less than 50%). An orientation session was conducted
for the selected students, wherein the purpose of the study and its implications for
adolescents was explained. Charts which had the meanings of some of the difficult words
used in the questionnaires were prepared. This list was derived from the difficulties faced
by the students in the pilot study.

Students were tested over a period of four months. Testing groups consisted of
twenty students each, to ensure that all student queries would be attended to. Students
were administered only two tests in one session to avoid test boredom and to optimize the
reliability of the test results. The other two tests were administered a week later.
Students were also asked to fill out a personal data form; to collect demographic details
about family background, caste, parental education and occupation etc. Income details were collected from the school office, as it was a sensitive question to be asked of students.

3.9 Data Processing

The data collected was then scrutinized, coded and scored. The response sheets collected were scrutinized to ensure that students have filled in the questions appropriately. Response sheets which had omissions, double markings, and obviously biased markings were rejected.

3.9.1 Scoring

The response sheets for each test administered were manually scored according to the instructions of their respective manuals. Following is the scoring procedure for all the scales used in the research.

Ravens Standard Progressive Matrices

This test consists of 60 items, arranged in order of increasing difficulty. The response is either correct or wrong. Each correct response gets a score of 1. The total number of correct responses is recorded as the raw score for an individual. A high score would indicate a high intellectual ability.

Schuttes Emotional Intelligence Scale

The Emotional Intelligence Scale consists of 33 items to be responded to on a 5-pont scale, which ranges from “strongly agree” to “strongly disagree”. Out of the 33 items, 3 items are keyed negatively. The positively keyed items are assigned scores from 1 to 5, the negatively keyed items are scored in the reverse order – from 5 to 1.
The final score is obtained by totaling all the individual scores. A high score would indicate a high degree of emotional intelligence.

**Social Intelligence Scale**

This scale consists of 66 items. Every item has 3 alternate responses. A scoring key has been given in the manual, according to which the scoring was done. Every response to every item has a particular score ranging from 0 to 3. There are 8 dimensions of social intelligence which are tested. Each dimension is scored separately. The total score for social intelligence will be obtained by adding the scores on all the 8 dimensions.

**Perceived Parenting Scale**

This scale has 40 items related to eight different modes of parenting and are distributed in a meaningful manner. Out of the 40 items, 5 items are framed negatively to check the habitual disposition of responses. The scoring is quantitative type and based on the five point Likert scale.

The scoring for mothering and fathering are done separately; for each of the dimensions except the dimension of marital conflict. Total mothering and fathering scores are also computed.

**3.10 Analyses of Results**

**3.10.1 Statistical Techniques Applied**

The following techniques were applied to analyze the scored data and to verify the research hypotheses:

- Student ‘t’ test is applied to verify Ha$_{1.1}$ to Ha$_{1.4}$

- Stepwise Multiple Regression Analysis is applied to verify Ha$_{2.1}$ to Ha$_{2.4}$
Student ‘t’ test

The statistical technique of Student ‘t’ test is usually used to test significance of difference between two independent sample means.

In the present research study, the student ‘t’ test is applied to verify Ha$_{1.1}$ to Ha$_{1.4}$ ie the two groups of high and low achieving adolescents differ significantly from each other on each of the four dependent variables.

Step-wise Multiple Regression Analysis

Step-wise Multiple Regression Analysis is used to determine the relationship of multiple predictors on a single criterion. The basis of a multiple regression is to assess whether one continuous dependent variable can be predicted from a set of independent (or predictor) variables. Or in other words, how much variance in a continuous dependent variable is explained by a set of predictors. The step-wise selection helps to determine the level of significance of each predictor variable.

In the present research study, this technique is used to verify the hypotheses Ha$_{2.1}$ to Ha$_{2.4}$, to study the significant contribution of the various demographic factors on the various dependent psychological variables. The results of this analysis would help in identifying the demographic variables that contribute significantly to the dependent variables.