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# Evaluation of Patterns and Risk Factors of Substance Abuse among Female Students in Dhaka City, Bangladesh

*Akter F[1], Rahman MJ[2], Debnath MK[3], Tarafder A[4], Hasan MKI[5], Zahan MS[6], Sporshow SJ[7]

## Abstract

Substance abuse among female students in Dhaka city is an escalating public health crisis, severely impacting mental health, academic outcomes, and overall well-being. Despite its growing prevalence, there is a critical research gap concerning the patterns and risk factors specific to this demographic within Bangladesh's unique socio-cultural context. A descriptive, cross-sectional study was conducted among 115 female students admitted in different rehabilitation centers in Dhaka, Bangladesh, between September 2023 and February 2025, to investigate the patterns, predominant risk factors, and consequential impacts of substance abuse. Data was collected via structured interviews using standardized questionnaires. The mean age of participants was 21.88±2.39 years. The most frequently abused substances were amphetamines (69.57%), followed by cannabis (65.22%) and sedatives (63.48%). Academic performance was severely affected, with high rates of declining grades (65.22%), class absenteeism (60.87%), and academic year repetition (42.61%). Prevalent adverse effects included insomnia (79.13%), restlessness (79.13%), euphoria (63.48%), and hostility (61.74%). Depression was a significant risk factor (58.26%; p<0.0001), alongside peer pressure and easy drug accessibility, primarily from the black market (86.09%). This study revealed alarming patterns of polysubstance abuse with devastating academic and health consequences among female students. The findings underscore an urgent need for gender-sensitive public health strategies, enhanced mental health support, and stricter regulatory measures to curb drug availability and address this growing epidemic.

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## Introduction

The global escalation in substance use and addiction has emerged as a critical public health crisis with profound social, economic, and health implications. The problem is particularly acute in South Asia, including Bangladesh, where substance use has infiltrated all sectors of society, creating an alarming ripple effect on individuals, families, and communities.[1] Despite growing international attention, the depth of the issue remains inadequately addressed, especially in terms of its unique impact on vulnerable subgroups like female students. The intersection of substance abuse with social, psychological, and biological dimensions underscores its complexity and the pressing need for targeted, evidence-based interventions.[2] Globally, the scale of substance use is staggering. According to the World Health Organization (WHO), over 275 million individuals, approximately 5.6% of the global population, engage in illegal substance use, with 31

1. *Dr. Fajana Akter, MD in Forensic Medicine, Bangladesh Medical University, Dhaka.
2. Dr. Md. Jahidur Rahman, Lecturer, Department of Forensic Medicine & Toxicology, Sir Salimullah Medical College, Dhaka.
3. Dr. Milton Kumar Debnath, Lecturer, Department of Forensic Medicine & Toxicology, Cumilla Medical College, Cumilla.
4. Dr. Aditi Tarafder, Assistant Professor, Department of Forensic Medicine & Toxicology, Delta Medical College, Dhaka.
5. Dr. Md. Khalid Ibn Hasan, MD (Resident), Department of Forensic Medicine, Bangladesh Medical University, Dhaka.
6. Dr. Md. Sarwar Zahan, Assistant Professor, Department of Forensic Medicine & Toxicology, Islami Bank Medical College, Rajshahi.
7. Dr. Shifat Jannat Sporshow, MD in Forensic Medicine, Bangladesh Medical University, Dhaka.

***Address of Correspondence:***
*Email: farjanaakter5757@gmail.com*

million struggling with substance use disorders.[3] The United Nations Office on Drugs and Crime (UNODC) 2022 World Drug Report highlights an alarming 30% rise in global drug use over the last decade, with South Asia playing a significant role in this increase.[4] Bangladesh, in particular, has witnessed a sharp upsurge in drug addiction, with a reported 20% increase in registered cases over five years, as noted by the Department of Narcotics Control. These statistics, while striking, only scratch the surface of a deeper issue that remains understudied and inadequately managed.[5] In Bangladesh, the demographic most affected by substance use is the youth population, with around 80% of individuals with addiction falling within the 15–30 age group.[6] Alarmingly, approximately 2.5 million people in the country grapple with drug addiction, creating a significant burden on the healthcare system and society. Among these, female students represent a growing yet underexplored demographic. Recent findings indicate that over half of the female drug users interviewed in a 2021 study were students, with heroin and injected drugs being commonly used. These figures point to a critical and growing public health challenge that demands immediate attention.[7] The rise in substance use among female students can be attributed to a confluence of social, psychological, and environmental factors.[8] Peer pressure, familial history of substance abuse, and the increasing availability of drugs create a conducive environment for substance initiation.[9] Psychological factors, such as stress, anxiety, and depression often exacerbated by academic pressures and societal expectations further drive substance use behaviors. Additionally, societal shifts, including evolving gender roles and greater acceptance of substance use among females, contribute to this trend. Female students, in particular, face unique challenges, including societal stigma, gender-based discrimination, and limited access to support systems, which exacerbate the problem and hinder recovery efforts.[10] From a public health perspective, the issue of substance abuse among female students has far-reaching implications. It jeopardizes reproductive health outcomes, such as fertility and maternal health, and increases vulnerability to gender-based violence. Mental health consequences, including heightened rates of depression, anxiety, and suicidal tendencies, exacerbate the burden on already overstretched healthcare systems. The social repercussions extend beyond the individual, straining family dynamics, disrupting community cohesion, and perpetuating cycles of addiction and poverty.[11] Despite the growing prevalence of substance use among female students, research on this demographic remains scarce. The lack of targeted studies on the specific challenges faced by female students in Bangladesh represents a significant gap in the existing body of knowledge. Substance abuse among young women not only has immediate health consequences, such as increased risks of reproductive and mental health disorders, but also creates long-term socioeconomic and familial disruptions. Addiction compromises educational attainment, impairs social relationships, and contributes to intergenerational cycles of disadvantage. These issues are further compounded by the stigma and social ostracization associated with substance use, which discourage affected individuals from seeking help. This study seeks to address these critical gaps by exploring the patterns and determinants of substance use among female students in Bangladesh. By examining the socio-demographic and lifestyle factors associated with substance abuse, this research aims to provide actionable insights into the underlying causes and

consequences of the problem. The study's focus on female students is particularly significant, given the paucity of data on this subgroup and the unique challenges they face in navigating addiction and recovery. Furthermore, understanding the interplay between substance use and its psychological, reproductive, and social impacts can inform the development of targeted prevention and intervention strategies.

## Methods

This descriptive, cross-sectional study was conducted between September 2023 and February 2025 in different rehabilitation centres of Dhaka City, Bangladesh. We adopted a consecutive sampling or consecutive enrollment technique. A total of 115 female students were enrolled in this study.

Our inclusion criteria were: female students in any educational institution within Dhaka city having addicted to substance abuse. Exclusion criteria were: non-student individuals who are not currently enrolled in an educational institution, not residing in Dhaka city and aged less than 15 years.

Face-to-face interviews were conducted with a closed and open-ended questionnaire to collect data. Collected data was compiled, coded and analyzed using Statistical Package for Social Sciences (SPSS) version 27.0 for Windows. Different variables were represented descriptively by frequency and percentage. Chi-square test was applied to see if there was significant difference between the dependent variable and the independent variables, accepting a confidence level of 95%. A p-value <0.05 was considered significant.

The research protocol was approved by the Institutional Review Board of Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh.

## Results

The demographic profile of the 115 participants revealed a mean age of 21.88±2.39 years, indicating a young cohort primarily in their early adulthood. The majority of participants were unmarried (62.6%), while 35.7% were married, and a small minority were divorced (1.7%). In terms of family structure, a larger proportion resided in joint family systems (66%) compared to nuclear families (34%). The largest group had attained a Higher Secondary Certificate (HSC) (38.26%), followed by those currently in Bachelors programs (33.91%). This indicates that the vast majority (88.69%) had completed at least secondary education, forming a cohort of relatively educated young women (Table-I). The analysis of substance uses patterns uncovered an alarming prevalence of polysubstance abuse. Amphetamines were the most frequently abused substance (69.57%), closely followed by cannabis (65.22%) and sedative drugs (63.48%). A significant number also reported using shisha (57.39%) and cigarettes (58.26%), while alcohol use was reported by 37.39% of the participants. The use of harder drugs like heroin (8.70%) and cocaine (2.61%) was considerably lower (Table-II). The majority of respondents (68.70%) had a history of substance use exceeding five years (Fig. 1). Procurement was overwhelmingly dominated by the black market, with 88.70% citing it as their source, far surpassing pharmacy shops (33.04%) and hospitals (11.30%) (Fig. 2). The oral route was the predominant method of administration (91.30%) (Fig.3). The investigation into risk factors identified several highly significant associations. Depression emerged as a major psychological risk factor, affecting 58.26% ($p<0.0001$). Interpersonal influences were also

paramount, with relationships with partners being the most cited risk factor (69.57%). Peer influence (56.52%) and the perceived easy availability of drugs (62.61%) were other major contributors. Conversely, the absence of strong restrictions against drug use (78.26% reported none), low educational aspirations (72.17% reported none), and a community perception that deviance is unimportant (88.70%) failed to act as protective factors for this group (Table-III). Academic performance was profoundly impaired. A majority reported receiving lower grades (65.22%), missing classes (60.87%), and performing poorly in exams and papers (59.13%). Most critically, 42.61% had been forced to repeat an academic year, a stark indicator of severe educational disruption (Table-IV). The most common adverse effects were relaxation and sleep (63.48%), tranquilization (47.83%), and euphoria (37.39%). A significant number also reported decreased secretions (46.09%) and personality disorders (31.30%). Other notable effects included flushed warm skin (24.35%), reduced sex drive (22.61%), and hallucinations (21.74%) (Table-V).

**Table-I:** Demographic characteristics of the participants (N=115)

| Variables | Frequency | Percentage |
|---|---|---|
| **Marital status** | | |
| Divorce | 2 | 1.7 |
| Married | 41 | 35.7 |
| Unmarried | 72 | 62.6 |
| **Education level** | | |
| HSC | 44 | 38.26 |
| Bachelors | 39 | 33.91 |
| SSC | 19 | 16.52 |
| Class-IX | 6 | 5.22 |
| Masters | 4 | 3.48 |
| MBBS | 2 | 1.74 |
| JSC | 1 | 0.87 |
| **Family type** | | |
| Joint | 76 | 66.0 |
| Nuclear | 39 | 34.0 |

**Table-II:** Substances used by the respondents

| Substances Used | Yes Frequency (Percentage) | No Frequency (Percentage) | p-value |
|---|---|---|---|
| Cigarettes | 67(58.26) | 48 (41.74) | <0.0001[S] |
| Alcohol | 43(37.39) | 72 (62.61) | |
| Cannabis | 75(65.22) | 40 (34.78) | |
| Cocaine | 3(2.61) | 112 (97.39) | |
| Sedative drugs | 73(63.48) | 42 (36.52) | |
| Heroin | 10 (8.70) | 105 (91.30) | |
| Shisha | 66(57.39) | 49 (42.61) | |
| Amphetamine | 80(69.57) | 35 (30.43) | |

Chi-square test was applied to reach p-value; S=significant.

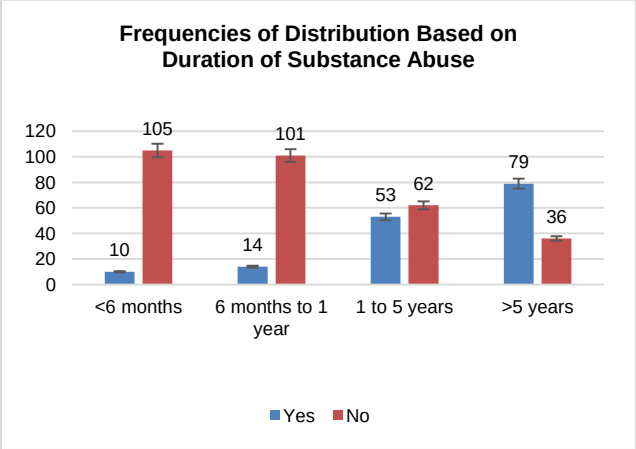


**Fig. 1:** Duration of substance abuse

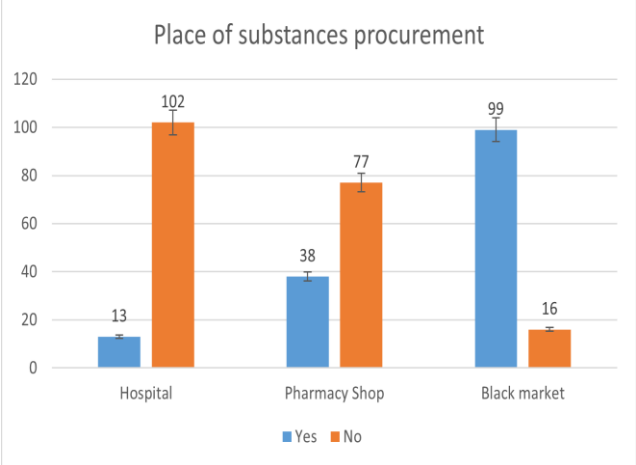


**Fig. 2:** Places for substance purchase

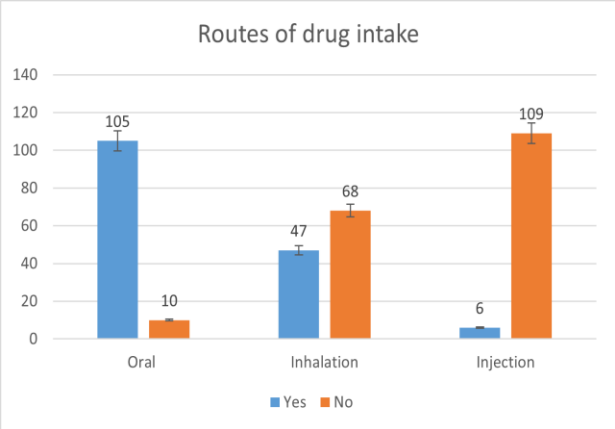


**Fig. 3:** Routes of drug intake

**Table-III:** Risk factors associated with substance abuse

| Risk factors | Yes | No | p-value |
|---|---|---|---|
| | Frequency (Percentage) | Frequency (Percentage) | |
| Depression | 67 (58.26) | 48(41.74) | <0.0001[S] |
| Self-Motivation | 65 (56.52) | 50(43.48) | |
| Effects of the relationship with partners | 80 (69.57) | 35(30.43) | |
| Restriction against drug use | 25 (21.74) | 90(78.26) | |
| Educational aspiration | 32 (27.83) | 83 72.17) | |
| Perceived opportunity | 28 (24.35) | 87(75.65) | |
| Deviance is important to people/ community | 13 (11.30) | 102(88.70) | |
| Perceived peer drug use | 65 (56.52) | 50(43.48) | |
| Availability of the drug | 72 (62.61) | 43(37.39) | |
| Others | 20 (17.39) | 95(82.62) | |

Chi-square test was applied to reach p-value; S=significant.

**Table-IV:** Academic performance of the participants

| Academic performance | Yes | No | p-value |
|---|---|---|---|
| | Frequency (Percentage) | Frequency (Percentage) | |
| Lower grades | 61 (65.22) | 49 (34.78) | <0.0001[S] |
| Doing poorly in exams and papers | 68 (59.13) | 47 (40.87) | |
| Missing classes | 75 (60.87) | 40 (39.13) | |
| Repeat the academic year | 49 (42.61) | 66 (57.39) | |

Chi-square test was applied to reach p-value; S=significant.

**Table-V:** Types of acute adverse effects

| Acute adverse effects | Yes | No | p-value |
|---|---|---|---|
| | Frequency (Percentage) | Frequency (Percentage) | |
| Analgesia | 11(9.57) | 104 (90.43) | <0.0001[S] |
| Respiratory depression | 4(3.48) | 111(96.52) | |
| Euphoria | 43(37.39) | 72(62.61) | |
| Relaxation and sleep | 73(63.48) | 42(36.52) | |
| Tranquilization | 55(47.83) | 60(52.17) | |
| Constipation | 24(20.87) | 91(79.13) | |
| Decreased blood pressure | 25(21.74) | 90(78.26) | |
| Constriction of pupils | 9(7.83) | 106(92.17) | |
| Hypothermia | 13(11.30) | 102(88.70) | |
| Reduced sex drive | 26(22.61) | 89(77.39) | |
| Flushed warm skin | 28(24.35) | 87(75.65) | |
| Decreased secretions | 53(46.09) | 62(53.91) | |
| Hallucination | 25(21.74) | 90(78.26) | |
| Personality disorder | 36(31.30) | 79(68.70) | |

Chi-square test was applied to reach p-value; S=significant.

## Discussion

This study provides a critical examination of the patterns, risk factors, and impacts of substance abuse among female students in Dhaka city, revealing a complex public health crisis driven by psychological distress, social factors, and easy access to drugs. The demographic profile, with a mean age of 21.88 years and a predominance of unmarried participants (62.6%), highlights a vulnerable cohort navigating the transition to adulthood, a period often characterized by identity exploration and heightened susceptibility to peer influence and risk-taking behaviors.[12,13] The high prevalence of substances with sedative properties, e.g., amphetamines (69.57%), cannabis (65.22%), and sedative drugs (63.48%), strongly indicates that self-medication for stress, anxiety, and academic pressure is a primary driver of use, rather than recreational pursuit.[14] This pattern is particularly alarming as it creates a vicious cycle where substance use exacerbates the very mental health conditions it is intended to alleviate, thereby deepening dependency.[15] The identified risk factors further elucidate this cycle. Depression was a significant predictor (58.26%, $p<0.0001$), consistent with global research substantiating the strong link between mental health disorders and increased vulnerability to substance misuse.[7] The influence of relationships with partners (69.57%) and peers (56.52%) underscores the role of interpersonal dynamics and emotional stress in initiating and sustaining drug use.[16] Crucially, the perceived easy availability of drugs (62.61%) emerged as a major enabling factor, reflecting inadequate regulatory control and the pervasive reach of the black market, which was the primary procurement source for 86.09% of participants.[17] The failure of traditional protective factors, such as societal restrictions (reported absent by 78.26%) and educational aspirations (absent for 72.17%), to mitigate risk suggests that rapid urbanization and shifting cultural norms may be eroding previously influential safeguards.[18] The profound negative impact on academic performance is a central finding, serving as a stark indicator of the broader consequences of this epidemic. High rates of lower grades (65.22%), missing classes (60.87%), and repeating academic years (42.61%) demonstrate severe educational disruption. This aligns with studies confirming that substance abuse impairs cognitive functions like memory and concentration, reduces motivation, and displaces academic priorities, ultimately jeopardizing long-term professional and personal prospects.[19,20] The spectrum of acute and chronic adverse effects illustrates the severe physical and psychological toll. The high prevalence of effects like relaxation and sleep (63.48%) and tranquilization (47.83%) confirms the use of substances for coping, while reports of insomnia (79.13%) and restlessness (79.13%) in the chronic phase reveal the debilitating aftermath of such use.[21] The significant reporting of psychological effects, including hostility (61.74%) and dysphoria (61.74%), points to substantial emotional dysregulation, necessitating integrated treatment approaches that address both substances use and co-occurring mental health disorders.[22]

Our study was limited to 115 participants from rehabilitation centers, which may not represent all female students in Dhaka or the broader population. Its cross-sectional design limits the ability to infer causal relationships between identified risk factors and substance use. Reliance on self-reported information introduces the possibility of recall bias and under-reporting due to the stigma associated with substance abuse. The findings may not be generalizable to other regions or cultural contexts due

to the study's localized nature. Exclusion of non-student females might overlook important trends in substance use patterns within the same age group.

## Conclusion

This study reveals an alarming trend of substance abuse among female students in Dhaka, primarily driven by psychological distress, peer influence, and easy drug availability. Amphetamines, cannabis, and sedatives were the most abused substances, reflecting a shift towards synthetic drugs. This abuse severely impacted academic performance, with high rates of course failure and absenteeism, and led to significant mental and physical health deterioration, including depression and chronic ailments. The findings underscore an urgent need for targeted interventions, including enhanced mental health support and stricter regulatory measures to curb this growing public health crisis. Government should promote community engagement and awareness campaigns to reduce stigma and encourage early intervention for substance abuse and develop gender-sensitive policies as well.

## References


1. *Islam A, Hossain MF. Drug abuse and its impact on Bangladesh. Int J Sociol Anthropol. 2017;9:143-56.*
2. *Volkow ND, Blanco C. Substance use disorders: a comprehensive update of classification, epidemiology, neurobiology, clinical aspects, treatment and prevention. World Psychiatry. 2023;22(2):203-29.*
3. *Moonajilin MS, Kamal MKI, Mamun FA, Safiq MB, Hosen I, Manzar MD, et al. Substance use behavior and its lifestyle-related risk factors in Bangladeshi high school-going adolescents: an exploratory study. PLoS One. 2021;16(7):e0254926.*
4. *United Nations Office on Drugs and Crime. World Drug Report 2022. Retrieved from: https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2022.html (Accessed December 14, 2024).*
5. *Department of Narcotics Control, Ministry of Home Affairs, Government of the People's Republic of Bangladesh. Annual Drug Report Bangladesh, 2022. Retrieved from: https://dnc.gov.bd/sites/default/files/files/dnc.portal.gov.bd/annual_reports/37a9ace4_624d_4650_80ad_9f4041db6b2b/2023-05-10-07-21-ca4e1390829fc7f031c5df30419878f6.pdf (Accessed December 14, 2024).*
6. *Mohiuddin AK. Drug addiction in Bangladesh: "a consequence of social demoralization rather than individual flaws". Int J Addiction Res Ther.2019;2:10.*
7. *United Nations Office on Drugs and Crime. World Drug Report 2023. Retrieved from: https://www.unodc.org/unodc/data-and-analysis/world-drug-report-2023.html (Accessed December 14, 2024).*
8. *Momen MA, Shahriar SHB, Sultana S. Sociopsychological factors of drug abuse among young females in Bangladesh and gender-specific vulnerabilities: Aligning with SDG 3 and SDG 5. J Ethn Subst Abuse. 2024:1-19.*
9. *Blows S, Isaacs S. Prevalence and factors associated with substance use among university students in South Africa: implications for prevention. BMC Psychol. 2022;10(1):309.*
10. *Amaro H, Sanchez M, Bautista T, Cox R. Social vulnerabilities for substance use: stressors, socially toxic environments, and discrimination and racism. Neuropharmacology. 2021;188:108518.*
11. *Zhang XD, Zhang J, Xie RS, Zhang WH. Sexual and reproductive health correlates of polysubstance use among female adolescents who sell sex in the southwest of China. Subst Abuse Treat Prev Policy. 2020;15(1):59.*
12. *Scales PC, Benson PL, Oesterle S, Hill KG, Hawkins JD, Pashak TJ. The dimensions of successful young adult development: A*

*conceptual and measurement framework. Appl Dev Sci. 2015;20(3):150-74.*

13. *Alhammad M, Aljedani R, Alsaleh M, Atyia N, Alsmakh M, Alfaraj A, et al. Family, individual, and other risk factors contributing to risk of substance abuse in young adults: a narrative review. Cureus. 2022;14(12):e32316.*
14. *Becker WC, Fiellin DA, Desai RA. Non-medical use, abuse and dependence on sedatives and tranquilizers among U.S. adults: psychiatric and socio-demographic correlates. Drug Alcohol Depend. 2007;90(2-3):280-7.*
15. *Santo T Jr, Campbell G, Gisev N, Martino-Burke D, Wilson J, Colledge-Frisby S, et al. Prevalence of mental disorders among people with opioid use disorder: a systematic review and meta-analysis. Drug Alcohol Depend. 2022;238:109551.*
16. *Nawi AM, Ismail R, Ibrahim F, Hassan MR, Manaf MRA, Amit N, et al. Risk and protective factors of drug abuse among adolescents: a systematic review. BMC Public Health. 2021;21(1):2088.*
17. *Lodhi FS, Rabbani U, Khan AA, Raza O, Holakouie-Naieni K, Yaseri M, et al. Factors associated with quality of life among joint and nuclear families: a population-based study. BMC Public Health. 2021;21(1):234.*
18. *Rosol M, Rosol C. Food, pandemics, and the anthropocene – on the necessity of food and agriculture change. Can Food Stud. 2022;9(1):281-93.*
19. *Audiffren M, André N. The exercise-cognition relationship: a virtuous circle. J Sport Health Sci. 2019;8(4):339-47.*
20. *Weinstock J, Fu Q, Veeramachaneni K, Poe LM, Baxley C, Weiss E. The effects of substance use and physical activity on cognition: the impact of incongruent health behaviors. Drug Alcohol Depend. 2021;221:108635.*
21. *Ong JC, Fox RS, Brower RF, Mazurek S, Moore C. How Does narcolepsy impact health-related quality of life? A Mixed-Methods Study. Behav Sleep Med. 2021;19(2):145-58.*
22. *Liu JF, Li JX. Drug addiction: a curable mental disorder? Acta Pharmacol Sin. 2018;39(12):1823-9.*