The aim of the present investigation was to study the relationship of Weight Status and Health Habits in adolescents in relation to various Personality Dimensions; Stress and Ways of Coping; Positive Mental States (viz. Optimism, Satisfaction with Life, Positive Affect Perceived Happiness Status, Mental Health, Generalized Self Efficacy and Health Efficacy); Negative Mental States (viz. Anger Experienced and Anger Expressed, Adolescent Depression and Negative Affect); Symptoms of Depression, Hostility and Anxiety; Family-Adolescent Conflict and Perceived Parental Bonding; Health Protective Behavior and Perceived Health Status. The relationship was also studied among Siblings' and Parental BMI and Siblings' and Parental Health Habits.

To assess the Weight Status of adolescents, the measure of Body Mass Index (BMI), also known as the Quetelet Index, for the man who first proposed it over 100 years ago, was used. The Body Mass Index is the ratio of weight divided by the height squared (in metric units):

\[ \text{BMI} = \frac{\text{Weight in kilograms}}{(\text{Height in Meters})^2} \]

Health Habits Inventory by Atwater (1995) was used to measure different Health Habits viz., Eating Habits, Exercise and Fitness Habits and Avoidance of Alcohol and Drugs. The Health Protective Behavior was measured by using the Health Protective Behavior Checklist devised by Harris and Guten (1979).

Perceived Health Status was Measured on an 11-point rating scale (Blaxter, 1985).
For measuring different dimensions of Personality, the following standardized tests were used: Eysenck's Personality Questionnaire (Revised) (Eysenck et al., 1985), and abbreviated version by Francis (Francis et al., 1992) was used to measure Extraversion, Psychoticism, Neuroticism and Lie (Social Desirability). The State - Trait Anxiety Inventory by Spielberger et al. (1983) was used to assess the State - Trait Anxiety. The Personality dimensions of Externality / Internality were studied using Health Locus of Control Scale (HLOC) devised by Wallston and Wallston (1982).

For measuring Stress and Coping, the following standardized tests were used: Stress was measured by Stress Symptoms Rating Scale by Heilbrun and Pepe (1985) and Life Event Stress Scale by Albuquerque et al. (1990). The Daily Hassles and Uplifts Scale constructed by Kanner et al. (1981) and revised by Delongis et al. (1982) was used for assessing the degree of Hassles and Uplifts experienced. The Coping Styles Inventory by Carver et al. (1989) was used to measure three types of Coping viz., Task Focused Coping, Emotion Focused Coping and Avoidance Coping.

Positive Mental States were assessed by using the following standardized tests: The WHO Measure of Mental Health, adapted for use in India, by Wig (1999) was used to measure Mental Health. It has three dimensions viz., Being Comfortable with Self, Being Comfortable with Others and Perceived Ability to Meet Life Demands. Self Efficacy was measured by Generalized Self Efficacy Scale by Jerusalem and Schwarzer (1995). Health Efficacy Scale by Jerusalem and Schwarzer (1995) was used to measure the Health Efficacy. Scheier and Carver's Optimism Scale (1985) was used for measuring Optimism. Life Satisfaction was assessed using Satisfaction with Life Scale by Diener et al. (1985). Positive Affect was measured by Positive and Negative Affect.
Schedule by Watson et al. (1988). Perceived Happiness Status was measured on an 11-point self rating scale (Fordyce, 1988).

**Negative Mental States** were assessed by using the following standardized tests: To measure Anger Experienced and Anger Expression Styles, Spielberger's (1988) State Trait Anger Expression Inventory was used. Adolescents' Depression was measured by using Adolescent Depression Scale by Radziszewska et al. (1993). Negative Affect was measured by Positive and Negative Affect Schedule by Watson et al. (1988).

**Brief Symptom Inventory** by Derogatis and Melisaratos (1983) was used to measure brief symptoms of Depression, Hostility and Anxiety.

**Parental Bonding** was measured by Parental Bonding Instrument by Parker et al. (1979). It has two dimensions which includes Perceived Parental Care and Perceived Parental Overprotection. **Family-Adolescent Conflict** was measured by Family-Adolescent Conflict Scale by Radziszewska et al. (1993).

The sample comprised of 242 adolescents (121 male adolescents and 121 female adolescents) in the age range of 16 to 18 years selected from different private schools in Manipur. In addition to these subjects, their parents and siblings were also included in the sample i.e. 242 mothers, 242 fathers and 242 siblings. So the total sample including their parents and siblings were 968.

**INCLUSION CRITERIA FOR SELECTING THE SAMPLE**

All selected subjects were first born, with a family size of at least 2 offsprings.

Out of the 46 variables, only 27 variables were studied among the siblings’ sample i.e. brothers and sisters of Male Adolescents and
brothers and sisters of Female Adolescents. The siblings group were compared on Weight Status; Health Habits; various Personality Dimensions; Positive Mental States viz., Mental Health, Satisfaction with Life, Positive Affect and Perceived Happiness Status; Negative Mental States viz., Anger Experienced and Anger Expressed and Adolescent Depression; and Family-Adolescent Conflict.

A set of 17 variables were studied among the parents of Male and Female Adolescents i.e. mothers and fathers of Male and Female Adolescents. The parental scores on Weight Status, Health Habits, Perceived Health Status, various Personality Dimensions, Perceived Happiness Status and Anger Experienced and Anger Expressed were related with scores of their offspring.

The raw scores were analyzed using appropriate statistical techniques viz. descriptive analyses, inter correlations and regression analyses. Results are shown in tables 1-29.

**Descriptive Statistics**

Means and Standard Deviations were calculated for the Male Adolescents (Table 1), Female Adolescents (Table 2), the Total Sample (Table 3), Brothers of Male Adolescents (Table 4), Sisters of Male Adolescents (Table 5), Brothers of Female Adolescents (Table 6), Sisters of Female Adolescents (Table 7), Mothers of Male Adolescents (Table 8), Mothers of Female Adolescents (Table 9), Fathers of Male Adolescents (Table 10), Fathers of Female Adolescents (Table 11).

**t-ratios**

t-ratios were calculated to find the significance of the difference between Male Adolescents and Female Adolescents on all the 46 variables (Table 12). The table revealed that t-ratios between the two groups emerged significant on Body Mass Index, Eating Habits, Exercise
Habits, Avoidance of Use of Alcohol and Drugs, Total Health Habits, Anger Control, Total Anger Expressed, Extraversion, Lie (Social Desirability), Life Event Stress, External Health Locus of control and Perceived Health Status.

**Correlational Analyses**

Intercorrelational analyses were calculated to study the relationships among variables of the three groups i.e. Total Sample (Table 13), Male Adolescents (Table 14) and Female Adolescents (Table 15).

The tables (13,14,15) showed that BMI was positively related to State Anxiety and Positive Affect and negatively related to Extraversion in case of total sample. In case of male adolescents, BMI was positively related to Perceived Ability to Meet Life Demands, Task Focused Coping, Generalized Self Efficacy and Positive Affect. No negative significant correlations emerged in case of male adolescents. In case of female adolescents, BMI was found to be negatively related to Emotion Focused Coping and Optimism. No positive significant correlations emerged in case of female adolescents.

The tables (13,14,15) further showed that Total Health Habits was positively related to Anger Control, Perceived Ability to Meet Life Demands, Total Mental Health, Internal Health Locus of Control, Health Protective Behavior, Task Focused Coping, Generalized Self Efficacy, Health Efficacy, Positive Affect, Uplifts and Perceived Health Status and negatively related to Total Anger Expressed, Neuroticism, Stress Symptoms, State Anxiety, Trait Anxiety, Adolescent Depression, Depressive Symptoms, Hostility Symptoms and Anxiety Symptoms in case of total sample. In case of male adolescents, Total Health Habits was positively related to Internal Health Locus Of Control, Health Protective Behavior, Health Efficacy, Uplifts and Perceived Health Status.
and negatively related to Stress Symptoms, Depressive Symptoms and Hostility Symptoms. In case of female adolescents, Total Health Habits was positively related to Anger Control, Total Mental Health, Internal Health Locus Of Control, Health Protective Behavior, Generalized Self Efficacy and Uplifts and negatively related to Total Anger Expressed, Stress Symptoms, State Anxiety, Trait Anxiety, Adolescent Depression, Depressive Symptoms and Hostility Symptoms.

In addition to these, bivariate correlations were studied between Adolescents and their parents. A set of 17 variables were studied.

Table 16 shows the correlations between Male Adolescents and their mothers. Table 17 shows the correlations between Male Adolescents and their Fathers. Table 18 shows the correlations between Female Adolescents and their mothers. Table 19 shows the correlations between Female Adolescents and their fathers.

Bivariate correlations were also studied between Adolescents and their brothers and sisters. A set of 27 variables were studied.

Table 20 shows the correlations between Male Adolescents and their brothers. Table 21 shows the correlations between Male Adolescents and their sisters. Table 22 shows the correlations between Female Adolescents and their brothers. Table 23 shows the correlations between Female Adolescents and their sisters.

Regression Analyses

Regression analyses were conducted to identify the predictors for BMI and Total Health Habits. Stepwise Multiple Regression Analysis using the SPSS- Version 11 was conducted. Tables 24 to 29 shows regression analyses for various groups viz. Total sample, Male Adolescents and Female Adolescents.
Body Mass Index and its Predictors

With Body Mass Index as the criterion, regression equations were run for the Total sample (Table 24), Male Adolescents (Table 25) and Female Adolescents (Table 26).

In total sample (n= 242), the significant predictors that emerged, in the descending order of contribution were, State Anxiety, Positive Affect and Anxiety Symptoms.

In Male Adolescents (n= 121), the significant predictors that emerged, in the descending order of contribution were Task Focused Coping, Perceived Ability to Meet Life Demands, State Anxiety, Anxiety Symptoms and Trait Anger.

In Female Adolescents (n= 121), the significant predictors that emerged, in the descending order of contribution were Optimism, Parental Care and Emotion Focused Coping.

Total Health Habits and its Predictors

With Total Health Habits as the Criterion, regression equations were run for total sample (Table 27), Male Adolescents (Table 28) and Female Adolescents (Table 29).

In total sample (n= 242), the significant predictors that emerged, in the descending order of contribution were Health Protective Behaviour, Stress Symptoms, Uplifts, Internal Health Locus of Control, Perceived Health Status and Life Event Stress.

In Male Adolescents (n= 121), the significant predictors that emerged, in the descending order of contribution were Health Protective Behaviour, Perceived Health Status, Hostility, Internal Health Locus of Control and External Health Locus of Control.
In Female Adolescents (n= 121), the significant predictors that emerged, in the descending order of contribution were Health Protective Behavior and Stress Symptoms.

This investigation tried to identify psychosocial variables related with BMI and Health Habits to suggest interventions to improve adolescent health.

The major implications of the present investigation could be summed up in the following steps: early monitoring of the BMI indices, developing awareness about health oriented behavior, keeping track of adolescent eating-activity behavior, avoiding junk food and above all use of sports, exercise and yoga to enhance fitness, flexibility and consciousness.