Original Article

Relationship between Peer Pressure and Initiation of Smoking and Alcoholism among the College-Going Students of Kolkata: A Case–Control Study

Saikat Bhattacharya, Atanu Roy[1], Soumitra Mondal[1], Kaushik Mitra[2]

Department of Community Medicine, NRS Medical College, [1]Department of Community Medicine, Medical College Kolkata, Kolkata, [2]Department of Community Medicine, Burdwan Medical College, Bardhaman, West Bengal, India

Abstract

Introduction: Substance abuse is now steadily increasing in the adolescent age group across the globe. Pressure to blend in with substance-using peers is an important predictor of substance abuse among adolescents. Smoking and alcohol intake are the two most common forms of substance abuse. Hence, this study tried to explore the effect of peer pressure on both substance users and nonusers and tried to find the adjusted effect of that pressure on substance abuse focused on smoking and alcohol intake. **Materials and Methods:** A case–control study was conducted on college-going students from various colleges and institutions in Kolkata during September and October 2021. The sample size for this case–control study was calculated taking confidence level at 99% and power 90%. Case and control ratio was taken as 1:1. Age-based matching was ensured. Further matching among the cases and controls was done based on gender. Data were collected by investigators using a pretested self-administered questionnaire that particularly focused on peer pressure along with some demographic factors. The questionnaire was distributed via electronic media and was circulated on various social platforms. A modified Peer Pressure Inventory containing 8 factors was created to evaluate the effect of peer pressure, and the Likert scale was used to score the responses of the participants. The odds ratio for the effect of peer pressure on smoking and drinking was calculated with a 99% confidence interval separately. Risk calculation was performed by multiple logistic regression to describe predictability and adjusted odds ratio of peer pressure on initiation of substance abuse. **Results:** The odds of the effect of peer pressure on initiation of drinking are 24.008 times higher. We also found that 53.62% of the cases have been drinking alcohol for at least 12 months. The odds of peer influence on initiating smoking tobacco were calculated to be 31.320. We found that 84.38% of the smokers had been subjected to significant peer pressure while 85.29% of the control subjects had not been subjected to significant peer pressure. **Conclusion:** Odds of peer pressure on smoking and alcohol initiation is quite high. Staying alone for more time has a protective effect on initiation of substance abuse.

Keywords: Alcohol, peer pressure, smoking, substance use

Introduction

Substance abuse in adolescence is increasingly becoming a global public health problem.[1] Adolescence is the period of human development that starts with puberty (10–12 years of age) and ends with physiological maturity (approximately 19 years of age).[2] Along with physical changes, many psychological changes occur in this period which leads to higher consciousness regarding both interpersonal relations and social status.[3] Relationship with peers plays an important role in nurturing psychological makeup in adolescence. Along with other life-defining behaviors, substance abuse also starts mostly in adolescence worldwide.[1]

For an operational definition, substance abuse encompasses harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs.[4,5] In India, tobacco

Submitted: 30-Jan-2022 **Revised:** 01-Apr-2022
Accepted: 17-May-2022 **Published:** 27-Jun-2022

Access this article online

Quick Response Code:

Website: www.actamedicainternational.com

DOI: 10.4103/amit.amit_15_22

Address for correspondence: Dr. Kaushik Mitra, Flat K-3, Cluster-8, Purbachal, Salt Lake, Kolkata - 700 097, West Bengal, India.
E-mail: drkmitra@gmail.com

How to cite this article: Bhattacharya S, Roy A, Mondal S, Mitra K. Relationship between peer pressure and initiation of smoking and alcoholism among the college-going students of Kolkata: A case–control study. Acta Med Int 2022;9:78-82.

Table 1: Sociodemographic variables of cases and controls for smoking (*n*=66)

Variables	Cases, *n* (%)	Controls, *n* (%)	Totals, *n* (%)
Gender			
Male	19 (48.72)	20 (51.28)	39 (61.90)
Female	13 (48.15)	14 (51.85)	27 (42.86)
Current course			
General course	12 (37.5)	7 (20.6)	19 (30.16)
Professional course	20 (62.5)	27 (79.4)	47 (74.60)
Staying with parents			
Yes	17 (53.1)	27 (79.4)	44 (69.84)
No	15 (46.9)	7 (20.6)	22 (34.92)
Staying alone (days)			
0	5 (15.6)	3 (8.8)	8 (12.70)
1	11 (34.4)	22 (64.7)	33 (52.38)
2	3 (9.4)	3 (8.8)	6 (9.52)
3	1 (3.10)	1 (2.9)	2 (3.17)
>3	12 (37.5)	5 (14.7)	17 (26.98)
Residence			
Hostel	13 (40.6)	6 (17.6)	19 (30.16)
Own apartment	14 (43.8)	25 (73.5)	39 (61.90)
Paying guests	1 (3.1)	2 (5.9)	3 (4.76)
Rented house	4 (12.5)	1 (2.9)	5 (7.94)

Table 2: Sociodemographic variables of cases and controls for alcoholism (*n*=133)

Variables	Cases, *n* (%)	Controls, *n* (%)	Totals, *n* (%)
Gender			
Male	37 (55.2)	36 (54.5)	73 (54.89)
Female	30 (44.8)	30 (45.5)	60 (45.11)
Current course			
General course	25 (36.2)	14 (21.9)	39 (29.32)
Professional course	44 (63.8)	50 (78.1)	94 (70.68)
Staying with parents			
Yes	46 (66.7)	40 (62.5)	86 (64.66)
No	23 (33.3)	24 (37.5)	47 (35.34)
Staying alone (days)			
0	10 (14.5)	18 (28.1)	28 (21.05)
1	30 (43.5)	31 (48.4)	61 (45.86)
2	11 (15.9)	9 (14.1)	20 (15.04)
3	2 (2.9)	2 (3.1)	4 (3.01)
>3	16 (23.2)	4 (6.3)	20 (15.04)
Residence			
Hostel	19 (27.5)	21 (32.8)	40 (30.08)
Own apartment	41 (59.4)	36 (56.3)	77 (57.89)
Paying guests	1 (1.4)	1 (1.6)	2 (1.50)
Rented house	7 (10.1)	3 (4.7)	10 (7.52)
Relative's apartment	1 (1.4)	3 (4.7)	4 (3.01)

products and alcohol are two main substances abused by adolescents. Interest regarding those substances is mainly generated in the peer groups, and in many cases, one is expected to try those just to blend in with the peer group.[1] When someone acts according to a group prescribed norm instead of his or her own will that can be defined as peer pressure. Although there are instances that substance abuse in family may have a role in initiation of this behavior,[6] more often it starts with the curiosity to try these things among the peer groups and quickly this substance abuse behavior spreads among the whole group. Ahmad *et al*.[7] report that compared to 10–13-year-olds, substance abuse increases dramatically among 16–19-year-old adolescents.

In adult population of India, the prevalence of alcohol use mostly ranged from 20% to 40% which is even higher (45.9%) in Jalandhar, Punjab.[8-11] Similar picture is seen for tobacco smoking also.[10] Studies conducted among school students, college students, and even medical college students also showed an alarming proportion of substance abusers in India.[12]

Studies found many correlating factors of initiation of substance abuse among adolescents among which influence by existing peers or prospective peers is found to have major influence.[13-15] Peer pressure is a subjective construct. Some studies have collected data regarding peer pressure both from substance abusers and their peers but in most cases that pressure was not quantified or explored in detail.[16,17]

Hence, instead of focusing on what caused the peer pressure as stated in earlier studies, we focused on how the participants responded or felt to the peer influence. The amount of peer influence was calculated based on their feelings instead of their actions such as misconduct or involvement in college or at home. This was more appropriate in the Indian context where adolescent freedom is restricted as compared to different Western countries. Hence, we devised a modified scale to target the factors which we believed would highlight the effects of peer influence on substance abuse initiation. Previous studies suggested that gender, social expectations, literacy, family environment are also significant predictors of substance abuse.[14,15] Hence, this study tried to match those factors by case–control study design to find the adjusted effect of peer pressure as indicated by the scale on initiation of substance abuse.

Materials and Methods

Study design and study setting

A case–control study was conducted at the Community Medicine Department of Medical College, Kolkata, during September and October 2021. Participants were students from various colleges and institutions in the city where the investigator is currently based. The inclusion criteria were decided as: graduated higher secondary (Class 12) or equivalent standard and currently a part of any undergraduate or postgraduate courses. People who refused to give consent and were employed full-time were excluded. Approval from the Ethics Committee of Medical College, Kolkata, was obtained for the study (MC/KOL/IEC/NON-SPON/1216/11/21 dated November 01, 2021).

Table 3: Predictors of smoking and alcohol drinking initiation as per multiple logistic regression

	P	Adjusted OR	99% CI	
			Lower	Upper
Predictors of smoking initiation as per multiple logistic regression				
Gender	0.58	1.31	0.49	3.52
Peer pressure	<0.001	52.76	9.17	303.55
Not staying with parents	0.020	9.01	1.42	57.34
General course education	0.031	8.23	1.21	55.89
Predictors of alcohol drinking initiation as per multiple logistic regression				
Gender	0.96	0.98	0.49	1.95
Peer pressure	<0.001	27.01	10.12	72.11
Staying alone once per week	0.011	0.12	0.02	0.61

OR: Odds ratio, CI: Confidence interval

Sample size

The sample size for this case–control study was calculated taking confidence level at 99% and power 90%. The expected presence of exposure in the control group was taken as 50% and the risk of smoking was taken as 35.03.[18] Considering case and control ratio as 1:1, the minimum sample size in both the groups came to 27 as per Kelsey sample size assumption. Taking 20% nonresponse rate, it was further elevated to be 33 each. Similarly, the risk of alcohol intake was taken as 70.45[18] and the minimum sample size came to 25 each which was further elevated by 20%. As the college students belong to a restricted age group of 18–25 years, age-based matching was automatically ensured. Further matching among the cases and controls was done on the basis of gender.

Data were collected by investigators using a pretested self-administered questionnaire. The questionnaire particularly focused on peer pressure along with some demographic factors. Pretesting was done among the 10 students for each group concerning smoking and alcoholism who were subsequently excluded from the main study. Face validity and content validity were ensured by the experts of psychiatry and community medicine. A prepared questionnaire was translated to two commonly spoken local languages, namely Bengali and Hindi, and translated back to English with the help of linguist experts and distributed only when students are not conversant in English.

The purpose of this study was explained and informed written consent was obtained from all the participants through e-mail. Since physically approaching candidates were not feasible given the pandemic situation, the questionnaire was distributed via electronic media (emailing Google Forms) and was also circulated on various social platforms (WhatsApp, Instagram, etc.). Quick response code was generated for the electronic form and published in posters that were put up on college notice boards and also shared on college social media platforms. Students whose age is below 18 or above 25 and who study in colleges outside Kolkata were excluded from the study. A line listing was done for all the responses, and all the cases were included in the study, provided a matched control is found. The total responses obtained were matched for cases and controls each for drinking alcohol and smoking individually in terms of their gender. Unmatched responses were excluded from the study. From the list of the matched controls for cases, final control selection was done by simple random sampling using a random number generator in MS Excel. A total of 133 complete matched responses were obtained for drinking and 66 for smoking.

Data analysis was performed in IBM SPSS statistics (Statistical Package for the Social Sciences), Armonk, New York, United States: version 22. Descriptive statistics were calculated for sociodemographic data such as age, gender, residence, and staying alone. A modified Peer Pressure Inventory containing 8 factors was created. To evaluate the effect of peer pressure objectively, we have used the Likert scale to score the responses of the participants in each of the 8 questions. The factors considered for preparation of the Likert scale for peer pressure were the feelings of "curiosity," "fascination," "numbness," being "left out" from the social hub, "acceptance" in the peer group, "offers to use substances," the "impact of the absence of their close peers," and "history of substance abuse their peers."

The responses of the Likert scale were recoded into points from 1 to 5 for "strongly disagree" to "strongly agree." The scores are obtained by adding the points on each of the Likert scale responses. The scale designed has 38 as maximum and 8 as minimum scores. The score so obtained formed a continuous variable which was then categorized using the median value. The median value for the scale of each substance (drinking and smoking) was found to be 16 and 18, respectively. We used the median value to determine the value for significant peer influence; hence scores above 16 and 18 were considered significant peer pressure for drinking and smoking. The points scored for drinking and smoking ranged from 8 to 34.

The participants who declared having smoked tobacco or drank alcohol at least once were considered cases. The ones who claimed to have never used either of the substances till date were considered controls. Cases and controls were matched concerning gender. The odds ratio for the effect of peer pressure on smoking and drinking was calculated with a 99% confidence interval separately. Risk calculation was performed by multiple logistic regression to describe predictability and adjusted odds ratio of peer pressure on initiation of substance abuse.

Results

73 (54.9%) male and 60 (45.1%) female filled up the questionnaire for alcoholism. Most of the participants belonged to the age of 22 years, with standard deviation (SD) being 1.791. There are a total of 67 people, 30 females and 37 males, who have drunk alcohol at least once (cases) and 66 people, 30 females and 36 males, who have never consumed alcohol to date (controls). [Table 2]

The odds of the effect of peer pressure on initiation of drinking are 24.008 times higher. Upon further analysis, we found that 85.94% of the people who claimed to have never drunk alcohol, had not been subjected to significant peer pressure. On the other hand 79.71% of drinkers have been subjected to significant peer pressure. We also found that 53.62% of the cases have been drinking alcohol for at least 12 months. It was seen that peer influence on drinking was maximum on those participants who had their best friends or boyfriend or girlfriend currently consuming alcohol. For them, the odds of having peer influence were 9.415 times higher among cases. 89.86% of the people who had initiated drinking had their best friends and boyfriend or girlfriend already drinking. Both males and females have initiated alcohol usage almost equally.

To eliminate bias and confounding, multiple logistic regression was conducted. It assessed the adjusted impact of peer pressure, gender, age, current course the participants studying, staying with parents, residential conditions, and number of days staying alone in predicting the chances of alcohol initiation. It indicated that only peer pressure and "staying alone a day" were significant predictors of initiation of drinking alcohol (peer pressure Wald = 43.280 and $P = 0.000$ [< 0.05]; staying alone a day Wald = 6.536 and $P = 0.011$ [< 0.05]). This model explained 59.7% of the variability of drinking alcohol. The adjusted odds ratio for peer pressure is 27.008 (95% confidence interval [CI]: 10.116–72.106), and for staying alone a day, it is 0.118 (95% CI: 0.023–0.608). Thus, implying peer pressure is responsible for alcohol initiation, and participants staying alone for less time are more likely to initiate drinking [Table 1].

In the case of smoking tobacco, there are total 66 matched cases and controls based on gender and residence. Most of the participants are also in the age group of 21–22 years (65.20%), with the SD being 1.207. 40.91% of the study population are female and the rest 59.09% are male. There are 32 cases, 13 females and 19 males, who claimed to have smoked at least once. 14 females and 20 males who claimed that they had never smoked any tobacco products were taken as the controls. . 47% of the smokers had been smoking for a year at least [Table 1].

The odds of peer influence on initiating smoking tobacco were calculated to be 31.320. We found that 84.38% of the smokers had been subjected to significant peer pressure while 85.29% of the control subjects had not been subjected to significant peer pressure. In addition to this, 59.09% of the people staying away from their parents were seen to be more susceptible to peer pressure.

Again, a binomial logistic regression calculated the impact of peer pressure, gender, age, staying with parents, residential conditions, course currently studying, staying alone, and the peers currently smoking in predicting the chances of outcome of smoking initiation. We found that peer pressure (Wald = 19.737; $P = 0.000$), currently studying course (Wald: 4.650; $P = 0.031$), and whether staying with parents (Wald: 5.425; $P = 0.020$) to be the significant predictors at 5% level. The adjusted odds ratio for "peer pressure" was 52.767, for "staying away from parents" was 9.014 and for "currently studying general course" was 8.229, indicating that peer pressure, staying away from parents, and participants studying in general courses are more likely to initiate smoking [Table 3].

Discussion

From this study, the findings suggest that peer pressure significantly increases the odds of initiation of substance abuse both for alcohol and tobacco. Curiosity and experimentation followed by family and friends' influences were some common factors found to be responsible for initiation of harmful substance use.[19] Hence, we can predict that something is triggering the curiosity in them. It may be from seeing their peers drinking or smoking or hearing their experience,[20] or it may be the impact of movies showing alcohol usage as depicted in several studies.[21] Either staying away from parents or staying alone for less number of days proved to be significant contributors of initiation of substance abuse. Given the odds for the effect of peer pressure on initiating smoking (31.320), one may safely assume that our study population is more prone to peer influence when it comes to smoking tobacco than that of alcohol.

Most regions of India have several taboo cultures which cause some of the most common issues such as substance usage and sexual practices. Poor communication between youths and their parents/guardians lead to inaccurate ideation about substance usage among the young adults. While some show it as an act of rebellion, or freedom while being away from their parents, others just smoke to be considered cool or macho in their social group.[22] Negative association of parental monitoring and substance initiation was found to be consistent with several other studies.[23-25] The changes of puberty are true for all adolescents; however, difference lies in handling the changes in a fruitful manner. Lack of proper communication, restricted environment, an idea of following concrete footsteps, or legacies compromising the teens' self-identity contribute to improper handling of the puberty changes.[26] In a prospective study on schoolchildren in Maryland, USA, it was concluded that teens with friends involving in misdemeanors like drinking staling bullying with less parental interaction were more likely to initiate substance usage.[27]

In this study, 22.7% of the smokers and 30.83% of the drinkers were experimental users. As per a study in Australia, experimental smokers were 29 times more likely to make a transition into daily smoking and subsequent usage. We found that 47% of the smokers were already smoking for over a year now, which is quite similar to the finding of Patton *et al*.[28]

Several studies and surveys (*The Substance Abuse and Mental Health Statistics National Survey 2006*) pointed out that males are more prone to substance use and dependence over time as compared to that of females.[29,30] It was also found that in recent times, females had increased involvement in substance usage.[31] This study shows that male and female participants

are almost equally likely to initiate substance usage as reported in surveys (*The Youth Risk Behavior Surveillance of 2005 in USA*) and other research papers.[31,32]

A strong predictability suggested by multiple logistic regression for both smoking and alcoholism implies that even after adjusting for all other factors, peer pressure contributes highly and significantly for initiation of smoking and alcoholism. Medical students who know all the ill effects of addiction were also victims of substance abuse due to peer pressure.

Limitation

We could not consider the factors for addiction other than the period of substance usage.

For the present study we have only considered the usage of alcohol and tobacco for smoking. Other drug abuse like heroin, cough syrups etc were beyond the scope of present study.

Multidimensional peer pressure or other forms of peer pressure could not be evaluated as conducting interviews was not plausible.

Conclusion

The participants who were more exposed to peer pressure were certainly more likely to initiate substance abuse. Staying away from parents and staying alone for less time significantly contributed to initiation.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Interventions for Reducing Adolescent Alcohol Abuse: A Meta-Analytic Review | Adolescent Medicine | JAMA Pediatrics | JAMA Network. Available from: https://jamanetwork.com/journals/jamapediatrics/fullarticle/382685. [Last accessed on 2021 Nov 15].
2. Adolescence – APA Dictionary of Psychology. Available from: https://dictionary.apa.org/adolescence. [Last accessed on 2021 Nov 16].
3. Widén E, Silventoinen K, Sovio U, Ripatti S, Cousminer DL, Hartikainen AL, *et al.* Pubertal timing and growth influences cardiometabolic risk factors in adult males and females. Diabetes Care 2012;35:850-6.
4. Available from: http://apps.who.int/iris/bitstream/handle/10665/63850/a58352_PartA.pdf;jsessionid=817FDD3D7788EFAB5AD653115D503A45? sequence=1. [Last accessed on 2021 Nov 16].
5. Smart RG, Hughes PH, Johnston LD, Anumonye A, Khant U, Medina Mora ME, *et al*. Methodology for student drug-use surveys. World Health Organization; 1980. Available from: https://apps.who.int/iris/handle/10665/37206. [Last accessed on 2021 Nov 16].
6. Available from: https://apps.who.int/iris/bitstream/handle/10665/40384/9241540481.pdf. [Last accessed on 2021 Nov 16].
7. Ahmad A, Khalique N, Khan Z, Amir A. Prevalence of psychosocial problems among school going male adolescents. Indian J Community Med 2007;32:219.
8. Prevalence and Pattern of Drug Use amongst College Students – PubMed. Available from: https://pubmed.ncbi.nlm.nih.gov/665288/. [Last accessed on 2021 Dec 01].
9. Sharma B, Arora A, Singh K, Singh H, Kaur P. Drug abuse: Uncovering the burden in rural Punjab. J Family Med Prim Care 2017;6:558-62.
10. Ghulam R, Rahman I, Naqvi S, Gupta SR. An epidemiological study of drug abuse in urban population of Madhya Pradesh. Indian J Psychiatry 1996;38:160-5.
11. Varma VK, Singh A, Singh S, Malhotra A. Extent and pattern of alcohol use and alcohol-related problems in north India. Indian J Psychiatry 1980;22:331-7.
12. Chavan BS, Arun P, Bhargava R, Singh GP. Prevalence of alcohol and drug dependence in rural and slum population of Chandigarh: A community survey. Indian J Psychiatry 2007;49:44-8.
13. Brown BB, Lohr MJ. Peer-group affiliation and adolescent self-esteem: An integration of ego-identity and symbolic-interaction theories. J Pers Soc Psychol 1987;52:47-55.
14. Lewis-Esquerre JM, Rodrigue JR, Kahler CW. Development and validation of an adolescent smoking consequences questionnaire. Nicotine Tob Res 2005;7:81-90.
15. Sussman S, Dent CW, Mestel-Rauch J, Johnson CA, Hansen WB, Flay BR. Adolescent nonsmokers, triers, and regular smokers' estimates of cigarette smoking prevalence: When do overestimations occur and by whom? J Appl Soc Psychol 1988;18:537-51.
16. Eiser JR, van der Pligt J. Attitudinal and social factors in adolescent smoking: In search of peer group influence. J Appl Soc Psychol 1984;14:348-63.
17. Graham JW, Marks G, Hansen WB. Social influence processes affecting adolescent substance use. J Appl Psychol 1991;76:291-8.
18. Varela A, Pritchard ME. Peer influence: Use of alcohol, tobacco, and prescription medications. J Am Coll Health 2011;59:751-6.
19. Chassin L, Curran PJ, Hussong AM, Colder CR. The relation of parent alcoholism to adolescent substance use: A longitudinal follow-up study. J Abnorm Psychol 1996;105:70-80.
20. Knight JR. Substance use, abuse, and dependence and other risk-taking behaviors. In: Carey WB, Crocker AC, Coleman WL, Elias ER, Feldman HM, editors. Developmental-Behavioral Pediatrics. 4th ed., Ch. 45. Philadelphia: W.B. Saunders; 2009. p. 437-51. Available from: https://www.sciencedirect.com/science/article/pii/B9781416033707000456. [Last accessed on 2021 Dec 01].
21. Hanewinkel R, Sargent JD, Hunt K, Sweeting H, Engels RC, Scholte RH, *et al.* Portrayal of alcohol consumption in movies and drinking initiation in low-risk adolescents. Pediatrics 2014;133:973-82.
22. Iwamoto DK, Smiler AP. Alcohol makes you macho and helps you make friends: The role of masculine norms and peer pressure in adolescent boys' and girls' alcohol use. Subst Use Misuse 2013;48:371-8.
23. Chilcoat HD, Anthony JC. Impact of parent monitoring on initiation of drug use through late childhood. J Am Acad Child Adolesc Psychiatry 1996;35:91-100.
24. DiClemente RJ, Wingood GM, Crosby R, Sionean C, Cobb BK, Harrington K, *et al.* Parental monitoring: Association with adolescents' risk behaviors. Pediatrics 2001;107:1363-8.
25. Dishion TJ, Andrews DW, Crosby L. Antisocial boys and their friends in early adolescence: Relationship characteristics, quality, and interactional process. Child Dev 1995;66:139-51.
26. Hill KG, Hawkins JD, Catalano RF, Abbott RD, Guo J. Family influences on the risk of daily smoking initiation. J Adolesc Health 2005;37:202-10.
27. Simons-Morton BG. Prospective analysis of peer and parent influences on smoking initiation among early adolescents. Prev Sci 2002;3:275-83.
28. Patton GC, Olsson CA, Skirbekk V, Saffery R, Wlodek ME, Azzopardi PS, *et al.* Adolescence and the next generation. Nature 2018;554:458-66.
29. Girish N, Kavita R, Gururaj G, Benegal V. Alcohol use and implications for public health: Patterns of use in four communities. Indian J Community Med 2010;35:238-44.
30. Kloos A, Weller RA, Chan R, Weller EB. Gender differences in adolescent substance abuse. Curr Psychiatry Rep 2009;11:120-6.
31. Dakof GA. Understanding gender differences in adolescent drug abuse: Issues of comorbidity and family functioning. J Psychoactive Drugs 2000;32:25-32.
32. Latent Growth Modeling of the Relationship between Depressive Symptoms and Substance Use during Adolescence. PsycNET. Available from: https://content.apa.org/record/2008-06772-004. [Last accessed on 2021 Dec 01].