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# Substance Use among Male and Female Healthcare Professional College Students-A Cross Sectional WHO Risk Screening

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## ABSTRACT

**Objective**: To determine the frequency of substance use and dependence and figure out commonly used drugs among male and female healthcare professional college students.

**Method**: A cross sectional study was conducted in Lahore on healthcare professional college students between ages 17-26 years. After approval by parent institute's ethical board, WHO questionnaire of ASSIST (Alcohol, Smoking and Substance Involvement Screening Test, and containing 8 items), a validated questionnaire was used to figure out prevalence of substance use among 250 young healthcare professional students.

**Results**: Prevalence of substance dependence among different departments of medical and allied health sciences was 26.8 % for ASSIST mentioned drugs among n=250 participants. The frequency of drugs in "others" category including caffeine was 49.2 %. Individuals who were at high risk of drug dependence were 18.32 %, including caffeine and other drugs. P value was 0.000. Gender association was strong (OR for male/female 0.441, 95 % CI 0.240-0.809). According to this study the odds of males consuming any type of drugs is 2.3 (2.27) times more as compared to females.

**Conclusion**: Substance dependence is an issue of concern among young healthcare professional students in colleges and universities of Lahore. Both genders seem to use substances that can lead to dependence. Efforts are required to raise awareness about disadvantages of substance dependence.

**Keywords**: Substance dependence; Healthcare professionals; ASSIST questionnaire; Drug use; Gender association; Odds Ratio (OR); Confidence Interval (CI)

## INTRODUCTION

Drug dependence is a persistent and progressive phenomenon, indicated by considerable impairment that may rivet social, physiological or psychological dysfunction and is frankly associated with insistent and excessive exploit of psychoactive substances. It may be understated that drug dependence is a common term selected for its relevance to all kinds of substance abuse and thus carries no insinuation of the extent of hazard to public health or need for any or a certain sort of drug control. According to UNDOC world drug report over the recent years, ratio of drug abuse has

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increased by 22 percent from 2010. Unfortunately drug dependence has also increased among young people in Pakistan. Each year fifty thousand new drug users are added to list of drug addicts in Pakistan. People mostly start abusing drugs during period of their youthfulness. Individuals may well become dependent on an extensive assortment of chemical substances producing central nervous system effects, ranging from excitation to depression. All of these substances are capable of producing in certain people a peculiar state of mind which is known as psychic dependence, a sentiment of satisfaction and a psychic drive that requires recurrent or constant administration of the drug to bring out contentment or prevent discomfort. Some drugs also give rise to corporeal dependence that is an adaptive condition characterized by physical disturbances, when a drug is administered or when its action is affected by specific antagonists. The features of substance dependence have consequential differences from one common group to another, a condition which makes it necessary to construct a pattern of substance dependence. According to a survey, one among ten college or university students is a drug abuser. Due to distinctive challenges experienced by college students they are prone to use of alcohol, marijuana and non-therapeutic use of prescription drugs. Substance dependence is also very common among medical students and most recurrently used drugs among medical students are alcohol and tobacco. Substance dependence can result in poor educational and clinical performance as well as in reduced discernment ability of students. To create a healthy society, it should be discouraged among students with the help of proper counseling like motivational interviewing that reduces heavy drug use, use days and other substance related problems in adolescents. For motivational interviewing certain screening tools can be used that determine the risk levels of substance users. Eight question based tool known as ASSIST (Alcohol, Smoking and Substance Involvement Screening Test) is an effective screening tool developed by WHO that determines the risks linked with the unhealthy substance use and signals towards the requirement for clinical referral or treatment. Screening questionnaires are not diagnostic of substance dependence, their abuse, tendency for addiction or substance use disorders, but rather measure the risks of developing them. Substance users with positive screenings may need to be counseled or referred for clinical assessment or treatment. The ASSIST has been significantly assessed to make sure that it is practical, dependable, legitimate, all-inclusive and cross-culturally significant, and able to be allied to concise interventions as it gives a score screening of low, moderate and high risk of developing or developed substance dependence. As screening of substance use is scanty among healthcare professionals especially at student level which is exactly when the tendency to develop substance use emerges among young healthcare professionals and can lead to health hazards later in life. There is a need to screen healthcare professionals on regular basis so as to provide both mental and physical health interventions to those developing habits of substance use [1-8].

## MATERIALS AND METHODS

A cross sectional study was conducted in Lahore on n=250 healthcare professional students of age 17 to 26 years. After approval by parent institute ethical board, WHO ASSIST questionnaire (ASSIST: Alcohol, Smoking and Substance Involvement Screening Test containing 8 items), a validated questionnaire to determine substance dependence was used to figure out prevalence of substance use among young health professional students. Non probability convenient sampling technique was used. Students included healthcare professionals including Medical students from 1$^{st}$ year to final year MBBS, nursing and AHS students of same institutes. An informed consent was taken from the participants of the study. The demographic profile was recorded before ASSIST screening [9-11].

### Statistical Analysis

The collected information was entered and analyzed using SPSS 22, frequencies were articulated in percentages; *chi-square* test of independence was used to study association of substance use with gender and commonly abused drugs and then expected risk was calculated by binary logistic regression.

## RESULTS

The prevalence of substance dependence among health professional students of Lahore was 26.8 % for ASSIST mentioned drugs among n=250 participants. The frequency of drugs in “others” category including caffeine was 49.2 %.Significant number of students between the ages of 17-26 years used different types of drugs at bachelor level as the *chi square* P value was 0.000. 24% of students denied any kind of substance use including caffeine. The drug that was used most frequently was caffeine (47.6 %). Second most common substance was tobacco which was used by 29.6 % and third most common was sedatives which were used by 6.4 % students (**Figure 1**). Out of 121 females who participated in the study 81 were using some kind of a substance, while 110 out of 129 male participants were using different substances. Gender association was strong (OR for male/female 0.441, 95 % CI 0.240-0.809) and significant for caffeine, tobacco, cannabis, amphetamines and alcohol. According to this study the odds of males consuming any type of drugs is 2.3(2.27) times more as compared to females (**Tables 1-3**).

**Table 1:** Substance use in both genders with odds ratio and confidence interval.

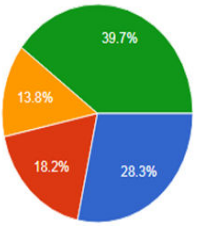
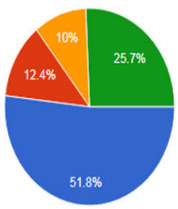
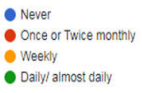
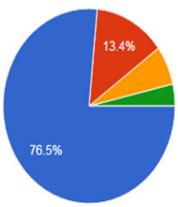
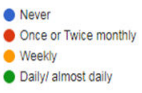
| | No drug | Drug use |
|---|---|---|
| Male | n=20 (16.5 %) | n=101 (83.5 %) |

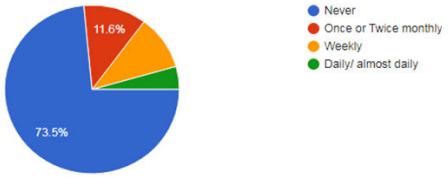
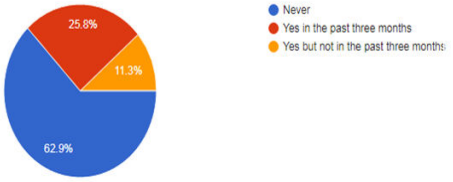
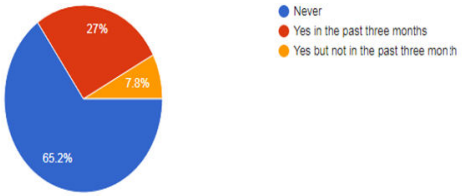
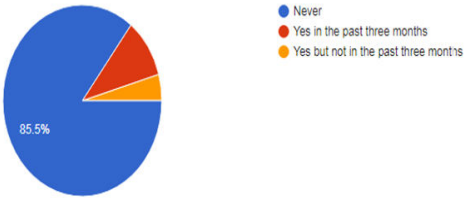
| | | |
|---|---|---|
| Female | n=40 (31 %) | n=89 (69 %) |
| Odds ratio | OR=0.533 | OR=1.210 |
| 95% Confidence interval | (0.331-0.858) | (1.052-1.392) |

**Table 2:** Gender association with different drugs being used.

| S.No. | Drugs | Male | Female | P value |
|---|---|---|---|---|
| 1 | Caffeine | 19.60% | 28 % | 0.029 |
| 2 | Tobacco | 26.80% | 2.80% | 0 |
| 3 | Cannabis | 4.80% | 0.80% | 0.004 |
| 4 | Amphetamines | 1.60% | 0.00% | 0.037 |
| 5 | Inhalants | 2.40% | 0.80% | 0.126 |
| 6 | Alcohol | 2.80% | 0.40% | 0.024 |
| 7 | Cocaine | 2.00% | 1.60% | 0.662 |
| 8 | Sedatives | 3.20% | 3.20% | 0.895 |
| 9 | Hallucinogens | 1.60% | 0.40% | 0.153 |
| 10 | Opioids | 1.20% | 0.40% | 0.283 |
| 11 | Other | 0.80% | 0.80% | 0.949 |
| 12 | None | 7.60% | 16% | 0.004 |
| 13 | Injecting drug | 10% | 4.40% | 0.056 |

**Table 3**: ASSIST questionnaire response.

| | | | |
|---|---|---|---|
| 1 | Use of the substances mentioned in past three months |  |  |
| 2 | A strong desire or urge to use (drug) in past three months |  |  |
| 3 | Use of (drug) leading to a health, social, legal or financial troubles in last three months |  |  |

| | | |
|---|---|---|
| 4 | Failure to do what was usually expected of you because of your use of (drug) in the last three months |   |
| 5 | A friend or relative or someone else1 expressing concern about your use of (drug) |   |
| 6 | Ever tried to reduce or quit using (drug) but failed |   |
| 7 | Use of any drug by injection |   |

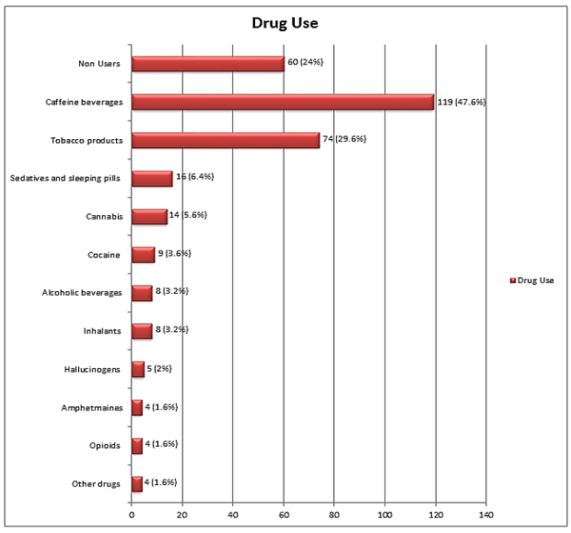



**Figure 1:** Graph of various drug use percentages.

ASSIST questionnaire was used to score study population, which is a validated questionnaire designed by WHO to figure out substance use, severity of use and risk scoring. In our study 250 individual medical professional students participated (**Figures 2 and 3**). Their ASSIST scoring from Q2-7 and 8 is as follows. P values of all drugs from Q2-7 are in **Table 4.**

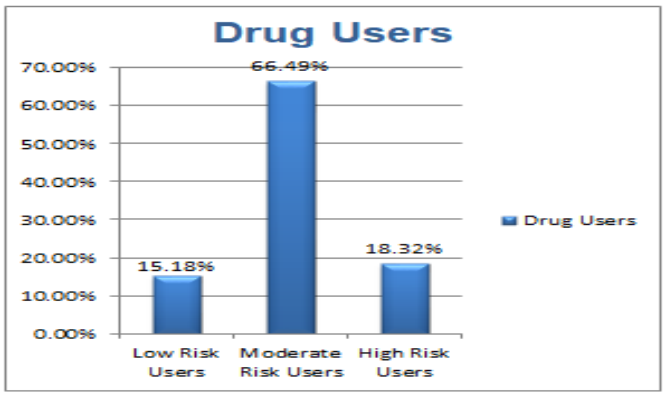



**Figure 2:** ASSIST scoring from Q2-7 and Q8; Q2-7, risk scoring of assist questionnaire.

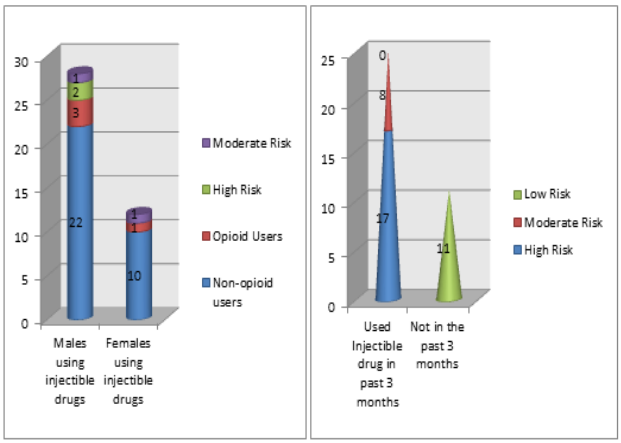



**Figure 3:** ASSIST scoring from Q2-7 and Q8; Q8: substance users who take drugs through injections.

**Table 4:** ASSIST questionnaire P-values from Q2-7 for different drugs.

| Q2 (Use in past three months) | Q3 (Desire in past three months) | Q4 (Problems due to use) |
|---|---|---|
| Caffeine=0.000 | Caffeine=0.112 | Caffeine=0.501 |
| Tobacco=0.002 | Tobacco=0.000 | Tobacco=0.000 |
| Cannabis=0.023 | Cannabis=0.050 | Cannabis=0.000 |
| Amphetamines=0.393 | Amphetamines=0.918 | Amphetamines=0.927 |
| Inhalants=0.065 | Inhalants=0.118 | Inhalants=0.773 |
| Alcohol=0.027 | Alcohol= 0.126 | Alcohol=0.168 |
| Cocaine=0.005 | Cocaine= 0.809 | Cocaine= 0.697 |
| Sedatives= 0.001 | Sedatives=0.475 | Sedatives=0.382 |
| Hallucinogens=0.000 | Hallucinogens=0.281 | Hallucinogens=0.338 |
| Opioids=0.007 | Opioids= 0.127 | Opioids=0.290 |
| Other=0.535 | Other=0.734 | Other=0.180 |
| None=0.000 | None=0.000 | None=0.000 |
| Q5 (Performance issues in last 3 months) | Q6 (People concerned for you) | Q7 (Failure to quit use) |
| Caffeine=0.083 | Caffeine=0.028 | Caffeine=0.096 |
| Tobacco=0.000 | Tobacco=0.000 | Tobacco=0.000 |
| Cannabis=0.020 | Cannabis=0.050 | Cannabis=0.004 |
| Amphetamines=0.744 | Amphetamines=0.461 | Amphetamines= 0.921 |
| Inhalants=0.765 | Inhalants=0.864 | Inhalants=0.781 |
| Alcohol=0.409 | Alcohol=0.420 | Alcohol=0.190 |
| Cocaine=0.496 | Cocaine=0.948 | Cocaine=0.887 |
| Sedatives=0.000 | Sedatives=0.002 | Sedatives=0.022 |
| Hallucinogens=0.008 | Hallucinogens=0.337 | Hallucinogens 0.371 |

| | | |
|---|---|---|
| Opioids=0.083 | Opioids=0.153 | Opioids= 0.172 |
| Other=0.236 | Other=0.084 | Other=0.000 |
| None=0.000 | None=0.000 | None=0.000 |

## DISCUSSION

Substance use leads to dependence in a clandestine fashion and the issue can be highlighted at earliest stages through proper screening and catering of youth. Substances or drugs that can lead to dependence are used by college and university students including healthcare professional students in both developed and underdeveloped countries like Pakistan and India and also Muslim countries like Turkey. The ASSIST (alcohol, smoking, and substance involvement screening test) was developed by WHO. It is used as a screening tool to figure out substance use swiftly in primary care set up. This test figures out substance use, severity of use and risk scoring of individuals using drugs as a habit. The scores obtained are categorized as lower, moderate or high risk category which then determines proper counseling or treatment intervention for individuals using different substances. In our study 15.18 % of substance users were at low risk of developing dependence, however 66.49% were at moderate risk and 18.32% were in the high risk range which is a matter of concern. Such figures are rarely seen in other studies as most data shows overall or specific drug based frequencies or prevalence but hardly any one mentioned risk categories of drug users. Out of eight questions, scoring is based on adding up usage responses (never, once or twice, monthly, weekly or daily) from questions 2 to 7. The moderate score can lead to dependence and high score shows eminent dependence or already dependent on drugs. Low risk individuals are asked to remain as such and need guidance and counseling to abstain. Moderate risk individuals need 3-15 minutes brief intervention of motivational interviewing. High risk individuals after 3-15 minutes intervention are referred for detailed clinical assessment and specialist treatment. People who inject drugs are referred for clinical assessment, HIV, Hep B, C screening and specialist treatment. High risk individuals among those who inject themselves are the ones using 4 times/month and they need immediate referrals. In this study, the prevalence of ASSIST mentioned drug use was 26.8%, while the use of any kind of substance was found in 76% of the participants. In a study conducted in 2019 in BP Koirala institute of health sciences among medical students yielded a prevalence of 61.4%. Another study on the medical students of Spain gives prevalence of 57.1% regarding use of any kind of substance. 83% students used drugs excessively in a survey of different universities of Punjab according to a 2015 study. However much lower use was also documented as in a study on the medical students of Azad university, Tabriz in 2018 where prevalence of substance abuse was 17.3%. Most commonly and frequently used drug was caffeine that was used by 47.6% of the substance users and showed a strong gender association with a P value of 0.029, 28% of females and 19.6% of males were consuming caffeine. Second most common drug was tobacco, P value 0.000, with 2.8% females and 26.8% males consuming it. Third most common drug was *Cannabis* with P value of 0.004 and 0.8% consumption by females and 4.8% by males. Other substances were consumed less. Regarding drugs used by injections, the P value for both genders was 0.056 with 10% males and 4.4% females using different drugs by injections. Only 4 (3 males and 1 female) students were using opioids by injection, only 1 male was at high risk using it in last 3 months. Our study showed variations of drug users among males and females where females were found to consume only caffeine more than any other drug than males. Males were 2.3 times more at risk of using drugs as compared to females in our study. 2022 study by EDADES also validated gender differences for substance use or abuse. Increased use of various habit forming and psychoactive substances among students and medical students is alarmingly high in Pakistan. According to a 2018 study, medical universities and colleges recognize the elevated academic stress among their students that leads to seeking refuge by using various drugs at high rate. New aspect in our study was to include caffeine independently as a drug. According to a research published in 2018 by Cyril Willson, caffeine is now the most widely consumed psycho-stimulant in today's world. As alcohol is consumed more in neighboring countries and west, after caffeine, most widely used substance is tobacco in Pakistan. Study is limited as it was conducted in only one city and sample size (n=250) was relatively small, but results raise the need of further screening and arrangements for creating awareness to mitigate the substance use by youth [12-18].

## CONCLUSION

Substance use is a significant issue among young healthcare professional students in colleges and universities. Both genders seem to use substances that can lead to dependence. Efforts are required to raise awareness about disadvantages of substance use among students that may trickle down to diverse strata of population [19].

## SPONSORSHIP OR FINANCIAL SUPPORT

None.

## CONFLICTS OF INTEREST

None.

## REFERENCES

1. Nawi AM, Ismail R, Ibrahim F, Hassan MR, Manaf MRA, et al. (2021) Risk and protective factors of drug abuse among adolescents: A systematic review. BMC Public Health. 21(1):1-15.
2. Ignaszewski MJ (2021) The epidemiology of drug abuse. J Clin Pharmacol. 61:10-17.
3. Ahmed B, Yousaf FN, Saud M, Ahmad A (2020) Youth at risk: The alarming issue of drug addiction in academic institutions in Pakistan. Child Youth Serv Rev. 118:105385.
4. Garofoli M (2020) Adolescent substance abuse. J Am Acad Child Adolesc Psychiatry. 47(2):383-394.
5. Skidmore CR, Kaufman EA, Crowell SE (2016) Substance use among college students. Child Adolesc Psychiatr Clin N Am. 25(4):735-753.
6. Kushwaha RP, Rauniar GP, Koirala B, Mandal NK (2019) Prevalence of substance use among undergraduate students in a medical college of Nepal. JNMA J Nepal Med Assoc. 57(219):315.
7. Candido FJ, Souza R, Stumpf MA, Fernandes LG, Veiga R, et al. (2018) The use of drugs and medical students: A literature review. Rev Assoc Med Bras. 64:462-468.
8. Bhatta S, Sapkota MR, Shrestha S, Shrestha RM (2018) Substance abuse among students in a dental school. JNMA J Nepal Med Assoc. 56(214):896-899.
9. Steele DW, Becker SJ, Danko KJ, Balk EM, Adam GP, et al. (2020) Brief behavioral interventions for substance use in adolescents: A meta-analysis. Pediatrics. 146(4): e20200351.
10. Krist AH, Davidson KW, Mangione CM, Barry MJ, Cabana M, et al. (2020) Screening for unhealthy drug use: US Preventive Services Task Force recommendation statement. JAMA. 323(22):2301-2309.
11. Muhamad NA, Mihat O, Ramly R, Aziz AA, Kamaruddin R, et al. (2018) Translation, cross-cultural adaptation, reliability and validity of the malay version of Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) V3. 1. Health. 10(07):985-998.
12. Nawaz H, Khan AA, Bukhari S (2007) Use of psychoactive drugs among medical undergraduates in Abbottabad. J Ayub Med Coll Abbottabad. 29(4):599-603.
13. Humeniuk R, Ali R, Babor TF, Farrell M, Formigoni ML, et al. (2008) Validation of the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Addiction. 103(6):1039-1047.
14. Mora GP, Ramon MR (2022) Substance use pattern analysis among Spanish medical students. Glob J Med Stud. 2(1):3-10.
15. Zaman M, Razzaq S, Hassan R, Qureshi J, Ijaz H, et al. Drug abuse among the students. Pak J Med Sci. 1(1): 41-47.
16. Herizchi S, Abbasabad GD, Delnavaz P, Torkmandi H, Dezhampor S, et al. (2020) Factors involving in the substance abuse among medical students and its association with medical students' general health: Mixed-method study. Prev Care Nurs Midwifery J. 10(1):8-1.
17. PP SJ, Manik KA, Sudhir P (2018) Role of yoga in attention, concentration, and memory of medical students. Natl J Physiol Pharm Pharmacol. 8(11): 1526-1158.
18. Willson C (2018) The clinical toxicology of caffeine: A review and case study. Toxicol Rep. 5:1140-1152-1158.
19. Zubair F, Zhao T, Ahmad H, Khanam R (2022) A gender-specific assessment of tobacco use risk factors: Evidence from the latest Pakistan demographic and health survey. BMC Public Health. 22(1):1-11.