Chapter III

Methods and Procedure
Aizawl is the capital of the state of Mizoram, with an estimated population of 3,88,238 people (Population Handbook, 2008). Situated on the Lushai hills, it is a home for nearly one third of the total population of Mizoram. English is used as the medium of instruction in all the high schools across the state.

Sample

The study incorporated multistage sampling procedure. Keeping in view the objectives of the study, 600 subjects (300 boys and 300 girls) were randomly selected for the conduct of the study. Firstly, from the 133 affiliated High Schools under Aizawl District 75 High Schools that come within Aizawl city were selected. In the second stage 25 High Schools based on their previous year’s class X Board results, were selected. In the final stage 12 schools were randomly picked up by lottery method. At this stage of the sampling procedure, 50 students (25 boys and 25 girls) were randomly picked by simple random sampling from different sections of class X from each school to constitute the final samples of the study. From the 600 sample collected, the students who were Non-Mizos, and those students whose age was not within 15 to 17 and those with incomplete forms were excluded. Thus the final sample came to be 558 (272 boys and 286 girls). The background information of the subjects like age, birth order, number of siblings, living arrangement, education and occupation of the parents, family monthly income etc. were recorded with the help of a socio-demographic information schedule.
Aim of the study

The study aims to see the effect of Self-Esteem, Locus of Control and Social Support on Test Anxiety in Class X Mizo students (Boys and Girls) studying in Aizawl city, to provide an empirical and methodological foundation for behavioral intervention programs for the posed problem(s) so that Teachers / Parents / Educational institutions and Government agency can take effective steps for prevention and or design treatment programs. It can also form basis for further research and extended studies.

Objectives

Given the theoretical and methodological foundations pertaining to anxiety as explanations, the present study has been designed with four-fold objectives:

1. To study the nature and pattern of Test Anxiety in Mizo Adolescents.
2. To find out the effect of gender on Test Anxiety, Self-Esteem, Locus of Control and Social Support.
3. To highlight gender difference between the levels of Test Anxiety.
4. To elucidate the relationship of Test Anxiety with all the predictor variables independently and taken together.
Hypotheses

1. It is expected that there will be an inverse relationship between Self-Esteem and Test Anxiety.

2. The dimensions of Locus of Control viz. Internal Control, Powerful Others and Luck/Chance are expected to correlate with test anxiety.

3. Social support is expected to manifest an inverse relationship with test anxiety.

The Design of the Study:

The present study titled “Test anxiety in relation to Self-Esteem, Locus of Control and Social Support: A study of Mizo Adolescents” is basically aimed to see the effect of Self-Esteem, Locus of Control, Social Support and Test Anxiety on the subjects selected for the study, that is Mizo adolescents studying in Class X from various schools in Aizawl city.

For this purpose, the Test Anxiety was considered as a criterion variable while the other three namely – Self-Esteem, Locus of Control and Social Support were considered as predictors.

A combination of all the independent variables (Self-esteem, Locus of Control and Social support) and ‘Gender’ (boys and girls) and the three levels of Test Anxiety (Low Test Anxiety = Mean - SD , Moderate Test Anxiety = Mean and High Test Anxiety = Mean + SD ) give rise to the formation of a separate group design for the conduct of the study. It may be diagrammatically presented as follows:
Assessment Tools:

To meet the objectives of the present study on “Test Anxiety in relation to, Self-esteem, Locus of control and Social support : A study of Mizo Adolescents”, the following Psychological measures were incorporated: 1). Test Anxiety Inventory (TAI), Spielberger et al., (1978), 2). Self-Esteem Scale (SES), Rosenberg, (1965),
3). Locus of Control Scale (LOCS), Levenson, (1973) and 4). Social Support Questionnaire (SSQ), Sarason et al., (1983). The test instruments are described below to make lucid the behaviour components that are aimed to be investigated.

1. Test Anxiety Inventory (Spielberger, et al., 1978)

In order to identify the Test Anxiety levels of the students, the Test Anxiety Inventory was used. Original 20 item, English version of the Test Anxiety Inventory (TAI), has been developed by Spielberger, et al., (1978) was designed to assess individual differences in anxiety proneness in test situation. This self-report inventory has been developed and standardized with large samples of high school and college students. The range of possible score is from a minimum score of 20 to maximum score of 80, on a four-point rating scale, ranging from: (1) Almost never to (2) Sometimes (3) Often and (4) Almost always. It consists of two subscales for measuring ‘Worry’ and ‘Emotionality’ having eight items in each subscale. There are four buffer items in the scale. In this test high scores represent higher level of anxiety and low score represents lower level of anxiety.

**TAI Emotionality Sub-scale**

Emotionality Sub-scale consists of items 2, 8, 9, 10, 11, 15, 16 and 18. Add the circled values (1, 2, 3, or 4) marked for items 2, 8, 9, 10, 11, 15, 16 and 18. Enter the sum on the appropriate line on the answer sheet. The Minimum E score is 8 and Maximum E score is 32.
TAI Worry Sub-scale (W)

Worry Sub-scale consists of items 3, 4, 5, 6, 7, 14, 17 and 20. Add the circled values (1, 2, 3, and 4) for items 3, 4, 5, 6, 7, 14, 17 and 20. Minimum W score is 8 and Maximum score is 32.

TAI Total Score (TA)

Items 1 (values of item 1 are reversed) 12, 13, and 19. Minimum T score is 20 and Maximum score is 80. To obtain TAI total score, add the values (1, 2, 3 and 4) marked for item 1 (reversed values) 12, 13 and 19 and add the sum to the score obtained for W and E. The grand total is the TAI total score.

2. Self-Esteem Scale (Rosenberg, 1965)

The Self-Esteem Scale consist of 10 items, each with a four-points ranging between ‘strongly agree’ (1) to ‘strongly disagree’ (4) choice range to measure the level of Self-Esteem of the subjects. Self-esteem or self-image measures tend to show consistency, continuity, and stability following the formative years, and during the early adolescent years (Carlson; Engel, 1959). Agreements on items: 1, 2, 4, 6 and 7 indicates high self esteem, while disagreements on items: 3, 5, 8, 9 and 10 indicates high self-esteem. A high numerical score indicates low Self-Esteem while a low numerical score indicates high self-esteem. A score of 10 is the minimum and represents the highest possible self-esteem while the maximum is 40, representing the lowest possible self-esteem.
3. **Locus of Control Scale (Levenson, 1973)**

Locus of Control Scale selected for the present study was designed by Levenson. This tridimensional measure has separate scales for the internal control, powerful others and chance influences. This scale consists of 24 items, each with six point choices (Strongly disagree (-3) to strongly agree (+3). Items 1, 4, 5, 9, 18, 19, 21 and 23 constitute **Internal Control (IC)** scale. Items 3, 8, 11, 13, 15, 17, 20 and 22 constitute **Powerful Others (PO)**. Items 2, 6, 7, 10, 12, 14, 16 and 24 constitute **Luck / Chance (LC)** scale. The questionnaire is scored by adding the circled responses for each of the three scales individually and adding the number 24 to each of the totals. The range of scores for the three scales is 0 – 48.

4. **Social Support Questionnaire. (Sarason et al., 1983)**

The SSQ has been constructed by Sarason, Levine, Basham and Sarason (1983). It consists of 27 items. It has been factor analytically derived from a large body of items intended to measure the functions of social network. For each question two part answer is requested. The two basic elements studied by this scale are:

i) Number of available others to whom individual believe they can turn to in times of need (SSN) and

ii) The degree of satisfaction they anticipate from support they see as available on a 6 point scale (SSS) ranging from Very satisfied (1) to Very Dissatisfied (6).
For the present study scores will be obtained in terms of both:

1. **Social Support Number**: Add total number of people for all 27 items (Maximum is 243)

   And divide by 27 for per item score. This gives SSQ Number score, or SSN.

2. **Social Support Satisfaction**: “Very Satisfied” with a value of 6 and “Very Dissatisfied” with a value of 1. Total satisfaction scores for all 27 items (Maximum is 162) (Reverse scoring i.e 1 has a value of 6, 2 has a value of 5, 3=4, 4=3, 5=2 and 6=1) divide by 27 for per item score. This gives SSQ Satisfaction score, or SSS.

**Procedure:**

A prior appointment was made with school authorities of all the schools selected for the study to apprise them of the objectives of the study and to obtain their permission for data collection. Then, a tentative date for data collection was fixed for each of the 12 schools in discussion with the authorities. Data were collected with the voluntary consent of the adolescent participants. Voluntary consent was obtained after sharing the objectives of the study and reassuring the participants about their anonymity and the confidentiality of information they were providing.

All the measures were stapled together in the order Self-Esteem, Locus of Control, Social Support and Test Anxiety, and were distributed to the students in classroom settings. Instructions written on top of each questionnaire were read loudly
along side with the subjects reading them silently. Queries, if any, were answered. Mizo Translation was given to students when they failed to understand a question or a statement.

**Statistical Analysis:**

For the analysis of data, suitable statistical techniques were adopted for the present study.

1. Descriptive statistics were employed to describe the demographic variables like age, gender, birth-order, number of siblings parents education, parents occupation and family income.

2. Means and standard deviations were calculated for all the variables to know the level of the anxiety.

3. Two tailed ‘t’ test was applied to find the level of significance of gender difference.

4. Karl Pearson’s Coefficient of Correlation was used to assess the relationship between the dimensions of Test Anxiety and its correlates.

5. One way Analysis of variance with Scheffe’s Post Hoc test was employed to find the difference in the predictors in the Test Anxiety and its dimensions.

6. Multiple Linear Regression Analysis was fitted to assess the relationship between Self-Esteem, locus of Control, Social Support and Test Anxiety.

7. Finally, qualitative method, namely profile analysis was also applied.
Mizoram State

Aizawl District – 133 affiliated High Schools

Aizawl - Capital City – 75 English Medium High Schools

Previous Year’s Class X Board Results – 25 High Schools

By Random Selection / Lottery Method - 12 Schools Selected
(50 students from each school – 25 girls and 25 boys)

50 students x 12 schools = 600 samples selected

300 boys

300 girls

Non-Mizos / Students not within age of 15 to 17 / incomplete forms - deleted

272 boys

286 girls

Total X Standard Students taken for the study = 558
The overall considerations would not only help satisfy to achieve the theoretical and methodological considerations but would also provide theoretical and methodological foundations for behavioral intervention programs for the posed problem(s) and further extended studies.
Chapter IV

Results and Discussion
Table – 7.1: The Effect of Self-esteem, Locus of Control and Social Support on the Worry Component of Test Anxiety. (Regression Analysis, Predicted variable – Worry).

<table>
<thead>
<tr>
<th>Sl.No</th>
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<th>Unstandardized Coefficients</th>
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<th>Sig.</th>
</tr>
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<tr>
<td></td>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Constant</td>
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<td>1.77</td>
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<tr>
<td>4</td>
<td>Self Esteem</td>
<td>0.17</td>
<td>0.05</td>
<td>3.66**</td>
</tr>
<tr>
<td>5</td>
<td>Internal Control</td>
<td>-0.03</td>
<td>0.03</td>
<td>-1.10</td>
</tr>
<tr>
<td>6</td>
<td>Powerful Others</td>
<td>0.05</td>
<td>0.02</td>
<td>2.24*</td>
</tr>
<tr>
<td>7</td>
<td>Luck/Chance</td>
<td>0.10</td>
<td>0.02</td>
<td>4.00**</td>
</tr>
<tr>
<td>8</td>
<td>Social Support Number</td>
<td>0.12</td>
<td>0.18</td>
<td>0.66</td>
</tr>
<tr>
<td>9</td>
<td>Social Support Satisfaction</td>
<td>-0.06</td>
<td>0.28</td>
<td>-0.21</td>
</tr>
</tbody>
</table>

Adjusted R Square = 0.10

**F = 5.59**

**P<0.01 * P <0.05**

The computed ‘F’ ratio is 5.59 (p<0.01) and is statistically significant. The adjusted ‘R’ square is 10%. The sub scale of TA, Worry (W) has statistically significant relationship with Self-esteem (ESE) (P<0.01), the sub scale of LOC, Powerful Others (PO) (P<0.05) and Luck/Chance (LC) (P<0.01). SE has a positive effect on worry, that is for every 1 score increases in SE, worry will increase by 0.17 scores. It implies that lower the Self-Esteem, higher will be Worry, for the students in testing situations. The result of the study on ‘self-Esteem and Anxiety in Secondary school achievement’
Chapter V

Summary and Conclusions
The present study has been undertaken with the aim to find the effect of (i) Self-esteem; (ii) Locus of Control and (iii) Social Support on Test Anxiety in class X Mizo students (Boys and Girls) studying in Aizawl City, to provide empirical and methodological foundations and also to provide an insight into the sub cultural variations that may or may not exist, for further/future studies in Mizo Adolescents in particular and Mizos in general.

This chapter attempts a brief summary of the whole study and some conclusions drawn based on the results and the findings. The findings, conclusions and recommendations may help to improve the educational environment and improve the lot of students and impart Holistic education.

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 problems like school avoidance, decreased problem-solving abilities, and lower academic achievement have also been noted as consequences (Donovan & Spence, 2000; McLoone, Hudson & Rapee, 2006; Rapee, Kennedy, Ingram, Edwards & Sweeney, 2005). The pressures of cut throat competition, rising expectations from students, good results being the main stake for the reputation of a school or a teacher and the inability to help children cope with all this has led to increasing depression amongst students, leading to physical and psychological problems like school drop outs conduct disorder, truancy, drug addiction etc. Lalnunthara, (1997) reported that drug abuse is on the increase in the state of Mizoram and identified peer group pressure as one of the main causes. Test Anxiety and peer pressure are driving
a growing number of children to suicide (Frean, 2008). Within five days of the CBSE declaring the Class X and XII results, half a dozen students in the Capital (New Delhi) have committed suicide (Kak, Smriti, 2002). The problem gets aggravated because at this tender age they neither have the sagacity nor the experience to reconcile with failure.

This is reflected in the report that in one year alone in India, 2320 children, or more than six children per day, committed suicide because of failure in examinations (National Crime Records Bureau, Ministry of Home Affairs, Government of India, 2000). This shocking figure underlines the seriousness of this problem and its resounding social costs to communities. Though 239 suicides cases were reported in the last 5 years (Vanglaini, 2010) exam related suicide is not common in Mizoram, (only two reported case in the recent past), probably due to the high social support Mizo adolescents enjoy, Test Anxiety still remains a serious problem that needs immediate attention. Unless treated this could exhibit itself in other forms like dependency in tobacco products, drug abuse or even alcoholism.

The present study has been designed with four-fold objectives: (i) to study the nature and pattern of Test Anxiety in Mizo Adolescents. (ii) to find out the effect of gender on Test Anxiety, Self-Esteem, Locus of Control and Social Support. (iii) to highlight gender difference between the levels of Test Anxiety and (iv) to elucidate the relationship of Test Anxiety with all the predictor variables independently and taken together.

The study incorporated multistage sampling procedure. Keeping in view the objectives of the study, 600 subjects (300 boys and 300 girls) were randomly selected
for the conduct of the study. Firstly, from the 133 affiliated High Schools under Aizawl District 75 High Schools that come within Aizawl city were selected. In the second stage 25 High Schools based on their previous year’s class X Board results, were selected. In the final stage 12 schools were randomly picked up by lottery method. At this stage of the sampling procedure, 50 students (25 boys and 25 girls) were randomly picked by simple random sampling from different sections of class X from each school to constitute the final samples of the study. From the 600 sample collected, the students who were Non-Mizos, and those students whose age was not within 15 to 17 and those with incomplete forms were excluded. Thus the final sample came to be 558 (272 boys and 286 girls). The background information of the subjects like age, birth order, number of siblings, living arrangement, Education and occupation of the parents, family monthly income etc. were recorded with the help of a socio-demographic information schedule.

To meet the objectives of the present study on “Test Anxiety in relation to Self-esteem, Locus of control and Social support: A study of Mizo Adolescents”, the following Psychological measures were incorporated: 1. Test Anxiety Inventory (TAI), Spielberger et al., (1978), 2. Self-Esteem Scale (SES), Rosenberg, (1965), 3. Locus of Control Scale (LOC), Levenson, (1973) and 4. Social Support Questionnaire (SSQ), Sarason et al., (1983).

Since this is the first endeavor in Mizoram to study Test Anxiety in the Mizo Adolescents, the researcher felt it necessary to include the Socio-demographic pattern in a detailed manner to give the reader a perspective of the Mizo culture and background and also to provide a backdrop/reference for further studies in the population.
In many studies (Schwarzer & Zeidner, 1996), the cross-cultural differences in anxiety have been linked to different value systems and norms as well as educational, social, economical and institutional differences. This intensifies the need to map out common as well as culture-specific sources of levels/patterns of test anxiety and to utilize them in the interpretation of results. Speaking on Socio-demographic factors Sud (1990) stated that any cross cultural comparison of test anxiety and the socio-demographic factors like, gender, age, and educational level, social class etc. must be either controlled or accounted for. The confounding effect of gender, age, education level and social class in general anxiety has been noted in many studies in India (Sharma, 1978b, 1988) but such studies are very limited in number (Sharma and Rao 1984). The use of normative data permits more definitive patterns of different cultures (as in this study) on Test Anxiety across cultures. When comparisons are made on the basis of normative samples of different cultures, comparison are also needed in socio-demographic characteristics as gender, age, education level, social class so as to rule out plausible rival interpretation of the data (Sharma, 1977).

It was found that the socio-demographic variables like age, gender (see Regression analysis, Table – 7. 3) have an influence on the Test Anxiety of the students. Another finding of interest is that the father’s education and monthly income (see Appendix – XV : Zero order correlation of the Socio-demographic variables), have a low but statistically significant effect on Test Anxiety. It indicates that students from families earning higher monthly income have lower Test Anxiety compared to students coming from families with low monthly income. Kaplan and Sadock (2000) reported that the prevalence of anxiety disorders tends to decrease with higher socio-economic status.
Most of the research till now has focused on children living with their parents. An attempt has been made in the present study to elucidate the pattern of living arrangements of Mizo Adolescents to provide a glimpse of the present trends of living arrangements in the Mizo society.

The purpose of studying Class X students, who are adolescents, will help understand and explain some of the emotional and behavioural patterns that parents, teachers and other practitioners witness in their encounters with young people. To achieve this, sources of anxiety, methods of coping with test anxiety experiences and stress-related outcomes need to be discussed in a constructive way so as to translate this understanding into action.

Adolescents, as they get more exposed to the various environments of family, school, changing relationships, and to issues of sexuality and socio-economic pressures, are confronted with new and unexpected situations that require skills which the adolescents may have never previously used. Dealing with the unexpected, and choosing a response never tried before, is certainly stressful and anxiety generating.

After ascertaining the Reliability of the test scales and their subscales and after testing the Normality and Homogeneity of the collected data, descriptive statistics were employed to predict the gender difference in the predicted and the predictor variables.

Gender turned out to be a significant predictor of Test Anxiety and its Worry and Emotionality components with girls reporting higher scores on these dimensions.
than boys. The observed trends found its supporting evidences in many previous studies (Costello et al., 2003; Paulton et al., 2001; A. Sud, 1990a; A. Sud & S.Sharma, 1990b; Sharma & Sud, 1990; Sud, 2001, 2003). Gupta, J.P. (1978) found that girls were significantly more anxious than boys. Besharat, A (2003) in a study on parental perfectionism and students’ test anxiety observed that girls had higher scores on Test Anxiety than boys and the results are discussed in terms of the relationship of Test Anxiety to family variables. In a gender-related study by Willimas (1996), females reported more test anxiety than did males. Whereas females experienced higher worry than emotionality, males reported little difference between the two anxiety components namely worry and emotionality. Barinder, M. (1985) reported that sex was significantly related to anxiety, both general and test anxiety. Girls exhibited more general anxiety; as well as test anxiety than boys. Ellakka Kumar, B. and Elanka Thirlselvan (2000) investigated test anxiety and academic achievement of students in Physics. The results revealed that test anxiety was higher for the girls than that of boys.

Shikari, A.G. (1986) reported that tribal students showed greater anxiety as compared to non-tribal students and that female students irrespective of their race and background, were found to show more anxiety than the male students. Sud (2003) highlighted that despite higher level of education, modernization and westernization in some cultures and lesser in others, the socialization factor in all the cultures continue to be different for boys and girls. In India, these differences have been attributed to lack of general motivation and encouragement given to females for academic excellence (Karlelkar, 1983, Sud, 2001). Most of the parent support for higher education depends of their ability to earn higher scores at school level which might be quite stress provoking.
for them. Further, males have been found to be more defensive as manifestation of anxiety has been found to be more ego alien (unmasculine to them) (Sud, Avasthi & Sud, 2001).

During the collection of data, while interacting with the Principals and teachers of the schools, where the study was conducted, 10 out of 12 principals and majority of the teachers were of the opinion that the Mizo students exhibit less anxiety in general. This has also been the observation of the researcher who has been teaching in Mizoram for nearly 10 years. Contrary to this belief, the results indicate that both Mizo boys (Mean – 41.7) and girls (Mean - 43.8) experience higher TA compared to the Mean scores of Indian sample used for cross cultural study by A. Sud (1991) boys (Mean – 39.68) and girls (Mean - 42.09). The possible explanation for this phenomenon may be because Mizo students are less expressive of their emotions and feelings which is a general observation, even though no research has been conducted on this aspect.

There are studies that suggest that cultural variations can deferentially determine not only the frequency but also the mode of expression of test Anxiety (Ahlawat, 1989a; Dusek 1980; Oner & Kaymak,1987; Schwarzer & Kim, 1984; Sharma, Parnian & Spielberger, 1983; Sud, 1990; Sud & Sharma, 1990).

No significant gender difference is seen between boys and girls in the self-esteem scale. It has been reported that in the Mizo population men and women emerged to be more or less equal on Self-esteem (Zoengpari, 2002).

In the LOC, the ‘t’ score for both IC and PO are not statistically significant, whereas the ‘t’ score of Luck/Chance (3.58) is statistically significant at 0.01 level.
From this it is evident that Mizo adolescent girls rely on Luck/chance much more than Mizo adolescent boys and may be one of the causes of girls experiencing a higher level of TA as compared to boys.

In the SSQ the ‘t’ score for SSQ number is 6.03 and indicates a significant gender difference at 1% level (P<0.01) and the ‘t’ score in SSQ satisfaction is 4.03 which is also statistically significant at 0.01 level (P<0.01).

From the result it is clear that the girls in Mizo society enjoy more Social Support both by way of Number of persons to support them and also the amount of satisfaction received. There is a close relationship between parents and girl children in Mizo culture as girls are given responsibility in household chores, which may lead to more interaction with parents and others. Hence the perceived Social Support may be higher for girls.

The results of gender difference in the levels (low, moderate and high) of TA show that 20.5% of the girls fall in the high TA level while only 12% of the boys fall in the high TA. Around 68% of boys and girls fall in the moderate TA level, where as 20.22 % of the Boys, 11.54 % of girls come in the low TA level. When the whole sample is considered 16.31 % of the students fall in the high level, 67.92 % come under the moderate level and 15.77 % fall in the low Test Anxiety level. This gives us a clear idea about the nature and pattern of TA among the class X Mizo adolescents. It also calls for interventions to help the 16% of the students (20.5% of girls and 12% of boys) who fall in the High TA category.
This observed gender difference on levels of TA is consistent with many previous studies. Gender tend to come out as a significant predictor of TA, worry and emotionality (A. Sud et al., 2001). With regard to gender difference, girls have been found to be more anxious than boys in all the culture groups (Sud & Sharma, 1990; Sud & Sud, 1997; Sud, 2001, 2003). Gender differences in test anxiety have been established in other studies (Guida & Ludlow, 1989; Sud, 1991) and female adolescents were found to demonstrate higher levels of test anxiety.

One way ANOVA to determine the effect of Self-Esteem on the three levels of Test anxiety found that in both the cases of boys and girls there is a significant difference in Mean of Self-Esteem across the three levels of TA. The ‘F’ ratio for Boys is 6.65 (P<0.001) and for Girls is 14.6 (P<0.001) and are statistically significant. There is no significant difference between moderate and high levels of TA among the boys in Self-Esteem. As compared to boys at lower level of TA, those at moderate and higher levels have greater Self-Esteem scores. It implies that the Boys at lower level of TA have significantly greater Self-Esteem as compared to those at high and moderate levels of TA.

In the case of Girls it is seen that the Self-Esteem score significantly differs between low and moderate, moderate and high and with low and high levels.

When we take the total (boys + girls) Self-Esteem has a statistically significant difference across the three levels of high, moderate and low levels. The total ‘F’ ratio is 20.7 (P<0.001). It clearly demonstrates that higher the score in TA, higher found to be the Self-Esteem score. As per the scoring interpretation procedure of SES, high
score in Self-Esteem indicates lower the Self-Esteem. This proves that Higher the Self-Esteem lower the TA and vice-versa. Thus the result manifested that there is an inverse relationship between Test Anxiety and Self-Esteem as hypothesized in the present population. This result is in confirmation with a number of previous studies. Blum (1972) observed an inverse relationship between self-esteem and anxiety. His general findings suggest that individuals who maintain non conforming opinions despite peer pressure show a drop in self-Esteem and an increase in the level of anxiety. When, at last, they find themselves in agreement with a referent body, they experienced a rise in self-Esteem and corresponding drop in anxiety level. Gupta, P. (1984) reported that there was some relationship between self-concept, anxiety, dependency and adjustment for the experimental group. Self-concept and adjustment were positively correlated and they had negative correlation with anxiety. It has been repeatedly demonstrated that at higher levels, the effect of anxiety are more serious, which not only interferes with performance on both classroom and aptitude tests but also lowers Self-Esteem, and limits educational and vocational development (Deffenbacher, 1977, Sarason, 1978).

ANOVA for gender for LOC on the levels of TA indicate that when the three levels of TA is correlated with Locus of Control, we observe that boys have no significant difference between the Means of low and moderate, low and high levels in the IC. However there is a significant difference between the means of moderate and high levels of with the IC (F= 3.06, P<0.05). Girls revealed no significant difference between the three levels of TA with IC. This corroborates with the study made by Malhotra (1975) who observed that there was no significant relationship between Locus of control and test Anxiety.
When Luck/Chance is correlated to the levels of TA we observe that there is no difference between low and moderate levels of TA for boys. But we observe that there is a significant difference between low and high, moderate and high levels of anxiety (F= 5.74, P<0.01). When LC is correlated with the levels of TA for the girls we see that there is no significant difference between low and moderate levels. There is a significant difference between low and high, moderate and high levels of anxiety (F= 6.07, P<0.01).

When the boys and girls are taken together and the three levels of TA are correlated to IC, we observe that there is no significant difference between the three levels. In PO we see no significant difference between low and moderate, moderate and high levels. There is a significant difference between low and high levels. In LC there is a significant difference between low, moderate and high levels of anxiety. Thus the ‘F’ score 14.0 which is statistically significant at 0.01 level confirms that Luck/Chance of Locus of Control has a significant effect on the three levels of test anxiety.

ANOVA for gender for Social Support on the levels of TA indicate that there is no statistically significant difference between the different levels of TA (F ratios are Boys - 0.09 and girls- 1.14). Social Support satisfaction when correlated with three levels of TA, the result for boys and girls shows that there is no statistically significant difference between the different levels of TA (F ratios are Boys- 0.03 and girls- 0.76). When the boys and girls are taken together and the three levels of TA are correlated to SSN and SSS, we observe that there is no significant difference between the three levels. (F ratios are Boys- 0.03 and girls- 0.76). (F ratios for SSN= 0.6, SSS= 0.5).
This indicates that neither social support nor social support satisfaction has any impact on the three levels of TA. This deviates from the findings of the previous studies which said that Social support has an impact on Test Anxiety. Bowlby (1980) viewed that the availability of social support bolsters the capacity to withstand and overcome frustrations and problem solving challenges. Similar findings are reported by Hirsch (1980). Social support (or lack of it) could have a direct effect on biological processes for example, low levels of social support are related to an increase in negative emotions (Kessler and McLeod, 1985).

In the results of Zero Order correlation of Test Anxiety with the predictor variables namely (i) Self-Esteem (SE) (ii) the three sub-scales of Locus of Control (LOC) namely IC, PO and LC and (iii) Social Support (SS) and its two sub scales namely SSN and SSS, it is seen that Test Anxiety has a low significant positive correlation with SE (0.26, P<0.01).

TA has no correlation with IC, has low positive correlation with PO (0.13, P<0.01), and has a low significant positive correlation with LC (0.19, P<0.01). This is in contradiction to an earlier study by Shelton and Mallinckrodt (1991) who reported a significant relation between test anxiety, locus of control, and self-efficacy. But the result corroborates with the findings of Malhotra (1975) that no significant relationship was observed between locus of control and test anxiety.

It is seen that SE has a low level but significant negative relationship with IC (-0.13, P<0.01) and low positive correlation with PO (0.14 P<0.01). SE has no significant relationship with LC. It has no statistically significant correlation with SSN and SSS.
SE has statistically significant positive correlation with Test Anxiety (0.26, P<0.01), Worry (0.19, P<0.01) and emotionality (0.25, P<0.01).

IC has statistically significant negative low relationship with SE (-0.13, P<0.01), and statistically significant positive relationship with PO (0.17, P<0.01), LC (0.32, P<0.01), SSN (0.17, P<0.01) and SSS(0.11, P<0.01). IC has no correlation with TA, W and E.

As a whole we see that Worry and Emotionality has high significant positive relationship among themselves and with overall TA score as predicted.

Many and Many (1975) examined the relationships between a measure of self-esteem and each of 2 measures of general anxiety and test anxiety and found statistically significant negative correlations between the measure of self-esteem and each of the measures of general anxiety and test anxiety. Although these correlations tended to be low to moderate, they were consistent in suggesting a negative relationship between a measurable construct of SE with each of the corresponding constructs of general and test anxiety.

Having ascertained the factor structures of the behavioural components, multiple linear regression analysis was assessed to highlight the predictability of the relationship between the predicted variable, TA with age, gender and the predictor variables viz. SE, LOC and SS.

The predictability of the relationship between Worry (W) and other predictor variables reveal that the computed ‘F’ ratio is 5.59 (p<0.01) and is statistically
significant. The adjusted ‘R’ square is 10%. The sub scale of TA, W has statistically significant relationship with SE (P<0.01), PO, (P<0.05) and LC (LC) (P<0.01) sub-scales of LOC. SE has a positive effect on W, that is for every 1 score increases in SE, W will increase by 0.17 scores. It implies that lower the Self-Esteem, higher will be Worry, for the students in testing situations. The result of the study on ‘self-Esteem and Anxiety in Secondary school achievement’ by Newbegin et al. also proved that Self-Esteem correlated with Test Anxiety (Newbegin et al., 1996). Hedges and Olkin (1985) stated that TA relates inversely to students’ self-esteem and directly to their fears of negative evaluation, defensiveness, and other forms of anxiety. Many and Many (1975) also stated statistically significant negative correlation between the measure of Self-Esteem and test anxiety. Although these correlations tended to be low to moderate, they were consistent in suggesting a negative relationship between a measurable construct of Self-esteem with Test Anxiety.

There is a positive relationship between PO, sub scale of LOC and W. For every 1 score increases in PO, there is a corresponding 0.17 scores increase in W. It implies that higher the dependence on external others, higher the Worry and anxiety in test taking situations. This is in line with the findings of Sarason et al.(1983) that people with external locus of control tend to distract themselves with off task thoughts during tests. This further confirms the findings of Choi (1998) that externally oriented students exhibits higher level of TA than internally oriented students.

From these evidences we can conclude that self esteem, powerful others and Luck/ chance is found to have positive effect on the worry component of
Test Anxiety. The internal control, social support number, and satisfaction have no significant effect on Worry.

The predictability of the relationship between Emotionality (E) and other predictor variables reveal that the computed ‘F’ ratio 5.39 (P<0.01) is statistically significant. The adjusted R square indicates only a 9% variation and the background demographic variables and the personality variables like SE and LOC and SS variable on E sub- scale of TA.

SE was found to have a statistically significant positive effect on E sub - scale of TA. It implies that as SE increases by 1 score there is a corresponding 0.27 increase in the E score. In the present scale (Rosenberg, 1965) higher Self-Esteem score indicates lower Self-Esteem as per the scoring process of the SES scale, and so an inverse relationship between E and SE. That means students with low SE experience higher emotionality. This is in line with earlier studies which proved a statistically significant negative correlation between SE and TA (Many & Many, 1975; Newbegin et al., 1996).

Among the different sub – scales of LOC, only LC has a significant positive effect on E at 1% level (P<0.01). It shows that as L/C increases by 1 score there is a corresponding 0.07 increase in the E score. It denotes that students who depend on LC tend to experience more emotionality symptoms like self perceived arousal or autonomic reactions (e.g., muscular tension, sweaty palms) evoked by testing situations (Sud & Sharma, 1989; Sarason, 1984; Deffenbacher & Hazaleus, 1985). The effect of other sub – scales of LOC like IC and PO have no significant effect on E component of TA.
The predictability of the relationship between Test Anxiety and other predictor variables reveal that the computed ‘F’ ratio is 6.6 (P<0.01) and is statistically significant. The adjusted R square is 10%. TA has a statistically significant effect on SE (P<0.01) and LC of LOC (P<0.01). This finding that there exists no significant relationship between the IC and PO sub-scales of LOC corroborates with the finding of Malhotra (1975) that no significant relationship was observed between locus of control and Test Anxiety. This is in contradiction to the finding of Choi (1998) in his study on ‘The effects of test format and locus of control on test anxiety’. He stated that externally oriented students did seem to exhibit higher levels of test anxiety than internally oriented students.

Among the demographic variables only age (P<0.05) and gender (P<0.05) have significant effect on TA. Age has a positive effect while gender has a negative effect on TA at 5% level. Keeping other variable constant, as age increases by 1 year TA would increase by 1.3 scores. Surprisingly this finding is contrary to an earlier study by Manley and Rosemier quoted by zeider, (1992) where it was reported that high school students were less anxious than their junior school counterparts (Zeider, 1998). It also differs from the findings of Araki (1992) where it was reported that Test Anxiety level increases from kindergarten to the fourth grade and then remain relatively constant through 12th grade. This difference may be attributed to the fact that normally a student in class X should be of 15 or 16 years and those students whose age is 17 have either failed in a class or were admitted late to class I. As the older ones among their peers these students are likely to develop more anxiety as they have more pressure to pass class X examination.
Gender shows that as compared to boys, girls have 1.6 greater scores in TA, i.e. for every unit of TA for boys, the girls will experience 1.6 unit higher Test Anxiety. It implies that girls experience greater TA compared to boys of the same age. This corroborates with a number of earlier studies that found gender difference in TA (Costello, Egger & Angold, 2003; Poulton, Milne, Craske & Menzies, 2001; Weiss & Last, 2001; Sud, 1990a; Sud & Sharma, 1990b; Sharma & Sud, 1990; Sud, 2001, 2003; Williams, 1996; Singh & Broota, 1992). There is no significant relationship between Social Support and Test Anxiety and its components, Worry and emotionality.

The researcher having worked in six states in India (three of which are North Eastern states) have observed that in general acceptance and support Mizo adolescents receive from the parents, relatives and from the society is much higher than what their counterparts receive in other parts of India. Since Social support is quite high in Mizo culture it doesn’t seem to have any significant effect on test Anxiety and the two personality variables except in Internal Control sub-scale of LOC. To summarize, it can be concluded that among the personality variables Self-Esteem has negative/inverse effect and Luck/Chance of LOC is found to have a positive effect on Test Anxiety.

In conclusion the following are the findings of the study in a nutshell;

1. The hypothesis that there will be inverse relationship between Test Anxiety and self-Esteem has been accepted (vide Table – 7.3). The two components of Test Anxiety namely Worry (vide Table – 7.1) and Emotionality (vide Table – 7.2) indicate inverse relationship with Self-esteem.
This is in line with earlier studies which proved a statistically significant negative correlation between SE and TA (Many & Many, 1975; Sandler et al., 1997).

The result of the study on ‘Self-Esteem and Anxiety in Secondary school achievement’ by Newbegin et al. also proved that Self-Esteem correlated with both worry and emotionality components of Test Anxiety (Newbegin et al., 1996)

2. The study also confirmed that the Girl students experience higher level of Test Anxiety compared to their male counterparts.(vide Table- 3. 1, Table – 4. 1, Table – 7. 2 & Table – 7. 3). The result (vide Table – 3. 1 show that the girls score higher mean ( 43.8) compared to boys ( 41.7 ) and the difference is statistically significant (‘t’= 3.11) at 0.01 level. In table- 4. 1 we observe that 21% of the girls have high TA while only 12% of the boys come under high Test Anxiety level. In the regression analysis also (Table – 7. 2 and table - 7. 3) gender turned out to be a significant predictor of Test Anxiety and its Worry and Emotionality components with girls reporting higher scores than boys.

This corroborates with a number of earlier studies that found gender difference in TA (Costello, Egger & Angold, 2003; Poulton, Milne, Craske & Menzies, 2001; Weiss & Last, 2001;Sharma & Sud, 1990; Williams, 1996; Singh & Broota, 1992; Sud, 1990a; Sud & Sharma, 1990b; Sud, 2001, 2003). Shikari, A.G. (1986) reported that tribal students showed grater anxiety as compared to non-tribal students. The female students, irrespective of their race and background, were found to show more anxiety than the male students. This proved to be true in the present study too.
In the context of Mizoram gender difference in TA may be attributed to three factors:

(i) The difference may be due to the fact that girls are expected to assist their families in household chores which could make them feel that they are more responsible towards the welfare of the family and siblings as compared to boys. (in Mizoram one hardly see boys carrying babies/younger sibling on their back or doing household work).

(ii) It could be due to the fact that these days many girls who like to go out of Mizoram to study in other parts of India and abroad and have to perform better and score high marks in order to get admission in colleges and universities outside.

(iii) They may like to do well in the examination so that they earn favour of their parents who may be willing to send them for higher studies if they have excelled in their Board examinations. This could create an additional pressure on the girls in their study.

3. Test Anxiety and both the components namely Worry and Emotionality have statistically significant positive correlation with Luck Chance of LOC (vide Table – 7. 1, Table - 7. 2 and table - 7. 3). Powerful Others of LOC has a positive correlation with Worry component of TA (vide Table – 7. 1) as hypothesized. However the Internal Control Sub-Scale has a negative correlation which is not statistically significant on Test Anxiety and its two components.
Therefore the hypothesis that the dimensions/sub-scales of LOC is expected to correlate with test Anxiety is accepted in the case of PO and LC sub-scales and rejected in the case of Internal Control sub-scale.

Choi (1998) reported that externally oriented students did seem to exhibit higher levels of test anxiety than internally oriented students.

4. The result revealed a negligible relationship, that is not statistically significant, between Test Anxiety and Social Support Number and asocial Support Satisfaction. (vide Table – 6. 1 and Table – 7. 3). Hence the hypothesis that Social Support is expected to manifest an inverse relationship with TA has been rejected. This corroborates with an earlier study on mizo adolescents by Nag (2005) who reported that Social Support was not correlated to age, sex, family type, birth order, stress rating, adaptive coping and maladaptive coping (Nag, 2005).

The findings of the study speak in favour of both anxiety prevention efforts for adolescents and mental health promotion efforts aimed at students, teachers, parents and the authorities. First, although broader strategies for global adolescent mental health have been well detailed elsewhere (see Patel, Flisher, Ketirck & McGarry, 2007; Patel, Flisher, Nikapota & Malhotra, 2008), it is worth reiterating that measures such general and specific prevention education, self-help strategies and resources, and psychosocial support networks and services, and can be embedded in educational settings.
Schools offer an ideal setting for universal prevention activities with potential to reach large numbers of children and adolescents (Masia-Warner et al., 2006; Chatterji et al., 2004; Barretta and Pahl, 2006). Additionally, the school environment is likely to facilitate the acquisition of competencies in Indian children as it is viewed as a place of learning (Rambaldo et al., 2001). At school adolescents can be taught how to manage stress and anxiety and can practice skills. As a targeted intervention strategy, there is evidence to suggest that cognitive-behavioral treatment can reduce levels of anxiety among adolescents (Deb, Chatterjee & Walsh, 2010).

**Limitations of the Study**

The present study has the following of limitations.

1). The results may not reasonably be generalized to all Class X students of Mizoram as the sample was from Aizawl city alone. 2). The study was done exclusively on class X students. Hence, it is not known whether these findings are peculiar only to class X students or if they are also applicable to other academic levels. 3). Since the data collection was done just before the Class X Board Examination, the period of data collection might have had an impact on the responses of the students. It appeared that some of the students were in a hurry to finish their response to the test materials provided.
Future Research

(1) Intervention oriented studies could be undertaken to help students with Test Anxiety in Mizoram. (2) A cross cultural study on Test Anxiety could be undertaken. (3) If TA score could be correlated to class X Board Examination results it would give more comprehensive information.

Implications of the Study

The present study has wide ranging implications for educators, parents, counsellors and all other service providers. The findings highlights the need for supporting adolescent students through this crucial and difficult life stage, as well as providing them with skills that will help them to cope with stressful situations in life. It is observed that about 16% of the students fall in the high Anxiety Group and may need professional help to cope with Test anxiety and 21% of the girls come under high Test Anxiety group and may also special attention to deal with physical and psychological parables.

The study has the following suggestions for teachers, parents and administrators.

To minimize unnecessary test anxiety, steps could be taken to minimize failure and place more importance on Continuous Comprehensive Evaluation and reduce the emphasis on testing. If testing can’t be avoided, students may need to be given opportunities for retaking tests, emphasize on co-operation than competition, and design an environment in which students progress at their own pace. The following steps could be taken in an educational institution.
Teachers could be made aware that it is in school that the anxiety will start showing its most disabling effects. Therefore, the test anxious child may need to be helped to achieve as much as is warranted by her/his abilities. Since anxiety has a debilitating effect on performance, development of a module for study skills may play an important role in reducing Test Anxiety. (i) Test Anxious students are very much dependent on the positive and encouraging attitudes of others towards them to improve their Self-Esteem and so teachers appreciation may be effective. (ii) Teachers can strive to cultivate positive thinking in students and their behaviour towards reduction of Test Anxiety. (iii) Teachers could be given short-term in-service training courses in counseling to help them develop skills like attentive listening, empathetic understanding and ability to diagnose symptoms of Test Anxiety in students. (iv) Through regular meetings of Parent-Teacher Associations, the teachers can try to interact with parents/guardians and educate them on Test Anxiety and explain their role in bringing down Test Anxiety in their children.

The parents could be made aware of their attitude towards examinations and that pushing their children, may increase their Test Anxiety level and have negative effects on their children. They need to be more understanding and caring specially during the time of examinations.

“A man who suffers earlier than usual, suffers greater than usual,” so goes a Greek saying. Anxiety, considered to be a universal phenomenon existing across cultures, although its contexts and manifestations are influenced by cultural beliefs
and practices (Good & Kleinman, 1985; Guarnaccia, 1997) manifests among adolescent students as Test anxiety.

Shelton and Mallinckrodt (1991) in their study, ‘Test anxiety, locus of control, and self-efficacy as predictors of treatment preference’ established a significant relationship between test anxiety, locus of control, and self-efficacy. In the present study too these variables have proved to have an impact on the Test Anxiety of the students. This calls for effective intervention strategies as suggested above.

Unless the system of awarding marks and ranks are abolished, the pressure from schools and parents on the students to perform better than the other will continue and the PTA meetings will be reduced to forums where they discuss how well or badly the child is doing in her/ his class and how to improve the results of the students and the school. The teachers need to learn to treat every child as a unique person and cater to the physical, psychological and spiritual needs of their students to help them grow into Holistic persons. This alone will bring about a significant change in the present situation. The schools will have to make the first move and also perhaps start educating the parents along with children.