Research Article

Psychoactive Substance Use Prevention and Reduction Programs in University Students in Asia

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ABSTRACT:

Background: Drugs and psychoactive substances have become a major risk factor among the university students of Asia due to its potential devastating effects on their academics, health and well-being. This systematic review provides us an overview about the psychoactive substances, their use, prevention and reduction programs which are targeting universities of Asia.

Objective: It also highlights different strategies to minimize this issue within Asian society and culture. It also explains the underlying factors leading to the increased substance use among students including academic stress, cultural norms, family burdens and peer pressure.

Methodology: We searched three databases (Google scholar, PubMed and Cochrane Library) for conducting this systematic review. We used the search strings for search purpose: psychoactive substances, prevention, reduction programs, and university students of Asia. Only full-text articles with provided information about psychoactive substances were included.

Results: From the 11 selected studies for this review, 27% showed use of tobacco and related substances, 18% depicted use of areca nut, cigarettes and e-cigarettes, alcohol respectively and 9% showed use of water pipe and cannabis respectively as the psychoactive substance. Awareness, counselling and supportive environment were suggested for reduction in use of illicit substances.

Conclusions: Deriving the evidence from both qualitative and quantitative studies, this research puts an emphasis on making interventions that helps the students regarding this critical issue. It also proposes recommendations for future programs including awareness campaigns, educational workshops, counseling services and policy changes.

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INTRODUCTION:

Drugs and other illicit substance use threatens people of every age, education level and geographic region. Among all of those at risk, students have significantly more chances of falling a prey to addiction and abuse mostly due to their immaturity, tender age, easier access, academic pressure, social isolation and, in some cases, separation from parental supervision. Research shows that the estimated prevalence rate of substance abuse among students is from 20 to 40 percent worldwide[1].

A substance that alters brain functioning, changes mood, behavior, consciousness and thinking upon use is known as a psychoactive substance. It could be a variety of things ranging from opioids, sedative hypnotics, cannabis and cocaine to simple caffeine or pain medications[2].These psychoactive substances have dependence liability on the persons who use them. The matter starts from its use, leads to abuse and ultimately dependence. Substance abuse occurs when the dose taken exceeds moderate consumption and dependence is when there is a need to take dose to feel good[3]. The abuse or dependence liability not only endangers their life but are also a result of poor academic performance. Globally, different programs have been established to control substance use among students. The programs that appeared to focus on social skill development, drug use etiology, their deleterious effects and better practices were found to be more effective[4]. Development and institutionalization for promoting health and primary prevention of substance use have been done by institutions in some regions of Asia. In 1988, at the fourth SAARC summit in Islamabad, it was decided that 1989 would be declared as the SAARC Year for Combating Drug Abuse[5]. SAATH, a Nepalese NGO, was given the DAPC funding in 2012 to perform drug prevention programs among Nepalese schoolchildren[6]. Drama, song and quizzes were used for creating awareness and interactive sessions were organized with students. In May 2016, teacher training programs and school awareness programs were organized in Pakistan. The aim was to educate students about drug addiction, career counselling and installation of vital skills for survival in competitive environment[7]. Similarly in Malaysia, SHIELDS program aims to increase awareness and endurance of drug abuse amo-ng students[8].In November 2017, The International campus of Business, Agriculture, and Technology (IUBAT) and the Lion Club of Dhaka Oasis in Bang-ladesh developed a drug awareness workshop for students and faculty at that campus. Over 500 pupils attended the seminar and were provided with free medical camp exams[9].

Many programs have been developed on preventing the use of drugs among students but still there is a large proportion of them using it, hence, there is a need to increase awareness about the disastrous effects of these drugs on physical and mental health of students. Greater research programs should be launched in order to find the best approach to deal with it. The goal of this research is to review and analyze various initiatives introduced throughout Asia to prevent the use of drugs and illicit substances among students so that better ways of prevention may be implemented to protect the future of many nations.

MATERIALS AND METHODS:

A systematic review was carried out. Systematic reviews are publications that include information from numerous research articles on a certain area to synthesize data and emphasize the relevance of results. They are an excellent way to stay up to date on new discoveries and can be used as guidelines in medical practice. The Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) criteria were used to perform the review.

This research was conducted using electronic databases such as Google scholar, Pubmed, PakMediNet, and online websites. The search method included multiple terms edited with Boolean and wildcard operators in each database, including 'Drugs,' 'Psy-choactive substances,' 'Smoking,' 'Alcohol,' 'Caffeine,' 'Opioids,' 'Pain-killers,' 'Drug abuse,' 'Cigarette,' and 'Addiction'. The search was restricted to articles written in English. Cohort studies, cross-sectional studies, reviews, and descriptive studies were all included in our review. There is an English language criterion for the articles to be included, which means that only items authored in English or translated into English will be included. This review covered articles that were freely available online. There were articles with similar titles, intentions, and material targeting psychoactive substance use, prevention, and reduction initiatives in Asian university students.

Articles with titles that did not correspond to our research were eliminated. Some study design papers were eliminated, including interventional studies, case reports, editorial reviews, letters of communication, and grey literature. Articles published in languages other than English that did not have an English translation were not included in our review.

The first database search yielded 102 articles. After deleting duplicates, 54 papers remained for evaluation by two researchers. First, the researchers examined the titles and abstracts, and exclusions were made based on the aforementioned criteria. A third researcher read the whole text of the remaining publications and resolved any differences. Following full-text screening, 11 publications were found to meet the inclusion criteria and were used for data extraction. The study selection process is depicted in figure 1.

The authors (KI, MM, MA, KZ, JT) independently performed data extraction from the included publiccations in terms of amount, features, and sources of evidence. Author, year, country, sample cohort, sample size, age, timeline of the study, scales/instrument, diagnostic method or screening tool used, measuring the psychoactive substances, use, preventive and reduction programs among Asian university students are all included. The same authors screened any full-length articles and selected data for review.

RESULTS:

The articles (2004-2023) covered Asian countries such as India, Pakistan, China, Malaysia, Bangladesh, and Nepal. They used various study designs, such as cross-sectional, descriptive, narrative, and thematic reviews. The sample sizes ranged from 19 to 52,874 students. The articles measured the prevalence, patterns, factors, and consequences of substance use among students, as well as the prevention and reduction programs. The substances included tobacco, areca nut, alcohol, cannabis, opioids, benzodiazepines, amphetamines, and

glue sniffing. Table 1 lists the features of the studies considered in this evaluation.

This review discusses the developments in psychoactive substance usage among Asian university students. This systematic review provided us with the information that variety of substances use e.g, tobacco,

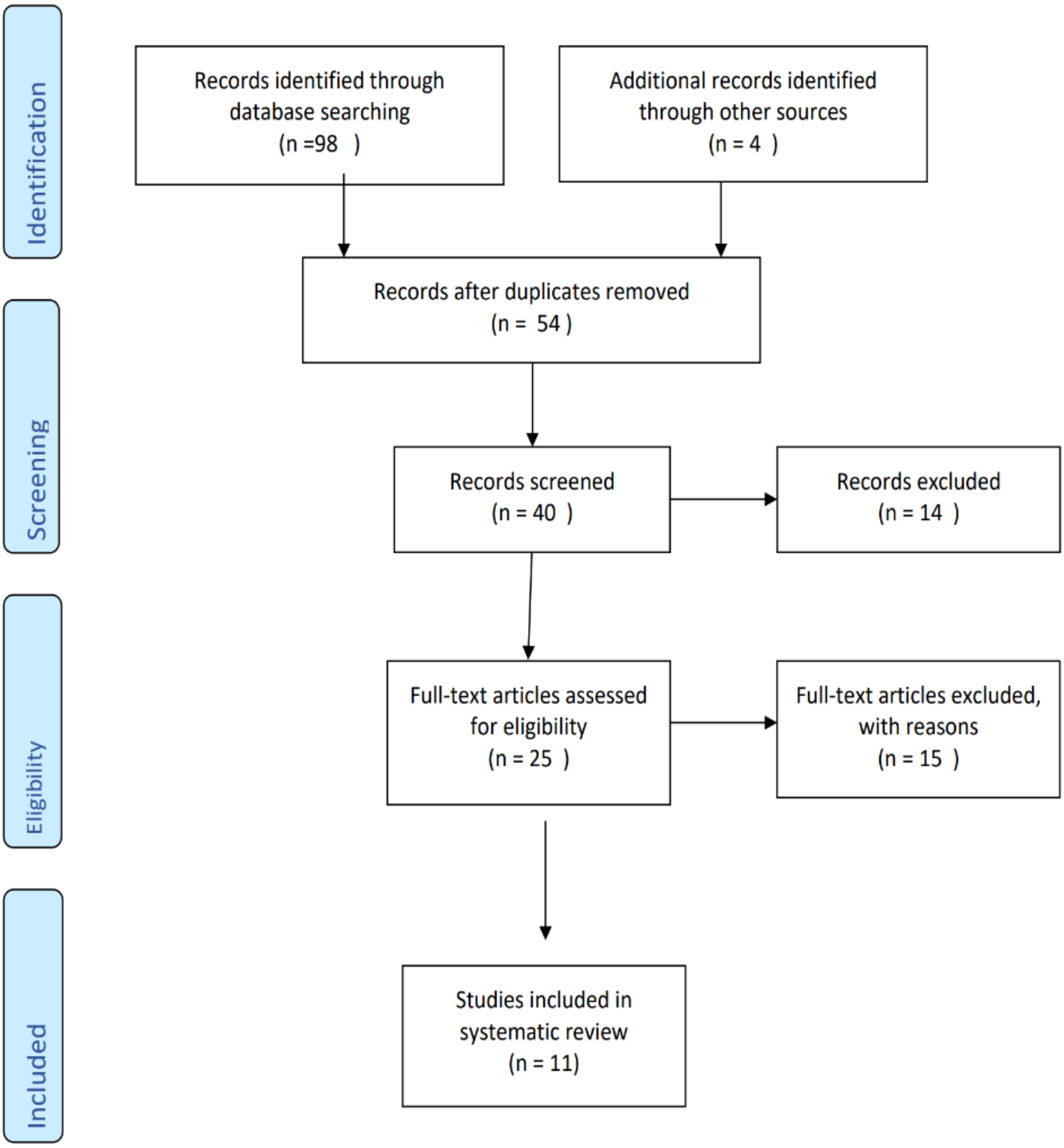

Figure 1: PRISMA flow diagram depicting study screening process.

Table 1: Data extraction tables for articles included in this systematic review.

Sr. No	Author	Year	Title	Place of study	No of Participants	Type of study	Results
1.	Dhole et al[10]	2019	Knowledge, Attitude and Practice Towards Areca Nut Use Among Medical Student of Nagpur City	Nagpur City, India	200 participants	Cross-sectional Study	There was a high percentage of unawareness regarding knowledge and attitude parameters and lack of practice of areca nut among medical students
2.	Arshad et al[11]	2019	Knowledge, attitudes, and perceptions towards water pipe tobacco smoking amongst college or university students: a systematic review	World-wide	86 Studies; 45 from Global North, 41 from Global South	Systematic Review	Reasons for WTS among univer-sity students is multifactorial. Interve-ntions at individual and social level, as well as policy changes are required to portray the harm of WTS. For better targeted interventions, additional studies are required to assess changes in perception with time among students.
3.	Jiang et al[12]	2018	Measuring and preventing alcohol use and related harm among young people in Asian countries: a thematic review	Asian countries	41 studies included	A thematic review	The study examines alcohol consu-mption patterns as well as alcohol-associated social and health issues among young people aged 15 to 29 in Asian nations, as well as measures for preventing and managing alcohol use and related consequences.
4.	Font-Mayolas et al[13]	2023	Cigarette, e-cigarette and water pipe cognitions and use among university students in Guangzhou, China	China	281 University students	Cross-sectional Study	The study emphasizes the need to develop prevention programs that prepare students to resist social pressure to use tobacco products. It also establishes the need to raise awareness regarding the detrimental health effects of alternative tobacco products. Gender based differences in the use of tobacco products was also found which should be taken into account when preparing questionnaires and analyzing future studies.
5.	Sharma et al[14]	2021	COUNSELLING AND TREATMENT PRACTICES DURING DRUG DEADDICTION	India	10 studies included	Systemati c Review	The study shows that alcohol rem-ains the single most consumed subs-tance by Indians, the use of other relatively lethal substances have sky-rocketed especially amongst the you-nger population. There are gender discrepancies, social class differ-ences and accessibility concerns in the usage of drugs.
6.	Gupta et al22	2022	Magnitude of Substance Use and Its Associated Factors Among the Medical Students in India and Implications for Medical Education	India	59 Studies included	A Narrative Review	Alcohol (current use: 3.2%–43.8 %), followed by tobacco (3.7%–28.8%) and cannabis (1.6%–15%), were the common substances used by the medical students. Among the fema-les, an increasing trend of substance use, particularly of nonprescription sedatives (even higher than males), alcohol, and smoking, was seen.

7.	Mansoori et al[15]	2018	Factors associated with substance abuse among male illicit drug users in rehabilitation centres of Pakistan.	Pakistan	460 participants	Cross-sectional Study	Substance abuse was observed in all demographic strata and segments in Pakistani population. A significant association of heroin addiction was found with age ≤ 19 years, and duration of its use.
8.	Tareen et al[16]	2020	CHANGES IN OPIOD ABUSE IN PAKISTAN 1979-1994	Pakistan	52874 Participants	Cross-sectional Study	The Sociodemographic characteristics of opium users have not changed significantly over 15 years and represent a very different social group from the heroin abusers. Heroin addicts show a clear change over time, reaching a peak in 1988 to 90 and declining there-after, whereas referrals for opium addiction show no such pattern.
9.	Imran et al[17]	2011	Prevalence of Psychoactive Drug Use Among Medical Students in Lahore	Pakistan	1299 (response rate (87%)	Cross-sectional Study	The prevalence of cigarettes, alcohol and illicit substance use among medical students in Lahore is of concern and unacceptably high (17%). Substances used by students in order of preference were cigarettes 175 (78.9 %), alcohol 58 (26.2%), cannabis 56 (25.5%), amphetamines 32 (14.6%), Benzodiazepines 6 (3.6%) and glue sniffing 8 (0.4%)
10.	Butt et al[23]	2018	Cannabis Abuse among Patients with Schizophrenia	Pakistan	381 diagnosed patients of schizophrenia	Cross-sectional study	Among all the patients of schizophrenia included in the study, 42.3% were active users of cannabis. Prevalence among males (35.7%) was significantly higher than females (6.6%). Unmarried patients with schizophrenia are more likely to be cannabis users than married patients. Duration of illness did not significantly affect cannabis usage.
11.	Khan et al[24]	2004	Surgical outcome after femoral vessels ligation in I/V drug users	Pakistan	19 diagnosed patients	Descriptive study	The need for surgical amputation of affected limb in patients with IV drug usage is multifactorial which includes age, immune status, duration of addiction and IV drug administration and personal hygiene. The incidence of the need for amputation is directly related to the age of the patient. Surgical amputation is deferred unless absolutely indicated as outcome cannot be predicted with certainty.

benzodiazepines, cannabis and alcohol are utilized among the various university students of Asia.

In 2019, a study was conducted in Nagpur, India that revealed the lack of proper awareness about the side effects and subsequently increased use of areca nut use among the university students. A similar study was conducted in Pakistan manifesting the increased prevalence of tobacco and alcohol use among the medical students of Lahore which shows the increased requirements of formulating effective methods for psych-

oactive substances reduction.

Another cross- sectional study focused on the cigarette, e- cigarette use among the university students of China. The findings of the study stressed that proper awareness programs are the need of the hour to prevent that massive psychoactive substance use among the students.

Tareen measured the changing trends in the opioid abuse in Pakistan over the massive period of 15 years. Sociodemographic-ally significant features of opioid users were as also presented comparing them with the heroine users.

Another study conducted in 2021 emphasizes the risk factors associated with the drug abuse. This systematic review summarized the factors in 3 categories: "individual, family and community" contributing to the increased drug prevalence. Forest plot depicting number of studies for each type of psychoactive substance discussed in this review is given in Figure 2.

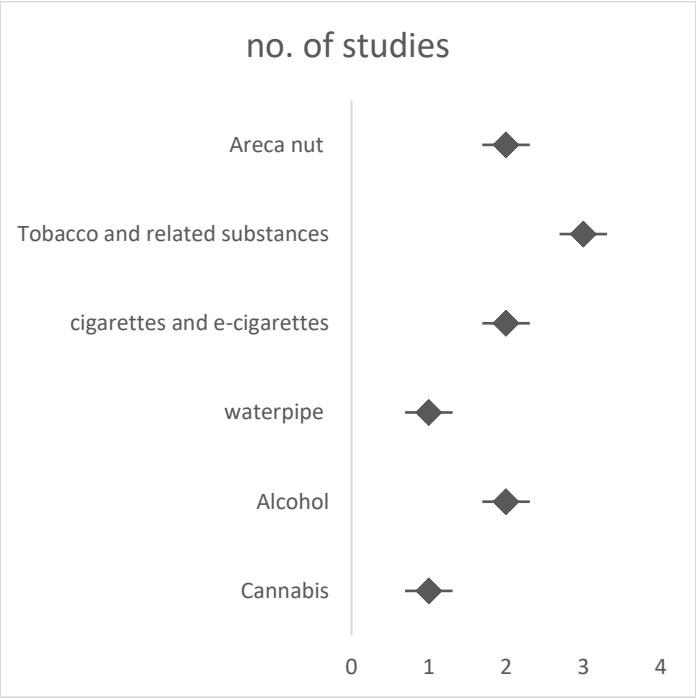

Figure 2: Forest plot showing type of psychoactive substance used in the included studies.

Figure 3 shows a bar chart for the number of research conducted on each type of psychoactive chemical addressed in this review.

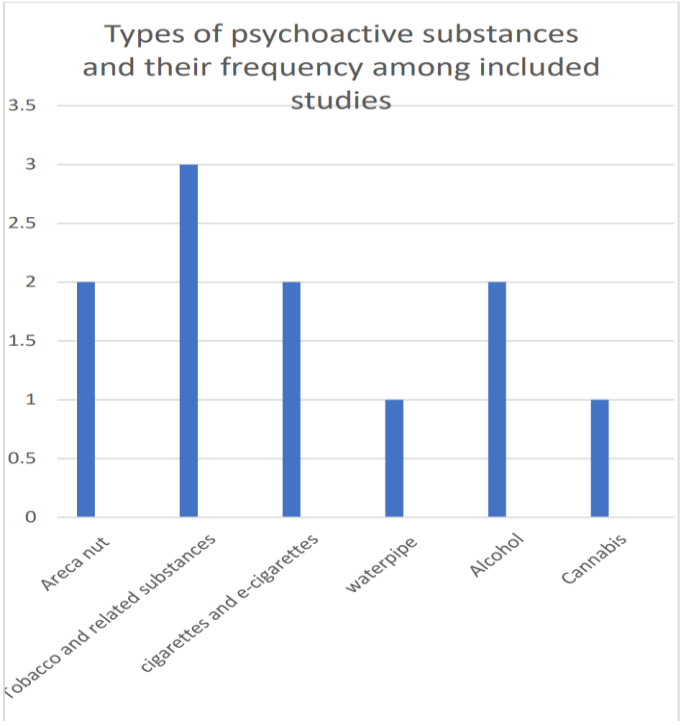

Figure 3: A bar chart showing the included studies against the psychoactive substances included in this review.

This study provided us an overview related to the awareness, knowledge and practice related to the water pipe tobacco smoking among the college or university students and also discussed the factors associated with it.

These studies mentioned above give a call to formulate tailored interventions, run proper awareness campaigns and design policy changes to mitigate psychoactive substance use related risks and promote healthier life and well-being of the university students of Asia.

DISCUSSION:

The goal of our review was to assess psychoactive substance usage among Asian university students, as well as reduction programs or prevention guidelines. Psychoactive substances we studied were alcohol, tobacco, areca nut and cannabis etc. Drug use among college students is a significant issue in Asia as it is elsewhere and has mostly gone unreported. The purpose of this study was to ascertain the prevalence and factors that contribute to students' propensity for abusing psychoactive substances. Alcohol and illegal drugs are two examples of psychoactive chemicals that can be misused or dangerously used.

According to the study of numerous research, drug addiction is the brain's response to specific chemicals in the form of an overproduction of particular feel-good hormones. For most people, abusing drugs serves as an "escape mechanism" as well as a source of enjoyment and entertainment. Environmental factors such as living situation, substance abuser in family, sibling, close friend, insist from friend to take substance, and substance abuser in community were also identified statistically significant with substance usage, especially substance usage by parents[18]. A history of abuse was also discovered to be positively associated with adolescent drug usage, especially among females. However, there is still little proof connecting abuse of substances to maltreatment. According to the study's findings, teens with negative personality traits should be constantly watched and given health information, inspiration, counseling, and emotional support because these attributes affect teen drug use across individual, family, and community domains. Individual risk factors included personal psychiatric diagnoses, prior substance and addiction histories, attitude and perception as risk factors, and negative personality features such as high impulsivity, rebelliousness, difficulties controlling emotions, and alexithymia. However, some personality qualities, like optimism, high mindfulness, and social phobia, have been found to be protective against drug dependence. The study concluded that because negative personality traits are linked to high-risk behaviors such as drug use, adolescents with negative personality traits should be continuously monitored and provided with health information, motivation, counseling, and emotional support.

The study looked at the prevalence and trends of smoking among young individuals in China, including traditional cigarettes, e-cigarettes, and water pipes. Male children used all three items more frequently than women, according to the findings, with more than half of male children and just over one-third of female children reporting regular cigarette usage. This was consistent with results of other studies[19]. The usage of water pipes and e-cigarettes was also widespread, with a sizeable percentage of users adding nicotine in these products. These findings corroborate earlier systematic reviews and meta-analyses that discovered a cross-sectional relationship between young individuals, e-cigarette use, cannabis use, and alcohol use[21]. By highlighting the temporal pattern that e-cigarette use among young people increases their likelihood of later starting to use other psychoactive substances compared to young people who have never used an e-cigarette, the current review adds to the body of literature.

The review talks about how it's crucial to comprehend how medical students feel about using areca nuts to counteract their negative consequences. Areca nut is a popular and addictive drug that is consumed in many different ways in India and other nations, and it has been connected to a number of health issues. Over the past few decades, smokeless tobacco use has grown in popularity in India. It is a serious issue because the use of it appears to be on the rise, especially among college students and street children. Studies show that chewing and smoking are more common than ever before and are even starting to become fashionable among young people.

Cannabis was identified as the illicit drug used most frequently among medical students, with a prevalence of 1.6% to 10.1%. According to a prior systematic review, the prevalence was 11.8%, which is in line with this prevalence. Given that medical UGs frequently view cannabis as an innocent drug and that it has anxiolytic, hypnotic, mood-altering, and appetite-promoting qualities, it becomes clear why there is a higher rate of cannabis usage among medical students. The study also discovered that poly tobacco use—the simultaneous use of two or more tobacco products—was increasing in popularity among young people, with almost half of the individuals engaging in this behavior. Women tended to take none of the drugs, whereas men most frequently used two or more. The purpose of the study was to evaluate substance use among Asian students, including its prevalence and risk factors. According to the study, a sizable percentage of medical students (25.9%–57.4%) used drugs like alcohol, cigarettes (both smoking and smokeless), and cannabis. Compared to the Indian community as a whole, medical students used cigar-ettes less frequently. 17.2% was the prevalence of tobacco usage among medical students, according to a comprehensive review. A global survey of medical students in their last year indicated that, despite the high frequency of tobacco use among them, medical students are not adequately and regularly educated about nicotine dependence and its treatment, as well as the negative repercussions of cigarette usage.

The study concludes by emphasizing the need for uniform definitions of current substance use and for additional research to gauge the scope and contributing elements of substance use among medical students. It is therefore essential that the curriculum devote more time to psychiatry instruction and training, including the prevention and treatment of nicotine dependency. On the other hand, it is recommended that adolescents' activities be observed and monitored on a regular basis, that they be provided with a suitable and supportive environment, and that they be provided with school, community, and health facility-based awareness, counselling, and problem-solving approaches to address the problem of substance abuse[20].

As a result, there would be a decrease in student smoking, and improved clinical treatment for their patients with tobacco-related problems would be encouraged.

Despite the fact that it is based on the findings of a thorough examination of studies in a variety of circumstances, this study may have some limitations. First, despite the fact that these two illnesses frequently co-exist and impair one another's course, we did not

investigate how severe the psychiatric comorbidities were in drug- and alcohol-using pupils. Second, although the medical students' attitudes and understanding of substance use were not assessed, we solely looked at the prevalence and use of psychoactive substance. Third, our review was restricted to University students in Asia only while the magnitude of substance use in other population was not assessed. Lastly, due to the fact that we only included English articles, we might have overlooked some other crucial components.

CONCLUSION:

In conclusion, the use of psychoactive substances poses a substantial challenge to students' quality of life. This study emphasizes the need for uniform definitions of current substance use and for additional research to gauge the scope and contributing elements of substance use among medical students. It is therefore essential that the curriculum devote more time to psychiatry instruction and training, including the prevention and treatment of nicotine dependency. As a result, there would be a decrease in student smoking, and improved clinical treatment for their patients with tobacco-related problems would be encouraged.

The findings of this study have the potential to influence policy and practice by assisting in the development of interventions addressing how to avoid the use of such substances among university students.

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