METHOD

DESIGN
The main aim of the present investigation was to study the role of protective and risk factors in smoking and drinking among adolescents of both the genders. In addition the study explored whether protective and risk factors chosen played similar or differential role in smoking versus drinking adolescents. Gender differences in protective and risk factors in drug use were also explored.

SAMPLE
Out of a larger population of school and college students of Tricity, the final sample comprising of 350 adolescents was chosen. Half of them were males and the other half females in the age range of 17-19 years. The subjects were further divided into four groups depending on their drinking and smoking status. The four categories were:

- Non-drinking, non-smoking subjects henceforth called non-drug users (n = 60)
- Drinking only subjects (n = 120)
- Smoking only subjects (n = 65)
- Both smoking and drinking subjects (n = 105)

The latter three categories were referred to as drug abusers.

Inclusion Criteria
- Those with any known history of psychopathology were not included in the sample.
- Polydrug users were not included in the sample.

TESTS AND TOOLS
The following standardized tests and tools were used:
1. Spiritual Well Being Scale (Paloutzian and Ellison, 1982)
2. Health Habits Inventory (Atwater, 1995)
3. Self Efficacy Scale (Mattoo and Malhotra, 1998)
4. Parental Bonding Instrument (Parker et al., 1979)
5. Coping Styles Inventory (Carver et al., 1989)
6. Stress Symptoms Rating Scale (Heilbrun and Pepe, 1985)
7. Daily Hassles and Uplifts Scale (DeLongis et al., 1982)
8. Beck Depression Inventory (Beck and Steer, 1987)
9. Modified Sensation Seeking Scale (Basu et al., 1993)
10. Aggression Questionnaire (Buss and Perry, 1992)

An interview schedule based on WHO (2002) guidelines to gather demographic and socioeconomic information and assess smoking and drinking status of the respondents was administered.

For assessing drinking status, respondents were asked to respond to: Do you drink? Yes/No.

If their answer was in the affirmative, then they were further asked: What is the average number of drinks you consume per week?

- 1-10 drinks per week (mild drinking)
- 10-20 drinks per week (moderate drinking)
- 20+ drinks per week (heavy drinking)

For assessing smoking status, respondents were asked: Do you smoke? Yes/No.

If they answered in the affirmative, they were further asked to reveal: How frequently did they smoke?

- Less than 10 cigarettes per day (light smokers)
- 10-15 cigarettes per day (moderate smokers)
- More than 15 cigarettes per day (heavy smokers)

**BRIEF DESCRIPTION OF THE TESTS**

1. **Spiritual Well Being Scale (SWBS)**: The SWBS developed by Paloutzian and Ellison (1982), was used to measure spirituality. The SWBS is a 20 item
A Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree), the possible range of scores for the total index is 20 to 120, with higher scores representing higher spirituality. The measure was designed to reflect both the religious and the existential dimensions of spirituality. The SWBS has two subscales to reflect those two dimensions: a 10 item scale measuring Religious Well Being (I have a personally meaningful relationship with God) and a 10 item scale with no reference to God, which measures Existential Well Being (believe there is some real purpose for my life). Ellison (1983) reported a correlation between the Religious Well Being and Existential Well Being subscales of .32. The test/retest reliability over a 1-week period was .93 for the overall SWBS score, .96 for the Religious Well Being subscale, and .86 for the Existential Well Being subscale. Coefficient alphas for the total score ranged from .89-.94, as well as the Religious Well Being subscale (.82-.94) and the Existential Well Being subscale (.78-.86) and showed good internal consistency. Criterion validity has been established by correlating the SWBS total score with other theoretically related scales such as the UCLA loneliness scale, the purpose in life test, intrinsic religious orientation and a measure of self esteem (Ellison, 1983). The Religious Well Being subscale showed a stronger relation with intrinsic religious orientation \((r=.79)\) than the Existential Well Being subscale \((r = .19)\). Conversely, the Existential Well Being subscale was more highly related to purpose in life \((r = .68)\) than the Religious Well Being subscale \((r = .28)\).

It has been successfully used in the West by Konstam \textit{et al.} (2001); Rye \textit{et al.} (2001); Rye and Pargament (2002); Leach and Lark (2004); Rye \textit{et al.} (2004); Toussaint and Webb (2005); Webb \textit{et al.} (2006); Utsey \textit{et al.} (2007) and VonDras \textit{et al.} (2007). In India Tripathi (2008) used it successfully.
2. **Health Habits Inventory (Atwater, 1995)**: This inventory has 12 items to assess the Health Habits of subjects. The inventory measures three types of Health Habits *viz.*, Eating Habits, Exercise and Physical Fitness and Avoidance of use of Alcohol and Drugs. The subjects were instructed to read each statement and choose from among three responses - Almost always, Sometimes, Never. The total score in each area *viz.*, Eating Habits, Exercise/Fitness and Avoidance of use of Alcohol and Drugs were added separately and a total score for Health Habits (summated across all the three areas) was also obtained. The scores between 9 and 10 implied excellent Health Habits, 6-8 good, 3-5 average and 0-2 poor. This scale was used in India by Sehgal (2003) and Sharma (2005).

3. **Self Efficacy Scale (Mattoo and Malhotra, 1998)**: This 23 item scale was adapted in Hindi by Mattoo and Malhotra (1998) from the Sherer *et al.* (1982) scale. The items subjected to factor analysis yielded two factors *viz.*, general self efficacy and social self efficacy. The reliability estimate for the scale was .92. The test-retest reliability coefficient ranged form .91-.94 for the test. The scale thus had robust psychometric properties.

4. **Parental Bonding Instrument (Parker *et al.*, 1979)**: The PBI is 25 item self-report measure of respondents recollections of parents attitudes and behaviours during the first 16 years. Respondents were asked to answer questions based on how they remember their parent, using a Likert type scale ranging from 0 (very like) to (very unlike). The PBI was developed using factor analysis from self reports of experiences with parents in childhood. The scale consisted of two factors: Maternal/Paternal Care (*i.e.*, care vs indifference and rejection) and Maternal/Paternal Overprotection (*i.e.*, overprotection vs encouragement of autonomy). Higher scores on the two
scales indicate higher perceived paternal care and overprotection respectively. The 12 items of the maternal/paternal care factor allowed a maximum score of 36 and the 13 items of the overprotection factor permitted a maximum score of 39. The two factor scores were negatively correlated (r = -.24) suggesting that the two dimensions were not independent (Parker et al., 1979) i.e., overprotection is associated with lack of ‘care’. Adequate internal consistency has been demonstrated in numerous studies using split half technique. The scale also has high test-retest reliability over a three week period of both care scale (r = .76; p < .01) and overprotection scale (r = .63, p < .01) (Parker et al., 1979 and Parker, 1989). The scales inter rater reliability and concurrent, convergent, criterion and predictive validity have been established (Parker, 1989). It was successfully used in India by Haobam (2007) and Harinder (2007).

5. **Coping Styles Inventory (Carver et al., 1989)**: Coping styles were assessed following the recommendation of Carver et al. (1989). The inventory measured three broad coping dispositions viz., Task Focussed, Emotion Focussed and Avoidance Coping. Items were conceptually grouped into three scales with 10 items in each scale. Each item was answered on a 4 point rating scale ranging from “I usually don’t do this at all” to “I usually do this a lot.” The scores on each of the scales ranged from 10 to 40. Internal consistency of each scale was assessed using Cronbach’s alpha. For Task Focussed Coping, it was .78 for Emotion Focussed Coping, it was .76 and for Avoidance Coping .77. Task and Emotion Focussed Copings were correlated (r = .46). Neither Task nor Emotion Focussed Copings were associated with Avoidance Coping (r = .16). This scale was used in India by Sehgal (2003), Salariya (2006) and Haobam (2007).
6. **Stress Symptoms Rating Scale (Heilbrun and Pepe, 1985):** Heilbrun and Pepe (1985) constructed the Stress Symptoms Rating Scale which is a response-defined measure of stress in contrast to the stimulus-defined measures being used in earlier stress research. The Stress Symptoms Rating Scale is an inquiry into the amount of stress experienced without regard to what provoked them. They selected 25 symptoms of stress from a list that Selye (1956), identified as readily detectable by the individual. The subject is required to rate the frequency of each stress symptom (for the previous year) alone on a six-point scale ranging from “Not at all” to the “More than once per day” (i.e., ranging from 0 to 5). The stress score was the summation of scores obtained over all the ratings.

The alpha reliability for the scale was found to be .93 by Heilbrun and Putter (1986). Evidence for validity came from differential elevations of stress found in groups, otherwise identified as more stressful. The test was successfully used in India by Saini (1998), Opara (1999), Mohan (2000, 2001, 2002 and 2006), Shourie (2003), Sharma (2005), Malhotra (2006) and Salariya (2006).

7. **Daily Hassles and Uplifts Scale (Delongis et al., 1982):** The Daily Hassles and Uplifts Scale was constructed by Kanner et al. (1981) to assess the number, severity and intensity of the daily hassles and uplifts that the subject had experienced in the last month. The ‘Hassles Scale’ consisted of a list of hassles or everyday irritants. These covered the areas of health, family, friends, the environment, practical considerations and chance occurrences. Subjects were requested to indicate any hassles that had been experienced during the last month and rate how severe these were on a three point scale, three being “A great deal and 0 being None or Not applicable.” The ‘Uplift
Scale’ consisted of lists of uplifts, minor life events that make people feel good. Subjects were asked to indicate the uplifts they had experienced during the last month and rate their experience of each on a three point scale, three being ‘A great deal and 0 being None or Not applicable’. The present study used a revised version of Hassles and Uplifts Scale by Delongis et al. (1982) which is a shorter version of Kanner et al. (1981) test and consisted of 53 items. The test was successfully used in India by Saini (1998), Opara (1999), Mohan (2000), Mohan et al. (2000, 2006), Kaur (2002), Shourie (2003), Salariya (2006), Haobam (2007) and Harinder (2007).

8. **Beck Depression Inventory (Beck et al., 1974)**: Beck’s Depression Inventory is a 21 item self report scale that assesses cognitive, affective and somatic depressive symptoms that have occurred over the previous week. This scale measures depressed mood disorder. It has acceptable test-retest reliability ($r=.79$) in non-clinical population and demonstrates concurrent validity ($r = .67-.79$) in clinical and non-clinical samples. This test has been used in India by Mohan and Sehgal (2004), Malhotra (2006) and Salariya (2006).

9. **Sensation Seeking Scale (Basu et al., 1993)**: Zuckerman et al. (1975) developed Sensation Seeking scale as a measure of individual differences in
The present form V (1979) of the Sensation Seeking Scale was developed, based on factor analysis of form IV. Based on the cross sex and the cross-national similarities in item loading, the new form V was constructed.

Modified Sensation Seeking Scale (MSSS, Basu et al., 1993) is an Indian adaptation of the Sensation Seeking Scale form V (Zuckerman et al., 1978). It comprises 40 items force-choiced as Yes (score 0) or No (score 1). It gives score for the sensation seeking total and four subscales: Thrill and Adventure Seeking (TAS), Experience Seeking (ES), Boredom Susceptibility (BS) and Disinhibition (DIS).

The form contained 10 items representing each of the four factors. It did not contain the general scale, but instead used a sensation seeking total score based on the sum of the four factors score. The four factors form the four subscales:

- **Thrill and Adventure Seeking (TAS)**: It consisted of items expressing desire to engage in sports or activities involving some physical danger or risk taking (such as mountain climbing, speeding in a car etc.).

- **Experience Seeking (ES)**: It contained items describing the desire to seek new experiences through the mind and senses by living in a non-conforming life style with unconventional friends and through travel.

- **Boredom Susceptibility (BS)**: It indicated an aversion for repetitive experience of any kind, routine work or even dull or predictable people. Other items indicated a restless reaction when things were unchanging.

- **Disinhibition (DIS)**: It was named for the items describing the need to disinhibit behaviour in the social sphere by drinking, partying and seeing variety in sexual partners. This 40 item Inventory has a large research base.
and is valid. Both the internal reliability and re-test reliability for the test are highly significant; alpha and inter item correlation being in the range of .83-.94. The cross subscale correlations were generally low to moderate, ranging from .55 to .44.

The scale was first adopted for Indian population by Basu et al. (1993) at Chandigarh. The modified scale was found to have high rank order correlation coefficient of the test and retest scores. It was also used in India by Mohan and Sehgal (2004) and Malhotra (2006).

10. **Buss-Perry Aggression Questionnaire (Buss and Perry, 1992)**: The Buss-Perry Aggression Questionnaire was developed to measure aggression. The test had 29 items and yielded four factors, *viz.*, Physical Aggression, Verbal Aggression, Anger and Hostility. The test had a true-false response format. Physical and Verbal Aggression were the instrumental components of aggression. Anger was the affective component and Hostility the cognitive component. Reliability estimates for different dimensions of aggression were; for Physical Aggression ranging from .74-.85; for Verbal Aggression from .70-.72 for Anger from .74-.83 and for Hostility, it ranged from .73-.77.

**Procedure**

All the respondents were contacted personally and requested to volunteer for the study. They gave informed consent. They were then given the test booklet and requested to fill up the tests truthfully. They were assured that information revealed by them would be kept strictly confidential and used for research study only. They first filled up the general information schedule and rest of the tests in 3-4 sessions.
Instructions for the Spiritual Well Being Scale

The following instructions were given for the Spiritual Well Being Scale, “For each of the following statements, circle the choice that best indicates the extent of your agreement or disagreement as it described your personal experience.” SA- Strongly Agree, D-Disagree, MA-Moderately Agree, MD-Moderately Disagree, A-Agree, SD-Strongly Disagree.

Instructions for Health Habits Inventory

“Here is a list of 12 statements measuring your eating habits, exercise habits and avoiding use of alcohol and drugs. Each statement was followed by three category response formant viz., Almost always, Sometimes and Almost never. Please circle the appropriate category after each of the following statements.”

Instructions for Generalized Self-Efficacy Scale

The instructions were given for the Generalized Self-Efficacy Scale. “Please read each statement carefully and express your agreement or disagreement. There is no right or wrong answer. Your answers will be kept confidential.”

Instructions for Parental Bonding Instrument

“This questionnaire listed various attitudes and behaviours of parents. As you remember your Mother and Father in your first 16 years would you place a tick in the most appropriate column next to each question. The column are : (1) Very like (2) Moderately like (3) Moderately unlike (4) Very unlike.”

Instructions for Coping Styles Inventory

“Rate your responses for each item along the following 4 point rating scale. (0) Don’t do it all (1) Rarely do it (2) Often do it (3) Usually do this a lot.”
Instructions for Stress Symptoms Rating Scale

The instructions were given for Stress Symptoms Rating Scale. “Rate the frequency of each item for the previous year along the following scale, ranging from 0-Not at all, 1-less than once per month, 2-between once per week and once per month, 3-between once per day and once per week, 4-about once per day, 5-more than once per day. Indicate your answer by circling the number of each item. Be sure to answer every item. All your responses will be kept strictly confidential.”

Instructions for Daily Hassles and Uplifts Scale

“Given below are 53 statements with the scale of 0-3 on each side. Please circle 1 number on the left side to describe the situations as Hassles and circle one number on the right hand side to describe the situation as uplifts. The response alternative area: (0) None or not applicable, (1) Somewhat, (2) Quite a bit, (3) A great deal.”

Instructions for Beck Depression Inventory

The instructions were given for Beck Depression Inventory. “On this questionnaire are a group of statements. Please read each group of statements carefully. Then pick out one statement in each group, which best describes the way you have been feeling in the past week, including today. Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle each one. Be sure to read all the statements in each group before making your choice.”

Instructions for the Sensation Seeking Scale

The instructions were given for the Sensation Seeking Scale. “Each of the items below contains two choice, A and B. Please indicate on your answer sheet, which of the choices best describe your likes or the way you feel. In some cases, you may find items in which you do not like either choice. In these cases, mark
the choice you dislike least. Do not leave any item blank please. It is important, you respond to all items with only one choice, A or B. We are interested only in your likes or feelings, not in how others feel about these things or how one is supposed to feel. There is no right or wrong answer. Be frank and give your honest appraisal of yourself.”

**Instructions for the Buss-Perry Aggression Questionnaire**

Following are 29 items measuring aggression. You are requested to go through all the items and choose from a response format of Yes or No. Tick ‘Yes’ if the item is truly characteristic of you, otherwise tick ‘No’.

**Scoring and Statistical Analysis**

Scoring for all the tests was done as per the instructions provided in the scoring manuals of the tests. The scores were then subjected to various statistical treatment and analysis. Means, Standard deviations, t-ratios, Analysis of Variance were computed. Intercorrelations, Logistic Regression Analysis and Stepwise Discriminant, Functional Analysis were also performed.