Original Research Article

Determinants of Alcohol Consumption of Adolescents in Western Province of Sri Lanka

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ABSTRACT

Adolescents are the future of a country, a critical link between childhood and adulthood, characterized by significant physical, psychological and social transitions. Alcohol is mainly shown in positive attitudes on advertisements, movies, socially, etc. Literature revealed there are three factors on adolescents consuming alcohol which were movies, gender and peers. The objective of this study is to check whether there exist any association between movies, demographic and socio factors of adolescents consuming alcohol. A sample of 101 randomly selected adolescents of public and private schools of Western Province of Sri Lanka. A self-administrated questionnaire was used for data collection. The questionnaire confirmed the reliability and validity. Both descriptive and inferential statistics used for data analysis. The Z-test and t-test test was used for hypothesis testing. The descriptive statistics indicated that, over 39% of adolescents have consumed alcohol, 25.7% of them consume alcohol because of friends and 5.9% of adolescents consume alcohol weekly. Inferential statistics were obtained for proportion of adolescents who consumed alcohol. The results show that the proportion of males and females consuming alcohol are equal, and proportion alcohol consumption in public schools and private schools are also identical. In conclusion, the main influence for adolescents consuming alcohol is friends. And no association was found on movies and alcohol consumption. Furthermore, there is no significant association between; gender, type of school and consumption of alcohol. Results of this study can be used for policy and strategy development to prevent alcohol consumption of adolescents.

Key Words: Adolescents, Alcohol, Z-test, t-test

INTRODUCTION

Drinking is a common act witnessed by many. Whether it's for sad or fun times, adolescents may try to mimic the users for the same reasons they witness or just out of curiosity. Adolescents have long been known to take risks as they are neither children nor adults. Therefore, they still require special attention and guidance from adults, since they are still developing. Most adolescents progress to adulthood with quite little effort, undergoing excellent physical health and strength and not engaging in unhealthy behaviors that put themselves or others at risk. But, as they are not all the same, many may experiment on alcohol while not knowing the risks of it, such as; mental problems, liver problems, fertility issues permanent brain damage and many more. Adolescents are in ages varying from 13 to 20 years and just starting to learn about the world. Therefore, it could be proposed that by the curiosity of adolescents, they may experiment what they see. Also, not all parents consider having harsh rules about adolescents' consuming alcohol equally important. [1] The typical global alcohol consumption for people

above the age of 15 years is 6.2 liters of alcohol per year. [2] According to a survey done in Sri Lanka, 24% of schooling adolescent boys and 10% of schooling adolescent girls have ever use alcohol, while current users are 6% and 1% respectively. And 34% of out-of-school adolescents have ever taken alcohol and 19% are current users. [3] Alcohol is linked to many harmful consequences for the consumer, affecting the consumer's immediate environment and society, thus making alcohol use a socio-economic problem. [4] Only a few longitudinal studies have attempted to identify multiple trajectories by cluster analyzing drinking patterns over time. [5] Early regular used of alcohol is associated to heavy drinking later in one's life. [6] There are more than 50 different types of alcoholic beverages in the world; each of them with the ability to get people drunk. Those with the lowest income had the highest prevalence of alcohol use in urban area of Sri Lanka. [7]

Research Problem

Consumption of alcohol is commonly publicized, usually as a means of the someone trying to escape worries or just for having fun. In Sri Lanka, many adolescents are committed with alcohol consumption. [3] And South East Asia and the Western Pacific have shown a new continuing increase in alcohol consumption. [4-2] Factors for adolescents committed with alcohol consuming in Sri Lanka is undecided. Literature reveals that there are so many factors influences for alcohol consumption. Vorst, [1] considered the factors to be families. Somatunga, [4] thought then to be; sex, age, ethnicity, marital status, education and income. Engels, [8] understood them as gender, peers and stress. Finally, Cin [9] considered them as movies. With that finding determents are vital to minimize the destruction to the adolescents.

Hence, following research questions are identified;

1. Do adolescents get motivated /addicted to alcohol by demographic factors?
2. Do adolescents get motivated /addicted to alcohol by socio factors?
3. Do adolescents get motivated /addicted to alcohol by movies?

Significance of the Study

The results of the study will be a light house for better development of the future of adolescents. This study will fill the knowledge gap and paw the path for identifying reasons for alcohol consumption of adolescents in Western Province of Sri Lanka. The results of this study can be taken as a guideline for policy and strategy developments to overcome this issue.

Objective of the Study

Objectives of the study are twofold;

Primary Objectives

i. To test the association between demographic factors and alcohol consumption of adolescents of Western Province of Sri Lanka.
ii. To test the association between socio factors and alcohol consumption of adolescents of Western Province of Sri Lanka.
iii. To test the association between watching movies and alcohol consumption of adolescents of Western Province of Sri Lanka.

Secondary Objectives

i. To find the proportion of adolescents who have ever consumed alcohol.
ii. To compare the alcohol consumption of adolescents by gender.
iii. To compare the alcohol consumption of adolescents of by type of school.

LITERATURE REVIEW

Engles, Knibbe and Drop, [8] examine the association in public drinking places and at parties with distress. A sample of first and second grade students was taken from 36 schools in Netherlands. The T-test was used to examine the differences between males and females and the association tested by Pearson correlation. The study reveals that the consumption levels of adolescent male home drinkers are related to poor psychological well-being and less socially integrated. And drinking in

public appears not to be related to stress and low self-esteem. Determining the prevalence of alcohol use and describing the prevailing drinking patterns in Sri Lanka is the main concern of the study. [4] The sample was permanent residents of the study area and could speak either Sinhalese or Tamil. A multistage cluster sampling method was used. The dependent variable is the prevalence of alcohol. And the independent variables are; sex, age, ethnicity, marital status, education, and income. The prevalence of current drinkers among males is 39.6% whereas that of females is 2.4%. The prevalence of alcohol consumption among males increased with age to the highest level between 45-54-year age group and decreased thereafter. Those who are currently employed and with an educational level less than grade 10 have high probability to being drinkers compared to the unemployed and those with a higher educational level. There an increasing trend among female drinking.

Vorst, Engels, Meeus, et al [1] inspected the effect of parental drinking and parents standards on adolescents consumption of alcohol. Further, the rules of alcohol consumption of adolescents also examine. Sample of Dutch families with at least 2 children of age 13 to 16 years were taken. The measures are alcohol consumption, rules about alcohol and norms about alcohol. Paired t-tests were used to compare the responses of the family members on the scale of rules about alcohol, and compare the norms about early adolescents' drinking of each parent. The Chi-square test, CFI (Comparative Fit Index) and RMSEA (Root Mean Square Error of Approximation) were used to measure the fit of the longitudinal model. The results revealed that there were strong significant association between having rules about alcohol and adolescents and alcohol consumption for both older and younger adolescents. Further, it was found that parents drinking were not related to adolescents drinking.

The objective of Cin, Worth, Gerrard, et al [9] was to investigate the psychological processes that underlie the relation between exposures to alcohol use in media with adolescent alcohol use. They used Content analysis. The results revel that exposure to alcohol in movies had significant influence on believes about alcohol consumption, friend's alcohol consumptions and willingness to consume alcohol.

METHODOLOGY

The methodology consist conceptualization and operationalization. The conceptualization further divided into theoretical framework and conceptual framework.

Conceptualization

Conceptualization is the process of development and clarification concepts and alcohol consumption. Current study uses several concepts. We clarify these concepts further and develop the following variables. These variables have been selected with the help of literature. Conceptualization of the study begins with the theoretical framework.

Theoretical framework

Theoretical frame work based on various theories related to human behavior. Social learning, problem behaviors, planned behavior, social norms, cognitive behavior and social responsibility are the theories considered by the study. Social Learning Theory suggests that people learn from one another, by observation, imitation, and modeling. [10] Problem behaviors are those that aren't believed typically acceptable. Nearly everyone can have a moment of disruptive behavior or an error in judgment. However, problem behavior is a consistent pattern. [11] The Theory of Planned Behavior foresees an individual's intention to involve in a behavior at a specific time and place. [12] The Social Norms Theory posits that our behavior is influenced by misperceptions of how our peers think and act. [13] Cognitive behavioral therapy is a short-term, goal-oriented psychotherapy remedy that takes a hands-on, practical approach to problem-

solving. Its purpose is to change patterns of thinking or behavior that are behind people's difficulties, and so change the way they feel. [14] Social responsibility is a duty every individual should work to maintain a balance between the economy and the ecosystems. [15]
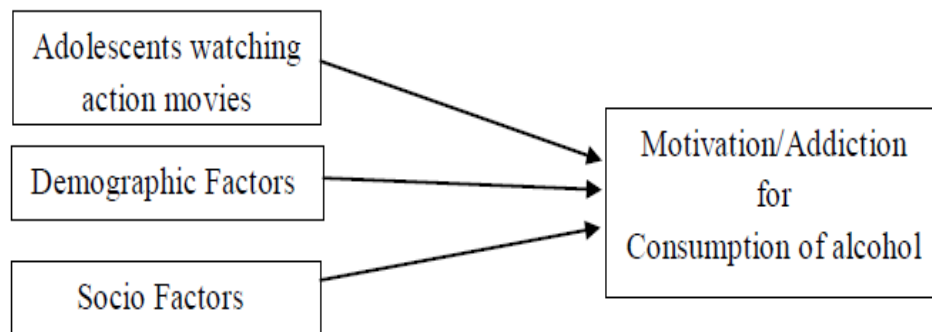
Conceptual framework

The selection of the model dimensions and indicators to formulate the conceptual model of the study depends on many factors such as the nature of adolescent's behavior and objective of the research. This conceptual framework develops with the help of literature. The frame work as follows;

Figure 1- Conceptual Framework

Hypotheses of the Study
Following hypotheses were developed;

Hypothesis 1
H_0: Adolescents do not get motivated /addicted to alcohol by demographic factors.
H_1: Adolescents get motivated /addicted to alcohol by demographic factors.

Hypothesis 2
H_0: Adolescents do not get motivated /addicted to alcohol by socio factors.
H_1: Adolescents get motivated /addicted to alcohol by socio factors.

Hypothesis 3
H_0: Adolescents do not get motivated /addicted to alcohol by movies.
H_1: Adolescents get motivated /addicted to alcohol by movies.

Operationalization
Adolescents of Western province of Sri Lanka were the population of the study. Multi-stage sampling technique was used in the data collection. In stage one, two famous higher education institutes were selected by judgment. The selected institutions are; Shakthi Institute and Sakya Academy of Higher Education. Shakthi Institute conducts tuition classes for London GCE O/L and GCE A/Ls. A self-administered questionnaire was used for data collection.

The measurement of the questionnaire is ordinal. A systematic sampling technique was adopted to select the participants, a sample of 101 adolescents was asked to fill the questionnaire. Cronbach's Alpha Test used to test the reliability and confirm validity of the questionnaire. Both descriptive and inferential statistics used for data analysis.

ANALYSIS
Data analysis consist three parts;
i. Testing internal consistency of the questionnaire.
ii. Descriptive statistics.
iii. Inferential statistics.

Testing Internal Consistency of the Questionnaire
Internal consistency of the questionnaire was first tested after the pilot survey, then necessary adjustments were done. Then, the internal consistency was pre-tested after the data collection of the study.

The internal consistency was assessed by inter item consistency using the statistical tool Cronbach's Alpha Co-efficient. Questionnaire was distributed among 25 adolescents on the pilot survey. The Cronbach's Alpha was found to be

0.744. Then the questionnaire was distributed among 101 adolescents and, Cronbach's Alpha was found to be 0.745. Therefore, the questionnaire is acceptable and it confirms the validity.

Descriptive Statistics

Descriptive statistics of the study categorized as follows.
i. Demographic Variables.
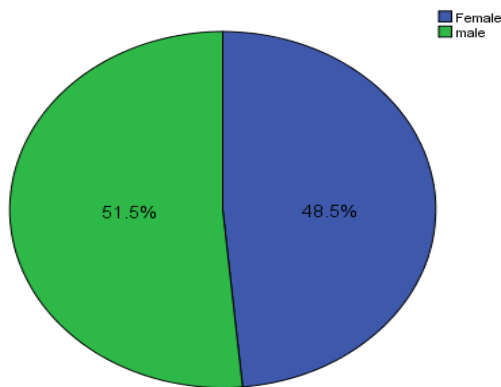ii. Consumption of alcohol.

Demographic variables

Figure 2-Sample by Gender

Figure 2, the gender of adolescents in the sample. It is noticed that majority of (51.5%) of adolescents belong to male category and 48.5% belong to female category.
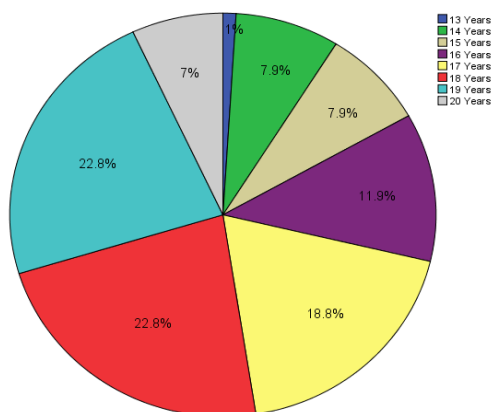
Figure 3-Sample by Age

Figure 3 summarizes the age of adolescents in the sample. Around 1% of adolescents in study are 13 years old, 7.9% are 14 years old, 7.9% are 15 years old, 11.9% are 16 years old, 18.8% are 17 years

old, 22.8% are 18 years old, 22.8% are 19 years old, and 7 % are 20 years old.
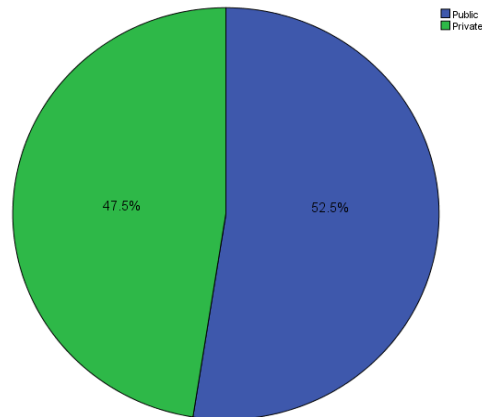

Figure 4-Sample by Type of School

Figure 4 summarizes the type of school of adolescents in the sample. Majority of 52.5% of adolescents belong to public schools and 48.5% belong to private schools.
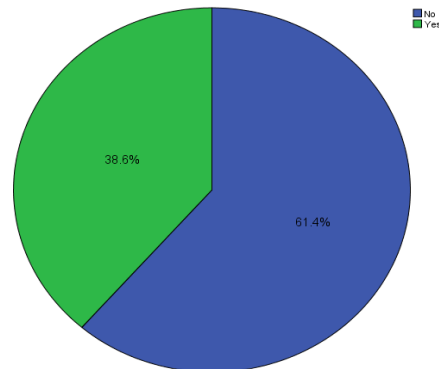
Consumption of alcohol

Figure 5-Sample by Ever Consumed Alcohol

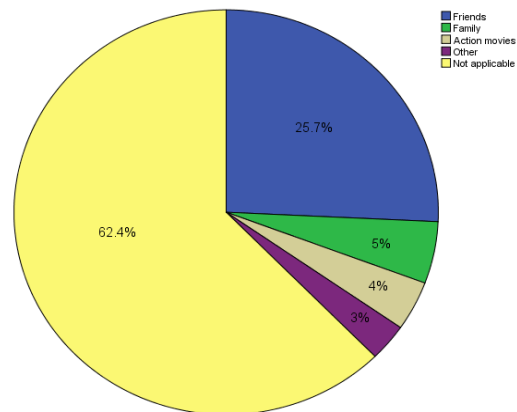The summary of figure 5 shows that c 61.4% have never consumed alcohol.

Figure 6-Sample by Influence for Consuming Alcohol for the First Time

The summary of figure 6 indicates that 25.7% of adolescents consume alcohol because of friends, 5% consume alcohol because of family, 4% because of action movies and 3% had other reasons, and 62.4% do not consume alcohol or did not answer.
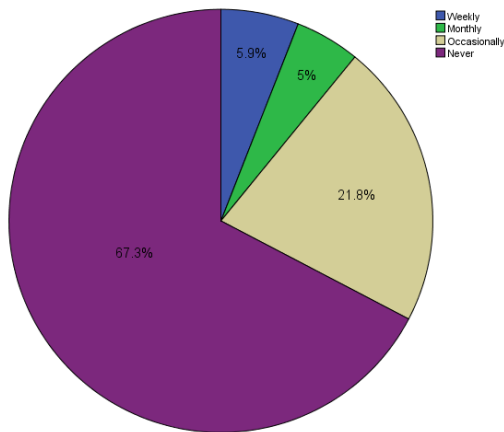

Figure 7-Sample by Rate of Consuming Alcohol

The summary of figure 7 shows that 5.9% of adolescents consume alcohol weekly, 5% consume alcohol monthly, 21.8% consume alcohol occasionally and 67.3% consume alcohol once, twice or never.
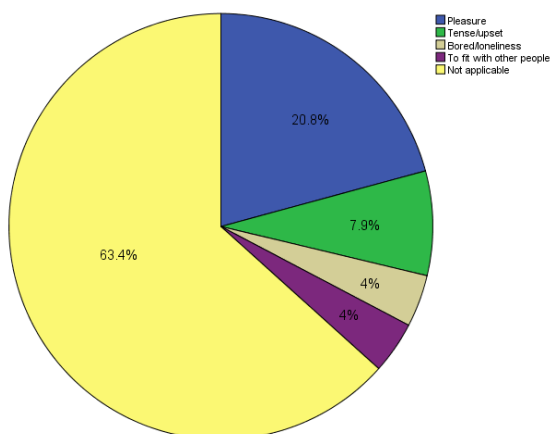

Figure 8-Sample by Reason for Consuming Alcohol

The summary of figure 8 shows that 20.8% of adolescents consume alcohol for pleasure, 7.9% consume alcohol because they are tense/upset,4% consume alcohol because they are bored/lonely, 4% consume alcohol to fit with other people, and 63.4% do not consume alcohol or did not answer.

Inferential Statistics

Statistical inference can be defined as the process by which conclusion are drawn about some measure or attributes of a population based upon analysis of sample data. Statistical inference can be divided into 2 types; estimation and hypothesis testing.

In sample proportions of following variables were obtained;

A: No. of adolescents who have ever consumed alcohol.

A_m: No. of males who have ever consumed alcohol.

A_f: No. of females who have ever consumed alcohol.

Inferential statistics for proportion of adolescents who have consumed alcohol

Let p = population proportion of adolescents "ever consumed alcohol"

p_s= sample proportion of adolescents "ever consumed alcohol"

(1-α) % confidence interval for p =

$$p_s \pm Z_{\alpha/2} \sqrt{\frac{p_s q_s}{n}}$$

(1)

Where: $Z_{\alpha/2}$ = critical value of standard normal distribution, $q_{s=1}$ - p_s, n = sample size.Hence the 95% confidence interval for p = (0.291189, 0.481088)≈ (0.29, 0.48) .The 95% CI for population proportion of adolescents who ever consumed alcohol is (29%, 48%).It means, there is a 95% chance the population proportion is between 29% and 48%.The random variable, "number of adolescents who ever consumed alcohol" (A) can be modeled by the binomial distribution due to following reasons.

i. Either an adolescent has consumed alcohol or not. It means each trail has 2 possible outcomes.

ii. There were 101 participants in the study (no. of trails is fixed).

Assuming the drinking habits of adolescents are independent from each other and setting $p = 0.29$;
$A \sim B (101, 0.29)$

According to the central limit theorem, normal approximation to binomial distribution will be appropriate when n is large, and p is small. Hence, $A \approx N (\mu, \sigma^2)$
Where $\mu = np$
$\sigma^2 = np (1-p)$
At first, following hypothesis was tested at $\alpha = 5\%$

$H_0: p = 0.29$
$H_1: p > 0.29$

The null hypothesis can be rejected, if the p - value of the test is less than the significance level. In this case p – value = 0.017, it is less than $\alpha = 0.05$. Therefore, H_0 is rejected. At 5% significance level, there is evidence to say that the population of "adolescents who ever consumed alcohol" is greater than 29%. Then, following hypothesis was tested, assuming population proportion = 0.3

$H_0: p = 0.3$
$H_1: p > 0.3$

The p – value of the test (0.029) is less than the significance level (0.05). Therefore, H_0 is rejected. At 5% significance level, there is evidence to say that the population of "adolescents who ever consumed alcohol" is greater than 30%. Therefore, following hypothesis was tested, assuming population proportion = 0.31
$H_0: p = 0.31$
$H_1: p > 0.31$

The p – value of the test (0.049) is less than the significance level (0.05). Therefore, H_0 is rejected. At 5% significance level, there is evidence to say that the population of "adolescents who ever consumed alcohol" is greater than 31%. Therefore, following hypothesis was tested, assuming population proportion = 0.32
$H_0: p = 0.32$
$H_1: p > 0.32$

The p - value of the test (0.077) is greater than the significance level (0.05). Therefore, H_0 is not rejected. At 5% significance level, there is evidence to say that the population of "adolescents who ever consumed alcohol" = 32%.

Comparison of population proportions of consumption of alcohol by gender

Sample Proportion of females consume alcohol = 17/49, sample Proportion of males consume alcohol = 22/52. It was intended to see whether, consumption of alcohol differ by gender in the population.
Let p_1 = population proportion of females ever consumed alcohol.
p_2 = population proportion of males ever consumed alcohol.
Hence the following hypothesis also tested.
$H_0: p_1 = p_2$
$H_1: p_1 < p_2$

At $\alpha = 5\%$, the Fisher's exact test p – value of the hypothesis test is 0.4. Therefore, null hypothesis is not rejected. It can be concluded that the proportion of males consuming alcohol is not different from proportion of females consuming alcohol.

Comparison of population proportions of consumption of alcohol by type of school

The population of the study consist both public and private schools, it was intended to test whether the consumption of alcohol is different in public schools and private schools.
Let p_1 = Population proportion of public school adolescents ever consumed alcohol.
p_2 = Population proportion of private school adolescents ever consumed alcohol.
$H_0: p_1 = p_2$
$H_1: p_1 \neq p_2$
At $\alpha = 5\%$, the p – value of the hypothesis test is 0.148. Therefore, null hypothesis is not rejected. At $\alpha = 5\%$ there is evidence to say that consumption of

alcohol is not different in public schools and private schools.

DISCUSSION AND CONCLUSION

It is discussed that consumption of alcohol is one of the main unhealthy behaviours for adolescents. And they may experiment on these unhealthy behaviours, which in turn may affect their future.

In this study, we examine the alcohol consumption by demographic, socio factors and movies in Western Province of Sri Lanka. The main influence on adolescents for consuming alcohol is their friends. The results of the study revel that there is no association between movies and alcohol. But, it was found that over 32% of adolescents have consumed alcohol with the proportion of males drinking no different than females drinking. Furthermore, it was found that the alcohol consumption in public and private schools are not different. Following the results of this study, steps towards prevalence of adolescents consuming alcohol should begin from the government on spreading awareness and educating adolescents and the parents of adolescents on alcohol abuse. Starting new advertising campaigns on increasing awareness should mention the short and long term negative effects caused by alcohol such as; distorted vison and hearing, anemia, memory lapses, alcohol poisoning, liver damage, nerve and brain damage and many more. Additionally, religious program could be conducted for the prevalence of alcohol. Also, non-government organizations can educate the people by adding workshops and other educational programs as cooperate social responsibility to educate adolescents and their parents. The government should implement and monitor new policies on alcohol abuse. Both private and public schools should pay more attention and educate adolescents and their parents to prevent alcohol consumption. It is recommended to continue this study for other provinces in Sri Lanka. Further, it is useful to expand this study as district levels and examine the comparison between provinces and districts.

In conclusion, there was no association between watching movies and alcohol consumption of adolescents in Western Province of Sri Lanka. Furthermore, it can be concluded that there is no significant association between gender and consumption of alcohol and, no association between type of school and consumption of alcohol. The main influence for alcohol consumption was found to be by friends which identical to literature.

REFERENCES

1. Vorst, HVD., Engels, RCME., Meeus, W.,et al. The impact of alcohol-specific rules, parental norms about early drinking and parental alcohol use on adolescents' drinking behavior. In: Journal of Child Psychology and Psychiatry. 2006. 47(12), p.1299–1306.
2. WHO. Global Status Alcohol Report. Geneva: World Health Organization; 2014. Available from: http://www.who.int/substance_abuse/public ations/globalalcohol_report/msb_gsr_2014_ 1. pdf?ua=1.
3. Thalagala, N., Rajapakse, L., and Yakandawala, H. National Survey on Emerging Issues among Adolescents in Sri Lanka. In: UNICEF Sri Lanka. 2004.
4. Somatunga, LC., Ratnayake, LVR., Wijesinghe, WMDNK., et al. National alcohol use prevalence survey in Sri Lanka. In: Journal of the Postgraduate Institute of Medicine. 2014. 1(1), E7:1-12.
5. Chassin, L., Pitts, SC., and Prost, J. Binge Drinking Trajectories From Adolescence to Emerging Adulthood in a High-Risk Sample: Predictors and Substance Abuse Outcomes. In: Journal of Consulting and Clinical Psychology. 2002. 70(1), p.67-78.
6. Griffin, KW., Botvin, GJ., Epstein., et al. Psychosocial and Behavioral Factors in Early Adolescence as Predictors of Heavy Drinking among High School Seniors. In: Journal of studies on alcohol. 2000. p.603-606.
7. De Silva, V., Samarasinghe, D., and Gunawardena, N. Alcohol and tobacco use among males in two districts in Sri Lanka.

In: Ceylon Medical Journal. 2009. 54(4), p.119-124.

8. Engels, RCME., Knibbe, RA., and Drop, MJ. Why do Late Adolescents Drink at Home? A Study on Psychological Well-Being, Social Integration and Drinking Context. 1999. 7(1), p.31-46.

9. Cin, S., Worth, K., Gerrard, M.,et al. Watching and drinking: Expectancies, prototypes, and peer affiliations mediate the effect of exposure to alcohol use in movies on adolescent drinking. In: National Institutes of Health. 2009. 28(4), p.473–483.

10. Bandura, A. Social Learning Theory. In: General Learning Press. 1971.

11. Jessor, R. Problem Behavior Theory. In: Psychology Press. 1958. p.239-256.

12. Ajzen, I. From intentions to action: a theory of planned behavior. In: J. Huhl, & J. Beckman (Eds.), Will; performance; control (psychology); motivation (psychology). 1985. p.11–39.

13. Berkowitz, A. An Overview of the Social Norms Approach. Changing the Culture of College Drinking: A Socially Situated Prevention Campaign. 2005. Chapter 13.

14. Knapp, P., and Beck, A. Cognitive therapy: foundations, conceptual models, applications and research. In: Rev Bras Psiquiatr. 2008.30(2), p.54-64.

15. Gunaratne, S., and Hasim, M.,S. Social Responsibility Theory Revisited a Comparative Study of Public Journalism and Developmental Journalism. In: Javnost - The Public.1996.3(3), p.97-107.

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