DISCUSSION

Adolescence has been perceived both as a period of uncertainty and of great challenges. Being a period of transition between childhood and adulthood, many critical health behaviours emerge at this stage which have implications for future health outcomes as adults. It is the period where patterns of behaviours are initially tried out and eventually become established. These include those (smoking and drinking), which may have immediate consequences affecting health status or those, which affect future health status (drug abuse) (Rew, 2005). Given the recent increase in smoking and drinking prevalence among youth and the fact that most adult smokers and alcoholics initiated drinking and smoking during adolescence, there is a need to focus on risk factors related to drug use in adolescents. During adolescence the life process changes and stresses that occur may have a substantial negative impact on emotional well being and may lead to adoption of unhealthy/maladaptive behaviour. If one has to reduce the mortality and morbidity related to cigarette smoking and alcohol use, there is a dire need to understand the processes involved to explore the role of protective and risk factors in smoking and drinking among adolescents. It is necessary to know why some adolescents can cope successfully with stress, while for others stress translates into distress leading to use of intoxicants as a coping strategy. One needs to investigate whether it is Parental Support, Self Mastery, Self Efficacy, Religiosity or a Healthy Life Style that can act as buffer distinguishing adolescents who can cope with stress using personal and social resources compared to those who choose substance use as life strategy.

Keeping this background in view, the aim of the present investigation was to study the role of protective and risk factors in smoking and drinking among adolescents. Additionally gender differences in smoking, drinking and their correlates were also seen. The study also explored the differential role of chosen
protective and risk factors, if any in smoking versus drinking. The study was carried out to design a framework for educational counseling and public health interventions for prevention of drinking and smoking among youth in future.

Among the protective factors, Spiritual Well Being, Health Habits, Perceived Parental Care, Self Efficacy and Adaptive Coping Styles were selected. Stress dimensions, Avoidant Coping, Depression, Sensation Seeking and Aggression-Hostility were selected as the risk factors. In addition, gender differences in protective and risk factors as related to drinking and smoking were also investigated.

Spiritual Well Being and its two dimensions Religious Well Being and Existential Well Being were measured using Spiritual Well Being scale by Palaoutzran and Ellison (1982). Different Health Habits viz., Eating Habits, Exercise and Fitness and Avoidance of use of Alcohol and Drugs were measured using the Health Habits Inventory by Atwater (1995). Self Efficacy was measured by using scale proposed by Mattoo and Malhotra (1998). Perceived parental bonding was measured by parental bonding instrument developed by Parker et al. (1979). It has two dimensions viz., Perceived Parental Care and Perceived Parental Overprotection. The inventory developed by Carver et al. (1989) was used to measure three different Coping Styles viz., Task Focussed Coping, Emotion Focussed Coping and Avoidant Coping.

For measuring stress, the tests used were: Daily Hassles and Uplifts were assessed using scale given by Delongis et al. (1982). Stress Symptoms rating scale devised by Heilbrun and Pepe (1985) was used to measure stress symptoms. In order to measure depression, Beck Depression Inventory was used (Beck, 1967).

To measure Sensation Seeking and its dimensions viz., Thrill and Adventure Seeking, Experience Seeking, Disinhibition and Boredom
Susceptibility-modified Sensation Seeking Scale developed for Indian population by Basu et al. (1993) was used.

To measure Aggression, Questionnaire constructed by Buss and Perry (1992) was used. It has four dimensions of Aggression viz., Physical Aggression, Verbal Aggression, Anger and Hostility. In addition, an interview schedule based on WHO (2002) guidelines was administered to assess demographic information and assess smoking and drinking status of the respondents. The total sample comprised of 350 adolescents, which included adolescents not smoking or drinking, smoking only, drinking only and both drinking and smoking from both the genders. They were in the age range of 17-19 years.

They were administered all the tests and the interview schedule. A $4 \times 2$ factorial design with unequal replications was employed among other statistical techniques to analyze the raw data. Drug use status (4 levels) and gender (2 levels) were the independent variables in the factorial design. Means and SDs were calculated for different groups. t-ratios were calculated to find out the significance of differences between means of various groups on all the measured variables. Stepwise Discriminant Functional Analyses and Logistic Regression Analysis were also carried out.

ROLE OF PROTECTIVE AND RISK FACTORS IN DRINKING AND SMOKING AMONG ADOLESCENTS

It was hypothesized that non drinking and non smoking adolescents would score higher on Spiritual Well Being and its Dimensions, Health Habits, Self Efficacy, Uplifts, Perceived Parental Care and Adaptive Coping Styles, viz., Task focussed and emotion focussed in comparison to adolescents who drink and smoke.

It was also hypothesized that non drinking and non-smoking adolescents would score lower on Stress dimensions viz., Hassles and Stress, Symptoms,
Depression, Avoidant Coping, Aggression and its dimensions and Sensation Seeking and its dimensions in comparison to adolescents who drink and smoke.

To test these hypotheses, t-test and Analysis of Variance were computed. Correlational analyses, Logistic Regression Analysis and Stepwise Discriminant Functional Analyses were also performed.*

Tables 1 to 8 show means, standards deviations and t-ratios for different group comparisons.

Table 1 shows means, SDs and t ratios comparing drug users and non users. The comparison revealed the following t ratio emerged significant. On SpWB, non user adolescents scored higher than drug users (t = 2.79, p < .01). On its sub dimension RWB also, non user adolescents scored higher than drug users (t = 3.51, p < .01). On Health habits total and on Exercise and Fitness dimensions, non users scored significantly higher than drug users (t = 2.23, p < .02). On Perceived Parental Care, non-users scored higher than drug users (t = 2.32, p < .02). Similarly on Emotion Focussed Coping, non-users scored higher than drug users (t = 2.86, p < .00).

In case of Depression (t = 2.18, p < .03), Experience Seeking (t=2.77, p < .00), Disinhibition (t=2.72, p<.00), Boredom Susceptibility (t=2.03, p<.04) and Total Sensation Seeking (t=3.59, p < .00) significant differences between means of two groups emerged with drug user group scoring higher than non-drug users.

The ANOVA (Tables 9 to 35) revealed the F ratios to emerge significant for SpWB and its dimensions (non-users scoring higher). The non users scored higher in case of Exercise and Fitness, Avoidance of use of alcohol and drugs Total Health Habits, Self Efficacy, Perceived Parental Care and Emotion focused coping.

* Note: Hence forth in discussion smoking and drinking adolescents would be categorized as drug user group compared to non drinking, non-smoking adolescents to be called non-drug users.
On the risk factors, F ratios emerged significant for Stress Dimensions, i.e., Hassles and Stress Symptoms (drug users scoring higher than non-users), Depression, Experience Seeking, Disinhibition, Boredom Susceptibility, Total Sensation Seeking and Anger (with non-drinking, non-smoking adolescents scoring lower than drug users).

Logistic regression analysis (Table 44) revealed Religious Well Being, Emotion Focussed Coping, Experience Seeking dimension of sensation seeking and Uplifts to distinguish drug users and non-drug users. As discussed earlier, non-drug users scored higher on Religious Well Being, Uplifts and Emotion Focussed Coping but drug users scored higher on sensation seeking dimension of Experience Seeking.

Results clearly revealed that as hypothesized, in majority of cases, significant differences emerged on risk and protective factors between drug user and non-user groups. The results lead credence to the rationale and objectives of the study. The results have support from many earlier studies in the field.

In the present investigation also, spirituality has been found to be protective factor against drug use and this is confirmed in consonance with earlier studies. Many viewpoints have been put forth to define spirituality. There are two theoretical models within the spirituality literature: Frankl's (1963) existential theory and Palaoutzran and Ellison's (1982) conceptualization of spirituality. Frankl’s work focussed on the ability of individuals to find meaning in their life (finding a life purpose or a sense of life fulfillment and satisfaction), whereas Frankl had focussed exclusively on the existential domain of spirituality. There had been an emergence of 3rd view also which argued spirituality to be a combination of religious and existential dimensions. Palaoutzran and Ellison (1982), stated spirituality to be a combination of Religious Well Being (harmony with God or a higher power) and EWB (nonreligious sense of meaning and purpose in life).
Spirituality has been conceptualized as a flexible coping mechanism rather than a stable trait, a view that is consistent with the operational definitions used in existing empirical literature on spirituality and religiosity. In particular, religiosity has been reported to serve as a coping strategy to help manage emotional distress (Koenig et al., 2001), and religious and/or spiritual coping strategies have been found to be helpful in dealing with the emotional impact of illness (Lamdan et al., 1997). Lazarus and Folkman’s (1984) transactional model of stress defined coping as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person”. This model also distinguished between emotion-focussed coping, which regulates the emotional response to the problem, and problem-focussed coping, which manages or alters the problem causing the distress. Carver (1997) found that spirituality does not fall into either emotion-focussed or problem-focussed coping domain, but rather is a separate construct, a factor that is distinct from all other coping strategies. His study assessed the importance of Religious Well Being versus Existential Well Being in accounting for the variance in psychological adjustment. They found that the broader construct of Existential Well Being primarily accounts for the relation between spirituality and psychological outcomes like reducing anxiety/depression and distress than Religious Well Being. Other studies also examined the buffering role of religiosity for stressful life events. Several studies reported that as compared to Religious Well Being, Existential Well Being revealed stronger relations with psychological adjustment (Fehring et al., 1997) and quality of life (Brady et al., 1999). Moreover, other studies observed that meaning in life is a mediator between religiosity and psychological adjustment. Finding meaning and purpose of life may comprise a broader, more universal construct that plays an important role in psychological adjustment and stress reduction. Therefore, one may expect spirituality to be a protective factor in preventing drinking and smoking and EWB to be playing a greater role than RWB in preventing drug use.
Religiosity and Drug Abuse

According to Wills et al. (2003), religiosity is a protective factor with regard to health status and healthy behaviours. Epidemiologic studies have indicated that religiosity is inversely related to adult mortality rates, and lower rates of substance use among individuals with an involvement in religion (McCullough et al., 2000). A relation of religious involvement to lower rates of alcohol use and problem behaviour among adolescents was also observed (Wills et al., 1996). These authors further added that family support and problem-solving skills have been shown to reduce the effect of life stress on outcomes such as adjustment and academic achievement, and parental support reduces the impact of negative life events on adolescent substance use. There is some evidence in favour of religiosity as a protective factor, evidenced by studies showing that measures of religiosity are inversely correlated with indices of adolescent substance use (Wallace and Forman, 1998), and considerable evidence indicating that life stress is a risk factor for adolescent alcohol and other drug use (Chassin et al., 1993).

Given the existence of buffering processes, it is thus plausible to predict that religiosity has a buffering effect for adolescent stressors, reducing the impact of life events on alcohol and other substance use.

George et al. (2000) outlined pathways for buffering effect of religiosity in adolescent substance use. In theory, a protective resource could act to directly counter the impact of a stressor; for example, financial support would directly reduce the impact of financial problems. Religiosity operates in such a manner, because it probably affects multiple psychosocial domains. At the individual level, buffering could occur because religiosity affects attitudes and values. For example, it may be related to the perceived meaning and purpose in life (George et al., 2000) and could also be related to values and attitudes about substance use (Brody et al., 1996). These factors could moderate the impact of negative life events through cognitive or attitudinal mechanisms. Wills et al. (2003) also evidenced
that buffering might also occur because of relations to coping processes, social networks, or both. Religiosity may influence the way people tend to cope with problems and their perceptions about the coping functions of substance use, hence an indirect mechanism through coping processes could act to alter the effects of life stress on various outcomes. In the domain of social processes, religiosity could be associated with the characteristics of an adolescent’s network of adults and peers and may be related to integration in the larger community through participation in social and service activities, a factor that could also work to produce buffering effects. Klein et al. (2006) found religiosity in women to be negatively related with drug use.

There is a large body of research on Alcoholics Anonymous, Narcotics Anonymous, and other 12-step programs in which spiritual growth is a central tenant.

According to Galanter (2006) Alcoholics Anonymous (AA) is described as a spiritual fellowship by many of its members, but its spiritual orientation needs to be better understood by clinicians and researchers. Spirituality is a latent construct, one that is inferred from multiple component dimensions, such as social psychology, neurophysiology, and treatment outcome research. Alcoholics Anonymous (AA) dates back to 1935 when Bill, a layman, experienced a spiritual reawakening that led him on a path towards recovery from alcoholism. Since that time, countless people with addictions have attributed similar relief to this movement. AA is called a spiritual fellowship by its members. The validation of spirituality, a seemingly enigmatic term, must ultimately be based on psychological and physiological findings.

In the 12-step experience AA creates a sense of commonality, as distinguished from the conventional institutional context, and this solidarity is an important aspect of the program's spiritual nature. The fellowship's orientation to mutual support creates a shared sense of renewal that validates the behavioural
requirement of recovery—namely, maintaining abstinence. For addicted group, the orientation to mutual support has also sustained the integrity and structure of AA as a movement. The clinical benefit of AA mutual support has been demonstrated in controlled studies on enhanced outcome in addiction treatment (Galanter, 2006). Members of AA showed reduced relapse and greater abstinence after treatment of alcoholism.

Research outcome has not been uniform here as many studies suggested that affiliation with 12-step programs, especially when measured in the form of active participation rather than mere attendance is positively related to improved recovery in substance abuse. In addition, increases in Religiosity/Spirituality (R/S) measures often occur during treatment and 12-step participation, and such increases predict subsequent abstinence from drug use and drinking. In the culture of recovery, many drug users, treatment providers, and faith leaders believe that Religiosity/Spirituality is critical to success (Tonigan, 2007).

Scientists have tested the hypotheses regarding processes by which Religiosity/Spirituality might lead to better health. It is possible that some of the Religiosity/Spirituality effect may not be direct, but is accomplished through intervening or mediating variables. The relationship between Religiosity/Spirituality and health may be mediated by social support, especially when one's social network includes clergy or fellow congregants whose support is grounded in Religiosity/Spirituality precepts, for example, having someone to pray with (Krause, 2002). Other Religiosity/Spirituality mediators suggested in earlier studies included optimism, self-esteem, sense of coherence, (low) psychological distress, and (low) thought suppression. Finally, in the domain of drug problems, Religiosity/Spirituality may provide a source of motivation for and confidence in recovery. Thus, abstinence motivation and abstinence Self-Efficacy are important mediators as confirmed by the studies of Saunders et al. (2007) and Longshore et al. (2008).
Additionally, the relationship between R/S and health may be especially moderated by certain demographic variables such as gender and age. In the general population, women score higher than men in most Religiosity/Spirituality measures. Gender differences have also been found in drug users, with men more likely to report more severe drug use and more serious associated problems than women (Saunders et al., 2007).

According to Appel and Appel (2009), mindfulness can be viewed as an effort to intentionally pay attention, non-judgmentally, to one’s present-moment experience and sustain this attention over time. Mindfulness is a cognitive strategy that develops a perspective that cultivates the recognition of thoughts and feelings as passing events created in the mind. By practicing the skills of moment-to-moment awareness, one seeks to gain insight into patterns in thoughts, feelings, and interactions with others, and then one can skillfully choose helpful targeted responses rather than automatically reacting in habitual, over learned or unconscious ways. The aim of mindfulness is to cultivate consistent and non-reactive present moment awareness or directed attention. Mindfulness has been found to be negatively related with drug abuse. A study by Appel and Appel (2009) found that recovering individuals who rate themselves as being more spiritual than religious had better outcomes. It was suggested that spirituality contributes to a more optimistic outlook in life whereas religious faith acts as a buffer to stress. Mindfulness is now included as a technique for coping with cravings to engage in substance abuse and also prevent relapse in addiction.

HEALTH HABITS AND DRUG ABUSE

Results of the present study have shown health habits to protect against drug use. Smoking and physical inactivity are behaviours of primary public health concern (Amisola and Jacobson, 2003). The harmful effects of tobacco on people’s health is well documented and it is estimated that worldwide about five million deaths can be attributed to smoking on a yearly basis. Physical activity on
the other hand, has proved to have important beneficial effects on health in terms of aerobic fitness, blood pressure, body composition and mental health. It has been suggested that engagement in physical activity may serve as a protective factor for smoking in adolescence. Hence, physical activity may improve health not only directly, but also through its protective effect on smoking (Verkooijen et al., 2008). Several cross sectional studies have demonstrated a negative correlation between physical activity and the use of tobacco in adolescents (Wilson et al., 2005).

Carlini-Marlatt et al. (2003) found physically active adolescents to be less likely to smoke and drink. Strong parental bonding was also found to promote health habits in youth. Results of another study also reported family support and cohesion to be inversely related to illicit drug use and positively to healthy habits (Eaton et al., 2006).

Greater participation in physical activity has been associated with lower BMI and less weight concern among youth (Gillison et al., 2006). In turn, weight concern and to a lesser degree, a higher BMI has been linked with increased smoking, especially among girls (Potter, 2004). Hence, participation in physical activity might prevent smoking due to its favourable effect on body weight. Physically active adolescents with weight problems might be more likely to smoke than their active peers without weight concern since they may use smoking as an additional mean to control weight.

Chen et al. (2006) examined the extent to which the use of the three most commonly consumed drugs (i.e., alcohol, tobacco, and betel nut) was related with health-related quality of life among adolescents in Taiwan. They probed whether the relationship linking alcohol use with health-related quality varied by health-oriented domains (e.g., physical, social, or emotional) or it differs with other drug involvement. They found poorer health habits among youth who were actively drinking.
Adolescents’ self concept regarding physical activity has also been put forward as a variable that may link physical activity and smoking. Research has demonstrated that adolescents who identify themselves as a “jock” or “sporty” are less likely to engage in smoking (Verkooijen et al., 2007). Moreover, Rodriguez and Audrain (2005) found that adolescents’ global physical self-concept (i.e., an overall estimation of the physical self, including physical appearance and competence) served as a mediator in the physical activity and smoking relationship. Thus, leisure time physical activity may contribute to a physically active self-concept and keeps away adolescents from smoking. Verkooijen et al. (2008) examined the relationship between adolescents’ leisure time physical activity and smoking behaviour, while considering BMI, weight concern, sense of coherence, and physically active self-concept as potential mediating and moderating variables. Data were obtained through a postal survey among 3,940 Danes aged 16 to 20. Bivariate and multivariate logistic regressions were performed to identify significant associations as well as mediating and moderating effects. In the bivariate model, leisure time physical activity was negatively associated with smoking; adolescents who were active at least one hour per week were up to half as likely to smoke as inactive adolescents.

Results revealed that participation in leisure time physical activity was indeed inversely associated with adolescent smoking, if physical activity was perceived as an important part of the self. As such, interventions designed to promote physical activity among youth may lead to boost physically active self-concepts and save youth from drug abuse.

According to Dzewaltowski et al. (2008), despite the evidence showing that physical activity was related to a number of beneficial physical and psychological outcomes in children and adolescents, many youths are failing to be sufficiently active. Childhood and adolescence is a critical developmental period for the promotion of physical activity. Unfortunately, there is a well-documented
decline in physical activity participation by youth as they progress through the school-aged years. It was hypothesized that parent bonding would influence the association between parental physical activity and that of youth after school. They found that youth who were strongly bonded to their parents had after-school physical activity levels similar to their parents, while less bonded youth reported after-school physical activity levels less similar to their parents. Social bonds with parents moderated unhealthy behaviour like drug use also.

SELF EFFICACY AND DRUG ABUSE

Self Efficacy emerged to be a significant protective factor in the present study against drug use. According to Badr and Moody (2005), many people are still smoking regardless of the knowledge that tobacco smoking is potentially lethal and is considered the single, primary cause of preventable, premature deaths worldwide. Moreover, many of the smoking cessation programs fail and a large percentage of smokers are not even motivated to discontinue smoking (Dijkstra and De Vries, 2000). Self-efficacy (SE) may be playing an imperative, influencing, and effective role in the success of such programs. SE, a construct derived from social learning theory (SLT). SLT refers to an individual's conviction that he or she is capable of executing a course of action to produce a given outcome. According to SLT, there is an interaction among behavioural, personal, and environmental factors. Such factors through the process of reciprocal determination may affect an individual's self-confidence that he or she can resist an adverse behaviour or habit, for example, smoking. Further, according to Badr and Moody (2005) the failure of most of the smoking cessation programs might be due to negligence of including self-efficacy as an imperative factor in changing many adverse behaviours. Their study investigated the role of self-efficacy as a predictor for smoking cessation contemplators and precontemplators in adult boy Kuwaiti smoker employees. A sample of 657 Kuwaiti boy smokers represented the target population. Stepwise multivariate logistic binary regression analysis
illustrated that self-efficacy was the first predictor for contemplating smoking cessation followed by monthly income. Self-efficacy as a cognitive determinant should be considered to mediate improvement in the smoking cessation programs. This finding was consistent with that of Stuart et al. (1994). These authors concluded that Self Efficacy is a significant predictor of making an attempt to quit smoking. High Self Efficacy was inversely related to making attempts to quit by positively related to the success of attempts has also been revealed by (Sobti, 2009).

Stamatakis et al. (2003) investigated the association of self-esteem and 10-year all cause mortality in population-based sample of 2,682 boy residents of Kuopio, Finland who were followed prospectively as part of the Kuopio Ischemic Heart Disease Risk Factor Study. They reported that though lower self-esteem was associated with many socioeconomic, behavioural, psychosocial and disease characteristics, no association between self-esteem and all-cause mortality was observed after adjustment for other psychosocial characteristics, primarily hopelessness (MacArthur, 2004). Low self-esteem can have devastating consequences:

- It can create anxiety, stress, loneliness and increased likelihood for depression.
- It can cause problems with friendships and relationships.
- It can seriously impair academic and job performance.
- It can lead to underachievement and increased vulnerability to drug and alcohol abuse.

According to Klein et al. (2006), self-esteem is a construct closely related with self efficacy and the latter has been found to be related with drug abuse among women. Those with higher self-esteem reported less drug abuse as both depression and optimism levels were associated with drug abuse. More drug use
was reported by women who were more depressed than those who were more optimistic about the future. Subjects with high self esteem were more optimistic.

Self-esteem is the affective of emotional aspect of self and generally refer to how one feels about or how one values oneself (one’s self-worth) (Alavi, 2007). Self-concept is the general idea we have of ourselves and self-esteem can refer to particular measures about components of self-concept. A great deal of research showed that the self-concept is, perhaps, the basis for all motivated behaviour (Franden, 1994). Self esteem is linked with motivated behaviour. Both self esteem and self efficacy are inversely related to tobacco, alcohol and drug abuse.

Low self esteem and familial environment are causatively linked to substance use and abuse, and that the parent-child relationship provides the experiences from which self esteem is developed (Alavi, 2007). Substance abuse is a frequently observed, maladaptive attempt to cope with the experience of pain associated with low self esteem. Adolescent substance abuse and measures of self-esteem are highly negatively correlated. It has been inferred that young child whose self esteem is not sufficiently nourished will group with adolescents having greater propensity for substance abuse (Alavi, 2007).

According to Rubino (2007), low self esteem is the number one causative factor that the vast majority of drug and alcohol addicts share in common. By definition, those possessing low self esteem are typically challenged in four key areas. They feel that they lack personal power and so their ability to influence others is compromised. Secondly, many with low self esteem feel as though they are insignificant to others, lacking the affection and attention of others who hold them in low regard. Thirdly, low self esteem results when people feel that they lack virtue. In other words, they are plagued by an inherent nagging sense of not being a good person morally or ethically. They often feel unloved, unappreciated, and unwanted and so they feel that they must not be good enough to be worthy of such love and appreciation. Lastly, those possessing low self esteem often hold
themselves as incompetent in one or more areas of life. They fear they are unable to maintain control of their lives and as a result, they are easily dominated by others who they perceive as being more powerful and capable than they are. This often results in ineffective communication and social conflicts which diminishes their self esteem further.

It is no wonder that those with low self esteem often resort to addictive behaviours in an effort to numb out the pain and escape to a world that allows them a temporary release from their sufferings and problems. Alcoholism and drug dependency enables those with low self esteem to cover up their pain, at least for a while. The problem lies in the fact that such addictions render these drug and alcohol addicts incapable of overcoming the challenges that originally caused them to seek refuge in their addictions (Rubino, 2007).

Stein et al. (2008) while evaluating the relationship of self-esteem to poorer psychological outcomes showed that lower self esteem led to emotional distress and substance abuse. Higher individual self-esteem appeared to provide a protective psychological foundation that facilitated more positive decision-making and behavioural responses. Similar results were obtained by Kavas (2009), Moeller and Crocker (2009) and Schwarzer, (2010).

PARENTAL BONDING AND DRUG ABUSE

Parents play a great role in socialization. The key function of a child’s family is to raise the young person in as healthy a manner as possible. The parents’ role is to provide the child with a safe, secure, nurturant, loving, and supportive environment, one that allows the offspring to have a happy and healthy youth. This sort of experience allows the youth to develop the knowledge, values, attitudes, and behaviours necessary to become an adult making a productive contribution to self, family, community, and society. What a parent does to fulfill these “duties” of his or her role is called parenting. Parenting a term that summarizes behaviours used by a person-usually, but, of course, not exclusively,
the mother or father-to raise a child. Given the above-described characteristics of this set of activities, it is clear that parenting is the major function of the family (Canetti et al., 1997). Hence, parenting, parental bonding are strong protective forces against substance abuse. In fact parenting has emerged as playing a critical role (Kotchik and Forehand et al., 2002). It has long been recognized as making an important contribution to child development. A rich empirical history has documented how various parenting attitudes and practices influence child behaviour and the development of either prosocial competencies or psychosocial maladjustment. Generally speaking, these studies have found that parenting practices that include the provision of positive reinforcement, open displays of warmth or affection, involvement in and active monitoring of children’s activities, and consistent, but not overly harsh disciplinary strategies tend to relate to various measures of adaptive child psychosocial adjustment, including academic competence, high self-esteem, positive peer relations, and fewer child behaviour problems.

Bowlby (1969) and Canetti et al. (1997) emphasized the central role of the relationship between parent and child in normal development. They postulated that the attachment behaviour that one observes from six months onward is made up of a number of instinctual responses which mature at different times, serve the function of binding the child to the mother, and contribute to the reciprocal dynamics of that binding. Many psychiatric disorders including substance abuse are attributed either to deviations that have occurred in the development of attachment behaviour or more rarely to a general failure of its development (Bowlby, 1988). Tyas and Pederson (1998) also observed that parental attachment and support influence smoking among adolescents. Parental and other adult support is protective against adolescent smoking. An authoritative, positive parenting style has been associated with lower levels of adolescent smoking. Some aspects of child rearing, however, may have differential effects for boys and girls.
Low parental concern increased the risk of boys taking up regular smoking, whereas poor communication with parents and restrictions on going out raised the prevalence of smoking in girls. A permissive, distracted family environment has also been related to illicit drug use in girls.

*Keeping the above in view, it was hypothesized that perceived parental care would emerge as a protective factor. As expected, results clearly revealed non drug users to score higher than drug users on this dimension. Literature is replete with similar findings.*

Several authors have underlined the importance of parental rearing styles in the development of alcoholism (Marchiori et al., 1999). Several demographic characteristics like socio-economic status, father’s education and occupation play important in parental drinking and act as enabling factors in alcohol use as it give easy assess buying alcohol (Sobti, 2009). Some researchers observed that alcoholics, compared with a normal population, report considerably higher scores on rejection and over-protection and considerably lower scores on emotional warmth for both parents. Bernardi et al. (1989), using the Parental Bonding Instrument (PBI) (Parker et al., 1979) and comparing alcoholics with normal controls, found that alcoholics had higher maternal protection scores than controls.

While working out the effect of peer and parent influences on middle school students' substance use in 4,263 sixth- to eighth-grade students. Simons-Morton et al. (1999) showed direct peer pressure and deviant friend associations to be positively and parent involvement, parental expectations, and parental regard to be negatively associated with smoking and drinking. Peer pressure was positively associated with drinking in cases of both boys and girls.

To understand the context for tobacco smoking in young adolescents Pinilla et al. (2002) conducted a study estimating the effects of individual, family, social and school related factors. 14.2% of the young teenagers surveyed used tobacco, almost half of them (6.3% of the total surveyed) on a daily basis. According to the
ordered logistic regression model, to have a smoker as the best friend increased significantly the probability of smoking. Experience with alcohol, and lack of interest in studies were also significant factors affecting smoking. Multilevel models of logistic regression showed that factors related to the school affect the smoking behaviour of young teenagers. More specifically, whether a school complies with antismoking rules or not is the main factor to predict smoking prevalence in schools. The remainder of the differences can be attributed to individual and family characteristics, tobacco consumption by parents or other close relatives, and peer group.

Shamsuddin and Abdul (2002) while measuring the prevalence of cigarette smoking among boy secondary school children and assessing their family influence especially that of fathers' smoking habits on their current smoking habits revealed family factors, fathers' and siblings' smoking habits, and lack of parental supervision to be significantly associated with the students' current smoking habits.

Adolescents who felt a stronger sense of belonging in their school reported a lower lifetime use of alcohol and cigarettes, lower cigarette and marijuana use, lower frequency of current use of these substances, fewer substances ever used, and a later age of initiation into drug use (Napoli et al., 2003). These results were confirmed by the studies of Lundborg (2005) and Sher et al. (2005).

Several theories have been put forth to explain peer influences, in the context of adolescent drug use (Yanovitzky, 2005). Two of these, social control theory and problem behaviour theory, focus on the degree of attachment to peers and other positive or negative social influences. According to social control theory (Hirschi, 1969), weak attachment to family, school, and the community led association with deviant peers, leads to drug abuse. Erickson et al. (2000) who tested this proposition, found that strong social bonds indirectly reduced adolescents' drug use by decreasing associations with deviant peers and
susceptibility to the negative influences of peers. Similarly, problem behaviour theory (Jessor and Jessor, 1977) posits that an adolescent's proneness to drug use will be a function of the balance between protective and risk factors—some of which are proximal (immediate), whereas others are distal (indirect influences)—that is unique to each adolescent and the extent to which his overall lifestyle favours engagement in unconventional behaviour over conventional behaviours. Specifically, weak attachment to parents and conventional (non-deviant) peers and strong attachment to deviant peers were found in constellation of deviant behaviours, including substance use.

Other theories have focussed on social learning of drug use through social interaction with deviant peers. Peer cluster theory posits that drug use occurs in the presence of peers (particularly, the most important peers or the peer cluster). Peers encourage adoption and ongoing use by tolerating drug use, providing emotional support, furnishing education about drugs, and making drugs available. Members of the peer cluster are not passive participants who are influenced by others, but themselves contribute to development of peer clusters norms and behaviours in the context of drug use. The results of Yanovitzky (2005) supported the hypothesis according to which other risk or protective factors may increase or decrease the risk that adolescents (particularly those who are most prone to drug use, such as high sensation seekers) will engage directly in drug use or in activities (such as associating with deviant peers and having pro-drug discussion with peers) that will increase this risk. It is also clear that a different constellation of factors may be more or less effective in each case. For example, religiosity may protect adolescents from having pro-drug discussions with peers or from developing intention to use drugs, but not from associating with deviant peers. Similarly, positive family relationships protect against association and pro-drug interactions with but not against actual drug use. On the other hand, parental monitoring seemed to be an important protective factor in all the three instances.
Parenting behaviours play an essential role in the development of antisocial problem behaviours among children and adolescents, including substance use (Barnes et al., 2000). Increased parent monitoring and consistent discipline have been shown to reduce adolescents' alcohol use and/or delay initiation of alcohol use. Positive parenting (communication, nurturance, association and support) is frequently considered a protective factor having a buffering effect on negative outcomes. Tildesley and Andrews (2008) found similar results.

A study by Gau et al. (2007) revealed that as regards substance abuse that the most predictive factors were boy gender, ADHD, conduct disorder, and sibling using tobacco. On the other hand, the risk of substance use disorder was significantly lower for students with a household of two parents, better academic grades and objection to use of a substance by parents. Regarding peer influences, those who preferred to be with their friends using drugs rather than their family during their spare time and those who passed their time in unsuitable places, were more likely to develop substance use disorders.

A dual process model was supported by Andrews et al. (2008). In this risky behaviour is influenced by two pathways: one that is reasoned and another that is reactive. Both cigarette and alcohol use in adolescence are influenced by both intention to engage in the behaviour and by willingness to do so. In support of the prototype/willingness model (Gerrard et al., 2006), both the intercept and slope of prototypes (social images of substance users) predicted cigarette use through willingness to smoke. Andrews et al. (2008) concluded that elementary children have measurable cognitions regarding substance use that develop during the elementary years and predict use later in adolescence. These findings emphasized the need for prevention programs targeted at changing children’s social images of substance user and encouraging more accurate perceptions of peers’ use. The results also emphasized the importance of children’s cognitions about substance use throughout the elementary years.
Based on previous literature studying gender differences in peer influences it was expected that stronger relationships between the initial level and growth of subjective norms, intentions and willingness for girls than for boys will be there. As expected in contrast to boys, girls’ increase in perception across the elementary years of the number of peers who smoked was related to a higher intention to smoke in the future and to more willingness to smoke. For girls, the effect of the slope of prototypes on cigarette use was through both willingness and intention, whereas for boys, effect was only through willingness. Girls have a greater concern about rejection from friends and have a greater need to be popular. These concerns may guide girls to be planful as a result of their social images of smokers, leading to intention and willingness to smoke.

Because the frequency of girls’ cigarette use was greater than that of boys, the finding of more significant pathways to use is meaningful. All paths must be targeted in smoking prevention programs, with a particular emphasis on both the affective and reasoned pathways for girls. Only one gender difference was found in the model predicting alcohol use, and this effect was in the opposite direction to that hypothesized. The initial level of perception of peer alcohol use was significantly related to intentions only for boys. There is really no obvious explanation for this finding, which is not supported by previous research. The stronger effects for girls than for boys found only for cigarette use, could be due to the relative acceptability and prevalence of alcohol as compared to cigarette use (Andrews et al., 2008).

Voisine et al. (2008) reported that the forms of the family relationships (close relationships between the parents and the children, passing time together, being in a healthy relationship and the habit of having dinner together) protect their children in high schools and universities from initiating smoking. Similar results had been confirmed by other authors (Macleod et al., 2008; Prestopnik and Slesnick, 2008).
Based on an instance of "clinical lore", Marshal and Chassin (2000) assessed the efficacy of children's and adolescents' knowledge of family history as an index of psychological well-being and potential for positive change in clinical and educational settings. Knowledge of family history is significantly correlated with internal locus of control, higher self-esteem, better family functioning, greater family cohesiveness, lower levels of anxiety, and lower incidence of behaviour problems including drug abuse. The more children said they knew about their family histories the lower their anxiety, the higher their self esteem, the more internally controlled they were the better their family functioning. The researchers believed that knowledge of family history reflects certain processes that exist in families whose members know their histories. One such process is the communication of family information across generations; important questions about this process would include “Who is passing this information?” and “When is this information transmitted?” In their study of family rituals at the Family Narratives Project, they found that family stories seem to be transferred by mothers and grandmothers more often than not and that the information was typically passed during family dinners, family vacations, family holidays, and the like. Other data indicated that these very same regular family dinners, yearly vacations and holiday celebrations occur in families that have high levels of cohesiveness and that they contribute to the development of a strong sense of what we have called the intergenerational self. It is this intergenerational self and the strength and guidance that seem to derive from it that are associated with increased resilience, better adjustment and indulging in drug abuse.

A large body of research showed that the type of parenting style used by the parent(s) had greatest effect on adolescent drug use. The authoritative parenting style was recognized as the most successful style for developing competent and confident children. Family conflict, family bonding, and peers' antisocial
behaviour all as independent predictors determine drug use in adolescence (Rai, 2008).

According to Sacker and Brady (2008) parental warmth and responsiveness had a protective effect through decreasing changes in expectancies about alcohol and affiliation with peer users.

The quality of the relationship between parents and their children may also underlie the observed relationship between nicotine dependence and problem behaviours (Pahl et al., 2010). For instance, conflict with their parents may lead adolescents to smoke and become dependent on nicotine, as well as to engage in other problem behaviours (such as drug use or violence). In this study, a construct measuring the degree of adolescents’ conflict with their parents was included. Characteristics of the larger social environment, including schools and neighborhoods, may also influence both levels of nicotine dependence and other problem behaviours, in particular other substance use. Kaiser and Perrin (2009) also found similar results.

A study by Leeuw et al. (2010) examined if effects of peer smoking family smoking and parenting on smoking development during adolescent were moderate by personality characteristics of adolescents. Leeuw et al. (2010) obtained longitudinal data from 428 adolescents, (mean aged = 13.4 years) and their parents. Latent Growth Curve models assessed the development of smoking as a function of predictors and if effects of smoking-specific parenting and exposure to smoking were moderated by adolescents’ Big Five personality dimensions. It became apparent that having peers who smoker was associated with an increased likelihood of being a smoker at baseline. Further, significant interactions revealed that adolescents lower in agreeableness were more likely to be smokers at baseline if they had an older sibling who smoked or if their parents engaged in frequent smoking-related discussions with them. Effective smoking-specific conversation was more strongly related to smoking at baseline among adolescents who were
highly emotionally stable. No interactions predicted growth in smoking over time, yet significant main effects showed that growth in smoking was associated with higher levels of extraversion, lower levels of emotional stability, and less effective parental smoking-specific communication. This study highlighted the relevance of personality-targeted interventions and policy programs directed at parents and peers.

Adolescence presents a prime time to intervene because the quality of parent–adolescent relationships is known to exacerbate or buffer against adolescent risk-taking behaviours, including smoking and drinking (Levy et al., 2010). Parents influence smoking through antismoking socialization, restrictive home smoking rules, modeling nonsmoking behaviours, monitoring of adolescents, restricting cigarette access, and positive parenting. These authors hypothesized that quality of communication between parents and children is important for smoking cessation. When communication about smoking was characterized by respect, openness, and acceptance, adolescents were more likely to examine beliefs and consider new behaviours. Fear of parental punishment and judgment and parental tendencies to lecture were barriers to effective communication. It was convincingly clear that quality of communication (i.e., how a parent communicates with a child) rather than content or frequency was associated with effective communication. When parents reacted emotionally or lectured, rather than engaged adolescents in discussions about smoking, this posed a barrier to communication. Although some parents felt that these conversations were helpful, adolescents did not. Thus, from the adolescents’ perspective, parent lecturing and criticism undermined parents’ intentions to motivate their children to reduce or quit smoking. Therefore, involving parents in adolescent smoking cessation programs may be promising. Parental involvement may include teaching parent–child communication skills and building stronger relational bonds (Levy et al., 2010).
STRESS, HASSLES, DEPRESSION AND DRUG ABUSE

In the present study, Stress, Hassles and Depression emerged as significant risk factors in drug use with drug users scoring higher on these dimensions than the non drug users. Sinha (2001) opined that stress in early life may increase vulnerability to drug use. Frone (1999) and Parrot (1999) had observed that adolescents often indicated that smoking helped relieve feelings of stress. Trim et al. (2007) found regular smoking to be more common among boys and girls who were rated as disturbed in childhood by their parents. Behavioural, emotional and environmental stress related problems predisposed adolescents to smoking and drinking in later life. Sobti (2010) as stress and coping play an important role in substance abuse, teaching appropriate coping and stress management skill is important in prevention programs.

Several models of addiction have proposed that stress increases risk of drug abuse and relapse. However, the mechanisms by which stress exposure may enhance drug use and increase relapse risk remain elusive. There has been a dramatic increase in research to understand neural circuits associated with stress and those underlying addictive behaviours. Sinha (2001) has put forth theories to explain association of stress and drug use. Major theories of addiction postulate that acute and chronic stress plays an important role in the motivation to abuse addictive substances. The stress coping model of addiction proposes that use of addictive substances serves to both reduce negative affect and increase positive affect, thereby reinforcing drug taking as an effective, albeit maladaptive, coping strategy. Relapse prevention model (Marlatt and Gordon, 1985) stated that in addition to other biopsychosocial risk factors such as parental substance use, peer pressure and positive expectancies over the potential benefits of using substances, individuals with poor coping resources are at increased risk for problematic use of addictive substances. The popular tension reduction and self-medication hypotheses have proposed that people use drugs to enhance mood and alleviate
emotional distress. These models postulate that the motivation to enhance mood is great in acute and chronic stress states. Initially a drug may be used to modulate tension or distress; subsequently, with repeated success, it may become a more ubiquitous response for both stress relief and mood enhancement. The above models suggest that both negative reinforcement/relief from stress or positive reinforcement/mood enhancement can increase the vulnerability to drug abuse. Koob and Le Moal (1997) proposed a model that linked the negative and positive reinforcement aspects with drugs abuse. They postulated that stress leads to state-related changes in brain reward circuits resulting in a greater sensitivity to the reinforcing properties of drugs, and, thereby, increasing the motivation to use drugs compulsively. Thus, stress may act to “prime” brain reward systems, thereby enhancing the reinforcing efficacy of drugs, particularly in those vulnerable to drug abuse.

According to Trim et al. (2007) adolescents using alcohol and drugs are at increased risk for a variety of negative outcomes in young adulthood, including lower educational attainment and earnings, relationship problems, risky sexual and criminal behaviour, depression, anxiety and emotional distress.

Several theoretical models have been proposed to explain the association between adolescent substance use and internalizing symptoms like depression. Self-medication models propose that adolescents with preexisting emotional distress use alcohol and drugs to escape or cope with internalizing symptoms associated with their psychopathology. Alternatively, substance use may lead to a developmental lag wherein adolescents do not develop healthy interpersonal, self-regulatory, and coping skills, which makes them less able to cope with the demands of adulthood and more likely to experience internalizing symptoms. Also, the consequences of adolescent substance use, such as health or legal problems or difficulties at school or work, may extend into adulthood and contribute to the development of internalizing symptoms in young adulthood.
Finally, there is evidence that heavy drinking in adolescence is associated with detrimental effects on brain development and functioning of neuropsychological performance in adults. Thus, the neurotoxic effects of substance use in adolescence may impair cognitive functioning in adulthood. This could heighten the risk for adult internalizing problems due to difficulties in school and at work that are attributable to deficits in learning and memory. Similarly, animal research has suggested that drugs may hijack the reward mechanism needed for adaptive human behaviour. According to this theory, adolescents may limit their involvement in other sources of pleasure in order to acquire and use alcohol or drugs, and over time, this restriction of activities could increase vulnerability to subsequent depression and anxiety (Trim et al., 2007).

The integrative models of the co-occurrence of smoking-anxiety and depressive relations proposed by Johnson et al. (2008) posited that negative reinforcement/negative affect reduction expectancies among smokers, in particular, may be strongly related to negative emotional vulnerability. These predictions were formed on the basis of self-regulation theory and stress-coping perspectives of substance use. That is, among certain daily smokers, smoking serves important perceived affect regulatory functions. Those individuals who expect tobacco use to help alleviate aversive affective states may be particularly motivated to smoke for affect regulation purposes. Although the objective physiological and subjective mood-dampening qualities of smoking are complex, in the absence of other more adaptive coping strategies, such persons may learn to rely on smoking to manage negative mood states in the short-term. Moreover, as such individuals repeatedly smoke to reduce nicotine withdrawal symptoms (shakiness, anxiety), they may learn to rely on smoking to manage anxiety and related emotional states in other situations. This type of smoking behaviour may ultimately contribute to beliefs (negative affect reduction expectancies) that smoking is a personally powerful self-regulation strategy for managing negative
affect states such as anxiety and depression. Smoking outcome expectancies may, thus, play an important role in the maintenance of smoking behaviour. Johnson et al. (2008) further concluded that empirical research on outcome expectancies would suggest that simply believing smoking could be used as an effective response strategy for managing aversive emotional states may serve to confer risk for negative emotional vulnerability.

According to Unger et al. (2001), the associations among stress and adolescent smoking, alcohol use, and depression have been well documented in the United States, but a few studies have evaluated the evidence for these associations in Asian cultures also. This study developed a scale of stressful life events among 7th grade adolescents in Wuhan, China. These authors observed that most frequent stressors reported were bad grades or punishment at school, and the events reported as most stressful were disruptions in family life, such as death, divorce, or disability of parents. Associations were observed between stressful life events (especially negative school-related events) and smoking, alcohol use, and depressive symptoms. Results indicated that school-related stress may lead to substance use and mental health problems among Chinese adolescents.

Wills et al. (2002) conducted a comparative test of the hypotheses that (a) stress is an etiological factor for smoking and (b) cigarette smoking causes an increase in stress. Participants were a sample of 1,364 adolescents, with a mean age 12.4 years and followed at three yearly intervals. Measures of negative affect, life events and cigarette smoking were obtained at all three assessments. Latent growth modeling showed negative affect to be related to an increase in smoking over time. There was no path from initial smoking to change in negative affect. Comparable results were found for negative life events, with no evidence for reverse causation.

Motivational theories of drug use have assigned negative affect a central role in determining drug urges and drug relapse (Niaura et al., 2002). The purpose
of their study was to examine the effects of social stress on smoking urges in a controlled laboratory setting, and the relation of these responses to short-term (3-month) smoking cessation outcomes. As expected, during the induction stage, urge to smoke was positively associated with anxiety ratings and negatively with self-efficacy to resist smoking. However, only heart rate increase and behavioural social skills (observed by independent judges) predicted smoking abstinence at three months. These results suggested that subjective, affective and efficacy responses during a stressful social encounter are associated with smoking urges; however, urges and these responses may be related in different ways to the probability of smoking cessation.

Smokers often report that they smoke to relax or reduce tension, particularly in response to stress, anxiety, sadness, and anger. Smoking may increase smokers’ perceived that smoking is an effective way to cope with stress and anxiety. It follows then, that if smokers are exposed to stress their perception of control and coping may be impaired. Research into the link between stress and use of alcohol has largely been driven by the tension-reduction hypothesis, which posits that drinking alcohol reduces stress and that individuals under stress drink alcohol to benefit from this effect (Fouquereau et al., 2003).

Some problems in this case as put forth by Fouquereau et al. (2003) are that (a) for the average person, stress is not the only reason to drink, (b) for the average person, drinking is not the only behaviour triggered by stress, and (c) at least for some people, alcohol itself is a stressor. When assessed at the level of subgroups of the general population, the relationship between stress and alcohol intake appeared stronger. This is the case among people for whom (a) alcohol is firmly expected to reduce stress (b) drinking alcohol is part of the behaviour repertory, and (c) drinking alcohol is the only available way to reduce high tension. These results were certainly important, but not surprising.
To elucidate the presumed link between stress and alcohol intake, these authors (Fouquereau et al., 2003) examined it from a cognitive perspective. They studied and compared the cognitive processes involved among alcoholics and non-alcoholics. On the one hand, they assessed the stressful character of events and combination of events and, on the other hand assessed the urge to drink stimulated by these events. The patterns of stress attributed to the ten individual life change events were very similar among alcoholics and non-alcoholics. Although expected stress was slightly lower in non alcoholics the relative positions of the 10 events were identical. In contrast, the patterns of urge to drink stimulated by these events were quite different. For the alcoholics participants, the relationship between perceived stress and perceived urge to drink was positive and quasilinear. The urge to drink was considerably lower in non-alcoholics.

A growing clinical literature also revealed a link between substance abuse and stress (Goeders, 2004). One explanation for the high co-occurrence of stress-related disorders and drug addiction is the self-medication hypothesis, which suggests that a dually diagnosed person often uses the abused substance to cope with tension associated with life stressors or to relieve symptoms of anxiety and depression resulting from traumatic events. Data obtained from both human and animal investigations indicated that exposure to stress increases the vulnerability to addiction. The animal literature suggested that stress increases reward associated with drugs such as cocaine and amphetamine through a process similar to sensitization. The growing literature on drug addiction indicated that there is a similar link between substance abuse and stress as reflected in the high co-occurrence of Post Traumatic Stress Disorder (PTSD) and drug addiction. These results were replicated in a study of Lawrence et al. (2004).

Depressed people are overrepresented among current smokers, especially smokers high in nicotine dependence (Haaga et al., 2004). Moreover, they have a harder time achieving and maintaining abstinence than nondepressed smokers.
This difficulty in quitting was observed even with low, subclinical levels of depressive symptoms or a history of depression in the absence of current depression. A history of depression may serve as a marker of current depression vulnerability and depression-vulnerable smokers are especially likely to use smoking as a means of managing negative affect. Therefore, smoking cessation would seem to deprive depression-vulnerable smokers of one of their most dependably available and effective mood-regulating coping skills, which could account for the difficulty that they experience in trying to quit. Consistent with this conjecture, findings by Haaga et al. (2004) indicated that smoking cessation selectively increased depressive symptoms and negative mood among smokers with a history of major depression, and that increases in negative mood upon quitting smoking predict relapse.

Tsokh and Hall (2004) designed a study to examine the relations among daily negative events, perceived stress, smoking and smoking urges. The moderating effects of gender and nicotine dependence were also explored. Fifty-one adult community-residing smokers recorded negative events, perceived stress, cigarette smoking and urges to smoke four times daily for fourteen days. Analyses of within-person relations showed that participants smoked more cigarettes and experienced more urges to smoke on occasions with higher number of negative events and higher levels of perceived stress. These relations were stronger for men than for women. Nicotine dependence did not interact with events or stress in predicting smoking or smoking urges. These findings build on laboratory studies and cross-sectional surveys by showing that in naturalistic settings, negative events and perceived stress are associated with smoking and urges to smoke.

A cross-sectional study conducted on a sample of 891 adolescents in Sri Lanka revealed 57.7% of the participants to be having elevated depressive
symptoms (Perera et al., 2006). Alcohol use, smoking, and low physical activity were found to be associated with elevated depressive symptoms.

Making far reaching life decisions and passing through transitions to new roles explain why the transition to young adulthood has been put forward as the most stressful life stage (Bell and Lee, 2006). Research on substance use, including smoking, showed a peak in use during the transition to young adulthood, followed by a decrease as individuals take on more adult roles. Smoking is more likely than illicit drug use to be maintained beyond this transition, because it is more socially and legally acceptable (Bell and Lee, 2006).

Gau et al. (2007) found elevated stress and maladaptive coping related to childhood maltreatment which got translated to greater substance use behaviour by making the coping motives of substance use to appear more attractive. Indeed, substance users commonly reported using psychoactive substances such as alcohol, cannabis, and cocaine to cope with stress and regulate affect.

Associations between a personal history of childhood maltreatment and the perceived stress and stress-coping styles of recently abstinent and treatment-engaged cocaine dependent adults were examined by Hyman et al. (2009). It was shown that the severity of overall childhood maltreatment experienced by recently abstinent cocaine dependent adults had a significant relationship with perceived stress and avoidance coping in adulthood. There was an increased prevalence of depressive symptoms and suicidal ideation in China also. Financial pressure, family conflicts and stress at work/school were identified as important contributing factors (Yip, 2001). Studies conducted in China indicated that family, school, and peer-related stressful life events among adolescents were related to depressive symptoms, alcohol use, and smoking. The evidence of an association between depression or depressive symptoms and smoking in earlier research suggested that students might attempt to use smoking as self-medication, part of a coping strategy to regulate negative affect and alleviate related distress.
Bonn-Miller and Zvolensky (2009) examined marijuana use, abuse, and dependence in relation to anxious and fearful responding to panic-relevant bodily sensations elicited by biological challenging procedures among a sample of young adult marijuana users (n=64; 46.9% women). Mean age was 21 years. It was found that those who were dependent on marijuana had greater self-reported panic attack symptoms post-challenge than those who abused marijuana.

Both depression and anxiety were found to be associated with alcohol use disorders in college students (Grant et al., 2009). Etiological models of alcohol use that highlight the role of negative affect and depression have not been applied to research on the association of suicidality and alcohol use. Authors sought to rectify this oversight by examining whether a motivational model of alcohol use could be applied to understanding the relationship between suicidal ideation and alcohol outcomes in a sample of underage college drinkers who had a history of passive suicidal ideation (n = 91). In this cross-sectional study, regression analyses were conducted to examine whether drinking to cope with negative affect statistically mediated or was an intervening variable in the association between suicidal ideation and alcohol outcomes. It was revealed that drinking to cope was a significant intervening variable in the relationship between suicidal ideation and alcohol consumption, heavy episodic drinking, and alcohol problems, even while controlling for depression. These results suggested that the relationship between suicidal ideation and alcohol outcomes may be due to individuals using alcohol to regulate or escape the distress associated with suicidal ideation. These results were in consonance with those of Gonzales et al. (2009).

Gonzales et al. (2009), further opined that cigarette smokers vulnerable to depression, experience considerable difficulty in quitting smoking, possibly because they use smoking to manage negative affect and possess underdeveloped alternative coping skills for doing so.
According to Magid et al. (2009), stress and negative affect (NA) figure prominently in theoretical models of smoking initiation, maintenance and relapse, yet few studies have examined these associations among college students. Further complicating examination of these associations, smoking often occurs in the context of other substance use (alcohol, marijuana) in college populations. Thus, it is still not clear whether stress and negative affect (NA) are associated with cigarette use among college students, and if so, whether these associations are evident after controlling for effects of other substance use. The goals of the study by these workers were to examine whether several aspects of stress (objective events, subjective experiences) and NA (sad mood, general emotional distress) were associated with cigarette smoking among college students and to find out whether associations remained after accounting for alcohol and marijuana use. A large sample of college freshmen (n= 633) was followed longitudinally over thirty five weeks via internet assessments. Hierarchical linear modelling demonstrated that measures of subjective stress and negative affect were positively related to cigarette use.

A study by Niraula et al. (2009) revealed nearly six fold greater likelihood of depression in the sample of drug abusers compared with the control. This finding was in agreement with a study on the use of illicit drugs among 9,512 young Australian women that showed depression as one of the risk factors for their use. Short temper (Quick temper) was another risk factor for drug abuse. National Institute of Drug Abuse (NIDA) reports also indicated that aggressive and shy behaviours are not only the predictors of later drug abuse, but the combination of both leads to even higher levels of adolescent substance abuse among boys than aggressiveness without shyness does. Aggression is the short tempered behaviour that results in fighting with others or breaking rules, whereas shyness is the behaviour of staying alone, having few friends, and not speaking
A number of epidemiological studies showed that mental health problems, in particular depression, anxiety and suicidal behaviours, co-occur with cigarette smoking (Pederson and Soest, 2009). A population-based prospective study of 2000 non-depressed adolescents reported that smoking increases the risk for developing depressed mood. This study and a number of other studies suggested that smoking leads to reduced mental health, whereas latter does not usually lead to smoking. Several possible explanations may account for such associations. The first possibility is that mental health problems lead to smoking because individuals with such problems turn to smoking as a form of self-medication or coping strategy. The second possibility is that the same underlying factors dispose an individual to both smoking and mental health problems. An increasing number of studies pointed to an association between social disadvantage and smoking patterns. However, evidence suggested that smoking usually precedes reduced mental health. During the past decade, a third explanation for the association has been proposed—that smoking by itself affects mental health adversely. The underlying mechanisms are unclear, but there is some evidence that nicotine consumption impairs serotonin function. It has also been speculated that smoking increases the likelihood of emotional disturbances by reducing the oxygen flow to the brain. A fourth possible mechanism is that smoking contributes to impaired mental health because of the increasing social stigmatization of smokers. Confirmation of a causal relationship between smoking and depression or other mental health problems may have major public health consequences (Pederson and Soest, 2009; Weinstein et al., 2008 and Witte et al., 2009).

**COPING STYLES AND DRUG ABUSE**

In the present study coping styles *viz.*, problem focussed and emotion focussed were expected to be used more frequently by non drug users. Avoidant
coping was expected to be more prevalent among drug users. Results revealed that significant differences emerged only on Emotion focussed coping with non users scoring higher than drug users; results provided only partial support to the hypotheses. Many earlier researches in the field yield a different picture. Carver et al. (1989) developed a multidimensional coping inventory to assess the different ways in which people respond to stress. Five scales measured conceptually distinct aspects of problem focussed coping (active coping, planning, suppression of competing activities, restraint coping, seeking of instrumental social support); five scales measured aspects of what might be viewed as emotion focussed coping (seeking of emotional social support, positive reinterpretation, acceptance, denial, turning to religion); and three scales measured coping responses that were less useful (focus on and venting of emotions, behavioural disengagement, mental disengagement).

According to Carver and Scheier (1999), facing danger, threat or a challenging event motivates individuals to adapt or reduce stress by use of coping strategies. In general, three classes of coping are identified: (1) “problem-focussed” coping involve cognitive and behavioural strategies, such as cognitive restructuring, planning and preparation for recurrence of the event, consideration of alternate options, and behavioural coping involving direct action aimed at altering the source of stress or one’s relationship to it; (2) “emotion-focussed” coping is the management of one’s emotional distress associated with the stressful event rather than the cause of the stress; and (3) finally, avoidance coping is aimed at avoiding any acknowledgement that the event has occurred or giving up the attempt to do anything about the event. New approaches view coping in the self-regulation context with the function of attaining a goal or regaining a desired state/homeostasis. Folkman and Lazarus (1980) also distinguished between two general types of coping. The first, termed problem focussed coping, is aimed at problem solving or doing something to alter the source of the stress. The second,
termed *emotion focussed coping*, is aimed at reducing or managing the emotional distress that is associated with (or cued by) the situation. Although most stressors elicit both types of coping, problem-focussed coping tends to predominate when people feel that something constructive can be done, whereas emotion-focussed coping tends to predominate when people feel that the stressor is something that must be endured (Folkman and Lazarus, 1980).

According to Cooper *et al.* (1988) and William and Clark (1998) drinking to cope was a strong predictor of both alcohol consumption and alcohol dependence.

Most studies focusing on the relationship between *habitual coping strategies* and alcohol consumption involved alcoholics. Consistent evidence linked relapse to the use of avoidance coping strategies when alcoholics were faced with stress (William and Clark, 1998). In the non-clinical population, escape drinking could occur when other coping strategies were not available, either due to circumstances or because of inherent deficits in the individual’s coping repertoire. Cooper *et al.* (1988) found that coping styles indicative of avoidance of emotions were more important predictors of alcohol abuse than problem-focussed coping.

Despite the situational specificity of the effectiveness of problem-focussed and emotion-focussed coping, a general finding in the substance use literature has been that individuals who routinely use problem-focussed stress-coping strategies are less likely to develop and more likely to overcome substance use problems than the individuals who routinely use emotion-focussed stress-coping strategies (Wagner *et al.*, 1999). Wills and Hirky (1996) have found that adolescents who characteristically employ emotion-focussed relief-oriented coping strategies are at greatest risk for developing substance use problems. Among adults, Finney and Moos (1995) found that individuals who rely more on approach coping, a form a problem-focussed stress-coping, and less on avoidance coping are less likely to develop substance use problems and experience greater success in recovery.
attempts, if they do develop such problems. Wills and Shiffman (1985) maintained that stress-coping and temptation-coping contributed independently to the prediction of substance use. Wagner et al. (1999) examined an important assumption of the stress-coping model of addiction. They tested this proposition using a sample of public high school students. In addition, substance-abusing and non-substance-abusing adolescents were compared on both stress-coping and temptation-coping, hypothesizing that substance-abusing adolescents would demonstrate more emotion-focussed stress-coping, less problem-focussed stress-coping, and less temptation-coping than adolescents without substance use problems. After controlling for demographic variables (i.e., grade and gender), hierarchical multiple regression analyses revealed that both stress-coping and temptation-coping accounted for statistically unique and significant variance in teenagers' substance use. These analyses also demonstrated that avoidance and problem-focussed coping were the stress-coping strategies most strongly related to adolescent substance use. Adolescents who reported a greater reliance on avoidance stress-coping (an emotion-focussed strategy) exhibited greater substance involvement, whereas adolescents who reported a greater reliance on problem-focussed stress-coping, exhibited less substance involvement.

According to Catanzaro and Laurent (2004), the stressor vulnerability model (Cooper et al., 1992) was developed based on social learning theory tenets that behaviour reflects interactions between contextual (or situational) variables and individual differences in expectancies and motives. The model posits that individuals learn to use drinking alcohol as a coping response when they believe that healthier means of coping are unavailable—presuming that people, in general, are motivated to reduce feelings of distress. The stressor vulnerability model makes two key claims. First, it posits that alcohol-related expectancies interact with other personal and contextual factors (avoidant coping dispositions; the experience of stressful events) to predict drinking behaviour and problems.
Second, it posits that these interacting risk factors exert their influence on drinking and drinking-related outcomes via the mediating effect of drinking to cope (DTC). Over a decade of research has provided good support for the stressor vulnerability model (Cooper et al., 1992). Individuals with strong positive alcohol expectancies who also display dispositions to deny and disengage from stressful problems (avoidant coping) appear to be especially likely to use drinking as a coping mechanism, which in turn is associated with increased levels of alcohol use and alcohol-related problems.

Contanzare and Laurent (2004) evaluated hypotheses derived from the above model adding two potential coping resources that may be important for adolescents—perceived family support and expectancies for negative mood regulation. Students in Grades 9–12 ($n$ = 210, 50% girl) completed self-report measures of family environment, alcohol expectancies, coping preferences, negative mood regulation, motives for drinking, and drinking behaviour. Recent drinking, lifetime drinking, and drunkenness were positively associated with stronger tension reduction alcohol expectancies and drinking to cope (DTC) completely mediated these relations. DTC was also associated with avoidant coping dispositions and with the interaction between tension reduction alcohol expectancies and avoidant coping dispositions. Family support was only modestly correlated with drinking to cope.

There is evidence that substance abusers who actively take steps to overcome problems (through problem solving, conflict resolution, and healthy affect regulation) as compared with those who more commonly avoid facing problems or focus on venting emotions in response to stress (yelling at others; slamming doors) typically meet with better outcomes (Hyman et al., 2009). Supportive relationships may also facilitate recovery efforts by assisting with coping and promoting less threatening interpretations of negative life events, and moderating the impact that stress has on cravings. For these reasons, assessment of
perceived stress, coping, and social support at treatment entry may identify strengths and deficits that could help inform treatment planning and stress-focussed intervention. Importantly, all these factors are amenable to change.

In addition to being a maladaptive response to stress, a maladaptive/avoidant coping style may also be implicated in the generation of future life stressors. As stated by Holahan et al. (2005) “Cognitive avoidance may permit incipient stressors, such as financial or health problems to fester and grow. Behavioural avoidance may actively promote new stressors, such as when emotional discharge aggravates strains in family or work relationships.” Indeed, these authors found support for this hypothesis in a prospective study which showed an association between baseline avoidance coping and more chronic and acute life stressors four years later.

Results of a study by Hyman et al. (2009) indicated problem-focussed coping, emotion focussed coping and perceived social support to be negatively associated with perceived stress. However maladaptive/avoidant coping was positively associated with it. Gender differences were found with men reporting greater perceived stress than women. The findings of these authors using regression analysis revealed the level of perceived social support and extent to which maladaptive/avoidant coping strategies are typically used when facing problems was predictive of stress in the sample. These findings have suggested that social support may protect against stress, whereas maladaptive/avoidant coping may exacerbate it, regardless of whether one is opioid dependent or a healthy control. Interestingly, although adaptive problem and emotion-focussed coping differed between groups and were modestly correlated with stress, after controlling for social support, maladaptive/avoidant coping, and demographic factors, adaptive problem and emotion-focussed coping were not related to stress. Together, these findings suggested that the extent to which an individual engages in maladaptive/avoidant forms of coping may be more important than the extent to
which adaptive coping strategies are used in predicting his or her overall level of perceived stress. This finding was in consonance with earlier literature indicating that among coping efforts, avoidant coping has the strongest and most consistent relationship with distress. It may be that maladaptive/avoidant coping (focusing on venting emotions; active disengagement from efforts at dealing with problems) is directly related to stress as a conditioned response (i.e., escape/avoidance conditioning or the “fight or flight” response), whereas adaptive forms of coping (planning; problem solving) are more deeply rooted in executive function and have a more indirect relationship with stress.

Results of present study revealed emotion focussed coping to be an adaptive coping style leading to lower drug use. No significant differences emerged between drug users and non-users on problem focussed or avoidant coping styles.

SENSATION SEEKING AND DRUG ABUSE

Sensation seeking is the single most important personality dimension associated with drug use and other health risk behaviours. Hence it was hypothesized in the present study that drug users would score significantly higher than non users on total sensation seeking and its dimensions. Results revealed the hypothesis to be upheld for majority of groups.

Perkins et al. (2000) opined that the personality characteristic of sensation seeking is associated with risk of smoking, perhaps because of greater initial sensitivity to nicotine. Young healthy nonsmokers (n = 37) were administered 0, 10, and 20 microg/kg nicotine by nasal spray in 3 separate sessions, and subjective responses were assessed. Sensation-Seeking Scale (SSS) scores were then correlated with these responses. A comparison group of smokers (n = 55) was included to determine whether sensation seeking was associated specifically with initial sensitivity to nicotine or with general sensitivity regardless of past nicotine exposure. SSS subscales, particularly Experience Seeking and Disinhibition, were
correlated with subjective responses to nicotine in nonsmokers, but generally not in smokers. These findings have indicated that sensation seeking is associated with greater initial sensitivity to nicotine's subjective effects.

In view of the strong associations of alcohol use and high-risk sexual behaviour, Chandra et al. (2003) conducted a study to assess the relationship between sensation seeking, and sexual risk taking among a sample of heavy alcohol users admitted to a de-addiction centre in south India. The study compared patterns and levels of sensation seeking among men with and without sexual risk taking. It was hypothesized that the levels of sensation seeking in a group of heavy users of alcohol would be higher among those with high-risk sexual behaviour as compared to those without. On comparing sensation seeking scores (SSS) between the risk group for use of drugs and without risk group, a significant difference was observed in the total sensation seeking scores and all the subscales of SSS. The subjects in drug using group reported higher sensation seeking in all the domains (DIS, ES, BS and TAS) and also in the total score when compared with non drug users. Alcohol use plays important role in risks for sexually transmitted infections, particularly among high sensation seekers. Cognitive restructuring of alcohol outcome expectancies may offer an in-road developing HIV-STI risk reduction interventions.

A model for explaining the relationships among sensation seeking, substance use and sexual risks was proposed by Kalichman et al. (2003). It was evidenced that sensation seeking, including sexual sensation seeking and sexual adventurism, predicted substance use in sexual contexts and sexual risk behaviours among gay and bisexual men. It was indicated that alcohol expectancies influence both drinking and the association between drinking and sexual risk taking. This was the basis for the model, which also included alcohol outcome expectancies as a cognitive mechanism through which sensation seeking influences substance use in the context of sex (Kalichman et al., 2003). These authors examined a
conceptual model of sensation seeking personality and alcohol expectancies as correlates of sex-related alcohol use and sexual risk behaviours. Path analyses showed sensation seeking to be related to engaging in unprotected sexual intercourse with casual or one-time sex partners (i.e., high-risk sex). Sensation seeking was also associated with stronger expectancies that alcohol use enhances sex. This association was related to alcohol use in sexual contexts, which in turn, was related to high-risk sex. Analyses also showed that alcohol outcome expectancies mediated the association between sensation seeking and alcohol use in sexual contexts.

According to King et al. (2003), although there is no empirical support for an overall “alcoholic personality,” distinct alcoholic typologies have been demonstrated, but not in girls. This is largely due to the fact that the majority of research in this field was focussed primarily on boy alcoholism. For example, Eysenck’s personality theory, which posits a biological basis of personality, was examined mainly in samples of boy alcoholics. Results were not entirely consistent, but in general alcoholics demonstrated elevations in psychoticism and neuroticism as compared to nonalcoholic controls. One study examining scores on the Eysenck Personality Questionnaire (EPQ) in severely dependent boy and girl alcoholics showed similar elevations on neuroticism and psychoticism scales as compared to moderate/mildly dependent boy and girl alcoholics.

Sher et al. (2005) focussed on three broad personality dimensions that are frequently discussed in the alcoholism literature—neuroticism/negative emotionality, impulsivity/disinhibition, and extraversion/sociability—and that, broadly considered, correspond to “Big Three” models such as those proposed by Eysenck et al. (1994) and Tellegen (1994). Although most studies have found that clinical alcoholics and controls exhibit similar levels of extraversion/sociability, a relationship has been found between extraversion/sociability and drinking onset (Hill et al., 2000) as well as between extraversion and alcohol consumption among
non-alcoholics (Flory et al., 2002). In addition, two recent studies have found that extraversion prospectively predicts the development of alcohol problems among community samples. Impulsivity and disinhibition have consistently been associated with clinical alcoholism. In addition, alcoholics tend to exhibit high rates of Cluster B (dramatic/impulsive) personality disorders, such as antisocial personality disorder and borderline personality disorder. Additionally, Sher et al. (2005) suggested that the genetic variance in behavioural undercontrol accounts for a significant proportion of the genetic variance in alcohol dependence.

According to Yanovitzky (2005) research addressing adolescents’ motivation to use drugs culminated to theories that emphasized personality traits, in particular sensation seeking, as a major factor affecting drug use. Sensation seeking was identified by a drive for varied, novel, complex, and intense experiences and the willingness to take risks to obtain those experiences (Zuckerman, 1994).

According to Yanovitzky (2005) the intrapersonal trait of sensation seeking was found to be a strong positive predictor of adolescent drug use and other risky behaviours such as smoking, alcohol use, drinking and driving, and risky sexual behaviour. The fact that sensation-seeking tendencies intensify during adolescence (although they level off in the late 20s) may explain the tendency of adolescent drug use to increase with age. Current literature has offered several explanations for the association between sensation-seeking tendencies and drug use by adolescents. One explanation is that, for the high sensation-seeker adolescent, drug use involves taking illegal risks that the adolescent finds stimulating. Another explanation is that high sensation-seeking adolescents use drugs to experience the neurological stimulation associated with the substance itself. It has also been suggested that high sensation seekers underestimate the risks associated with drug use as compared to their low sensation-seeking counterparts and are, therefore, less likely to consider drug use to be a risky
behaviour. The primary goal of study by Yanovitzky (2005) was to demonstrate that sensation seeking, an individual intrapersonal trait, contributes to the likelihood of drug use by adolescents both directly and indirectly through the way it shapes social interactions with peers in the context of drug use. With few exceptions, the available scientific literature has focussed on (and has generally supported) the proposition that high levels of sensation seeking are directly linked to increased likelihood of adolescent drug use. Results suggested that different factors may be protecting high sensation-seeking adolescents from using drugs or engaging in activities (association with deviant peers) that might be increasing their risk for drug use. First, as expected, sensation seeking had a substantial, statistically significant correlation with each of the dependent variables; association with deviant peers, frequency of having pro-drug discussions with peers, and intention to use marijuana. In addition, association with deviant peers had equally substantial correlation with frequency of having pro-drug discussions and intention to use marijuana and pro-drug discussions were even more strongly associated with intention to use marijuana. According to Yanovitzky (2005), sensation seeking may be contributing to adolescent drug use in one of the three ways. The most obvious route of effect, and the one most established in current literature, is a direct effect of sensation seeking on drug use. The two remaining routes of effects have suggested that sensation seeking may be contributing to drug use indirectly through its impact on association with deviant peers and having pro-drug interactions with peers. Sensation seeking is hypothesized to affect an adolescent’s selection to associate with deviant peers either because sensation seekers tend to associate with other high sensation seekers who then engage in drug use to meet the collective need for stimulation or because the mere association with deviant peers, whether high sensation seekers or not, provides opportunities for the high sensation seeking adolescent to engage in activities that will satisfy that same need. Association with deviant peers, may lead to drug use directly (as has been suggested in the literature) or indirectly by increasing the
likelihood that the adolescent will have interactions with peers that are favourable toward drug use.

Yanovitzky (2005) further opined that the final path through which sensation seeking may affect adolescent drug use involves a direct impact of sensation seeking on the likelihood that an adolescent will have pro-drug interactions with peers (presumably because high sensation seekers may be more motivated than low sensation seekers to initiate discussions with peers that favour drug use which in turn, increases the likelihood of actual drug use). The influence of sensation seeking on the likelihood of having pro-drug discussions may also be indirect to the extent that sensation seeking tendencies motivate the adolescent to associate with deviant peers and this association, in turn, provides the setting for holding discussions that are favourable to the notion of drug use by group members.

According to Dom et al. (2006), the personality traits of impulsivity and sensation seeking have been proposed as important features of early-onset of alcoholism (EOA). Early-onset and late-onset alcoholic (LOA) patients were compared on the severity of their substance use and related problems, and self-report scales measuring impulsivity, sensation seeking and aggressiveness. The symptom severity of the EOAs' alcohol-use disorder and related problems was higher than that of the LOAs. Furthermore, the EOAs had higher levels of impulsivity, sensation seeking, and aggression relative to the LOAs. The differences in impulsivity remained after an analysis controlling for the effect of aggressiveness. Finally, cigarette smoking was positively correlated with impulsiveness across alcoholic subgroups. Active screening for impulsive traits in treatment-seeking alcohol-abusing populations has been recommended to improve treatment planning and prevent early drop-out.

Smoking is addictive and harmful, causing health problems and even death, therefore, there is a need to understand the factors contributing to smoking onset
(Harakeh et al., 2006). As experimentation with cigarette smoking often starts during adolescence. These authors explored whether personality plays a role in smoking initiation among adolescents. Each person is characterized by a unique combination of personality traits which largely determine who they are and how they behave, and these traits may have important consequences for a broad range of behavioural outcomes including smoking. Because personality traits are enduring dispositions (McCrae and Costa, 2003), it is important to establish whether certain traits increase the risk for cigarette smoking among adolescents. If smoking occurs in adolescents with distinctive personality characteristics, such information may help to design more effective intervention and prevention programs, to formulate specific public policies and perhaps to apply a more personalized treatment to discourage or prevent adolescent smoking.

Harakeh et al. (2006) examined the association between adolescents' personality traits and smoking, and tested whether this association was moderated by birth order or gender. Participants were 832 Dutch siblings aged 13 to 17 years participating at baseline assessment (T1) and at follow-up 12 months later (T2). Personality was assessed by applying a variable-centered approach including five personality dimensions (Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Openness to Experience), and a person-oriented approach using three personality types (i.e., Resilient, Overcontrollers and Undercontrollers). Cross-sectional findings indicated that Extraversion (at T1 and T2), Agreeableness (at T2), Conscientiousness (at T2), and Emotional Stability (at T2) were related to adolescent smoking. Longitudinal findings indicated that only Extraversion and Emotional Stability were related to onset of adolescent smoking. Using a person-oriented approach, overcontrollers and Undercontrollers did not differ from resilient on smoking onset. No indication was found for a moderating effect of birth order on the association between personality and smoking. Additional findings showed that gender moderated the effect of Agreeableness on
adolescents' smoking onset. Conscientiousness and Emotional Stability (i.e., low on Neuroticism) were indicative of lower involvement in smoking. The findings on Emotional Stability concurred with other studies which reported that Neuroticism is a risk factor for smoking.

Insofar as the relationship between habitual consumption and sensation seeking, it should be emphasized that a meta-analytic review carried out by Hittner and Swickert (2006) indicated that the disinhibition factor was the most closely connected to alcohol consumption (Garcia Montes et al., 2009). Perkins et al. (2000) found that non-smokers who scored high on the experience-seeking and disinhibition subscales of sensation seeking were more sensitive to the subjective effects of nicotine than individuals "with low scores on these traits. Blum et al. (1997) suggested that some individuals have a genetic predisposition to develop a "reward deficiency syndrome". Some people possess a "biochemical inability to derive reward from ordinary, everyday activities". This deficit may underlie a number of addictive and compulsive behaviours, including substance abuse. Furthermore, repeated exposure to drugs could result in sensitization, making drug use increasingly more alluring. Additionally, prolonged exposure to drugs may lead to changes in the "setpoint" of the reward system, making it more difficult to find pleasure in life and, consequently, increasing the role of taking drugs. Specific preventive programs and treatments might thus, be developed for young people scoring high in sensation seeking, which could channel this personality trait in a much more adaptive manner.

Temperament factors such as impulse control and sensation seeking were found to be associated with many different forms of substance use, including smoking and marijuana use among adolescents as well as in the general population of adults (Zuckerman, 2007a,b; Trocki et al., 2009). Sensation seeking as a motivation for bar patronage appeared to be correlated with heavier drinking.
Sensation seeking was found to be a strong predictor of cigarette and alcohol use among adolescence across different nations (Pahl et al., 2010; Pokhrel et al., 2010 and Sargent et al., 2010).

The concept of drinking motives assumed that people drink to obtain positive outcomes or to avoid negative consequences (Kuntsche et al., 2010). They might also be motivated by internal rewards such as enhancement of a desired emotional state, or by external rewards such as social approval or acceptance. It was demonstrated that enhancement and coping motives, in particular, were associated with drinking among adolescents. The above cited study, therefore, focused on these two motive dimensions. Adolescents who scored high on these internal motives were shown to drink consistently across different drinking situations, resulting in overall excessive drinking. Although both motive dimensions were found to be strongly related to excessive drinking, associated personality factors differed considerably: The enhancement motive (drinking to have fun and to get drunk) was found to be associated with extraversion and sensation-seeking, while drinking to cope was associated with neuroticism, avoidance, and negative emotionality. Moreover, boys and older adolescents scored higher on enhancement, but lower on coping motives than girls and younger adolescents respectively. Drinking for enhancement motives was associated with drinking with friends and going out in the evening (to parties and bards), while coping motives were associated with drinking at home. In addition, coping motives but not enhancement motives, were associated with poor academic performance and negative social relationships.

An unanswered question is how personality traits might modify the effects of social-environmental influences on smoking development (Leeuw et al., 2010). Based on earlier research, it may be expected that adolescents with higher scores
on extraversion are at greater risk when exposed to social contexts with high smoking prevalence. Highly extraverted youth often seek out sensation or stimulation, and thus, when surrounded by smokers, they might be more vulnerable to smoke as well. Based on this assumption, Leeuw et al. (2010) expected that highly extraverted adolescents to be more likely to be influenced by smoking of parents, siblings, and friends. In addition, adolescents who were more agreeable might be more likely to smoke as a reaction to social-environmental smoking to conform to others. As adolescents with increased levels of neuroticism had a higher risk to start smoking as a form of self-medication, it was expected that these adolescents would have a higher risk for smoking progression whether or not they were in a social-environment with a high smoking prevalence because they smoke in response to an internal state and not to their environment. In short, social-environmental smoking might have the strongest impact on adolescents with high levels of extraversion and agreeableness. With regard to social-environmental factors, the findings by Leeuw et al. (2010) revealed that irrespective of whether adolescents had high or low levels of extraversion, conscientiousness, emotional stability, or openness to experience, exposure to sibling's smoking was related to a higher initial starting point of smoking, but not to an increase over time. These findings were in consonance with the previous studies that implied that having a smoking sibling increases the risk for smoking onset.

Terracciano and Costa (2004) described possible underlying mechanisms to explain the associations between personality characteristics and smoking. They concluded that the relationship between low levels of agreeableness and smoking can be explained by the fact that rebelliousness, a characteristic closely related to low agreeableness, contributes to the etiology of smoking. Further, they suggested that individuals scoring low on conscientiousness had lower levels of self-control, a variable also linked with youth smoking and substance use. Individuals scoring
high on neuroticism had a tendency to experience unpleasant emotions and for these individuals smoking might be an attempt to self-medicate with nicotine (Munafo and Black, 2007). A possible explanation for why highly extraverted individuals had an increased risk for being a smoker was that they generally had higher levels of excitement-seeking, which could be relevant in light of the stimulating effect of nicotine. Another explanation might be that, because of their higher levels of sociability highly extraverted individuals were more likely to be exposed to smoking in social situations (Munafo and Black, 2007). Finally, openness to experience could be seen as a cognitive stimulus for engaging in risk taking behaviours such as smoking, as individuals who score high on this dimension actively seek new and varied experiences (McCrae and Costa, 2003).

AGGRESSION AND DRUG ABUSE

In the present study, it was hypothesized that drug users would score higher on aggression and its dimensions viz., physical aggression, verbal aggression, anger and hostility. Results have lent only partial support to this hypothesis as differences between drug users and non-drug users emerged on anger only and some groups on hostility. However, many earlier studies have found violence and aggression to play a major role in drug usage. Aggression, anger and hostility were hypothesized to be risk factors in drug usage.

Three major categories of behavioural variables related to smoking status were observed by Tyas and Pederson (1998). First were the factors related to school; primarily academic performance and aspirations. A second category contained risk-taking or deviant factors such as violence and gang membership. A final related group included lifestyle factors such as diet, exercise, sleep, and dental care.

Epidemiological studies and laboratory research consistently linked alcohol use with aggression. Not all people, however, exhibited an increased aggression under the influence of alcohol. Moeller and Dougherty (2001) suggested that
people with antisocial personality disorder (ASPD) might be more prone to alcohol-related aggression than those without ASPD. As a group, people with ASPD had higher rates of alcohol dependence and more alcohol-related problems than people those ASPD. Likewise, in laboratory studies, people with ASPD had shown greater increases in aggressive behaviour after consuming alcohol than those without ASPD. The association between ASPD and alcohol-related aggression might result from biological factors, such as ASPD-related impairments in the functions of certain brain chemicals (serotonin) or in the activities of higher reasoning, or “executive,” brain regions. Alternatively, the association between ASPD and alcohol-related aggression might stem from some as yet undetermined factor(s) that increase the risk for aggression in general. A study by Moeller and Dougherty (2001) focussed on personality characteristics in adolescent boys \((n = 414)\) and girls \((n = 552)\) in 8th grade with self-reported violent behaviour and risky alcohol use. Adolescents with indications of violent behaviour and/or risky alcohol use, compared to others, were generally more impulsive, had a stronger need for change and action, were less adjusted and socially conforming, as well as more aggressive. The findings pointed towards a clustering of problem behaviours. Furthermore, adolescents with a combination of violent behaviour and alcohol use had more pronounced antisocial personality scores than those who reported only one of these behaviours. The main finding was that among girls, these behaviours appeared to be associated with more deviant levels of the personality characteristics in focus.

Hostility has been defined as either a mood state or personality trait characterized by temporary or stable negative affect toward others (Weiss et al., 2008). Hostility is one of the components of the "AHA Syndrome": anger, hostility, and aggression. There is some evidence suggesting that hostility is associated with unhealthy lifestyles and with increased likelihood of smoking. Hostility is positively correlated with negative affect, including stress, anxiety,
irritation, anger, fatigue, and depression, which may in turn lead to the use of smoking as a coping mechanism to regulate mood and to reduce feelings of frustration. Weiss et al. (2008) in their study, chose items that measured hostility as a relatively stable trait as opposed to a changing mood. They observed cigarette smoking to be a culturally accepted behaviour among adult boys in China. However, there is limited information on smoking among Chinese adolescents, particularly the information on the relationship between psychological well-being and smoking behaviour among this population. Their study explored associations between three psychological factors—anxiety, hostility, and depressive symptoms—and smoking behaviour among Chinese adolescents. Results have shown that anxiety, hostility, and depressive symptoms are significantly associated with a higher risk of lifetime smoking for both boys and girls.

Kahler et al. (2009), defined hostility as a multifaceted construct encompassing affective, behavioural, and cognitive aspects. Hostility was linked to poorer outcomes in smoking cessation treatment; however, it was unclear which components of hostility were most important in cessation. These authors examined multiple aspects of trait hostility in 92 heavy social drinkers who were seeking smoking cessation treatment. Consistent with their hypothesis, they found the cognitive component of hostility to be most relevant to smoking cessation outcome. Specifically, those who expressed bitterness about their lives and tended to believe that they had poor luck and had gotten a raw deal out of life, had poor smoking cessation outcomes.

Three models for substance abuse were found to be statistically significant for boys (Kaiser and Perrin, 2009). The model predicting symptoms of substance abuse was significant and verbal abuse was found to be the strongest predictor of substance abuse symptoms after controlling for physical aggression. The model predicting obvious attributes of substance abuse was also significant with minimizing and terrorizing parental behaviours serving as the only significant
predictor of other attributes of substance abuse after controlling for physical aggression. The model predicting use of drugs other than alcohol was also significant, but no single independent variable significantly predicted drug use.

Results from the regression analyses for girls indicated that the model predicting face valid use of other drugs was significant with exploitive parental behaviours the only significant predictor of drug use after controlling for physical aggression. The hypothesis that parental psychological aggression during childhood would be associated with substance abuse later in life was supported, although the relationship patterns varied for boys and girls. Correlational analyses for girls indicated that experiencing exploitive members or invading the child's privacy, were associated with higher scores on three of the five subscales of the Substance Abuse Subtle Screening Inventory (SASSI–3). Correlational analyses for boys indicated that the psychologically aggressive parental behaviour that was most consistently associated with three of the five subscales of the SASSI-3 was parental verbal abuse and attacks on self-worth such as making a child feel significantly ashamed or guilty of something. In addition, nearly all of the Psychological Maltreatment Experience Scale (PMES) subscales were associated with both alcohol symptoms and obvious attributes of substance abuse for boys. Psychological aggression, as measured by the Parental Child Conflicts Tactics Scale (CTSPC) was significantly associated with three of the five substance abuse problems identified by the SASSI-3 for boys as well as girls indicating high scores on psychological aggression to be associated with self-reported abuse of other drugs and obvious attributes of abuse for both boys and girls and with symptoms of substance abuse for boys and self-reported abuse of alcohol for girls. As measured by the CTSPC, psychological aggression included instances such as shouting, yelling, or screaming, threats to spank without actually spanking the child, swearing or cursing, calling the child, dumb, lazy or other names of this nature, or threatening to kick the child out of the house or send him away. These
findings were consistent with earlier research, which suggested childhood maltreatment in various forms, including physical and emotional forms, to be a significant risk factor for substance abuse among not only individuals in drug and alcohol treatment programs, but also various community and student samples.

The link between parental psychological aggression as well as neglect with substance abuse in a sample of college students was examined by Kaiser and Perrin (2009). Due to the fact that child neglect and psychological maltreatment are relatively newly established forms of child maltreatment, much is unknown concerning the various subtypes of these forms of parental aggression and neglect and their potential relationship to substance abuse. These authors attempted to operationally define these constructs by specifying a number of different subtypes of parental psychological aggression and also included different measures of neglect that focussed on specific parental behaviours. Specifically, parental psychological aggression defined by them encompassed a variety of parental behaviours, including exploitive parental behaviours (i.e., making a child watch a parent be aggressive towards other family members), minimizing, isolating, and terrorizing acts (i.e., unfairly comparing a child to a sibling), and verbal abuse or attacks on self-worth (i.e., threatening, shouting, yelling, or screaming at a child). Neglectful parental behaviours included withholding supportive behaviours (i.e., giving appropriate physical affection needed), failing to provide proper care such as food, shelter, e.g., and leaving a child with family or friends because the parent could not care for the child. In addition, a measure of substance abuse, including both alcohol and other drugs, was used to allow for a range of scores and varying degrees of substance abuse symptoms.

Kaiser and Perrin (2009) hypothesized that both parental psychological aggression and neglectful parental behaviours would be positively correlated with substance abuse symptoms. It was also predicted that both parental psychological aggression and neglectful behaviours would continue to predict substance abuse
symptoms even after controlling for physical aggression experienced during childhood. Finally, it was hypothesized that gender differences would exist in relationship to these variables. The sample included 227 students from a small, private, liberal arts university in southern California enrolled in a general psychology course. Participants ranged in age from 17-25 years. The gender composition of the sample included 102 boys and 123 girls.

Independent sample t-tests were conducted to examine potential gender differences on the dependent measures. Findings indicated significant gender differences on subscales for the SASSI-3. Significant gender differences were observed on three SASSI-3 subscales including the Face Valid Alcohol (FVA), Face Valid Other Drugs (FVOD), and Subtle Attributes (SAT) scales with boys consistently reporting higher levels of substance use when compared to girls.

Pearson Product Moment correlations were conducted separately for boys and girls in order to assess the relationship between substance abuse, parental physical and psychological aggression, psychological maltreatment, and child neglect. Results for boys indicated that most subscales of the PMES and parent child conflict tactics (CTSPC) to be significantly associated with obvious attributes of substance abuse and symptoms of abuse as well as the face valid other drug use subscale as measured by the SASSI-3. In contrast, results for girls indicated far fewer significant relationships. Neglecting/rejecting behaviours and exploitive behaviours (as measured by the psychological maltreatment experiences, PMES) and psychological aggression were also significantly correlated with both the face valid alcohol and other drug subscale in addition to the severe physical assault subscale of the CTSPC.

In the present study, however, drug users scored significantly higher on anger dimension only. In other dimensions of aggression, drug users group scored higher, though not significantly thus only partially upholding the hypothesis.
GENDER DIFFERENCES IN DRUG ABUSE

Another aim of the present study was to compare boy and girl adolescents in the drug user and non-user category on the chosen protective and risk factors. In the absence of unequivocal literature, no directional hypotheses were proposed and gender differences were explored.

Table 2 shows comparison on boy and girl drug users; Tables 3, 4, 5 and 6 show separate boy/girl comparison for overall drug users (Table 2), drinking only group (Table 3), smoking only group (Table 4), non drug users (Table 5) and both drinking and smoking groups (Table 6).

In the present study boy drug users were observed to score higher than girl drug users on Spiritual Well Being, Religious Well Being, Existential Well Being, Total Health Habits, Eating Habits, Avoidance of use of Alcohol and Drugs, Self Efficacy, Disinhibition, Physical Aggression, Verbal Aggression, and Total Aggression (Table 2). Girl drug users scored higher than boy drug users on Perceived Parental Overprotection, Stress Symptoms and Depression. Boy drug users appeared to be scoring higher both on protective and risk factors in majority of cases. Girls drug users scored higher on risk factors only viz., Stress, Depression Perceived Parental Overprotection.

Significant differences emerged on Stress Symptoms, Hassles and Depression. Girls scored higher than Boys in all these dimensions (Table 3).

While comparing boy and girl smokers, significant differences on Total Spiritual Well Being, Religious Well Being, Existential Well Being and Self Efficacy (all protective factors) with boy smokers scoring higher than girl smokers were seen (Table 4). On risk factors of Disinhibition, boy smokers scored higher than girl smokers.
Girl smokers scored significantly higher on Stress Symptoms and Depression (both risk factors) in comparison to boy counterparts. The girl smokers had a more risky profile as compared to boys.

The comparison of boy and girl non drug users revealed girls to score higher on Eating Habits and boy scoring higher than girls (Table 5) on Task Focussed Coping.

Gender differences between adolescents who both smoked and drank were apparent (Table 6). On Spiritual Well Being, Religious Well Being, Existential Well Being, Total Health Habits, Eating Habits, Exercise and Fitness, Avoiding use of Alcohol and Drugs, Perceived Parental Care (all protective factors) boys scored higher than girls. Avoidant Coping, Hassles, Uplifts, Physical Aggression, Verbal Aggression and Total Aggression (all risk factors) boys scored higher than girls. Only on Boredom Susceptibility Dimension of Sensation Seeking, girls scored higher than boys. Results revealed that boys who both drank and smoke scored higher on both protective and risk factors in comparison to girls who drink and smoke.

The F ratios (as obtained by ANOVA, Table 9-35) for gender emerged significant for Spiritual Well Being, Religious Well Being, Existential Well Being, Exercise and Fitness, Avoidance of use of Alcohol and Drugs, Total Health Habits, Self Efficacy (boys scoring higher than girls), Stress Symptoms, Depression (girls scoring higher than boys), Disinhibition (boys scoring higher than girls), Boredom Susceptibility (boys scoring higher than girls), Physical, Verbal and Total Aggression (boys scoring higher than girls).

Stepwise Discriminate Functional Analysis (Table 42) comparing boy and girl drug users revealed Stress, Existential Well Being, Disinhibition, Perceived Parental Control, Physical Aggression and Eating Habits to emerge as discriminants.
Many earlier studies have also found gender differences in factors related to drug use. Ensminger et al. (1982) examined sex differences in marijuana, alcohol and cigarette use among 705 first graders and reassessed 10 years later. Teenage boys reported more use of marijuana and alcohol than girls, but boys and girls reported similar use of cigarettes.

Trim et al. (2007) found girls to be more likely than boys to smoke (27% vs. 18%) and to report depressed mood (23% vs. 8%). In logistic regression models that adjusted for age, ethnicity, percentage of friends who smoke, number of smokers in the home, and educational aspirations, the odds of smoking were elevated among teens with depressed mood, both among girls and boys.

There is some suggestion in the literature that smoking may serve different needs for boys and girls and that the mechanisms underlying the development of smoking may be different despite the fact that the prevalence of smoking is similar in the two groups (Koval and Pederson, 1999). For example, concern about body weight may be an issue for girls, but not for boys. In addition, boys and girls may differ with regard to the complex interrelationships between the variables that have been shown to be related with initiation to smoking. A 5-year longitudinal study of adolescents was conducted to investigate the interrelationships of stress, coping, mastery, self-esteem, social support, psychological distress, and smoking behaviour, examining some pre-specified relationships derived from the literature on smoking and on other substance use. The cohort design provided an opportunity to establish possible causal links of psychological factors with smoking behaviour as the study participants progressed from Grade 6 to 11. Results showed that increased stress was associated with increased involvement with smoking, but this effect changed with levels of self-reported distress. Coping and/or personal resources might serve to buffer the effects of increased levels of stress and, therefore, acted as modifiers of the stress–smoking relationship. If, for example, stress was high and coping skills were also high, the likelihood of
smoking was low. Conversely, if stress was high, but coping was low, smoking
was more likely to occur. Psychosocial factors such as social conformity and
rebelliousness might tamper the proposed effects of coping and personal resources
in such a way that these latter two factors no longer served as buffers in the stress–
smoking relationship. Factors related to smoking (attitudes, beliefs, smoking
environment) might function to modify the proposed stress–smoking relationship
by reducing the likelihood that smoking occurred when stress was experienced.

On the other hand, smoking might serve an entirely different function for
girls than for boys, for whom smoking might be more strongly related to social
factors and/or rebelliousness. If smoking was considered to be a coping skill, high
stress and low distress might be the result of the fact that the individual smokes.
Results of these authors revealed that ever smokers (current regular and
occasional, experimental, and ex-smokers) scored higher on depression,
rebelliousness, and social conformity scales, reported more life events in the past
year, and had lower scores for social support. Koval and Pederson (1999) gave
models of the relationship of stress, depression and other psychosocial factors in
smoking behaviour. Jackson (2000) studied women's and men's use of alcohol to
cope with emotional distress. Participants (n = 740) were adults drawn from a
community sample, originally recruited through random-digit dialing for a larger
investigation on gender differences in depression across adulthood. All of them
completed questionnaires by mail. The two major questions explored were what
were the key psychological correlates of use of alcohol to cope and were these
correlates the same for both women and men? It was hypothesized that an
individual's use of alcohol to cope with emotional distress would be predicted by
the belief that one should use alcohol to cope. It was further hypothesized that the
smaller one's range of adaptive coping behaviours, the stronger the effect of the
belief that one should use alcohol to cope on reported actual use of alcohol to
cope. It was also hypothesized that the larger one's range of maladaptive coping
behaviours, the stronger the effect of the belief that one should use alcohol to cope. It was also hypothesized that the more one used alcohol specifically to cope, the greater one's overall alcohol consumption. Finally, it was hypothesized that these predictions would hold for both women and men. Hierarchical multiple regressions showed that for both women and men, use of alcohol to cope was predicted by the belief that one should use alcohol to cope and by maladaptive coping range. Surprisingly, adaptive coping range did not predict use of alcohol to cope for either women or men. For men only, a wider maladaptive coping range increased the effect of the belief that one should use alcohol to cope on use of alcohol to cope. For both women and men, overall alcohol consumption was predicted by use of alcohol to cope.

Women who reported childhood sexual abuse (CSA) were at an increased risk for developing psychiatric disorders in adulthood (Kendler *et al.*, 2000). Those with CSA had a substantially increased risk for developing a wide range of psychopathology. Most of this association was due to more severe forms of CSA and could not be explained by background familial factors. Although other biases could not be ruled out, these results were consistent with the hypothesis that CSA is causally related to an increased risk for psychiatric and substance abuse disorders.

Best *et al.* (2001) examined stages of drinking and smoking careers and transitions from initiation to regular use among adolescents, as a function of ethnic status and gender. The data were collected using a confidential, self-completion questionnaire assessing onset and frequency of drinking and smoking. The sample consisting of 1777 adolescents, between the ages of 11 and 14, was drawn from eight secondary schools in south-west London. For both smoking and drinking, white children were more likely to have ever smoked tobacco and drunk alcohol, and were also more likely to progress from initiation to regular use than were either black or Asian children. Asian children reported the lowest prevalence rates
for both drinking and smoking. Boys reported experimenting with both cigarettes and alcohol at an earlier age than girls, although a lower proportion of boys reported regular and lifetime involvement with both alcohol and tobacco. Furthermore, a significantly higher proportion of girls who tried smoking went on to do so regularly.

Haddad and Malak (2002) estimated the prevalence of smoking and wanted to describe the habits, attitudes and practices related to smoking among students of Jordan University. The participants were made familiar with a modified Arabic version of the World Health Organization Smoking Questionnaire and the Attitudes towards Smoking Questionnaire to study their habits, attitudes, and beliefs in relation to smoking. The study revealed the prevalence of smoking to be 28.6% (50.2% among boys and 6.5% among girls). Friends, not family, were the main source of the first smoking, and this most often occurred after 15 years of age (82.3%). Boys preferred smoking in the cafeteria and girls in the bathroom. The main advantage of smoking for boys was calming down, while for girls, it was independence. Non-smokers chose not to smoke because of health and hatred of the habit. The non-smokers had more positive attitudes against smoking and were more aware of the adverse effects of smoking. The reasons smokers gave for starting smoking was pleasure, followed by stress reduction and curiosity.

In the US, men generally drink about twice as much alcohol as women (King et al., 2003). Studies demonstrated a 4:1 boy-to-girl ratio of lifetime prevalence of alcohol dependence overall and a 2:1 boy-to-girl ratio of alcohol dependence within current drinker populations. The converse was also true i.e., lifetime abstinence or very rare alcohol drinking was more common among adult girls (45%) than boys (22%). It was suggested that environmental influences, psychological vulnerabilities, and individual differences might be accounting for a large proportion of the variance in the progression from social to hazardous drinking between the sexes.
Individual differences in response to stressful events were hypothesized to be important determinants in the development and maintenance of substance use disorders. In some studies, the relationship among stressful events, emotional distress, and alcohol drinking was reported to be stronger in men as compared to women drinkers (King et al., 2003). These authors conducted a study that showed the age and education levels not to be associated with alcohol drinking. In boys, stressful life events, anxiety, and depression were positively correlated with drinking levels. In girls, stressful events, anxiety, and depression, as well as Neuroticism showed even greater positive associations with heavier drinking. Results of the regression analyses showed that among men, a three-variable model emerged to predict increasing alcohol drinking levels, in the following sequence: anxiety, Neuroticism (in the negative direction), and stressful life events. Taken together, these variables accounted for a modest 25% of the variance in men's drinking. In contrast, in girls, a two-variable model emerged, including Neuroticism and depression (both in the positive direction) that significantly predicted heavier drinking. These two variables together accounted for 42% of the variance in women's drinking. Although stressful life events were significantly related to heavier drinking in girls, depressive symptoms and neuroticism were more powerful predictors of women's heavier drinking levels, and once the effects of these two variables were taken into account, stressful life events did not enter the overall prediction model. This implies that psychological factors might be more strongly associated with increased risk for hazardous drinking in girls than were stress-related risk factors. This fact was supported by household survey data showing psychiatric impairment at a two to three times greater rate in girl problem drinkers than in boys.

According to Knauss et al. (2005) cigarette smoking is the leading preventable cause of morbidity and mortality in the United States, resulting in 20% of deaths annually. Although smoking has detrimental effects on all smokers,
women are more susceptible to distinctive smoking-related health risks. Not only do girl smokers face a 24% greater chance of developing lung cancer, they are also vulnerable to an increased likelihood of developing cervical cancer and osteoporosis (Epps and Geller, 2001). Furthermore, among girl smokers who use oral contraceptives, the rate of heart attack is 10-fold increased. Women smokers are also prone to difficulties during pregnancies, such as an increased risk of miscarriage, preterm deliveries, and low birth weight infants. Passive smoking in women also makes them prone to develop cervical cancer (Sobti et al., 2006). In fact smoking has been found to be responsible for various diseases such as chronic obstructive pulmonary disease, cardiac heart disease and various cancers (Sobti et al., 2008, 2009, 2010a, b).

Knauss et al. (2005) further opined that the tobacco industry has long exploited the idealized image of a thin, independent, attractive girl smoker. These marketing strategies reinforce the belief that smoking controls body weight. Such advertisements are particularly salient due to popular culture's emphasis on physical appearance among young women. Thus, perceived social pressure for thinness often leads girl to use weight loss methods that pose serious health risks. The behavioural contradictions inherent in cigarette smoking create a paradoxical phenomenon. Among girls, who smoke to control body weight, their behaviour is motivated by a desire to be perceived as attractive and healthy. However, while these women may be perceived as healthy and thin individuals, they place their own health at significant risk. In other words, the long-term risks (morbidity from smoking) are outweighed by short-term gains (perceived as thin and attractive). Knauss et al. (2005) examined the perception of social attractiveness and approval of smoking in a vignette of an American college girl smoker after a failed quit attempt. It was hypothesized that she would be perceived more favorably when she was smoking to control her weight, compared to a non-weight related excuse during a failed quit attempt. The design was a 2 (gender: boy vs. girl)×4
(condition: control, 5, 10, 20 lb gain)×3 (participants’ smoking status: never, former, or current smoker) factorial design with the Social Attraction Index and Perception of Smoking Index as dependent variables. Contrary to the hypothesis, perceptions of the girl were not affected by her disclosed amount of weight gain. Consistent with the literature on stigmatization of smokers, smoking participants perceived the girl target as most socially attractive and nonsmokers perceived her to be the least attractive.

There has been a mounting concern about the increasing numbers of adolescents who (ab) use drugs, alcohol and cigarettes (Rodham et al., 2005). These authors tried to establish the prevalence according to gender and ethnicity of drinking, smoking and drug-use in a representative sample of 15 and 16 year olds. The sample consisted of 6020, 15- and 16-year-old pupils from 41 schools in England who completed an anonymous self-report survey. There were clear gender and ethnic differences in self-reported substance use. More boys than girls reported drinking and drug taking. More girls reported smoking, but boys were more likely to be heavy smokers. Asians and Black boys and Black and Asian girls were less likely to report drinking during a typical week compared to the White participants. Asian girls were less likely to report smoking as compared to White girls.

Relationship between the gender and the smoking habit was observed by Munafo et al. (2007). Ratio of the boys taking smoking was higher than of girls. Munafo et al. (2007) tried to identify pathways of risks from adolescence to adulthood that are linked to SES variation in smoking behaviour among adults for both men and women. The analyses identified a strong SES-related chain of risk pathways from age 16 to 30 years, linking current smoking at age 16 and maintenance at age 30. The identified risk pathways were similar for both men and women. The results indicated that smoking among young adults was influenced mainly by smoking in adolescence, which itself was a reflection of adverse
socioeconomic and psychosocial chains of risks operating during adolescence. Gender differences were present for all of the phases of drug abuse (initiation, escalation of use, addiction, and relapse following abstinence). While there were some differences among specific classes of abused drugs, the general pattern of gender differences was the same for all drugs of abuse. Girls began regularly self-administering licit and illicit drugs of abuse at lower doses than do boys; use escalates more rapidly to addiction, and girls are at greater risk for relapse following abstinence. Soldz and Cui (2001) also determined that the smoking risk indices of the boys were five times more than those of girls. A study by Novak et al (2007), observed higher smoking rates among men and women (30 years) with low education.

Becker and Hu (2008) also reported rates of drug abuse to be lower in women than in men. Nevertheless, the number of women using and abusing prescription and illegal drugs was observed to be on the rise. Adult men were 2–3 times more likely than women to have a drug abuse/dependence disorder, but the gender difference might reflect differences in opportunity, rather than vulnerability to drug use. If one looks at rate of escalation of drug use, however, women tend to increase their rate of consumption of alcohol, marijuana, opioids, and cocaine more rapidly than do men. Furthermore, once addicted to a drug, women find it more difficult to quit than men do. This has been reported to be true for nicotine, as well as many other drugs of abuse (Carpenter et al., 2006).

Gender and age differences on psychological characteristics were also explored by Weiss et al. (2008). There were significant age and gender differences on psychological characteristics. Specifically, girls reported higher scores on hostility compared to boys, but there were no significant gender differences on anxiety or depression. On the other hand, older students reported higher scores than younger ones on anxiety, hostility and depression (for all three psychological characteristics) all of which are related to drug abuse.
According to Yazici (2008) anxiety among adolescents is widely prevalent among both genders. Many adolescents experience anxiety symptoms because they are concerned about peer acceptance, academic performance, parental expectations, and other environmental stressors, which play out against a backdrop of physical, cognitive, emotional, and other life changes. High levels of trait anxiety are related to coping strategies for substance use, including smoking. Lack of coping skills to stressful situations and unsuccessful adjustment to dramatic life changes may lead to the adoption of maladaptive behaviours among adolescents. The relationship between the adolescents’ smoking and their family environment was investigated by Yazici (2008). He found meaningful relationships between the adolescents’ smoking behaviour and the gender, socio-economic status and maternal smoking. The non-smoking adolescents’ perception level of the family control was higher than the smokers. These results demonstrated that the family attitudes affect the smoking habits of the adolescents.

It has further been evidenced that gender can influence reasons for using drugs (social pressures), pathways to problematic use (victimization), and the consequences of use (e.g., absence of social support available to women) (Niccols et al., 2010). In comparison to men, women typically report more complex precursors to substance abuse, more negative health and other consequences and more difficulties accessing treatment. In a 2004, United Nations report, women who abused substances were described, in comparison to men, as having fewer resources, being more likely to be living with a partner with a substance use problem, experiencing more severe substance problems at the beginning of treatment, and having higher rates of trauma (United Nations Office on Drugs and Crime, 2004). In gender sensitive theoretical models, substance abuse is viewed in the context of women's relationships, including broader relational and multigenerational systems. Women's substance use issues have been described as more "socially embedded" than men's. Women entering treatment are more likely
than their boy counterparts to report relationship problems, social isolation, fewer friends, and having partners who are involved in drugs or alcohol.

Underage drinking among girls is a growing problem. Not only are girls closing the gender gap in the prevalence of their alcohol use, but among young ones in particular, they are reporting higher rates of use than boys (Fang et al., 2009). Among the explanations offered for girls’ underage drinking, is family interaction theory. This theory posits that adolescents’ alcohol use results from psychological, peer, and family influences, and suggests that strong parent-child involvement and communication and high levels of parental monitoring can protect girls. Although some studies suggested that psychological factors such as depression (Silberg et al., 2003), body esteem (National Center on Addiction and Substance Abuse, 2003), and self-efficacy as well as peer influence are strongly associated with adolescent girls’ drinking, other findings support that familial factors may be stronger predictors (Cleveland et al., 2008). Informed by family interaction theory, Fang et al. (2009) investigated how demographic, psychological, peer, and family factors explain girls’ alcohol use. They hypothesized that: (1) higher levels of depression, less body esteem, lower self-efficacy, and greater levels of perceived peer alcohol use would be related to girls’ drinking; (2) after controlling for the contributions of psychological and peer variables, familial factors, namely maternal drinking, parental monitoring, family rules against girls’ alcohol use, parental involvement, and mother-daughter communication, would be associated with girls’ alcohol use; (3) familial domain variables would explain girls’ drinking over and above that accounted for by psychological and peer domain variables; and (4) familial domain variables would modify the effects of psychological and peer factors on girls’ alcohol use.

Results of the study confirmed hypotheses concerning the relationship between depression, body esteem, self-efficacy, peer alcohol use, and girl’s drinking. Higher levels of depression, lower self-efficacy, and greater levels of
perceived peer alcohol use contributed to both girls’ lifetime and recent alcohol use. Girls’ dissatisfaction with their appearance and weight was positively associated with their lifetime drinking, albeit such a relationship was not replicated in the recent drinking model. Body esteem may have different functional roles during girls’ developmental processes. Warranting note is that body esteem may not be associated with alcohol consumption among adolescent girls until they enter late adolescence, i.e., 18 years. Study data partially supported the hypothesis that familial variables would exert distinct impacts on girls’ alcohol use when girls’ personal characteristics, psychological states, and perceived peer drinking were considered in the analysis. Beta weights indicated parental monitoring, family rules against alcohol use, and parental involvement to be associated with decreased girls’ lifetime alcohol use, but not recent use. Only maternal drinking was significantly related to both girls’ lifetime and recent alcohol consumption. It was earlier suggested that mothers might be influencing adolescent drinking by modelling drinking behaviour. Drawn from a large, ethnically-diverse sample, study findings lend credence to previous results that alcohol use among adolescent girls is explained in part by individual, peer and family factors. In line with family interaction theory, the study suggested that familial factors not only directly impact girls’ drinking, but also that these factors might be safeguarding against peer and psychological risks. To be effective, alcohol misuse prevention programs for adolescent girls should begin early, involve parents, and address the interplay of risk and protective factors in multiple domains.

Neglect in childhood is related to later substance abuse (Kaiser and Perrin, 2009). It was shown that gender differences in coping styles begin to appear during adolescence. Men were thought to implement distraction techniques to cope (Nolen-Hoeksema, 2004), which might include substance abuse. Further, boys were less likely than girls to turn problematic feelings inward against
themselves, and might be using more outward focused coping strategies, such as drinking and drug use. It has been suggested that differential coping styles result from the ways in which men and women are socialized. Specifically, girls are socialized to be more expressive than boys, which may reflect an underlying biological and psychological process (Nolen-Hoeksema, 2004). This, in turn, suggested greater girl perception and articulation of stress. In a study examining the relationship between gender-specific coping styles and substance abuse among college students, the association between stress and drinking was found to be stronger for girls than boys, and that coping styles (especially maladaptive coping styles) were significantly associated with polysubstance abuse for both men and women in the college population.

Lotorean et al. (2009) assessed cross-sectional and prospective relations between alcohol and tobacco use among Romanian adolescents, giving special attention to possible gender differences. The data were obtained from a two-wave 1-year longitudinal study carried out among 403 Romanian high school students aged 15-17 years. Questionnaires were used to assess smoking behaviour and alcohol use. Both behaviours were classified into two categories, that of adolescents who used the substance (at least once/month) and that of those who did not use it or used less than monthly. Logistic regression was used to determine the best predictor substance of the subsequent use of the other substance. Alcohol and cigarette uses were found to be linked reciprocally and this interrelationship differed across genders. Among girls smoking predicted alcohol use better than the converse, while for the boys it was the other way around. Girls reported significantly higher levels of mood variability than did boys at each wave. Additionally, daily smoking rates for girls were significantly higher than those of boys.
A COMPARATIVE PROFILE OF SMOKING VERSUS DRINKING ADOLESCENTS

One of the aims of the study was to explore whether the protective and risk factors play a differential role among adolescents who smoke and drink. t ratios (Table 7) revealed that on Existential Well Being, Self Efficacy, Perceived Parental Care, adolescents who indulged in drinking only scored higher than adolescents who smoked only among both the genders.

Significant differences also emerged on Exercise and Fitness, Stress, Hassles, Uplifts, Depression, Disinhibition, Total Sensation Seeking and Total Aggression with adolescents who smoked only scoring significantly higher than adolescents who indulged in drinking only (Table 7). Adolescents who smoked only have been found to score much higher on risk factors in drug abuse. The results have clear implications for interventions on smoking cessation programs.

DISCRIMINANT FUNCTIONAL ANALYSIS

The comparison of drinking and smoking groups using DFA revealed Hassles, Anger, Task Focussed Coping, Disinhibition, Exercise and Fitness and Depression to emerge as discriminants between the two groups (Table 43).

Many earlier studies also investigated role of psychosocial factors in drinking and smoking population. Bloom et al. (1984) assessed 596 students in Grades 5-7 in Western Pennsylvania (USA) regarding their cigarette and alcohol behaviour, attitudes and knowledge. Approximately one third of the subjects were experimental users of these substances. While smoking and drinking were related, no differences in cigarette and alcohol use were found between sexes or among the 3 grade levels. Cigarette smoking was a peer-oriented behaviour for this age group, whereas drinking was a more family oriented behaviour. Findings suggest that just prior to and in early adolescence, knowledge of health risks may play a more significant role in the deterrence of drinking or smoking onset than in later ten years.
Based on a national survey by Thorlindsson and Vilhjalmsson et al. (1991) in 1,131 Icelandic adolescents (aged 15-16 years) various predictors of cigarette smoking and alcohol use were explored. It was found that the use of tobacco and alcohol was found to be related to a number of different factors: sex, residence, hours of paid work, physical activities, social network, educational performance and beliefs, and psychological distress. Further, smoking and drinking had most predictors in common.

One important reason for concern about adolescent alcohol use is its close association with the use of other drugs (O’Malley et al., 1998). There is considerable evidence that alcohol use tends to precede use of illicit drugs, and some researchers have argued, based on longitudinal data, that alcohol use serves as a “gateway” to the use of illicit substances (O’Malley et al., 1998).

Elder et al. (2000) examined baseline predictors of tobacco and alcohol use and susceptibility among Hispanic migrant adolescents. Subjects were 660 11-16 years olds enrolled in the Migrant Education Program through the Country Office of Education. Slightly more than 75% of the study sample was first generation Hispanics and 79% preferred to speak Spanish. An interviewer-administered survey assessed the information with respect to standard demographic characteristics, modeling of cigarette smoking (including parental and peer smoking), attitudes (including self-standards and anticipated outcomes), acculturation, communication with parents, amount of social support, and satisfaction with social support. Significant predictors of susceptibility to tobacco and smoking status included age, gender, attitudes towards cigarettes (anticipated outcomes, self-standards), satisfaction with social support, and parent-child communication. Factors that were also significant predictors of susceptibility to alcohol and drinking status were age, attitudes toward drinking, satisfaction with social support, and level of parent-child communication. In addition, peer and household use of alcohol predicted adolescent outcomes. Based on these results it
was suggested that tobacco and alcohol use concerns availability, peer pressure, modeling and expectancies, parent-child communication.

There is need for understanding of the impact of sociocultural and psychological factors on the various stages of adolescent smoking (Richardson et al., 2002). Using national data, they examined transitions across smoking stages among adolescents \((n = 20,747)\) as a function of interpersonal, familial, and peer domains. Peer smoking was particularly influential in differentiating regular smoking, whereas alcohol use was most influential in early smoking initiation. Higher school grades were more likely to differentiate regular smoking from earlier smoking stages. Connectedness to school and family were protective of smoking initiation. Results lend support for an interactional approach to prevent smoking among adolescents.

Wetzels et al. (2003) examined the earliest stages in drug involvement, in terms of the relationship between alcohol and tobacco use, among adolescents from six European countries (Denmark, Finland, the Netherlands, Portugal, Spain and the United Kingdom). International gender and age differences were studied. A large international sample of European adolescents \((n=10170, \text{mean age} = 13.3 \text{ years})\) was followed longitudinally. Data were gathered in the autumn terms of 1998 and 1999 by means of self-administered questionnaires. Adolescents’ self-reports on smoking and alcohol behaviour were used. Both behaviours were classified into two categories, that of adolescents who had never used the substance and that of those who had used the substance at least once in their lives. Logistic regression was used to determine which substance was the best predictor of the subsequent use of the other substances. Alcohol use and tobacco use were found to be associated with each other reciprocally. Results revealed that in Europe as a whole, tobacco use predicted subsequent alcohol use better than the converse. However, for Dutch girls, alcohol use predicted subsequent smoking behaviour better than the converse. The findings suggest that the development of
alcohol and tobacco use patterns are closely related, but the order of progression is not universal and may reflect cultural factors.

According to Reed et al. (2007) the association between the use of alcohol and tobacco has also been widely observed in college student populations. A study conducted at a Canadian university, nearly 3 of 4 (74%) of the undergraduate participants reported smoking while drinking. Among first year college students, individuals who initiated smoking before coming to college had a higher rates of heavy episodic drinking (i.e., consuming five or more drinks on any one occasion) than late-onset students (i.e., college initiators); however, heavy episodic drinking rates among late-onset smokers approximated those of early-onset smokers when these individuals reach senior years. Another study also found heavy episodic drinking and marijuana use in college to predict cigarette smoking (Reed et al., 2007). Several theoretical mechanisms have been used to explain the observed relationship between the concurrent use of alcohol and cigarettes. According to alcohol myopia theory (Steele and Josephs, 1990), heavy drinking restricts an individual's attentional capacity and only the most salient aspects of one's environment will be attended to by a person who is intoxicated. In this case, impelling environmental cues that promote smoking such as other people smoking or cigarette vending machines may be more salient to the intoxicated individual than inhibiting cues that discourage smoking (i.e., personal attitudes about smoking, beliefs about the health risks of smoking). Classical conditioning explanations of the concurrent relationship between drinking and smoking states that over time the frequent pairing of alcohol with cigarettes results in alcohol serving as a stimulus which causes the conditioned response of cigarette craving. Models of young adult peers also influence and offer possible explanations for the concurrent use of alcohol and cigarettes. For instance, in a recent study of young adults aged between 19 to 25 years, both a concurrent and prospective relationship between peer use and participant use was observed for cigarette smoking and
heavy drinking. Additionally, an alternative conceptualization of the ‘gateway’ theory of substance use (Kandel and Yamaguchi, 1993) might predict that alcohol use (or the use of other drugs) may influence smoking behaviour through specific developmental stages of substance use progression in some college students (Reed et al., 2007).

Tobacco prevalence rates were reported to be high in North East India (Tsering et al., 2008). Survey revealed that boys were more likely than girls to use all types of tobacco products. The current and regular tobacco use (both smoke and smokeless) in any form among boys students exceeded that of girls.

Research is a way to enhance understanding of a set of phenomena. This study, related to smoking and drinking among adolescents in this region was planned to focus on some significant psychological correlates. The data analysis has provided some pertinent insights, which have useful implications for the educators. Probably, this takes these results into the realm of applications, policy making and practice.