DISCUSSION

The aim of the present investigation was to study the Psychosocial Correlates of Health Protective Behavior among youth. Health Protective Behavior was studied in relation to Personality Dimensions, Measures of Positive and Negative Mental States, Stress and Coping, Psychological Well-being, Mental Health, Perceived Social Support, Self-Esteem, Self-Efficacy, Health Habits, Perceived Family Environment and Perceived Parental Health Orientation.

In addition, gender differences on the above-mentioned variables and correlates of Health Protective Behavior were also investigated.

Different personality dimensions included in the investigation were Eysenckian Personality dimensions viz. Extraversion/Introversion, Psychoticism, Neuroticism and Social Desirability; Hardiness and its dimensions viz. Control, Commitment and Challenge; Health Locus of Control and State–Trait Anxiety.

Positive and Negative Mental States measured were Optimism, Satisfaction with Life, Perceived Happiness Status and Irritability.

Stress Measures included were Stress Symptoms, Daily Hassles, and General Health Questionnaire. Coping Styles assessed were Problem Focused and Emotion Focused Coping.

The different WHO Mental Health dimensions included in the investigation were Being Comfortable with Self, Being Comfortable with Others and Perceived Ability to Meet Life Demands. Psychological Well-Being and Perceived Social Support were also measured.

Self-Esteem, Self-Efficacy and Health Habits were also assessed.

The Perceived Family Environment was measured across five dimensions viz. Warmth, Hostility, Neglect, Over-protection and Over-control. Perceived Parental Health Orientation was also measured.
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The sample consisted of 300 students. Out of these 150 were boys and 150 girls.

The raw scores consisted of scores on all the above mentioned 37 variables.

The raw scores were analyzed using appropriate statistical techniques. Mean and standard deviations for all the groups were calculated. Table 1 shows means and standard deviations for the Total Sample. Table 2 shows means and standard deviations for boys group. Table 3 shows means and standard deviations for girls group. The same have been graphically presented in figures1-8.

t-ratios were also calculated to find out the significant differences between boys and girls groups on the measured variables. Table 4 shows means and standards and t-ratios comparing boys and girls.

Table 5 shows Discriminant Functional Analyses for boys and girls for 37 variables.

Correlation analysis was done to study the relationship of Health Protective Behavior with various Personality Dimensions, Positive and Negative Mental States, Stress and Coping, Mental Health, Psychological Well-Being, perceived social support, Self-Esteem, Self-Efficacy, Health Habits, Perceived Family Environment and Perceived Parental Health Orientation.

Tables (6-8) show the Intercorrelation matrices for the three groups. Table 6 shows Intercorrelation matrix for the total sample. Table 7 shows Intercorrelation matrix for boys group. Table 8 shows Intercorrelation matrix for girls group.

Tables (9-26) show the regression analyses done for all the three groups’ viz. total sample, boys and girls. There were six criterion variables viz. Health Protective Behavior (Tables 9-11), Perceived Social Support (Tables 12-14), Hassle (Tables 15-17), Stress Symptoms (Tables
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18-20), Perceived Happiness (Tables 21-23) and Mental Health (Tables 24-26).

PERSONALITY AND HEALTH PROTECTIVE BEHAVIOR

It was hypothesized that Health Protective Behavior among youth was expected to be positively related with Extraversion, Lie (Social Desirability) Scale, Health Locus of Control-Internal, Total Hardiness and its components namely Control, Commitment and Challenge.

Health Protective Behavior among youth was expected to be negatively related with Psychoticism, Neuroticism, State and Trait Anxiety and Health Locus of Control-External.

Tables 6, 7, and 8 revealed intercorrelations among Personality Dimensions and Health Protective Behavior in the total sample, boys and girls respectively.

Intercorrelation analyses revealed that in the total sample, Health Protective Behavior was significantly and positively correlated with Psychoticism only. No other significant correlations emerged.

Among Boys, Health Protective Behavior was not related significantly and positively with any of the variables. Health Protective Behavior was significantly and negatively correlated with Neuroticism.

Among Girls, Health Protective Behavior was significantly and positively correlated with Challenge dimension of Hardiness, Trait-Anxiety and Lie (Social Desirability) Score. Health Protective Behavior was significantly and negatively correlated with Health Locus of Control-External, State-Anxiety and Extraversion.

Regression analyses revealed (Tables 9, 10 and 11) that for the criterion Health Protective Behavior, Psychoticism emerged as a significant predictor in total sample ($\beta=-0.19$) and among girls ($\beta=-0.18$). Extraversion emerged as a significant predictor of Health Protective Behavior among girls ($\beta=0.18$).
Previous researches have also shown that personality dimensions have a significant role to play in health/illness. Personality plays a major role in prediction of health protective behavior, subjective well-being and engaging in health-risk behaviors.

The Eysenckian Personality dimensions are the most widely researched correlates of Health Protective Behavior. Extraversion has received the most theoretical and empirical attention. McCrae and Costa (1986) viewed that extraversion was associated with increased use of rational action, positive thinking, substitution and restraint. Wilson (1967) believed that the happy person is extraverted.

Parkes (1986) found coping to be positively associated with extraversion and negatively with neuroticism.

Headey and Wearing (1989) studied the relation between personality, life events, and subjective well-being. The study revealed that very stable personality traits i.e. Neuroticism, Extraversion and openness to experience, predisposed people to experience moderately stable levels of adverse life events and subjective well-being. (Rim, 1986) Individuals high on neuroticism were more likely to use wishful thinking, self-blame and tension reduction and less likely to use problem-focused coping (Rim, 1986). Johnson (1991) found hardiness to be positively related with health behavior.

Pastore et al., (1996) studied the prevalence of abnormalities in weight, eating attitudes, and eating behaviors among urban teenagers. Measures of weight, height and blood pressure were obtained from 1001 students of physical education, with 55% females and 45% males. Mean age was 16 years. Results showed that on percent ideal body weight (%IBW), 25% were obese (>20% above IBW), 18% were overweight and 5% were underweight. Abnormal Eating Attitudes Test (EAT) scores (>21), were found in 6% of males and 15% females. Low self-esteem and high anxiety were associated with high EAT scores \( r=.29, p<.001 \).
Self-esteem and anxiety of obese students did not differ from normal weight ones. The study reveals association of personality with eating attitudes – a major dimension of Health Protective Behavior.

Korkeila et al., (1998) in a study reported that the individuals with high level of Extraversion showed a trend towards lesser weight gain. Martinez (1999) in a study on relationship among eating behavior and personality traits in secondary level students found that, in both genders clinical features of Neuroticism, Introversion and Psychoticism were associated with higher scores on eating disorders. Jeffery (1978) suggested that Internal Locus of Control was more effective in producing weight maintenance. This finding has been supported by Schreiber et al., (1979), who found externals gained more in maintenance phase. Goldney and Cameron (1981) reported that while internally controlled subjects were most likely to succeed in weight reduction, they were more likely to drop out of the programme also.

Goodwin and Engstrom (2002) studied the relationship between self-perceived health and personality among adults in the community. Results showed that Personality factors were significantly associated with perception of poor health. Among those without self-reported medical problems (N=834), openness to experience, extraversion and conscientiousness were associated with perception of good health. Among those with self-reported medical problems (N=2772), high scores on agreeableness, openness to experience, extraversion and conscientiousness, and low neuroticism scores were associated with perception of good health. These associations were significant after adjustments for age, gender, race, marital status and education. Thus, it was concluded that self-perceived health was strongly associated with personality characteristics among subjects with or without self-reported medical problems.
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Researches have revealed that personality factor of internality and externality of locus of control has a significant role in health behavior.

Sehgal (2003) on studying teenager's health found extraversion to be positively related with disease and disability whereas Health Locus of Control-External was found to be negatively related with disease and disability.

“Internals” feel responsible towards their health, seek more information about health maintenance and seek more relevant information about health maintenance during illness. It is believed that internals engage in more adaptive health responses than externals, both at preventive as well as remedial levels (Strickland, 1978). Studies show that internals were more likely than externals to consume high fiber foods and less likely to consume refines sugar.

People with Internal Health Locus of Control are more sensitive to health messages, more keen to enhance their physical health and more likely to show psychological well-being (Strickland, 1978; Furnham and Drakelay, 1993; Kirkcaldy et al., 1994 and Furnham and Kircaldy, 1996). Internal Health Locus of Control is significantly associated with a longer disease free interval (Hislop et al., 1987).

Researches have found that Locus of Control is a powerful predictor of life satisfaction. Internal Locus of Control is consistently related to greater life satisfaction, higher subjective well-being and happiness (Diener, 1984).

According to Falconer et al., (1993) locus of control is an important predictor of healthy lifestyle. It was observed that those who feel that they are in control of their life events are much more likely than other individuals to engage in health-promoting behaviors. Thus, ‘internals’ are
more likely than externals to exercise, eat a balanced and healthy diet, or undertake preventive and safety practices. Houts and Warland, (1989) found that internals reported significantly more nutritious behavior than did externals. In another study, internals were more likely than externals to consume high fiber foods and less likely to consume refined sugar.

Noor (1996) examined the contributions of some demographic (age and education), personality (extraversion and neuroticism) and role variables (role occupancy and role quality) as predictors of happiness and symptoms of psychological distress in a sample of employed and unemployed English women. Noor (1996) showed that personality variables accounted for the largest proportion of explained variance in the well-being measures. The results did not support the predictions made by the transactional model of stress and that the three sets of predictor variables (demographic, personality and roles) combined additively in their effects on women's psychological well-being.

Heaven (1996) examined the role of personality factors, such as Extraversion and Neuroticism that may be implicated in the maintenance of substance use. Some researchers have also noted that personality factors differentiate users of different intensity. It was found that cigarette smokers who inhale deeply are more neurotic than smokers who inhale only superficially. Moreover, male smokers appeared to be more extraverted than female smokers (Mohan et al., 1994, 1995). Eysenck and Eysenck (1975) opined that tough-minded types are also likely to engage in sensation-seeking activities and so-called 'arousal jags'. Male smokers were more tough-minded than female smokers (Heaven, 1996). Regular smokers were found to be more tough-minded.

Hannah (1998) investigated the relationship between psychological hardiness and health behavior. It was believed that one mechanism by which hardiness may buffer the stress-illness relationship is through its effect on health behavior. Those high in hardiness may engage in more
health-protective behaviors than those low in hardiness, so that when under stress they are less likely to become ill. 96 undergraduate university students were measured on current health behavior, psychological hardiness and health as a personal life concern. It was interpreted that in individuals high on concern for health, as opposed to those low in health concern, hardiness was significantly related to health behavior.

Mohan et al., (2000) reported that cardiovascular diseased patients scored higher than healthy controls on External Locus of Control. 

Thakur (2000) reported that healthy executives scored higher on extraversion and lie (social desirability) score.

Steptoe and Wardle (2001) conducted a study on 4170 university students aged 18-30 years. The study was done to measure health behaviors, awareness of the role of lifestyle factors in health, depression, social support, health locus of control and value placed on health. Results revealed that East European students had less healthy lifestyles than Western European with significant differences on regular exercise, drinking alcohol, avoiding dietary fat, eating fibre, adding salt to food, wearing a seat-belt and using sunscreen protection. They were less aware of the relationship between lifestyle factors like smoking, exercise, fat and salt consumption and cardiovascular disease risk. They were more depressed and reported lower social support. They scored higher on “chance” and “powerful others” locus of control. Thus, unhealthy lifestyles, lack of information about health and health behavior, belief in uncontrollable influences and low emotional well-being contributed to poor health status in Eastern Europe.

Wasylkiw and Fekken (2002) studied the relationship of health and health behavior with personality. The results revealed that Health Protective Behavior was positively correlated with Extraversion, Conscientiousness and agreeableness. Health was negatively correlated with Neuroticism, anger hostility, depression, self-consciousness.
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Shifren et al., (2003) studied the relationship between Instrumental (assertiveness and independence) and expressive (caring and dependence) traits and health-related behaviors among individuals of 18-25 years old. 200 individuals (100 males and 100 females) in American sample, and 36 males, 75 females in Britain were given measures of neuroticism, health behaviors and two measures of perceived physical health. Results revealed that individuals in both samples scored higher on instrumental and expressive traits and reported better health practices (i.e. safety belt use, less smoking). For both the samples, neuroticism explained more variance in perceived physical health than the other personality traits.

POSITIVE AND NEGATIVE MENTAL STATES AND HEALTH PROTECTIVE BEHAVIOR

It was hypothesized that Health Protective Behavior among youth was expected to be positively related with Optimism, Satisfaction with Life and Perceived Happiness Status.

Health Protective Behavior among youth was expected to be negatively related with Irritability.

Tables 6, 7, and 8 revealed intercorrelations among Positive and Negative Mental States and Health Protective Behavior in the total sample, boys and girls.

Intercorrelation analyses revealed that in the total sample, Health Protective Behavior was significantly and positively correlated with Perceived Happiness Status. No other significant correlations emerged.

Among Boys, no significant positive and negative correlations emerged between Health Protective Behavior and Positive and Negative Mental States.

Among Girls, Health Protective Behavior was significantly and positively correlated with Satisfaction with Life. No significant negative
correlations emerged between Health Protective Behavior and Positive and Negative Mental States.

Regression analyses revealed (Tables 9, 10 and 11) that for the criterion Health Protective Behavior, Perceived Happiness Status emerged as a significant predictor for girls ($\beta=0.19$).

Some earlier studies have also revealed that **Satisfaction with Life is an important contributor to health status.**

Johnson (1991) examined relationships of anger experience, anger expression, hostility and hardiness to health behaviors among 97 healthy women. 25% of variance in healthy behavior was accounted by hostility (12.5%), and education (added 7.5%). The combination of high anger experience/high anger-out added an additional 5% variance. The negative effects of hostility and chronic experience of anger for health emerged stronger than positive association between hardiness and healthy behaviors.

Mohan et al., (2000) reported that cardio vascular diseased patients scored higher than healthy controls on Irritability, Hostility, and Anger out.

Peterson (2000) felt optimism has a health enhancing and health maintaining function. **Optimism is a major factor in maintaining good health.** Taylor et al., (2000) opined that optimism, a sense of personal control, and the ability to find meaning in one’s life experiences are valuable psychological resources long believed to be associated with mental health. Psychological resources become important when people are faced with challenging or threatening events. They may act as reserves, enabling people to cope more effectively with such events.

Puri (2002) reported that healthy controls scored higher than backache patients on Optimism.

Riolli et al., (2002) suggested that optimism, personality and coping styles may alter the effects of stressful events through appraisal and stress-reduction. Optimism and reduction control coping were related to
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higher levels of maladjustment. Pessimism and escape coping showed no relation to psychological adjustment. They inferred that resilience was related to a combination of higher optimism, extraversion, openness to experience, conscientiousness and control coping, paired with lower neuroticism.

Happiness has a positive effect on health. Positive affect reflects enthusiasm, alert, active and pleasure response to the environment. It includes feelings of joy, interest, well-being, optimism, trust, happiness, high energy and determination. Many recent researches have suggested that positive affect is related to higher quality of health. Pettit et al., (2001) reported that individuals lacking positive affect were more likely to report poor health, thereby suggesting that low positive affect may have deleterious health consequences. Mulkana and Hailey (2001) studied the relationship between levels of optimism and participation in health-enhancing behaviors of undergraduate psychology students. Results revealed a positive association between the measures of optimism and health measures. Positive relationship was found between optimism, health-enhancing behaviors, and general health habits.

Lyubomirsky (2001) explored the reason why some people are happier than others which is important for health. Following a construal theory of happiness, he proposed that multiple cognitive and motivational processes moderate the impact of the objective environment on well-being. Thus, to understand why some people are happier than others, one must understand the cognitive and motivational processes that serve to maintain and enhance enduring happiness and transient mood. He explored hedonically relevant psychological processes, such as social comparison, dissonance reduction, self-reflection, self-evaluation, and persons’ perception in chronically happy and unhappy individuals. Self-rated happy and unhappy individuals differed systematically in the particular cognitive and motivational strategies they used. Unhappiness
was found to be associated with distress, negative mood, fear, and poor physical health. **Watson and Pennebaker (1989)** found that while there were strong correlations between negative affectivity and reported ill-health, there was very little correlation between negative affectivity and objective physical measure of health. They concluded that the unhappy people have a low threshold for pain or minor symptoms and thus report themselves to be ill.

**Vitterso et al., (2002)** reported that Satisfaction with Life is closely related with quality of life and reported a positive correlation between Satisfaction with life and quality of life.

**Kitsantas et al., (2003)** examined the self-regulatory strategies and subjective well-being of college students diagnosed with eating disorders, at-risk students, and individuals without eating disorders. Results showed that students with eating disorders reported more self-regulated strategies for managing their weight, a lower level of life satisfaction, and higher levels of negative affect than did at-risk students or individuals with normal weight. At-risk students reported higher levels of self-regulation and negative affect than did students with normal weights.

**Sehgal (2003)** reported that perceived health status among teenagers was highly correlated with satisfaction with life, optimism and happiness.

**Wrosch and Scheier (2003)** reported that personality affects quality of life by influencing how people approach and react to critical life events. They found optimism and adjustment to promote healthy quality of life.

Happiness and health are believed to go hand in hand. **Perneger et al., (2004)** conducted a cross-sectional survey on randomly selected 1257 university students in Geneva, Switzerland to explore whether self-reported happiness is associated with mental and physical health status among young adults. Results revealed that most participants felt happy all of the time or most of the time. Feeling happy all or most of the time was
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strongly associated with better mental health, getting enough love and affection and higher self-esteem. The association between happiness and physical health was weak and non-significant.

STRESS, COPING AND HEALTH PROTECTIVE BEHAVIOR

It was hypothesized that Health Protective Behavior among youth was expected to be positively related with Problem Focused Coping.

Health Protective Behavior among youth was expected to be negatively related with Stress symptoms, Daily Hassles, General Health scores and Emotion Focused Coping.

Tables 6, 7, and 8 revealed intercorrelations among stress dimensions, Coping Styles and Health Protective Behavior in the total sample, boys and girls.

Intercorrelation analyses revealed that in the total sample, Health Protective Behavior was not found to be positively related with any variable. It was negatively correlated with Emotion Focused Coping.

Among Boys, Health Protective Behavior was significantly and positively correlated with Stress Symptoms only.

Among Girls, Health Protective Behavior was significantly and positively correlated with Problem Focused Coping and General Health. No significant negative correlations emerged between Health Protective Behavior, Stress and Coping.

Regression analyses revealed (Tables 9, 10 and 11) that for the criterion Health Protective Behavior, Emotion Focused Coping emerged as a significant predictor for total sample ($\beta=-0.17$) and girls ($\beta=-0.29$).

Stress is one of the most potent factors involved in health and illness. Stressors or stressful circumstances refer to the experience of negative life events and chronic life strain. Negative life events are culturally or personally undesirable changes in the usual activities of an individual that require substantial behavior readjustments (Holmes and Rahe, 1967; Brown and Harris, 1978).
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A person experiencing stress often engages in poor health practices such as smoking, poor dietary practices and sleeping habits (Cohen and Williamson, 1988).

Compas et al., (1986) conducted a study which provides clear support for the association between perceived negative life events and psychological dysfunction among adolescents. Negative life events were significantly correlated with symptoms of a variety of psychological problems (depression, anxiety, obsessive-compulsiveness, interpersonal sensitivity and somatization) while positive and neutral events were not.

Effective coping plays an important role in health promotion, disease prevention and more rapid recovery from illness. How individuals cope with stress is an important mediator of the stress – illness relationship (Cohen and Lazarus, 1979). Coping can influence hormone levels, cause direct tissue changes, or affect the immune system (Kielcolt-Glaser et al., 1987). On the other hand, positive coping, including strong feelings of a ‘will to live’ and high morale have a positive physiological consequences (Scheier and Carver, 1987). Thus, Effective coping was found to be linked to quicker recovery form illness.

Blake and Vandiver (1988) conducted a study on 157 adults, to explore cross-sectional associations of social stressors, social support, and coping strategies with health status. The results revealed that Health status was directly associated with active-cognitive coping and inversely associated with avoidance-cognitive coping. The study revealed that the tendency to engage in avoidant behavior in response to stressful experience is associated with health impairment, especially when social support is weak.

Nowack (1989) conducted the study on 194 professional employees to investigate the effects of coping styles (intrusive positive thoughts, intrusive negative thoughts, avoidance, problem-focused coping), cognitive hardiness, stress, health habits, psychological distress
and physical illness. Results using multiple regression analyses revealed that intrusive negative thoughts and avoidance coping approaches significantly contributed to predictions of psychological distress and physical illness outcomes respectively. Health habits were significantly related to both measures of health status. Intrusive positive thoughts and problem-focused coping, did not significantly contribute to predictions of either physical or psychological status.

Voydanoff and Donnelly (1989) studied relationship among economic distress, family coping resources, behaviors and mental health. Sample consisted of 203 men and 207 women. Results revealed that economic distress was negatively associated with mental health. Although family coping resources were lower among those experiencing economic distress and were generally positively related to mental health their role as mediators of relationships between economic distress and mental health was limited. Economic distress was positively related to family coping behaviors. However, these behaviors did not have positive relationships with mental health and did not counteract the effects of economic distress on mental health. Some coping resources and behaviors had buffering effects on relationships between economic distress and mental health.

Pushkar and Lamb (1991) studied adolescents from a rural western Pennsylvania high school, to explore the life events problems, stressful situations, and coping methods used by adolescents. Results revealed that the most frequent life event listed was breaking up with a boyfriend/girlfriend; most frequent problems were related to adjustment to school; and most common stress situations related to family. The most common coping strategy used was self-control. All these dimensions were related to health status.

Heaven (1996) reported that stress has also been linked to depression. Adolescents are susceptible to various stressors such as biological changes, social changes, school transitions, parental
separation, or divorce and gender-role expectations which are important in understanding depression and poor mental health.

Greene and Walker (1997) reported that stress plays an important role in the development and maintenance of psychosomatic problems in adolescents. They further said that understanding of these will help to know the vulnerabilities, competencies and level of social support among them. Once the assessment of a particular problem is made, proper intervention like symptom relief, stress reduction and promotion of competence can be initiated. During counseling and stress management sessions proper contact with the patient and family should be maintained. Discussing the potential role of stress in health and illness, during the guidance sessions may also help prevent the development of psychosomatic problems in adolescents.

Many researches have made it clear that stressful life events, traumas, and major losses have a profound and detrimental impact on physical and mental health status (Leserman et al., 1998). Leserman et al., (1998) reported that though many studies have focused on the relationship between stress and health; few have examined the impact of multiple types of stressors. Sexual and physical abuse history, lifetime losses, trauma and turmoil in childhood and family and recent stressful life events were found to be four stressors impacting health. It was found that these stressors were related to poor health status. Together, these stressors accounted for 32% of the variance in overall current health status. Unlike other studies they did not find that social support buffered the effect of stress. It was evident that many different types of stressors independently contribute to poor health.

Mohan (2000) reported that cardiovascular disease patients scored higher on Stress Symptoms, Stressful Life Events, Hassles and General Physical Health and lower on Uplifts than healthy controls.
According to Wadee et al., (2001) stress has been shown to have an association with immune changes. Wadee et al., (2001) opined that depression has been associated with an increased risk of a variety of illnesses, ranging from Herpes to cancer; whereas loneliness has been related to depressed immunological activity and an increased susceptibility to viral infection.

Bekker and Boselie (2002) examined the relationship between disorders, feminine gender, role stress and other types of stressors. They also examined whether eating disordered women compared to non-clinical controls used depressogenic coping more often. It was hypothesized that women with eating disorders would, compared to controls, suffer from more stress, irrespective of the type of stressors and they would use depressogenic coping more frequently. 36 women with mean age of 25.8 years suffering from eating disorders and 53 controls with mean age 21.2 years were taken as subjects. Results showed that compared with controls, eating disordered women reported higher levels of feminine gender role stress, as also higher levels of masculine gender role stress as well as recently experienced stress. Also women suffering from eating disorders used emotional coping more often than the control group.

Puri (2002) reported that healthy controls scored higher than backache patients on presumptive stressful life event scale, uplifts and confrontive coping.

Bal et al., (2003) investigated the role of social support in well-being and coping after a stressful event on non-clinical adolescents. The study also aimed at replicating the findings of sexual abuse adolescents who reported more symptoms and less adequate coping strategies than adolescents who reported another type of stressful event/no stressful episode. 820 adolescents between 12-18 years were assessed on social support, trauma symptoms, behavior problems and coping. The results revealed 42% of adolescents reported a stressful experience and 4.4%
reported sexual abuse. Sexually abused adolescents reported more stress related symptoms and used more avoidance and few support-seeking coping strategies than other adolescents. Social support did not affect the relation between stressful events and coping. Also high support from family was associated with less avoidance coping.

Natvig et al., (2003) reported the concept of health contains aspects of social and mental well-being and not just the absence of disease. The concept of well-being is sometimes used interchangeably with happiness. Natvig et al., (2003) explored the associations between happiness and experience of stress at school, personal and social factors. 887 school adolescents were studied on health promotion behavior. Results showed that an increasing degree of stress experience reduced the feeling of happiness. Increasing levels of general self-efficacy increased the odds of feeling happy. Social support from teachers also enhanced happiness. Most happy pupils experienced significantly more support than the ones who reported being unhappy. Pupils feeling unhappy reported symptoms more often.

Sehgal (2003) reported positive correlations between experience of illness, stress symptoms, life event stress and emotion focused coping.

Coping styles are the attempts to meet environmental demands and to prevent negative consequences (Lazarus and Folkman, 1984; Mechanic, 1974; Pearlin and Schooler, 1978). Coping refers to constantly changing cognitive and behavioral efforts to manage specific external/internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus and Folkman, 1984). Some coping styles screen the individual from stressful life events, whereas other coping styles enhance the individual’s vulnerability to mental health problems.

Thakur (2000) revealed that healthy executives used task focused coping strategies to alleviate stress.
Liu et al., (2004) studied strategies used to cope with stress and also explored the association between coping strategies and behavioral/emotional problems in adolescents from China. The results revealed that adolescents often used multiple coping strategies, especially active coping and avoidance coping were used when faced with stress. Avoidant coping was significantly associated with increased risk for internalizing and externalizing problems, but active coping was associated with reduced risk, after adjustment for child’s age, sex and father’s occupation, thus, revealing the association between coping and mental health problems in Chinese adolescents.

Steiner et al., (2002) examined the relationship between adolescent coping styles and health outcomes. The results revealed that approach coping correlated negatively with indices of health problems and health risk-behaviors, while avoidance coping correlated positively with these domains. Bovier et al., (2004) studied the role of stress as a determinant of health. They found health status to be negatively associated with stress.

MENTAL HEALTH, PSYCHOLOGICAL WELL-BEING, PERCEIVED SOCIAL SUPPORT AND HEALTH PROTECTIVE BEHAVIOR

It was hypothesized that Health Protective Behavior among youth was expected to be positively related with Mental Health and its dimensions viz. Being Comfortable with Self, Being Comfortable with Others and Perceived Ability to Meet Life Demands, Psychological Well-Being, and Perceived Social Support.

Tables 6, 7, and 8 revealed intercorrelations among Mental Health and its dimensions Psychological Well-being, Perceived Social Support and Health Protective Behavior in the total sample, boys and girls.

Intercorrelation analyses revealed that in the total sample, Health Protective Behavior was significantly and positively correlated with Being
Comfortable with Self, Being Comfortable with Others, Perceived ability to meet life demands, and Perceived Social Support. No significant negative correlation emerged between Health Protective Behavior and other variables.

**Among Boys**, Health Protective Behavior was significantly and positively correlated with Total Mental Health. Health Protective Behavior was significantly and negatively correlated with Perceived Ability to meet Life Demands.

**Among girls**, Health Protective Behavior was significantly and positively correlated with Being Comfortable with Self, Total Mental Health and Perceived Social Support. No significant negative correlation emerged between Health Protective Behavior and other variables.

*Regression analyses* revealed (Tables 9, 10 and 11) that *for the criterion Health Protective Behavior*, Perceived Social Support emerged as a significant predictor for total sample ($\beta=0.16$).

Mental Health, Psychological Well-Being, and Perceived Social Support are very closely linked with Health Protective Behavior. They are interrelated and collectively help in maintenance and promotion of good health.

Life satisfaction is said to complement happiness, the most effective dimension of positive functioning (Campbell et al., 1976) and “... In the larger context, mental health is the other name of quality of life...” (Wig, 1979).

Negative affect and depression were associated negatively with Psychological Well-Being and have been found to be related with poorer health and physical decline (Booth-Kewley and Friedman, 1987).

Many researches have shown Psychological Well-Being to have significant positive correlation with happiness, life satisfaction, increased positive affect and health status, and negatively related with depression.
and negative affect. Psychological health, psychological well-being and happiness reduce the risk of disease or illness (Simonsick et al., 1995).

Uchino et al., (1996) and Folkman and Moskowitz (2000) suggested that since people are social beings, social support seems to act as a buffer against the effect of stress. Heaven (1996) opined that having a social support network is crucial in assisting individuals to cope with stress. Thus, a close circle of friends or warm and loving family moderate the anxiety and anguish that stress induces and assists the individual in adjusting to stressful situation, reduce onset of illness and promote health.

Kostelecky (1997) conducted a study to find out how family dynamics (cohesion and adaptability) affect self-esteem, self-efficacy, and goal stability in adolescents. Results revealed that adolescents who came from very connected and very flexible family structure had high self-efficacy, high self-esteem, and goal stability. The higher the cohesion and adaptability of family members, the more an adolescent experienced a sense of competency to achieve, value their gifts and abilities, development of goal directedness engage in Health Protective Behavior, while adolescents from disengaged families, and rigid boundaries experienced low self-esteem, low goal stability and engaged in health risk behavior.

Kenneth et al., (2000) studied six dimensions of Mental Health viz. perceived physical health, nonconflictual interpersonal relationship, anxious-depressive symptoms, substance use, social support and self-esteem. The sample comprised of 794 female-female twin pairs. Results revealed five common factors (2 genetic, 1 family environmental and 2 unique environmental); variable-specific genetic effect for physical health, substance use and social support; and variable specific family environmental effects for interpersonal relationships and substance use. Genetic effects were seen for all six dimensions. Total heritability ranged from 16% to 49%. Family environment was an important influence on
interpersonal relationships, substance use and social support. Thus, mental health was influenced by genetic and environmental factors. Genetic factors appeared to be of moderate etiologic importance in all major dimensions of mental health, whereas family environment appeared to be an important influence in interpersonal relations, social support, and substance use only.

Social Support protects the individual from the harmful effect of stress. It leads the individual to believe that they are cared for, loved, esteemed, and valued (Cobb, 1976). Perception of availability of support and feelings of being supported might be based on past supportive transactions (Coyne and Delongis, 1986). Past supportive transactions promote psychological well-being and affect through their effects on perception of support as much as their resolution of problems (Cohen and Hoberman, 1983). This is how social support moderates the stress-illness relationship.

Generally, increase in social support during instances of major life stress serve to lessen mood disturbances. It appears that positive mood is produced by and results from more secure relations with others, which may influence health outcomes. For example, among the general population, individuals who are more socially connected have a greater chance of survival compared to those who are less connected (House et al., 1988). Cummins et al., (1999) examined the risk and protective factors among adolescents which were correlated with their physical and emotional health. Results revealed that connectedness to family, family caring and bonding were the most powerful factors in explaining variance in physical and emotional health of both male and female adolescents. Parental bonding and adolescent well-being are closely related (Frits et al., 2002).
Opara (1999) reported that healthy controls scored higher than cardiovascular disease patients on Social Support (Numeric), Satisfaction with Social Support and Total Social Support.

According to Harker and Kerker (2001) positive emotional expression also relates to personal well-being. Feeling positive affect is an important contributor to well-being, as is evident in the well-established relations between extraversion and elevated well-being. Positive affective tendencies enhance individuals’ well-being through their influence on social activity and relationship satisfaction, which contributes to personal well-being and health.

Nathawat (2000) studied the influence of social support and hardiness on some measures of psychological well-being of educated men. Results revealed that hardiness and social support significantly influenced psychological well-being in educated men. Hardy men had significantly better psychological well-being than low hardy or non-hardy men. Also, men with high social support had better psychological well-being than with low social support.

Fraser and Spink (2002) examined the role of social support and group cohesion in the compliance behavior of females required to exercise for health-related reasons. Compliance behavior was assessed as attendance and dropout behavior. Discrimination was found between high and low attendees as well as between dropout and students who had completed graduation. Cohesion and social support both contributed to the successful prediction of attendance.

Social Support also helps by promoting health protective behavior like proper diet, exercise, and safety practices. Shisana and Celentano (1987), Rodin and Salovey (1989), found that when social support was less, the relation between stress, illness and physically poor health outcomes was rather more.
**Konu et al., (2002)** conducted a study based on conceptual model of well-being in school. Aim was to explore factors associated with school childrens’ subjective well-being. 56 independent variables were included like grade, socioeconomic status, social cohesion, recreation, health behaviors, school conditions, social relationships, health status, and means for self-fulfillment. 22% boys and 25% of girls accounted for General Subjective Well-being variation. Girls were found to be higher on self-fulfillment, social relationships in school, and outside school. Self-fulfillment, Social Relationships in school, and Outside school were highly correlated with General Subjective Well-being. Grade and socioeconomic status showed only a weak correlation with General Subjective Well-being among both genders. Thus, it was inferred that the school context has a major influence on pupils’ general subjective well-being and health.

**Puri (2002)** reported that healthy controls scored higher than backache patients on seeking social support.

**Sehgal (2003)** reported that teenager’s health was highly correlated with perceived social support.

**Adolescents’ mental health problems have been found to be related with psychological variables.**

**Bovier et al., (2004)** viewed Mental Health as the main determinant of quality of life. They surveyed 2000 university students to study the role of perceived stress, social support, and internal resources as determinant of health. Results revealed that Mental Health was negatively associated with Stress and positively with Social Support and Internal Resources. Mastery and Self-esteem were positively related with Mental Health and buffered negative impact of stress. Thus, it was concluded that perceived stress is an important risk factor for low mental health and self-esteem is important protective factors of mental health among young adults.
SELF-ESTEEM, SELF-EFFICACY, HEALTH HABITS AND HEALTH PROTECTIVE BEHAVIOR

It was hypothesized that Health Protective Behavior among youth was expected to be positively related with Self-Esteem, Self-Efficacy and Health Habits.

Tables 6, 7, and 8 revealed intercorrelations among Self-esteem, Self-efficacy and Health Habits and Health Protective Behavior in the total sample, boys and girls.

Intercorrelation analyses revealed that in the total sample, no significant positive or negative correlations emerged between Health Protective Behavior, Self-Esteem, Self-Efficacy and Health habits.

Among Boys, Health Protective Behavior was significantly and positively related with Self-Efficacy and negatively related with none.

Among Girls, Health Protective Behavior was significantly and positively correlated with Self-Efficacy and significantly and negatively correlated with Self-esteem.

Regression analyses revealed (Tables 9, 10 and 11) that for the criterion Health Protective Behavior, none of the above i.e. Self-Esteem, Self-Efficacy and Health habits emerged as the predictors of Health Protective Behavior.

Self-Esteem refers to one’s feelings about one’s inside qualities, and a sense of worth, while Self-Efficacy is the belief that one can succeed at something that one wants to do. Self-Esteem and Self-Efficacy have a close link to health as, these help an individual know about his mental and physical health and cope with specific situation (Harter, 1993).

Fisher et al., (1991) conducted a study on 286 high school adolescent females to explore whether subjects with abnormal eating attitudes displayed lower level of self-esteem and higher levels of anxiety than their peers. They also studied whether they participated in health-risk behaviors to a greater or lesser degree than their peers. Results showed
that almost two-thirds of the students described themselves as overweight, almost three-quarters felt were above the healthiest weight of their age and height and almost four-fifths were above the weight at which they would be most happy. 18% showed eating disorders. Thus, it was revealed that those unhappy with their weight were more likely to have lower self-esteem and higher anxiety and to participate more in health-risk behaviors like smoking, alcohol use, drug use and sexual activity. Health-risk behaviors clustered around vulnerable adolescents and abnormal eating behaviors was a part of this cluster, especially in females with low-esteem and high levels of Anxiety.

Weiss et al., (1996) studied college students’ participation in health protective behavior. The direct, indirect, and total effect of gender, social attachments (activity involvement, social support and romantic involvement), social triggers (personal health, acute illnesses and personal/ family health crises), health values and effort to improve health behavior on Health Protective Behavior were examined. Results revealed that gender; health values and effort to change health behaviors were the most powerful predictors of Health Protective Behavior participation.

Button et al., (1997) investigated the extent of eating problems and their association with self-esteem in girls aged 15-16 years. 609 schoolgirls completed questionnaire on eating behavior, self-esteem, and general psychological well-being. Sub sample of 31 girls were interviewed on eating behavior and self-esteem. Results revealed that 56% girls felt fat and had used some form of weight control strategy. 32% scored high on anxiety, depression, and low self-esteem. Those with high levels of eating concerns showed greater levels of global self-dissatisfaction and higher dissatisfaction with their physical appearance and family relationships.

According to Jesser et al., (1998), adolescence is a critical period for the adoption of behaviors relevant to health. Health-related habits, values, and lifestyles established during this important formative period
are likely to continue throughout life and consequently have enduring consequences for individual health and well-being. The early formation of healthy behavioral practices, such as eating foods which are lower in fat and cholesterol, and engaging in regular physical exercise, have immediate benefits for health but also delay or prevent premature disability and mortality in adulthood. These health behaviors prevent heart disease, stroke, diabetes, and cancer in later life.

Hagger et al., (2001) studied the influence of self-efficacy and past behavior on young people's intentions to engage in physical activity. They were assessed on physical activity intentions, attitudes, subjective norms, perceived behavioral control, self-efficacy and past physical activity behavior. Results revealed that attitudes and self-efficacy were strong predictors of physical activity intention. Self-efficacy weakened the influence of attitudes and perceived behavioral control on intentions. Past behavior predicted intention directly and indirectly through self-efficacy and attitude. They concluded that young people with positive attitudes and high self-efficacy were more likely to form intentions to engage in physical activity and health promoting behavior.

Shields and Shooshtari (2001) examined determinants of self-perceived health. Factors associated with very good health were compared with fair/ poor rather good health. Results revealed that physical health was strongly related to health perceptions, health lifestyle, socio-economic and psychosocial factors. Heavy smoking, irregular exercise, and overweight were associated with fair/poor health ratings. Unhealthy changes in lifestyle were associated with fair/poor health ratings. Distress, low self-esteem, and low socio-economic status were negatively associated with very good health status.

Backman et al., (2002) reported that intention to eat a healthful diet was a predictor of healthful dietary behavior in adolescents. Intention was influenced most by attitude and then by perceived behavioral control and
subjective norms. Those with positive attitudes towards healthful eating believed that they would like the taste of healthful foods, feel good about themselves, giving up foods that they like to eat, and lose weight or maintain a healthful weight. Mother, siblings, and friends were identified as important predictors of subjective norm. Knowledge about how to eat a healthful diet, availability of healthful foods, motivation, and access to enough money were main factors of perceived behavioral control influencing health status of a person.

Park (2003) examined factors associated with adolescent self-concept and the impact of adolescent self-concept on psychological and physical health behavior in young adulthood. Data was collected from household cross-sectional (1994/95) and longitudinal (1994/95 to 2000/01) components of Statistical Canada's National Population Health Survey. Results showed that self-concept was low amongst girls compared with boys. Cross-sectionally, adolescent self-concept was associated with household income and emotional support. For girls and for young adolescents, a weak self-concept in 1994/95 was related to the incidence of depression over the next six years. It was also predictive of physical inactivity among boys and obesity among both sexes. A strong self-concept had a positive long-term effect on girls’ self-perceived health.

Sehgal (2003) reported that among teenager's eating habits, exercise and health habits were highly correlated with health protective behavior.

Chiang et al., (2004) reported that over the past decade, self-efficacy has become one of the most measured variable in studies on health behaviors and patient education. The concept which was originally proposed in 1977 by Bandura is considered as one of the most important determinants of health related behaviors.
PERCEIVED FAMILY ENVIRONMENT, PERCEIVED PARENTAL HEALTH ORIENTATION AND HEALTH PROTECTIVE BEHAVIOR

It was hypothesized that Health Protective Behavior among youth was expected to be positively related with Warmth dimension of Perceived Family Environment and Perceived Parental Health Orientation.

Health Protective Behavior among youth was expected to be negatively related with Hostility, Neglect, Over-control, and Over-protection dimensions of Perceived Family Environment.

Tables 6, 7, and 8 revealed intercorrelations among Perceived Family Environment and Perceived Parental Health Orientation and Health Protective Behavior in the total sample, boys and girls.

Intercorrelational analyses revealed that in the total sample as well as among girls, no significant positive or negative correlations emerged between Health Protective Behavior, Perceived Family Environment and Perceived Parental Health Orientation.

Among Boys, Health Protective Behavior was significantly and positively correlated with Over-controlling dimension of Family Environment. No significant and negative correlations emerged between Health Protective Behavior, other Perceived Family Environment dimensions and Perceived Parental Health Orientation.

Regression analyses revealed (Tables 9, 10 and 11) that for the criterion of Health Protective Behavior, Over-protection dimension of Family Environment emerged as a significant predictor for girls ($\beta=-0.16$) only. Results are in accordance with some of the earlier studies.

Lau et al., (1990) explored the sources of stability and change in young adults' health belief and behavior concerning drinking, diet, exercise and wearing seat belts. A substantial change in the performance of health behaviors was seen during the first three years of college, and peers had strong impact on the magnitude of the change in health behavior. It was observed that parents were much more important than peers as a source
of influence over their beliefs and behaviors. Out of all the social influence processes, the direct modeling of behavior had most influence on both parents and peers. Thus, it was inferred that parents have influence on their children’s health beliefs and behavior while the children are living at home at least through college years.

Dekovic and Meeus (1997) studied the link between parent-adolescent relationship and the adolescents’ relationship with peers. It was assumed that the quality of parent-child relationship affects the adolescents’ self-concept, which in turn affects the adolescents’ integration into the peer world. Study was done on 508 families with adolescents aged between 12-18 years old. Results revealed that adolescents’ self-concept served as a mediating role in the relationship between maternal child-rearing style and involvement with peers. Parental child-rearing style was not accounted for by the adolescents’ self-concept. The quality of adolescents’ peer relations was same for both mothers and fathers. Thus, it was concluded that positive self-concept and warm supportive parenting resulted in satisfactory peer relations, known to be an important factor in Health Protective Behavior.

Cummins et al., (1999) opined that family bonding, caring, and connectedness are most powerful factors in explaining health of both male and female adolescents. Wickrama et al., (1999) conducted a longitudinal study on 330 adolescents to study whether – 1) health-risk lifestyles exist among adults and adolescents, 2) parents’ health-risk behaviors influence adolescents’ health-risk behaviors, 3) intergenerational transmission occurs by way of a health-risk lifestyle, by direct transmission of specific behavior or through both mechanisms. Results showed that underlying health-risk lifestyle factor existed among both parents and adolescents.

Shek (1999) carried out research which concluded that strengths of association between perceived parenting characteristics and adolescent psychological well-being are stronger in female than male adolescents.
Paternal parenting was found to exert a stronger influence on adolescent psychological well-being than maternal parenting.

Allison et al., (1999) examined the individual and social determinants of physical inactivity, daily smoking, heavy drinking, and overall health risk behaviors. Sample comprised of 1395 Canadian aged 20-24 years. The variables studied were: gender, mastery, self-esteem, sense of cohesion, chronic stress, psychological distress, social support, income adequacy, education, and main activity like working, looking for work, attending school, etc. Results revealed that the most consistent determinants of health risk behaviors were chronic stress and main activity. Social context was an important influence on risk-related behavior and also in approaches designed to promote health behaviors.

Topolski et al., (2001) assessed the association between health-risk behaviors and self-perceived quality of life among adolescents. A sample of 2801 students was used to determine relationship of health-risk behaviors to tobacco use, alcohol use, illicit drug use, and high risk sexual behavior. Differences among engagers (adolescents who often engage), experimenters (occasionally engage), and abstainers (never engage) in health-risk behavior were evaluated by gender and junior/senior high school groups. Results revealed that adolescent abstainers reported higher quality of life (QOL) than engagers and experimenters. Adolescents who engaged in multiple risk behaviors scored even lower than those who engaged in only one health-risk behavior. Needless to add quality of life is provided by parents in this period.

Repetti et al., (2002) believed that good health begins early in life. In the early years of childhood the family is charged with responsibilities the care and development of the child. Happy, healthy families provide children with emotional and physical security. They have an environment of well-being and acquire behaviors that will eventually help them to maintain their own physical and emotional health independent of
caregivers. A healthy environment for children is a safe environment, provides them with a sense of emotional security and social integration and offers critical social experiences that lead to the acquisition of behaviors that will eventually allow them to engage in effective self-regulation.

Rask et al., (2003) studied the relationship between adolescents’ subjective well-being (SWB) and family dynamics as perceived by adolescents and their parents. Sample comprised of 239 females from 7th and 9th grades. One of their parents was also included (n=239). Results revealed that parents assessed family dynamics better than adolescents. No association was found between family dynamics perceived by adolescents and one of their parents or between the adolescents’ SWB and parental perception of family dynamics. Family dynamics perceived by adolescents was related to adolescents’ global satisfaction and global ill-health. Predictors of adolescent global satisfaction were perception of high level of mutuality and stability in the family as well as male gender and lack of serious problems in family. Disorganization in the family and poor parental relationship perceived by adolescent females, serious problems and illness is in the family predicted high level of adolescent global ill-being among them.

Blum et al., (2003) studied factors associated with poor health status, substance use and suicide risk among young and also the extent to which the risk and protective factors identified cut across health-compromising behaviors. Young people from 9 Caribbean countries were studied. Results revealed that physical/sexual abuse and having a friend or relative who had attempted suicide were associated with increasing health-compromising behaviors. Connectedness with parents and school and attendance at religious services were associated with fewer health risk behaviors and higher Health Protective Behavior.
Waters et al., (2003) studied parent and adolescent agreement on physical, emotional, mental and social health and well-being in a representative population. 2096 parent-adolescent dyads were examined. Results revealed that body pain, experience of mental health and impact of family activities on health were found to be significant predictors of illness for adolescents. Thus, all adolescents were less optimistic about their health and well-being than their parents. Adolescents were found to be sensitive to pain, mental problems, health in general and impact of family activities on their health.

GENDER DIFFERENCES IN HEALTH PROTECTIVE BEHAVIOR AND ITS CORRELATES

The use of gender was introduced in behavioral and social sciences to distinguish it from the concept of sex. Gender was distinguished from sex in feminist literature to emphasize that anatomy is not destiny, as sex is biologically defined and gender is culturally constructed. Male and female are examples of a sexual distinction, whereas masculine and feminine are examples of gender description (Ortner and Whitehead, 1981).

Work and family are the two principal spheres of activity for all men and women. Historically, a large segment of women were forced to enter gender-appropriate, female-dominated occupations, except during World War II. Women earn less than men and also face the glass ceiling. Work done by women is often devaluated and marginalized (Spender, 1982).

There are two theories that explain why gender differences on cultural norms and behavior occur. Childhood interactions with parents, fellow students and others encourage girls to be cooperative and expressive while the same interactions encourage boys to be competitive, independent and instrumental (Martinez, 1999). The other theory attributes males developing instrumental norms and competitive behavior to the fact that males are over represented in authoritative positions.
(Martinez, 1999). Lee (1998) found gender differences on four dimensions: competitiveness, hardiness, emotionality and object orientation. The boys are individualistic, tough, and desire to work with things whereas girls are cooperative, soft and desire to work with people. Rubin (1985) explains that women develop friendship among themselves based on shared intimacies, self-revelation, nurture and emotional support whereas males' relationships are based on shared activities.

An individual's gender is one of the most important determinants of personality development. Several studies have indicated some psychological differences between the sexes. After reviewing some studies Mischel (1976) observed that boys were greater in physical and antisocial aggression, visual and spatial ability, but girls were found to be greater in dependency, passivity and verbal ability.

Significant differences between boys and girls have also been reported in value patterns (Anantharaman, 1980; Srivastava and Ramani, 1988); dependence proneness and insecurity (Singh and Ojha, 1987) and various aspects of self-attitudes (Brisore and Lee, 1974; Goswamy, 1976; Sudha and Nirmala, 1984; Singh and Singh, 1986; Usha, 1986). Though there are no major differences in the rate of psychiatric disorders among men and women, there are significant gender differences in types of disorders (Cleary, 1987). Women have significantly higher rates of depressive episodes, phobias and obsessive and compulsive disorders compared with men.

Men and women differ physiologically and psychologically on gender roles. One of the causes of these differences between sexes might be the differential role expectations for boys and girls and consequently differential parental behaviors in socialization them. Further, parents have their own belief in practicing certain child-rearing techniques.
This study also examined gender differences in Health Protective Behavior and its correlates. Table 4 shows t-ratios between boys and girls and Table 5 shows Discriminant Functional Analyses for boys and girls

**Gender and Personality dimensions**

Table 4 revealed significant t-ratios between the two groups on **Internality** \( t=3.22 \); **Control dimension of Hardiness** \( t=2.63 \); **State Anxiety** \( t=2.99 \); **Psychoticism** \( t=3.16 \) and **Neuroticism** \( t=3.24 \) with boys scoring higher than girls.

The Discriminant Functional Analyses run for boys and girls (Table 5) revealed that **Psychoticism** emerged to have significant discriminating power \( \lambda = 0.81 \), with mean of boys (7.62) which was more than mean for girls (6.50). **Trait-Anxiety** emerged to have significant discriminating power \( \lambda = 0.76 \), mean for boys (80.84) and mean of girls (80.13).

**Gender and Positive and Negative Mental States**

Table 4 showed the significant t-ratios between boys and girls on **Optimism** \( t=2.05 \); **Irritability** \( t=3.09 \) with boys scoring higher than girls.

Significant differences also emerged on **Perceived Happiness Status** \( t=2.97 \) with girls scoring higher than boys.

The Discriminant Functional Analyses run for boys and girls (Table 5) revealed that **Optimism** emerged to have significant discriminating power \( \lambda = 0.71 \), with mean for boys (13.08) and mean for girls (12.60).

**Gender, Stress, and Coping**

Table 4 showed significant the t-ratios between boys and girls on **Stress Symptoms** \( t=2.99 \); and **Problem Focused Coping** \( t=3.16 \) with boys scoring higher than girls.

The Discriminant Functional Analyses run for boys and girls (Table 5) revealed that **Problem Focused Coping** emerged to have
significant discriminating power $[\lambda = 0.79, \text{ with mean for boys (3.44) and mean for girls (2.95)}]$.

**Gender, Mental Health, Psychological Well-Being, and Perceived Social Support**

Table 4 revealed significant the t-ratios between boys and girls on Perceived Social Support ($t=4.50$) with boys scoring higher than girls.

The Discriminant Functional Analyses run for boys and girls (Table 5) revealed that Perceived Social Support emerged to have significant discriminating power $[\lambda = 0.85, \text{ with mean for boys (23.10) and mean for girls (19.94)}]$. Being Comfortable With Others emerged to have significant discriminating power $[\lambda = 0.70, \text{ with mean for girls (3.88) more than the mean for boys (3.66)}]$.

**Gender, Self-Esteem, Self-Efficacy, and Health Habits**

Table 4 showed significant t-ratios between boys and girls on Self-Esteem ($t=2.05$) with girls scoring higher than boys.

Significant differences also emerged on Health Habits ($t=6.10$) with boys scoring higher than girls.

The Discriminant Functional Analyses run for boys and girls (Table 5) revealed that Health Habits emerged to have significant discriminating power $[\lambda = 0.89, \text{ with mean of boys (8.91) higher than the mean of girls (7.70)}]$, Self-Esteem emerged to have significant discriminating power $[\lambda = 0.73, \text{ with mean for girls (3.30) higher than mean for boys (2.98)}]$.

**Gender, Perceived Family Environment, and Perceived Parental Health Orientation**

Table 4 showed significant t-ratios between boys and girls on Over-control dimension of Perceived Family Environment ($t=2.63$).

The Discriminant Functional Analyses run for boys and girls (Table 5) revealed that Over-Control dimension of Perceived Family
Environment emerged to have significant discriminating power $[\lambda = 0.75,$ mean for boys (2.47) higher than the mean of girls (2.16)].

Some of the earlier studies on Gender Differences in Health Protective Behavior and its Correlates were reviewed.

Earlier also many studies have been conducted to show gender differences on Eysenckian personality dimensions. Eysenck and Eysenck (1975), Sarup (1987), Tambs et al., (1989), Arora (1990) found males to be higher on Psychoticism than females. Whereas, Vaidya (2003) reported females to be higher on Psychoticism than males. No significant gender differences on Psychoticism were reported by Mohan and Jain (1984) and Mohan and Gulati (1989).

An earlier study also reported females to score higher on Extraversion than males (Corulla, 1989). In contrast, Mohan and Gulati (1989), found males to be higher on Extraversion than females. However, Sarup (1987), Zuckerman (1989), Wong and Reading (1989) and Gujral (1990) did not find any gender differences on Extraversion.

Mohan and Sheoran (1987) did not find any gender differences on Neuroticism. Several studies however reported that females scored higher on Neuroticism than males (Eysenck and Eysenck, 1975; Arora, 1990 and Vaidya, 2003). However, Mohan and Virdi (1985), Mohan and Gulati (1989) reported males scored higher than females on Neuroticism.

On Eysenckian personality dimension of Lie (Social Desirability) Scale, Mohan and Jain (1984), Sarup (1987), Wong and Reading (1989) and Gujral (1990) did not report any gender differences. In contrast to these studies Sarup (1993) and Corulla (1998), found males to score higher on Lie (Social Desirability) Scale than females.

Doherty and Baldwin (1985) found that Locus of Control among women was shifting from Internality in 1960’s to Externality in the decade of 1970’s.
Dyal (1984) and Carlisle-Frank (1992), reported that men were more internal than women.

Grubbs et al., (1992) measured self-efficacy in a voluntary sample of 432 freshmen and sophomores urban high school students. The effect of gender, race, socioeconomic status, and self-reported religiosity on self-efficacy was also examined. Results showed that teenagers had a moderately high degree of self-efficacy. No significant gender differences emerged on self-efficacy.

Lonnquist et al., (1992) found Health Protective Behavior in sophomore females was more than male students. Peer practices was found to be significant predictor for both males and females. Value placed on health predicted for females but not males, while grade point average predicted for males but not females.

Burke & Weir (1978) conducted a study comparing male and female adolescents with experienced life stress, social support received from parents and peers and emotional and physical well-being. Sample consisted of 93 males and 181 female adolescents from high schools. Results revealed that female adolescents were significantly higher on perceived life stress, but received more social support from peers. Female adolescents showed poorer emotional and physical well-being than males.

Weissman et al., (1993) cited research demonstrating that women more frequently become depressed over disruption and conflict in close relationships, whereas men become depressed over the loss of an ideal or an achievement related goal. Women might have a predisposition to depression based upon child rearing factors or upon their relative social powerlessness (Giesbrecht, 1998).

Copper et al., (1988) found females to score higher on personal growth and positive relationships than males. Similar results were reported by Ryff (1989) which showed differences among males and females in
psychological well-being, with females showing more strength on the interpersonal relations.

Dorohy et al., (1996) reported that women were generally more depressed than men. Findings regarding gender differences in life satisfaction were inconsistent.

The cultural changes and modernization has changed the role of women in the society. Women today are participating in every field and are receiving higher education. Dorohy et al., (1996) reported higher level of life satisfaction among Indian females, than males, which reflects the changing status of women in modern India.

Sandhu (1996) reported that girls scored higher than boys on family protectiveness, father positivity and father democracy.

Milligan et al., (1997) reported that self-efficacy was greater for females taking healthy diet and moderate alcohol intake. Men had high self-efficacy for physical activity. For women, barriers to smoking cessation were lack of family support, stress, and concerns about weight gain. Type A behavior was associated with smoking and “unsafe” drinking in both men and women. Generally unhealthy dietary choices were observed in women and greater physical activity in men. Depressive affect was higher in female smokers and unsafe drinkers. Depressive affect was inversely related with physical activity and self-efficacy in both men and women.

Larouche (1998) studied 151 university students on perceived health status, and health-promoting lifestyles, using Health Promoting Lifestyle Profile. It was found that students’ perceived health status was predictive of Health Promoting Lifestyle Profile, exercise, stress management and spiritual growth. College women practiced significantly better nutrition, interpersonal relations, health responsibilities, and Health Promoting Life Profile than men. All the students were low in stress management.
Liu and Kaplan (1999) opined that as girls reach adolescence with intensified gender-related role expectations, girls may encounter greater pressures to comply with the stereotypic role and standards depicted for women. The change in the physical body at puberty, the increasing restrictions experienced at home in comparison to boys and the conflictual demands and social pressures may add to girls’ uncontrollable feelings towards life. The induction into the world of dating may increase contacts with boys, who, often being more conservative in sex stereotypes than girls, might inadvertently enhance girls’, feminine attributes of compliance, difference and avoidance in dealing with life challenges. Greater use of avoidance defense is expected to increase subjective distress. Those who make a habit of using avoidant style of defense tends feel incapable of actively dealing with stressors or having enough resources to eliminate sources of stressors. Women using avoidant coping more frequently are thus more vulnerable to mental distress (Liu and Kaplan, 1999).

According to Wickrama et al., (1999) parents’ health-risk behaviors were transmitted to adolescents by the life style they practiced. Effect of parents’ health-risk lifestyles on adolescents showed gender symmetry i.e. fathers’ health-risk lifestyle affected only boys’ health-risk lifestyle, whereas mothers’ health-risk lifestyle affected only girls’ health-risk lifestyle.

Takakura and Sakihara (2000) studied psychosocial factors associated with depressive symptoms and with gender differences in depressive symptoms among junior high school students. Sample size was 2,660 students in Japan. The psychosocial variables examined were life stresses, social support, health practices, self-esteem and locus of control. It was found that depressive symptoms were positively associated with life stresses and negatively with health practices, social support, self-esteem and internal locus of control. Female students reported more
depressive symptoms, life stresses and low self-esteem and poor health practices than male students.

Kagee and Dixon (2000) found women more likely to engage in Health Protective Behavior than men.

Galal et al., (2001) studied self-reported health problems among adolescents with a random sample of 1002 adolescents from schools in Cairo and Qaliubia. Out of 863 adolescents who completed questionnaire, 54% were males and 46% females with age range of 12-18 years. The results showed that by and large boys perceived their health better than girls. Girls considered their health to be average. Girls reported more weekly occurrence of abdominal pain, headache, dizziness, backache, morning tiredness, sleep disturbance, and nervousness.

Singh (2001) reported females to be higher on anxiety, depression, somatic and cognitive symptoms.

Misra et al., (2002) examined the health promotion behaviors of Asian Indian immigrant groups in U.S. Sample consisted of 261 Gujuratis. Health promotion behaviors were obtained using the Health Promotion activity chart. Physical inactivity was the highest among adults of 25-50 years of age. Significant differences existed between males and females in health responsibility. Females were more responsible for their health and medical problems than males. They also educated themselves about health promotion behaviors through reading and watching TV programs.

Brooks et al., (2002) studied self reported symptoms of depression and stress with risk behaviors. A sample of 2,224 students of 9th and 12th grade was selected. Results found that feelings of depression/stress were associated with age, female gender, increasing levels of tobacco use, physical fights, and non-use of birth control.

Hetland et al., (2002) investigated dimensional structures in subjective health complaints in adolescents and examined the variation in levels and dimensionality across gender and age. Sample consisted of
1427 Norwegian students (11-15 years) from school. Results showed that somatic and psychological factors were highly correlated. Girls showed higher mean levels compared with boys. There was an indication of increase in these factors with age amongst girls, while amongst boys there was less, if any difference across age groups. Correlation between the somatic and psychological factors was constant across age groups and gender.

Barron et al., (2002) reported that coping strategies used by adolescents may have an effect on their psychological development. They studied the relationship between coping and psychological well-being and the effect that age and gender had on these variables. The results showed that, adolescent women used a greater variety of coping strategies and were less skillful in coping with problems than men.

Halfors and Doin (2002) conducted a survey which included questions on mental health and found that approximately 18% of males and 22% of females had evidence of clinically significant emotional (e.g. aggression and delinquency) problems. Adolescents with high problem scores were more likely to have used cigarettes and marijuana or engaged in binge drinking than those with low problem scores. Rates for use were more than twice for those with behavioral problems. Among children without mental health problems, boys were more likely than girls to binge drink, smoke cigarettes, or use illicit drugs. However, girls with behavior problems were just as likely as boys with behavioral problems to binge drink, smoke cigarettes, or use illicit drug.

Puri (2002) reported that male backache patients scored higher than female backache patients on Pain at its least, Extraversion, Type A, Health Locus of Control-Internal, Internal control, control by others, chance, optimism, hostility, state anxiety, confronting, coping, seeking social support and painful problem solving.
Vaidya (2003) reported that women scored higher than men on seeking health care services for symptoms of irritable bowel syndrome. Women were also found to be higher than men on anxiety, life event stress, hassles, problem focused coping, emotion focused coping, well being measures and perceived social support.

Trembley et al., (2003) analyzed self-perceived health among Canadian adolescents aged 12-17 years and factors associated with ratings of very good/excellent health. The sample consisted of 12,715 adolescents. Results revealed that, girls were less likely than boys to report very good/excellent health and were more likely to have a chronic condition and have experienced depression in the past year. Reporting of very good/ excellent health was significantly lower for teens, who were daily smokers, episodic heavy drinkers, physically inactive or obese as compared to the teens who did not have these characteristics.

Duetz et al., (2003) surveyed health related lifestyles. Four health measures viz. self-rated health, physical fitness, number of medical conditions and restrictions caused by medical conditions were analyzed with regard to their associations with gender, socio-economic and psychosocial factors. Survey was carried out on 923 people aged 56-66 years. Results revealed that gender was significantly associated with physical fitness, number of medical condition and subsequent restrictions.

Neumark et al., (2004) studied associations between healthful and unhealthful weight-control behaviors and dietary intake among adolescents. 4144 middle and high school students from diverse racial and socioeconomic background were chosen. Results revealed that girls using unhealthful weight-control behaviors had significantly lower intakes of fruits, vegetables, grains, calcium, iron, vitamin A, C, and B-6, foliate and zinc than girls using only healthful weight-control behaviors. Compared with girls reporting no weight-control behavior, girls using unhealthful weight-control behaviors had lower intake of grains, calcium,
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Iron, vitamin B-6, folate, and zinc. In contrast to the girls, boys reporting unhealthful weight-control behaviors did not have poorer dietary intake than boys not using weight-control behaviors or using only healthful behaviors. Among boys, there was no significant differences in mean intakes of vegetables, grains, calcium, iron, vitamins A, C and B-6, folate and zinc. Furthermore, boys using unhealthful weight-control behaviors had higher fruit intakes than boys reporting no-weight-control behavior. Thus, it was inferred that adolescent girls who engage in unhealthful weight-control behaviors are at increased risk for dietary inadequacy.

Oppedal and Roysamb (2004) investigated differences in levels of mental health, life stress, and social support among adolescents with immigrant and domestic background. Results revealed higher level of psychological distress and lower social support among Immigrants than host students. In gender-culture group, immigrant boys reported the highest level of problems, with 28% prevalence of anxiety/depression. However, girls in different ethnic groups did not show significant difference in problems faced by them.

Shields (2004) did a cross-sectional and longitudinal study among Canadians aged 18 years and above. The study was conducted to describe stress exposure and analyze short and long term associations with psychological distress and chronic conditions. Results revealed that women reported more stress than men. Stress levels were higher among the less educated, less affluent, and previously married for both sexes. The level of psychological distress in 1994/95 and the prevalence of chronic conditions were related to stress, as were increases in distress over the next six years and the likelihood of having been diagnosed with chronic conditions.

Kendler et al., (2005) reported that compared to men; women have larger and more intimate social networks and higher rates of major depression. Two interviews were done within one year. 1057 pairs of
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opposite sex dizygotic twins were assessed. Results revealed that within the opposite-sex twin pairs, the female twins reported significantly higher levels of global social support than did their twin brothers. Of the seven social support factors, the female twins reported significantly higher levels of support from other relatives, support from friends, support from children, and social integration. The male twins reported higher levels of support from their spouses and co-twins. No substantial difference was seen in the reported levels of social support the two twins received from their parents. Thus, it was revealed that women reported higher levels of global social support than their twin brothers. Major depression was stronger in females than in males. Women were more sensitive than men to the depressogenic effects of low levels of social support, particularly from the co-twin, relatives, parents, and spouses.

The present investigation – Psycho-social correlates of Health Protective Behavior Among Youth – attempted to study a large number of correlates of health of young boys and girls. The theoretical expectations and the reality of data have given significant insight. However, it can be stated that these outcomes can be found useful by the future researchers and the stake holders in the field of health of youth.