IMPACT OF FAMILY CLIMATE, MENTAL HEALTH, STUDY HABITS AND SELF CONFIDENCE ON THE ACADEMIC ACHIEVEMENT OF SENIOR SECONDARY STUDENTS

THESIS ABSTRACT

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By

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1.1 INTRODUCTION

The world is becoming more and more competitive and quality of performance is the key factor for personal progress. Excellence particularly, in academics and generally in all other areas has been seen as an important aspect. Parents desire that their children climb the ladder of performance to as high level as possible. This desire of a high level of achievement puts a lot of pressure on students, teachers, institutions and the educational system itself in general. In fact, it appears as if the whole system of education revolves around academic achievement of the students, though various other outcomes are also expected from the system. Hence, efforts have always been made to find out strategies and mechanism to improve excellence. Therefore, many factors have been hypothesised and researched by the researchers. They come out with different results, at time, complementing each other but at times contradicting each other.

A complete and comprehensive picture of academic achievement still seems to elude the researchers. The search, therefore, continues and educational researchers all over the world are still seeking a breakthrough in elucidating this phenomenon. In the present investigation it is presumed that students’ academic achievement is determined by Family climate, Mental health, Study habits and Self-confidence and this is the reason why, the aim of the present investigation was to study the “Impact of Family Climate, Mental Health, Study Habits and Self Confidence on the Academic Achievement of Senior Secondary Students.”

1.2 FAMILY CLIMATE AND ACADEMIC ACHIEVEMENT

“The family is the only socially recognised relation for child bearing and the essential agency for child rearing, socialization, and introducing the child to the culture of the society, thereby shaping the basic character structure of our culture and forming the child’s personality.” (Frank, 1948)

The infant begins his life under the fostering affection and care of his parents and other near and dear ones who are associated with the family. As he grows, he receives the first lesson of life in his family and tries to imbibe the habits, ideals and patterns of behaviour of his family members. In this way, family continuously influences him throughout his life. Happy and harmonious relationship between children and parents and other members of the family contribute to the development of sense of security. Through this, child develops a sense of belongingness. He needs
to have a place in the family structure and be recognised as an individual and must be respected. Child’s needs and feelings should neither be taken for granted or ignored. Every child just like an adult needs recognition for his achievement and success from the members of his family. Praise, encouragement, attention and recognition need to be given truly and frequently. The family provides opportunities to the child to experience success. The experience of success by itself immensely contributes to the growth and development of a child.

Not only Family Climate, child’s academic achievement depends upon a complex of factors within the child like intelligence, frustration, stress, attitude etc. And factors external to child like teachers, curriculum, methods of teaching & evaluation & school environment etc.

1.3 MENTAL HEALTH AND ACADEMIC ACHIEVEMENT

It has long been acknowledged that a variety of psychosocial and health problems affect learning and performance in profound ways. Such problems are exacerbated as youngsters internalize the debilitating effects of performing poorly at school and are punished for the misbehaviour that is a common correlate of school failure.

Due to these reasons schools have come under enormous pressure in recent years to demonstrate academic gains and to address deeply rooted disparities among students’ of different races, ethnic groups, and income levels. Clearly, boosting academic achievement should be a top priority. Over the past decade, research studies and reviews have consistently concluded that student health status and achievement is deeply connected. Evidence has been mounting that meeting the basic developmental needs of students — ensuring that they are safe, drug-free, healthy, and resilient — is central to improving their academic performance (Allensworth, Lawson, Nicholson, & Wyche, 1997; Marx, Wooley, & Northrup, 1998; Mitchell, 2000).

Recent research studies have proved that learning is not the activity of single, but is bound up with total personality of learner. Mental health is an essential to the learning process as intelligence. In short we can say that mental health is an inseparable part of education. For education sound mental health is the first condition. If children are not in sound mental health, they cannot concentrate in learning and retain knowledge received in the classroom. Therefore learning is dependent on sound Mental health.
1.4 STUDY HABITS AND ACADEMIC ACHIEVEMENT

Study habits are habitual way of exercising and practicing the abilities for learning. “Poor habits of study not only retard school progress but develop frustration, destroy initiative and confidence and make prominent the feeling of worthlessness towards himself and the subject of study whereas effective methods ensure success, happiness and sense of accomplishment” — Smith, Sammuel and Field (1948).

Study habits are techniques, which a student employs to go about his or her studies, which are consistent and have become stereotyped as a result of long application or practice. It is one of the major factor effecting academic achievement of the students. Psychologists and educationists believe that good study habits are the gateway of knowledge and wisdom. It is one of the effective means of systematic development of knowledge, language and personality of the individual.

The task of learning is not related to the teacher alone but it also requires many things on the part of the learners, like his ability to schedule his time, the plan of the study, concentration, note taking, mental review, mass and part learning etc. and therefore, “Study is self-directed education” but this does not mean that the student should be left entirely to his own devices in his search for knowledge.

According to Secondary Education Commission (1952-53):

“The underachievers need some form of special help or remedial education and guidance to overcome their difficulties and achieve up to the maximum of their potential. To plan remedial education and guidance programme for underachievers we need to know about the factors related to and their possible contribution towards underachievement.”

1.5 SELF CONFIDENCE AND ACADEMIC ACHIEVEMENT

Life is full of challenges and surprises and it is intelligence and self-confidence which prepares us for facing these challenges and accepting these surprises as successfully as possible. Self-Confidence is the conviction that one is generally capable of producing desired results. Self-confidence is related with success. A confident attitude, a belief and a faith in oneself and one’s ideas are essential in getting ahead but it should also be remembered that self-confidence grows with success that means it is desirable to develop those qualities within oneself that makes for success. It has been found that the child who perceives himself to be able, confident, adequate and a person of worth has more energy to spend on academic
achievement and will use his intelligence to be utmost, on the other hand, the child who perceives himself as worthless incapable and less confident may not come up to the optimum level of attainment.

Now, it is important to find out how self-confidence and other factors taken in this research would influence academic achievement. If a positive relationship is found between these variables (family climate, mental health, study habits and self-confidence) and academic achievement, it will be of immense importance to the most important social institutions concerned with the education of child – family and school. Thus family and teachers must be helped to realize the importance of positive family & school environment, mental health, good study habits and role of confidence for the academic excellence of its younger members. Also, what measures one can undertake to improve academic achievement.

1.6 STATEMENT OF THE PROBLEM
In this investigation researcher aimed to study the “Impact of Family Climate, Mental Health, Study Habits and Self Confidence on the Academic Achievement of Senior Secondary Students.”

1.7 OBJECTIVES OF THE STUDY
1. To study the relationship between criterion variable (i.e. academic achievement) and various predictor variables that is (family climate, mental health, study habits and self confidence).
2. To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement).
3. To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement) for the students of science stream.
4. To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement) for the arts stream group.
5. To establish regression equation for the prediction of the criterion variable in relation to science stream group.
6. To establish regression equation for the prediction of criterion variable in relation to arts stream group.
7. To study the nature of the distribution of scores of criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence).

1.8 SUBSIDIARY OBJECTIVES
Following subsidiary objectives have been formulated for the present study-
1. To compare the academic achievement of students of two faculties that is science and arts.
2. To compare the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of science stream group.
3. To compare the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of arts stream.

1.9 HYPOTHESES
The following hypotheses are undertaken in this investigation:
1. There is significant relationship between criterion variable (i.e. academic achievement) and various predictor variables (i.e. family climate, mental health, study habits and self confidence).
2. Each predictor variables (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement).
3. Each predictor variable (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of science stream.
4. Each predictor variables (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of arts group.

1.10 SUBSIDIARY HYPOTHESES
1. There will be no statistically significant difference in the mean of the academic achievement of students of two faculties i.e. science and arts.
2. There will be no statistically significant difference between the mean of male and
female respondents of science stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence).

3. There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence).

1.11 DELIMITATIONS

1. As India is a vast country it is difficult to cover the entire geographical area in a single study like the proposed one. Therefore, the sample has been selected from U.P. Board Schools of Aligarh and Etawah city.

2. The study is conducted only on the XII th class Senior Secondary Students of Science and Arts streams.

1.12 TOOLS USED IN THE STUDY

In order to meet the needs, aims and objectives of the present work, the following tools and measures were adopted:

- Family Environment Scale (FES) developed by Bhatia and Chadha (1993).
- Mental Health Battery (MHB) developed by Singh and Gupta (2008).
- Study Habits Inventory (PSSHI) by Palsane and Sharma (2003).
- Self Confidence Inventory (ASCI) by Agnihotri (1993).

1.13 SIZE OF THE SAMPLE

The main consideration in the selection of the sample was its representativeness. In this study representativeness was ensured by adopting simple random sampling without replacement selection technique. Sampling without replacement means that there are no repetitions or duplications of the units in the sample. A sample of 865 students was taken under this study.

(a) Selection of the institutions- To select the institutions from which target sample has been taken, first the investigator brought the list of Intermediate colleges of Etawah and Aligarh from the District Inspector of Schools office. Only 19 schools were taken from Etawah and Aligarh city. These schools were selected through lottery method, and male and female respondents both from science and arts stream were selected by using simple random sampling without replacement technique.

(b) Selection of the sample- The final sample of male and female students of
science and arts stream from the total cluster of students studying in XII class of
science and arts group of each institution between 16 to 18 years of age were
selected.

1.14- STATISTICAL TECHNIQUES EMPLOYED:
In the present research work, the data is analysed on the basis of these statistical
techniques: - for studying the relationship between criterion variable (i.e. academic
achievement) and various predictor variables, correlations are used. To study the
contributory role of various predictor variables on criterion variable, multiple
regression analysis is used. For calculating significant difference between two groups
t-test is used by using mean and standard deviation, because for rejecting or
accepting any hypothesis based on variables these tests are very important.

1.15- FINDINGS
Findings of the present investigation are presented in two parts: (i) findings related to
the major objectives, (ii) findings related to the subsidiary objectives.

1.15.1- FINDINGS RELATED TO THE MAJOR OBJECTIVES
Obj. 1: Relationship between various predictive variables and Academic
achievement.
Relationship between four predictive variables and academic achievement of total
students was ascertained by computing product moment coefficient of correlations
and the findings thus drawn are presented below:
(i) Significant & positive relationship was found between Family Climate and
Academic Achievement for total number of students.
(ii) Mental Health was found to be significantly and positively related to the
academic achievement of total number of students.
(iii) Significant & positive relationship was found between Study Habits and
Academic Achievement for total number of students.
(iv) Self Confidence was found to be significantly and positively related to the
academic achievement of total number of students.

Obj. 2: Contributory role of various predictive variables on the Academic
Achievement of total students.
In order of magnitude of regression weights, out of the eight dimensions of Family
Climate only two dimensions i.e. Active recreational orientation and Independence
were found prominent in determining variation in Academic achievement of total
students (N=865). The role of both the dimensions was found to be significant. From the regression coefficients it was inferred that one unit increase in externality scores of Active recreational orientation and independence, cause .10738 & .08521 unit’s increment respectively in the Academic Achievement of total students.

Out of the six dimensions of Mental Health only two dimensions i.e. Intelligence and Emotional Stability were found important in determining the Academic achievement. The role of both the dimensions Intelligence and Emotional stability was found to be significant. One unit increase in Intelligence was found to cause, .32122 units increment in the academic achievement of total students.

But a negative regression coefficient was obtained for dimension Emotional stability. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Emotional Stability score, academic achievement of the total students decreases by .09257 units.

Out of the eight dimensions of Study Habits only one dimension i.e. Memory was found prominent in determining variation in Academic achievement. The role of Memory was found to be significant. One unit increase in Memory was found to cause .09653 units increment in the academic achievement of total students.

But variable Self-confidence does not play any significant role in influencing Academic achievement.

The values of R (coefficient of multiple correlation) were found to be significant in case of Active recreational orientation (R=.2198), Independence (R=.2101), Intelligence (R=.3612) & Memory (R=.1546), which reflects that significant multiple relationship exists between these variables and criterion variable. But the value of R (coefficient of multiple correlation) was found not significant in case of Emotional stability (R=-.0230), which reflects that there exists negative & not significant relationship between Emotional stability and Academic achievement.

The values of \( R^2 \) (coefficient of multiple determination) being .17, which shows that about 17% of the variance in Academic achievement total students is accounted by the joint contribution of the these dimensions i.e. Active recreational orientation, Independence, Intelligence, Emotional Stability & Memory, and the remaining percentage of the variance is still to be accounted for.

Therefore, the second research hypothesis “each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute
in determining the criterion variable (i.e. academic achievement)”, is partially accepted.

**Obj. 3: Contributory role of various predictive variables on the Academic Achievement of science students.**

In order of magnitude of regression weights, out of the eight dimensions of Family Climate only one dimension i.e. Active recreational orientation played a prominent role in determining variation in Academic achievement of science students. The role of this dimension is found to be significant. From the regression coefficients, it was inferred that one unit increase in externality scores of Active recreational orientation, cause .14950 units increment in the Academic Achievement of science students.

Out of the six dimensions of Mental Health only two dimensions i.e. Intelligence and Emotional Stability were found important in determining the Academic achievement. The role of both the dimensions was found to be significant. One unit increase in Intelligence was found to cause, .30753 units increment in the academic achievement of science students.

But a negative regression coefficient was obtained for dimension Emotional stability. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Emotional Stability score, academic achievement of the science students decreases by .10048 units.

Out of the eight dimensions of Study Habits, only two dimensions i.e. Note taking and Memory were found important in determining the Academic achievement. The role of both the dimensions was found to be significant. One unit increase in Memory was found to cause, .08372 units increment in the Academic achievement of science students.

But a negative regression coefficient was obtained for the dimension Note taking. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Note taking score, Academic achievement of the science students decreases by .10606 units.

Here also variable Self-confidence does not play any significant role in influencing academic achievement of arts students.

The values of R (coefficient of multiple correlation) were found to be significant in case of Active recreational orientation (R=.2020), Intelligence (R=.3292) & Memory (R=1097), which reflects that significant multiple relationship exists between these
variables and criterion variable. But the value of R (coefficient of multiple
correlation) was not found significant in case of Emotional stability (R = -.0132) &
Note taking (R = -.0630) which reflects that there exists no relationship between
Emotional stability and academic achievement & Note taking and Academic
achievement.
The values of R² (coefficient of multiple determination) being .14, which shows that
about 14% of the variance in academic achievement science students is accounted by
the joint contribution of the these dimensions i.e. Active recreational orientation,
Intelligence, Emotional Stability, Memory & Note taking and the remaining
percentage of the variance is still to be accounted for.
Therefore, the third research hypothesis “each predictor variables (i.e. family
climate, mental health, study habits, and self confidence) will significantly contribute
in determining the criterion variable (i.e. academic achievement) for the students of
science stream”, is partially accepted.

Obj. 4: Contributory role of various predictive variables on the Academic
Achievement of arts students.
Out of the eight dimensions of Family Climate only two dimensions i.e. Control and
Expressiveness were found important in determining the academic achievement. The
role of both the variables was found to be significant. One unit increase in Control
was found to cause, .16761 units increment in the academic achievement of arts
students.
But a negative regression coefficient was obtained for Expressiveness variable. And
the value of the regression coefficient were indicative of the fact that with one unit
increment in the Expressiveness score, academic achievement of the arts students
decreases by .13805 units.
Out of the six dimensions of Mental Health only two dimensions i.e. Intelligence and
Autonomy were found prominent in determining variation in academic achievement
of arts students. From the regression coefficients it was inferred that one unit
increase in externality scores of Intelligence and Autonomy, cause only .14180 &
.13093 unit’s increment respectively in the Academic achievement of Arts students.
Out of the eight dimensions of Study Habits only one dimension i.e. Budgeting time
was found prominent in determining variation in academic achievement. The role of
Budgeting time was found to be significant. One unit increase in Budgeting time was
found to cause only, .19865 units increment in the academic achievement of arts students.

Here, also variable Self-confidence does not play any significant role in influencing academic achievement of Arts students.

The values of R (coefficient of multiple correlation) were found to be significant in case of Control (R=.2221), Intelligence (R=.2194), Autonomy (R=.1906) & Budgeting time (R=.2091), which reflects that significant multiple relationship exists between these variables and criterion variable. But the value of R (coefficient of multiple correlation) was not found significant in case of Expressiveness (R=.0763), which reflects that there exists negative & not significant relationship between Expressiveness and Academic achievement.

The values of R^2 (coefficient of multiple determination) being .14, which shows that about 14% of the variance in academic achievement of arts students is accounted by the joint contribution of these dimensions i.e. Control, Expressiveness, Intelligence, Autonomy & Budgeting time, and the remaining percentage of the variance is still to be accounted for.

Therefore, the forth research hypothesis “each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of arts stream”, is partially confirmed.

**Obj. 5- Prediction of the criterion variable on the basis of predictive variables in relation to science stream group.**

On the basis of the regression coefficients an ‘X1’ coefficient (constant), multiple regression equations was derived for science stream population, which is being presented as under.

In case of science respondents, value of ‘X1’ coefficient (constant), was 139.66, and values of regression coefficients were: .30753, .14950, -.10606, -.10048 and .08372 for M6, F6, P4, M1 & P6 respectively, the entire regression equation for science respondents thus reads-

\[
\text{Achievement} = .14950(X_2) + .20705(X_3) - .02234(X_4) + .0000(X_5) + 139.66
\]

In the equation \(X_1\) is the Academic Achievement predicted, while M6, F6, P4, M1 & P6 (intelligence, Active recreational orientation, Note taking, Emotional stability & Memory) are five dimensions of three predictive variables i.e. Family climate (b2),
Mental health (b3) and Study habits (b4), with the equation $X_1$ (academic achievement predicted) for every student can be predicted knowing his scores on the other variables.

**Obj. 6- Prediction of the criterion variable on the basis of predictive variables in relation to arts stream group.**

On the basis of the regression coefficients an ‘a’ coefficient (constant), multiple regression equations was derived for arts stream population, which is being presented as under.

In case of arts respondents value of $X_{fi}$ coefficient (constant), was 140.64, and values of regression coefficients were: .16761, .19865, .14180, -.13805, .13093 for F8, P1, M6, F2 & M3 respectively, the entire regression equation for arts respondents thus reads-

$$\text{Achievement (}\overline{X}_1\text{)} = .02956(X_2)+ .27273(X_3)+19865(X_4) +.0000(X_5)+ 140.64$$

In the equation $\overline{X}_1$ is the Academic Achievement predicted, while F8, P1, M6, F2 & M3 (Control, Budgeting time, Intelligence, Expressiveness, Autonomy) are five dimensions of three predictive variables i.e. Family climate (b2), Mental health (b3) and Study habits (b4), with the equation $X_1$ (academic achievement predicted) for every student can be predicted knowing his scores on the other variables.

**Obj. 7- Nature of the Distribution of Criterion and Predictive Variables Under Study**

**Nature of the Distribution of Criterion and Predictive Variables Under Study**

The scores of the criterion variable (academic achievement) and the four independent variables (Family climate, Mental health, Study habits and Self confidence) were found to be normally distributed in the sample. The curves of Family climate scores of arts students were found to be negatively skewed (-.086). This value suggests that the data is skewed to the left, and is approximately symmetric. The excess kurtosis (.117) is slightly greater than zero implies that distribution is slightly lepto-kurtic. For the students of science stream these curves were found to be negatively skewed (-.584). This suggests that data is skewed to the left, which implies that the distribution is moderately skewed. The excess kurtosis (.809) is slightly greater than zero implies that distribution is slightly lepto-kurtic.

The curves of Mental health scores of arts students were found to be negatively skewed (-.221). This value suggests that data is skewed to the left. The excess
Kurtosis (.673) is slightly greater than zero implies that distribution is slightly lepto-kurtic. For the students of science stream the negative value of skewness (-.515) suggests that data is skewed to the left. The excess kurtosis (.020) is slightly greater than zero implies that distribution is slightly lepto-kurtic.

The study habits scores of arts students were found to be negatively skewed (-.584). This value suggests that data is skewed to the left, and the distribution is moderately skewed. The excess kurtosis (.097) is slightly greater than zero implies that distribution is slightly lepto-kurtic. For the students of science stream the negative value of skewness (-.534) suggests that data is skewed to the left, and the distribution is moderately skewed. The excess kurtosis (.368) is greater than zero implies that distribution is lepto-kurtic.

The self confidence scores of arts students were found to be negatively skewed (-.193). This value suggests that data is skewed to the left, and the distribution is approximately symmetric. The excess kurtosis (.031) is slightly more than zero implies that distribution is lepto-kurtic. For the students of science stream the positive value of skewness (.053) suggests that data is skewed to the right, and the distribution is approximately symmetric. The excess kurtosis (-.293) is slightly less than zero implies that distribution is plati-kurtic.

The academic achievement scores of arts students were found to be positively skewed (.014). This value suggests that data is skewed to the right, and the distribution is approximately symmetric. The excess kurtosis (.492) is slightly more than zero implies that distribution is lepto-kurtic. This value implies reducing high probability for extreme values. For the students of science stream the negative value of skewness (-.004) suggests that data is ignorably skewed to the left, and the distribution is approximately symmetric. The excess kurtosis (-.119) is slightly less than zero implies that distribution is plati-kurtic.

1.15.2- FINDINGS RELATED TO THE SUBSIDIARY OBJECTIVES

Sub. Obj. 1- Comparison of the academic achievement of students of two faculties i.e., science and arts.

Significant difference was found between the respondents of science and arts stream on the variable of academic achievement. The calculated mean values are 263.68 and 233.57 for science and arts group respectively. And the obtained t-value is 8.30 which is found significant at 0.01 level. These values indicate that the academic...
achievement of science stream students is better than that of arts stream students. Therefore, the first subsidiary hypothesis is rejected.

Sub. Obj. 2- Comparison of the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of Science stream.

2(a)- Comparison of male and female respondents of science stream on the variable of Family climate.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor cohesion is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor expressiveness is higher than that of males.
- No significant difference was found between male and female respondents of science stream on the factor conflict.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor acceptance and caring is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor independence is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor active recreational orientation is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor organization is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor control and caring is higher than that of males.

Thus, we can say that a significant difference was found between male and female respondents of science stream. The mean value of females on the variable of Family Climate is higher than the mean value of males.
2(b)- Comparison of male and female respondents of science stream on the variable of Mental health.

- No significant difference was found between male and female respondents of science stream on the factor Emotional stability.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Adjustment is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Autonomy is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Security-insecurity is higher than that of males.
- No significant difference was found between male and female respondents of science stream on the factor Self concept.
- No significant difference was found between male and female respondents of science stream on the factor Intelligence.

Thus, we can say that significant difference was found between male and female respondents of science stream. The mean value of females on the variable of Mental health is higher than that of males.

2(c)- Comparison of male and female respondents of science stream on the variable of Study habits.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Budgeting time is higher than that of males.
- Significant difference was found between male and female respondents of science stream on factor Physical conditions for study. The mean value of females is higher than the mean value of males on factor Physical conditions for study.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Reading ability is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of males on factor Note taking is higher than that of females.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Factors in learning motivation is higher than that of males.
- Significant difference was found between male and female respondents of science stream on the factor Memory. The mean value of females on factor memory is higher than that of males.
- No significant difference was found between male and female respondents of science stream.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor health is higher than that of males.

Thus, we can say that significant difference was found between male and female respondents of science stream. The mean value of females on the variable of Study habits is higher than the mean value of males.

2(d)- Comparison of male and female respondents of science stream on the variable of Self confidence.
- Significant difference was found between male and female respondents of science stream on the factor Self confidence. The mean value of males is higher than the mean value of females.

2(e)- Comparison of male and female respondents of science stream on the variable of Academic achievement
Significant difference was found between male and female respondents of science stream. The mean value of females on factor Academic Achievement is higher than that of males. Therefore, the second subsidiary hypothesis is partially confirmed.

Sub. Obj. 3- Comparison of the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of Arts stream.

3(a)- Comparison of male and female respondents of arts stream on the variable of Family climate.
No significant difference was found between male and female respondents of arts stream on the factor Cohesion.
No significant difference was found between male and female respondents of arts stream on the factor Expressiveness.
No significant difference was found between male and female respondents of arts stream on the factor Conflict.

No significant difference was found between male and female respondents of arts stream on the factor Acceptance & Caring.

No significant difference was found between male and female respondents of arts stream on the factor Independence.

No significant difference was found between male and female respondents of arts stream on the factor Active recreational orientation.

Significant difference was found between male and female respondents of arts stream on the factor Organization. Males possess higher mean on factor Organization as compared to females.

No significant difference was found between male and female respondents of arts stream on the factor Control.

Thus, we can say that no significant difference was found between Male and Female respondents of Arts stream on the variable of Family climate.

3(b)- Comparison of male and female respondents of arts stream on the variable of Mental health.

Significant difference was found between male and female respondents of arts stream. The mean value of males on factor Emotional stability is higher than that of females.

Significant difference was found between male and female respondents of arts stream. The mean value of males on factor Adjustment is higher than that of females.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Autonomy is higher than that of males.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Security-insecurity is higher than that of males.

No significant difference was found between male and female respondents of arts stream on the factor Self concept.

No significant difference was found between male and female respondents of arts stream on the factor Intelligence.

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Thus, it can be concluded that there exists no significant difference between male and female respondents of Arts stream on the variable of Mental health.

3(c)- Comparison of male and female respondents of arts stream on the variable of Study habits.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Budgeting time is higher than that of males.

No significant difference was found between male and female respondents of arts stream on the factor Physical conditions for study.

No significant difference was found between male and female respondents of arts stream on the factor Reading ability.

No significant difference was found between male and female respondents of arts stream on the factor Note taking.

No significant difference was found between male and female respondents of arts stream on the factor Factors in learning motivation.

No significant difference was found between male and female respondents of arts stream on the factor Memory.

No significant difference was found between male and female respondents of arts stream on the factor Taking examinations.

No significant difference was found between male and female respondents of arts stream on the factor Health.

Thus, it can be concluded that there exists no significant difference between Male and Female respondents of Arts stream on the variable of Study habits.

3(d)- Comparison of male and female respondents of arts stream on the variable of Self confidence.

Significant difference was found between male and female respondents of arts stream. The mean value of females on the variable of Self confidence is higher than the mean value of males.

3(e) Comparison of male and female respondents of arts stream on the variable of Academic achievement.

Significant difference was found between male and female respondents of arts stream. The mean value of females on variable Academic achievement is higher than
the mean value of males. Therefore, the third subsidiary hypothesis is partially accepted.

1.16- SUGGESTIONS FOR FURTHER RESEARCH

Academic achievement is the central concept in the area of Educational Psychology. Therefore immense importance is placed on academic achievement and the factors involved therein. The present study has thrown some light and insight into the relationship between predictive variables viz. Family climate, Mental Health, Study habits and Self confidence and the criterion variable i.e. Academic achievement of science and arts stream students of senior secondary school. Some broad suggestions on the lines on which further research studies can be conducted are given below:

(i) The present investigation was carried out on 520 science stream and 345 arts stream students, studying in class XII of the intermediate colleges of Etawah and Aligarh city. Similar study can be carried out on a larger sample to get better and more authentic results.

(ii) A similar study can be carried out upon the students of different educational levels, different age groups, different educational streams and different levels of socio-economic status.

(iii) A comparative study of similar type may be conducted on rural and urban students.

(iv) The predictive variables used in this study viz. Family climate, Mental Health, Study habits and Self confidence can be studied in relation to other variables like creativity, aspiration levels, self-concept etc.

(v) The academic achievement of students can be studied in relation to factors other than Family climate, Mental Health, Study habits and Self confidence.

(vi) The most puzzling result of this study was the low contribution of self confidence in determining the academic achievement of the students. This has made the investigator curious to know about the causes underlying this state of affairs. The investigator is therefore of the opinion that it would be meaningful if further research in this area is conducted.

(vii) Research may be planned to develop projective tools for measuring the predictive variables undertaken in the present investigation.

(viii) The board of intermediate education offers also the agriculture, constructive, business streams of courses. The present research has attempted to study the
achievement in only science and arts streams. Prediction of achievement in other streams other than scientific and literary courses should also be made.

(ix) The present investigation is confined only to the students studying in intermediate classes (XII) of U.P. Board of Aligarh and Etawah Districts. Other districts or regions of the state should be included for further research.

(x) This study is confined only to govt. U.P. Board senior secondary school students; its findings cannot be applied to all the stages of education. Thus there is a need to generalize this study by taking a sample from all level of schooling to corroborate the findings of the study.
IMpact of family climate, mental health, study habits and self confidence on the academic achievement of senior secondary students

Thesis

Submitted for the award of the degree of

Doctor of Philosophy

in

Education

By

Sadaf Jafri

Under the Supervision of

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2011
DEDICATION

Dedicated
To
My Family

THESIS
CERTIFICATE

This is to certify that the work presented in this thesis entitled "Impact of Family Climate, Mental Health, Study Habits and Self Confidence on the Academic Achievement of Senior Secondary Students" has been carried out and completed under my supervision in the Department of Education, Aligarh Muslim University, Aligarh.

This work is an original contribution to existing knowledge of the subject. I recommended that Sadaf Jafri is allowed to submit the thesis for the award of the Degree of Doctor of Philosophy in Education.

Dr. (Mrs.) Sudha Kumari Sharma
Supervisor
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The errors and omissions that remain are mine.

(Sadaf Jafri)
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Chapter 1

Introduction

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1-INTRODUCTION

1.1 THE PROBLEM

The world is becoming more and more competitive and quality of performance is the key factor for personal progress. Excellence particularly, in academics and generally in all other areas has been seen as an important aspect. Parents desire that their children climb the ladder of performance to as high level as possible. This desire of a high level of achievement puts a lot of pressure on students, teachers, institutions and the educational system itself in general. In fact it appears as if the whole system of education revolves around academic achievement of the students, though various other outcomes are also expected from the system. Thus, a lot of time and efforts of the schools are utilised in helping students to achieve better in their scholastic endeavours. The importance of scholastic achievement has raised several important questions for educational researchers. What factors promote achievement of students? How far do the different factors contribute towards academic excellence? The answer to such questions is not easy because of intricate human personality. Hence, efforts have always been made to find out strategies and mechanism to improve excellence. Therefore, many factors have been hypothesised and researched by the researchers. They come out with different results, at time, complementing each other but at times contradicting each other.

A complete and comprehensive picture of academic achievement still seems to elude the researchers. The search, therefore, continues and educational researchers all over the world are still seeking a breakthrough in elucidating this phenomenon. In the present investigation it is presumed that students’ academic achievement is determined by Family climate, Mental health, Study habits and Self-confidence and this is the reason why, the aim of the present investigation was to study the “Impact of Family Climate, Mental Health, Study Habits and Self Confidence on the Academic Achievement of Senior Secondary Students.”
1.2 FAMILY CLIMATE AND ACADEMIC ACHIEVEMENT

"The family is the only socially recognised relation for child bearing and the essential agency for child rearing, socialization, and introducing the child to the culture of the society, thereby shaping the basic character structure of our culture and forming the child's personality." (Frank, 1948)

The infant begins his life under the fostering affection and care of his parents and other near and dear ones who are associated with the family. As he grows, he receives the first lesson of life in his family and tries to imbibe the habits, ideals and patterns of behaviour of his family members. In this way, family continuously influences him throughout his life. For the upbringing of the child, there is no better institution than the family. All the members of the family act and react and this process of give and take teaches many things to the child. In brief, each member of the family has an important role to influence the personality of the child.

It is in the family, where the foundation of a healthy or unhealthy personality is laid down. It is the family which satisfies most of the basic human needs physical, psychological and social. A child needs to have a sense of security not only physical but also emotional. He needs to be able to take for granted complete affection from all members of the family but also be able to express his love in various ways. Only then a sense of being wanted develops. Happy and harmonious relationship between children and parents and other members of the family contribute to the development of sense of security. Through this, child develops a sense of belongingness. He needs to have a place in the family structure and be recognised as an individual and must be respected. Child’s needs and feelings should neither be taken for granted or ignored.

Every child just like an adult needs recognition for his achievement and success from the members of his family. Praise, encouragement, attention and recognition need to be given truly and frequently. The family provides opportunities to the
child to experience success. The experience of success by itself immensely contributes to the growth and development of a child.

**Parenting**
- Style and relationships
- Monitoring

**Home – School Relationships**
- Communication
- Participation in school-based organizations and college outreach programs.

**Responsibility for Learning Outcomes**
- Homework Management
- Educational Expectations
- Encouragement for college

**Adolescent Outcomes**
- Higher Grades
- School Success
- Higher standardised test scores
- Higher self esteem
- Social competence
- Reduction in substance use
- Aspiration for college
- Enrolment in college
- Participation in out of school time programmes.

**Figure- 1.1 Processes of Family Involvement and Adolescent Outcomes**
*(Kreider et al, 2007)*

Parents with higher levels of education will have children who are better educated (Black, Devereux, and Salvanes, 2003; Oreopolous, Page, and Stevens, 2003). Since family climate and parent involvement has been shown to be a very important positive force in a child's life, one would expect that during Adolescence which is a critical and demanding phase the two most important environments in child development, home and school, would increase their collaboration. The opposite though is true: As children progress through school, parent involvement declines dramatically (Zill & Nord, 1994). To be successful in
school and in life, adolescents need trusting and caring relationships. They also need opportunities to form their own identities, engage in autonomous self-expression, and take part in challenging experiences that will develop their competence and self-esteem (Roeser, Eccles, & Sameroff, 2000). Adolescents desire autonomy, independence, and time with peers, but at the same time, they continue to rely on guidance from parents and other family members (Eccles, 1999). In brief, we can say that family involvement in academics and learning remains important in the adolescent years.

1.2.1 Parenting of Adolescents:
Parenting is the family involvement process that consists of parents’ attitudes, values, and practices in raising adolescents. The parenting styles used to engage adolescents, the quality of parent–child relationships, and the ways parents monitor their behavior collectively and uniquely influence adolescent achievement.

- Parenting style and parent–youth relationships. Warm, responsive parenting in adolescence is related to school success and positive social and emotional outcomes (Mandara, 2006). Adolescents with supportive parents exhibit higher rates of self-reliance, identity formation, school performance, and positive career-planning aspirations, as well as lower rates of depression and delinquency (Simpson, 2001). Youth who share trusting relationships with their parents—characterized by mutual and sustained bonds and open communication—have higher achievement and better physical health and are more likely to disclose information to their parents that will keep them out of trouble (Pong, Hao, & Gardner, 2005).

Different parenting styles are associated with different patterns of adolescent development. Many studies suggest that an authoritative style, which is responsive, warm, and firm but democratic, is associated with more positive educational outcomes than an authoritarian style, which is characterized by strictness and unilateral parental decision making.
(Steinberg, Bradford, & Dornbusch, 1996). The nature of the parent–youth relationship is not only important for individual student outcomes such as academic achievement, but also for participation in out-of-school time activities that can benefit youth academically, socially, and emotionally.

- **Monitoring**: Monitoring represents a parent's—or another close adult's—attempts to know what is going on in an adolescent's life. Monitoring of social activities, such as being aware of an adolescent's whereabouts, decreases school problems, substance use and delinquency, and promotes social competence and good grades (Rodriguez, 2002). By monitoring adolescents' academic and social lives, parents can prevent emerging problems from becoming big ones, foster identity achievement, and promote academic growth (Catsambis, 2001). Parental monitoring is also linked with youth's prosocial competency, fewer problem behaviors, and school adjustment and engagement; the latter refers to whether or not students pay attention in class, take school seriously, and want to do well in school (Rankin & Quane, 2002). Parental monitoring is most effective for academic motivation and achievement when adolescents perceive their parents as truly invested in their well-being and caring about them (Spera, 2006). However, the effect of parental monitoring might differ for girls and boys. For at-risk inner-city boys, school engagement was greater when parental monitoring was high, but for girls, school engagement depended on both high parental monitoring and high family cohesion (Annunziata, Hogue, Faw, & Liddell; 2006).

### 1.2.2 Home–School Relationships:

Home–school relationships are the formal and informal connections between the family and school. Home–school relationships seem to be just as important for adolescents as they are for younger children. Although home–school relationships tend to wane during or even before children reach adolescence, such relationships
continue to play an important role in youth outcomes. Aspects of home–school relationships include communicating with teachers and school personnel, attending school events, volunteering at school, and participating in parent–teacher organizations and leadership groups. The extent to which parents attend and volunteer at school functions, for example, has a consistent positive impact on adolescent academic achievement (Jeynes, 2005). There are several reasons why home–school relationships matter in middle and high school. Involvement and presence at school helps parents monitor their youth's academic and social progress, acquire information they need to make decisions about their children's academic future, and foster positive relationships with school staff (Hill & Taylor, 2004). Home–school relationships also increase student achievement by conveying to both teachers and students parents' beliefs about the importance of education and appropriate behaviors for adults in society (Cooper, Jackson, Nye, & Lindsay, 2001).

1.2.3 Responsibility for Learning Outcomes:

In adolescence, responsibility for learning is an aspect of parenting that places emphasis on homework management, educational expectations, and encouragement for college.

- **Homework management**- Parents are less likely to be directly involved in the homework content of middle and high school students as compared to younger children. Nonetheless, parental encouragement and concrete help in managing homework supports adolescents' learning, helping them to complete homework more accurately, so that when they study on their own, they can do so with fewer problem behaviors. Such help can also decrease conflict over homework and raise grades (Toney, Kelley, & Lanclos, 2003).

- **Educational expectations**- High parental expectations also improve student outcomes (Catsambis, 2001; Jeynes & Trusty, 2003). For instance, parental expectations for students' success and high expectations for achievement stand out as the most significant influences on high school seniors' achievement growth, high school credits completed, and enrollment in
extracurricular academic high school programs (Catsambis, 2001). High maternal expectations for educational achievement are directly associated with higher student maths and reading scores (Zhan, 2006). When adolescents perceive that their parents have high educational goals, they have more interest in school, greater academic self-regulation, and higher goal pursuits (Spera, 2006).

One explanation for why this aspect of responsibility for learning is so important is that parents' aspirations and expectations affect student aspirations and expectations of themselves, and this, in turn, affects students' achievement (Hong, & Ho, 2005, Patrikakou, 2004). For example, when students perceive that their parents value education, they are also more likely to feel competent and motivated in their schoolwork (Marchant, Paulson, & Rothlisberg, 2001). In fact, the academic encouragement parents provide is even more powerful than the support provided by friends (Sands, & Plunkett, 2005).

- **Encouragement for higher education**- Parents' constant encouragement and discussions about school and higher education also promote students' college aspirations and preparation (Catsambis, 2001; McCarron & Inkelas, 2006). When parents encourage college enrollment and youth perceive parents' interest in their school success, youth sign up for academic tracks in high school associated with college access, participate in out-of-school time programs that may prepare students for college environments and develop aspirations to attend college (Swail, Cabrera, & Lee, 2004).

Studies supporting the importance of parental involvement and the home environment have shown the positive influence of the family on students' achievement, and have identified characteristics and behaviours of parents and extended family members that support student learning (Rutter, 1990). The need for care and affection is critical throughout childhood and adolescence. Masten et al. (1990) noted that families:
nurture mastery, motivation and self-esteem as well as physical growth. Parents provide information, learning opportunities, behavioural models and connections to other resources. When these transactional protective processes are absent or are severely limited for prolonged periods, a child may be significantly handicapped in subsequent adaptation by low self-esteem, inadequate information or social know-how, a disinclination to learn or interact with the world, and a distrust of people as resources.

(Masten et al., 1990, p. 438)

Summarizing findings from a series of studies, Rutter (1990) further suggested that positive, intimate family relationships correlate with a positive self-concept and competence under stress. Research indicates that variables such as the physical environment of the home, the emotional and verbal responsiveness of the parents, parental expectations and their aspirations for the academic achievement of their children, and family cohesiveness and harmony play major roles in enhancing school learning.

Not only Family Climate, child’s academic achievement depends upon a complex of factors within the child like intelligence, frustration, stress, attitude etc. And factors external to child like teachers, curriculum, methods of teaching & evaluation & school environment etc.

1.3 MENTAL HEALTH AND ACADEMIC ACHIEVEMENT

According to Healthy People 2010 (a statement of national health objectives developed in part by the U.S. Department of Health and Human Services):

“Mental health is sometimes thought of as simply the absence of a mental illness but is actually much broader. Mental health is a state of successful mental functioning, resulting in productive activities, fulfilling relationships, and the ability to adapt to change and cope with adversity. Mental health is indispensable to personal well-being, family and interpersonal relationships, and one’s contribution to society.”
It has long been acknowledged that a variety of psychosocial and health problems affect learning and performance in profound ways. Such problems are exacerbated as youngsters internalize the debilitating effects of performing poorly at school and are punished for the misbehaviour that is a common correlate of school failure.

Due to these reasons schools have come under enormous pressure in recent years to demonstrate academic gains and to address deeply rooted disparities among students’ of different races, ethnic groups, and income levels. Clearly, boosting academic achievement should be a top priority. Over the past decade, research studies and reviews have consistently concluded that student health status and achievement is deeply connected. Evidence has been mounting that meeting the basic developmental needs of students — ensuring that they are safe, drug-free, healthy, and resilient — is central to improving their academic performance (Allensworth, Lawson, Nicholson, & Wyche, 1997; Marx, Wooley, & Northrup, 1998; Mitchell, 2000).

1.3.1 **Mental Health and Students**

The students enter the educational institution with certain explicit and implicit expectations from the school and schooling and are endowed with certain characteristics at the point of entry. Thus, the family environment, the personality make-up and other dispositions (e.g., aptitude, interest, abilities), assets and liabilities of a learner prepare him or her uniquely to interact with the school or college in healthy and productive or unhealthy and destructive ways. Considerable individual differences do exist in these characteristics. Health problems may arise due to incompatibility between the demands of the educational system and the characteristics of learners, or between learners’ expectations and the educational process, or both. Such incompatibilities are becoming more and more salient in the context of increasing competition in the job market, increased pressure for achievement from parents, uncertain future, and parental aspirations and their desire for compensation through their
progeny. Failure in examination, underachievement, and the resulting frustration are becoming prominent features of educational life at school as well as the higher educational levels, leading to a wide range of health problems having far reaching consequences for individual as well as societal well – being. This is reflected in a recent analysis of suicide among children and adolescents. Shah, Parkar, and Maheshwari, (1993) noted that failure in love affairs, failure in examination, and unemployment constitute the major causes of suicidal behavior.

The incidence of mental and emotional health issues continues to increase on college campuses and has more of a negative effect on student success than do physical health issues, students continue to engage in risk-taking behaviours that impact their physical health and may be a direct result of the increasing prevalence of mental and emotional health issues. Administrators are called upon daily to deal with a growing number of issues on campus that affect not only individual students’ health but the broader campus community as well. These issues include alcohol, tobacco and other drug use, violence, suicidal ideation, depression, stress, and eating disorders. While not every student who attends class on a college campus will be affected directly by these issues, most will be indirectly impacted by the consequences of such problems.

1.3.2 The Educational Process and Mental Health:
The functioning of the educational process itself may become a source of stress and strain and ill health for its participants. This partly may be due to lack of the necessary aptitude and attitude in the learner and the instructor or in the features of the educational process (e.g., course content, teaching method, interaction pattern, climate, rewards and punishment, evaluation system). The problems related to these features often-times vary with the developmental stage of the learner. For instance, the load of the school bag has been recently an issue of deep concern for the educationists (MHRD 1993). It has been felt that small children are
unnecessarily subjected to physical exertion by asking them to carry greater weight, both mental and physical, than what they can manage. Teaching strategies and behavioral styles of teachers are also potential source of stress and strain if they do not respond adequately and effectively to the needs of the children. This point has been effectively demonstrated in a study by Roy, Sinha, and Hassan (1994) who found that under the nurturant task style of headship, the socio emotional climate was better than under the democratic and authoritarian styles. The students showed more mischievous activities under the authoritarian style and were more studious under the nurturant task style. In addition, the mode of classroom interaction, the social milieu and the physical environment of the institution play an important role in healthy regulation of the teaching process.

The health problems in the educational setting are multiplicative in nature. The components described above do not operate in isolation. Often times the different features reinforce each other and make the adaptive demands more complex. As a study by Verma and Gupta (1990) has shown, the academic stress among adolescents was caused chiefly by the examination system, the burden of homework, and the attitude of parents and teachers. Their stress symptoms encompassed all the three areas, i.e., physiological, psychological and behavioural. A representative study that followed adolescents longitudinally found that approximately 15 percent of middle and high school students reported recurrent health problems and that these self-reported health problems were associated with school failure (Needham, Crosnoe, & Muller 2003). This association between physical health and academic progress was largely explained by the greater likelihood of adolescents with health problems to experience absenteeism, trouble with homework, and emotional distress. Evidence suggests that students in elementary school through high school perform better academically when they are physically active. Studies have demonstrated that physical activity is connected to physiological aspects of cognitive functioning (Sallis et al. 1999; Shephard 1997). Other research suggests that physical exercise increases neural connections and cerebral blood flow (Jensen 1998). Physical activity can also increase academic
performance indirectly by improving emotional health, self-esteem, and alertness—all of which are related to improved academic performance (Tremblay et al., 1998). It also is associated with nutrient intake, which in turn can improve student learning.

Data from social surveys indicate that youths who engage in moderate to high levels of physical activity tend to perform better in school (Dwyer, Sallis, Blizzard, Lazarus, & Dean 2001; Field, Diego, & Sanders 2001; Pate, Heath, Dowda, & Trost, 1996). More significantly, several experimental studies examining the academic consequences of participation in physical education programs have found that increases in physical education time concomitant with reductions in academic instruction time have favourable effects on students’ academic achievement (Dwyer, Coonan, Worsley, & Leitch 1979; Shephard et al. 1984; Sallis et al. 1999; Shephard 1997; Tremblay et al. 1998). These studies prove that schools that attempt to increase academic instructional time at the expense of physical education time will experience reductions in student learning and academic performance.

1.3.3 Criteria for mentally healthy person-
- Adaptability and resident mind i.e. individuals who are adaptable to the changing conditions of his environment receptive and not rigid in their behavior.
- Socially adaptable- Mentally healthy person is socially awakened, he participates in social activities and his personality functions properly under strains and stress of emotional disturbance.
- Emotionally satisfied- The emotions of mentally healthy person are well trained and controlled; he is free from persistent emotional tension in his life.
- Desires are in harmony with socially approved goals i.e. the mentally healthy person does not indulge in anti social activities; his goals of life are
in accordance with society. He fulfills his objectives in harmony with other people.

- The mentally healthy person has insight into his conduct. He self evaluates his behaviour and improves his conduct on the basis of self examination.

- They are enthusiastic and reasonable, and have good habit and also they are not easily annoyed. A mentally healthy person has his own philosophy of life and he develops definite attitudes towards value of life.

Healthy children have a desire to acquire more and more information and skills that will give them better control over their environment. Recent research studies have proved that learning is not the activity of single, but is bound up with total personality of learner. Mental health is an essential to the learning process as intelligence. In short we can say that mental health is an inseparable part of education. For education sound mental health is the first condition. If children are not in sound mental health, they cannot concentrate in learning and retain knowledge received in the classroom. Therefore learning is dependent on sound Mental health.

1.4 STUDY HABITS AND ACADEMIC ACHIEVEMENT

Learning is highly complex process in education. Different psychologists have tried to explain this in their own ways. The Oxford English Dictionary (2007) defines “Learning” as knowledge got by study; to get knowledge by study. Longman Dictionary of Contemporary English (2004) Defines “Learning” as knowledge gained through reading and study. On the other side “Habit” is defined as something that you do regularly or usually, often without thinking about it because you have done it so many times before”.

Above definitions suggests that learning is the end point of study. In other words we can say that, learning involves the development of proper study habits and skills and habits are not innate abilities like intelligence, but they are generally formulated, acquired, cultivated and fixed by repeated efforts.
Poor habits of study not only retard school progress but develop frustration, destroy initiative and confidence and make prominent the feeling of worthlessness towards himself and the subject of study whereas effective methods ensure success, happiness and sense of accomplishment — Smith, Sammuel and Field (1948).

Study habits are habitual way of exercising and practicing the abilities for learning. These are techniques, which a student employs to go about his or her studies, which are consistent and have become stereotyped as a result of long application or practice. It is one of the major factor effecting academic achievement of the students. Psychologists and educationists believe that good study habits are the gateway of knowledge and wisdom. It is one of the effective means of systematic development of knowledge, language and personality of the individual. There are many factors like concentration, motivation, keen observation, adjustment in school, networking etc. which influence the proper development of study habits.

According to Husen and others in the International Encyclopaedia of Education (1994) defines the term study habit as “study habitats and strategies refer to activities carried out by a learner during the learning process for the purpose of improving learning”.

Rao (1965) is of the opinion that a well formed study habit furnishes its own source of motivation. In fact a good study habit gives the learner a chance to study more. More study gives better learning performance in schools that again motivates the learner to study more which in turn results in improvement in the performance level. Thus, Study Habits not only help in promotion of better academic work but also influences students’ morale and sense of satisfaction.

Thus, it can be concluded that certain mechanical procedures and abilities are significant contributors to achievement in the various fields and dimensions of learning. Study habit of the students is the one and probably a very important predictor of high achievement. Efficient learning depends upon the development

The task of learning is not related to the teacher alone but it also requires many things on the part of the learners, like his ability to schedule his time, the plan of the study, concentration, note taking, mental review, mass and part learning etc. and therefore, “Study is self-directed education” but this does not mean that the student should be left entirely to his own devices in his search for knowledge.

According to Secondary Education Commission (1952-53):

“"The underachievers need some form of special help or remedial education and guidance to overcome their difficulties and achieve up to the maximum of their potential. To plan remedial education and guidance programme for underachievers we need to know about the factors related to and their possible contribution towards underachievement."”

Therefore, study is a complex operation and hence educators tend to regard study habits and attitudes as important variables in helping to determine academic success or failure, because we have already observed study is the process by which knowledge is acquired. Study habits might be the result of several factors affecting the individual. Good and poor study habits may be the result of a set of common factors.

1.5 SELF CONFIDENCE AND ACADEMIC ACHIEVEMENT

Life is full of challenges and surprises and it is intelligence and self-confidence which prepares us for facing these challenges and accepting these surprises as successfully as possible. Self-Confidence is the conviction that one is generally capable of producing desired results. Self-confidence is related with success. A confident attitude, a belief and a faith in oneself and one’s ideas are essential in getting ahead but it should also be remembered that self-confidence grows with
success that means it is desirable to develop those qualities within oneself that makes for success. It has been found that the child who perceives himself to be able, confident, adequate and a person of worth has more energy to spend on academic achievement and will use his intelligence to be utmost, on the other hand, the child who perceives himself as worthless incapable and less confident may not come up to the optimum level of attainment.

Self-confidence is an individual’s characteristic (a self-construct) which enables a person to have a positive or realistic view of themselves or situations that they are in (Sieler, 1998). It refers to a person’s expectation of his or her ability to achieve a goal in a given situation and is a very influential factor in ensuring a person’s potential is realised (Stevens, 2005). In other words, a person with a high self-confidence has a realistic view of themselves and their capability which makes them persistence in their endeavours. According to Neill (2005), self-esteem and self-efficacy in combination is what constitute self-confidence. Neill (2005) defines self-esteem as a general feeling of self-worth or self value. A person with low self-esteem believes that he or she is worthless or inadequate while a person who has high self-esteem believes otherwise. Self-efficacy on the other hand is the belief in one’s capacity to succeed at tasks.

Self-efficacy is defined as the levels of confidence individuals have in their ability to execute certain courses of action or achieve specific outcomes (Bandura, 1977, 1982, 1997). The strength of people’s firm belief in their own effectiveness is likely to affect whether they will even try to cope with given situation. At this initial level, perceived self-efficacy influences choices of behavioural actions. The latest research of Bandura (1999) showed that the stronger the belief in self-efficacy, the better the subsequent performance. Their results also indicated that causal attributions could influence achievements strivings; however, the effect is mediated almost entirely through changes in perceived self-efficacy (Weiner & Graham, 1999). The stronger the self-efficacy, the more active the effort, and that results in better performance. This positive link between self-efficacy and performance is widely reported and much research has been conducted in a range
of different settings (Panjares, 1996; Sadri & Robertson, 1993; Stajkovic & Luthans, 1998), although a number of conditions appear to influence the effect size. Thus, by giving appropriate skills and adequate incentives, self efficacy and performance can be increased.

1.5.1 Bandura’s self-efficacy theory:
Self-efficacy is a situation specific self-confidence (Bandura, 1986), a belief that one is competent to handle the task at hand. People with high self-efficacy - that is, those who believe they can perform well - are more likely to view difficult tasks as something to be mastered rather than something to be avoided. According to the theory, self-efficacy is enhanced by four factors: enactive attainment (successful performances), vicarious experiences, verbal persuasion, and psychological state (emotional arousal).

This means that:
- Successful past experiences lead to higher mastery expectations, while failures lower them
- Observing other people perform activities successfully can lead to the observers into believing that they also can improve their performance as they learn from watching others.
- People can be persuaded through suggestion into believing that they can cope successfully with specific tasks
- The individual's emotional states influence self-efficacy judgments with respect to specific tasks. Emotional state such as anxiety can lead to negative judgments of one's ability to complete a task

In education, Vrugt, Lanereis and Hoogstraten (1997) introduce the concept of academic self-confidence which refers to a person’s self-confidence in the context of academic achievement which is different from the general self-confidence. Academic self-confidence is easily influenced by situational elements differentiating it from the general self-confidence which is not easily influenced by situational elements Zokina and Nalbone (2003).
1.5.2- **Role of parents in developing self confidence:**

Many factors affect the development of self-confidence. Parents' attitudes are crucial to the way children feel about themselves, particularly in their early years. When parents provide acceptance, children receive a solid foundation for good feelings about themselves. If one or both parents are excessively critical or demanding, or if they are overprotective and discourage moves toward independence, children may come to believe they are incapable, inadequate, or inferior.

However, if parents encourage a child’s moves toward self-reliance and they are not overly critical when the child makes mistakes, the child will learn to accept herself, and will be on the way to developing self-confidence.

A lack of self-confidence is not necessarily related to a lack of ability. A lack of self-confidence is often the result of focusing too strongly on the unrealistic expectations of others, especially parents and friends. The influence of friends can be more powerful than those of parents in shaping the feelings about one's self.

1.5.3- **Characteristics of a Self-Confident Personality:**

The following are the nine characteristic traits and behaviours of a self confident person (Given by Oldham & Morris, 1995 in their book, The New Personality Self-Portrait).

- **Self-regard.** Self-Confident individuals believe in themselves and in their abilities. They have no doubt that they are unique and special and that there is a reason for their being on this planet.
- **The red carpet.** They expect others to treat them well at all times.
- **Ambition.** Self-Confident people are unabashedly open about their aspirations and possibilities.
- **Politics.** They are able to take advantage of the strengths and abilities of other people in order to achieve their goals, and they are shrewd in their dealings with others.

- **Competition.** They are able competitors, they love getting to the top, and they enjoy staying there.

- **Stature.** They identify with people of high rank and status.

- **Dreams.** Self-Confident individuals are able to visualize themselves as the hero, the star, the best in their role, or the most accomplished in their field.

- **Self-awareness.** These individuals have a keen awareness of their thoughts and feelings and their overall inner state of being.

- **Poise.** People with the Self-Confident personality style accept compliments, praise, and admiration gracefully and with self-possession.

Now, it is important to find out how self-confidence and other factors taken in this research would influence academic achievement. If a positive relationship is found between these variables (family climate, mental health, study habits and self-confidence) and academic achievement, it will be of immense importance to the most important social institutions concerned with the education of child – family and school. Thus family and teachers must be helped to realize the importance of positive family & school environment, mental health, good study habits and role of confidence for the academic excellence of its younger members. Also, what measures one can undertake to improve academic achievement.

1.6 **STATEMENT OF THE PROBLEM**

In this investigation researcher aimed to study the “Impact of Family Climate, Mental Health, Study Habits and Self Confidence on the Academic Achievement of Senior Secondary Students.”
1.7 DEFINITION OF THE TERMS USED

1.7.1 FAMILY CLIMATE:


New Websters Dictionary (2004) defines ‘Climate or Environment’ as the aggregate of all external and internal conditions affecting the existence, growth, and welfare of organisms.

The family climate refers to the physical, social and emotional surroundings that the child focuses in a family. In fact, family climate refers to the “sum total of the conditions which surrounds man” from the very beginning of his life.

On the basis of various definitions many sub dimensions have evolved of Family climate. Therefore, Family climate can be defined in terms of sub dimensions like: Cohesion, Expressiveness, Conflict, Acceptance & caring (Relationship dimensions), Independence, Active recreational orientation (Personal growth dimensions), Organization, Control (System maintenance dimensions).

Family Climate in this study has been taken as the total scores secured by the students on various dimensions of FES (Family Environment Scale) developed by Bhatia & Chadha in the year 1993.

1.7.2 MENTAL HEALTH:

“Mental Health is the ability to adjust satisfactorily to the various strains of the environment; we meet in life and mental hygiene as the means we take to assure this adjustment.”

(Cutts and Moslay, 1941)

“Mentally healthy person is one who is happy, lives peacefully with his neighbours, makes his children healthy citizens and after fulfilling such basic responsibilities is still empowered with sufficient strength to serve the cause of the society in any way.”

(Lewkan, 1949)
“Mental Health is the full and harmonious functioning of the whole personality”.

(Hadfield. 1952)

Mental health is described by WHO (2005) as:

“a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.”

On the basis of various definitions many sub dimensions have evolved of Mental health. Therefore Mental health can be defined in terms of sub dimensions like: Emotional stability, Overall adjustment, Autonomy, Security insecurity, Self concept and Intelligence.

Mental Health in this study has been taken as the total scores secured by the students on various dimensions of MHB (Mental Health Battery) developed by Singh & Gupta in the year 2008.

1.7.3 STUDY HABITS:

Dictionary of education, Good (1973) defines ‘Study Habits’ as the basic features involved in the application of the mind to a problem or subject; the characteristic pattern which an individual follows in learning about things and people.

Websters Dictionary (2004) defines ‘Study’ as ‘to apply the mind in acquiring knowledge’ and ‘Habit’ as ‘a tendency toward an action or condition, which by repetition has become spontaneous.’

Study habits mean the habits that an individual might have formed with respect to his learning activities. Study Habits in this study has been taken as the total scores secured by the students on various dimensions of SHI (Study Habits Inventory) developed by Palsane & Sharma in the year 2003.
On the basis of various definitions many sub dimensions have evolved of Study habits. Therefore Study habits can be defined in terms of sub dimensions like: Reading habits, Learning technique, Memory, Time schedule, Physical conditions for study, Examination, Evaluation etc.

1.7.4 SELF CONFIDENCE:

Dictionary of education, Good (1973) defines “Self confidence as faith in one’s own abilities.”

New Websters Dictionary (2004) defines self confidence as “confidence in oneself or on one’s own unaided powers, judgement, etc.”

Thus, a self confident kind of person is a man who strikes us, very sure of himself, he is relatively unworried, is not hypersensitive and is usually in good spirits. Self-confident people trust their own abilities, have a general sense of control over their lives, and believe that, within reason, they will be able to do what they want to do.

Self Confidence in this study has been taken as the total scores secured by the students in SCI (Self Confidence Inventory) developed by Agnihotri in the year 1993.

1.7.5 ACADEMIC ACHIEVEMENT:

Achievement is defined as “the measure of what and how much an individual has learnt. It may be the quality or quantity of learning attained by an individual in a subject of study after a period of instruction.”

According to Eyeseneck & Arnold, in the Encyclopaedia of Psychology (1972), Achievement is defined as “General term for the successful attainment of goal requiring certain effort”.

The dictionary of Education, Good (1973), defines Academic achievement as accomplishment or proficiency of performance in a given skill or body of knowledge.
Thus, Academic achievement is an end product of learning whose level and performance are affected by various conditions existing at the time of learning and its use.

Academic achievement in this study has been taken as the total marks secured by the students in their XII class board examinations.

1.7.6 SENIOR SECONDARY STUDENTS:

Senior secondary students are those students who are studying in class XI and XII of secondary schools.

1.8 JUSTIFICATION AND SIGNIFICANCE OF THE PROBLEM:

Forecasting performance of the school or college students is a problem of obvious importance in education. Educationists, researchers and guidance workers always look for an instrument useful in predicting academic achievement, such an instrument is helpful in identifying the students who, if provided with necessary guidance, can be developed to the maximum heights. Many attempts have been made in this direction using intelligence test scores and other intellective factors as predictors of academic success but were found to be of very limited use. Today, there is a growing realization that other factors like sociological, non-cognitive, cognitive, & environmental factors must be assessed in order to diminish the margin error in the prediction of academic achievement. Therefore, the present study makes a humble attempt to trace the impact of Family climate, Mental health, Study habits and Self confidence on the Academic achievement of senior secondary students.

A perusal of the related literature further reveals that only countable number of studies had been conducted in India on U.P. Board students related to the dimensions undertaken in the present study viz., Family Climate, Mental Health, Study Habits and Self Confidence. However, no researcher has focused on the relationship of academic achievement and the above mentioned variables. Also no one has attempted to use these variables as possible predictive indices of academic
achievement at senior secondary stage of education.

The present study is therefore, justified on the grounds that it is the first plan of its kind, designed to explore the relationship of four independent factors viz., Family Climate, Mental Health, Study Habits and Self Confidence to Academic Achievement which might significantly contribute to the prediction of the academic achievement of the senior secondary stage.

The present study will be useful for educators in general and teachers in particular because the knowledge of the relationship of these factors under study will enable the educators and teachers to plan their educational programme keeping in view these factors. The present study will provide an insight to the parents to deal effectively with their children so that they will be able to develop an understanding of the importance of family climate, mental health, study habits & self confidence. This understanding will also assist the teachers to create a more affectionate, harmonious, warm and democratic emotional atmosphere in inculcating good study habits at school. And also proper training and guidance may be given to the children accordingly. Moreover, on the basis of the findings of the study, teachers may help the students to modify their behaviour with regard to Familial factors, Mental health related problems, Study habits and Self confidence.

Educational administrators, curriculum planners, counsellors and guidance workers may also be benefitted by the results of this study. The information yielded by this work may be of great practical use for the purpose of training programme of teachers and guidance personnels. Findings of the study may be utilized at the time of admission of the students in various academic and professional courses of study. Researchers may also discover in it new challenges or new domains for further exploration. The present study is thus envisaged to serve a multidimensional cause in the vast field of education.

1.9 OBJECTIVES OF THE STUDY

1. To study the relationship between criterion variable (i.e. academic achievement) and various predictor variables that is (family climate, mental
health, study habits and self confidence).

2. To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement).

3. To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement) for the students of science stream.

4. To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement) for the arts stream group.

5. To establish regression equation for the prediction of the criterion variable in relation to science stream group.

6. To establish regression equation for the prediction of criterion variable in relation to arts stream group.

7. To study the nature of the distribution of scores of criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence).

1.10 SUBSIDIARY OBJECTIVES

Following subsidiary objectives have been formulated for the present study-

1. To compare the academic achievement of students of two faculties that is science and arts.

2. To compare the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of science stream group.

3. To compare the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of arts stream.
1.11 HYPOTHESES

The following hypotheses are undertaken in this investigation:

1. There is significant relationship between criterion variable (i.e. academic achievement) and various predictor variables (i.e. family climate, mental health, study habits and self confidence).
2. Each predictor variables (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement).
3. Each predictor variable (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of science stream.
4. Each predictor variables (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of arts group.

1.12 SUBSIDIARY HYPOTHESES

1. There will be no statistically significant difference in the mean of the academic achievement of students of two faculties i.e. science and arts.
2. There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence).
3. There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence).

1.13 DELIMITATIONS

1. As India is a vast country it is difficult to cover the entire geographical area in a single study like the proposed one. Therefore, the sample has been selected from
U.P. Board Schools of Aligarh and Etawah city.

2. The study is conducted only on the XII th class Senior Secondary Students of Science and Arts streams.

1.14 PROCEDURE IN OUTLINE

The investigator in order to arrive at meaningful generalizations selected the representative sample of the population under study. Then, the investigator, selected the suitable and appropriate tools for measuring family climate, mental health, study habits and self confidence, keeping in view the age and grade levels of the students. For measuring variable Academic achievement, marks obtained by the respondents in XII class (of U.P Board) were obtained from the school records. The investigator sought the permission from the chairperson of the department and then approached different schools selected for the study. After seeking approval from the concerned heads of the institutions, the researcher approached the subjects and explained them the instructions provided in the manuals. The investigator after establishing rapport with the subjects administered the above mentioned tools. The responses to items of each of the four tools were scored as per the method recommended by the constructors of the tests. Thus, the obtained scores were transformed into tabular form for the purpose of analysis. Analysis of the data was done with the help of suitable statistical techniques. The whole procedure in outline is given in the chart as under:
Representative sample of 865 students studying in various senior secondary schools of U.P. Board, Allahabad were selected from two districts of U.P. viz. Etawah and Aligarh.

Appropriate tools to measure Family climate, Mental health, Study habits & Self confidence were employed.

Marks obtained by the students in their XII class board examinations were recorded from the school.

Administered the tools on the students.

Response provided by 865 subjects were scored and tabulated.

Appropriate statistical techniques were employed to analyse the data.
Chapter 2

Review of the Related Literature

2.1. Studies related to Family climate
2.2. Studies related to Mental health
2.3. Studies related to Study habits
2.4. Studies related to Self confidence
2.5. Studies related to Academic achievement
2.6. Conclusion of Reviews
II- REVIEW OF RELATED LITERATURE

An essential part of the research is the review of related literature, which serves to place the current study in a chronological as well as a theoretical context. The review of related studies involves locating, studying and evaluating reports of relevant researches and articles, published research abstracts, journals, encyclopaedias etc. The investigator needs to acquire up-to-date information about what has been thought and done in a particular area. The researcher draws maximum benefits from the previous investigations, utilises the previous findings, takes many hints from designs and procedures of previous researches and formulates an outline for future research. The review of related studies provides the insight into the methods, measures etc., employed by others in the particular area. It provides ideas, theories, explanations, hypotheses of research, valuable in formulating and studying the problem at hand. It also furnishes indispensable suggestions related to the problem and already employed techniques to the researcher. Unless it is learnt what others have done and still remains to be done in the area, one can’t develop a research project and could contribute to furthering knowledge in the field. In fact, the review of related literature serves multiple purposes and is essential to well designed research study. In the process of reviewing the literature, the investigator is alert for finding out research approaches in the area that have proved to be sterile. However, for reviewing the related literature in an objective and scientific manner, the present investigator has followed a flowchart of related activities in the review of related literature presented by Weirsma (1991), the flowchart is as under.
Fig. 2.1 Flowchart of related activities in the review of related literature presented by (Wiersma, 1991)

1. Identify descriptors relevant to the problem
2. Identify sources such as appropriate index or retrieval system
3. Identify titles of potentially relevant reports
4. Locate copies of reports to be reviewed
5. Delete non-relevant reports
6. Separate the reports in order or into categories of relevance or importance (optional)
7. Prepare abstracts or summaries for the reports containing relevant information
8. Write the reviews of the related Literature
9. Prepare a complete Bibliography
The investigator has quoted the studies in this chapter that have direct or indirect relevance with the present study. The studies quoted in this chapter have been classified as follows:-

2.1 STUDIES RELATED TO FAMILY CLIMATE:

Jain (1965) conducted an experimental study of relationship between home environment and scholastic achievement. The study was designed to investigate experimentally into the influence of home environment as a correlate of scholastic achievement with reference to particular school subjects. 504 students of age-group thirteen plus to fifteen plus of both sexes were taken from higher secondary schools of Allahabad. The home environment questionnaire with three sections physical, and topographical, emotional and socio-economic was prepared. Some of the important findings were-

1) The influence of home environment on achievement is positive and significant.
2) Out of three factors of home environment, the influence of physical and topographical factor was greatest on school achievement followed by emotional tone when no control was applied, but when controls were applied, the effect of emotional tone of the home environment became the greatest, followed by physical conditions.
3) Socio-economic conditions seem to have no relationship with school achievement.

Ojha (1973) explored the relationship of achievement motivation with parental behaviour and certain socio economic variables viz. social class, father’s occupation, family size, parental separation etc. Chi- square, correlation, t- test and analysis of variance technique were employed. Some of the major findings were that paternal permissiveness, mother’s love were positively related to n-ach, whereas mother’s rejection, paternal restriction were negatively related. Relationship of n-ach with family size and social class was inverse and
curvilinear respectively and separation from parents had an adverse effect on son’s performance.

Khan (1976) conducted this study on a sample of 670 children (255 deprived and 415 undeprived). Of the 255 deprived children, 200 were males on the other hand, among the undeprived children, 300 were males. Their age ranged from 13 to 16 years. The sample was selected through the stratified cluster sampling method. Data was collected with the help of standardised tests, and academic achievement was recorded from the school records. Data was analysed with the help of the t-test.

The findings were:

1. There was a significant differential effect of parental deprivation on the level of adjustment.
2. Deprivation was affected by a variety of factors, viz., age at the time of separation, quality of maternal relationship during and after separation and other personality factors. Adjustment involved relating the individual most effectively to society; at the same time, society provided the means of realising the individual’s potential for perceiving, feeling, thinking and creative activity including the changing of society itself. The majority of the deprived children were emotionally well adjusted.
3. There was no significant difference in respect of levels of adjustment between the partially and fully deprived children.
4. Parental deprivation had a differential effect on the achievement of students.
5. There was a significant difference in respect of adjustment and general mental ability scores between partially deprived and undeprived children.
6. Children who belonged to the rural community were less adjusted in comparison to the children who were located in urban areas.
7. There was a significant difference between the adjustment scores of the rural non-deprived children and that of the urban deprived group children.

8. Female students had superior adjustment as compared to males.

9. There was a significant difference in respect of total adjustment scores amongst orphan and tribal, and orphan and parental group children.

Pyari (1980) attempted to study the feeling of security, family attachment and values of adolescent girls in relation to their educational achievement. The survey method was used on a sample drawn from the city of Agra in the age group of 16 to 21 years. The sample was drawn in accordance with the purposive non-probability technique.

The study yielded the following findings-

(i) The relationship between the security-insecurity scores and educational achievement scores was negative.

(ii) The relationship between the family attachment scores and the educational achievement scores was negative.

(iii) The relationship between the security-insecurity scores and the family attachment scores was positive.

(iv) As regards the relationship between the achievement scores and different values, the theoretical, aesthetic, social and religious values were positively related to educational achievement while the economic and political values were negatively related with the educational-achievement.

(v) The relationship between the security-insecurity scores and different values was very low.

(vi) The relationship between family attachment scores and different value scores was insignificant.
(vii) There was a definite pattern of values among adolescent girls. They gave first preference to social, second to political and thereafter to theoretical, economic, aesthetic and religious values.

*Kulshreshta (1981)* tried to study the factors related to differential patterns of achievement among bright students. One of the objectives of the study was to find out how parental attitudes, family background and basic skills influenced academic achievement of bright students. Among other things it was found that under achievement was directly related with the parent’s care concerning collecting fees and other facilities for these children and secondly, under achievers lived in more noisy houses.

*Chopra (1982)* designed a study related to this area in order to identify the variables having positive relationship with academic achievement and to find out the relative importance of intelligence and various non-intelligence variables in determining academic achievement.

A random stratified sample consisting of 309 girls and 598 boys (age around 15 to 16 years) studying in class X of twelve boys’ and five girls’ school was selected. Marks of high school examination were taken as the criterion of academic achievement. Results indicate that home adjustment was more clearly related to academic achievement, than emotional health and social adjustment.

*Agarwal (1986)* designed this study to understand the effect of parental encouragement upon educational development of secondary school students. The sample consisted of 1000 students studying in 24 higher secondary schools in the Garhwal region. Marks obtained by the students in four previous examinations were taken as the criterion of academic development. For measurement of parental development the investigator developed a Parental Encouragement Scale.
The main findings of the study were:

1. The high achieving group had been getting higher parental encouragement.
2. The high achieving girls got greater parental encouragement in the urban areas but in the rural areas the middle achieving group received more parental encouragement.
3. The urban boys received greater parental encouragement than the rural ones.
4. The urban girls got greater parental encouragement than the rural ones.
5. The girls in general received greater parental encouragement than the boys.
6. There were differences in the amount of parental achievement received by the students in different regions.
7. The high achieving groups of boys and girls with the mother as well as the father absent received more encouragement than the other boys and girls. Sex differences in the encouragement of either parental absence could not be identified.

Coleman (1988) examined the impact of changes in family status on the relations between family processes and academic achievement. He uses, as one example, family structure as a means of strengthening social capital in the family. Family structure deals with the number of parents present in the family. His work focuses on the absence of a family member that creates a structural deficit that leads to less social capital for children to draw on and use to support their development. In this framework, in comparison to two- parent families, one- parent households are seen as having less time available to invest in parent- child interactions. Indeed, there is considerable evidence that indicates children in single- parent households receive less encouragement and less assistance with homework than children in two- parent homes (e.g., Amato, 1987; Astone & Mclanahan, 1991; Dombusch et al., 1985; Nock, 1988).
**Zahir (1988)** designed this investigation to study the relationship between perceived maternal behaviour and personality as well as scholastic achievement of adolescents. The sample for the study consisted of 624 adolescents randomly selected from government approved higher secondary schools in Lucknow.

The main findings of the study were:

1. Maternal acceptance helped in the development of dominance, self-confidence and tendency of extraversion.
2. Neuroticism was developed by the mother’s detachment.
3. Child-centredness made adolescents more sociable and introvert.
4. Enforcement did not develop independence.
5. Maternal acceptance promoted scholastic achievement.
6. The mother’s negative attitude towards the child had an adverse effect on the child’s academic performance.

**Demo and Acock (1996)** used the National Survey of Family and Households in the United States to examine the differences between intact first married families, divorced single-parent families, step families, and continuously single mother-headed families regarding young adolescents socio-emotional adjustment, academic performance, and global well-being. The first marriage intact homes had children who performed the best across all indicators of well being and school success. The continuously single mother headed families had the lowest income and slightly less academically successful children. The divorced and step families tended to report more conflict and disagreement.

**Fuligni (1997)** examined the impact of family background, parental attitudes, peer support, and adolescents’ own attitudes and behaviours on the academic achievement of students from immigrant families with Latino, East Asian, Filipino, and European backgrounds. Results indicated that first and second generation students received higher grades in mathematics and English than their peers from native families. Only a small portion of their success could be attributed to their socio-economic background; a more significant correlate of
their achievement was a strong emphasis on education that was shared by the students, their parents, and their peers.

*Portes et al. (1998)* examined the influence of parents’ assistance on middle-school students’ problem solving ability and academic achievement. The researchers found that a cooperative problem solving style of interaction between parent and child was significantly correlated with children’s intellectual performance in school.

*Holmbeck et al. (2001)* aims to study coping socialization longitudinally by examining reported and observed family environment and parenting variables in relation to children's problem-focused coping in a sample of 68 families of preadolescents with spina bifida and 68 matched able-bodied comparison families. Family environment and parenting variables were assessed with mother and father reports and observational measures. Children's problem-focused coping was self-reported.

Prospective analyses revealed that maternal responsiveness, paternal responsiveness, and family cohesion predicted an increase in children's use of problem-focused coping strategies, while change in paternal responsiveness and maternal responsiveness and demandingness was related concurrently to change in coping. Few group (spina bifida vs. able-bodied) or gender differences with respect to parenting and family influences on children's coping behaviours were found.

*Bootcheck et al. (2003)* conducted this study, based on 1073 respondents from six high schools, examines correlates of school achievement, operationalized by self-reported grades. The independent variables include background variables—such as race/ethnicity, gender, social class, and family structure as well as current school engagement variables—such as study habits, extracurricular participation, holding a job, perceptions of parental pressure for good grades, and student ratings of their schools. The independent variables that
predict grade outcomes differ by racial/ethnic category. The predictive power of the model is strongest for Euro-Americans and Asian-Americans, intermediate for Hispanics, and weak for African-Americans.

**Devi and Mayuri (2003)** conducted this investigation to study family and school factors that affect the academic achievement of Residential school children studying in IX and X classes. The sample consisted of 120 children (60 from IX and 60 from X), and 40 teachers from 15 Residential schools of Hyderabad city. An interview schedule was developed by the investigator to study the family factors. The questionnaire administered to the teachers was developed by the second author to study school factors. I-IV rank holding children were the criteria of sample selection from previous final year examinations and present quarterly examinations. The result indicated that girls were superior to boys. Family factors like Parental Aspirations and Socio Economic Status significantly contributed to Academic Achievement. Among school factors Teachers Qualification, Physical Set up, Curriculum and Subject Matter, Class Room Organization, Method of Teaching, Teacher Student Interaction were found to be having effect on the academic achievement of the school children.

**Fatima (2003)** studied the relationship between the family climate and educational achievement. She tried to find out whether favourable home-climate result in high academic achievement and whether the unfavourable climate leads to poor academic achievement. She found out that there is no relationship between the type of climate and academic achievement of students.

**Silk et al. (2003)** tried to explore the relationship between parental psychological control and parental autonomy granting, and the relations between these constructs and indicators of adolescent psychosocial functioning, in a sample of 9,564 adolescents from grades 9 to 12. Participants completed a comprehensive parenting questionnaire as well as several measures of
psychosocial adjustment. Confirmatory factor analyses of the parenting items revealed discrete factors for psychological control and autonomy granting, suggesting that these are distinct parenting constructs rather than opposite ends of a parental control continuum. Moreover, structural equation modeling showed that these factors were weakly correlated and differentially related to adolescent internalizing symptoms.

Patrikakou (2004) conducted this study and data for this investigation were drawn from the National Educational Longitudinal Study (NELS), an extensive longitudinal study, which has been constructed to follow a cohort of students from the eighth grade through high school, college, and into the workforce. The first wave of data was collected in 1988 when participants were in eighth grade and they have been resurveyed four times (in 1990, 1992, 1994, and 2000). The model used to explore parent involvement influences was constructed using theoretical and empirical elements in the broader area of parent influences and academic success. The model consists of three blocks of influence: first, background factors such as gender and prior achievement, and parent involvement factors such as parent expectations and parent-child communication; second, the adolescent's perceptions of the parent involvement factors; and third, student characteristics such as time spent on homework and the student's own academic expectations.

The model was tested using structural modeling, a statistical procedure which estimates both direct and indirect effects that different factors have on the outcome under investigation. The two primary outcomes tested were academic achievement in high school (measured by standardized scores) and post-secondary attainment (measured by a 6-point scale ranging from some post-secondary education but no degree attained to Ph.D. or a professional degree attained).

Arati & Prabha (2005) conducted this study to find out the influence of different family variables on family environment of adolescents. The sample
comprised 120 adolescent (60 boys and 60 girls) in the age group of 13 to 16 years. Correlation test was done to find out the influence of selected family variables on family environment of adolescents. The results showed that the number of siblings, father’s education, father’s occupation and family income had significant positive influence on family environment of adolescents.

*Shankar & Rachel (2005)* investigated to measure parents’ anxiety in attitude development of the children especially at the board examination level. Special interest, care and coaching were given at this level to facilitate higher achievement. This stress on the students results in low achievement. This stress on the students results in low achievement; deviation in interest; improper motivation etc. the sample comprised 100 parents whose children were studying in govt. and private schools. It is found that more than 55% of the low achievers were students, who were given extra care and coaching by their parents forcibly at this level, and 20% of the high achievers were gifted with normal care and no special coaching and concern; rest of the 15% were beneficiaries of this anxiety of parents and 10% of failures remain stoic in this hypothetical frame.

*Ahuja & Goyal (2006)* conducted this study to investigate significance of difference in subject-wise performance of adolescents belonging to highly involved and highly aspirant parents and those belonging to low aspirant and low involved parents. The sample consisted of 100 adolescents studying in IX grade of schools of Chandigarh and their parents numbering 100. Among the findings based on ANOVA’s work:

1. High parental involvement lead to higher achievement of adolescents in Science, English and Maths, as compared to that of the group belonging to parents having low involvement with their wards’ academics.

2. High education aspirations of parents lead to higher achievement scores only in Maths. Achievement scores in English and Science were not
significantly different for children of parents having high and low educational aspirations.

3. Occupational Aspirations of parents, high or low, did not yield significantly different achievement scores in Science and Maths. But higher occupational aspirations of parents led to higher achievement scores in English.

_Darolia & Wydick (2006)_ examined how overt and private signals sent by an altruistic parent affect a child’s long-term performance. Unlike the standard principal-agent model, a parent may have better information over a child’s ability than the child herself. Based on the parent’s view of the child’s type and the parent’s own attributes, the parent then undertakes actions which act as either compliments or substitutes to the child’s own effort. While both actions are directed toward the well-being of the child, a parent’s complementary actions augment a child’s self-esteem, while substitutionary actions lower self-esteem, and thus motivation. They carry out both reduced form and structural estimations of their model on a sample of 651 college students, finding evidence that complimentary actions before college, such as displaying belief in the child and providing frequent praise, encourage academic achievement above what natural ability would predict. Conversely, they find some substitutionary actions before college, such as providing cars as gifts to children and helping children cheat on assignments, associated with lower effort in college and underachievement.

_Flouri (2006)_ used longitudinal data from sweeps of the 1970 British Cohort Study (BCS 70). The initial sample was those 1,737 men and 2,033 women with valid data on age 10, self-esteem, locus of control, father’s interest, mother’s interest, and age 26 educational attainment. Of these 1,326 men and 1,578 women were included in the final analysis. Results revealed that at the multivariate level, internal locus of control and mother’s interest (but not self-esteem) were significantly related to educational
attainment both men and women. Father’s interest was a significant predictor of educational attainment only in women. Parent’s interest was not linked to educational attainment via its impact on child’s self-esteem or locus of control. Self esteem predicted educational attainment in both genders by increasing internal locus of control, and fathers’ interest predicted educational attainment in men by increasing mother’s involvement.

*Khanam (2006)* studied the relationship between Family climate and Academic achievement of the male and female students at the secondary school level. She tried to investigate whether the family climate results in high academic achievement or whether the unfavorable family climate results in poor academic achievement. The investigator did not obtain any significant relationship between the family climate and the academic achievement. The achievement of the male and female students was independent of the influence of the type of family climate (favorable, unfavorable).

### 2.2 STUDIES RELATED TO MENTAL HEALTH:

*Vyathit (1973)* conducted a comparative study of Interpersonal relations in effective and ineffective classroom groups, with regard to sociometric cohesiveness, social distances, social perception, social cohesiveness and social attitudes of pupils towards their classroom groups and class teachers and to evolve various instruments for the purpose of the study. The tools devised were school assessment performa, form A&B, Classroom observation schedules, achievement tests in History for classes VII and VIII. The instruments used for data collection were sociometric test, social distance scale, Guess who test, classroom group rating scale, class teacher rating scale, teacher pupil relationship test. 18 effective and ineffective classroom groups were selected. The number of boys, girls and coeducational groups included in the sample were 198, 269 & 169 respectively. Whereas in ineffective type were 201, 124 and 145 respectively. In addition to pupils, fifty five classroom teachers including 31 males and 24 females were also included from various middle
schools of Bhopal city and data were analysed by means of factorial analysis and employing chi square technique.

Interpersonal relations and social acceptability for each other as a playmate in effective classroom group were found superior as compared to ineffective group and the number of isolates and neglectees were smaller in effective group. Coeducational classroom groups had better interpersonal relations and better social attitudes, towards playmates and teachers respectively than boys and girls alone. The number of isolates were smaller in co-educational classroom group.

Veereshwar (1979) surveyed the mental health and adjustment problems of college-going girls of urban and rural areas in and around Meerut. A sample of 406 girls in the age group of 18-20 years was drawn from the undergraduate students of Meerut University by the sequential list method. The sample was further divided into NSS and non-NSS groups. The NSS group had 182 students and the non-NSS groups had 224 students. The data was analysed calculating mean, S.D. and t-test.

The major findings were:

1. Adjustment problems for girls existed in all the areas but the percentage of extreme cases were meagre.

2. There was significant difference in the area of family adjustment between urban girls and rural girls. Family problems were more unsatisfactory for rural girls. The percentage of cases requiring help was very low for both the groups.

3. The scores of urban and rural girls in the area of education showed a significant difference. The college or educational area was a problem for rural girls more than for urban girls.

4. The social area held problems for both urban and rural girls. The difference between the two was significant, i.e. the percentage of rural girls showing unsatisfactory adjustment in the social area was higher.
5. Personal emotional problems were shown less by urban girls than by rural girls and the difference was significant.

6. The difference in adjustment of urban and rural girls was not significant in the area of health. Both groups showed quite satisfactory health adjustment.

7. The NSS and non-NSS groups did not differ significantly in home adjustment, educational area and health.

8. In the social area, though the difference was not statistically significant, the NSS group showed a little better adjustment.

9. The non-NSS group showed better emotional adjustment than the NSS group and the difference was statistically significant.

*Majid (1984)* aimed to identify the dominant factors which constituted the complex phenomenon known as mental health. Tools for Self-Acceptance, level of Aspiration, Self-Actualization, Existentiality, Feelings, Reactivity, Spontaneity, Self Regard, Self-Concept, Perception of Nature of Man, Acceptance of Aggression and capacity for intimate contact were administered to sample of 210 boys and 220 girls. The data were subjected to factor analysis employing the method of Principal Component Analysis. Separate analysis was done for boys, girls and boys and girls combined. The extracted factors were rotated orthogonally to achieve a psychologically meaningful, simpler structure of factor loadings.

The following factors were obtained: 1. Factor- I was called ‘Self-Acceptance’ because it was contributed by the variables which reflected an accepting attitude of the individual towards himself. The factor was common to all the three groups. 2. Factor- II for the combined group and Factor- III for boys and girls were called ‘Existential Autonomy’ because they were contributed by variables which indicated existentiality and inner orientation. 3. Factor- II for girls was called ‘Open Mindedness’ because it was mainly contributed by the variables which referred to a present-oriented and open personality. 4. Factor- II for boys and Factor- III for the combined group
emerged as a configuration of loading contributed by all the variables of Mental Health. This factor is therefore named the factor of ‘General Mental Health’.

**Prasanna (1984)** aims to identify the mental health variables which discriminated between high and low achievers among the total sample and sub-samples classified on the basis of sex, and area of residence. The sample was made up of 1050 pupils (567 boys and 483 girls) of std. IX, selected by applying the proportional stratified sampling technique. The main findings were:

1. All the mental health variables studied discriminated between high and low achievers in most of the groups studied.
2. High achievers had higher mean scores than low achievers for all the 16 mental health variables studied.

**Bhattacharjee (1985)** found that incidence of mental ill health was high. There was high positive relationship between materialistic, sexual relationship, security and independence needs and mental ill-health. There was negative relation between idealistic and altruistic needs and mental health. The less the frustration of idealistic and altruistic need, the more the mental ill-health and vice versa. There was a negative relationship between mental ill-health and frustration-in toleration of the idealistic and altruistic need.

**Mamta (1988)** compared personality and frustration reactions among accepted and non-accepted 12-13 year old girls of class VIII in Agra. It was noted that parentally accepted students differed in affiliation, change and order needs. Differences in all aspects of reactions to frustration were significant except the extrapunitive direction of aggression. No difference was found on the measure of achievement need. Need persistence was significantly related to achievement, affiliation and change needs among the acceptors. Obstacle dominance was relates to change and order needs. In non acceptors, the
relationships were not significant except between need for order and persistence, and achievement need and ego defence and persistence reactions.

*Sapru (1988)* examined personality pattern and reactions to frustration in high and higher secondary school boys of Srinagar. The introverts and normals differed significantly on group conformity rating, delinquency-prone persistence. Neurotics and normals differed on ego-defence, while introverts and normals differed on intragression. Multiple regression analysis revealed that group conformity was predicted by extragression, need persistence, proneness to disease, intragression, extraversion, obstacle dominance, ego-defence and imagression.

*Anand (1989)* found that the mental health of children was dependent upon the educational and occupational status of parents. Sound mental health was positively related to academic achievement, and both of them were positively related to parental status. The degree of mental health was also related to the type of school, being the highest in Convent schools, followed by Sainik, DAV and DM schools, respectively.

*Albuquerque et al. (1990)* study of life events and strains revealed that college students experienced about five life events in one year and had to undergo a mild degree of distress. The males reported relatively greater degree of distress. The majority of such events were experienced in the educational domain, followed by health. Bereavement and financial loss were more distressing. The female students reported greater degree of subjective distress than male students.

*Rayalu (1990)* compared the fears of Indian and British adolescents and found that neuroticism and fear were positively related among the British boys extraversion was negatively related to the fear score. Boys were found to be more intelligent than girls. Girls were more phobic and had high fear score.
The boys showed greater extraversion and psychoticism while girls showed more neuroticism. British adolescents scored higher on intelligence test. Indian adolescents showed more phobic tendency and fear than the British, who showed greater degree of neuroticism. A content analysis showed that Indians' fears dealt with failures, hosts and living away from the family. In contrast, fear among the British included sexual assault, mental illness, drugs offensive odour and being ugly.

*Reddy & Nagarathanamma (1993)* investigated certain components of Mental Health status among rural and urban students from the point of identifying students, who have potential for future development of mental health problems. The school is considered second to the home in its influence on the development of children's personality. The sample of study comprised 400 high school going children, out of which 200 were boys and 200 were girls. Their socio-economic status was taken into consideration. The results revealed no difference between urban and rural students, with regard to their mental health status. Boys and girls in the sample slightly differed from each other with regard to their mental health status, where as the socio-economic status did not contribute to their mental health status.

*Asha (2003)* investigated to examine the combined effect of creativity and intelligence on stress and mental health of college students. The sample consisted of 126 post-graduate students (61 male and 65 female students) from various departments of the Calicut University. Descriptive Test of Creativity, Mathew Test of Mental Abilities, Students Academic Stress Scale and Mental Health Inventory were used in the present study. The results indicate that the high creative-high intelligent groups of male and female students experience less stress and better mental health than the less creative-less intelligent male and female students. The study suggests that cognitive excellence is a resource for adapting to stressful conditions and fostering mental health.
Roul (2004) has attempted to find out the effectiveness of autonomous and non-autonomous college teachers in relation to their mental health. The study establishes that (1) autonomous college teachers are more effective than non-autonomous college teachers on teacher effectiveness; (ii) the teachers of autonomous colleges have better mental health than their counterparts in non-autonomous colleges. The researcher draws a conclusion that the teachers of autonomous college show better performance than non-autonomous college teachers.

Dwairy (2004) conducted a study to examine the parental styles and psychosocial adjustment of adolescents and the relationship between gifted as compared to nongifted Arab adolescents. Standardised tools were administered to 118 gifted and 115 nongifted Arab adolescents in Israel. Results indicate that parents of gifted adolescents tend to be more authoritative and less authoritarian than parents of nongifted adolescents. The attitudes of the gifted adolescents toward their parents were more positive than those of the nongifted adolescents. The gifted displayed higher self-esteem and fewer identity disorders, phobias, and conduct disorders than the nongifted adolescents. The authoritative parental style correlates positively with the mental health of both gifted and nongifted adolescents, while the authoritarian parenting style impacts negatively on the mental health of the gifted, but not of the nongifted adolescents. The study results indicate that the authoritarian parenting style is a crucial factor that influences the well-being of gifted children and may affect their psychological adjustment.

Gonzales (2006) using a 1-year prospective design, this study examined the influence of family status variables (family income, parental education, family structure), parenting variables (maternal support and restrictive control), peer support, and neighborhood risk on the school performance of 120 African American junior high school students. In addition to main effects of these variables, neighborhood risk was examined as a moderator of the effects of
parenting and peer support. Family status variables were not predictive of adolescent school performance as indexed by self-reported grade point average. Maternal support at Time 1 was prospectively related to adolescent grades at Time 2. Neighbourhood risk was related to lower grades, while peer support predicted better grades in the prospective analyses. Neighbourhood risk also moderated the effects of maternal restrictive control and peer support on adolescent grades in prospective analyses.

_Tinkew et al. (2006)_ made an investigation in which father-child relationship and father’s parenting style are examined as predictors of first delinquency and substance use, using data from the National Longitudinal Study of Youth 1997, Rounds 1 to 3 (\(N = 5,345\)), among adolescents in intact families. Discrete time logistic regressions indicate that a more positive father-child relationship predicts a reduced risk of engagement in multiple first risky behaviours. Having a father with an authoritarian parenting style is associated with an increased risk of engaging in delinquent activity and substance use. Two-way interaction models further indicate that the negative effect of authoritarian parenting is reduced when fathers have a positive relationship with their adolescent. Permissive parenting also predicts less risky behaviour when the father-child relationship is positive. The positive influence of the father-child relationship on risk behaviours is stronger for male than for female adolescents.

_Dwairy et al. (2006)_ conducted a study in which the Psychological State Scale, Multigenerational Interconnectedness Scale, and the Parental Authority Questionnaire were administered to 2,893 Arab adolescents in eight Arab societies. In these tests, adolescents raised according to the inconsistent parenting scored lower in connectedness and higher in mental disorders than those raised according to the controlling or flexible-oriented parenting pattern. Authoritative parenting was associated with a higher level of connectedness with the family and better mental health of adolescents. A higher level of adolescent-family connectedness is associated with better mental health of
adolescents. Results indicate that authoritarian parenting within an authoritarian culture does not harm the adolescents' mental health as it does within the Western liberal societies. These results give rise to the hypothesis that inconsistency in parenting and inconsistency between the parenting style and the culture cause harm to adolescents' mental health.

Huh et al. (2006) tested the hypothesis that perceived parenting would show reciprocal relations with adolescents’ problem behaviour using longitudinal data from 496 adolescent girls. Results provided support for the assertion that female problem behaviour has an adverse effect on parenting; elevated externalizing symptoms and substance abuse symptoms predicted future decreases in perceived parental support and control. There was less support for the assertion that parenting deficits foster adolescent problem behaviours; initially, low parental control predicted future increases in substance abuse but not externalizing symptoms, and low parental support did not predict future increases in externalizing or substance abuse symptoms. Results suggest that problem behaviour is a more consistent predictor of parenting than parenting is of problem behaviour, at least for girls during middle adolescence.

Ayodhya (2007) aimed at studying the emotional problems of school children and their relation to stressors (life events) and school achievements from a sample drawn from Class X students using survey method, and author finds among other things that secondary school students had significantly high rate of emotional problems, and emotionally disturbed students had high life event scores.

2.3 STUDIES RELATED TO STUDY HABITS

Mehdi (1965) conducted a very exhaustive study to find out the effects of study habits on academic performance on the students of three streams, viz, Science, Arts and Commerce. Pupils entering class Xth in the three courses were studied for a period of three years in order to see whether the study habits showed
significant relationship with the ultimate success at the class XI public examination. The study habits were not found to contribute significantly to the prediction of Academic achievement.

**Jain (1967)** tried to investigate the relationship between study habits and academic achievement. A study habit inventory incorporation consultation and working habits developed by the investigator and the marks obtained at the annual examination served a measure of study habits and academic achievement respectively the scores on the study habits inventory correlated significantly and positively with academic achievement and coefficient of correlation ranged from .29 for consultation habits to .59 for the working habits.

**Pepper (1969)** examined the performance of a class of marginal students at Wayne State University by comparing their standardised test scores with those of regular students and by correlating the scores and the work of the marginal students after 1 year of school. (The subjects were part of an experimental program for students who do not meet the established admissions criteria of the school. Such students are given 1 school year to correct their deficiencies and are required to take a reading and study skills course.) Results showed that they did not perform as well as regularly admitted students. The relevance of these standardised test results to factors important to the academic success of marginal students was not clear, however. The author suggests perhaps a combination of test scores with the traditional admission date as a more valuable prediction of college grades.

**Jha (1970)** hypothesized that there exists a substantial positive relationship between study habits and attainment in science. Wrenn’s study habits inventory and the average of marks obtained at the two preceeding annual examinations in science served as a measure of study habit and achievement respectively. The study revealed that there was a significant and positive relationship between achievement in science and study habits in case of boys and combined samples but not so in the case of girls.
Trivedi & Patel (1973) conducted a comparative study of the performance and study habits of students reading in B.A. (English) and B.A. (Non English) course of S.P. University. The sample included 102 students (English) and 138 students (Non English) of third year B.A. It was found that average performance of the students of English stream was better and significant in comparison with non English stream students. The standard of knowledge of non-English group was also found lower than English group, and lastly the study habits of English stream students were relatively better organized than those of non-English stream students and also the same pattern of attitude towards English was observed.

Saxena (1981) studied not only the main effects of socio economic status and cultural settings on the three dependent variables but also studied how the two independent variables interact while influencing the dependant variables. The study was an ex-post facto correlational research. There were four phases of study, viz, first divisioners, second divisioners, third divisioners and failures of high school students. Each phase constituted of four 3x2 factorial experiment. Thus there were nine experiments in all. Samples were selected from the whole district in the age range of 15-18 years. Thus 720 students were selected for the purpose. Analysis of variance, T-Test and Duncan’s Test were the statistical techniques used for the analysis of data. The findings related to study habits were as follows:-

(i) The socio-economic status has the most significant effects on self concept and study habits of different divisions as well as failures of high school.

(ii) The first divisioners belonging to the rural culture had better patterns of study habits than those belonging to the urban culture.

(iii) Rural culture promoted better study habits and achievement. The results were similar in case of third divisioners too.

Tuli (1981) investigated the relationship between study habits and achievement in mathematics. Only the sample consisted of 474 boys and girls of IX class.
The investigator found that study habits were positively related to achievement in mathematics.

*Perry (1985)* conducted an in-depth study of the reading habits of the eighth grade population in a large suburban junior high school. The sample consisted of 404 students recorded five consecutive days of their reading incidence on a closed ended reading log from several pilot studies of reading habits. Subsequently, random sampling of 29 students from the first population on an opened ended reading log to keep with them for recording their responses for 7 days. A follow-up interview was conducted, with each student to clarify, expand and validate the information found in reading log, also the interviews of teachers and parents were conducted.

The major findings provide a description of the average eighth grade student who read mostly because it was required, who read about equal amounts at school and home, and who felt generally positive about reading. Though an average student was statistically calculated, the wide ranges in the responses contradicted the reality of an average student.

*Graham (1985)* using the California Achievement Test, Survey of Study Habits and Attitudes, and Tennessee Self Concept Scale, 210 high- and low-achieving migrant Spanish-surnamed students in grades seven, nine, and eleven from 2 Oklahoma and 4 Texas school districts were tested for achievement and grade level differences in study habits, study attitudes, and self concepts. Data were also analyzed by gender. High-achieving students as a group and by gender were found to have higher study habits, study attitudes, and self concepts; by grade level, high achievers had higher study attitudes and self concepts. Study habits were not significantly different by grade level, but by gender and grade level, study habits, study attitudes, and self concepts were higher for high achievers. Study attitudes appeared to influence achievement more than the other two measures. Data analysis found achievement was associated with student age, father's occupational status, number of counsellor visits, mobility, subject liked best, graduation and future plans, job aspirations,
and job reality. Twelve student interviews provided additional characteristics. Conclusions were used to profile potential high achievers and potential dropouts. Recommendations were made to increase school holding power. Supporting tables appear in the text; appendices include questionnaire, interview form, and copy of the Tennessee Self Concept Scale.

*Patel (1985)* conducted this investigation on 73 intellectually backward pupils of class VIIIth from six different types of schools. The statements were responded on a five point scale. For measuring the academic achievement of students, the results of the terminal examination were taken into consideration. The ANOVA correlational and trend analysis were used for statistical analysis of the data to test the null hypotheses. After analyzing the data he found that there was a significant difference between the mean scores of study habits of boys and girls. In order to decide which group was superior in study habits, Scheffe’s test multiple comparison was used. On the basis of the value calculated, it was concluded that a) rural girls were significantly superior to rural boys in study habits at 0.01 level. b) urban girls were significantly superior to rural as well as urban boys in study habits at 0.01 level.

*Chilimikollad (1987)* studied the “Study Habits and Study Skills of Metallurgy Students of Government Polytechnic”.

The important findings were:

1- There existed a moderate positive correlation between study habits and study skills of the 3 groups of students.

2- The obtained t-values were below the critical minimum required and such there were no significant differences in the mean scores of study habits and study skills among the students of 3 different years.

3- The scores of the students in the study habits inventory were consistent to the maximum for the entire sample taken together.
Blumner & Norman (1988) surveyed the study habits and standardized test performance for prediction of postsecondary academic achievement. 25 undergraduates and 44 graduates were administered by an inventory of study habits. The major findings were that undergraduate and graduate academic performance, additional variation in performance, high aptitude students all can be predicted by study skills, study habits will better predict best predict performance will vary as a function of undergraduate. Study habits are found less predictor of the performance of women and men.

Jenkins & Carol (1988) conducted a survey of the perceptions of study skills of the twelfth grade students in the state of Nebraska, to measure the perception of current, ideal, and actual levels of study skills, methods used to learn study skills and courses in which study skills were included. A stratified random sampling of 269 was done. Relationships between current and actual responses of the students suggested that students may have been unaware of the disparity between what they currently perceived their skills to have been and what statistically existed. Relationships between ideal and actual responses were statistically significant. Students viewed study skills as ideally important. Based on the actual responses of students, listening was considered the most used skill and note taking ranked second.

English and social studies courses were identified as the content areas where most students learned study skills. Students ranked teacher instructions as the number one method of study.

Dougle & Odell (1989) attempted to study the prediction of academic achievement from study skill habits among upward Bound students. The purpose of this study was to determine the relationships between selected study skill habits and attitudes and achievement of secondary students in English, Mathematics and spelling. Sample consisted of 82 secondary school students participating in upward bound programmes. Instruments used were the survey of study habits and attitudes (SSHA), the Stanford Test of academic Skills, TASK and the Otis-lennon Mental Abilities Test (OLMAT). The statistical
analysis indicated that the four subscores of the SSHA are not accurate predictors of academic achievement. However, some of the correlations among the subscores for SSHA and the TASK were significant. Most notable of these were work methods and mathematics, teacher acceptance and mathematics, and work methods and spellings. The recommendation is made that the SSHA should not be used to predict the Academic achievement in Upward Bound Programmes. Improving study habits and attitudes should be addressed as a method of refining academic programmes, not of predicting academic achievement.

George (1991) examined the influence of high school students’ study habits on achievement in high school and during the first semester of college by drawing data from 159 female and 93 male freshmen. He found that the same study habits that contributed to success in high school were unrelated to academic achievement during the first semester in college. On the basis of this finding it was suggested that college freshmen need to acquire new study habits to be academically successful. For measuring academic achievement, examination results were used as a reliable measure.

Indira (1992) conducted an investigation which aims at identifying the reading interests and study habits among neo-literates. He selected 240 neo-literates randomly from 30 Janshikshana Nilayams who served as subjects for the study. A Numerical Rating Scale, and a Study Habits Questionnaire were used to collect the data. The collected data were treated with mean, SD, ‘t’ test and analysis of variance. The findings indicate that a majority (53.33%) of respondents seemed to read during the morning many (37.5%) seemed to spend about one hour for reading many (50.83%) seemed to read five days in a week, only 5% claimed that they read every day and as many as 65% seemed to depend on libraries for reading materials.

Kaur & Lekhi (1995) investigated intelligence, achievement motivation and study habits as correlates of academic achievement. The sample of the study consisted of 100 students randomly selected from X class. The findings were:
a) Intelligence, achievement motivation and study habits were positively and significantly correlated with Academic Achievement.

_Darlene (1997)_ conducted an investigation based upon an unidimensional, global model of academic self-concept and nineteen years of public school teaching experience, the purpose of this study was to determine the relationship among the constructs of academic self-concept, academic achievement, persistence, self-attribution, study habits, and perceived school environment. The participants in this study were seventh- and eighth-grade students (N = 214), in a rural mid-western school. It was hypothesized that participants who have a high academic self-concept and high achievement would tend to persist at tasks. Moreover, this type of student would tend to attribute their successes to hard work and effort, have good study habits, and have a favourable perception of the school environment.

Student volunteers were administered two questionnaires, using a Likert-type format, in order to ascertain their perceptions of the school environment, study habits, self-attributions, persistence, and academic self-concept. Grade-point-average was used as the criterion variable. The two instrument contained items from the Piers-Harris Children's Self-Concept Scale (Piers-Harris, 1964), the Survey of Achievement Responsibility (Ryckman, et al. 1990), the Locus of Control Scale (Nowicki & Strickland, 1973), the Survey of Study Habits and Attitudes (Brown and Holtzman, 1967), and the Classroom Environment Scale (Moos, 1979).

The results of this study indicated that academic self-concept, academic achievement, and persistence are related significantly to academic self-concept and academic achievement. Further analysis, using LISREL, indicated that the data fit the reduced model that used self-attributions to explain the relationships among academic self-concept, academic achievement, and persistence, the best. It has long been a theme in education that a student needs a good academic self-concept in order to be successful academically. To achieve this success, schools can impact their students' academic self-concept by developing an organized, orderly, supportive environment. Classroom teachers should teach
students' good student habits and self-management skills together with appropriate self-attribution strategies. The results of the present study suggest that these teaching strategies could influence students' persistence and academic self-concept that, in turn, would promote academic achievement.

Thathong (2002) investigated the causal relationships between set of variables: study habits, motivation achievement, statistics attitude, admission test scores, and ages on an achievement in statistics for educational research. Participants were 41 graduate students in a program of educational administration. The participants were asked to indicate their study habits, motivation achievement and statistics attitude on the 5-point scale questionnaires. Their report scores of academic in statistics for educational research were used as an indicator of their achievement. The variables were examined their relationships using path analysis technique to provide estimates of the direct and indirect influences of independent variables on a dependent variable (Kerlinger and Lee, 2000). The findings indicated variables that showed direct effect on an achievement in statistics for educational research were admission test scores ($b \equiv 0.588$, $p < 0.05$), statistics attitude ($b \equiv 0.255$, $p < 0.05$), age ($b \equiv -0.199$, $p < 0.05$), and study habits ($b \equiv 0.194$, $p < 0.05$). It was found that motivation achievement showed only indirect effect pass through statistics attitude ($b \equiv 0.328$, $p < 0.05$). In addition, admission test score showed indirect effect pass through statistics attitude ($b \equiv 0.339$, $p < 0.05$).

Tuckman (2003) originally developed an educational psychology-based “study skills” program: Strategies-for-Achievement, to teach learning and motivation strategies to college students, was modified for use by high school students. It involved teaching students four achievement strategies: take reasonable risk, take responsibility, search the environment, use feedback. Each was divided into two sub-strategies, and used to teach students to overcome procrastination, build self-confidence and responsibility, manage their lives, learn from lecture and text, and prepare for exams. The training was provided as a course taught
using a “blended” technology-based instructional model called Active Discovery And Participation thru Technology (ADAPT). Students who took the training course earned significantly higher grade point averages in comparison to a matched group, during the term they took the course.

Anton & Angel (2004) analyzed the relationships among Cattellian personality factors, scholastic aptitudes, study habits, and academic achievement. A total of 887 volunteer students from primary education (453 males and 434 females), enrolled in 29 public schools, participated in this research. It was found that the scholastic aptitudes were the most predictive variables of achievement, while the personality traits had a low direct contribution to academic achievement, although the students with higher scores on socialized personality traits showed better study habits than those students with lower scores on personality socialization traits. The relationship between personality and academic achievement seems to be mediated by study habits. Moreover, females obtained higher academic achievement scores than males. These differences could be explained by the fact that females showed a more socialized personality pattern and better study habits.

Lakshminarayanan et al. (2006) made an attempt to compare achievers and non-achievers in study skills. For this purpose a sample of 50 achievers and 50 non-achievers was identified, based on their performances in the terminal examination. The responses were scored and treated with Mean, Standard Deviation and ‘t’ test. Results in general indicate that achievers use higher level of study skills than the non-achievers.

Young (2008) aimed to examine the relationship between children’s study habits, their parent’s involvement and other situational factors. It was found that the school the child went to determined how often they did their homework, it was also found that the children at the lower income school had more parents who smoked. It was also found that the children who had parents who smoked the child watched more television. This is interesting when examined with the fact that parents who smoke do not spend as much time
studying with their children, allowing them more time to watch television. This leads to lower grades because they do not do their homework as often leading them not to like school as well.

2.4 STUDIES RELATED TO SELF CONFIDENCE

*Lenney & Orono (1977)* highlighted previous reviewers who have suggested that women display lower self-confidence than men across almost all achievement situations. The empirical validity of this suggestion is assessed. The literature indicates that although low self-confidence is indeed a frequent and potentially debilitating problem among women, they are not lower in self-confidence than men in all achievement situations. Instead, it is argued that the nature of this sex difference depends upon such situation variables as the specific ability area, the availability of performance feedback, and the emphasis placed upon social comparison or evaluation. It is concluded that future research must more precisely identify the variables that influence women's self-confidence.

*Konvalina (1981)* investigated self-assessment, achievement, and confidence in basic mathematics skills. Thirty college students enrolled in a self-paced developmental mathematics course were randomly assigned to either an experimental group that performed a written self-assessment before each test, or to a control group that did not perform the written self-assessment. No significant differences were found between the groups in achievement or general confidence in basic mathematical skills. However, the experimental group consistently had a higher confidence mean over a 25-item basic skills inventory and scored higher on a significant proportion of skills. A highly significant correlation was found between skill confidence and achievement over the 25 basic skills for the combined groups. A significant correlation was found between group confidence and group achievement for the experimental group, but not for the control group.
Verma (1990) aims to analyse the sex differences in risk-taking, self-confidence and anxiety among adolescent learners. His sample consisted of 200 adolescents with equal number of male and female students studying in class X, selected randomly from different institutions of Behror in Alwar District in Rajasthan. Results indicate that male adolescent learners showed higher mean risk-taking than female adolescent learners. Male adolescent learners possessed significantly higher self-confidence than female adolescents. Female adolescent learners had significantly more anxiety than male adolescent learners.

Bénabou & Tirole (2002) in this paper analyzes the self-identification process and its role in motivation. They build a model of self-confidence where people have imperfect knowledge about their ability, which in most tasks is a complement to effort in determining performance. Higher self-confidence thus enhances motivation, and this creates incentives for the manipulation of self-perception. An individual suffering from time-inconsistency may thus want to enhance the self-confidence of his future selves, so as to limit their procrastination. The benefits of confidence-maintenance must, however, be traded off against the risks of overconfidence (inappropriate tasks being pursued). Moreover, rational inference implies that the individual cannot systematically fool himself. A first application of the model is self-handicapping: to avoid a negative inference about their ability, people may deliberately impair their performance, or choose overambitious tasks. Another application is selective memory or awareness management: people are (endogenously) more likely to remember or consciously acknowledge their successes than their failures. This, in turn, helps explain the widely documented prevalence of self-serving beliefs --that is, the fact that most people have overoptimistic assessments of their own abilities and other desirable traits. We analyze the workings of this "psychological immune system" and show that it typically leads to multiple equilibria in cognitive strategies, self-confidence, and behaviour. Moreover, while active self-esteem maintenance can improve ex-ante welfare, it can also be self-defeating. Systematically "looking on the bright side", avoiding "negative" thoughts and people, etc., can thus be
beneficial in certain environments; but in other circumstances one can only lose by playing such games with oneself, and it would be better to always "accept who you are" and "be honest with yourself".

**Klassen (2002)** conducted a study which examined the self- and collective efficacy beliefs of Indo-Canadian and Anglo-Canadian early adolescent students. The research participants included 112 Anglo-Canadian and 158 Indo-Canadian (children of Punjabi Sikh immigrants) grade 7 students. On a 22-item measure of math performance, the Indo-Canadian students earned a significantly higher score than the Anglo-Canadian students and also rated their self efficacy at a higher level. There were no differences between the groups in terms of calibration of self-efficacy and performance. In a multiple regression analysis, self efficacy was the only motivation variable that predicted math performance for both groups. For the Anglo-Canadian students previous math grade was the only other significant predictor of performance; for the Indo-Canadian students, math self-concept was the other significant predictor. Of the hypothesized four sources of efficacy beliefs, emotional arousal was the strongest predictor of efficacy for both cultural groups. Past performance was the next strongest predictor for Anglo-Canadians, while for the Indo-Canadian students, vicarious experience was the second significant predictor of self efficacy. For the sample as a whole, the students who were most accurate in their calibration performed at a higher level than students who under-estimated or overestimated their performance. For the group task, collective efficacy was the best predictor of group performance for the Anglo-Canadians, whereas previous math grade predicted group performance more strongly for the Indo-Canadians. Counter to predictions of higher overall collectivism, the Indo-Canadians displayed higher levels of vertical individualism and vertical collectivism than the other group. Implications of the influence of the vertical aspect of Indo-Canadians on self-appraisal are discussed.

**Stoel et al. (2003)** presented Latent growth curve (LGC) analysis of longitudinal data for pupils' school investment, self-confidence and language
A multivariate model is tested that relates the three developmental processes to each other and to intelligence. All processes show significant differences between children in their developmental curves. The increase in language ability and the decrease in school investment correspond with the hypotheses. No hypothesis is formulated about self-confidence, but an increase for some and a decrease for others are found. The hypothesis that development in language ability, school investment, and self-confidence are mutually positively associated is supported, as is the hypothesis that intelligence accounts for some of the differences in language ability. School investment, self-confidence, and intelligence each explain a different part of development in language ability.

**Tuckman (2003)** conducted this study which was based on an educational psychology-based “study skills” program: Strategies-for-Achievement, originally developed to teach learning and motivation strategies to college students, was modified for use by high school students. It involved teaching students four achievement strategies: take reasonable risk, take responsibility, search the environment, and use feedback. Each was divided into two sub-strategies, and used to teach students to overcome procrastination, build self-confidence and responsibility, manage their lives, learn from lecture and text, and prepare for exams. The training was provided as a course taught using a “blended” technology-based instructional model called ‘Active Discovery and Participation through Technology’ (ADAPT). Students who took the training course earned significantly higher grade point averages in comparison to a matched group, during the term they took the course.

**Jones & Caston (2004)** investigated how cooperative learning promoted the academic success of elementary African American males in grades 3 through 6 in a rural school in Mississippi. This study presents viewpoints based on these students' perception of what influenced academic achievement. The qualitative study using a qualitative analyzed interview data gathered in approach to collecting data, participants’ engaged 6 face-to-face interviews with 16
African-American males over a 3-month period during the 2002-2003 academic school year. Participants represented 16 elementary African American males. All students were regular education students who ranged between the ages of 8 and 13 years old. The participants were interviewed focused on topics related to home and school experiences and on how these two environments affected their academic success. It was evident of the significance cooperative learning had on their desire to learn. Cooperative learning was found to be a Results of this study indicated that was primary among the factor promoting that promoted these students' their academic success. The results further indicated that among the factors thought to inhibit their academic success. Findings showed that those African American males who had limited literacy activities did not perform as well academically as the students who did.

Hannula et al. (2004) with the help of this paper presents some preliminary results of the longitudinal aspect of a research project on self-confidence and understanding in mathematics. They collected a survey data of 3057 fifth-graders and seventh-graders and a follow-up data of ten classes (191 pupils) one and a half years later. The longitudinal data indicates that the learning of mathematics is influenced by a pupil’s mathematics-related beliefs, especially self-confidence. Pupils’ level of understanding fractions also influences their developing understanding of infinity. These relationships between different variables depend also on pupils’ gender and age.

Chang & Cheng (2008) studied the interrelationship between senior high school students' science achievement (SA) and their self-confidence and interest in science (SCIS) was explored with a representative sample of approximately 1,044 11th-grade students from 30 classes attending four high schools throughout Taiwan. Statistical analyses indicated that a statistically significant correlation existed between students' SA and their SCIS with a moderate effect size; the correlation is even higher with almost large effect sizes for a subsample of higher-SCIS and lower-SCIS students. Results of t-test
analysis also revealed that there were significant mean differences in students' SA and their knowledge (including physics, chemistry, biology, and earth sciences subscales) and reasoning skill subtests scores between higher-SCIS and lower-SCIS students, with generally large effect sizes. Stepwise regression analyses on higher-SCIS and lower-SCIS students also suggested that both students' SCIS subscales significantly explain the variance of their SA, knowledge, and reasoning ability with large effect sizes.

*Alias & Hajir (2009)* investigated to determine the relationship between type of confidence inducing stimulus, academic self-confidence and cognitive performance among engineering students. The study samples consisted of two groups of engineering students from a Malaysian polytechnic. The type of confidence inducing stimulus (positive or negative) was the independent variable, cognitive performance was the dependent variable and ASC was the hypothesised mediating variable. The results indicate that the positive group has statistically significantly higher ASC level (3.08) compared to the negative group (2.67) and the positive group also demonstrates a statistically significantly higher cognitive performance compared to the negative group; 71% and 54% respectively. It is concluded that boosting the ASC of engineering students can enhance their cognitive performance.

*Vealey & Campbell (2010)* conducted this study to (a) determine what achievement goal orientations are present in adolescent figure skaters, (b) examine the relationship between the goal orientations conceptualized by Maehr and Nicholls (1980) and those conceptualized by Vealey (1986), and (c) investigate the influence of different goal orientations on the precompetitive self-confidence, precompetitive anxiety, and actual performance of adolescent skaters. Subjects included 106 youth figure skaters participating in regional competition. Skaters were found to have two achievement goal orientations which were termed extrinsic and task orientations. Some support was found for the relationship between the achievement orientations and the sport-confidence/competitive orientation constructs of Vealey. Also, a multivariate
A relationship was supported between the sport-confidence/achievement orientation predictor constructs and the self-confidence, anxiety, and performance of adolescent figure skaters in sport competition.

2.5 STUDIES RELATED TO ACADEMIC ACHIEVEMENT-

_Bentley et al. (1980)_ examined the relationship between perceived sources of stress and academic achievement in order to determine if reactions to stress and methods of coping with stress were related to academic achievement. Freshman and sophomore junior college students completed Form III of the Floyd-Steyert Life Stress Inventory to measure three categories of stress self-report: sources of stress, emotional and physiological responses to stress, and methods chosen to cope with or adapt to stress. Several sources of stress (physical handicaps, chronic illness, in-laws, financial assistance, parents, living arrangements, irrelevant courses, instructors, academic advisement), responses to stress (dry throat, diarrhea, aggravation, back pains, fatigue), and methods of coping (running away, hobbies, drinking) appeared to affect academic achievement. Results suggest that perceived stress is related to academic achievement.

_Worland et al. (1984)_ conducted this investigation in which intelligence, academic achievement, and classroom behavior of 158 children were assessed in a sample that is being followed longitudinally. The sample included children at high risk for mental disorder by virtue of having a parent with a psychiatric diagnosis of schizophrenia or affective disorder, children at moderate risk, and children at low risk. A series of path analyses indicated that in this sample (1) classroom behavior was more likely an affect than a cause of academic achievement, and (2) the influence of parental psychopathology on classroom behavior was mediated by a child's intelligence and academic achievement. We were unable to substantiate an unmediated causal link between parental psychopathology and children's academic achievement or classroom behavior.
Cherian (1994) investigated the relationship between family reading habits and the academic achievement of 1021 Xhosa-speaking children whose mean age was 15.3 yr. A questionnaire was administered to identify each pupil's family status. Analysis of variance indicated positive and statistically significant main effects for the two variables on a reading habits score.

Bray (2001) aimed to study whether academic achievement had more of an affect on a college student’s self-esteem if that student was an Honors student versus a general student. Data were collected from 64 college students and analyzed by a 2 X 2 mixed design factorial ANOVA. Significant results agree with previous research that academic achievement and self-esteem have a positive relationship.

Tomas (2003) aimed at investigating to what extent and which personality traits predict academic performance. For this he conducted two longitudinal studies of two British university samples. Academic performance was assessed throughout a three years period and via multiple criteria (e.g., exams and final-year project). In addition several indicators of academic behaviour, e.g., absenteeism, essay writing, tutors exam predictions, were also examined with regard to both academic performance and personality traits. In sample 1 (N=70), the Big Five personality factors (Costa and McCrae, 1992) particularly Neuroticism and Conscientiousness were found to predict overall final exam marks over and above several academic predictors, accounting for more than 10% of unique variance in overall exam marks. Results suggest that Neuroticism may impair academic performance, while Conscientiousness may lead to higher academic achievement. In sample 2 (N=75) the EPQ-R (Eysenck and Eysenck, 1985) was used as the personality measure and results showed the three super factors were the most powerful predictor of academic performance, accounting for nearly 17% of unique variance in overall exam results. It is demonstrated that (like Neuroctisim) Psychoticism could limit academic success. The present results provide evidence supporting the inclusion of well-established personality measures in academic selection.
procedures, and run counter to the traditional view of ability measures as the exclusive psychometric correlate of academic performance.

Parker et al. (2004) examined relationship between emotional intelligence and academic achievement at high school level. Total 667 students attending a high school in Huntsville, Alabama were selected as sample. At the end of the academic year the data was matched with students' academic records for the year. When Inventory variables were compared in groups who had achieved very different levels of academic success (highly successful students, moderately successful, and less successful based on grade-point-average for the year), academic success was strongly associated with several dimensions of emotional intelligence.

Rohde & Thompson (2005) conducted this study with an aim to explain variation in academic achievement with general cognitive ability and specific cognitive abilities. Grade point average, Wide Range Achievement Test III scores, and SAT scores represented academic achievement. The specific cognitive abilities of interest were: working memory, processing speed, and spatial ability. General cognitive ability was measured with standardised scales. When controlling for working memory, processing speed, and spatial ability, in a sample of 71 young adults (29 males), measures of general cognitive ability continued to add to the prediction of academic achievement, but none of the specific cognitive abilities accounted for additional variance in academic achievement after controlling for general cognitive ability. However, processing speed and spatial ability continued to account for a significant amount of additional variance when predicting scores for the mathematical portion of the SAT while holding general cognitive ability constant.

Kaplan et al (2005) tested the hypothesis that educational expectations of junior high school students in interaction with school-related stress during early adolescence would adversely affect grades during high school. Multiple regression analyses of data from home interviews of 1034 students during junior high school and 3 years later during high school supported the
hypothesis that early adolescent school-related stress both independently and in interaction with high academic expectations negatively affected academic performance 3 years later. These results suggest that for students in high stress school environments, an increase in academic expectations may serve to increase their school-related stress and impede their academic performance.

*Malik & Balda (2006)* aimed at finding if any relationship exists between psychological stress and academic achievement of high IQ adolescents. Subjects were high IQ adolescents having IQ 110 and above. Battery of Stress Scales was used to assess the amount of stress on these adolescents. Academic achievement was assessed on the basis of average of marks obtained in last three examinations. Correlation coefficients between stress scores and academic scores were computed. Academic achievement was found to be negatively and significantly correlated with all types of stress except existential stress.

*Tomas & Adrin. (2006)* prepared this paper to report the results of a two-year longitudinal study of the relationship between self-assessed intelligence (SAI) and academic performance (AP) in a sample of 184 British undergraduate students. Results showed significant correlations between SAI (both before and after taking an IQ test) and academic exam marks obtained two years later, even when IQ scores were partialled out. Several continuous assessment indicators (notably attendance, oral expression, and motivation) were also significantly correlated with SAI, even when IQ scores were controlled. A series of hierarchical regressions indicated that although exam grades were best predicted by IQ, SAI showed significant incremental validity in the prediction of AP, accounting for an additional 3% of exam, 9% of continuous assessment, and 2% of essay grades.

*Laidra et al. (2006)* studied general intelligence and personality traits from the Five-Factor model as predictors of academic achievement in a large sample of Estonian school children from elementary to secondary school. A total of 3618 students (1746 boys and 1872 girls) from all over Estonia attending Grades 2,
3, 4, 6, 8, 10, and 12 participated in this study. Intelligence, as measured by the Standard Progressive Matrices, was found to be the best predictor of students’ grade point average (GPA) in all grades. Among personality traits (measured by self-reports on the Estonian Big Five Questionnaire for Children in Grades 2 to 4 and by the NEO Five Factor Inventory in Grades 6 to 12), Openness, Agreeableness, and Conscientiousness correlated positively and Neuroticism correlated negatively with GPA in almost every grade. When all measured variables were entered together into a regression model, intelligence was still the strongest predictor of GPA, being followed by Agreeableness in Grades 2 to 4 and Conscientiousness in Grades 6 to 12. Interactions between predictor variables and age accounted for only a small percentage of variance in GPA, suggesting that academic achievement relies basically on the same mechanisms through the school years.

_Uwaifo (2008)_ examined the effects of family structure and parenthood on the academic performance of Nigerian university students. The sample for the study consisted of 240 students drawn from the six randomly selected faculties in Ambrose Alli University, Ekpoma, Edo State. The adapted form of “Guidance and Counselling Achievement Grade Form” was used for data collection and the data collected were subjected to statistical analysis using the t-test statistical method. The three null hypotheses formulated were tested at .05 level of significance. The results showed that significant differences existed between the academic performance of students from single parent family and those from two-parent family structures. The results also indicated significant differences in academic performance of male and female students compared on two types of family structures.

_Naderi et al. (2009)_ examined self-esteem, gender and academic achievement. Participants N= 153, 105 = male & 48= female) completed the Persian version of the Rosenberg Self-Esteem Scale (RSES) (Tevakkoli, 1995). The RSES as a questionnaire test included 10 items. Cumulative grade point average (CGPA) was used to select the participants. Data were analyzed by multinomial logistic
regression and independent sample t-test. The findings from this study indicate that although self-esteem indicates a strong significant relationship on academic achievement when gender is controlled (Chi-Square =14.173, Sig=.007, P<0.01, there is no relationship between self esteem and academic achievement (Sig=.074, P>0.05). In other words, a significant difference between gender and self-esteem was observed (Sig=.001, P<0.01).

Kaur et al. (2009) made an attempt to explore academic achievement and home environment as correlates of self-concept in a sample of 300 adolescents. The results of the study revealed self-concept to be positively correlated with academic achievement, though not significantly so. A significantly positive relationship of home environment components of protectiveness, conformity, reward, and nurturance with self-concept is revealed, there by meaning that use of rewards and nurturance from parents should be done for positive self-concept development among adolescents. However, the correlation of social isolation, deprivation of privileges and rejection components of home environment is significantly negative with self-concept among adolescents indicating that for positive self-concept development among adolescents, there should be less or no use of social isolation, deprivation of privileges and rejection.

Joshi & Srivastava (2009) has undertaken this study to investigate the self-esteem and academic achievement of urban and rural adolescents, and to examine the gender differences in self-esteem and academic achievement. The sample of this study consisted of 400 adolescents (200 urban and 200 rural) from Varanasi District. The boys and girls (aged 12 to14) were equally distributed among the urban and rural sample. Self-esteem was measured by Self-esteem questionnaire and academic achievement was measured by academic school records. The findings indicated that there were no significant differences with regard to self-esteem of rural and urban adolescents. There were significant differences with regard to academic achievement of rural and urban adolescents. Urban adolescents scored higher in academic achievement
as compared to rural adolescents. Boys would score significant higher on self-esteem as compared to girls. Significant gender differences were found in academic achievement. Girls were significantly higher on academic achievement as compared to boys.

Folorunso et al. (2010) in this paper examined family background factors that affect students' academic achievement in institutions of higher learning in Nigeria. With the use of structured questionnaire, data were collected from 110 first-degree final year students using random sampling and analysed through multiple linear regression techniques. It was found that student's academic performance was positively influenced by student's parental level of education, maternal income level, age, income of the student and number of hours allocated for reading on daily basis. Those students who spent more hours reading their books daily were found performing better than those who spent lesser hours. The hypothesis that parental educational level impacted positive effects on students' academic performance was confirmed valid for the country while effects of parental occupation and parental income were mixed. The major finding of the paper was that higher educational attainment and income status of parents were essential factors contributing to high academic record of students of tertiary institutions.

2.6 CONCLUSION OF REVIEWS:

A brief account of preceding studies leads to the conclusion that research in the field of Academic Achievement in general and in its relation to the cognitive, non-cognitive variables in particular, seems to be developing fast, touching many new areas. While this is a welcome growth, other potent areas of academic achievement deserve attention in view of the educational needs of individuals and society.

A critical analysis of the above mentioned studies give rise to certain substantive inquiries which need to be highlighted and addressed for the sake of further investigation. Most of the studies whether conducted in India or
abroad support multiple results leading to phenomena where the need of further research becomes imperative. In the area of Family climate, it has come to light that research studies found contrary and mixed results. The studies conducted by (Jain, 1965) hold that physical and topographical factors influence academic achievement. Parental permissiveness & mother’s love are positively related with performance (Ojha, 1973). Parental attitude, family background and basic skills influence achievement of bright students (kulshreshta, 1981). According to Uwaifo, 2008 significant differences existed between the academic performance of students from single parent family and those from two-parent family structures. Students who have parental and peer support are performing better (Fuligni, 1997). Home adjustment was more clearly related to academic achievement and social adjustment (Chopra, 1982). High parental encouragement, have positive influence on academic achievement (Agarwal, 1986). Higher parental occupational aspirations and SES significantly contributed to academic achievement (Devi & Mayuri, 2003; Ahuja & Goyal, 2006). Higher educational attainment and income status of parents were essential factors contributing to high academic record of students of tertiary institutions (Folorunso, 2010). Parents, who display belief in the child and provide frequent praise, encourage academic achievement (Darolia & Wydick, 2006). Parents’ anxiety leads to stress in students which results in low achievement (Shankar & Rachel, 2005). Single parent households receive less encouragement and less assistance with homework than children in two parent homes (Coleman, 1988). Single mother headed families had the lowest income and slightly less academically successful children (Demo & Acock, 1996). Maternal acceptance and interest promoted scholastic achievement (Zahir, 1988; Gonzales et al., 1996; Gonzales, 2006; Flouri, 2006).

As against this, studies conducted by Khanam, 2006 show opposite results, and hold that the achievement of the male and female students was independent of the influence of the type of family climate (favourable, unfavourable). Family status variables were not predictive of adolescent school performance (Gonzales, 2006).
Nearly all the studies reported above except that of Khanam, 2006 & Gonzales, 2006 holds that family climate is a strong determinant of academic achievement.

Also, in the area of Mental Health it has come to light that research studies found contrary and mixed results. The studies conducted by in relation to interpersonal relations and social acceptability effective classroom group was found superior as compared to ineffective group and the number of isolates and neglectees were smaller in effective group (Vyathit, 1973). Results of study conducted by Bentley et al., 1980, suggests that perceived stress is related to academic achievement. Kaplan et al., 2005 suggest that for students in high stress school environments, an increase in academic expectations may serve to increase their school-related stress and impede their academic performance.

Adjustment problems for girls existed in all the areas but the percentage of extreme cases were meagre. Family problems were more unsatisfactory for rural girls. Personal emotional problems were shown less by urban girls than by rural girls and the difference was significant (Veereshwar, 1979). High achievers had higher mean scores than low achievers for all the 16 mental health variables studied (Prasanna, 1984). There was negative relation between idealistic and altruistic needs and mental health (Bhattacharjee, 1985). Sound mental health was positively related to academic achievement, and both of them were positively related to parental status (Anand, 1989). College students experienced about five life events in one year and had to undergo a mild degree of distress. The males reported relatively greater degree of distress (Albuquerque et al. 1990). Indian adolescents showed more phobic tendency and fear than the British, who showed greater degree of neuroticism (Rayalu, 1990). The high creative-high intelligent groups of male and female students experience less stress and better mental health than the less creative-less intelligent male and female students (Asha, 2003). The authoritative parental style correlates positively with the mental health of both gifted and non-gifted adolescents, while the authoritarian parenting style impacts negatively on the
mental health of the gifted, but not of the nongifted adolescents (Dwairy, 2004). The positive influence of the father-child relationship on risk behaviours is stronger for male than for female adolescents (Tinkew et al., 2006).

As contradictory to this, studies conducted by Malik & Balda, 2006 revealed that Academic achievement was found to be negatively and significantly correlated with all types of stress except existential stress. Reddy & Nagarathannamma, 1993 found that socio-economic status did not contribute to student’s mental health status. Authoritative parenting was associated with a higher level of connectedness with the family and better mental health of adolescents (Dwairy et al., 2006). Secondary school students had significantly high rate of emotional problems, and emotionally disturbed students had high life event scores (Ayodhya, 2007).

Further, in the area of study habits it has come to light that research studies found contrary and of mixed results. Jain, 1967, Graham, 1985 & Kaur and Lekhi, 1995 hold that study habits significantly and positively correlated with academic achievement. According to Lakshminarayanan et al., 2006 achievers use higher level of study skills than the non-achievers. Study of Jha, 1970 revealed that there was a significant and positive relationship between achievement in science and study habits in case of boys and combined samples but not so in the case of girls. Tuli, 1981 found that study habits were positively related to achievement in mathematics. (Trivedi & Patel, 1973) concluded in their study that average performance of the students of English stream was better and significant in comparison with non English stream students because of their better study habits. Study of Saxena, 1981 revealed that first divisioners belonging to the rural culture had better patterns of study habits than those belonging to the urban culture i.e. rural culture promoted better study habits and achievement. Patel (1985) holds that rural & urban girls are superior than rural & urban boys in relation to their study habits. Teaching strategies could influence students' persistence and academic self-concept that, in turn, would promote academic achievement (Darlene, 1997). Females
obtained higher academic achievement scores than males. These differences could be explained by the fact that females showed a more socialized personality pattern and better study habits (Anton & Angel, 2004).

Contradictory to the studies mentioned above, study habits were not found to contribute significantly to the prediction of Academic Achievement (Mehdi, 1965). Study habits are found less predictor of the performance of women and men (Blumner & Norman, 1988). Improving study habits and attitudes should be addressed as a method of refining academic programmes, not of predicting academic achievement (Dougle & Odell, 1989). George, 1991 found that the same study habits that contributed to success in high school were unrelated to academic achievement during the first semester in college.

Again in the area of self confidence it has come to light that research studies found contrary and mixed results. Academic achievement and self-esteem have a positive relationship (Bray, 2001). Women are not lower in self-confidence than men in all achievement situations (Lenney & Orono, 1977). A significant correlation was found between group confidence and group achievement for the experimental group, but not for the control group (Konvalina, 1981). Self efficacy was the only motivation variable that predicted maths performance for both (Indo & Anglo Canadian) groups (Klassen, 2002). Alias & Hafir, 2009 concluded that boosting the Academic Self Confidence of engineering students can enhance their cognitive performance.

Contradictory to the above findings, no relationship was found between self esteem and academic achievement (Naderi et al., 2009). Male adolescent learners possessed significantly higher self-confidence than female adolescents (Verma, 1990)

The contradictory findings of various studies mentioned above inspired the investigator to conduct a research which can study the “Impact of Family Climate, Mental Health, Study Habits and Self Confidence on the Academic Achievement of Senior Secondary Students”.
There is already a lack of research activity in the area of secondary education and especially at U.P Board level. Although, a lot of research has been conducted abroad on these variables, still all these variables in combination have not been studied extensively. Thus the present study departs from the previous studies already undertaken in the field of academic achievement.

Besides, getting an overall view of research at secondary stage of education, the review of related literature helped the investigator in understanding the important variables like Family Climate, Mental Health, Study Habits, Self Confidence and Academic Achievement. They helped in understanding the relationship between achievement and other variables like students’ motivations, aspirations, students’ engagement in other activities etc.

The review of studies highlighted the need for such a study in the light of inconclusive and conflicting findings. It also come to the notice of the researcher that the work so far done in these areas in India is inadequate and the area needs further exploration, especially, at Senior Secondary Stage. The review threw some light on method of data collection, research design, method of tool construction, standardization and use of statistical tool for analysing data, which helped the researcher in developing an appropriate methodology for the present investigation which will be discussed in the next chapter.
Chapter 3

Design of the Study

3.1. Methodology
3.2. Description of the variables under study
3.3. Tools used in the study
3.4. Administration of the tools
3.5. Description of the tools used in this study and their scoring
3.6. Selection of the sample
3.7. Hurdles in data collection.
3.8. Statistical techniques employed
III - DESIGN OF THE STUDY

3.1- METHODOLOGY:

In any discipline whether it is science, social science, commerce or humanities etc, methodology plays a leading role in carrying out the study systematically and objectively to be more scientific in nature. Research is a systematic effort to find a solution of the problem. These efforts require certain techniques to be followed properly. Methodology is a total sum of these techniques/steps being carried out by a researcher in order to find out the real dynamics operating for any problem and behavioural outcomes. In other words methodology is defined as “the logic of applications of scientific methods to the investigation of the phenomena”. It is a kind of decision making process in which the researcher has to select the appropriate model, sampling techniques, measuring instruments and data analysis methods suitable for selected problem. However, the objectivity of the scientific investigation is contingent upon the accuracy of research methodology adopted by the researcher.

Formulation of research problem is followed by research design. It is the scientific procedure within which research is conducted in a smooth and unbiased fashion. Research design is an arrangement of conditions for collecting and analysing the data in a manner that aims to combine relevance to the research purpose with economy in procedure, it is a kind of architecture prepared in advance by the researcher with minimum expenditure of time, money and other requirements.

In the light of the above facts the method adopted for the present study can be categorised as descriptive statistical in nature. Descriptive research describes and interprets what is? It is concerned with conditions or relationship that exist, practices that prevail, beliefs, points of views or attitudes that are held, processes that are going on, effects that are being felt or trend that are developing. The process of description as employed in this research study goes beyond mere gathering and tabulation of data. It involves an element of
interpretation of the meaning or significance of what is described. Thus, description is combined with comparison or contrast involving measurement, classification, interpretation and evaluation.

The present investigation seeks to investigate the effects of Family climate, Mental health, Self-confidence and Study habits on the Academic achievement of senior secondary school students of U.P. board, Allahabad.

3.2 DESCRIPTION OF THE VARIABLES UNDER STUDY:

A variable is a characteristic that may take on different values (Wiersma, 1991). Classification of variables depends on their role in the research. Researchers may identify variables using different terminology. These variables are defined by Wiersma, 1991 as follows-

3.2.1 OPERATIONAL VARIABLES

A research problem seeks to analyse the relationship between two or more variables. In order to explain the probable answer to the research problem, a research hypothesis is formulated which determines the probable relationship between dependent and independent variables. In the present investigation, there are four independent variables (family climate, mental health, study habits & self confidence) and one dependent variable i.e. academic achievement.

3.2.2 DEPENDENT VARIABLES

The variable being affected or assumed to be affected by the independent variable is called dependent variable. In the present investigation academic achievement has acted as a criterion/dependent variable as the effect of four other variables has to be seen on it.

3.2.3 INDEPENDENT VARIABLES

A variable that affects (or is assumed to affect) the dependent variable under study and is included in the research design so that its effect can be determined.
Family climate, mental health, self confidence and study habits are independent and in the present investigation as these are manipulated to provide the desired objectives.

The investigator in order to collect the data has adapted all the standardised tests of family climate, mental health, self-confidence and study habits.

3.3 TOOLS USED IN THE STUDY

In order to meet the needs, aims and objectives of the present work, the following tools and measures were adopted:

- Family Environment Scale (FES) developed by Bhatia and Chadha (1993).
- Mental Health Battery (MHB) developed by Singh and Gupta (2008).
- Study Habits Inventory (PSSHJ) by Palsane and Sharma (2003).
- Self Confidence Inventory (ASCI) by Agnihotri (1993).

3.4 ADMINISTRATION OF THE TOOLS

The investigator personally visited each institution, where students were consulted for explaining the purpose of the study and were instructed how to respond to different tools. Tools of four independent variables i.e., Family Environment Scale, Mental Health Battery, Study Habits Inventory and Self Confidence Inventory were administered on the prospective students. Test administration is one of the most important steps in the research process because in the absence of correct test administration, one cannot get reliable results.

Thus, in order to develop rapport and to get the right responses from the sample population a brief talk was given to them. The instructions given in each tool were explained in a specified manner and it was ensured that subjects should be seated comfortably and as far as possible should not have a chance a talk to other students or glance at their answers. They were given full assurance by the investigator that information collected from them would be kept confidential.
Further clarifications were offered on the questions/doubts raised by them and they were requested to cooperate with the investigator for successful completion of the research. Each tool was administered in accordance with the instructions laid down in their respective manuals. Before starting the investigator made her best efforts to see that each subject has clearly understood.

3.5 DESCRIPTION OF THE TOOLS USED IN THIS STUDY AND THEIR SCORING

All the four tools i.e., Family Environment Scale (FES), Mental Health Battery (MHB), Study Habits Inventory (PSSIH), and Self Confidence Inventory (ASCI), are discussed separately under different heads. The description of each tool is given below-

3.5.1 FAMILY ENVIRONMENT SCALE (FES) 1993:

In this investigation Family Environment Scale was used to measure Family Climate of adolescents. This scale was constructed by Bhatia and Chadha in the year 1993. It was developed for the subjects whose age range was between 17 to 50 years. This test was constructed on a five point scale (Strongly Agree, Neutral, Disagree and Strongly Disagree). It contains 69 items.

**Dimensions of FES:**

The following are the eight dimensions of Family Environment Scale:

**Relationship Dimensions**

1- **Cohesion.** Degree of commitment, help, and support family members provide for one another.

2- **Expressiveness.** Extent to which family members are encouraged to act openly and express their feelings and thoughts directly.

3- **Conflict.** Amount of openly expressed aggression and conflict among family members.
4- **Acceptance and Caring.** Extent to which the members are unconditionally accepted and the degree to which care is expressed in the family.

**Personal Growth Dimensions**

5- **Independence.** Extent to which family members are assertive and independently make their own decisions.

6- **Active-Recreational Orientation.** Extent of participation in social and recreational activities.

**System Maintenance Dimensions**

7- **Organization.** Degree of importance of clear organization structure in planning family activities and responsibilities.

8- **Control.** Degree of limit setting within a family.

**Reliability:**

Split-half reliability was found for the present scale. For this purpose, the present scale was split into who halves. The scores of each dimension were also split into two halves. The scores for each of these halves were then correlated. From this self-correlation of the half-tests, the reliability coefficient of the whole test was estimated using the Spearman-Brown Prophecy formula. The reliability coefficients thus obtained are as follows.
Table: 3.1  
Reliability of Family Environment Scale

<table>
<thead>
<tr>
<th>Sub-Scales</th>
<th>Reliability coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cohesion</td>
<td>0.92</td>
</tr>
<tr>
<td>2. Expressiveness</td>
<td>0.88</td>
</tr>
<tr>
<td>3. Conflict</td>
<td>0.84</td>
</tr>
<tr>
<td>4. Acceptance and Caring</td>
<td>0.86</td>
</tr>
<tr>
<td>5. Independence</td>
<td>0.70</td>
</tr>
<tr>
<td>6. Active-Recreational Orientation</td>
<td>0.48</td>
</tr>
<tr>
<td>7. Organization</td>
<td>0.75</td>
</tr>
<tr>
<td>8. Control</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Overall Test Reliability Coefficient = 0.95

*Validity:*  
Both face and content validity were tested by giving the scale to eighteen experts to evaluate the test items. Only those items with at least 75 percent agreement among the judges were retained.  
For content validity, the dimensions of the family environment were selected and clearly defined for the purpose of measuring the specific aspects of the environment. These definitions were also subjected to the judgement of the eight experts in the first step, and five experts in the second step.

*Norms:* Specific norms need to be formulated separately for each specific group under study.
Table: 3.2

Qualitative norms of FES for the sample of the age range of 17 to 50 years

<table>
<thead>
<tr>
<th>Sub-Scales</th>
<th>Raw Score</th>
<th>Qualitative Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cohesion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>61 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>46 to 60</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>45 and below</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Expressiveness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>28 to 39</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>27 and below</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Conflict</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>52 and above</td>
<td>Low conflicts</td>
</tr>
<tr>
<td></td>
<td>38 to 51</td>
<td>Average conflicts</td>
</tr>
<tr>
<td></td>
<td>37 and below</td>
<td>High conflicts</td>
</tr>
<tr>
<td><strong>Acceptance and Caring</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>55 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>41 to 54</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>40 and below</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Active-Recreational</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Orientation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>34 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>26 to 33</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>25 and below</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Independence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>41 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>31 to 40</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>30 and below</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>7 to 9</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>6 and below</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>14 to 17</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>1 and below</td>
<td>Low</td>
</tr>
</tbody>
</table>

* In this sub-scale, high score is indicative of low conflict and vice-versa.
Scoring:

The scoring pattern of FES is given in table 3.3.

Table: 3.3

<table>
<thead>
<tr>
<th>Positive Items</th>
<th>Response</th>
<th>Negative Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Strongly Agree</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Agree</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Neutral</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Disagree</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>Strongly Disagree</td>
<td>5</td>
</tr>
</tbody>
</table>

Table: 3.4

Final FES Scale along with the response categories

<table>
<thead>
<tr>
<th>Sub-Scales</th>
<th>Positive Items</th>
<th>Negative Items</th>
<th>Total Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Relationship Dimensions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cohesion</td>
<td>1, 9, 24, 37, 43, 55, 60, 63, 66, 69</td>
<td>17, 49, 31</td>
<td>13</td>
</tr>
<tr>
<td>2. Expressiveness</td>
<td>10, 25, 38, 44, 56</td>
<td>2, 18, 32, 50</td>
<td>9</td>
</tr>
<tr>
<td>3. Conflict</td>
<td>11, 19, 39, 51, 61, 67</td>
<td>3, 26, 33, 45, 57, 64</td>
<td>12</td>
</tr>
<tr>
<td>II. Personal Growth Dimensions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Independence</td>
<td>4, 27, 46, 52</td>
<td>12, 20, 34, 40, 58</td>
<td>9</td>
</tr>
<tr>
<td>6. Active Recreational Orientation</td>
<td>5, 13, 21, 28, 17</td>
<td>35, 41, 53</td>
<td></td>
</tr>
<tr>
<td>III. System Maintenance Dimensions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Organization</td>
<td>14</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>8. Control</td>
<td>7, 22</td>
<td>15, 29</td>
<td>4</td>
</tr>
</tbody>
</table>
3.5.2 MENTAL HEALTH BATTERY (MHB) 2008:

Mental Health Battery (MHB) intends to assess the status of Mental Health of persons in the age range of 13 to 22 years. This battery was prepared by Singh and Gupta in the year 2008. As it is a battery of sub tests, so items for each part were separately written and submitted to a group of experts in the fields to judge their face validity. Subsequently, language expert also made necessary corrections and modifications. Following Kelley’s method (N=370) they were subjected to item analysis which finally yielded about 150 items for the MHB. In selecting item preference was given to those items which and high positive discrimination index (Singh, 1998). The social desirability values of the items in the first five parts were determined by correlating the items with Hindi version of Moriowe-Crowne (ND) Social Desirability Scale (1960). Items which yielded high and significant correlations, with M-D scale were dropped. Finally a set of 130 items were retained for MHB. Following are 130 items selected dimension wise for MHB.

<table>
<thead>
<tr>
<th>Part</th>
<th>Dimension</th>
<th>Total No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I</td>
<td>Emotional Stability (ES)</td>
<td>15</td>
</tr>
<tr>
<td>Part II</td>
<td>Over-all Adjustment (SA)</td>
<td>40</td>
</tr>
<tr>
<td>Part III</td>
<td>Autonomy (AY)</td>
<td>15</td>
</tr>
<tr>
<td>Part IV</td>
<td>Security-Insecurity (SA)</td>
<td>15</td>
</tr>
<tr>
<td>Part V</td>
<td>Self-Concept (SC)</td>
<td>15</td>
</tr>
<tr>
<td>Part VI</td>
<td>Intelligence (IG)</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Dimension wise items of MHB</strong></td>
<td><strong>130</strong></td>
</tr>
</tbody>
</table>
**Dimensions of MHB:**

The following are the six dimensions of MHB:

1- **Emotional Stability.** It refers to experiencing subjective stable feelings which have positive or negative values for the individual.

2- **Adjustment.** It refers to individual’s achieving an overall harmonious balance between the demands of various aspects of environment, such as home, health, social, emotional and school on the one hand and cognition on the other.

3- **Autonomy.** It refers to a stage of independence and self-determination in thinking.

4- **Security-Insecurity.** It refers to a high or low sense of safety, confidence, freedom from fear, apprehension or anxiety particularly with respect to fulfilling the persons present or future needs.

5- **Self-Concept.** It refers to the sum total of person’s attitudes and knowledge towards himself and evaluation of his achievements.

6- **Intelligence.** It refers to general mental ability which helps the person in thinking rationally, and in behaving purposefully in his environment.

**Reliability:**

Both tempora stability reliability and internal consistency reliability of MHB were computed. The details are given in Table 1.
Table: 3.6
Reliability Coefficient of MHB

<table>
<thead>
<tr>
<th>Part</th>
<th>Mean Age</th>
<th>N</th>
<th>Test-retest reliability</th>
<th>Odd-even (whole length) reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>15.6</td>
<td>102</td>
<td>$r_{tt} = .876$</td>
<td>$r_{tt} = .725$</td>
</tr>
<tr>
<td>Part II:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Adjustment</td>
<td></td>
<td></td>
<td>$r_{tt} = .821$</td>
<td>$r_{tt} = .871$</td>
</tr>
<tr>
<td>Part III:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td></td>
<td></td>
<td>$r_{tt} = .767$</td>
<td>$r_{tt} = .812$</td>
</tr>
<tr>
<td>Part IV:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security-Insecurity</td>
<td></td>
<td></td>
<td>$r_{tt} = .826$</td>
<td>$r_{tt} = .829$</td>
</tr>
<tr>
<td>Part V:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Concept</td>
<td></td>
<td></td>
<td>$r_{tt} = .786$</td>
<td>$r_{tt} = .861$</td>
</tr>
<tr>
<td>Part VI:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligence</td>
<td></td>
<td></td>
<td>$r_{tt} = .823$</td>
<td>$r_{tt} = .792$</td>
</tr>
</tbody>
</table>

Note: All correlation values were significant (P<.01)

Validity:

MHB was validated against the different test developed earlier. Part I of MHB was validated against Emotional Stability Test developed earlier by Sen Gupta & Singh (1985). Part II was validated against High School Adjustment Inventory (HSAI) developed earlier by Singh and Sen Gupta (1987) and Hindi adaptation of Bell’s Adjustment Inventory by Mohsin, Shamshad and Jehan (1967). For part III and part V Construct validity was computed. Part IV was validated against Neuroticism Scale of MPI as adapted by Jaloa & Kapoor (1975). Likewise, part VI was validated against Jalota Group General Mental Ability Test (176). Only relevant parts of MHB with suitable criteria were given to the random sample of 102. The standard instructions of the test and the criteria were followed the details are given in Table-2.
Table: 3.7

Validity Coefficients of MHB

<table>
<thead>
<tr>
<th>Parts of MHB</th>
<th>N</th>
<th>Concurrent Validity</th>
<th>Parts of MHB</th>
<th>N</th>
<th>Construct Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I: ES</td>
<td>102</td>
<td>.673*</td>
<td>Part III: AY</td>
<td>102</td>
<td>.681*</td>
</tr>
<tr>
<td>Part II: QA</td>
<td></td>
<td>.704*</td>
<td>Part V: SC</td>
<td></td>
<td>.601*</td>
</tr>
<tr>
<td>Part IV: SI</td>
<td></td>
<td>.821*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part VI: IG</td>
<td></td>
<td>.823*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* P < 0.0

**Scoring:**

The scoring of MHB comprises of two sections – Section A and Section B.

**Section-A.** Item Nos. I to IV of preliminary information was given weight to determine socio-economic status (SES) of the examinee (a), (b), (c) and (d) of item No. II, III and IV each should be given the score of 1, 2, 3 and 4 respectively whereas, (a), (b), (c), (d) and (e) of item No. 1 was given a score 5, 4, 3, 2 and 1 respectively. Scores earned were added together to yield final total score and finally, SES was judged as under:

15-17 = upper

9-14 = Middle

8 or below = Low

**Section - B:** The answers of those items (in each part) which tally with the answers given in the scoring key was given a score of 1. If they don’t tally, they were given a score of zero.
Scoring Key:

Part I:  Item Nos.:  1, 2, 3, 4, 5, 7, 8, 9, 10, 12, 14, 15 = No
          Item Nos.:  6, 11, 13 = Yes.

Part II: Item Nos.:  16, 19, 22, 26, 27, 30, 35, 37, 40, 41, 42, 43, 47, 49,
          50, 52, 53 = Yes
          Item Nos.:  17, 18, 20, 21, 23, 24, 25, 28, 29, 31, 32, 33, 34, 36,
          38, 39, 44, 46, 48, 51, 54, 55 = No

Part III: Item Nos.:  58, 60, 61, 62, 63, 66 = (a)
          Item Nos.:  56, 57, 59, 64, 67, 68, 69, 70 = (b)

Part IV: Item Nos.:  1, 72, 73, 74, 75, 77, 79, 80, 82 = Yes
          Item Nos.:  76, 78, 81, 83, 84, 85 = No

Part V:  Item Nos.:  86, 87, 88, 91, 92, 93, 94, 95, 96, 97, 100 = Correct
          Item Nos.:  90, 98, 99 = Incorrect

Part VI: Item Nos.:  101, 105, 106, 109, 113, 117, 125, 127 = (a)
          Item Nos.:  107, 108, 110, 115, 118, 119, 120, 122, 124, 126,
          128, 129 = (b)
          Item Nos.:  103, 104, 114, 121 = (c)
          Item Nos.:  102, 111, 112, 116, 130 = (d)
3.5.3 STUDY HABITS INVENTORY (PSSHI) 2003:

In the present investigation Study Habits Inventory was used to measure Study Habits of adolescents. This inventory contains 45 items and was developed by Palsane & Sharma in the year 2003.

Dimensions:

Diagnosis of the students study habits should cover the following areas:

(i) Budgeting time- it is very important to plan the budget of study time. Time schedule helps to adjust the study periods and other activities according to the needs of the individual. The best way to budgeting the time is to keep the record of all activities throughout the day for one week in a diary. By budgeting time, students can optimize their success in study as well as their extra-curricular activities.

(ii) Physical conditions for study- physical conditions play an important part in study habits. The place for study should be calm and quiet. It should be clean and there should be proper illumination and ventilation. Furniture should be comfortable. There should be sufficient light. Study table should be clean and contain only all necessary things e.g. papers, pen, pencil, books etc.

(iii) Reading ability- reading is the basic skill in any kind of study. It includes various factors as good vocabulary, speed of reading, comprehension, independent selection of appropriate material for reading and locating information. One must try to build up a good memory by remembering the precise meaning of the words. Speed of reading is also an important factor. Silent reading is always faster than loud reading. It’s necessary to adjust the speed of reading according to the importance of matter. Technical material requires more time than usual one. An individual should try to understand what he is reading. He should try to remember the ideas he has grasped while reading and should be able to summarize the main ideas.
(iv) **Taking notes**- taking notes in the classroom is an important learning activity. Taking notes from book also helps a great deal in study. There are different ways of taking notes. One may copy everything from book. One may take down only important paragraphs or one may take down the headings and sub-headings and important key paragraphs to make an outline. Paraphrasing in one’s own words and summarizing is supposed to be the best way of making one’s notes. It is a good practice to combine class notes from books to make a final note. With the help of regular practice note-taking can become a habit.

(v) **Factors in learning motivation**- Apart from ability to learn, desire to learn is an important consideration. If one is genuinely interested in learning he/she may learn quickly and retain it for a long time. There are individual differences in capacity to learn. Everybody can improve with extra efforts. Spirit of competition and co-operation helps in learning. One learns better in a group.

(vi) **Memory**- improving memory means learning better. Distributing learning periods is preferable to continuous or massed learning. The better we learn the longer we retain. Over learning helps in remembering the matter for a longer period.

(vii) **Taking examinations**- most of our examinations are of essay type where a few questions are given and students are required to write long answers. If is good to prepare an outline and arrange the ideas properly, following a logical pattern of presentation. Use of simple language is advisable. Separate ideas should be discussed in paragraphs. Headings and sub-headings should be properly placed. Important words and phrases may be underlined.

   a- **Preparation for examination**- One should devote more time and attention to his weak points. A time schedule for study should be prepared. If one is regular in his/her study habits he is already prepared for the examination. Calm, cool and relaxed attitude towards the examination is necessary and can be achieved only after a good preparation.
b- Use of examination results - from the results one can find out his strong and weak points. Knowledge of results can motivate an individual and direct his efforts.

(viii) Health - regular and healthy habits of eating, exercise, recreation and sleep help in maintaining good health and sound mental state which is necessary to achieve success in the examination.

Reliability:

The reliability of the inventory is determined by two methods:

i. The reliability coefficient was found to be .88 by test re-test method (with an interval of 4 weeks) on a sample of 200 male students of undergraduate classes.

ii. The reliability coefficient was found to be .67 with an interval of 3 months on a sample of 60 girls studying in intermediate classes.

iii. Using split half technique on 150 boys of intermediate and undergraduate classes, the coefficient of correlation was found to be .56 between odd and even item.

Validity:

The inventory, besides having a high face validity, has the other validity coefficients which are given below:
Table: 3.8
Validity coefficients of Study Habits Inventory

a. With External Criterion (Similar type of Study Habit Inventories)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of other tests</th>
<th>N</th>
<th>Validity Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Study Habit Inventory</td>
<td>80</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>- Mukhopadhyaya and Sansanwal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Test of Study Habits and Attitudes</td>
<td>80</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>- C.P. Mathur</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Study Habit Inventory</td>
<td>80</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>- B. V. Patel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Study Involvement Inventory</td>
<td>80</td>
<td>.83</td>
</tr>
<tr>
<td></td>
<td>- Asha Bhatnagar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. With other Variable Measures

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of other tests</th>
<th>N</th>
<th>Validity Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Verbal Achievement Motivation Test</td>
<td>50</td>
<td>.46</td>
</tr>
<tr>
<td></td>
<td>- V. P. Bhargava</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Scholastic Achievement (Total Marks in Annual Examination)</td>
<td>50</td>
<td>.42</td>
</tr>
<tr>
<td>3.</td>
<td>Level of Aspiration</td>
<td>50</td>
<td>.58</td>
</tr>
<tr>
<td></td>
<td>- Shah and Bhargava</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Reading Comprehension Test</td>
<td>50</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>- Ahuja &amp; Ahuja</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The above Validity Coefficients indicate that the inventory has sufficiently high Validity with other similar inventories and allied measures by other authors and have significant relationship with other variables which influence the study habits and academic performances.

**Scoring:**

The procedure of scoring is quite simple. For ‘Always’ or ‘Mostly’ response, score of 2 is awarded, whereas 1 and 0 scores are to be given for ‘Sometimes’ and ‘Never’ response respectively.

**Table: 3.9**

**Scoring pattern of Study Habits Inventory**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Always or Mostly</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Sometimes</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>

In case of statement Nos. 6, 9, 13, 15, 24, 26, 34, 36, 37, 41 & 42 the weightage of scoring is reversed and it is as 0, 1 and 2 for ‘always’, ‘sometimes’ and ‘never’ responses respectively. The maximum obtainable score is 90. Higher score indicates good study habits.

**3.5.4 AGNIHOTRI’S SELF CONFIDENCE INVENTORY (ASCI) 1993:**

In this study Self Confidence Inventory was used to measure the Self Confidence of adolescents. This inventory was prepared by Agnihotry in the year 1993. The preliminary form of the inventory consisting of ninety true-false type items, was administered to a sample of 200 individuals. The extreme groups were identified by taking 27% of the top scores and 27% of the bottom scores. On the basis of the proportion of true and false answer for each item the validity index of each item was determined with the help of Flanagan’s Table of normalized biserial coefficients. The obtained validity indices ranged
between .07 and .73. The items having validity indices .25 and above were retained for the final form of the inventory. Thus, the final form of the inventory has 56 items.

**Standardization Sample:**

The inventory was then administered in two far-flung cities of the U.P. State – Meerut in the Western U.P. and Allahabad in the Central U.P. – to a sample of 2074 individuals of both the sexes (Males N=748; Females N=1326).

**Table: 3.10**

<table>
<thead>
<tr>
<th>Method</th>
<th>N</th>
<th>Reliability Coefficient</th>
<th>Index of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-Half</td>
<td>362</td>
<td>.91</td>
<td>.95</td>
</tr>
<tr>
<td>K-R Formula 20</td>
<td>200</td>
<td>.89</td>
<td>.94</td>
</tr>
<tr>
<td>Test-Retest</td>
<td>116</td>
<td>.78</td>
<td>.88</td>
</tr>
</tbody>
</table>

(After one month)

**Validity:**

In item-analysis validity coefficients were determined for each item by biserial correlation method and only those items were retained which yielded .25 or above biserial correlation with the total score.

The inventory was also validated by correlating the scores obtained on this inventory with the scores obtained by the subject on Basavanna’s (1975) Self Confidence Inventory. The validity coefficient obtained is .82 which is significant beyond .01 level.
**Scoring:**

The inventory was scored by hand. A score of one is awarded for a response indicative of lack of Self-Confidence, i.e., for making cross (x) to incorrect response to item nos. 2, 7, 23, 31, 40, 41, 43, 44, 45, 53, 54, 55, and for making cross (x) to correct response to the rest of the items. Hence, the lower the score, the higher would be the level of Self-Confidence and vice-versa.

**3.5.5 ACADEMIC ACHIEVEMENT**

It is the knowledge attained or skills developed in the school subjects, usually designated by test scores or by marks assigned by teachers or by both. The investigator for the purpose of the study obtained XII class board examination marks of the subjects from their school records. The obtained marks of the students acted as the scores of dependent variable.

**3.6 SELECTION OF THE SAMPLE**

The problem of actual selection of the sample of required type and size becomes indeed very crucial of any systematic and scientific method of enquiry. Adequate sampling design involves a number of considerations such as nature and characteristics of the populations from which the sample is to be drawn, accessibility of the subjects chosen, availability of time and resources at the disposal of the investigator and appropriateness of the statistical treatment of the data etc.

Keeping in view the above principle, the researcher followed the following steps-

**3.6.1- Description of the Universe and its elements**

Universe of the present study consisted of the male and female respondents of science and arts stream of the age group 16 to 18 years, studying in XII class of Intermediate Colleges of Etawah and Aligarh City, which were affiliated to U.P. Board of Education, Allahabad. All the elements in the population were included irrespective of their caste, creed, religion and family occupation.
3.6.2- Size of the Sample

The main consideration in the selection of the sample was its representativeness. In this study representativeness was ensured by adopting simple random sampling without replacement selection technique. Sampling without replacement means that there are no repetitions or duplications of the units in the sample. A sample of 865 students was taken under this study. It is given in table 3.11.

3.6.3 Sample Selection

The representative sample for the present investigation was selected by using the following procedure.

3.6.3.1 Selection of the institutions- To select the institutions from which target sample has been taken, first the investigator brought the list of Intermediate colleges of Etawah and Aligarh from the District Inspector of Schools office. Only 19 schools were taken from Etawah and Aligarh city. These schools were selected through lottery method, and male and female respondents both from science and arts stream were selected by using simple random sampling without replacement technique.

3.6.3.2 Selection of the sample- The final sample of male and female students of science and arts stream from the total cluster of students studying in XII class of science and arts group of each institution between 16 to 18 years of age were selected by using simple random sampling without replacement. Institution wise number of sample units on whom tests were administered are being presented in the table below.
<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of selected schools</th>
<th>No. of respondents</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>1-</td>
<td>Govt. Girls Inter College (GGIC), Etawah</td>
<td>45</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>2-</td>
<td>Govt. Inter College (GIC), Etawah</td>
<td></td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>3-</td>
<td>Arya Kanya Inter College, Etawah</td>
<td></td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>4-</td>
<td>Shri Sanatan Dharma Inter College, Etawah</td>
<td>35</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>5-</td>
<td>Boddh Vidya Mandir, Etawah</td>
<td>43</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>6-</td>
<td>Shorawal Inter College, Etawah</td>
<td></td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>7-</td>
<td>Islamia Inter College, Etawah</td>
<td>41</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>8-</td>
<td>Karma Kchitra Inter College, Etawah</td>
<td></td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>9-</td>
<td>Archana Memorial Inter College, Etawah</td>
<td>24</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>10-</td>
<td>Naurangi Lal Inter College, Aligarh</td>
<td>35</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>11-</td>
<td>Shri Mad Brahmanand Inter College, Aligarh</td>
<td>44</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>12-</td>
<td>Dharma Samaj Inter College, Aligarh</td>
<td>20</td>
<td>06</td>
<td></td>
</tr>
<tr>
<td>13-</td>
<td>Shri Maheshwar Inter College, Aligarh</td>
<td></td>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>14-</td>
<td>Champa Agrawal Inter College, Aligarh</td>
<td>15</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>15-</td>
<td>Rajkiye Balika Inter College, Aligarh</td>
<td>23</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>16-</td>
<td>Ram Katori Varshney Inter College, Aligarh</td>
<td></td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>17-</td>
<td>Chiranji Lal Inter College, Aligarh</td>
<td></td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>18-</td>
<td>Dharma Samaj Anglo Vedic Inter College, Aligarh</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-</td>
<td>Manoj Bal Inter College, Aligarh</td>
<td>13</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>GRAND TOTAL</strong></td>
<td><strong>276</strong></td>
<td><strong>244</strong></td>
<td><strong>180</strong></td>
</tr>
</tbody>
</table>
In the present study the total sample of XII class secondary school students from various secondary schools of Aligarh and Etawah District of Uttar Pradesh were taken. Out of the total sample of 865, 520 science and 345 arts respondents were selected. The details have been given in the table No. 3.11 and the locations have been shown in Map No. 3.12.
3.6.4. Testing of the Representativeness of the Sample -

In empirical researches, where parametric statistics is to be used, it is essential to know whether the selected sample size is adequate for the purpose of fulfilling the assumptions of parametric statistics and whether the sample is representative of the target population, so that the generalizations of the results can be made authentically. Thus the representativeness of the sample size were determined by using the following procedure.

The primary consideration in determining the representativeness of the sample is the distribution of the scores obtained on a well defined variable and the standard error of the measure.

In relation to the present investigation, academic achievement was considered the relevant variable for testing the representativeness of the selected sample. The reason behind this is the normal distribution of the achievement scores in the universe.

In order to scrutinize the nature of academic achievement scores in the selected population of male and female, science and arts stream students of senior secondary schools, the scores obtained as Academic achievement were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table below.
SAMPLE OF ARTS SATUDENTS:

Table- 3.6.4.1

Frequency distribution of the Academic achievement Scores of boys and girls of arts stream and the total sample of Arts stream.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Arts Stream)</th>
<th>Girls (Arts Stream)</th>
<th>Total Arts Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>111 - 130</td>
<td>3</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>2</td>
<td>131 - 150</td>
<td>6</td>
<td>9</td>
<td>5.0</td>
</tr>
<tr>
<td>3</td>
<td>151 - 170</td>
<td>12</td>
<td>21</td>
<td>11.7</td>
</tr>
<tr>
<td>4</td>
<td>171 - 190</td>
<td>16</td>
<td>37</td>
<td>20.6</td>
</tr>
<tr>
<td>5</td>
<td>191 - 210</td>
<td>27</td>
<td>64</td>
<td>35.6</td>
</tr>
<tr>
<td>6</td>
<td>211 - 230</td>
<td>29</td>
<td>93</td>
<td>51.7</td>
</tr>
<tr>
<td>7</td>
<td>231 - 250</td>
<td>30</td>
<td>123</td>
<td>68.3</td>
</tr>
<tr>
<td>8</td>
<td>251 - 270</td>
<td>32</td>
<td>155</td>
<td>86.1</td>
</tr>
<tr>
<td>9</td>
<td>271 - 290</td>
<td>16</td>
<td>171</td>
<td>95.0</td>
</tr>
<tr>
<td>10</td>
<td>291 - 310</td>
<td>6</td>
<td>177</td>
<td>98.3</td>
</tr>
<tr>
<td>11</td>
<td>311 - 330</td>
<td>2</td>
<td>179</td>
<td>99.4</td>
</tr>
<tr>
<td>12</td>
<td>331 - 350</td>
<td>1</td>
<td>180</td>
<td>100</td>
</tr>
<tr>
<td>13</td>
<td>351 - 370</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>14</td>
<td>371 - 390</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

N  180  165  345

Circumspection of the above table 3.6.4.1 reveals that the scores of Academic achievement for the sample of girls (arts) and boys (arts) and that of the total sample of arts stream is normally distributed. Table 3.6.4.1 clearly shows that the frequencies of Academic achievement scores of male population are concentrated towards the upper end while that of female population are...
concentrated towards the centre of the distribution. This indicates that most of the boys in the population under study are tended to perform below average, while majority of girls are tended to be average in their Academic achievement. More over the mean value for girls was found higher than for boys (vide table 3.6.4.2).

This finding is in confirmation with the earlier findings of Fabregat, Anton & Angel, (2004) and Joshi & Srivastava (2009).

Fig. 3.6.4.1.1

Frequency polygon showing Academic achievement scores of boys of Arts stream (N=180).
Fig. 3.6.4.1.2

Frequency polygon showing academic achievement scores of girls of Arts stream (N=165).
Various statistical values like Mean, Median, S.D., Q.D., Skewness and Kurtosis of the Academic achievement scores were also computed and presented in the table below:
Table- 3.6.4.2

Statistical measures of the Academic achievement scores of boys, girls and total sample of Arts stream.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(180)</td>
<td>225.92</td>
<td>226</td>
<td>43.56</td>
<td>25</td>
<td>-0.094</td>
<td>-0.179</td>
</tr>
<tr>
<td>Girls(165)</td>
<td>243.40</td>
<td>241.00</td>
<td>37.43</td>
<td>25</td>
<td>0.782</td>
<td>0.619</td>
</tr>
<tr>
<td>Total</td>
<td>234.33</td>
<td>235.5</td>
<td>41.63</td>
<td>25</td>
<td>0.492</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Perusal of the above table reveals that there is negligible negative skewness in the distribution of the Academic achievement scores of boys while distribution of girls is found to be positively skewed. As regards the skewness and kurtosis of the total arts sample, the positive value of skewness (.014) suggests that data is skewed to the right, and the distribution is approximately symmetric. The excess kurtosis (.492) is slightly more than zero implies that distribution is leptokurtic. This value implies reducing high probability for extreme values.

The observations leads to the conclusion that Academic achievement scores of students of arts stream are normally distributed.
SAMPLE OF SCIENCE STUDENTS:

Table- 3.6.4.3

Frequency distribution of the Academic achievement scores of boys and girls of Science stream and of the total sample of science stream.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Science stream)</th>
<th>Girls (Science stream)</th>
<th>Total Science Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>110 – 134</td>
<td>5</td>
<td>5</td>
<td>1.8</td>
</tr>
<tr>
<td>2</td>
<td>135 - 158</td>
<td>7</td>
<td>12</td>
<td>4.3</td>
</tr>
<tr>
<td>3</td>
<td>159 - 182</td>
<td>28</td>
<td>40</td>
<td>14.5</td>
</tr>
<tr>
<td>4</td>
<td>183 – 206</td>
<td>37</td>
<td>77</td>
<td>27.9</td>
</tr>
<tr>
<td>5</td>
<td>207 – 230</td>
<td>40</td>
<td>117</td>
<td>42.4</td>
</tr>
<tr>
<td>6</td>
<td>231 – 254</td>
<td>40</td>
<td>157</td>
<td>56.9</td>
</tr>
<tr>
<td>7</td>
<td>255 – 278</td>
<td>31</td>
<td>188</td>
<td>68.1</td>
</tr>
<tr>
<td>8</td>
<td>279 – 302</td>
<td>32</td>
<td>220</td>
<td>79.7</td>
</tr>
<tr>
<td>9</td>
<td>303 – 326</td>
<td>27</td>
<td>247</td>
<td>89.5</td>
</tr>
<tr>
<td>10</td>
<td>327 – 350</td>
<td>15</td>
<td>262</td>
<td>94.9</td>
</tr>
<tr>
<td>11</td>
<td>351 – 374</td>
<td>6</td>
<td>268</td>
<td>97.1</td>
</tr>
<tr>
<td>12</td>
<td>375 – 398</td>
<td>4</td>
<td>272</td>
<td>98.6</td>
</tr>
<tr>
<td>13</td>
<td>399 - 422</td>
<td>1</td>
<td>273</td>
<td>98.9</td>
</tr>
<tr>
<td>14</td>
<td>423 – 446</td>
<td>2</td>
<td>275</td>
<td>99.6</td>
</tr>
<tr>
<td>15</td>
<td>447 – 470</td>
<td>1</td>
<td>276</td>
<td>100</td>
</tr>
</tbody>
</table>

| N    | 276            | 244           | 520           |

Circumspection of the above table reveals that the scores of Academic achievement for the sample of girls (science) and boys (science) and that of the total sample of science students is normally distributed. Table 3.6.4.3 clearly
shows that the frequencies of Academic achievement scores of male population are concentrated towards the upper end while that of female population are concentrated towards the centre of the distribution. This indicates that most of the boys in the population under study are tended to perform below average, while majority of girls are tended to be average in their Academic achievement. More over the mean value for girls was found higher than for boys (vide table 3.6.4.4).

This finding is in confirmation with the earlier findings of *Fabregat, Anton & Angel, (2004)* and *Joshi & Srivastava (2009)*.

**Fig. 3.6.4.3.1**

**Frequency polygon showing Academic achievement scores of boys of Science stream (N=276).**
Fig. 3.6.4.3.2

Frequency polygon showing Academic achievement scores of girls of Science stream (N=244).
Frequency polygon showing Academic achievement scores of total students of science stream (boys + girls) (N=520)

The calculated statistical values like Mean, Median, S.D., Q.D., Skewness, and Kurtosis of Family climate scores of male, females of science and of the total science sample are presented in table 3.6.4.4 in order to understand the variation existing between two groups and dispersion between the groups.
Table- 3.6.4.4

Statistical measures of the Academic achievement scores of boys, girls and total sample of science stream.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(276)</td>
<td>248.31</td>
<td>245.50</td>
<td>62.18</td>
<td>25</td>
<td>.092</td>
<td>.415</td>
</tr>
<tr>
<td>Girls(244)</td>
<td>282.21</td>
<td>286.00</td>
<td>44.54</td>
<td>25</td>
<td>-.206</td>
<td>-.155</td>
</tr>
<tr>
<td>Total 520</td>
<td>264.22</td>
<td>264.50</td>
<td>57.12</td>
<td>25</td>
<td>-.119</td>
<td>-.004</td>
</tr>
</tbody>
</table>

Perusal of the above table 3.6.4.4 reveals that there is positive skewness in the distribution of the academic achievement scores of boys while distribution of girls is found to be negatively skewed. As regards the skewness and kurtosis of the total science sample, the negative value of skewness (-.004) suggests that data is ignorially skewed to the left, and the distribution is approximately symmetric. The excess kurtosis (-.119) is slightly less than zero implies that distribution is platikurtic.

The observations leads to the conclusion that Academic achievement scores of the students of Science stream are normally distributed.

3.7 HURDLES IN DATA COLLECTION

Unfortunately, the data collection work was delayed due to many unforeseen difficulties. The main difficulties encountered were as follows:

1- Lack of cooperation of principals and teachers was the main hurdle that the investigator encountered during the data collection process of students.

2- Winter vacation, summer vacation, gazetted holidays, half working days on weekends, school functions, inspection days, practicals, examinations etc. were the other hurdles which the investigator encountered during data collection process.
3.8 STATISTICAL TECHNIQUES EMPLOYED:

The analysis of the data is really a major task in the field of research. Analysis involves the scientific temper and expertness. However, the investigator kept into consideration the very basic norms for the analysis of the data. Appropriate statistical techniques were employed for analysing the data. In order to examine and justify the objectives of the study both descriptive and inferential statistics were used.

3.8.1 DESCRIPTIVE STATISTICS

Certain descriptive statistics were computed in order to describe the nature an distribution of the scores, obtained on the various tests. These were:

**Mean-** The mean value was computed as a measure of central tendency of the distribution of family climate, mental health, study habits & self confidence, as well as to compute measures of kurtosis and skewness of the various distributions of scores.

**Median-** The value of median of the various scores was computed to study the nature of distribution of scores and to compute the value of kurtosis and skewness.

**Standard Deviation-** This was computed to study the variation in the scores and to do other various computations.

**Quartile Values-** These values were calculated to compute kurtosis & skewness in the distribution of the scores.

**Percentile Values-** The percentile values mainly $P_{10}$ and $P_{90}$ were computed to calculate the values of kurtosis and skewness.

**Skewness-** These values were calculated in order to study the amount of divergence from the normalcy as well as to study its significance in distribution of scores of various variables in the universe and to ensure about the nature of distribution for computation of higher statistical values.
Kurtosis- These values were also computed in order to study the normalcy of the distribution of scores of various variables to ensure about the application of the higher sophisticated statistical values.

Frequency Polygons- They were drawn to study the nature of distribution of scores as well as their scatteredness or concentration towards the mean in the sample as well as in the universe.

Pearsons Coefficient of Correlation- The values of coefficient of correlation were computed mainly between the various sets of scores to study the relationship between dependent variable and various independent variables.

3.8.2. INFERENTIAL STATISTICS

The following inferential statistics were used in the present investigation to test the various hypotheses of the study, as well as to draw definite conclusions on the basis of the obtained results.

t-test- It was calculated to find out the difference between the means of two groups.

Multiple Correlation- The multiple correlation was calculated to find the extent to which the independent variables justify accounted for variance in the dependent variable.

Multiple Regression Coefficients- The value of multiple regression coefficients was computed to assess comparative effectiveness of different predictor variables in predicting the criterion variable.

Regression Equations- The regression equations were established to predict that criterion variable (the academic achievement of students) on the basis of predictive variables viz. Family climate, Mental health, Study habits & Self confidence of the subjects under study.
Chapter 4

Analysis and Interpretation

4.1.- Nature of distribution of predictive variables under study

4.2.- Analysis on the basis of correlation

4.3.- Analysis on the basis of Multiple regression.

4.4.- Establishing Regression Equation.

4.5.- Analysis on the basis of ‘t’-Ratio.
After the data has been collected, it is essential to put the unorganised information in a systematic manner in order to obtain the desired results and their interpretations scientifically. Therefore it is indispensable that the data should be presented in a well arranged manner so that the purpose of the study can be introduced by it. Hence, the statistics plays a unique and important role in every research work. That is why, now a day’s statistics is being inevitably used for getting definite results in a research work, because the results are understandable on the basis of statistical calculations and they can be given a specific meaning also. In the present research work, the data is analysed on the basis of statistics: - for studying the relationship between criterion variable (i.e. academic achievement) and various predictor variables, correlations are used. To study the contributory role of various predictor variables on criterion variable, multiple regression analysis is used. For calculating significant difference between two groups t-test is used by using mean and standard deviation, because for rejecting or accepting any hypothesis based on variables these tests are very important.

The analysis and interpretation of the data are two aspects but they cannot be separated because if we separate them, the remaining one has no meaning. In fact, the process of analysis and interpretation has been used from the starting point of the research work. Moreover the analysis and interpretation of the data is a true mirror of the work. Therefore, analysis explains the results given by data and interpretation explains the meaning of results as per objectives of the study. In the problem of the present research work, different hypotheses are being tested by using various statistical methods. In this chapter, the analysis and interpretation of data is being done hypotheses wise which are as under.
4.1. NATURE OF DISTRIBUTION OF PREDICTIVE VARIABLES UNDER STUDY:

The nature of the distribution of each predictive variable was studied both for male and female samples of science and arts stream, and for the total sample, with the help of frequency distributions, statistical values (Mean, Median, S.D., Q.D., Skewness and Kurtosis & frequency polygons). The nature of the distribution of each predictive variable is discussed separately as under.

4.1.1 NATURE OF DISTRIBUTION OF FAMILY CLIMATE SCORES

SAMPLE OF ARTS STUDENTS:

In order to scrutinize the nature of Family climate scores in the selected sample of male and female students of arts stream and of the total arts students of senior secondary stage, the scores procured on the Family Environment Scale were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table below.
Table 4.1.1.1

Frequency distribution of the Family Climate Scores of boys and girls of arts stream and of the total sample of arts students.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Arts)</th>
<th>Girls (Arts)</th>
<th>Total Arts Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>181 – 191</td>
<td>0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>192 – 202</td>
<td>6</td>
<td>6</td>
<td>3.3</td>
</tr>
<tr>
<td>3</td>
<td>203 – 213</td>
<td>4</td>
<td>10</td>
<td>5.6</td>
</tr>
<tr>
<td>4</td>
<td>214 – 224</td>
<td>17</td>
<td>27</td>
<td>15.0</td>
</tr>
<tr>
<td>5</td>
<td>225 – 235</td>
<td>24</td>
<td>51</td>
<td>28.3</td>
</tr>
<tr>
<td>6</td>
<td>236 – 246</td>
<td>32</td>
<td>83</td>
<td>46.1</td>
</tr>
<tr>
<td>7</td>
<td>247 – 257</td>
<td>37</td>
<td>120</td>
<td>66.7</td>
</tr>
<tr>
<td>8</td>
<td>258 – 268</td>
<td>31</td>
<td>151</td>
<td>83.9</td>
</tr>
<tr>
<td>9</td>
<td>269 – 279</td>
<td>20</td>
<td>171</td>
<td>95.0</td>
</tr>
<tr>
<td>10</td>
<td>280 – 290</td>
<td>6</td>
<td>177</td>
<td>98.3</td>
</tr>
<tr>
<td>11</td>
<td>291 – 301</td>
<td>3</td>
<td>180</td>
<td>100.0</td>
</tr>
</tbody>
</table>

N        180  165  345

A perusal of the above table indicates that most of the frequencies are within the range of 214 to 279. This shows that majority of the subjects are concentrated in the middle of the distributions i.e. there is normal tendency in the scores of Family Climate. This trend is also visible from the given figures 4.1.1.1.1, 4.1.1.1.2 & 4.1.1.1.3.
Fig. 4.1.1.1.1

Frequency polygon showing Family Climate scores of boys of arts stream.

(N=180)
Fig. 4.1.1.1.2

Frequency polygons showing Family Climate scores of girls of arts stream

(N=165)
Fig. 4.1.1.1.3

Frequency polygons showing Family Climate scores of total arts students (boys + girls) (N=345)

In order to further understand variation existing between two groups and dispersion within the arts group of boys, girls and the total arts sample the Mean, Median, S.D., Q.D. Skewness and Kurtosis were also computed and are given in the table below.
Table 4.1.1.2

Statistical measures of the Family Climate scores of boys, girls and total sample of Arts stream.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys (180)</td>
<td>247.58</td>
<td>249.00</td>
<td>21.43</td>
<td>25</td>
<td>-.162</td>
<td>-.188</td>
</tr>
<tr>
<td>Girls (165)</td>
<td>248.26</td>
<td>247.00</td>
<td>21.84</td>
<td>25</td>
<td>.424</td>
<td>.016</td>
</tr>
<tr>
<td>Total (345)</td>
<td>247.90</td>
<td>248.08</td>
<td>21.60</td>
<td>25</td>
<td>.117</td>
<td>-.086</td>
</tr>
</tbody>
</table>

A careful glance of the Table 4.1.1.2 reveals the skewness and kurtosis values. The negative value of skewness (-.086) suggests that data is skewed to the left, and is approximately symmetric. The excess kurtosis (.117) is slightly greater than zero implies that distribution is slightly leptokurtic.

The observations lead to the conclusion that Family climate scores of arts students are normally distributed.

**SAMPLE OF SCIENCE STUDENTS:**

In order to scrutinize the nature of Family climate scores in the selected population of male and female students of science stream and of the total science students, the scores procured on the Family Environment Scale were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.1.3.
Table- 4.1.1.3

Frequency distribution of the Family Climate Scores of boys and girls of science stream and of the total sample of science students.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Science)</th>
<th>Girls (Science)</th>
<th>Total Science Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>131 – 150</td>
<td>1</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>2</td>
<td>151 – 170</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>171 – 190</td>
<td>3</td>
<td>4</td>
<td>1.4</td>
</tr>
<tr>
<td>4</td>
<td>191 – 210</td>
<td>4</td>
<td>8</td>
<td>2.9</td>
</tr>
<tr>
<td>5</td>
<td>211 – 230</td>
<td>37</td>
<td>45</td>
<td>16.3</td>
</tr>
<tr>
<td>6</td>
<td>231 – 250</td>
<td>71</td>
<td>116</td>
<td>42.0</td>
</tr>
<tr>
<td>7</td>
<td>251 – 270</td>
<td>89</td>
<td>205</td>
<td>74.3</td>
</tr>
<tr>
<td>8</td>
<td>271 – 290</td>
<td>59</td>
<td>264</td>
<td>95.7</td>
</tr>
<tr>
<td>9</td>
<td>291 – 310</td>
<td>11</td>
<td>275</td>
<td>99.6</td>
</tr>
<tr>
<td>10</td>
<td>311 – 330</td>
<td>1</td>
<td>276</td>
<td>100</td>
</tr>
</tbody>
</table>

N   | 276 | 244 | 520

From the table 4.1.1.3 it may be discernible that the Family climate scores of science students are concentrated in the middle of the distribution and show gradual decrease towards the ends amongst the scores of boys, girls as well as of the total students, thereby indicating a normal distribution of the Family climate scores in the population. This also shows that the trend of Family climate of the population under study is towards moderate Family environment. The pictorial representation (vide Fig. 4.1.1.3) of the nature of distribution of Family climate scores also confirms the above observation.
Fig. 4.1.1.3.1

Frequency polygon showing Family climate scores of boys of science stream

(N=276)
Fig. 4.1.1.3.2

Frequency polygon showing Family climate scores of girls of science stream.

(N=244)
Fig. 4.1.1.3.3

Frequency polygon showing Family climate scores of total science stream students (Boys + Girls) (N=520)

The calculated statistical values like Mean, Median, S.D., Q.D., Skewness, and Kurtosis of Family climate scores of male, females of science and of the total science sample are presented in table 4.1.1.4 in order to understand the variation existing between two groups and dispersion between the groups
Table- 4.1.1.4

Statistical measures of the Family Climate scores of boys, girls and total science sample.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(276)</td>
<td>250.87</td>
<td>251.00</td>
<td>24.17</td>
<td>25</td>
<td>1.825</td>
<td>-.602</td>
</tr>
<tr>
<td>Girls(244)</td>
<td>263.66</td>
<td>266.00</td>
<td>23.26</td>
<td>25</td>
<td>.937</td>
<td>-.636</td>
</tr>
<tr>
<td>Total- 520</td>
<td>263.02</td>
<td>265.00</td>
<td>23.07</td>
<td>25</td>
<td>0.809</td>
<td>-.584</td>
</tr>
</tbody>
</table>

A careful glance of the Table 4.1.1.4 reveals that the negative value of skewness (-.584) suggests that data is skewed to the left, which implies that the distribution is moderately skewed. The excess kurtosis (0.809) is slightly greater than zero implies that distribution is slightly leptokurtic.

The observations lead to the conclusion that Family climate scores of the science students are normally distributed.

4.1.2 NATURE OF DISTRIBUTION OF MENTAL HEALTH SCORES

The scores obtained on the Mental Health Battery were organised in a frequency distribution for the total sample of arts and science as well as for the sub-samples of boys and girls of science and arts stream and are detailed below.

SAMPLE OF ARTS STUDENTS:

In order to scrutinize the nature of Mental health scores in the selected population of male and female students of arts stream and of the total arts students of senior secondary stage, the scores procured on the Mental Health Battery were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.2.1.
Table 4.1.2.1

Frequency distribution of the Mental Health Scores of boys and girls of arts stream and the total arts sample.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Arts Boys</th>
<th></th>
<th>Arts Girls</th>
<th></th>
<th>Total Arts Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
<td>F</td>
<td>c.f</td>
</tr>
<tr>
<td>1</td>
<td>51 – 55</td>
<td>5</td>
<td>5</td>
<td>2.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>56 – 60</td>
<td>5</td>
<td>10</td>
<td>5.6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>61 – 65</td>
<td>6</td>
<td>16</td>
<td>8.9</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>66 – 70</td>
<td>17</td>
<td>33</td>
<td>18.3</td>
<td>33</td>
<td>48</td>
</tr>
<tr>
<td>5</td>
<td>71 – 75</td>
<td>35</td>
<td>68</td>
<td>37.8</td>
<td>28</td>
<td>76</td>
</tr>
<tr>
<td>6</td>
<td>76 – 80</td>
<td>36</td>
<td>104</td>
<td>57.8</td>
<td>36</td>
<td>112</td>
</tr>
<tr>
<td>7</td>
<td>81 – 85</td>
<td>47</td>
<td>151</td>
<td>83.9</td>
<td>32</td>
<td>144</td>
</tr>
<tr>
<td>8</td>
<td>86 – 90</td>
<td>24</td>
<td>175</td>
<td>97.2</td>
<td>16</td>
<td>160</td>
</tr>
<tr>
<td>9</td>
<td>91 – 95</td>
<td>5</td>
<td>180</td>
<td>100</td>
<td>5</td>
<td>165</td>
</tr>
</tbody>
</table>

N | 180 | 165 | 345 |

A perusal of the above table indicates that most of the frequencies are within the range of 66 to 90. This shows that majority of the subjects are concentrated in the middle of the distributions i.e. there is normal tendency in the scores of Mental Health. This trend is also visible from the figures 4.1.2.1.1, 4.1.2.1.2, & 4.1.2.1.
Fig. 4.1.2.1.1

Frequency polygon showing Mental health scores of boys of arts stream. (N=180)
Frequency polygon showing Mental health scores of girls of arts stream. (N=165)
In order to further understand variation existing between two groups and dispersion within the science group of boys, girls and the total sample the Mean, Median, S.D., Q.D. Skewness and Kurtosis were also computed and are given in the table below.
Table 4.1.2.2

Statistical measures of the Mental Health scores of boys, girls and total sample of arts stream.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(180)</td>
<td>82.36</td>
<td>83.00</td>
<td>9.067</td>
<td>75</td>
<td>.494</td>
<td>-.700</td>
</tr>
<tr>
<td>Girls(165)</td>
<td>81.11</td>
<td>81.00</td>
<td>10.02</td>
<td>25</td>
<td>.992</td>
<td>.201</td>
</tr>
<tr>
<td>Total- 345</td>
<td>81.76</td>
<td>82.00</td>
<td>9.539</td>
<td>50</td>
<td>.673</td>
<td>-.221</td>
</tr>
</tbody>
</table>

The perusal of the above Table 4.1.2.2 reveals that the negative value of skewness (-.221) suggests that data is skewed to the left. The excess kurtosis (.673) is slightly greater than zero implies that distribution is slightly leptokurtic.

The observations leads to the conclusion that Mental health scores of arts students are normally distributed.

**SAMPLE OF SCIENCE STUDENTS:**

In order to scrutinize the nature of Mental health scores in the selected population of male and female students of science stream and of the total science students of senior secondary stage, the scores procured on the Mental health battery were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.2.3.
Table- 4.1.2.3

Frequency distribution of Mental health scores of science students

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Science)</th>
<th>Girls (Science)</th>
<th>Total Science Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>51 - 60</td>
<td>1</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>2</td>
<td>61 - 70</td>
<td>18</td>
<td>19</td>
<td>6.9</td>
</tr>
<tr>
<td>3</td>
<td>71 - 80</td>
<td>64</td>
<td>83</td>
<td>30.1</td>
</tr>
<tr>
<td>4</td>
<td>81 - 90</td>
<td>105</td>
<td>188</td>
<td>68.1</td>
</tr>
<tr>
<td>5</td>
<td>91 - 100</td>
<td>83</td>
<td>271</td>
<td>98.2</td>
</tr>
<tr>
<td>6</td>
<td>101 - 110</td>
<td>5</td>
<td>276</td>
<td>100</td>
</tr>
</tbody>
</table>

| N    | 276            | 244            | 520            |

From the above observation of the table 4.1.2.3 it may be discernible that the Mental health scores of science students are concentrated in the middle of the distribution and show gradual decrease towards the ends amongst the scores of science boys, girls as well as of the total science students, thereby indicating a normal distribution of the Mental health scores in the population. This also shows that the trend of Mental health of the population under study is towards moderate Mental health. The pictorial representation (vide Fig. 4.1.2.3) of the nature of distribution of Mental health scores also confirms the above observation.
Fig. 4.1.2.3.1

Frequency polygon showing Mental health scores of boys of science stream
(N=276)
Fig. 4.1.2.3.2

Frequency polygon showing Mental health scores of girls of science stream.

(N=244)
Frequency polygon showing Mental health scores of total science sample (boys + girls) (N=520)

The calculated statistical values like Mean, Median, S.D., Q.D., Skewness, and Kurtosis of Mental health scores of male, females of science and of the total science sample are presented in table 4.1.2.4 in order to understand the variation existing between two groups and dispersion between the groups.
Table- 4.1.2.4

Statistical measures of the Mental health scores of the boys, girls and total sample of science stream

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(276)</td>
<td>85.29</td>
<td>86.00</td>
<td>8.99</td>
<td>25</td>
<td>-.348</td>
<td>.361</td>
</tr>
<tr>
<td>Girls(244)</td>
<td>88.04</td>
<td>88.00</td>
<td>7.983</td>
<td>25</td>
<td>.728</td>
<td>-.666</td>
</tr>
<tr>
<td>Total- 520</td>
<td>86.58</td>
<td>88.00</td>
<td>8.639</td>
<td>25</td>
<td>.020</td>
<td>-.515</td>
</tr>
</tbody>
</table>

A careful glance of the Table 4.1.2.4 reveals the negative value of skewness (-.515) suggests that data is skewed to the left. The excess kurtosis (.020) is slightly greater than zero implies that distribution is slightly leptokurtic.

The observations leads to the conclusion that Mental health scores of science students are normally distributed.

4.1.3 NATURE OF DISTRIBUTION OF STUDY HABITS SCORES

The scores obtained on the Study habits inventory were organised in a frequency distribution for the total sample as well as for the sub-samples of boys and girls of arts & science stream and are detailed in the tables below.

SAMPLE OF ARTS STUDENTS:

In order to scrutinize the nature of Study habits scores in the selected population of male and female students of arts stream and total sample of arts students, the scores procured on the Study habits inventory were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.3.1.
Table 4.1.3.1

Frequency distribution of Study habits scores of arts boys, girls and of the total arts sample

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Arts)</th>
<th>Girls (Arts)</th>
<th>Total Arts Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>36 - 47</td>
<td>10</td>
<td>10</td>
<td>5.6</td>
</tr>
<tr>
<td>2</td>
<td>48 - 59</td>
<td>67</td>
<td>77</td>
<td>42.8</td>
</tr>
<tr>
<td>3</td>
<td>60 - 71</td>
<td>94</td>
<td>171</td>
<td>95.0</td>
</tr>
<tr>
<td>4</td>
<td>72 - 83</td>
<td>10</td>
<td>180</td>
<td>100</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the above observation of the table 4.1.3.1 it may be discernible that the Study habits scores of arts students are concentrated in the middle of the distribution and show gradual decrease towards the ends amongst the scores of boys, girls as well as of the total students, thereby indicating a normal distribution of the Study habits scores in the population. This also shows that the trend of Study habits of the population under study is towards moderate Study habits. The pictorial representation (vide Figs. 4.1.3.1.1, 4.1.3.1.2 & 4.1.3.1.3) of the nature of distribution of Study habits scores also confirms the above observation.
Fig. 4.1.3.1.1

Frequency polygon showing Study habits scores of boys of arts stream. (N=180)
Fig. 4.1.3.1.2

Frequency polygon showing Study habits scores of girls of arts stream. (N=165)
In order to further understand variation existing between two groups and dispersion within the group of boys, girls of arts and the total arts sample the Mean, Median, S.D., Q.D. Skewness and Kurtosis were also computed and are given in the table below.
A careful glance of the Table 4.1.3.2 reveals that the negative value of skewness (-.584) suggests that data is skewed to the left, and the distribution is moderately skewed. The excess kurtosis (.097) is slightly greater than zero implies that distribution is slightly leptokurtic.

The observations leads to the conclusion that Study habits scores of arts students are normally distributed.

**SAMPLE OF SCIENCE STUDENTS:**

In order to scrutinize the nature of Study habits scores in the selected population of male and female students of science stream and total science students, the scores procured on the Study habits were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.3.3.
Table 4.1.3.3

Frequency distribution of Study habits scores of science boys, girls and of the total science sample

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Science)</th>
<th>Girls (Science)</th>
<th>Total Science Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>36 – 40</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>41 – 45</td>
<td>3</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>3</td>
<td>46 – 50</td>
<td>15</td>
<td>18</td>
<td>6.5</td>
</tr>
<tr>
<td>4</td>
<td>51 – 55</td>
<td>36</td>
<td>54</td>
<td>19.6</td>
</tr>
<tr>
<td>5</td>
<td>56 – 60</td>
<td>48</td>
<td>102</td>
<td>37.0</td>
</tr>
<tr>
<td>6</td>
<td>61 – 65</td>
<td>75</td>
<td>177</td>
<td>64.1</td>
</tr>
<tr>
<td>7</td>
<td>66 – 70</td>
<td>73</td>
<td>250</td>
<td>90.6</td>
</tr>
<tr>
<td>8</td>
<td>71 – 75</td>
<td>22</td>
<td>272</td>
<td>98.6</td>
</tr>
<tr>
<td>9</td>
<td>76 – 80</td>
<td>4</td>
<td>276</td>
<td>100</td>
</tr>
</tbody>
</table>

| N    | 276           | 244           | 520            |

From the above observation of the table 4.1.3.3 it may be discernible that the Study habits scores of science students are concentrated in the middle of the distribution and show gradual decrease towards the ends amongst the scores of boys, girls as well as of the total students, thereby indicating a normal distribution of the Study habits scores in the population. This also shows that the trend of Study habits of the population under study is towards moderate Study habits. The pictorial representation (vide Figs. 4.1.3.3.1, 4.1.3.3.2 & 4.1.3.3.3) of the nature of distribution of Study habits scores also confirms the above observation.
Fig. 4.1.3.3.1

Frequency polygon showing Study habits scores of boys of science stream.

(N=276)
Fig. 4.1.3.3.2

Frequency polygon showing Study habits scores of girls of science stream.

(N=244)
Fig. 4.1.3.3.3

Frequency polygon showing Study habits scores of total students of science stream (boys + girls) (N=520)

The calculated statistical values like Mean, Median, S.D., Q.D., Skewness, and Kurtosis of Study habits scores of male, females of science and of the total science sample are presented in table 4.1.3.4 in order to understand the variation existing between two groups and dispersion between the groups.
Table- 4.1.3.4

Statistical measures of the Study habits scores of the science boys, girls and total science students

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls(244)</td>
<td>64.13</td>
<td>64.00</td>
<td>6.76</td>
<td>25</td>
<td>1.232</td>
<td>-0.702</td>
</tr>
<tr>
<td>Boys(276)</td>
<td>62.18</td>
<td>63.00</td>
<td>7.093</td>
<td>25</td>
<td>-0.113</td>
<td>-0.400</td>
</tr>
<tr>
<td>Total</td>
<td>63.094</td>
<td>64.00</td>
<td>7.00</td>
<td>25</td>
<td>0.368</td>
<td>-0.534</td>
</tr>
</tbody>
</table>

A careful glance of the Table 4.1.3.4 reveals that the negative value of skewness (-.534) suggests that data is skewed to the left, and the distribution is moderately skewed. The excess kurtosis (.368) is greater than zero implies that distribution is leptokurtic.

The observations leads to the conclusion that Study habits scores of science students are normally distributed.

4.1.4 NATURE OF DISTRIBUTION OF SELF CONFIDENCE SCORES

The scores obtained on the Self confidence inventory were organised in a frequency distribution for the total sample as well as for the sub-samples of boys and girls of arts & science stream which is detailed below.

SAMPLE OF ARTS STUDENTS:

In order to scrutinize the nature of Self confidence scores in the selected population of male and female students of arts stream and of the total sample of arts students, the scores procured on Self confidence inventory were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.4.1.
Table 4.1.4.1

Frequency distribution of the Self confidence scores of boys and girls of arts and of the total arts sample.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Arts)</th>
<th>Girls (Arts)</th>
<th>Total Arts Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>c.f</td>
<td>%c.f</td>
</tr>
<tr>
<td>1</td>
<td>1 – 6</td>
<td>1</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>2</td>
<td>7 – 12</td>
<td>10</td>
<td>11</td>
<td>6.1</td>
</tr>
<tr>
<td>3</td>
<td>13 – 18</td>
<td>22</td>
<td>33</td>
<td>18.3</td>
</tr>
<tr>
<td>4</td>
<td>19 – 24</td>
<td>34</td>
<td>67</td>
<td>37.2</td>
</tr>
<tr>
<td>5</td>
<td>25 – 30</td>
<td>39</td>
<td>106</td>
<td>58.9</td>
</tr>
<tr>
<td>6</td>
<td>31 – 36</td>
<td>50</td>
<td>156</td>
<td>86.7</td>
</tr>
<tr>
<td>7</td>
<td>37 – 42</td>
<td>18</td>
<td>174</td>
<td>96.7</td>
</tr>
<tr>
<td>8</td>
<td>43 – 48</td>
<td>6</td>
<td>180</td>
<td>100</td>
</tr>
<tr>
<td>9</td>
<td>49 – 54</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

N  | 180            | 165          | 345          |

From the table 4.1.4.1 it may be discernible that the Self confidence scores of arts students are concentrated in the middle of the distribution and show gradual decrease towards the ends amongst the scores of boys, girls as well as of the total students, thereby indicating a normal distribution of the Self confidence scores in the population. This also shows that the trend of Self confidence of the population under study is towards moderate Self confidence.

The pictorial representation (vide Figs. 4.1.4.1.1, 4.1.4.1.2 & 4.1.4.1.3) of the nature of distribution of Self confidence scores also confirms the above observation.
Fig. 4.1.4.1.1

Frequency polygon showing Self confidence scores of boys of arts stream.

(N=180)
Fig. 4.1.4.1.2

Frequency polygon showing Self confidence scores of girls of arts stream.

(N=165)
In order to further understand variation existing between two groups and dispersion within the arts group of boys, girls and the total sample the Mean, Median, S.D., Q.D. Skewness and Kurtosis were also computed and are given in the table below.
Table- 4.1.4.2

Statistical measures of Self confidence scores of arts boys, girls and total sample of arts students

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(180)</td>
<td>27.44</td>
<td>28.50</td>
<td>9.024</td>
<td>25</td>
<td>-.205</td>
<td>-.091</td>
</tr>
<tr>
<td>Girls(165)</td>
<td>30.81</td>
<td>30.00</td>
<td>8.321</td>
<td>25</td>
<td>.512</td>
<td>-.249</td>
</tr>
<tr>
<td>Total- 345</td>
<td>29.05</td>
<td>29.00</td>
<td>8.843</td>
<td>25</td>
<td>.031</td>
<td>-.193</td>
</tr>
</tbody>
</table>

The perusal of the above Table 4.1.4.2 reveals that the negative value of skewness (-.193) suggests that data is skewed to the left, and the distribution is approximately symmetric. The excess kurtosis (.031) is slightly less than zero implies that distribution is leptokurtic. The probability of extreme values is less than for a normal distribution and the values are wider spread around the mean.

The observations leads to the conclusion that Self confidence scores of arts students are normally distributed.

**SAMPLE OF SCIENCE STUDENTS:**

In order to scrutinize the nature of Self confidence scores in the selected population of male and female students of science stream and of the total sample of science, the scores procured on Self confidence inventory were assorted in a tabular form. A frequency distribution of the scores was prepared, which is given in the table 4.1.4.3.
Table- 4.1.4.3

Frequency distribution of the Self confidence scores of boys and girls of science and of the total science sample.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Class Interval</th>
<th>Boys (Science)</th>
<th></th>
<th>Girls (Science)</th>
<th>Total Science Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>c.f</td>
<td>%c.f</td>
<td>f</td>
</tr>
<tr>
<td>1</td>
<td>1-10</td>
<td>19</td>
<td>19</td>
<td>6.9</td>
<td>22</td>
</tr>
<tr>
<td>2</td>
<td>11-20</td>
<td>77</td>
<td>96</td>
<td>34.8</td>
<td>76</td>
</tr>
<tr>
<td>3</td>
<td>21-30</td>
<td>106</td>
<td>202</td>
<td>73.2</td>
<td>98</td>
</tr>
<tr>
<td>4</td>
<td>31-40</td>
<td>66</td>
<td>268</td>
<td>97.1</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>41-50</td>
<td>8</td>
<td>276</td>
<td>100</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>276</td>
<td></td>
<td></td>
<td>244</td>
</tr>
</tbody>
</table>

From the above observation of the table 4.1.4.3 it may be discernible that the Self confidence scores of science students are concentrated in the middle of the distribution and show gradual decrease towards the ends amongst the scores of boys, girls as well as of the total students, thereby indicating a normal distribution of the Self confidence scores in the population. This also shows that the trend of Self confidence of the population under study is towards moderate Self confidence. The pictorial representation (vide Fig. 4.1.4.3.1, 4.1.4.3.2 & 4.1.4.3.3) of the nature of distribution of Self confidence scores also confirms the above observation.
Fig. 4.1.4.3.1

Frequency polygon showing Self confidence scores of boys of science stream.

(N=276)
Fig. 4.1.4.3.2

Frequency polygon showing Self confidence scores of girls of science stream.

(N=244)
Fig. 4.1.4.3.3

Frequency polygon showing Self confidence scores of total science stream students (boys + Girls) (N=520)

The calculated statistical values like Mean, Median, S.D., Q.D., Skewness, and Kurtosis of Self confidence scores of male, females of science and of the total science sample are presented in table 4.1.4.4 in order to understand the variation existing between two groups and dispersion between the groups.
### Statistical measures of the Self confidence scores of science boys, girls and total science sample

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>S.D.</th>
<th>Q.D.</th>
<th>Ku</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys(276)</td>
<td>24.39</td>
<td>25.00</td>
<td>9.440</td>
<td>25</td>
<td>-0.354</td>
<td>-0.046</td>
</tr>
<tr>
<td>Girls(244)</td>
<td>23.03</td>
<td>23.00</td>
<td>9.215</td>
<td>25</td>
<td>-0.083</td>
<td>0.173</td>
</tr>
<tr>
<td>Total- 520</td>
<td>23.75</td>
<td>24.00</td>
<td>9.351</td>
<td>25</td>
<td>-0.270</td>
<td>0.057</td>
</tr>
</tbody>
</table>

A careful glance of the Table 4.1.4.4 reveals that the positive value of skewness (.057) suggests that data is skewed to the right, and the distribution is approximately symmetric. The excess kurtosis (-.270) is slightly less than zero implies that distribution is platikurtic. The observations leads to the conclusion that Self confidence scores of science students are normally distributed.

### 4.2- ANALYSIS ON THE BASIS OF CORRELATION-

**Objective.1-To study the relationship between criterion variable (i.e. academic achievement) and various predictor variables that is (family climate, mental health, study habits and self confidence).**

**Hypothesis.1- There is significant relationship between criterion variable (i.e. academic achievement) and various predictor variables (i.e. family climate, mental health, study habits and self confidence).**

To verify hypothesis no.1 Product Moment Correlation was applied and the relationship was calculated between criterion variable (i.e. academic achievement) and various predictor variables (i.e. family climate, mental health, study habits and self confidence).

The correlation values of various predictor variables and criterion variable is given in table-4.2.1.
### TABLE-4.2.1: Correlation matrix showing relationship of criterion variable i.e Academic achievement with various Predictor variables

<table>
<thead>
<tr>
<th></th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>F6</th>
<th>F7</th>
<th>F8</th>
<th>FCT</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
<th>M5</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>.4322**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3</td>
<td>.5225**</td>
<td>.3042**</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
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<td>.3390**</td>
<td>.4830**</td>
<td>1.00</td>
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<td></td>
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</tr>
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<td>.3565**</td>
<td>.3660**</td>
<td>1.00</td>
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<td></td>
</tr>
<tr>
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<td>.3050**</td>
<td>.4300**</td>
<td>.4180**</td>
<td>.4224**</td>
<td>1.00</td>
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<td>.3444**</td>
<td>.3349**</td>
<td>.3002**</td>
<td>.2938**</td>
<td>1.00</td>
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<td></td>
</tr>
<tr>
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<td>.4997**</td>
<td>.2778**</td>
<td>.4973**</td>
<td>.4381**</td>
<td>.3652**</td>
<td>.3340**</td>
<td>.4010**</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>FCT</td>
<td>.7480**</td>
<td>.5550**</td>
<td>.7030**</td>
<td>.6906**</td>
<td>.6254**</td>
<td>.6491**</td>
<td>.6910**</td>
<td>.7343**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>M1</td>
<td>.1901**</td>
<td>.1698**</td>
<td>.2357**</td>
<td>.1820**</td>
<td>.1884**</td>
<td>.1757**</td>
<td>.1674**</td>
<td>.1675**</td>
<td>.2681**</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2</td>
<td>.3150**</td>
<td>.2415**</td>
<td>.3318**</td>
<td>.2784**</td>
<td>.2850**</td>
<td>.2739**</td>
<td>.2346**</td>
<td>.2797**</td>
<td>.4060**</td>
<td>.4084**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M3</td>
<td>.2039**</td>
<td>.0701*</td>
<td>.1767**</td>
<td>.1415**</td>
<td>.1728**</td>
<td>.1373**</td>
<td>.1185**</td>
<td>.1904**</td>
<td>.2221**</td>
<td>.1797**</td>
<td>.2182**</td>
<td>1.00</td>
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<td></td>
</tr>
<tr>
<td>M4</td>
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<td>.1411**</td>
<td>.1643**</td>
<td>.1520**</td>
<td>.1365**</td>
<td>.1796**</td>
<td>.0744**</td>
<td>.1732**</td>
<td>.2219**</td>
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### TABLE 4.2.1: Correlation matrix showing relationship of criterion variable i.e Academic achievement with various Predictor variables

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4.2.1. Correlation of Family climate and Academic achievement

*Objective.* 1(a)- To study the relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. family climate).

*Hypothesis.* 1(a)- There is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. family climate).

To verify hypothesis no. 1(a) Product Moment Correlation was applied and the relationship was calculated between criterion variable (i.e. academic achievement) and predictor variable (i.e. family climate).

The correlation value of Family climate and Academic achievement is given in table 4.2.2

**Table- 4.2.2**

*Showing relationship between various dimensions of Family climate and Academic achievement.*

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** = Significant at .01 level

NS = Not significant at any level.

- It is evident from the table 4.2.2 that there is significant and positive relationship between Cohesion and academic achievement ($r=.1974$), conflict and academic achievement ($r=.1917$), acceptance & caring and academic achievement ($r=.2101$), independence and academic
achievement ($r=0.2101$), active recreational orientation and academic achievement ($r=0.2198$), organization and academic achievement ($r=0.0982$), & control and academic achievement ($r=0.2024$). On the other hand a positive and not significant relationship was found between expressiveness and academic achievement ($r=0.0197$).

Thus, it is evident from the table 4.2.2 that there exists significant and positive relationship between Family climate and Academic achievement ($r=0.2424$). Therefore, a part of the first hypothesis i.e. 1(a) “there is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. family climate)” is accepted.

4.2.2. Correlation of Mental health and Academic achievement.

**Objective.1(b)-To study the relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. mental health).**

**Hypothesis.1(b)- There is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. mental health).**

To verify hypothesis no.1(b) Product Moment Correlation was applied and the relationship was calculated between criterion variable (i.e. academic achievement) and predictor variable i.e. Mental health.

The correlation value of Mental health and Academic achievement is given in table-4.2.3
Table 4.2.3  
*Showing relationship between Academic achievement and various dimensions of Mental Health.*

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**= Significant at .01 level  
* = Significant at .05 level  
NS = Not significant at any level.

- It is evident from the table 4.2.3 that there is significant and positive relationship between adjustment and academic achievement ($r=.1178$), autonomy and academic achievement ($r=.0756$), security-insecurity and academic achievement ($r=.0652$). Also, a significant and positive relationship is found between self concept and academic achievement ($r=.1798$), intelligence and academic achievement ($r=.3612$). Contradictory to these, a positive and no significant relationship was found between emotional stability and academic achievement ($0.0230$).

- Thus it is evident from the table 4.2.3 that there is significant and positive relationship between Mental health and Academic achievement ($r=.2587$). Therefore, a part of the first hypothesis i.e., 1(b) "there is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. mental health)" is accepted.
4.2.3. Correlation of Study habits and Academic achievement.

Objective 1(c)- To study the relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. study habits).

Hypothesis 1(c)- There is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. study habits).

To verify hypothesis no.1(c) Product Moment Correlation was applied and the relationship was calculated between criterion variable (i.e. academic achievement) and predictor variable i.e. study habits.

The correlation value of Study habits and Academic achievement is given in table-4.2.4.

Table-4.2.4

Showing relationship between Academic achievement and various dimensions of Study Habits.

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** = Significant at .01 level
NS = Not significant at any level.

- It is evident from the table 4.2.4 that there is significant and positive relationship between budgeting time and academic achievement \((r=.0927)\), physical conditions for study and academic achievement \((r=.1732)\), factors in learning motivation and academic achievement \((r=.1197)\), memory and academic achievement \((r=.1546)\), taking examinations and academic achievement \((r=.0409)\), and health and academic achievement \((r=.1260)\).
(r = .1197), memory and academic achievement (r = .1546), & health and academic achievement (r = .1260). On the other hand, a positive and no significant relationship was found between reading ability and academic achievement (r = .0528), note taking and academic achievement (r = .0048), & taking examinations and academic achievement (r = .0409).

Thus it is evident from the table 4.2.4 that there is significant and positive relationship between Study habits and Academic achievement (r = .1553). Therefore, a part of the first hypothesis i.e. 1(c) “there is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. study habits)” is accepted.

4.2.4 Correlation of Self confidence and Academic achievement.

Objective 1(d)-To study the relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. self confidence).

Hypothesis 1(d)- There is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. self confidence).

To verify hypothesis no.1(d) Product moment Correlation was applied and the relationship was calculated between criterion variable (i.e. academic achievement) and predictor variable i.e. self confidence.

The correlation value of Self confidence and academic achievement is given in table-4.2.5.

**Table-4.2.5**

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Academic Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-confidence</td>
<td>.1424**</td>
</tr>
</tbody>
</table>

** = Significant at .01 level

- It is evident from the above table 4.2.5 that there is significant and positive relationship between Self confidence and Academic achievement (r = .1424). Therefore, a part of the first hypothesis i.e., 1(d)
“there is significant relationship between criterion variable (i.e. academic achievement) and predictor variable (i.e. self confidence)” is accepted.

Thus, it is clear from the above tables viz., 4.2.2, 4.2.3, 4.2.4 & 4.2.5, that there exists a significant and positive relationship between criterion variable i.e. Academic achievement and various predictor variables (i.e. family climate, mental health, study habits and self confidence). Therefore, the first hypothesis “there is significant relationship between criterion variable (i.e. academic achievement) and various predictor variables (i.e. family climate, mental health, study habits and self confidence)” is accepted.

4.3- ANALYSIS ON THE BASIS OF MULTIPLE REGRESSION-

Objective. 2- To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement).

Hypothesis. 2- Each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement).

To verify second hypothesis Multiple Regression was applied and the contributory role of predictor variables (i.e. family climate, mental health, study habits, and self confidence) on criterion variable (i.e. academic achievement) of the total sample (N=865) has been observed.

The Beta value, $R^2$, Simple r and t-value of five dimensions (out of 22 dimensions) of three independent variables (out of 4 independent variables) i.e. M6 (dimension of mental health), F6 (dimension of family climate), P6 (dimension of study habits), M1 (dimension of mental health) & F5 (dimension of family climate) were computed and are presented in the table given below.
Table- 4.3.1 Determinants of Academic achievement of the total sample.

N=865

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent variable i.e. Academic Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>Intelligence (M6)</td>
<td>.3212**</td>
</tr>
<tr>
<td>Active-recreational orientation (F6)</td>
<td>.10738**</td>
</tr>
<tr>
<td>Memory (P6)</td>
<td>.09653**</td>
</tr>
<tr>
<td>Emotional stability (M1)</td>
<td>-.09257**</td>
</tr>
<tr>
<td>Independence (F5)</td>
<td>.08521**</td>
</tr>
</tbody>
</table>

Multiple R = .41269
Total R Square = .17031

** = significant at .01 level.

- Table- 4.3.1 depicts the influence of only five dimensions of three predictor variables (out of 22 dimensions and 4 predictor variables) on students’ Academic achievement. Table- 4.3.1 clearly depicts that the t-value is found to be highly significant at .01 level of confidence. This clearly indicates that five dimensions of three independent variables i.e. M6 (dimension of mental health), F6 (dimension of family climate), P6 (dimension of study habits), M1 (dimension of mental health) & F5 (dimension of family climate), contributes significantly in determining the Academic achievement of total sample (both science and arts stream students).

- Again the value of $R^2$, (coefficient of multiple determination) being .17031 is indicative of the fact that 17% of the variance in academic achievement of the total students is accounted by these five dimensions.
(out of 22 dimensions of 3 independent variables) i.e.:-(M6, F6, P6, M1 & F5) and the remaining percentage of the variance is still to be accounted for by the other variables which are not included in the study. It can be inferred from the above discussion that the variance accounted for by the independent variables under this study is low. This low percentage in the total sample is may be due to the non-significant effects of the determining variables on the criterion variable in the case of total sample.

- The beta value from the table clearly depicts that it is positively significant in case of factors M6, F6, P6, & F5, which enables us to conclude that an increase in per unit in these four factors of three independent variables i.e. M6, F6, P6, & F5, Academic achievement of the respondents’ increases only by .32122, .10738, .09653, & .08521 units respectively.

- But, beta value is negative in case of factor M1, which depicts that increase in per unit in factor M1 of the subjects, Academic achievement of the subjects decreases by .09257 units.

Thus, in the light of the results mentioned above, the second hypothesis “Each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement)” is partially accepted.

Objective.3- To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement) for the students of science stream.

Hypothesis.3- Each predictor variable (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of science stream.
To verify third hypothesis Multiple Regression was applied and the contributory role of predictor variables (i.e. family climate, mental health, study habits, and self confidence) on criterion variable (i.e. academic achievement) of the science respondents (N=520) has been observed.

The Beta value, R-square, Simple r and t-value of five dimensions (out of 22 dimensions) of three independent variables (out of 4 independent variables) i.e. M6 (dimension of mental health), F6 (dimension of family climate), P4 (dimension of study habits), M1 (dimension of mental health) & P6 (dimension of study habits) were computed and are presented in the table given below.

**Table- 4.3.2 Determinants of Academic Achievement of Science Respondents.**

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent variable = Academic Achievement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
</tr>
<tr>
<td>Intelligence (M6)</td>
<td>.30753**</td>
</tr>
<tr>
<td>Active recreational orientation (F6)</td>
<td>.14950**</td>
</tr>
<tr>
<td>Note taking (P4)</td>
<td>-.10606**</td>
</tr>
<tr>
<td>Emotional stability (M1)</td>
<td>-.10048**</td>
</tr>
<tr>
<td>Memory (P6)</td>
<td>.08372*</td>
</tr>
</tbody>
</table>

Multiple R = .38552
Total R Square = .14863

** = significant at .01 level.
* = significant at .05 level.

- Table- 4.3.2 depicts the influence of only five dimensions (out of 22 dimensions) of three predictor variables (out of 4 independent variables) on students’ Academic achievement. Table- 4.3.2 clearly shows that the t-value is found to be highly significant at .01 level of confidence. This
clearly indicates that dimensions M6 (dimension of mental health), F6 (dimension of family climate), P4 (dimension of study habits), M1 (dimension of mental health) & P6 (dimension of study habits), contributes significantly in determining the Academic achievement of science stream students.

- Again the value of $R^2$, (coefficient of multiple determination) being .14863 is indicative of the fact that 14% of the variance in academic achievement of the science students is accounted by these five dimensions i.e.:- (M6, F6, P4, M1 & P6) and the remaining percentage of the variance is still to be accounted for by the other variables which are not included in the study. It can be inferred from the above discussion that the variance accounted for by the independent variables under this study is low. This low percentage in the total sample is may be due to the non-significant effects of the determining variables on the criterion variable in the case of science stream respondents.

- The beta value from the table clearly depicts that it is positively significant in case of factors M6, F6 & P6, which enables us to conclude that an increase in per unit in the factors (M6, F6 & P6) Academic achievement of the respondents’ increases only by .30753, .14950, & .08372 units respectively.

- But, beta value is negative in case of factors P4 & M1, which depicts that increase in per unit in variables P4 & M1 of the subjects, academic achievement of the subjects decreases by .10606 & .10048 units respectively.

These results, thus, partially confirm the third hypothesis that “Each predictor variable (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of science stream.”
Objective 4- To study the contributory role of various predictor variables (i.e. family climate, mental health, study habits and self confidence) on criterion variable (i.e. academic achievement) for the students of arts stream.

Hypothesis 4- Each predictor variable (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of arts stream.

In order to test the forth hypothesis Multiple Regression was applied and the contributory role of predictor variables (i.e. family climate, mental health, study habits, and self confidence) on criterion variable (i.e. academic achievement) of the arts respondents (N=345) has been observed.

The Beta value, R-square, Simple r and t-value of five dimensions (out of 22 dimensions) of three independent variables (out of 4 independent variables) i.e. F8 (dimension of family climate), P1 (dimension of study habits), M6 (dimension of mental health), F2 (dimension of family climate) & M3 (dimension of mental health) were computed and are presented in the table given below.

Table- 4.3.3 Determinants of Academic achievement of Arts Respondents 
N=345

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent variable = Academic Achievement</th>
<th>Beta</th>
<th>R-square</th>
<th>Simple r</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (F8)</td>
<td></td>
<td>.16761**</td>
<td>04.93</td>
<td>.2221**</td>
<td>3.127</td>
</tr>
<tr>
<td>Budgeting Time (P1)</td>
<td></td>
<td>.19865**</td>
<td>03.62</td>
<td>.2091**</td>
<td>3.914</td>
</tr>
<tr>
<td>Intelligence (M6)</td>
<td></td>
<td>.14180**</td>
<td>02.66</td>
<td>.2194**</td>
<td>2.688</td>
</tr>
<tr>
<td>Expressiveness (F2)</td>
<td></td>
<td>-.13805**</td>
<td>01.70</td>
<td>-.0763NS</td>
<td>2.682</td>
</tr>
<tr>
<td>Autonomy (M3)</td>
<td></td>
<td>.13093**</td>
<td>01.62</td>
<td>.1906**</td>
<td>2.533</td>
</tr>
</tbody>
</table>

Multiple R = .38125
Total R Square = .14535

** = significant at .01 level.
* = significant at .05 level.
Table- 4.3.3 depicts the influence of only five dimensions (out of 22 dimensions) of three predictor variables (out of 4 predictor variables) on students' Academic achievement. Table- 4.3.3 clearly shows that the t-value is found to be highly significant at .01 level of confidence. This clearly indicates that dimensions F8 (dimension of family climate), P1 (dimension of study habits), M6 (dimension of mental health), F2 (dimension of family climate) & M3 (dimension of mental health), contributes significantly in determining the Academic achievement of arts stream students.

Again the value of $R^2$, (coefficient of multiple determination) being .14535 is indicative of the fact that 14% of the variance in academic achievement of the arts students is accounted by these dimensions i.e.:-(F8, P1, M6, F2 & M3) and the remaining percentage of the variance is still to be accounted for by the other variables which are not included in the study. It can be inferred from the above discussion that the variance accounted for by the independent variables under this study is low. This low percentage in the total sample is may be due to the non-significant effects of the determining variables on the criterion variable in the case of arts stream respondents.

The beta value from the table clearly depicts that it is positively significant in case of factors F8, P1, M6 & M3, which enables us to conclude that an increase in per unit in the factors (F8, P1, M6 & M3) Academic achievement of the respondents’ increases only by .16761, .19865, .14180, & .13093 units respectively.

But, beta value is negative in case of factor F2, which depicts that increase in per unit in factor F2 of the subjects, Academic achievement of the subjects’ decreases by .13805 units.
Thus, the above discussed results partially confirm the forth hypothesis that “Each predictor variable (i.e. family climate, mental health, study habits and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of arts stream.”

4.4- ESTABLISHING REGRESSION EQUATION-

Formula of Multiple Regression-

\[ \bar{X}_1 = b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + K \]  

(Garrett, 1981, P: 412)

Where ,

\[ \bar{X}_1 \] = Value of the Dependent variable (\( \bar{X}_1 \)). what is being predicted or explained.

\( b_2 \) = Slope (Beta coefficient) for \( X_2 \).

\( X_2 \) = First independent variable that is explaining the variance in \( \bar{X}_1 \).

\( b_3 \) = Slope (Beta coefficient) for \( X_3 \).

\( X_3 \) = Second independent variable that is explaining the variance in \( \bar{X}_1 \).

\( b_4 \) = Slope (Beta coefficient) for \( X_4 \).

\( X_4 \) = Third independent variable that is explaining the variance in \( \bar{X}_1 \).

\( b_5 \) = Slope (Beta coefficient) for \( X_5 \).

\( X_5 \) = Fourth independent variable that is explaining the variance in \( \bar{X}_1 \).

\( K \) = is the Constant or intercept.
Objective- 5: To establish regression equation for the prediction of the criterion variable in relation to science stream group.

4.4.1. Prediction of the criterion variable on the basis of predictive variables in relation to science stream group.

For the prediction of the criterion variable in relation to science stream group the following regression equation can be established-

$$\bar{X}_1 = b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + K$$

Where,

$\bar{X}_1$ = Dependent Variable (Academic Achievement).

$b_2$ = Slope (Beta coefficient) for Family climate (F6).

$X_2$ = First independent variable that is explaining the variance in $\bar{X}_1$.

$b_3$ = Slope (Beta coefficient) for Mental health (M6 and M1).

$X_3$ = Second independent variable that is explaining the variance in $\bar{X}_1$.

$b_4$ = Slope (Beta coefficient) for Study habits (P4 and P6).

$X_4$ = Third independent variable that is explaining the variance in $\bar{X}_1$.

$b_5$ = Slope (Beta coefficient) for Self confidence.

$X_5$ = Forth independent variable that is explaining the variance in $\bar{X}_1$.

$K$ = is the Constant or intercept i.e. 139. 66.

i.e. Academic achievement = $b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + K$
The available results led to set up the following regression equation:-

$$\text{Academic achievement} = 0.14950(X_2) + 0.20705(X_3) - 0.22234(X_4) + 0.00001(X_5) + 139.66$$

So the achievement of science stream students can be predicted by inserting the value of 5 dimensions of 3 independent variables i.e., Family climate (F6), Mental health (M1 & M6), Study habits (P4 & P6) in the above equation.

Objective- 6: To establish regression equation for the prediction of the criterion variable in relation to arts stream group.

4.4.2. Prediction of the criterion variable on the basis of predictive variables in relation to arts stream group.

For the prediction of the criterion variable in relation to arts stream group the following regression equation can be established-

$$\bar{X}_1 = b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + K$$

Where,

$\bar{X}_1 = \text{Dependent Variable (Academic Achievement)}$.

$B_2 = \text{Slope (Beta coefficient) for Family climate (F8 and F2)}$.

$X_2 = \text{First independent variable that is explaining the variance in } \bar{X}_1$.

$B_3 = \text{Slope (Beta coefficient) for Mental health (M3 And M6)}$.

$X_3 = \text{Second independent variable that is explaining the variance in } \bar{X}_1$.

$B_4 = \text{Slope (Beta coefficient) for Study habits (P1)}$.

$X_4 = \text{Third independent variable that is explaining the variance in } \bar{X}_1$.

$B_5 = \text{Slope (Beta coefficient) for Self confidence}$.
$X_5$ - Fourth independent variable that is explaining the variance in $\bar{X}_1$.

$K = $ is the Constant or intercept i.e. 140.64.

i.e. Academic achievement = $b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + K$

The available results led to set up the following regression equation:-

Academic achievement = $0.02956(X_2) + 0.27273(X_3) + 19865(X_4) + 0.0000(X_5) + 140.64$

So the achievement of arts stream students can be predicted by inserting the value of 5 dimensions of 3 independent variables i.e., Family climate ($F_8$ & $F_2$), Mental health ($M_3$ and $M_6$), Study habits ($P_1$) in the above equation.

4.5- **ANALYSIS ON THE BASIS OF ‘t’-RATIO**-

*Subsidiary Objective-1. To compare the academic achievement of students of two faculties that is science and arts.*

*Subsidiary Hypothesis-1. There will be no statistically significant difference in the mean of the Academic achievement of students of two faculties i.e. science and arts.*

4.5.1. **Comparison of Academic achievement of students of two faculties i.e. science and arts stream.**

In order to compare the academic achievement of students of two faculties i.e., science and arts, ‘t’-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of academic achievement of science and arts respondents are given in table-4.5.1.
Table-4.5.1

Showing significance of difference between the mean scores of science and arts stream students on the variable of Academic achievement.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Students of Science N=520</th>
<th>Students of Arts N=345</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>Mean 263.68 S.D 57.53</td>
<td>Mean 233.57 S.D 43.06</td>
<td>863</td>
<td>8.30**</td>
</tr>
</tbody>
</table>

** = significant at .01 level.

Fig. 4.5.1- Mean scores of Science and Arts stream respondents on the variable of Academic achievement.

The table-4.5.1 indicates that there exists a significant difference between the respondents of Science and Arts Stream of U.P. Board on the measure of Academic achievement. The mean value of two groups' science and arts differs as 263.68 and 233.57 respectively. It clearly shows that students of science perform better as compared to arts stream group. Thus, it can be said with assurance that there exists a marked difference between the respondents of science and arts stream on the variable of Academic achievement, because the calculated t-value (8.30) is found significant at 0.01 level. Therefore, the first subsidiary hypothesis i.e., "There will be no statistically significant difference
in the mean of the Academic achievement of students of two faculties i.e. science and arts” is rejected.

**Subsidiary Objective-2-** To compare the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of Science stream.

**Subsidiary Hypothesis-2-** There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence).

4.5.2. **Comparison between the mean of male and female respondents of Science stream on the variable of Family Climate.**

**Subsidiary Objective-2(a)-** To compare the predictor variable i.e. family climate of male and female students of Science stream.

**Subsidiary Hypothesis-2(a)-** There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their predictor variable i.e. family climate.

In order to compare the Family climate of male and female respondents of science stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of various dimensions of Family climate of male and female respondents of science stream are given in table-4.5.2.
Table 4.5.2
Showing significance of difference between the mean scores of male and female respondents of Science stream on the variable of Family climate

<table>
<thead>
<tr>
<th>Dimensions of Family Climate</th>
<th>Males (Science Stream) N=276</th>
<th>Females (Science Stream) N=244</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D</td>
<td>Mean</td>
<td>S.D</td>
</tr>
<tr>
<td>Cohesion (F1)</td>
<td>53.38</td>
<td>6.17</td>
<td>55.26</td>
<td>5.21</td>
</tr>
<tr>
<td>Expressiveness (F2)</td>
<td>30.57</td>
<td>4.09</td>
<td>31.82</td>
<td>3.94</td>
</tr>
<tr>
<td>Conflict (F3)</td>
<td>43.94</td>
<td>5.77</td>
<td>44.41</td>
<td>5.62</td>
</tr>
<tr>
<td>Acceptance &amp; Caring (F4)</td>
<td>43.91</td>
<td>4.55</td>
<td>45.18</td>
<td>4.51</td>
</tr>
<tr>
<td>Independence (F5)</td>
<td>30.56</td>
<td>4.26</td>
<td>32.70</td>
<td>4.77</td>
</tr>
<tr>
<td>Active-Recreational Orientation (F6)</td>
<td>24.74</td>
<td>4.44</td>
<td>29.39</td>
<td>4.26</td>
</tr>
<tr>
<td>Organization (F7)</td>
<td>7.94</td>
<td>1.77</td>
<td>8.25</td>
<td>1.73</td>
</tr>
<tr>
<td>Control (F8)</td>
<td>15.83</td>
<td>2.96</td>
<td>16.64</td>
<td>2.52</td>
</tr>
<tr>
<td>Family Climate Total</td>
<td>250.87</td>
<td>24.17</td>
<td>263.66</td>
<td>23.26</td>
</tr>
</tbody>
</table>

** = significant at .01 level.
* = significant at .05 level.
N.S = Not Significant.
Above table 4.5.2 depicts that there is a significant difference between male and female respondents of Science stream as the obtained t-value (3.732) is significant at 0.01 level of confidence. The mean value of females (55.26) is higher than the mean value of males (53.38) on the factor Cohesion of Family climate.

Table 4.5.2 shows that there is a significant difference between male and female respondents of Science stream as the obtained t-value (3.562) is significant at 0.01 level of confidence. The mean value of females (31.82) is higher than the mean value of males (30.57) on the factor Expressiveness of Family climate.

Table 4.5.2 shows that there is no significant difference between the male and female respondents of Science stream as the obtained t-value (.942) is not significant even at 0.05 level of confidence. The mean value of females is 44.41 on the factor Conflict of Family climate and the mean value of males is 43.94.

Above table 4.5.2 shows that there is a significant difference between male and female respondents of Science stream as the obtained t-value (3.212) is significant at 0.01 level of confidence. The mean value of females (45.18) is higher than the mean value of males (43.91) on the factor Acceptance and Caring of Family climate.

Table 4.5.2 depicts that there is a significant difference between male and female respondents of Science stream as the obtained t-value (5.403) is significant at 0.01 level of confidence. The mean value of females (32.70) is higher than the mean value of males (30.56) on the factor Independence of Family climate.

Table 4.5.2 shows that there is a significant difference between male and female respondents of Science stream as the obtained t-value (3.518) is significant at 0.01 level of confidence. The mean value of females
(29.39) is higher than the mean value of males (24.74) on the factor Active recreational orientation of Family climate.

- Above table 4.5.2 shows that there is a significant difference between male and female respondents of Science stream as the obtained t-value (2.004) is significant at 0.05 level of confidence. The mean value of females (8.25) is higher than the mean value of males (7.94) on the factor Organization of Family climate.

- Table 4.5.2 depicts that there is a significant difference between male and female respondents of Science stream as the obtained t-value (3.339) is significant at 0.01 level of confidence. The mean value of females (16.64) on the factor Control of Family climate is higher than the mean value of males (15.83).

Thus, we can say that there exists a significant difference between male and female respondents of Science stream on the variable of Family climate as the obtained t-value (6.129) is found significant at 0.01 level of confidence. The mean value of males of science stream is 250.87 which is lower than the mean value of females of science stream (263.66). Thus, a part of the second subsidiary hypothesis i.e., 2(a) “There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their predictor variable (i.e. family climate)” is rejected.

4.5.3. Comparison between Male and Female respondents of science stream on the variable of Mental health.

Subsidiary Objective-2(b)- To compare the predictor variable i.e. mental health of male and female students of Science stream.

Subsidiary Hypothesis-2(b)- There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their predictor variable i.e. mental health.
In order to compare the Mental health of male and female students of science stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of various dimensions of Mental health of male and female respondents of science stream are given in table-4.5.3.

Table-4.5.3

Showing significance of difference between the mean scores of male and female respondents of science stream on the variable of Mental health.

<table>
<thead>
<tr>
<th>Dimensions of Mental Health</th>
<th>Males (Science Stream) N=276</th>
<th>Females (Science Stream) N=244</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Stability (M1)</td>
<td>Mean 10.21 S.D 2.19</td>
<td>Mean 9.96 S.D 2.11</td>
<td></td>
<td>1.309NS</td>
</tr>
<tr>
<td>Adjustment (M2)</td>
<td>Mean 27.13 S.D 4.09</td>
<td>Mean 27.86 S.D 3.42</td>
<td></td>
<td>2.181*</td>
</tr>
<tr>
<td>Autonomy (M3)</td>
<td>Mean 10.70 S.D 1.69</td>
<td>Mean 11.29 S.D 1.47</td>
<td></td>
<td>4.234**</td>
</tr>
<tr>
<td>Security</td>
<td>Mean 8.78 S.D 2.14</td>
<td>Mean 10.06 S.D 2.17</td>
<td></td>
<td>6.749**</td>
</tr>
<tr>
<td>Insecurity (M4)</td>
<td></td>
<td></td>
<td>518</td>
<td></td>
</tr>
<tr>
<td>Self Concept (M5)</td>
<td>Mean 9.35 S.D 1.96</td>
<td>Mean 9.67 S.D 2.07</td>
<td></td>
<td>1.815NS</td>
</tr>
<tr>
<td>Intelligence (M6)</td>
<td>Mean 19.13 S.D 3.88</td>
<td>Mean 19.20 S.D 3.71</td>
<td></td>
<td>.234NS</td>
</tr>
<tr>
<td>Mental Health</td>
<td>Mean 85.29 S.D 8.99</td>
<td>Mean 88.04 S.D 7.98</td>
<td></td>
<td>3.662**</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** = significant at .01 level.  
N.S = Not Significant.
Fig. 4.5.3- Mean scores of male and female respondents of science stream on the variable of Mental health.

- Table 4.5.3 reveals that there is no significant difference between male and female respondents of Science stream on the factor Emotional stability. The obtained t-value (1.309) is found not significant even at 0.05 level of confidence. The mean value of the factor Emotional stability for males is 10.21 and that of females is 9.96.

- Table 4.5.3 depicts that there is a significant difference between male and female respondents of Science stream on the factor Adjustment. The obtained t-value (2.181) is found significant at 0.05 level of confidence. The mean value of females (27.86) on factor Adjustment is higher than the mean value of males (27.13).

- Above table 4.5.3 shows that there is a significant difference between male and female respondents of Science stream on the factor Autonomy. The obtained t-value (4.234) is found significant even at 0.05 level of confidence.
confidence. The mean value of females (11.29) on factor Autonomy is higher than the mean value of males (10.70).

- Table 4.5.3 depicts that there exists a significant difference between male and female respondents of Science stream on the factor Security-insecurity. The obtained t-value (6.749) is significant even at 0.05 level of confidence. The mean value of females (10.06) on factor Security-insecurity is higher than the mean value of males (8.78).

- Table 4.5.3 shows that there is no significant difference between male and female respondents of Science stream on the factor Self concept. The obtained t-value (1.815) is not significant even at 0.05 level of confidence. The mean value of the factor Self-concept for males is 9.35 and that of females is 9.67.

- Table 4.5.3 depicts that there is no significant difference between male and female respondents of Science stream on the factor Intelligence. The obtained t-value (.234) is not significant even at 0.05 level of confidence. The mean value of the factor Intelligence for males is 19.13 and that of females is 19.20.

Thus, it is clear from the above table 4.5.3 that there exists a significant difference between the male and female respondents of Science stream in respect to their Mental health. The obtained t-value (3.662) is found significant at 0.01 level of confidence. The mean value of females of science stream (88.04) is higher than the mean value of males (85.29) of science stream on the variable of Mental health. Hence, a part of the second subsidiary hypothesis i.e., 2(b) “There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their predictor variable (i.e. mental health)” is rejected.
4.5.4. **Comparison between Male and Female respondents of science stream on the variable of Study Habits.**

**Subsidiary Objective-2(c)-** To compare the predictor variable i.e. study habits of male and female students of Science stream.

**Subsidiary Hypothesis-2(c)-** There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their predictor variable i.e. study habits.

In order to compare the study habits of male and female students of science stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of various dimensions of Study habits of male and female respondents of science stream are given in table-4.5.4.

<table>
<thead>
<tr>
<th>Dimensions of Study Habits</th>
<th>Males (Science Stream) N=276</th>
<th>Females (Science Stream) N=244</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td>Budgeting Time (P1)</td>
<td>7.92</td>
<td>1.53</td>
<td>8.17</td>
<td>1.35</td>
</tr>
<tr>
<td>Physical conditions for study (P2)</td>
<td>8.39</td>
<td>1.35</td>
<td>8.62</td>
<td>1.43</td>
</tr>
<tr>
<td>Reading Ability (P3)</td>
<td>10.30</td>
<td>2.00</td>
<td>10.98</td>
<td>1.73</td>
</tr>
<tr>
<td>Note Taking (P4)</td>
<td>4.13</td>
<td>1.55</td>
<td>3.68</td>
<td>1.72</td>
</tr>
<tr>
<td>Factors in Learning Motivation (P5)</td>
<td>9.37</td>
<td>1.49</td>
<td>9.77</td>
<td>1.38</td>
</tr>
<tr>
<td>Memory (P6)</td>
<td>4.89</td>
<td>1.28</td>
<td>5.16</td>
<td>1.27</td>
</tr>
<tr>
<td>Taking Examinations (P7)</td>
<td>13.26</td>
<td>2.15</td>
<td>13.41</td>
<td>2.26</td>
</tr>
<tr>
<td>Health (P8)</td>
<td>3.93</td>
<td>1.14</td>
<td>4.34</td>
<td>.944</td>
</tr>
<tr>
<td>Study Habits Total</td>
<td>62.18</td>
<td>7.09</td>
<td>64.13</td>
<td>6.76</td>
</tr>
</tbody>
</table>

** = significant at .01 level.
* = significant at .05 level.
N.S = Not Significant.
Fig. 4.5.4- Mean scores of male and female respondents of science stream on the variable of Study habits.

- Table 4.5.4 depicts that there is a significant difference between male and female respondents of Science stream on the factor Budgeting time. The obtained t-value (1.976) is found significant even at 0.05 level of confidence. The mean value of females (8.17) on factor Budgeting time is higher than the mean value of males (7.92).

- Table 4.5.4 reveals that there is a significant difference between male and female respondents of Science stream on the factor Physical conditions for study. The obtained t-value (1.892) is found significant at 0.05 level of confidence. The mean value of females (8.62) is higher than the mean value of males (8.39) on the factor Physical conditions for study.

- Table 4.5.4 shows that there exists a significant difference between male and female respondents of Science stream on the factor Reading ability. The obtained t-value (4.164) is found significant even at 0.05 level of
confidence. The mean value of females (10.98) on factor Reading ability is higher than the mean value of males (10.30).

- Table 4.5.4 depicts that there is a significant difference between male and female respondents of Science stream on the factor Note taking. The obtained t-value (3.161) is found significant even at 0.05 level of confidence. The mean value of males (4.13) on factor Note taking is higher than the mean value of females (3.68).

- Table 4.5.4 shows that there is a significant difference between male and female respondents of Science stream on the factor ‘Factors in learning motivation’. The obtained t-value (3.235) is found significant even at 0.05 level of confidence. The mean value of females (9.77) on factor ‘Factors in learning motivation’ is higher than the mean value of males (9.37).

- Table 4.5.4 depicts that there exists a significant difference between male and female respondents of Science stream on the factor Memory. The obtained t-value (2.432) is found significant even at 0.05 level of confidence. The mean value of females (5.16) is higher than the mean value of males (4.89) on the factor Memory.

- Table 4.5.4 indicates that there exists no significant difference in the mean value of male and female respondents of Science stream on the factor Taking examinations. The obtained t-value (.730) is not found significant even at 0.05 level of confidence. The mean value of females is 13.41 on factor taking examinations and the mean value of males is 13.26.

- Table 4.5.4 depicts that there is a significant difference between male and female respondents of Science stream on the factor Health. The obtained t-value (4.428) is found significant even at 0.05 level of confidence. The mean value of females (4.34) on factor Health is higher than the mean value of males (3.93).
Thus, it is clear from the above table 4.5.4 that there is a significant
difference between male and female respondents of Science stream on the
variable of Study habits. The obtained t-value (3.191) is found significant
even at 0.05 level of confidence. The mean value of females (64.13) on
factor Study habits is higher than the mean value of males (62.18). Hence, a
part of the second subsidiary hypothesis i.e., 2(c) “There will be no
statistically significant difference between the mean of male and female
respondents of science stream in relation to their predictor variable (i.e.
study habits)” is rejected.

4.5.5. Comparison between Male and Female respondents of science
stream on the variable of Self confidence.

Subsidiary Objective-2(d)- To compare the predictor variable i.e. self
confidence of male and female students of Science stream.

Subsidiary Hypothesis-2(d)- There will be no statistically significant
difference between the mean of male and female respondents of science
stream in relation to their self confidence.

In order to compare the self confidence of male and female students of science
stream, t-test was applied. The mean scores and S.D. was found out and t-value
was calculated. The mean scores, S.D. and t-value of self confidence of male
and female respondents of science stream are given in table-4.5.5
Table 4.5.5

Showing significance of difference between the mean scores of male and female respondents of science stream on the variable of Self-confidence.

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Males (Science Stream)</th>
<th>Females (Science Stream)</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=276</td>
<td>N=244</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>24.48</td>
<td>23.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.D</td>
<td>9.514</td>
<td>9.211</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = Significant at .05 level.

Fig. 4.5.5- Mean scores of male and female respondents of science stream on the variable of Self confidence.

Table 4.5.5 depicts that there exists a significant difference between male and female respondents of Science stream on the variable of Self confidence. The obtained t-value (1.725) is found significant at 0.05 level of confidence. The mean value of males is 24.48 and that of females is 23.06. Thus, we can say that males possess higher Self confidence as compared to girls. Hence, a part of the second subsidiary
hypothesis i.e., 2(d) “There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their predictor variable (i.e. self confidence)” is rejected.

4.5.6. **Comparison between Male and Female respondents of Science stream on the variable of Academic achievement.**

Subsidiary Objective-2(e)- To compare the criterion variable i.e. Academic achievement of male and female students of Science stream.

Subsidiary Hypothesis-2(e)- There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their Academic achievement.

In order to compare the Academic achievement of male and female students of science stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of academic achievement of male and female respondents of science stream are given in table-4.5.6.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Males (Science Stream) N=276</th>
<th>Females (Science Stream) N=244</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Achievement</td>
<td>250.25   63.177</td>
<td>278.87   45.994</td>
<td>518</td>
<td>5.840**</td>
</tr>
</tbody>
</table>

** = significant at .01 level.

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Table 4.5.6 shows that there is a significant difference between the male and female respondents of Science stream on the variable of Academic achievement. The obtained t-value (5.84) is found significant even at 0.05 level of confidence. The mean value of females (278.87) on the variable of Academic achievement is higher than the mean value of males (250.25). Hence, a part of the second subsidiary hypothesis i.e., 2(e) "There will be no statistically significant difference between the mean of male and female respondents of science stream in relation to their criterion variable i.e. academic achievement is rejected.

Thus, it is clear from the above tables viz., 4.5.2, 4.5.3, 4.5.4, 4.5.5 and 4.5.6 that there exists a significant difference between males and female respondents on criterion variable i.e., Academic achievement and on various predictor variables i.e., Family climate, Mental health, Study habits, and Self confidence. Thus, the second subsidiary hypothesis "There will be no significant difference between the male and female respondents of
science stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence)” is rejected.

Subsidiary Objective-3 To compare the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of arts stream.

Hypothesis-3- There will be no significant difference between the male and female respondents of arts stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence).

4.5.7. Comparison between Male and Female respondents of arts stream on the variable of Family Climate.

Subsidiary Objective-3(a)- To compare the predictor variable i.e. Family climate of male and female students of Arts stream.

Subsidiary Hypothesis-3(a)- There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their Family climate.

In order to compare the Family climate of male and female students of arts stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of various dimensions of Family climate of male and female respondents of arts stream are given in table-4.5.7.
Table 4.5.7

Showing significance of difference between the mean scores of Male and Female respondents of Arts stream on the variable of Family climate

<table>
<thead>
<tr>
<th>Dimensions of Family Climate (FC)</th>
<th>Males (Arts Stream) N=180</th>
<th>Females (Arts Stream) N=165</th>
<th>Df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohesion (F1)</td>
<td>Mean: 52.37 S.D: 6.19</td>
<td>Mean: 53.34 S.D: 5.10</td>
<td></td>
<td>1.585 NS</td>
</tr>
<tr>
<td>Expressiveness (F2)</td>
<td>Mean: 30.60 S.D: 4.31</td>
<td>Mean: 30.92 S.D: 3.99</td>
<td></td>
<td>.716 NS</td>
</tr>
<tr>
<td>Conflict (F3)</td>
<td>Mean: 42.04 S.D: 5.65</td>
<td>Mean: 41.65 S.D: 5.30</td>
<td>343</td>
<td>.650 NS</td>
</tr>
<tr>
<td>Acceptance &amp; Caring (F4)</td>
<td>Mean: 42.97 S.D: 4.69</td>
<td>Mean: 42.24 S.D: 4.97</td>
<td></td>
<td>1.403 NS</td>
</tr>
<tr>
<td>Independence (F5)</td>
<td>Mean: 29.62 S.D: 4.44</td>
<td>Mean: 30.07 S.D: 4.61</td>
<td></td>
<td>.936 NS</td>
</tr>
<tr>
<td>Active-Recreational Orientation (F6)</td>
<td>Mean: 27.29 S.D: 3.86</td>
<td>Mean: 27.56 S.D: 3.83</td>
<td></td>
<td>.649 NS</td>
</tr>
<tr>
<td>Organization (F7)</td>
<td>Mean: 7.58 S.D: 1.82</td>
<td>Mean: 7.20 S.D: 1.84</td>
<td></td>
<td>1.941 *</td>
</tr>
<tr>
<td>Control (F8)</td>
<td>Mean: 15.12 S.D: 3.09</td>
<td>Mean: 15.28 S.D: 2.98</td>
<td></td>
<td>.495 NS</td>
</tr>
</tbody>
</table>

* = significant at .05 level.
N.S = Not Significant.

Fig. 4.5.7- Mean scores of male and female respondents of arts stream on the variable of Family climate.
- The table-4.5.7 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor Cohesion. The t-value came out to be 1.585 and the mean values are 52.37 and 53.34 for males and females respectively. So it can be said very safely that both male and female respondents of Arts stream are having same or equal level of Cohesion.

- The table-4.5.7 depicts that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor Expressiveness. The t-value came out to be 0.716 and the mean values are 30.60 and 30.92 for males and females respectively. So it can be said very safely that both male and female respondents of Arts stream are having same or equal level of Expressiveness.

- According to table-4.5.7 no significant difference is found between male and female respondents of Arts stream on the measure of the factor Conflict. The t-value came out to be 0.650 and the mean values are 42.04 and 41.65 for males and females respectively. So it can be said very safely that both male and female respondents of Arts stream are having same or equal level of Conflict.

- The table-4.5.7 shows that there exists no significant difference between male and female respondents of Arts stream on the measure of the factor Acceptance & caring. The t-value came out to be 1.403 and the mean values are 42.97 and 42.24 for males and females respectively. So it can be said that Male and Female respondents of Arts stream experience same or equal level of Acceptance and caring.

- It is clear from table-4.5.7 that there exists no significant difference between male and female respondents of Arts stream on the measure of the factor Independence. The t-value came out to be .936 and the mean values for males and females are 29.62 and 30.07 respectively. So it can be said that both male and female respondents of Arts stream are having same or equal Independence.
- It is clear from table-4.5.7 that there exists no significant difference between male and female respondents of Arts stream on the measure of the factor Active recreational orientation. The t-value came out to be .649 and the mean values for males and females are 27.29 and 27.56 respectively. So it can be said that both male and female respondents of Arts stream are having same or equal Active recreational orientation.

- The table-4.5.7 depicts that there exists a significant difference between Male and Female respondents of Arts stream on the measure of the factor Organization. The t-value came out to be 1.941 and the mean values 7.58 and 7.20 for males and females respectively. So it can be said that male respondents of arts stream are better than female respondents of Arts stream on the factor Organization.

- The table-4.5.7 shows that there is no significant difference between Male and Female respondents of Arts stream on the measure of the factor Control. The calculated t-value is 0.495 and the mean values are 15.12 and 15.28 for males and females respectively. So it can be said that both male and female respondents of Arts stream are having same or equal control.

Thus, the above table-4.5.7 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the variable of Family climate. The t-value came out to be 0.296 and the mean values 247.58 and 248.26 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream are having same or equal type of Family climate. Thus, a part of the third subsidiary hypothesis i.e., 3(a) "there will be no significant difference between the male and female respondents of arts stream in relation to their predictor variable (i.e. family climate)" is accepted.
4.5.8. **Comparison between Male and Female respondents of arts stream of the variable of Mental Health.**

**Subsidiary Objective-3(b)- To compare the predictor variable i.e. Mental health of male and female students of Arts stream.**

**Subsidiary Hypothesis-3(b)- There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their Mental health.**

In order to compare the Mental health of male and female students of arts stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of various dimensions of Mental health of male and female respondents of arts stream are given in table-4.5.8.

**Table-4.5.8**

**Showing significance of difference between the mean scores of Male and Female respondents of Arts stream on the variable of Mental health**

<table>
<thead>
<tr>
<th>Dimensions of Mental Health (MH)</th>
<th>Males (Arts Stream) N=180</th>
<th>Females (Arts Stream) N=165</th>
<th>Df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustment (M2)</td>
<td>Mean: 27.26 S.D: 3.99</td>
<td>Mean: 26.09 S.D: 4.20</td>
<td></td>
<td>2.652**</td>
</tr>
<tr>
<td>Autonomy (M3)</td>
<td>Mean: 10.56 S.D: 1.70</td>
<td>Mean: 11.13 S.D: 1.72</td>
<td></td>
<td>3.107**</td>
</tr>
<tr>
<td>Security Insecurity (M4)</td>
<td>Mean: 9.22 S.D: 2.16</td>
<td>Mean: 10.08 S.D: 2.27</td>
<td>343</td>
<td>3.586**</td>
</tr>
<tr>
<td>Self Concept (M5)</td>
<td>Mean: 9.41 S.D: 1.86</td>
<td>Mean: 9.23 S.D: 2.30</td>
<td></td>
<td>.782NS</td>
</tr>
<tr>
<td>Intelligence (M6)</td>
<td>Mean: 15.87 S.D: 4.17</td>
<td>Mean: 15.33 S.D: 4.17</td>
<td></td>
<td>1.200NS</td>
</tr>
<tr>
<td>Mental Health</td>
<td>Mean: 82.36 S.D: 9.07</td>
<td>Mean: 81.11 S.D: 10.02</td>
<td></td>
<td>1.219NS</td>
</tr>
</tbody>
</table>

**= significant at .01 level.**

N.S = Not Significant.
The table-4.5.8 reveals that there exists a significant difference between Male and Female respondents of Arts stream on the measure of variable Emotional stability. The calculated t-value is 3.487. The mean values for males and females also differ as 10.04 and 9.25 respectively. It clearly shows that males are better than females on the factor Emotional stability. Thus, it can be said with assurance that there exists a marked difference between male and female respondents of Arts stream on the variable emotional stability because the calculated ‘t’ value is significant even at 0.05 level of confidence.

The table-4.5.8 indicates that there exists a significant difference between Male and Female respondents of Arts stream on the measure of factor Adjustment. The calculated t-value is 2.652. The mean values for males and females also differ as 27.26 and 26.09 respectively. This clearly shows that males are better than females on the factor Adjustment. Thus, it can be said with assurance that there exists a marked difference between male and female respondents of Arts stream.
on the variable adjustment because the calculated value is significant at 0.01 level of confidence.

- The table-4.5.8 indicates that there exists a significant difference between Male and Female respondents of Arts stream on the measure of factor Autonomy. The calculated t-value is 3.107. The mean values for males and females also differ as 10.56 and 11.13 respectively. This clearly shows that females are better than males on the autonomy factor. Thus, it can be said with assurance that there exists a marked difference between male and female respondents of Arts stream on the variable autonomy because the calculated value is significant at 0.01 level of confidence.

- The table-4.5.8 indicates that there exists a significant difference between Male and Female respondents of Arts stream on the measure of factor security-insecurity. The calculated t-value is 3.586. The mean values for males and females also differ as 9.22 and 10.08 respectively. This clearly shows that females are better than males on the factor security-insecurity. Thus, it can be said with assurance that there exists a marked difference between Male and Female respondents of Arts stream on the variable security-insecurity because the calculated value is significant even at 0.05 level of confidence.

- The table-4.5.8 indicates that there exists no significant difference between male and female respondents of Arts stream on the measure of factor self-concept. The t-value came out to be .782 and the mean values are 9.41 and 9.23 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream are having same or equal type of self-concept.
- The table-4.5.8 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of factor Intelligence. The t-value came out to be 1.200 and the mean values as 15.87 and 15.33 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream are having same or equal level of Intelligence.

Thus, table-4.5.8 reveals that there exists no significant difference between male and female respondents of Arts stream on the measure of Mental health variable. The t-value came out to be 1.219 and the mean values are 82.36 and 81.11 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream are having same or equal level of Mental health. Thus, a part of the third subsidiary hypothesis i.e., 3(b) “there will be no significant difference between the male and female respondents of arts stream in relation to their predictor variable (i.e. mental health)” is accepted.

4.5.9. **Comparison between Male and Female respondents of arts stream on the variable of Study habits.**

**Subsidiary Objective-3(c)- To compare the predictor variable i.e. Study habits of male and female students of Arts stream.**

**Subsidiary Hypothesis-3(c)- There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their Study Habits.**

In order to compare the Study habits of male and female students of arts stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of various dimensions of Study habits of male and female respondents of arts stream are given in table-4.5.9.
Table 4.5.9

Showing significance of difference between the mean scores of Male and Female respondents of Arts stream on the variable of Study habits

<table>
<thead>
<tr>
<th>Dimensions of Study Habits (SH)</th>
<th>Males (Arts Stream) N=180</th>
<th>Females (Arts Stream) N=165</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeting Time (P1)</td>
<td>7.58 1.66</td>
<td>8.12 1.45</td>
<td></td>
<td>3.198**</td>
</tr>
<tr>
<td>Physical conditions for study (P2)</td>
<td>7.91 1.58</td>
<td>7.90 1.55</td>
<td></td>
<td>.084NS</td>
</tr>
<tr>
<td>Reading Ability (P3)</td>
<td>10.26 2.22</td>
<td>10.53 2.09</td>
<td></td>
<td>1.170NS</td>
</tr>
<tr>
<td>Note Taking (P4)</td>
<td>3.56 1.59</td>
<td>3.70 1.88</td>
<td></td>
<td>.728NS</td>
</tr>
<tr>
<td>Factors in Learning Motivation (P5)</td>
<td>9.17 1.54</td>
<td>9.35 1.58</td>
<td></td>
<td>1.097NS</td>
</tr>
<tr>
<td>Memory (P6)</td>
<td>4.60 1.27</td>
<td>4.67 1.16</td>
<td></td>
<td>.507NS</td>
</tr>
<tr>
<td>Taking Examinations (P7)</td>
<td>13.04 2.24</td>
<td>12.77 2.03</td>
<td></td>
<td>1.167NS</td>
</tr>
<tr>
<td>Health (P8)</td>
<td>3.77 1.17</td>
<td>3.81 1.01</td>
<td></td>
<td>.334NS</td>
</tr>
<tr>
<td>Study Habits</td>
<td>59.89 7.440</td>
<td>60.84 7.369</td>
<td></td>
<td>1.195NS</td>
</tr>
</tbody>
</table>

** = significant at .01 level.
N.S = Not Significant.

Fig. 4.5.9- Mean scores of male and female respondents of arts stream on the variable of Study habits.

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The table-4.5.9 indicates that there exists a significant difference between Male and Female respondents of Arts stream on the measure of the factor Budgeting time. The calculated t-value is 3.198. The mean values also differ between the two groups as 7.58 and 8.12 respectively. It clearly shows that females are better than males on the factor budgeting time. Thus, it can be said with assurance that there exists a marked difference between male and female respondents of Arts stream on the factor budgeting time because the calculated ‘t’ value is significant at 0.01 level of confidence.

The table-4.5.9 depicts that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor Physical conditions for study. The t-value came out to be 0.084 and the mean values 7.91 and 7.90 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream have same Physical conditions for study.

The table-4.5.9 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor Reading ability. The t-value came out to be 1.170 and the mean values 10.26 and 10.53 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream do not differ in their Reading ability.

The table 4.5.9 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of factor Note taking. The t-value came out to be 0.728 and the mean values 3.56 and 3.70 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream are having same Note taking habit.
- It is clear from the above table 4.5.9 that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the dimension 'factors in learning motivation'. The t-value came out to be 1.097 and the mean values 9.17 and 9.35 for males and females respectively. Thus, it can be said very safely that both male and female respondents of Arts stream do not differ in their factors in learning motivation.

- The table-4.5.9 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor memory. The t-value came out to be 0.507 and the mean values 4.60 and 4.67 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream do not differ in their memory level.

- The table-4.5.9 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor Taking examination. The t-value came out to be 1.167 and the mean values are 13.04 and 12.77 for males and females respectively. So, it can be said very safely that both male and female respondents of Arts stream takes examinations equally serious.

- The table-4.5.9 indicates that there exists no significant difference between Male and Female respondents of Arts stream on the measure of the factor Health. The t-value came out to be 0.334 and the mean values are 3.77 and 3.81 respectively. So, it can be said very safely that both male and female respondents of Arts stream do not differ in their Health.

Thus, it is clear from the table-4.5.9 that there exists no significant difference between Male and Female respondents of Arts stream on the measure of variable Study habits. The t-value came out to be 1.195, which is not significant even at .05 level of confidence. The calculated mean values for males and females are 59.89 and 60.84 respectively. So, it can be said very
safely that both male and female respondents of Arts stream are having same or equal type of Study habits. Thus, a part of the third subsidiary hypothesis i.e., 3(c) “there will be no significant difference between the male and female respondents of arts stream in relation to their predictor variable (i.e. study habits)” is accepted.

4.5.10. Comparison between Male and Female respondents of arts stream on the variable of Self confidence.

Subsidiary Objective-3(d)- To compare the predictor variable i.e. Self confidence of male and female students of Arts stream.

Subsidiary Hypothesis-3(d)- There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their Self confidence.

In order to compare the self confidence of male and female students of arts stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of Self confidence of male and female respondents of arts stream are given in table-4.5.10.

Table-4.5.10

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Males (Arts Stream) N=180</th>
<th>Females (Arts Stream) N=165</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self confidence</td>
<td>Mean 27.44 S.D 8.320</td>
<td>Mean 30.81 S.D 9.024</td>
<td>343</td>
<td>3.587**</td>
</tr>
</tbody>
</table>

** = significant at .01 level.
Above table 4.5.10 indicates that there exists a significant difference between male and female respondents of Arts stream on the measure of variable Self-confidence. The calculated t-value is 3.587. The mean values also differ between the two groups as 27.44 and 30.81 respectively. It clearly shows that females are better than males on the variable of Self-confidence. Thus, it can be said with assurance that there exists a marked difference between male and female respondents of Arts stream on the variable of Self-confidence because the calculated value is significant even at 0.05 level of confidence. Thus, a part of the third subsidiary hypothesis i.e., 3(d) "there will be no significant difference between the male and female respondents of arts stream in relation to their predictor variable (i.e., self confidence)" is rejected.
4.5.11. Comparison between Male and Female respondents of arts stream on the variable of Academic Achievement.

Subsidiary Objective-3(e)- To compare the criterion variable i.e. Academic achievement of male and female students of Arts stream.

Subsidiary Hypothesis-3(e)- There will be no statistically significant difference between the mean of male and female respondents of arts stream in relation to their Academic achievement.

In order to compare the Academic achievement of male and female students of arts stream, t-test was applied. The mean scores and S.D. was found out and t-value was calculated. The mean scores, S.D. and t-value of Academic achievement of male and female respondents of arts are given in table-4.5.11.

Table-4.5.11

Showing significance of difference between the mean scores of Male and Female respondents of Arts stream on the variable of Academic achievement

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Males (Arts Stream) N=180</th>
<th>Females (Arts Stream) N=165</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Achievement</td>
<td>224.81 (Mean) 45.92 (S.D)</td>
<td>243.12 (Mean) 37.568 (S.D)</td>
<td>343</td>
<td>4.032**</td>
</tr>
</tbody>
</table>

** = significant at .01 level.
Above table 4.5.11 indicates that there exists a significant difference between male and female respondents of Arts stream on the measure of variable Academic achievement. The calculated t-value is 4.03. The mean value also differs between males and females as 224.81 and 243.12 respectively. It clearly shows that females of arts stream are better than males of arts stream on the variable of Academic achievement. Thus, it can be said with assurance that there exists a marked difference between male and female respondents of Arts stream on the variable Academic achievement because the calculated 't' value is significant at 0.01 level of confidence. Thus, a part of the third subsidiary hypothesis i.e., 3(e) "there will be no significant difference between the male and female respondents of arts stream in relation to their criterion variable i.e. academic achievement" is rejected.

Thus, it is clear from the above tables viz., 4.5.7, 4.5.8, and 4.5.9 that there exists no significant difference between male and female respondents on the variables of Family climate, Mental health and Study habits. But a significant difference is found between male and female respondents on the
variables of Self confidence and Academic achievement (Tables 4.5.10, 4.5.11). Thus, the third subsidiary hypothesis “There will be no significant difference between the male and female respondents of arts stream in relation to their criterion variable i.e. academic achievement and predictor variables (i.e. family climate, mental health, study habits and self confidence)” is partially accepted.
Chapter - 5
Discussion of Results

5.1. Discussion of results on the basis of Product Moment Correlation.

5.2. Discussion on the basis of Multiple Regression Analysis results.

5.3. Discussion on the basis of t-test results.
V- DISCUSSION OF RESULTS

The purpose of the present investigation was to determine the impact of Family climate, Mental health, Study habits and Self confidence on the Academic achievement of senior secondary students. These four independent variables were chosen for analysis because they are manipulable variables that have been identified as important influences on achievement in previous researches. Data collected from nineteen senior secondary schools of U.P. Board, Allahabad were analysed. Multiple regression, correlations, t-test were used to determine the effect of these variables on Academic achievement.

5.1. DISCUSSION OF RESULTS ON THE BASIS OF PRODUCT MOMENT CORRELATION:

5.1.1. Correlation of Family climate and Academic achievement

In the present study a significant positive relationship was found between Family climate and Academic achievement for total number of students. This result is supported by the findings of (Mandara, 2006), which revealed that adolescents need trusting and caring relationships to be successful in school and in life. Every child just like an adult needs recognition for his achievement and success from the members of his family. Warm, responsive parenting in adolescence is related to school success and positive social and emotional outcomes. Further (Simpson, 2001) reveals that adolescents with supportive parents exhibit higher rates of self-reliance, identity formation, school performance, and positive career-planning aspirations, as well as lower rates of depression and delinquency. Similarly (Pong, Hao, & Gardner, 2005) concluded that youth who share trusting relationships with their parents—characterized by mutual and sustained bonds and open communication—have higher achievement and better physical health and are more likely to disclose information to their parents that will keep them out of trouble. Rutter, (1990) found out that Parental involvement and the home environment have shown the positive influence of the family on students’ achievement. Similarly, the findings of Agrawal, 1986, Losh et. al., 2003, Devi & Mayuri, 2003 and Ahuja & Goyal, 2006 also support our results.
5.1.2. Correlation of Mental health and Academic achievement

Mental Health was found to be significantly and positively related to the academic achievement of total number of students. The results of the present study are borne out by Tremblay, Inman, & Willms (1998) results, which revealed that physical activity, can also increase academic performance indirectly by improving emotional health, self-esteem, and alertness—all of which are related to improved academic performance. Also, the results of Anand, 1989; Wisniewski, 2005; Kaplan et al., 2005; Dwyer, Coonan, Worsley, & Leitch 1979; Shephard et al. 1984; Sallis et al. 1999; Shephard 1997; Tremblay et al. 1998, concluded that performance is associated with good Mental health.

5.1.3. Correlation of Study habits and Academic achievement

Significant & positive relationship was found between Study Habits and Academic achievement for total number of students. The results of the present study are in agreement with the findings of Rao, 1965 which revealed that more study gives better learning performance in schools that again motivates the learner to study more, which in turn results in improvement in the performance level. Thus, Study Habits not only help in promotion of better academic work but also influences students’ morale and sense of satisfaction. The result of the present study is supported by the findings of studies conducted by Jain, 1967; Jha, 1970; Diener, 1976; Thorp, 1985 and Kaur & Lekhi, 1995.

5.1.4. Correlation of Self confidence and Academic achievement

Self Confidence was found to be significantly and positively related to the Academic achievement of total students. The results of the present study are supported by the findings of Konvalina, 1981, Bray, 2001, Cronk, 2009. The stronger the self-efficacy, the more active the effort, and that results in better performance. Thus, Self-confidence is related with success. A confident
attitude, a belief and a faith in oneself and one’s ideas are essential in getting ahead.

5.2. DISCUSSION ON THE BASIS OF MULTIPLE REGRESSION ANALYSIS RESULTS

The results of the analysis of data show that the Academic achievement of science and arts stream students of senior secondary schools is determined to a considerable extent by these three variables (excluding self confidence which is fourth independent variable) viz. Family climate, Mental health, and Study habits. About 17% variance in the Academic achievement of the total subjects, about 14% variance in the Academic achievement of science subjects and about 14% variance in the Academic achievement of arts subjects could be accounted for by these predictive variables excluding Self confidence. The results of the following studies reaffirm the role of Family climate in the determination of Academic achievement (Jain, 1965; Ojha, 1973; kulshreshta, 1981; Chopra, 1982; Agarwal, 1986; Zahir, 1988; Gonzales et al., 1996; Fuligni, 1997; Losh, et al., 2003; Darolia & Wydick, 2006; Gonzales, 2006; Flouri, 2006).

The findings of the studies conducted by Bentley et al., 1980; Prasanna, 1984; Anand, 1989; Dwairy, 2004; Kaplan et al., 2005; Tinkew et al., 2006 reaffirm the role of Mental health in the determination of Academic achievement.

Similarly, the results of the studies conducted by (Jain, 1967; Jha, 1970; Tuli, 1981; Thorp, 1985; Kaur and Lekhi; 1995; Lakshminarayanan et al., 2006) reaffirm the role of Study habits in the determination of Academic achievement.

The amount of variation caused by these three independent variables (Family climate, Mental health and Study habits) is found to be considerably higher in the total sample of students. But the pattern of relationship between Academic achievement and these three independent variables under study viz. Family climate, Mental health, and Study habits is not different for the two groups i.e.
science and arts and that academic achievement is equally affected by these variables.

In case of science students and of the total sample the major variation is caused by the factor Intelligence followed by other factors like Active recreational orientation, Note taking, Emotional stability & Memory, who caused a very low % of variation in the Academic achievement of science students, but this variation is found to be significant.

Since Intelligence caused the major variation in the academic achievement of science students. This can be due to the reason that Intelligence level of a person is positively related with his ability to understand the things or we can say that intelligence level is directly related with his learning ability. And it is learning ability which determines performance. Thus we can say that an intelligent person performs well in examination and get better grades. Thus, the Academic achievement is largely influenced by intelligence. This result is supported by the findings of the study conducted by Naderi et al. (2008) which revealed that intelligence and gender explained 0.019 of the variance in the Academic achievement. Similarly, study of Laidra et al. (2006) reveals that intelligence was the strongest predictor of Grade Point Average (GPA).

Further in case of arts students the variation in Academic achievement is caused by factor control, budgeting time, intelligence, Expressiveness and Autonomy. All these factors had significantly contributed in causing variance in Academic achievement.

5.3. DISCUSSION ON THE BASIS OF t-TEST RESULTS

5.3.1. ‘t’ values between science and arts stream students in relation to their Academic achievement

Significant difference was found between the respondents of science and arts stream in relation to their Academic achievement. Performance of science stream students is better than that of arts stream students. It is a known fact that the students of science stream gives more time to their studies or we can say
that science students are found to be more sincere and laborious as compared to arts students. On intellectual grounds also they are ahead of arts students. Apart from this reason, students of science experience better parental support and encouragement as compared to arts stream students. Thus, the first subsidiary hypothesis stands rejected.

5.3.2. ‘t’ values between male and female respondents of science stream on the variable of Family climate.

Significant difference was found between male and female respondents of science stream on the factor Cohesion. The mean value of females on factor cohesion is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Expressiveness. The mean value of females on the factor expressiveness is higher than that of males.

No significant difference was found between male and female respondents of science stream on the factor conflict.

Significant difference was found between male and female respondents of science stream on the factor Acceptance and caring. The mean value of females on the factor acceptance and caring is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Independence. The mean value of females on the factor independence is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Active recreational orientation. The mean value of females on the factor Active recreational orientation is higher than that of males.
Significant difference was found between male and female respondents of science stream on the factor Organization. The mean value of females on the factor Organization is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Control. The mean value of females on the factor control is higher than that of males.

Thus, we can say that a significant difference was found between male and female respondents of science stream on the variable of Family climate. Females of science stream experience better Family Climate as compared to males of science stream. Girls are more obedient, sincere and are less exposed to outer world as compared to boys. They share better bonding with their parents because they have the capacity of understanding family norms in a better way as compared to boys.

These results are supported by the findings of the study of Devi and Mayuri (2003) which reveal that girls were superior to boys.

5.3.3. ‘t’ values between male and female respondents of science stream on the variable of Mental health.

No significant difference was found between male and female respondents of science stream on the factor Emotional stability. Both male and female respondents of science stream are found to be equally emotionally stable.

Significant difference was found between male and female respondents of science stream on the factor Adjustment. The mean value of females on the factor Adjustment is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Autonomy. The mean value of females on the factor Autonomy is higher than that of males.
Significant difference was found between male and female respondents of science stream on the factor Security-insecurity. The mean value of females on the factor Security-insecurity is higher than that of males.

No significant difference was found between male and female respondents of science stream on the factor Self concept.

No significant difference was found between male and female respondents of science stream on the factor Intelligence.

Thus, significant difference was found between male and female respondents of science stream on the variable of Mental health. Females of science stream have better Mental Health as compared to males of science stream. The result of this study is supported by the findings of the study conducted by Albuquerque et al. (1990) which reveals that college students experienced about five life events in one year and had to undergo a mild degree of distress. The males reported relatively greater degree of distress.

Contradictory to the above finding, study of Veereshwar (1979) reveals that adjustment problems for girls existed in all the areas but the percentage of extreme cases was meagre. Similarly, results of Verma (1990) reveals that Female adolescent learners had more anxiety than male adolescent learners.

5.3.4. ‘t’ values between male and female respondents of science stream on the variable of Study habits.

Significant difference was found between male and female respondents of science stream on the factor Budgeting time. The mean value of females on the factor Budgeting time is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Physical conditions for study. The mean value of females on the factor Physical conditions for study is higher than the mean value of males.
Significant difference was found between male and female respondents of science stream on the factor Reading ability. The mean value of females on the factor Reading ability is higher than that of males.

Significant difference was found between male and female respondents of science stream on the factor Note taking. The mean value of males on the factor Note taking is higher than that of females.

Significant difference was found between male and female respondents of science stream on the dimension ‘Factors in learning motivation’. The mean value of females on the dimension ‘Factors in learning motivation’ is higher than the mean value of males.

Significant difference was found between male and female respondents of science stream on the factor Memory. The mean value of females on the factor Memory is higher than that of males.

No significant difference was found between male and female respondents of science stream on the factor Taking examinations.

Significant difference was found between male and female respondents of science stream on the factor Health. The mean value of females on the factor health is higher than that of males.

Thus, a significant difference was found between male and female respondents of science stream with respect to their Study habits. The mean value of females on the variable of Study habits is higher than the mean value of males. Girls are more studious and sincere as compared to boys. They devote much of their time in studies.

The findings reported in the present study are in agreement with the results of Yashomati & Patel (1985); which concluded that rural girls were significantly superior to rural boys in study habits. Similarly, findings of Rao, (1965); reveals that more study leads to improvement in the performance level. This motivates them to study more.
5.3.5. Discussion of significance of difference between science male and female respondents on variable Self confidence

Significant difference was found between the male and female respondents of Science stream. The mean value of males on the variable of Self-confidence is higher than the mean value of females. Thus, we can say that males of science stream possess higher Self confidence as compared to females of science stream.

Similar results were found by Joshi & Srivastava (2009); which revealed that boys would score significant higher on self-esteem as compared to girls. Similarly, findings of Verma (1990) revealed that Male adolescent learners possessed significantly higher self-confidence than female adolescents.

As against this, findings of Lenney & Orono, 1977 revealed that women are not lower in self-confidence than men in all achievement situations.

5.3.6. ‘t’ values between male and female respondents of science stream on the variable of Academic achievement.

Significant difference was found between male and female respondents of science stream on the variable of Academic achievement. Academic achievement of science stream females is higher than the Academic achievement of science stream males. As compared to boys, girls give more importance to their studies by attending school regularly, by completing assignments on time, by listening class lecture properly. Also, girls prepare notes, study in advance for examinations. Thus their performance is better as compared to boys.

The result of the present investigation is in agreement with the findings of Joshi & Srivastava, 2009; which concluded that girls were significantly higher on Academic achievement as compared to boys.

Thus, the hypothesis related to the second subsidiary objective stands partially confirmed.
5.3.7. ‘t’ values between male and female respondents of arts stream on the variable of Family climate

No significant difference was found between male and female respondents of arts stream on the factor Cohesion.

No significant difference was found between male and female respondents of arts stream on the factor Expressiveness.

No significant difference was found between male and female respondents of arts stream on the factor Conflict.

No significant difference was found between male and female respondents of arts stream on the factor Acceptance & Caring.

No significant difference was found between male and female respondents of arts stream on the factor Independence. They are equally independent in decision making.

No significant difference was found between male and female respondents of arts stream on the factor Active recreational orientation.

Significant difference was found between male and female respondents of arts stream on the factor Organization. The mean value of males on the factor Organization is higher than that of females.

No significant difference was found between male and female respondents of arts stream on the factor Control.

No significant difference was found between Male and Female respondents of Arts stream on the measure of the variable of Family climate.
5.3.8. ‘t’ value between male and female respondents of arts stream on the variable of Mental health

Significant difference was found between male and female respondents of arts stream. The mean value of males on factor Emotional stability is higher than the mean value of females.

Significant difference was found between male and female respondents of arts stream. The mean value of males on factor Adjustment is higher than the mean value of females.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Autonomy is higher than the mean value of males.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Security-insecurity is higher than the mean value of males.

No significant difference was found between male and female respondents of arts stream on the factor Self concept.

No significant difference was found between male and female respondents of arts stream on the factor Intelligence.

Thus, there exists no significant difference between male and female respondents of Arts stream on the measure of the variable of Mental health.

5.3.9. ‘t’ value between male and female respondents of arts stream on the variable of Study habits.

Significant difference was found between male and female respondents of arts stream on the factor Budgeting time. The mean value of females on the factor Budgeting time is higher than the mean value of males.

No significant difference was found between male and female respondents of arts stream on the factor Physical conditions for study.
No significant difference was found between male and female respondents of arts stream on the factor Reading ability. Both boys and girls have same kind of reading ability.

No significant difference was found between male and female respondents of arts stream on the factor Note taking.

No significant difference was found between male and female respondents of arts stream on the dimension ‘Factors in learning motivation’.

No significant difference was found between male and female respondents of arts stream on the factor Memory.

No significant difference was found between male and female respondents of arts stream on the factor Taking examinations.

No significant difference was found between male and female respondents of arts stream on the factor Health.

Thus, there exists no significant difference between Male and Female respondents of Arts stream on the measure of the variable of Study habits. Both boys and girls have similar type of study habits.

5.3.1. ‘t’ value between male and female respondents of arts stream on the variable of Self confidence.

There exists a significant difference between male and female respondents of Arts stream on the variable of Self-confidence. Females are found to be more self-confident as compared to males.

5.3.11. ‘t’ value between male and female respondents of arts stream on the variable of Academic achievement

There exists a significant difference between male and female respondents of Arts stream on the variable of Academic achievement. It clearly shows that females are better than males on the variable Academic achievement. Girls attend classes properly, they give time to their studies. Contradictory to this
boys do not attend school regularly, they show indiscipline while attending lecture. Thus, they are less benefitted by the lecture as compared to girls.

The result of the present study is in agreement with the findings of Joshi & Srivastava 2009; they concluded that girls were significantly higher on Academic achievement as compared to boys.

Therefore, the hypothesis related to the third subsidiary objective stands partially confirmed.
Chapter 6

Findings, Educational Implications and Suggestions

6.1. Findings
6.2. Educational Implications.
6.3. Suggestions for further research.
6.2. Educational Implications.
6.3. Suggestions for further research.
VI - FINDINGS, EDUCATIONAL IMPLICATIONS AND SUGGESTIONS

The study reported in the foregoing chapters was undertaken with a view to examine the impact of a set of four independent variables viz., Family climate, Mental health, Study habits and Self confidence on the Academic achievement of science and arts students of senior secondary schools; to study the relative contributory role they play independently and jointly in determining the academic achievement of the students of science and arts stream, and to predict the academic achievement of the students on the basis of these predictive variables. To fulfill the requirements of multiple regression, nature of distribution of criterion and predictive variables was also studied. The sample consisted of 520 science and 345 arts students selected from 18 intermediate colleges of Etawah and Aligarh district. Data about these dependent and independent variables was collected by administering Hindi version of Family Environment Scale by Dr. Harpreet Bhatia & Dr. N. K Chadha (1993), Mental Health Battery by Dr. Arun Kumar Singh & Dr. Alpana Sen Gupta (2008), Study Habits Inventory by Palsane & Sharma (2003) and Self confidence inventory by Dr. Rekha Agnihotri (1993). The data was analysed using Correlations, Multiple regression analysis and t-test. The data was analysed by the investigator by using SPSS Version 16.0.

Analysis of the data collected on these tests brought to light certain facts about the variables studied in the research. On the basis of these facts certain findings were drawn and are presented according to objectives as follows:

6.1 FINDINGS

Findings of the present investigation are presented in two parts: (i) findings related to the major objectives, (ii) findings related to the subsidiary objectives.
6.1.1 FINDINGS RELATED TO THE MAJOR OBJECTIVES

6.1.1.1 Obj. 1: Relationship between various predictive variables and Academic achievement.

Relationship between four predictive variables and academic achievement of total students was ascertained by computing product moment coefficient of correlations and the findings thus drawn are presented below:

(i) Significant & positive relationship was found between Family Climate and Academic Achievement for total number of students.

(ii) Mental Health was found to be significantly and positively related to the academic achievement of total number of students.

(iii) Significant & positive relationship was found between Study Habits and Academic Achievement for total number of students.

(iv) Self Confidence was found to be significantly and positively related to the academic achievement of total number of students.

6.1.1.2 Obj. 2: Contributory role of various predictive variables on the Academic Achievement of total students.

In order of magnitude of regression weights, out of the eight dimensions of Family Climate only two dimensions i.e. Active recreational orientation and Independence were found prominent in determining variation in Academic achievement of total students (N=865). The role of both the dimensions was found to be significant. From the regression coefficients it was inferred that one unit increase in externality scores of Active recreational orientation and independence, cause .10738 & .08521 unit’s increment respectively in the Academic Achievement of total students.

Out of the six dimensions of Mental Health only two dimensions i.e. Intelligence and Emotional Stability were found important in determining the Academic achievement. The role of both the dimensions Intelligence and Emotional stability was found to be significant. One unit increase in
Intelligence was found to cause, .32122 units increment in the academic achievement of total students.

But a negative regression coefficient was obtained for dimension Emotional stability. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Emotional Stability score, academic achievement of the total students decreases by .09257 units.

Out of the eight dimensions of Study Habits only one dimension i.e. Memory was found prominent in determining variation in Academic achievement. The role of Memory was found to be significant. One unit increase in Memory was found to cause .09653 units increment in the academic achievement of total students.

But variable Self-confidence does not play any significant role in influencing Academic achievement.

The values of R (coefficient of multiple correlation) were found to be significant in case of Active recreational orientation (R=.2198), Independence (R=.2101), Intelligence (R=.3612) & Memory (R=.1546), which reflects that significant multiple relationship exists between these variables and criterion variable. But the value of R (coefficient of multiple correlation) was found not significant in case of Emotional stability (R=.0230), which reflects that there exists negative & not significant relationship between Emotional stability and Academic achievement.

The values of $R^2$ (coefficient of multiple determination) being .17, which shows that about 17% of the variance in Academic achievement total students is accounted by the joint contribution of the these dimensions i.e. Active recreational orientation, Independence, Intelligence, Emotional Stability & Memory, and the remaining percentage of the variance is still to be accounted for.
Therefore, the second research hypothesis “each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement)”, is partially accepted.

6.1.1.3 Obj. 3: Contributory role of various predictive variables on the Academic Achievement of science students.

In order of magnitude of regression weights, out of the eight dimensions of Family Climate only one dimension i.e. Active recreational orientation played a prominent role in determining variation in Academic achievement of science students. The role of this dimension is found to be significant. From the regression coefficients, it was inferred that one unit increase in externality scores of Active recreational orientation, cause .14950 units increment in the Academic Achievement of science students.

Out of the six dimensions of Mental Health only two dimensions i.e. Intelligence and Emotional Stability were found important in determining the Academic achievement. The role of both the dimensions was found to be significant. One unit increase in Intelligence was found to cause, .30753 units increment in the academic achievement of science students.

But a negative regression coefficient was obtained for dimension Emotional stability. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Emotional Stability score, academic achievement of the science students decreases by .10048 units.

Out of the eight dimensions of Study Habits, only two dimensions i.e. Note taking and Memory were found important in determining the Academic achievement. The role of both the dimensions was found to be significant. One unit increase in Memory was found to cause, .08372 units increment in the Academic achievement of science students.
But a negative regression coefficient was obtained for the dimension Note taking. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Note taking score, Academic achievement of the science students decreases by .10606 units.

Here also variable Self-confidence does not play any significant role in influencing academic achievement of arts students.

The values of $R$ (coefficient of multiple correlation) were found to be significant in case of Active recreational orientation ($R=.2020$), Intelligence ($R=.3292$) & Memory ($R=.1097$), which reflects that significant multiple relationship exists between these variables and criterion variable. But the value of $R$ (coefficient of multiple correlation) was not found significant in case of Emotional stability ($R=-.0132$) & Note taking ($R=-.0630$) which reflects that there exists no relationship between Emotional stability and academic achievement & Note taking and Academic achievement.

The values of $R^2$ (coefficient of multiple determination) being .14, which shows that about 14% of the variance in academic achievement science students is accounted by the joint contribution of the these dimensions i.e. Active recreational orientation, Intelligence, Emotional Stability, Memory & Note taking and the remaining percentage of the variance is still to be accounted for.

Therefore, the third research hypothesis “each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of science stream”, is partially accepted.

6.1.1.4 Obj. 4: Contributory role of various predictive variables on the Academic Achievement of arts students.

Out of the eight dimensions of Family Climate only two dimensions i.e. Control and Expressiveness were found important in determining the academic
achievement. The role of both the variables was found to be significant. One unit increase in Control was found to cause, .16761 units increment in the academic achievement of arts students.

But a negative regression coefficient was obtained for Expressiveness variable. And the value of the regression coefficient were indicative of the fact that with one unit increment in the Expressiveness score, academic achievement of the arts students decreases by .13805 units.

Out of the six dimensions of Mental Health only two dimensions i.e. Intelligence and Autonomy were found prominent in determining variation in academic achievement of arts students. From the regression coefficients it was inferred that one unit increase in externality scores of Intelligence and Autonomy, cause only .14180 & .13093 unit’s increment respectively in the Academic achievement of Arts students.

Out of the eight dimensions of Study Habits only one dimension i.e. Budgeting time was found prominent in determining variation in academic achievement. The role of Budgeting time was found to be significant. One unit increase in Budgeting time was found to cause only, .19865 units increment in the academic achievement of arts students.

Here, also variable Self-confidence does not play any significant role in influencing academic achievement of Arts students.

The values of R (coefficient of multiple correlation) were found to be significant in case of Control (R=.2221), Intelligence (R=.2194), Autonomy (R=.1906) & Budgeting time (R=.2091), which reflects that significant multiple relationship exists between these variables and criterion variable. But the value of R (coefficient of multiple correlation) was not found significant in case of Expressiveness (R=.0763), which reflects that there exists negative & not significant relationship between Expressiveness and Academic achievement.
The values of $R^2$ (coefficient of multiple determination) being .14, which shows that about 14% of the variance in academic achievement of arts students is accounted by the joint contribution of these dimensions i.e. Control, Expressiveness, Intelligence, Autonomy & Budgeting time, and the remaining percentage of the variance is still to be accounted for.

Therefore, the forth research hypothesis “each predictor variables (i.e. family climate, mental health, study habits, and self confidence) will significantly contribute in determining the criterion variable (i.e. academic achievement) for the students of arts stream”, is partially confirmed.

6.1.1.5 Prediction of the criterion variable on the basis of predictive variables in relation to science stream group.

On the basis of the regression coefficients an ‘$X_1$’ coefficient (constant), multiple regression equations was derived for science stream population, which is being presented as under.

In case of science respondents, value of ‘$X_1$’ coefficient (constant), was 139.66, and values of regression coefficients were: .30753, .14950, -.10606 , -.10048 and .08372 for M6, F6, P4, M1 & P6 respectively, the entire regression equation for science respondents thus reads-

\[
\text{Achievement} = .14950(X_2) + .20705(X_3) -.02234(X_4) + .0000(X_5) + 139.66
\]

In the equation $X_1$ is the Academic Achievement predicted, while M6, F6, P4, M1 & P6 (intelligence, Active recreational orientation, Note taking, Emotional stability & Memory) are five dimensions of three predictive variables i.e. Family climate (b2), Mental health (b3) and Study habits (b4), with the equation $X_1$ (academic achievement predicted) for every student can be predicted knowing his scores on the other variables.
6.1.1.6 Prediction of the criterion variable on the basis of predictive variables in relation to arts stream group.

On the basis of the regression coefficients an ‘a’ coefficient (constant), multiple regression equations was derived for arts stream population, which is being presented as under.

In case of arts respondents value of ′X_j′ coefficient (constant), was 140.64, and values of regression coefficients were: .16761, .19865, .14180, -.13805, .13093 for F8, P1, M6, F2 & M3 respectively, the entire regression equation for arts respondents thus reads-

\[
\text{Achievement (}\bar{X}_1\text{)} = 0.02956(X_2) + 0.27273(X_3) + 0.19865(X_4) + 0.0000(X_5) + 140.64
\]

In the equation \(\bar{X}_1\) is the Academic Achievement predicted, while F8, P1, M6, F2 & M3 (Control, Budgeting time, Intelligence, Expressiveness, Autonomy) are five dimensions of three predictive variables i.e. Family climate (b2), Mental health (b3) and Study habits (b4), with the equation \(\bar{X}_1\) (academic achievement predicted) for every student can be predicted knowing his scores on the other variables.

6.1.1.7 Nature of the Distribution of Criterion and Predictive Variables Under Study

The scores of the criterion variable (academic achievement) and the four independent variables (Family climate, Mental health, Study habits and Self confidence) were found to be normally distributed in the sample. The curves of Family climate scores of arts students were found to be negatively skewed (-.086). This value suggests that the data is skewed to the left, and is approximately symmetric. The excess kurtosis (.117) is slightly greater than zero implies that distribution is slightly lepto-kurtic. For the students of science stream these curves were found to be negatively skewed (-.584). This suggests that data is skewed to the left, which implies that the distribution is moderately
skewed. The excess kurtosis (.809) is slightly greater than zero implies that distribution is slightly lepto-kurtic.

The curves of Mental health scores of arts students were found to be negatively skewed (-.221). This value suggests that data is skewed to the left. The excess kurtosis (.673) is slightly greater than zero implies that distribution is slightly lepto-kurtic. For the students of science stream the negative value of skewness (-.515) suggests that data is skewed to the left. The excess kurtosis (.020) is slightly greater than zero implies that distribution is slightly lepto-kurtic.

The Study habits scores of arts students were found to be negatively skewed (-.584). This value suggests that data is skewed to the left, and the distribution is moderately skewed. The excess kurtosis (.097) is slightly greater than zero implies that distribution is slightly lepto-kurtic. For the students of science stream the negative value of skewness (-.534) suggests that data is skewed to the left, and the distribution is moderately skewed. The excess kurtosis (.368) is greater than zero implies that distribution is lepto-kurtic.

The Self confidence scores of arts students were found to be negatively skewed (-.193). This value suggests that data is skewed to the left, and the distribution is approximately symmetric. The excess kurtosis (.031) is slightly more than zero implies that distribution is lepto-kurtic. For the students of science stream the positive value of skewness (.053) suggests that data is skewed to the right, and the distribution is approximately symmetric. The excess kurtosis (-.293) is slightly less than zero implies that distribution is plati-kurtic.

The Academic achievement scores of arts students were found to be positively skewed (.014). This value suggests that data is skewed to the right, and the distribution is approximately symmetric. The excess kurtosis (.492) is slightly more than zero implies that distribution is lepto-kurtic. This value implies reducing high probability for extreme values. For the students of science stream the negative value of skewness (-.004) suggests that data is ignorably skewed.
to the left, and the distribution is approximately symmetric. The excess kurtosis (.119) is slightly less than zero implies that distribution is plati-kurtic.

6.1.2 FINDINGS RELATED TO THE SUBSIDIARY OBJECTIVES

6.1.2.1 Comparison of the Academic achievement of students of two faculties i.e., science and arts.

Significant difference was found between the respondents of science and arts stream on the variable of Academic achievement. The calculated mean values are 263.68 and 233.57 for science and arts group respectively. And the obtained t-value is 8.30 which is found significant at 0.01 level. These values indicate that the Academic achievement of science stream students is better than that of arts stream students. Therefore, the first subsidiary hypothesis is rejected.

6.1.2.2 Comparison of the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of Science stream.

6.1.2.2.1 Comparison of male and female respondents of science stream on the variable of Family climate.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor cohesion is higher than that of males.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor expressiveness is higher than that of males.

- No significant difference was found between male and female respondents of science stream on the factor conflict.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor acceptance and caring is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor independence is higher than that of males.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor active recreational orientation is higher than that of males.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor organization is higher than that of males.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor control and caring is higher than that of males.

**Thus, we can say that a significant difference was found between male and female respondents of science stream. The mean value of females on the variable of Family Climate is higher than the mean value of males.**

6.1.2.2.2. Comparison of male and female respondents of science stream on the variable of Mental health.

- No significant difference was found between male and female respondents of science stream on the factor Emotional stability.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Adjustment is higher than that of males.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Autonomy is higher than that of males.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Security-insecurity is higher than that of males.

- No significant difference was found between male and female respondents of science stream on the factor Self concept.

- No significant difference was found between male and female respondents of science stream on the factor Intelligence.

**Thus, we can say that significant difference was found between male and female respondents of science stream. The mean value of females on the variable of Mental health is higher than that of males.**

6.1.2.2.3 Comparison of male and female respondents of science stream on the variable of Study habits.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Budgeting time is higher than that of males.

- Significant difference was found between male and female respondents of science stream on factor Physical conditions for study. The mean value of females is higher than the mean value of males on factor Physical conditions for study.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Reading ability is higher than that of males.

- Significant difference was found between male and female respondents of science stream. The mean value of males on factor Note taking is higher than that of females.
- Significant difference was found between male and female respondents of science stream. The mean value of females on factor Factors in learning motivation is higher than that of males.

- Significant difference was found between male and female respondents of science stream on the factor Memory. The mean value of females on factor memory is higher than that of males.

- No significant difference was found between male and female respondents of science stream.

- Significant difference was found between male and female respondents of science stream. The mean value of females on factor health is higher than that of males.

Thus, we can say that significant difference was found between male and female respondents of science stream. The mean value of females on the variable of Study habits is higher than the mean value of males.

6.1.2.2.4 Comparison of male and female respondents of science stream on the variable of Self confidence.

- Significant difference was found between male and female respondents of science stream on the factor Self confidence. The mean value of males is higher than the mean value of females.

6.1.2.2.5 Comparison of male and female respondents of science stream on the variable of Academic achievement

Significant difference was found between male and female respondents of science stream. The mean value of females on factor Academic Achievement is higher than that of males. Therefore, the second subsidiary hypothesis is partially confirmed.
6.1.2.3. Comparison of the criterion variable (i.e. academic achievement) and predictor variables (i.e. family climate, mental health, study habits and self confidence) of male and female students of Arts stream.

6.1.2.3.1. Comparison of male and female respondents of arts stream on the variable of Family climate.

No significant difference was found between male and female respondents of arts stream on the factor Cohesion.

No significant difference was found between male and female respondents of arts stream on the factor Expressiveness.

No significant difference was found between male and female respondents of arts stream on the factor Conflict.

No significant difference was found between male and female respondents of arts stream on the factor Acceptance & Caring.

No significant difference was found between male and female respondents of arts stream on the factor Independence.

No significant difference was found between male and female respondents of arts stream on the factor Active recreational orientation.

Significant difference was found between male and female respondents of arts stream on the factor Organization. Males possess higher mean on factor Organization as compared to females.

No significant difference was found between male and female respondents of arts stream on the factor Control.

Thus, we can say that no significant difference was found between Male and Female respondents of Arts stream on the variable of Family climate.
6.1.2.3.2 Comparison of male and female respondents of arts stream on the variable of Mental health.

Significant difference was found between male and female respondents of arts stream. The mean value of males on factor Emotional stability is higher than that of females.

Significant difference was found between male and female respondents of arts stream. The mean value of males on factor Adjustment is higher than that of females.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Autonomy is higher than that of males.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Security-insecurity is higher than that of males.

No significant difference was found between male and female respondents of arts stream on the factor Self concept.

No significant difference was found between male and female respondents of arts stream on the factor Intelligence.

Thus, it can be concluded that there exists no significant difference between male and female respondents of Arts stream on the variable of Mental health.

6.1.2.3.3 Comparison of male and female respondents of arts stream on the variable of Study habits.

Significant difference was found between male and female respondents of arts stream. The mean value of females on factor Budgeting time is higher than that of males.
No significant difference was found between male and female respondents of arts stream on the factor Physical conditions for study.

No significant difference was found between male and female respondents of arts stream on the factor Reading ability.

No significant difference was found between male and female respondents of arts stream on the factor Note taking.

No significant difference was found between male and female respondents of arts stream on the factor Factors in learning motivation.

No significant difference was found between male and female respondents of arts stream on the factor Memory.

No significant difference was found between male and female respondents of arts stream on the factor Taking examinations.

No significant difference was found between male and female respondents of arts stream on the factor Health.

Thus, it can be concluded that there exists no significant difference between Male and Female respondents of Arts stream on the variable of Study habits.

6.1.2.3.4 Comparison of male and female respondents of arts stream on the variable of Self confidence.

Significant difference was found between male and female respondents of arts stream. The mean value of females on the variable of Self confidence is higher than the mean value of males.

6.1.2.3.5 Comparison of male and female respondents of arts stream on the variable of Academic achievement.

Significant difference was found between male and female respondents of arts stream. The mean value of females on variable Academic achievement is higher than the mean value of males. Therefore, the third subsidiary hypothesis is partially accepted.
6.2. EDUCATIONAL IMPLICATIONS

In order to plan remedial education and guidance programmes for underachievers, we need to know something about the factors causing underachievement. Proper diagnosis of the factors for each individual may save time and the real cause may be hit upon.

The results of the present investigation reaffirmed the importance of the four variables viz. Family climate, Mental Health, Study habits and Self confidence in the determination of Academic achievement. In this light the present study has certain implications of major importance. This study may be of immense use for the prediction of Academic achievement of pupils. This study provides an important contribution for HRD (Human Resource Development). The variables used in this study can be included in the prediction battery of senior secondary students to make suitable selections for higher studies and different vocational streams.

The results of the present study may be helpful to the educational administrators also. They may provide such situations in the school through which students may develop personality characteristics conducive to academic success.

The implication related to parents’ involvement is that schools need to continue to bring parents into the educational process and to encourage parents to activate their concerns about children’s grades. In order to further foster better communication between home and school, teachers should encourage parents to be aware of school policies and the curriculum. Letting parents know about the best ways to communicate with their teen’s, to help them in their home work, to motivate them etc. Such strategies will foster a positive climate and make parents more involved and responsive to future school outreach.

Also, schools should focus on creating academically supportive teacher-student relationships which can substitute for those parents’ who rarely visit school campus.
The findings in the area of Mental health provide an important contribution to the public health field. These findings may be utilised in the guidance programme of failures and under achievers and also for the counselling of teachers (Secondary Education Commission, 1952).

The following steps can be undertaken for improving the Mental health status of secondary school students:

- Establish smaller class sizes thereby allowing greater opportunities for individual student-teacher interaction and for teachers to develop supportive and positive relationships with students.
- Educate teachers and parents about the psychological development of children and youth, particularly regarding social-emotional issues.
- Encourage Teachers’ to develop positive attitudes towards students in schools.
- Reduce gender inequity within homes, schools through education of parents, staff and students and changes in school practices.
- Promote greater school-community-parent collaboration.
- Provide professional preparation of mental health specialists (e.g., psychologists, psychiatrists, counsellors) specific to mental health promotion for children and youth.
- Develop school-based mental health promotion programs (e.g., curriculum for promoting life skills, and counseling services, Nastasi et al,1998)
- Reduce the pressure on academic performance, for example, by using alternative forms of evaluation, providing alternative educational routes (e.g., vocational training), and broadening the scope of culturally valued occupations.
- Encourage collaboration of the various sectors that provide services for youth, including government agencies (e.g., education and health ministries), religious organizations, non-governmental organizations, schools, parents, and community members.
- Develop innovative educational practices that focus on student-centered learning (e.g., through active learning, peer-based/mediated learning, and teacher as facilitator of learning).

Now, coming to the implications of Study habits we can suggest some individual & Group guidance procedures which can be used to improve the study habits and study skills of underachievers and failures. Individual counselling can serve as an effective intervention to improve their achievement and improve their study habits and study skills. Helping underachievers in such a way will surely bring out better results by proper utilisation of individual’s potentialities and thus realising the aim of education. The reason behind providing such guidance is that we find in schools the teaching-learning process is catering to the needs of only the average students where special groups like creative, slow learners, first generation learners and underachievers are neglected. There is an urgent need of counsellors for underachievers to look into the needs of these special groups.

In respect to enhance self confidence educators can guide parents to provide an atmosphere of love and warmth to their children. They can encourage teachers to initiate and develop activities that are sensitive to the diversity of students. This will provide a supportive school climate that fosters healthy traits. Apart from this they can also help children develop resiliency by taking on the role of the encourager, someone who acknowledges the significance of the defeat but does not allow it to result in a sense of personal failure. The key is to help the child see the big picture and refocus on an ability to try again or, if necessary, find alternative means to accomplish the goal. This process allows the child to accept the responsibility for the effort but also be reassured of his or her own worth. Children also need to believe that accomplishment comes through their own actions. This is often referred to as self-efficacy or self-determination. Children who lack this ability may be less resilient, overly dependent, or tend
not to accept responsibility for their actions because they do not believe they are in control.

To summarize, the present research presents a predictive instrument of academic achievement that can be utilised by parents, teachers, administrators and guidance personnels for substantially enhancing the academic performance of students, especially for those studying in senior secondary schools.

6.3. SUGGESTIONS FOR FURTHER RESEARCH

Academic achievement is the central concept in the area of Educational Psychology. Therefore immense importance is placed on academic achievement and the factors involved therein. The present study has thrown some light and insight into the relationship between predictive variables viz. Family climate, Mental Health, Study habits and Self confidence and the criterion variable i.e. Academic achievement of science and arts stream students of senior secondary school. Some broad suggestions on the lines on which further research studies can be conducted are given below:

(i) The present investigation was carried out on 520 science stream and 345 arts stream students, studying in class XII of the intermediate colleges of Etawah and Aligarh city. Similar study can be carried out on a larger sample to get better and more authentic results.

(ii) A similar study can be carried out upon the students of different educational levels, different age groups, different educational streams and different levels of socio-economic status.

(iii) A comparative study of similar type may be conducted on rural and urban students.

(iv) The predictive variables used in this study viz. Family climate, Mental Health, Study habits and Self confidence can be studied in relation to other variables like creativity, aspiration levels, self-concept etc.
(v) The academic achievement of students can be studied in relation to factors other than Family climate, Mental Health, Study habits and Self confidence.

(vi) The most puzzling result of this study was the low contribution of self confidence in determining the academic achievement of the students. This has made the investigator curious to know about the causes underlying this state of affairs. The investigator is therefore of the opinion that it would be meaningful if further research in this area is conducted.

(vii) Research may be planned to develop projective tools for measuring the predictive variables undertaken in the present investigation.

(viii) The board of intermediate education offers also the agriculture, constructive, business streams of courses. The present research has attempted to study the achievement in only science and arts streams. Prediction of achievement in other streams other than scientific and literary courses should also be made.

(ix) The present investigation is confined only to the students studying in intermediate classes (XII) of U.P. Board of Aligarh and Etawah Districts. Other districts or regions of the state should be included for further research.

(x) This study is confined only to govt. U.P. Board senior secondary school students; its findings cannot be applied to all the stages of education. Thus there is a need to generalize this study by taking a sample from all level of schooling to corroborate the findings of the study.

6.3.1. Topics suggested for future researches:

Some topics suggested by the investigator are given below on which further research studies can be conducted:

- Family climate, Study habits, Self confidence and academic achievement as predictors of Mental health at senior secondary stage.
- A comparative study of Family climate, Mental health, Study habits and Self confidence of rural and urban students.
- A comparative study of the level of self confidence between students of medicine and engineering.
- A study of the Mental Health status of the students of A.M.U., Aligarh.
- A study of types of Study habits of Arts, Commerce and Science students of Secondary schools.
- Self concept, Mental ability and Parental support as correlates of Academic self confidence.
- A study of Academic achievement of Children of Nuclear and Joint family.
- Mental Health Problems in Secondary School Children and its Relation to Self confidence and Scholastic Achievement.
- Family climate, peer relations, and academic achievement as predictors of happiness and loneliness.
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Appendices
निर्देश

इस पुस्तिका में कुछ कथन दिये गये हैं जो कि आपके परिवार से सम्बन्धित हैं। आपको यह तय करना है कि इनमें से कौन-सा कथन आप या आपके परिवार पर कितनी मात्रा में उपयुक्त है और उसी के अनुसार प्रत्येक के सामने बने पाँच खानों में से आपको किसी एक पर सही का निशान $\square$ लगाना है। यदि आप यह मेहसूस करते हैं कि आपका कथन बिल्कुल सहमत (SA) है तो उसके सामने खाने $\square$ में सहमत (A) है तो उसके सामने खाने $\square$ में, अनिश्चित (U) है तो उसके सामने खाने $\square$ में, असहमत (DA) है तो उसके सामने खाने $\square$ में तथा यदि बिल्कुल असहमत (SDA) है तो उसके सामने खाने $\square$ में सही का निशान लगावे। अपने परिवार के बारे में सामान्य जानकारी दें। किसी भी कथन का कोई सही या गलत उत्तर नहीं है। आपको प्रत्येक कथन के सामने अपने विचार दें तथा सभी कथनों के उत्तरं दें।
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<th>नंबर</th>
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<td>1</td>
<td>हम साथ-साथ काम करने में आनंदित होते हैं।</td>
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<td>परिवार के सभी सदस्यों से यह आशा की जाती है कि वह प्रतिदिन कम से कम एक समय के भोजन में साथ-साथ शामिल होते हैं।</td>
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<td>जब परिवार के सदस्य गुर्से में होते हैं तो वे कई दिनों तक आपस में एक दूसरे से बातचीत नहीं करते हैं।</td>
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<td>27.</td>
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<td>घर पर हम जो करना चाहते है उसके लिये हम बिल्कुल स्वतंत्र हैं।</td>
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<td>जब भी परिवार में कोई सूचना करार किया होता है जो सभी सम्बन्धित जनों से उनके विचारों को जाना जाता है।</td>
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<td>47.</td>
<td>हम अक्सर समय एवम् रितिदृष्टि के यहाँ पर जा पाते हैं।</td>
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<td>48.</td>
<td>हमारे परिवार में जब भी कोई परेशान होता है तो कोई ना कोई उसे समझाता है तथा उसकी परेशानी को हल करता है।</td>
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<tr>
<td>दोबंक</td>
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<td>विश्वसनीयता</td>
<td>सहसंपत्र</td>
<td>टर्सकेंड</td>
<td>असहसंपत्र</td>
<td>विश्वसनीयता असहसंपत्र</td>
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<tr>
<td>49. हमारे परिवार में लगभग लाने का कोई भी भाव नहीं है</td>
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<td>50. परिवार के सदस्यों के अपने भावनाओं के दूसरों को अवगन करते हैं</td>
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<td>51. जब भी कोई हमारे परिवार में असहिष्णुता से गुस्से में होता है तो वह अन्य सदस्यों को हल करने का निर्देशन तुरंत उसे देता है</td>
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<tr>
<td>52. जब भी परिवार के हमारे सदस्य के समानों में निर्माण होता है तो उसकी व्यक्तिगतता के विषय में विचार होता है तो अन्य सदस्यों से राय लेते हैं</td>
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<tr>
<td>53. हमारे परिवार में नजर करना तथा हमें उसकी दृष्टिकोण प्राप्त किया जाता है</td>
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<td>54. जब भी कोई बातों में बचता है तो हमारे परिवार में कोई न कोई सहसंपत्र को मोड़ देकर समाप्त कर देता है</td>
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<td>55. जब भी परिवार के हमारे सदस्य के समानों में निर्माण होता है तो उसकी देखभाल करने के लिए परिवार का प्रतिष्ठित सदस्य अपनी अर्थव्यवस्था में मदद मांगता है</td>
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<tr>
<td>56. घर में किसी भी वाणिज्य पर जब राय व्यक्त की जाती है तो हमारे परिवार के सदस्यों द्वारा उसे मजबूत रखा जाता है</td>
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<tr>
<td>57. जब भी परिवार का हमारे सदस्य कुछ अच्छा करता है तो परिवार के अन्य सदस्यों द्वारा प्रशंसा की जाती है</td>
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<td>58. किसी का राय पूर्ण विचार ही हमारे परिवार के मुख्य निर्णय बड़े के द्वारा ले लिये जाते हैं</td>
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<td>59. हमारे परिवार के सभी सदस्यों के बीच में कामी प्रभाव रहता है</td>
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<td>60. जब भी परिवार की बुद्धियों के बिना की कोई योजना बनती है तो उस समय हम सभी अपने सहाय देते हैं</td>
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<tr>
<td>61. हमारे परिवार का इसमें विश्वास है कि प्राथमिकों को दूर किये विचार ही मतभेदों को अर्थव्यवस्था तक रखकर जाते हैं</td>
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<td>62. यदि परिवार का हमारे सदस्य संकट में है तो वह परिवार के अन्य सदस्यों से सहायता एवं सहभागिता नामक वाणिज्य करता है</td>
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<td>63. जब भी कोई विपरीत आता है तो समस्या उत्पन्न होती है, परिवार के सभी सदस्य को हमारे उसका सहभागिता करते हैं</td>
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<td>64. हमारे परिवार में किसी एक सर्वसम्मत होने पर अधिकारिता नहीं पहुँच जाता है</td>
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<td>65. जब भी कोई परिवार में गलती करता है तो अन्य सदस्यों में से कोई भी उसे सहाय करता है</td>
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<tr>
<td>66. हमारे परिवार में हम सब साथ बैठकर अवश्यकता के आवश्यकता के अनुसार लेते हैं</td>
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<tr>
<td>67. हमारे परिवार में दरवाजे से पटकने के साथ जोड़ रखते हैं, भी भी ही देखने को मिलता है</td>
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<tr>
<td>68. हमारे परिवार के सदस्यों में एक दूसरे की आलोचना करने वाले हैं</td>
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<td>69. हम सभी परिवारी कक्षाएं / समारोहों में एक साथ सहभागिता निभाते हैं</td>
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कृपया निम्न सूचनाएं भरिए—

नाम: 

आयु: 

शहीद/शहीदी: 

स्कूल/कॉलेज: 

कुल समय: पार्ट I से पार्ट V: 25 मिनट (Approximate); पार्ट VI: 10 मिनट (Fixed)

क्षणिक भ्रमण: 

I: माता या पिता या दोनों की कुल आय: (क) ₹ 50,000 प्रति माह से अधिक 
(ख) ₹ 25,000 से ₹ 50,000 तक प्रति माह 
(ग) ₹ 10,000 से ₹ 25,000 तक प्रति माह 
(घ) ₹ 5,000 से ₹ 10,000 तक प्रति माह 
(ङ) ₹ 5,000 से कम

II: पिता की शिक्षा: 
(क) मैट्रिक या उससे कम 
(ख) इंटर 
(ग) बैकार्ड 

III: माता की शिक्षा: 
(क) मैट्रिक या उससे कम 
(ख) इंटर 
(ग) बैकार्ड 

IV: परिवार में सदस्यों की कुल संख्या: 
(क) 15 से ऊपर 
(ख) 10 से 15 तक 
(ग) 5 से 10 तक 
(घ) 5 से कम

SCORING TABLE

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<tr>
<th>Part</th>
<th>I (ES)</th>
<th>II (OA)</th>
<th>III (AY)</th>
<th>IV (SI)</th>
<th>V (SC)</th>
<th>VI (IQ)</th>
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<td>Percentile</td>
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Estd. 1983

ANKUR PSYCHOLOGICAL AGENCY

22/481, INDIRA NAGAR, LUCKNOW – 226 016
### निर्देश (Instructions):

आप दिए गए प्रश्नों को ध्यान से पढ़े। प्रत्येक प्रश्न के सामने दो विकल्प ‘हैं’ या ‘नहीं’ में से किसी एक के नीचे वाले खाने में जिसे आप अपने लिए उपयुक्त एवं सही समझते हैं, उस पर सही (√) का चिह्न लगा दें। किसी भी प्रश्न को न छोड़ें, आपके उत्तर गोपनीय (confidential) रखें जाएंगे।

<table>
<thead>
<tr>
<th>क्र. सं.</th>
<th>काशन</th>
<th>हैं</th>
<th>नहीं</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>किसी व्यक्ति द्वारा आलोचना किये जाने पर आप क्या कोईत हो जाते हैं?</td>
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<tr>
<td>2.</td>
<td>काशन में यदि शिक्षक कुछ प्रश्न करते हैं और आप उसका जवाब नहीं देते पाते हैं तो क्या आप अच्छा महसूस नहीं करते हैं?</td>
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<td>3.</td>
<td>परीक्षा में पेट हो जाने पर क्या आपको आत्महत्या करने का मन करता है?</td>
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<td>4.</td>
<td>माता-पिता द्वारा हल्का डोट देने पर भी क्या आप डर जाते हैं?</td>
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<td>5.</td>
<td>साप, दिखावी या अन्य समान जानवर देखने पर क्या आप काफी डर जाते हैं?</td>
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<td>6.</td>
<td>गृह-कार्य (home work) नहीं करके जाने पर क्या आप भांज-भांज मृत्यु रहते हैं?</td>
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<td>7.</td>
<td>क्या आप अपने दोस्त का कोई सामानया चीज चुराकर चुपचाप काशन में बैठे रहते हैं?</td>
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<td>8.</td>
<td>क्या आपको अपने दोस्तों को भला-बुरा कहने में अच्छा लगता है?</td>
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<td>9.</td>
<td>क्या आप किसी पल में अपने आप बहुत खुश हो जाते हैं एवं दूसरे पल में बहुत उद्दास हो जाते हैं?</td>
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<tr>
<td>10.</td>
<td>खेलने में हार जाने पर क्या आप अपने दोस्त को दोषी समझते उसे भला-बुरा कहते हैं?</td>
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<td>11.</td>
<td>माता-पिता से मन-पसंद चीज खिलने पर क्या आप खुश नजर आते हैं?</td>
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<td>12.</td>
<td>एक्सर्सिस दोस्त द्वारा निन्दा किये जाने पर क्या आप विचारित हो जाते हैं?</td>
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<td>13.</td>
<td>विपरीत परिस्थिति के होने पर भी क्या आप अपना संतुलन बनाए रखते हैं?</td>
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<td>14.</td>
<td>किसी व्यक्ति द्वारा जरा-सा भला बुरा कहे जाने पर आप क्यों कोईत हो जाते हैं?</td>
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<td>15.</td>
<td>शिक्षक द्वारा अनुशासनीयता के लिए डोट जाने पर क्या आप काफी विचारित हो जाते हैं?</td>
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</tbody>
</table>
### निर्देश (Instructions):

भाग - II के समाप्त ही यहाँ भर प्रश्न के दो-दो उत्तर, अर्थात् 'हाँ' या 'नहीं' दिखाए गए हैं। आप दिखाए इन उत्तरों में से अपने चुनाव उन्हें चुनकर उसके नीचे बने खानाओं में हाँ अथवा नहीं के नीचे साहित (✓) का चिह्न लगाएं। फिर भी प्रश्न को न छोड़ें।

<table>
<thead>
<tr>
<th>क्र. सं.</th>
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<th>हाँ</th>
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<td>16.</td>
<td>क्ष: माता-पिता के साथ आपका सम्बन्ध परिवार के दूसरे सदस्यों की अपेक्षा बहुत अच्छा है</td>
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<td>17.</td>
<td>अपने आप किसी दिन स्कूल नहीं जाते हैं तो क्या आपका मन घर पर नहीं लगता है?</td>
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<td>18.</td>
<td>क्ष: आप अपने विचार दूसरे के साथ व्यक्त करते समय बहुत आत्म संवेदना होता है।</td>
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<td>19.</td>
<td>क्ष: आप किसी सामाजिक-कार्य का दायित्व लेने में सबसे आगे रहते हैं?</td>
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<td>20.</td>
<td>क्ष: आपका रात में अक्सर मंद नहीं आता है?</td>
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<td>21.</td>
<td>क्ष: प्राकृतिक रूप से आक्सर किसी-न-किसी बात पर कहा-सुनी हो जाता है?</td>
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<td>22.</td>
<td>क्ष: आपको लोगों से मिलना-जुलना बहुत पसंद है?</td>
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<td>23.</td>
<td>क्ष: आपको अक्सर कदम की शिकायत रहती है?</td>
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<td>24.</td>
<td>क्ष: आपके मन में बेकार क्ये बातें प्राप्त आती रहती है?</td>
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<td>25.</td>
<td>स्कूल या कालेज के वातावरण में क्या आप घुटन महसूस करते हैं?</td>
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<td>26.</td>
<td>क्ष: आपका दूर दूर वातावरण बांधवपूर्ण है?</td>
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<td>27.</td>
<td>क्ष: आप ने लोगों से बहुत बड़ी मिलत मिटत कर लेते हैं?</td>
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<td>28.</td>
<td>क्ष: आपको अक्सर पाचन-संबंधी शिकायत रहती है?</td>
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<td>29.</td>
<td>अप-मोई आपकी जरा-सी निंदा करते तो क्या आप अपना संतुलन खो बैठते हैं?</td>
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<td>30.</td>
<td>क्ष: आपको रोज स्कूल या कालेज जाने में अच्छा लगता है?</td>
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<td>31.</td>
<td>क्ष: आप किसी कार्य को उन्हें माता-पिता की अनुमति के बिना नहीं करते हैं।</td>
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<td>32.</td>
<td>क्ष: आप दूसरे व्यक्ति से बिना झिझक सहायता लेते हैं?</td>
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<td>33.</td>
<td>क्ष: आप पावर का चश्मा पहनते हैं?</td>
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<td>34.</td>
<td>क्ष: आपका अपमान करता है तो आप परेशान हो जाते हैं?</td>
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<td>35.</td>
<td>क्या आप अपने दोस्तों के साथ मिल-जुलकर कोई कार्य करने वाला पसंद करते हैं?</td>
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<td>36.</td>
<td>क्या आपको ऐसा महसूस होता है कि परिवार के लोग आपके सम चाहते हैं?</td>
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<td>37.</td>
<td>क्या आप किसी सामाजिक कार्य में प्रधान भूमिका अदा करना चाहते हैं?</td>
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<td>38.</td>
<td>क्या आपके शरीर में रक्त की कमी है?</td>
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<td>39.</td>
<td>क्या आप अपने को अवसर असहाय महसूस करते हैं?</td>
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<td>40.</td>
<td>अगर आपके दोस्त के पास वित्तार नहीं होती है तो क्या आप उसे अपनी वित्तार देकर सहायता करते हैं?</td>
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<td>41.</td>
<td>अगर आपके माता-पिता बीमार पड़ जाते हैं तो क्या आप चिंता नहीं जाते हैं?</td>
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<td>42.</td>
<td>अगर आप रेस्तरां में सफर करते हैं तो क्या आप सहायक के साथ बहुत जल्दी दोस्ती कर लेते हैं?</td>
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<td>43.</td>
<td>घर में झगड़ा होने से क्या आप उसे जानने की कोशिश करते हैं?</td>
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<td>44.</td>
<td>क्या आप अन्य व्यक्तियों के सामने बेड़ा-बढ़ाकर अपना विचार व्यक्त करते हैं?</td>
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<td>45.</td>
<td>किसी का छून बहते देखकर क्या आप घबड़ा जाते हैं?</td>
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<td>46.</td>
<td>अगर आप किसी के घर जाते हैं तो क्या आप अपने मन पर खाने की चीज नहीं मिलने पर तान-बाना करते हैं?</td>
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<td>47.</td>
<td>घर की प्रतिबिंबिताओं में क्या आप प्रायः अगे रहते हैं?</td>
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<td>48.</td>
<td>क्या घर के लोग आपको उपर ध्यार नहीं करते हैं जितना किया जाना चाहिए?</td>
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<td>49.</td>
<td>कोई बात यस्ती नहीं अपने पर भी क्या आप प्रायः चुप रह जाते हैं?</td>
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<td>50.</td>
<td>क्या आप अपने पास-पड़ोस के लोगों का ख्याल रखते हैं?</td>
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<td>51.</td>
<td>घर में रहने के बजाय क्या आपकी दोस्तों के पर रहना ज्यादा अच्छा लगता है?</td>
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<td>52.</td>
<td>अगर आप किसी रिश्तेदार के पास जाते हैं तो क्या आप आसां से वहां के महोत्स या वातावरण में घुम-मिल जाते हैं?</td>
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<td>53.</td>
<td>क्या माता-पिता आपको द्वारा गलती किये जाने पर आपकी निन्दा में करते हैं?</td>
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<td>54.</td>
<td>क्या आपको पकड़ या छिपकाने की देखते ही अजीब-सी घबड़ात जाती है?</td>
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<td>55.</td>
<td>अगर कोई आपके घर के विभिन्न कामों को देखने की इच्छा कट करता है तो क्या आप उनके इस विचार की प्रशंसा करते हैं?</td>
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PART - III

निर्देश (Instructions):

नीचे कुछ ऐसी परिस्थितियाँ (situations) दी गई हैं जिनसे होकर प्रायः व्यक्ति अपने दिन-प्रतिदिन की जिंदगी में गुजरता है। आप इन परिस्थितियों को ध्यानपूर्वक पढ़ें और यह बताने की कोशिश करे कि यदि आप उस परिस्थिति में होते तो क्या करते ? आपका जवाब प्रत्येक प्रश्न के नीचे दिये गये दो उत्तरों में से किसी एक के रूप में होना चाहिए। अतः जो उत्तर आपको सही लगे उसके सम्बन्ध में खाने में सही (√) का चिह्न लगांगें। किसी भी प्रश्न का न छोड़ें।

56. आप अपने दोस्त के साथ जाते जा रहे हैं। उसी समय रात में एक मुद्रा पुर्स (money purse) गिर गया है। उसमें कुछ रुपये थे और उस व्यक्ति का पता (address) भी। आपके दोस्त ने कहा वोल्टेज होटल में अच्छा दिखाया दीया और उसके बाद सिर्फमान चले। ऐसी परिस्थिति में आप क्या करेंगे ?
   (क) दोस्त की बात मान लेंगे ?
   (ख) दोस्त के विचार से असहमति दिखायेंगे।

57. आपके माता-पिता बाहर हैं किंतु क्या आपका व्यवसाय (business) करें ताकि अच्छा या कंपा सके। ठेलकन आपकी इच्छा डाक्टर बनने की है ताकि लोगों की सेवा की जा सके, गर्म-चुप्पी का इलाज किया जा सके। ऐसी अवस्था में आप क्या करेंगे?
   (क) पिता की बात से सहमति दिखायेंगे।
   (ख) मेरिटकल परीक्षा की तैयारी में जुट जायेंगे।

58. वर्ष में अगर दोस्तों के बीच बहुत झगड़ा होता है और मार-पीट की नौकर आ जाती है तो आप ऐसी परिस्थिति में क्या करेंगे?
   (क) झगड़ा शांत करने की कोशिश करेंगे।
   (ख) चुपचाप तरस्थ रहकर मजा लेंगे।

59. आपकी परीक्षा बहुत नजरदार है। आपके माता-पिता आपको पढ़ने में ज्यादा समय देने के लिए कहते हैं परन्तु आपका ध्यान सिर्फमान तथा खेल-कूद को और अवकाश चला जाता है। आप ऐसी परिस्थिति में क्या करेंगे?
   (क) माता-पिता की बात सुनी-अनसुनी करेंगे?
   (ख) खेल-कूद तथा मनोज्ञान के साधन में अभिव्यक्ति दिखायेंगे?

60. अगर राहुल समय कोई व्यक्ति दुर्घटना (accident) का शिकार हो जाता है और आप अचानक वहाँ पहुँच जाते हैं, तो आप ऐसी परिस्थिति में क्या करेंगे?
   (क) व्यक्ति को किसी डॉक्टर या अस्पताल में भर्ती करने की कोशिश करेंगे।
   (ख) व्यक्ति को घोड़े देर तक देखकर फिर वहाँ से चल देंगे।
61. स्कूल से उत्तर आयकी बहन या भाई किसी का पेसिल या रव चुराकर लाता है तो आप उसे बहुत डंडते हैं तथा उसे सजाते हैं कि चोरी करना बुरी आदत है। किसी की चोरी खुलासे से लोग उसे बुरा आदती कहेंगे। लेकिन एक देख आयका दोस्त कहां से 500 रुपये चुराकर लाता है और आपके सामने रखते हुए कहता है, "चलो हम लग इस पैसे से मौज खड़े।" ऐसी परिस्थिति में आप क्या करेंगे?

(क) दोस्त को पैसा न करने के लिए समझायें।

(ख) दोस्त को साधा।

62. परीक्षा में उन प्रश्न-पत्र बहुत कठिन आता है और आप उहका जवाब जानते हैं और आपके साथी आपसे कहते हैं कि रह-सा उसे बता दो। दोस्त के नाते आप सोचते हैं कि बता दे। लेकिन तुरंत आपके पंज में वह बात आती। ऐसी परीक्षा में चोरी करना या दुष्टरों को बताना या सहायता करना दोनों ही जुर्म है और बीक्षक (examiners) द्वारा एक्के जाने पर वह कड़ी सजा भी पाएगा। ऐसी अवस्था में आप क्या करेंगे?

(क) साथ करके दोस्त को व्याख्या दें।

(ख) दोस्त को झटके दें।

63. पध में अगर किसी बात को लेकर आपके माता-पिता में झगड़ा होता है तो आप कुछ देर के लिए चिंतित हो जाते हैं। ऐसी परिस्थिति में आप क्या करेंगे?

(क) माता-पिता या दोनों को चुप करायें।

(ख) डर न आए।

64. अगर बच्चे के शिक्षक आते हैं तो कुछ लड़के उनके पास लगते हैं तथा पूर्ण लगाने की कोशिश करते हैं। ऐसी परिस्थिति में आप क्या करेंगे?

(क) सामना का साधा नहीं दें।

(ख) सामना को नये शिक्षक की तंग करे के लिये कुछ नयी तरीक़ा बतायें।

65. अगर कुछ लड़के स्कूल के अनुशासन को भंग करते हैं और स्कूल से भागकर सिनेमा चले जाते हैं, और यदि वह बात अग्रका मातृपूर्ति होती है तो आप क्या करेंगे?

(क) उन लड़कों के बारे में शिक्षक से खिताब करनें।

(ख) तदन हरकर अपना कार्य करनें।

66. अगर आपने दोस्त के पिता बहुत बीमार हो जाय और उनके पास इलाज कराने को पैसा भी नहीं हो तो आप क्या करें?

(क) दोस्त के पिता के लिए पैसे की मुदाट करें।

(ख) दोस्त को संतत्व दे दें।
67. त्यह बस (bus) में सफर करते समय कोई व्यक्ति किसी व्यक्ति का कोपशी सामान लेकर भागते समय फटा जाता है तो आप क्या करेंगे?
   
   (i) सुपृष्ठा बैठकर तमाशा देखना पसंद करेंगे।
   (ii) उस व्यक्ति को सजा दिलाने का प्रयास करेंगे।

68. आप आपको पता चलता है कि आपके साथी के पास पड़ने के लिए कोई भी विश्वास नहीं है और उसे पढ़ने व बहुत शोक है तबकि उसके गरीब दिखा बहुत मुश्किल से घर का खेत चलाते हैं तो आप ऐसी अवस्था में उस छात्र के साथ क्या करेंगे?
   
   (i) अपनी किताब उसे पढ़ने के लिए थोड़ समय के लिये देंगे।
   (ii) उसे विदा की दिशा में बादल करेंगे।

69. इस शिक्षक के पढ़ते समय अगर कोई सड़क उनके व्यवहारों की नकल छिपकर अपने अन्य साथियों को हमने के लिए करता है और आप उसे खेल लेते हैं तो उस अवस्था में आप क्या करेंगे?
   
   (i) उस लड़के को बैसा नहीं करने का दासता करेंगे।
   (ii) उस शिक्षक के की निर्देशित विद्यार्थी शिक्षक से बात करेंगे।

70. नाप शुरुआत में नहाते समय अगर आप देखते हैं कि कोई छोटा बच्चा झूट रहा है तो आप वैसी परिस्थिति में क्या करेंगे?
   
   (i) जोर-जोर बोलकर ‘बच्चों-बच्चों’ की आवाज देंगे।
   (ii) स्वयं उसे बचाने की कोशिश करेंगे।
**PART - IV**

निर्देश (Instructions):

इसमें आपके व्यवहार से सम्बन्धित कुछ प्रश्न दिये गये हैं। इन प्रश्नों का कोई पूर्व निश्चित उत्तर नहीं है। इसलिए आपको जो उत्तर सही हो, वहीं आपके लिए सही उत्तर होगा और वैसे ही उत्तर पर होने वाले अवधारणा नहीं के नीचे खाने पर सही (√) का चिह्न लगा दें। किसी भी प्रश्न को न छोड़ें।

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<td>घर में माता-पिता नहीं रहने से क्या आपको डर लगता है?</td>
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<td>रात में होने पर अचानक बायी (Light) बुझ जाने से क्या आप परेशान हो उठते हैं?</td>
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<td>घर में झगड़ा होने से क्या आपकी परेशानी बढ़ जाती है?</td>
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<td>74.</td>
<td>आपके घर के लोग यदि आपको लाने रेलवे स्टेशन पर देर से पहुँचते हैं तो क्या आप चिंतित हो जाते हैं?</td>
<td></td>
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<tr>
<td>75.</td>
<td>रात में अकेला जाने के नाम से ही क्या आपको डर लगने लगता है?</td>
<td></td>
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<tr>
<td>76.</td>
<td>टोप्सों के बीच रहकर भी क्या आप अकेलाप्न महसूस करते हैं?</td>
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<td>77.</td>
<td>क्या आप टोप्सों के ऊपर भरोसा करते हैं?</td>
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<tr>
<td>78.</td>
<td>क्या आप अपनी भावनाओं को व्यक्त करने में कठिनाई महसूस करते हैं?</td>
<td></td>
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<td>79.</td>
<td>क्या आप अपने बातचीत में पूरी तरह से समयोजित (adjusted) महसूस करते हैं?</td>
<td></td>
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<tr>
<td>80.</td>
<td>क्या आपको ऐसा लगता है कि आप बहुत-सी खुशी से बचित हैं?</td>
<td></td>
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<tr>
<td>81.</td>
<td>नये लोगों से परिचय होने पर क्या आपको घबराहट होती है?</td>
<td></td>
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<tr>
<td>82.</td>
<td>क्या आपको लोगों से कांसी प्रश्नांश मिलती है?</td>
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<td>83.</td>
<td>क्या आप अक्सर उदास रहते हैं?</td>
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<tr>
<td>84.</td>
<td>जरा-सी बात पर क्या आप दुःखी हो जाते हैं?</td>
<td></td>
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<tr>
<td>85.</td>
<td>क्या आपको किसी प्रकार की प्रतियोगिता (competition) से डर नहीं लगता है?</td>
<td></td>
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</tbody>
</table>
निर्देश (Instructions) :
नीचे दिए गए कथनों को अपने ध्यानपुर्वक पढ़े। प्रत्येक कथन के नामकरण उसके दो-दो उत्तर अर्थात् 'सही' या 'गलत' दिये गये हैं। आप अपने लिये उनमें से जिसे उपयुक्त एवं ठीक मानते हैं, उस पर सही (✓) का चिह्न लगा दें। किसी भी प्रश्न को न छोइं।

<table>
<thead>
<tr>
<th>क्र. सं.</th>
<th>कथन</th>
<th>सही</th>
<th>गलत</th>
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<tbody>
<tr>
<td>86.</td>
<td>मुझे लगता है कि मेरा ब्यवहार परिपक्व है।</td>
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<td>87.</td>
<td>मेरा सामान्य ज्ञान का भंडार पर्याप्त है।</td>
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<td>88.</td>
<td>मैं जल्द ही कठिन समस्याओं का समाधान कर सकता हूँ।</td>
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<tr>
<td>89.</td>
<td>हमारी आकांक्षाएँ (aspirations) वातावरणिक होती हैं।</td>
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<tr>
<td>90.</td>
<td>प्रभाव के रास्ते में मुझे अक्सर कोई न कोई बाधा का सामना करना जाता है।</td>
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<td>91.</td>
<td>मुझे पूर्ण उम्मीद है कि एक दिन हम अपने सभी प्रतियोगियों को पीछे छोड़ देंगे।</td>
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<td>92.</td>
<td>कुछ लोग मेरी सफलता से बहुत हाराम महसूस करते हैं।</td>
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<td>93.</td>
<td>मेरी प्रत्याशाएँ (expectations) मेरी सफलता पर आधारित हैं।</td>
<td></td>
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<tr>
<td>94.</td>
<td>मुझे अपनी जिद्दी में कभी असफलता हाय नहीं लगी है।</td>
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<td>95.</td>
<td>प्रत्येक व्यक्ति को सच्चे दंग से जिद्दी में सफल होने का प्रयास करना चाहिए।</td>
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<td>96.</td>
<td>मेरी सफलता हमेशा प्रभावी (effective) रही है।</td>
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<td>97.</td>
<td>अभी तक किसी ऐसे व्यक्ति से मेरी भेंट नहीं हुई है जिसने हमारे उपलब्धियों की आशेजना की हो।</td>
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<tr>
<td>98.</td>
<td>मेरी व्यवहार आदतें हमारी उपलब्धि में बाधक सिद्ध हुई है।</td>
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<td>99.</td>
<td>मुझे प्रायः लगता है कि बहुत प्रयास करने के बाद भी बहुत बोझ ही प्राप्ता पाता है।</td>
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<tr>
<td>100.</td>
<td>मेरी उपलब्धियों कुछ बिन्दु पर निर्भित रूप से आलोचना होती हैं।</td>
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</table>
निर्देश (Instructions):
नीचे कुछ ऐसे प्रश्न दिये गए हैं जिनके उत्तर आपसे बांछनीय हैं। आप प्रत्येक कवन को ध्यानपूर्वक पढ़े और दिये गये उनके चार-चार उत्तरों में से सबसे ज्यादा अनुकूल उत्तर पर सही का चिह्न (√) लगाएं। याद रखें कि इस भाग के सभी प्रश्नों का उत्तर आपको 10 मिनट के समय में ही देना है।

<table>
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<tr>
<th>प्रश्न</th>
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<tr>
<td>101.</td>
<td>(क) दोष</td>
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<td>(ख) गुण</td>
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<td>(ग) लज्जा</td>
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<td>(घ) दुःख</td>
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<tr>
<td>102.</td>
<td>(क) कमजोर</td>
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<td>(ख) अनेकाधिक</td>
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<td>(ग) बहादुर</td>
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<td>(घ) तरीका</td>
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<td>103.</td>
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<td>(घ) बन्ध</td>
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<td>104.</td>
<td>(क) मोटा</td>
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<td>(ग) नाटा</td>
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<td>(घ) जल</td>
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<td>105.</td>
<td>(क) उजाल</td>
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<td>(ग) किरण</td>
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<td>(क) पुज</td>
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<td>(ख) वाणन</td>
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<td>(ग) राजन</td>
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<td>(घ) देवक</td>
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<td>107.</td>
<td>(क) दुःखी</td>
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<td>108.</td>
<td>(क) अनुभव</td>
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<td>(ख) प्रभाव</td>
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<td>(घ) सूर्य</td>
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<td>109.</td>
<td>(क) काला</td>
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<td>(ख) प्रभाव</td>
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<td>(घ) सुनह</td>
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<td>(ग) अदान</td>
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</table>
111. इनमें से किसका अन्य तीनों से मेल नहीं (क) रबीन्द्रनाथ टेगोर है?
(ग) दिलकर  
(घ) महात्मा गाँधी

112. इनमें से किसका अन्य तीनों से मेल नहीं (क) कुसी है?
(ग) सेफा  
(घ) चादर

13. मीठा का सब्जा है?
(क) चौनी  
(ख) सफ़ा

14. कपड़ा का सब्जा है?
(क) टर्नी  
(ख) काटना

15. $\sqrt{16}$ के बराबर कौन है?
(क) $\sqrt{2}$  
(ख) 2

16. $3^3$ का बराबर क्या होगा?
(क) 9  
(ख) 6

17. प्यार का अर्थ है?
(क) सिंग  
(ख) ममता

18. 5, 7, 8, 10, 11, 13, ..... इन (क) 28 संख्याओं के आगे की संख्या क्या होगी?
(ग) 26

19. 5, 10, 15, 20, 25, ..... इसके आगे (क) 40 की संख्या लिखें—
(ग) 35

20. 98, 90, 82, 80, 72, 64, ..... इन (क) 55 संख्याओं के क्रम के अनुसार आगे की संख्या लिखें—
(ग) 62

21. 102, 204, 408, 816 ..... इस क्रम (क) 1532 न अनुसार आगे की संख्या लिखें—
(ग) 1632

22. अशोक से अवध क्रम बुद्धिमान है। (क) अशोक क्यों अशोक से भी अधिक बुद्धिमान नहीं तो सबसे बुद्धिमान कौन है?
(ग) अवध  
(घ) कोई नहीं
123. हिंदिनामा: घोड़ा; भौकना:  
(क) बिल्ली  
(ख) कुत्ता  
(ग) शेर  
(घ) भालू

124. इन चार शब्दों में से किसका अन्य सभी से (क) दरका कोई सम्बन्ध नहीं है?  
(क) बैज्जोदेवी  
(ख) कन्याकुमारी

125. स्प्यामली किरण से सुंदर है और किरण (क) अधिक सुंदर उथा से भी सुंदर है तो स्प्यामली उथा से कितनी सुंदर है?
(क) बाराबर  
(ख) साधारण

126. सर: टोपी, पाव:  
(क) मोजा  
(ख) जूता  
(ग) पतलून  
(घ) अंगूठी

127. किसी भी देश में रेल की कई लाइंगें होनी चाहिए किसका कारण यह है कि—  
(क) लोगों को अने जाने में तथा माल डोने में सुविधा हो।  
(ख) इससे समय की बचत हो सके।  
(ग) इससे व्यापारियों का मुनाफा बढ़ सके।  
(घ) इससे वस्तुओं की कीमत ऊंचा न हो।

128. बिल्ली एक लाभदायक पशु है क्योंकि—  
(क) वह दूध खाती है।  
(ख) वह चूहों का सफाया करती है।  
(ग) वह कुत्ते के डरकर भाग जाती है।  
(घ) वह अपनी आवाज से लोगों का ध्यान अपनी ओर आकर्षित करती है।

129. जूते चमड़े के बने इसलिए होते हैं क्योंकि—  
(क) चमड़ा सभी देशों में उपलब्ध होता है।  
(ख) चमड़े का जूता आरामदेह होता है।  
(ग) चमड़े का जूता पहनने से किसी प्रकार की बीमारी के होने की संभावना नहीं होती है।  
(घ) चमड़े का जूता धनाना आसान होता है।

130. \[
\frac{4 \times 6}{2} \times \frac{6 \times 0}{2} \times \frac{4 \times 6}{2}
\] बराबर  
(क) 3  
(ख) 6  
(ग) 4  
(घ) 0

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Mental Health Battery (M H B) Hindi Version.
कृपया निम्न सूचनाएं भरिए:—

चित्र

पूर्व परीक्षा में प्राप्त प्रतिष्ठा अंक

निर्देश

आपको प्रतेक कब्जा धारण से पड़ा है तथा उसके सामने बने तीन खानों में से जो आपके लिए उपयुक्त हो या आप पर लगू हो, उस पर सही (√) का चिह्न लगाना है।

उदाहरणार्थ

सदैव या बहुता कभी-कभी कदापि या कभी नहीं

में पढ़ते समय धकान का अनुभव करता हूँ।  

यदि इस कब्जे को पढ़ने के बाद आप सदैव या बहुता धकान का अनुभव करते हैं तो इसके नीचे वाले खाने में, यदि कभी-कभी धकान का अनुभव करते हैं तो इसके नीचे वाले खाने में तथा यदि धकान का अनुभव कभी नहीं करते हैं तो इसके नीचे वाले खाने में सही (√) चिह्न लगाकर अपना उत्तर दें। इसी प्रकार से समलैंगिक कब्जों के सामने वाले तीन खाने में से किसी एक पर अपनी पसंद व्यक्त करनी है।

आपको सभी कब्जों को हल करना है, कोई भी उत्तर गलत या सही नहीं है। यद्यपि इसके लिए कोई समय अवधि निश्चित नहीं है फिर भी इसे 20 मिनट में करने का प्रयास करें।
<table>
<thead>
<tr>
<th>क्रमक</th>
<th>कथन</th>
<th>स्देश या बहुध</th>
<th>क्ष्री-कभी</th>
<th>कदापि या कभी नहीं</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>मैं प्रतिदिन अध्ययन करता हूँ।</td>
<td>☐</td>
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<tr>
<td>2.</td>
<td>मैं दिन में निविष्ट समय पर ही अध्ययन करता हूँ।</td>
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<td>3.</td>
<td>मैं रोज़ गृह पाउ (home work) कर लेता हूँ।</td>
<td>☐</td>
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<tr>
<td>4.</td>
<td>मुझे अधिक बप्पों या समय तक अध्ययन करना होता है तो मैं बीच में आराम (rest) कर लेता हूँ।</td>
<td>☐</td>
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<tr>
<td>5.</td>
<td>मेरे पास अध्ययन करने के लिए समस्त पुस्तकें एवं सभी सामग्री (materials) होती हैं।</td>
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<tr>
<td>6.</td>
<td>अध्ययन करने समय मैं अपने आसपास के शोरूम से पेशावर (disturbed) हो जाता हूँ।</td>
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<tr>
<td>7.</td>
<td>किसी विषय (subject) का अध्ययन करने के बाद उसमें स्वतः ही मेरी रुचि विकसित हो जाती है।</td>
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<tr>
<td>8.</td>
<td>पत्तियों को दृष्टि में रखकर यह विभिन्न विषयों के महत्व को मैं महसूस करता हूँ।</td>
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<tr>
<td>9.</td>
<td>एक बार जमकर अध्ययन पर बैठने के बाद भी मन में अनेक विचार आते रहते हैं।</td>
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<tr>
<td>10.</td>
<td>किसी भी अध्ययन (chapter) के पढ़ने से पूर्व, मैं उसे समझते तौर पर निःशास्त्र हैं या मुख्य बिंदुओं को पढ़ता हूँ।</td>
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<td>11.</td>
<td>मैं पढ़ने समय नोट्स (notes) लिखता जाता हूँ।</td>
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<td>12.</td>
<td>कुछ भी पढ़ने के बाद मैं उसे स्मरण (recall) करने का प्रयास करता हूँ।</td>
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<td>13.</td>
<td>कुछ बाबुओं के अर्थ को समझने में कठिनाई होने के बावजूद भी मैं निर्दय पढ़ता रहता हूँ।</td>
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<tr>
<td>14.</td>
<td>प्रत्येक बिंदु (point) समझने के लिए मैं बहुत सावधानी से पढ़ता हूँ।</td>
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<td>15.</td>
<td>मैं चुपचाप (silently) नहीं पढ़ता हूँ।</td>
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<td>16.</td>
<td>विषय सामग्री के महत्व एवं उसकी कठिनता के अनुसार, मैं पढ़ने की गति बदलता रहता हूँ।</td>
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<td>कभी नहीं या कभी कभी नहीं</td>
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<tr>
<td>17.</td>
<td>पढ़ते समय मैं आकृतियाँ (figures) तथा आलेखों (graphs) का ध्यान से अध्ययन करता हूँ।</td>
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<tr>
<td>18.</td>
<td>जब मेरे शिक्षक मुझे पढ़ाते हैं, उस समय मैं नोट्स (notes) लिखता हूँ।</td>
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<td>19.</td>
<td>मैं शिक्षक द्वारा दिए गए नोट्स को विभिन्न लेखकों द्वारा लिखी पुस्तकों से लिए गए नोट्स से मिश्रण (combine) करता हूँ।</td>
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<td>20.</td>
<td>यदि मुझे कुछ समझ नहीं आता है, तो मैं किसी अन्य की सहायता लेता हूँ।</td>
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<td>21.</td>
<td>कक्षा में पढ़ाए जाने वाले पाठ की पूर्व तैयारी करके आता हूँ।</td>
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<td>22.</td>
<td>विद्यालय/कालेज में जब भी समय खाली रहता है मैं कुछ न कुछ पढ़ता रहता हूँ।</td>
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<td>23.</td>
<td>मैं नियमित रूप से विद्यालय/कालेज में जाता हूँ।</td>
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<td>24.</td>
<td>काम के कारण मुझे कक्षा से अनुपस्थित (absent) रहना पड़ता है।</td>
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<td>25.</td>
<td>यदि कोई सामग्री को गहनता से सीखना होता है तो मैं उसका भाग (parts) में अध्ययन करता हूँ।</td>
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<tr>
<td>26.</td>
<td>कोई विषय-वस्तु (content) समझ में न आने पर भी, मैं कुछ निर्देशित बातों को रट लेता हूँ।</td>
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<td>27.</td>
<td>मैं पढ़ी हुई विषय-सामग्री (subject matter) का पुन: अध्ययन करता हूँ।</td>
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<td>28.</td>
<td>मैं पुस्तकालय में अध्ययन करता हूँ।</td>
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<td>29.</td>
<td>परीक्षा के दिनों में भी मैं सामान्यतया रात में सो लेता हूँ।</td>
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<tr>
<td>30.</td>
<td>परीक्षा काल में, मैं समस्त प्रस्त-पत्र को प्रारंभ में ही सावधानीपूर्वक पढ़ लेता हूँ।</td>
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<td>31.</td>
<td>परीक्षा में पूछे गए प्रश्नों का मैं क्रम से उत्तर देता हूँ।</td>
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<tr>
<td>32.</td>
<td>उत्तर देने वाले प्रश्नों की संख्या के अनुसार मैं परीक्षा के समय बाकी का विभाजन करता हूँ।</td>
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</table>
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<table>
<thead>
<tr>
<th>क्रमांक</th>
<th>कथन</th>
<th>सदैव या बहुता</th>
<th>कभी-कभी</th>
<th>कभी नहीं</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.</td>
<td>परीक्षा के पूर्व दिन, मैं केवल स्वयं द्वारा बनाए गए नोट्स (notes) को ही पढ़ता हूँ।</td>
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<tr>
<td>34.</td>
<td>परीक्षा के पूर्व, मैं बाजार में उपलब्ध गाइड/नोट्स/श्योर सच्चाई/प्रश्न बैंक आदि को पढ़ता हूँ।</td>
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<td>35.</td>
<td>परीक्षा में उत्तर लिखने से पूर्व, मैं उनकी एक रूपरेखा तैयार करता हूँ।</td>
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<td>36.</td>
<td>परीक्षा के आरम्भ में, मैं तनाव एवं दबाव महसूस करता हूँ।</td>
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<tr>
<td>37.</td>
<td>परीक्षा होने के उपरांत, मुझे यह महसूस होता है कि मैंने परीक्षा में कुछ गलतियाँ कर दी हैं या उस समय कुछ याद होने वाली बातें भूल गया था।</td>
<td>☐</td>
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<td>38.</td>
<td>मैं परीक्षा या टूटू अंकों पर विशेष ध्यान देता हूँ।</td>
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<td>39.</td>
<td>परीक्षा परिणामों के उपरांत मुझे विभिन्न विषयों में कमजोरी का पता लगता है।</td>
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<td>40.</td>
<td>विभिन्न विषयों की कमजोरी सुधारने के लिए मैं व्यवस्थित रूप से प्रयास करता हूँ।</td>
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<td>41.</td>
<td>परीक्षा निष्कर्ष अनुकूल न होने पर मैं निराश हो जाता हूँ।</td>
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<td>42.</td>
<td>परिणाम आने पर मैं अपने प्राप्तांकों (marks) का अन्य लोगों के प्राप्तांकों से मिलान करता हूँ।</td>
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<td>43.</td>
<td>मैं यह सोचता हूँ कि अपनी अध्ययन आदतों में सुधार ला सकता हूँ।</td>
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<td>44.</td>
<td>उचित अध्ययन आदतों के लिए निर्देशन मुझे अपने शिक्षकों से प्राप्त हो जाता है।</td>
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<td>45.</td>
<td>यदि अध्ययन आदतों के लिए कोई निर्देशन कार्यक्रम की व्यवस्था हो रही है तो मैं उससे लाभान्वित होता हूँ।</td>
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Consumable Booklet of Palsane and Sharma Study Habit Inventory (P S S H I) Hindi Version.
निदेश

यह कोई परीक्षा नहीं है। आपके प्रश्नों पर कुछ क्षण दिए गए हैं जो आपके सम्बन्ध में सही अथवा गलत हो सकते हैं। आप प्रत्येक क्षण को पढ़ें, वह क्षण आपके सम्बन्ध में सही अथवा गलत हो तो उसकी केवल नीचे दाएँ छोरे में क्रॉस (x) का विक्षेप अंकित कर दें। कुछ ध्यान रखें कि आपको केवल अपने खास बारे में ही राय देनी है। कोई भी उत्तर सही या गलत नहीं है, जो उत्तर आप देंगे वही सही होगा। यद्यपि समय का ब्यवहार नहीं है फिर भी कार्य शीघ्रता से करें।

चूँकि आपके उत्तर गोपनीय रूप से जारी होंगे, अतः निःसंकोच उत्तर दें।
<table>
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<th>क्वांटूक</th>
<th>कथन</th>
<th>सही</th>
<th>गलत</th>
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</thead>
<tbody>
<tr>
<td>1. आपके साथ प्रायः ऐसा होता है कि काम करने का समय आने तक आप अपना निर्णय नहीं ले पाते हैं।</td>
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<tr>
<td>2. आप पर कोई बात कही जाय तो प्रायः आप उसका जवाब देने में नहीं चुकते।</td>
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<td>3. लोगों से बातचीत करने में प्रायः कठिनाई अनुभव होती है।</td>
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<td>4. आपकी भावनाओं को बहुत जल्दी ठेस पहुँच जाती है।</td>
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<td>5. कुछ लोगों से न भिलाये के विचार से आप प्रायः सड़क पार करने दूसरी तरफ चले जाते हैं।</td>
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<td>6. इस बात का भय लगा रहता है कि दूसरे लोग आपको नापसंद करेंगे।</td>
<td>☐</td>
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<tr>
<td>7. विज्ञ परेशान बुझ किसी कठिन परिस्थिति का सामना कर सकते हैं।</td>
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<tr>
<td>8. कुछ चीजों के लिए लोग आपको प्रायः अनुचित रूप से (unjustly) दोषी ठहरा देते हैं।</td>
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<tr>
<td>9. आप कुछ खेल खेलने से इसलिए मना कर देते हैं क्योंकि आप उनमें अच्छे नहीं हैं।</td>
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<td>10. हर बात को बहुत ज्यादा सोचते हैं।</td>
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<tr>
<td>11. आप अपनी भावनाओं को खुलकर प्रदर्शित नहीं कर पाते।</td>
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<td>12. लोग प्रायः आपसे कहना उठा ले जाने में सफल हो जाते हैं।</td>
<td>☐</td>
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<tr>
<td>13. किसी काम को करने की चोट तो उसमें असफल हो जाने का घात (horror) लगा रहता है।</td>
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<td>14. मौके पर सही बात कह पाना कठिन लगता है।</td>
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<tr>
<td>15. आपके लिए जीवन साधारण: एक तनाव (strain) की चीज है।</td>
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<tr>
<td>16. कठिनाई या खबरे (crisis) का सामना करने से पीछे हटते हैं।</td>
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<td>17. किसी एक ही काम पर अपना ध्यान लगाए रखना आपको कठिन लगता है।</td>
<td>☐</td>
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<td>18. कई बार आपने किसी काम को करने का विचार इसलिए छोड़ दिया क्योंकि उनके लिए आपको अपनी योग्यता (ability) कम लगती है।</td>
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<td>19. आपको ये लगता है कि आप चीजों का ढीठ से सामना नहीं कर पा रहे हैं।</td>
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<td>20. आप अपना काफी समय भविष्य की चिंता में बिता देते हैं।</td>
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<td>क्रमांक</td>
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<td>21.</td>
<td>आपने कई अच्छे अवसर गूंगा दिए क्योंकि आप जल्दी कोई निर्णय नहीं ले पाते।</td>
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<td>22.</td>
<td>आप प्रयास: दु-खी-दु-खी से रहते हैं।</td>
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<td>23.</td>
<td>आप उत्तम ही जल्दी दोस्त बना लेते हैं जितनी जल्दी दूसरे लोग बनाते हैं।</td>
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<td>24.</td>
<td>जब दूसरे लोगों की राय आपकी अपनी राय से मेल नहीं खाती तो आप हलोसाहित (discouraged) हो जाते हैं।</td>
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<td>25.</td>
<td>प्रयास: अपनी अपूर्ण इच्छाओं को कल्पना में पूरा करके संभवता कर लेते हैं।</td>
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<td>26.</td>
<td>किसी काम में पहले करने की प्रवृत्ति (to take initiative) की आप में कभी नहीं है।</td>
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<td>27.</td>
<td>आप प्रयास: जल्दी ही हलोसाहित (discouraged) हो जाते हैं।</td>
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<td>28.</td>
<td>भावनात्मक रूप से असहाय (upset) हो जाने पर उससे धीम होने में आपको समय लगता है।</td>
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<td>29.</td>
<td>आपको प्रयास: ऐसा लगता है कि आपको कोई नहीं समझता।</td>
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<td>30.</td>
<td>कभी-कभी आपको इतनी बेचैनी होती है कि आप एक जगह ठिक कर नहीं बैठ पाते।</td>
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<td>31.</td>
<td>आप सामाजिक: स्वयं को लचीला व शक्तिशाली अनुभव करते हैं।</td>
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<td>32.</td>
<td>आप साधारण: स्वयं को असहाय सा अनुभव करते हैं।</td>
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<td>33.</td>
<td>अपने बड़े अफसर के साथ बातचीत शुरू करने में आपको कठिनाई होती है।</td>
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<td>34.</td>
<td>आपको नई दोस्त बनाना जरा मुश्किल सा लगता है।</td>
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<td>35.</td>
<td>किसी सामाजिक बातचीत में आप प्रयास: सोटा ही रहते हैं बजाय बक्का के।</td>
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<td>36.</td>
<td>स्वयं को प्रयास: असुरक्षित (insecure) सा अनुभव करते हैं।</td>
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<td>37.</td>
<td>बहुत सारे लोगों के सामने बोलना मुश्किल लगता है।</td>
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<td>38.</td>
<td>जब दूसरे लोग आपकी ओर देख रहे हो तो आप किसी काम को उत्तम अच्छा कर पाते जितना अच्छा कर सकते हैं।</td>
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<td>39.</td>
<td>प्रत्येक व्यक्ति द्वारा की गई प्रशंसा या निदर्शा का आप पर बहुत असर पड़ता है।</td>
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<td>40.</td>
<td>आप स्वयं को एक सफल व्यक्ति मानते हैं।</td>
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<td>41.</td>
<td>आपको हमेशा ऐसा लगता है कि आप जो पाना चाहते हैं वो पा सकते हैं।</td>
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<td>42.</td>
<td>आपने निर्णयों पर पहुँचने में आपको कठिनाई होती है।</td>
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<td>43.</td>
<td>किसी खेल या प्रतियोगिता में एक ऐसे विरोधी के सम्मुख जो आप से बहुत अधिक श्रेष्ठ है आप थीक प्रकार से खेल लेते हैं।</td>
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<td>44.</td>
<td>आप वह विषय हमेशा पहले कर लेते हैं कि अगला कदम क्या होना चाहिए।</td>
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<td>45.</td>
<td>आप बहुत आसानी से दिमाग की परेशानी दूर करके विश्वास की अजुबूति (relaxed) कर लेते हैं।</td>
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<td>46.</td>
<td>नीचा दिखाने वाली (humiliating) परिस्थितियों से अन्य व्यक्तियों की अपेक्षाकृत आप ज्यादा परेशान हो जाते हैं।</td>
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<td>47.</td>
<td>आप साधारणतः स्वयं की अयोग्य (unworthy) अनुभव करते हैं।</td>
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<td>48.</td>
<td>आप जल्दी ही रो पड़ते हैं।</td>
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<td>49.</td>
<td>नीचेंग शुरू हो जाने पर अब जाने में आपको ख़ि़बार महसूस होती है।</td>
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<td>50.</td>
<td>प्रायः लिराशा (frustrated) अनुभव करते हैं क्योंकि जो चाहते हैं वो कर नहीं पाते हैं।</td>
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<td>51.</td>
<td>आपको लगता है कि आपके दोस्तों ने ज्यादा अच्छी तरह से जीवन के समायोजन किये हैं।</td>
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<td>52.</td>
<td>आप अक्सर अतिरिक्त (confused) से रहते हैं।</td>
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<td>53.</td>
<td>यदि आपको अवसर मिले तो आप एक अच्छे नेता साबित हो सकते हैं।</td>
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<td>54.</td>
<td>आपको ये लगता है कि कोई भी बाधा आपको अपना इच्छित लक्ष्य प्राप्त करने से नहीं रोक सकती।</td>
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<td>55.</td>
<td>किसी पार्टी के जीवन में अपने समावेशवादी (natural) तरीके से व्यवहार कर लेते हैं।</td>
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<td>56.</td>
<td>प्रायः जब कोई गम्भीर परिस्थिति जुगर जाती है तब ये सोचते हैं कि अपको ये करना चाहिए था परन्तु नहीं कर पाये।</td>
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Agnihotri Self Confidence Inventory (ASCI) Hindi Version.