DOES PSYCHOACTIVE SUBSTANCE USE AFFECT ACADEMIC PERFORMANCE OF MEDICAL STUDENTS?: A SYSTEMATIC REVIEW

ABSTRACT

Background: The use of illegal drugs, alcohol, and tobacco is very common among medical students. Problems related to substance usage are currently of concern on a global scale. Despite this, the condition is frequently misdiagnosed because students attempt to conceal their issues and do not seek professional assistance.
Aim: To investigate how drug usage affects medical students' academic performance

Design: A systematic review
Data Sources: Systematic search for worldwide published literature from PsycINFO, Cochrane, Google Scholar, Science Direct, PubMed, and WHOLIS

Study eligibility criteria: Studies that were part of this review provided information on the methodology, methods, and/or measurements for how drug usage affected medical students' academic performance.

Data extraction: The researcher further gathered the information from the chosen publications and recorded the following information in a consistent table: (i) publication information (first author's last name, year, and location of study); (ii) the sample size of the report; (iii) the impact of substance abuse on medical students' educational outcomes; (iv) the tool used to measure academic performance; (v) the average age of the sample size; and (vi) the percentage of female and unmarried medical students.

Result: Only 8 studies out of a total of 2,007 papers met all the inclusion criteria. The study conducted systematic research for cross-sectional research that looked at the impact of substance use on medical students' academic performance**.**

Conclusion: Medical students and people who use psychoactive substances become unproductive in their lives. Due to the dearth of longitudinal investigations, understanding the true origins of this situation is challenging. To ensure that students attain the goals of their medical education and contribute to society's demand for more qualified and better trained medical professionals, medical training institutes may need to enact stricter prohibitions on drug use among students. The availability of medicines should be restricted in order to deter medical students from using and misusing them.

Key words: Substance-related disorders; medical students; Academic performance.

INTRODUCTION

A significant lifestyle change occurs at the start of medical school [1] During their academic training, students experience extremely high levels of stress, which has negative effects on both

their social and psychological well-being [2]. One of them is substance misuse, which some students turn to as a form of escape and respite from the issues they encounter while in the program. Students utilize these substances in quest of a sense of well-being because they help to better handle stress by activating the reward and pleasure brain circuits. Drug abuse and related issues are a major global concern.

Adolescents are the principal sufferers of health issues brought on by substance addiction in various regions of the African continent, where it has reached epidemic proportions [1]. In actuality, a number of studies have shown that medical students frequently use alcohol, tobacco, and illegal drugs [3]. The negative effects of using these substances excessively extend much beyond the organic damage that has already been in-depthly discussed in the literature. For instance, statistics on crime, traffic violence, and absenteeism are all linked to alcohol abuse [4]. Additionally, the general populace looks to medical students as role models for good conduct. People may mistakenly feel that drug use is a safe activity after watching them using such substances and starting doing it regularly. Therefore, drug use among medical students may be viewed as a severe public health issue.

Despite this, the condition is frequently misdiagnosed because students shy away from seeking professional assistance [5]. Recognizing the exact prevalence of substance addiction in medical schools is so crucial. The reasons behind this consumption must also be identified, and any potential solutions must be evaluated. In order to ascertain the self-reported effects of medical student drug use as well as the prevalence of medical student alcohol and drug use.

AIMS

This study aims to investigate how drug use affects medical students' academic performance.

METHOD

The technique for this paper was a thorough evaluation of the literature. Recent research must be amalgamated and synthesized in a systematic and rigorous manner in order to create a corpus of empirical knowledge from which decisions can be made. A systematic review typically allows for a wider scope than standard systematic reviews because it strives to provide a comprehensive overview of a particular research subject [6]. A systematic review can be helpful in and of itself by providing an overview of the body of work in a certain area, but it can also point out areas of knowledge that need further investigation. A systematic review offers a wider research background in order to evaluate the results of such evidence syntheses. [7,8].

Study inclusion and exclusion criteria

Clarification of the inclusion and exclusion criteria was aided by the Population/Problem, Intervention, Comparison, and Outcome (PICO) framework [9]. No matter how many studies there may be, inclusion and exclusion criteria were established to serve as a guideline for obtaining literature using a search that is sensitive and retrieves specific literature needed to meet the study theme. The time period for searching has been restricted to the last two decades in order to acquire pertinent data due to evolving policies regarding the impact of substance use on medical student performance. The cost of hiring a translator was another factor in the language restriction. The following Table 1 lists the inclusion and exclusion criteria.

Table 1: Inclusion and Exclusion Criteria

Review Protocol	Inclusion Criteria	Exclusion Criteria
Population	Effects of substance used among medical and non-medical students' academic performance (25 – 64 years)	Studies not dealing on the effects of substance use on academic performance.
Exposure	Studies dealing with risk factors related to substance use	Studies not dealing with risk factors related to substance use
Outcome	Studies dealing with substance use complications	Studies dealing with non- substance use complications
Study Design	Primary research such as primary studies, articles. Reports	Editorials, discussion, expert opinion, reviews. Dissertations (due to the cost of obtaining data)
Language	English	Not English
Humans	Human based studies	Not human
Time	January 2000 – date	< January 2000

Literature searches

The Web of Science, PubMed, Cochrane, and PsycINFO were used to conduct a thorough search for pertinent literature, whereas WHOLIS only permitted the use of two keywords and a Boolean operator. The search queries comprised academic performance; illicit drug usage that influences medical student academic performance; cigarette use among medical student academic performance; and alcohol use among medical students.

To keep track of the references found during the search and to spot any data duplication that might have occurred as a result of combining multiple databases, the Full Version reference Manager Software was employed as a reference database management tool. If an importation tool was available, relevant literature was transferred from the chosen databases straight into the effective strategic planning articulates (e.g., Endnote). However, literature that was acquired from sources other than this program (such as WHOLIS) was manually entered.

Bias

Language prejudice may have happened but was inevitable because the search was limited to English-language studies alone, excluding studies written in other languages. Additionally, the omission of theses and reviews might have resulted in the loss of important data for the study.

RESULT

Only 8 studies out of a total of 2,007 papers met all the inclusion criteria. The figure illustrates the selection procedure for this investigation based on the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) criteria [3]. 1.

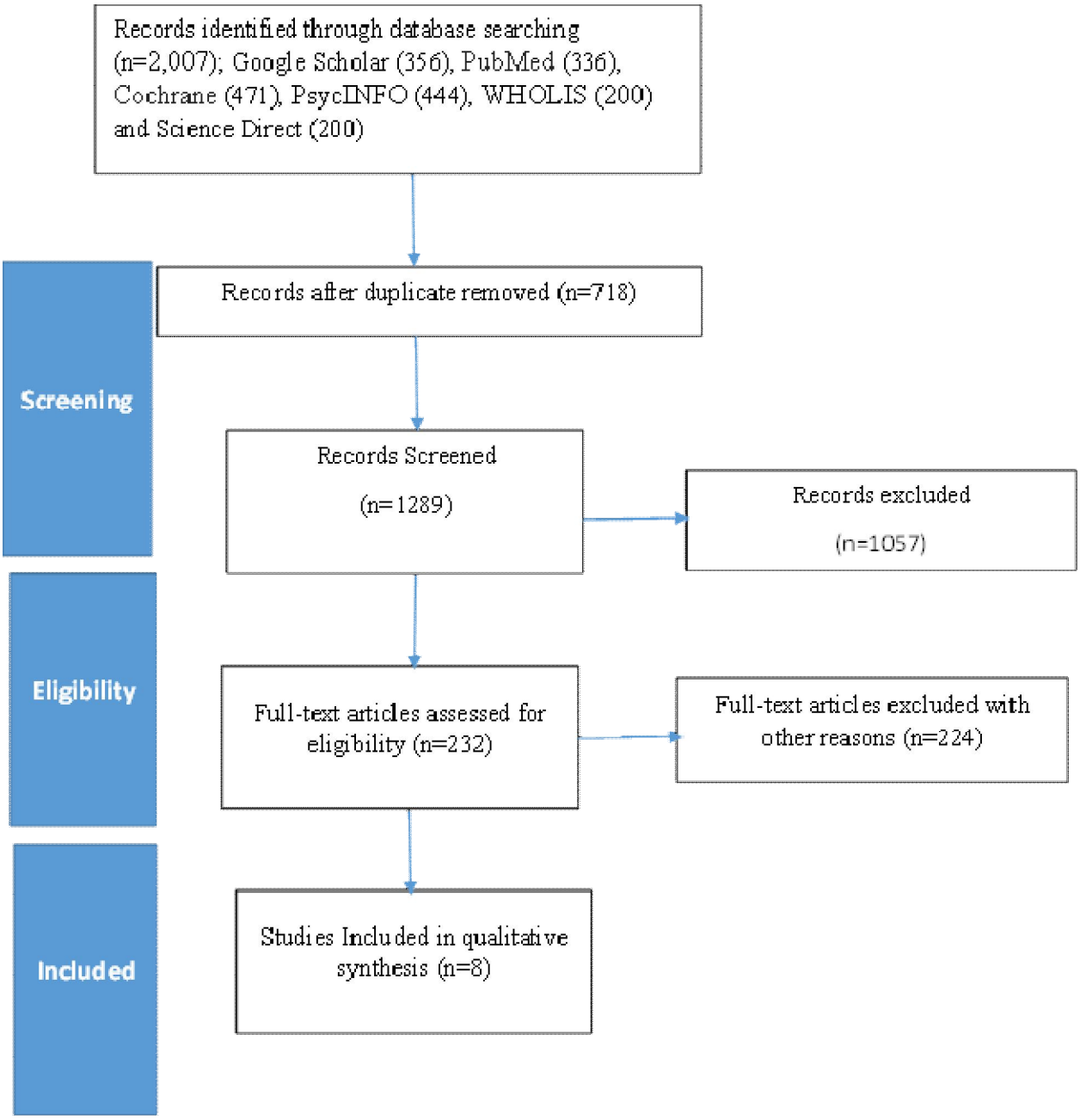

Figure 1. PRISMA flow chart of the systematic review process.

DISCUSSION

The following literature was examined after a number of searches were made and it met the inclusion criteria:

The consequences of substance usage on students' academic performance, in particular in health training institutes, were the subject of an empirical study by [10]. This study's methodology used a cross-sectional and quantitative design. The data was collected over a three-month period. The data from February to May 2017 was used. The notion that there is a high possibility that a student is taking drugs in every class supported the selection of the population because all students would be able to give pertinent information about the impact of drug use on academic performance. The sample included 325 health trainees out of the total population of 3300 from the two health training institutions. A random sampling approach utilizing computer-generated random numbers was used to choose the study's participants. Each student was given a different index number. This was done by entering the index numbers of every student at the two institutions into the computer using the program Microsoft Excel. The computer was then instructed to choose the necessary sample size (325) using the index numbers.

The school administration actively assisted the researchers in identifying these children by their names and index numbers, and they consequently presented questionnaires to them. The researchers obtained a letter introducing them as University of Cape Coast students conducting their research for academic purposes from the Directorate of Research Innovation and Consultancy in order to address ethical concerns. To gain access to the responses, this letter was initially sent to the nursing training institutions that had been chosen. The researchers further sorted the respondents' verbal assent. A guarantee of confidentiality and anonymity was given to those who agreed, and the study's goal was also conveyed to them. The administrative management of the schools helped by disclosing the names of the people who owned the chosen numbers. Surveys were distributed and the results were gathered. The Administration of Research and Innovation Center at the University of Cape Coast gathered an introductory letter from each institution chosen for the study. According to the study's findings, some trainees use drugs like alcohol, marijuana, and cigarettes. Fewer people than those who use alcohol, marijuana, and cigarettes use drugs like heroin, cocaine, diazepam, and ecstasy. Based on their use of these substances, it was discovered that these students frequently skipped class and suffered from health issues such as frequent sickness and heart muscle weakness. Additionally,

they lack motivation to study as a result of, among other things, impaired judgment, fear, and perception.

In addition, Deborah (2017) conducted a study in Ngora Town Council, Ngora District, and Eastern Uganda on the effects of drug misuse on students' academic performance in a sample of senior secondary schools. During the investigation, the researcher used a straightforward random sample methodology along with both a qualitative and quantitative data collection strategy. The results showed that responders included both men and women. The fact that the investigation's unit of inquiry included 25 school students, a religious leader, 15 community members or parents, and 10 teachers, for a total of 50 respondents—the bulk of whom were students—also came as a surprise. The study's research methods included both descriptive and analytical ones. Because data could be simply evaluated using frequency counts and percentages resulting from the answers provided in the questionnaires, the research designs were adequate. According to the report, there is a strong need to prevent drug use in order to keep most families together and prevent poverty, child neglect, and school dropouts. According to the study, substance use increases the risk of developing chronic diseases, causes early marriage, poor levels of education, high school dropouts, higher rates of ignorance, family neglect, poverty, and family dissolution. The author came to the conclusion that although it may seem hard to completely eradicate the drug problem, there are practical methods that may be taken to lessen drugs' influence on society. It would be foolish to dismiss the risk posed by medications.

Additionally, Candido et al. (2018) conducted a study on drug usage among medical students [12]. The study used a descriptive-exploratory strategy, and the Scientific Electronic Library Online (Scielo) and the Medical Literature Analysis and Retrieval System Online were used as the bibliographical references in the database (Medline). These portals were accessed on June 28, 2017, and the following English search phrases were entered: "medical students, drugs, and Brazil." The following keyword combinations were used in a search for references in Portuguese: "estudantes de medicina e drogas." The papers chosen for this review had no time restrictions. A total of 48 references were found during a Medline search using English keywords. The search on SciELO turned up 54 references, including 32 in Portuguese and 22 with English keywords.

Out of the 102 references discovered, all literature reviews, studies without Brazilian medical students as part of their sample populations, and studies that did not specifically evaluate drug usage were all disregarded. 79 papers were excluded as a result of this approach. Seven of the remaining 23 references were duplicates and were consequently ignored. Finally, this literature evaluation comprised a total of 16 papers, all of which were read in full. There were determined to be 99 articles in total, 16 of which were chosen for this review. After examining all 16 publications, it was discovered that there had been more scientific research done on the topic than there had been in the previous century. The majority of these investigations (75.0%) were undertaken in Southeast cities, with a focus on So Paulo, where nine studies (56.2%) were completed; only three studies (18.7%) were completed in the South, and only one (6.2%) in the Northeast. There were no publications on the topic from the North or Central West areas.

Regarding the technique, all of the chosen publications were cross-sectional, with only two (12.5%) being prospective and 14 (87.5%) being retrospective. Out of those, 12 studies (75.0%) aimed to determine the prevalence of legal and illegal drug use among medical students as well as the conditions and risk factors that may contribute to it. The other research had more focused objectives, like evaluating the relationship between marijuana and ether sprays, or lança-perfume in Portuguese, and determining how medical students responded to peer substance abuse [13]. All information was gathered via questionnaires that were validated and translated into Portuguese.

According to the research found [14], alcohol was consistently identified as the drug that medical students used the most. Although smoking has become less common during the past few years, some studies nevertheless show that tobacco is the second most commonly used substance [15,16]. Marijuana, solvents, ether sprays, and anxiolytics were the illegal substances that were used the most frequently. With the exception of tranquilizers, the male demographic has shown a propensity to consume higher levels of all types of medications. As the program advanced, it was discovered that drug use among medical students was becoming more prevalent. This could be due to the inherent stress of medical school activities. Students who don't use psychoactive substances are more likely to live with their parents, be employed, disapprove of drug use, and follow their religion. Even though they are aware of the potential harm, medical students frequently take both legal and illegal drugs.

[17] did research on the impact of substance usage on health officers' and medical students' academic performance.

A cross-sectional study involving 248 sampled medical and health officer students was carried out from September 16 to September 20, 2008, utilizing the stratified random sampling method. The necessary sample size was calculated using a method for a single population percentage with a 95% confidence interval and taking the habit of chewing khat, which accounts for 30% of the population. Self-administered structured questionnaires were used to collect data, and SPSS for Windows version 16 was used for analysis. When appropriate, statistical association was performed with a 5% threshold of significance. 239 out of the 248 subjects who were sampled answered, yielding a response rate of 96.4%. Among them, 207 (86.6%) were men, 115 (48.1%) were Oromos, 129 (54.0%) were Orthodox Christians, 214 (89.5%) were between the ages of 20 and 24, and 152 (63.6%) were medical students. The study subjects' average age was 23 (plus or minus 1.6) years. At the time of writing, 33.1% of people were chewing khat. Khat use was found to be more prevalent among men (37.2%) than women, Muslims (71.8%) than other religions, Oromos (40.9%) than other ethnic groups, people in the age range of 25 to 30 (86.7%) more frequently than other age categories, and final-year medical students (61.5%) than other class years.

Presently, 21.3%, 36.4%, and 87.9% of people smoke cigarettes, drink alcohol, and drink coffee, respectively. Approximately 68% of those who chewed khat also smoked cigarettes. Coffee consumption among chewers is 88%. After chewing khat, 40% of them would drink beer, and 8.9% of the chewers would use hashish, diazepam, or shisha while doing so. The consumption of khat was significantly associated with high income (p 0.001), smoking, and coffee drinking (p 0.05). The mean CGPA of chewers (2.770.43) and non-chewers (2.890.40), smokers (2.700.45) and non-smokers (2.90.4), and alcohol users (2.770.44) and non-users (2.90.4) differed statistically significantly (p0.05). However, there was no significant difference in mean CGPA between coffee users and non-users (p = 0.439, 95% CI) (0.23-0.01). This demonstrates how drug usage affects pupils' academic performance negatively.

Despite the fact that khat chewing promotes mental alertness/concentration and keeps students awake [18,19], the accompanying valuable time and energy waste for the khat ceremony and

maybe "Mirkana Chebsi" is one cause. In conclusion, it was discovered that various drug uses were very common. Significant correlations were found between khat chewing, cigarette smoking, coffee consumption, and alcohol consumption and factors like sex, age, religion, and income. This study also demonstrated that university students' academic performance is significantly harmed by khat chewing, smoking, and alcohol consumption.

Other related literatures reviewed include;

A study on the effects of teen substance misuse on academic performance in institutions of higher education by [20]. The study's methodology was survey research. Three colleges of education in the state's selected departments and a sample of 150 teenage students were chosen at random. To gather pertinent data, the Drug Habit Inventory [19] was employed, and objective exams on general studies and education were also used to evaluate the scholastic achievement of these pupils. A t-test was used to assess the data and determine whether the different hypotheses were correct. The results demonstrate that there is a considerable difference in academic performance between drug-abusing pupils and those who do not, as well as a significant gender difference among teenage substance abusers [21,22]. The following recommendations were made in light of the findings regarding the need to include campaigns against substance use in the health education curricula of colleges of education, with a focus on the negative effects of the substances used and the establishment of counseling centers for drug control: Every college of education should have counseling centers that are run by the government or by private individuals.

CONCLUSION

The chosen papers were examined, and it was found that despite medical students' awareness of the negative effects, there was a high use of psychoactive substances. This type of attitude may be caused by a number of factors, most notably the stress they experience while in the medical program. However, it is challenging to understand the true origins of this phenomenon due to the dearth of longitudinal research in the literature. According to the study, drug usage by people in general and medical students makes them less productive in their lives. Therefore, it is essential to draw the conclusion that those who engage in this practice will not be able to acquire the necessary skills and knowledge needed to effectively carry out their duties once they graduate

from the health teacher education institutions based on the study's findings that substance use among medical students outcomes in health issues that arise from delinquent behavior and low encouragement towards learning. In order to help medical students attain total growth, which is what the educational institution is aiming for, this behavior needs to be closely monitored.

RECOMMENDATION

The following recommendations are provided based on the findings of the review:

1. In order to provide the pupils with precise preventative measures and therapies, comparative research should be conducted to track them throughout time.
2. To prevent situations of persistent academic performance deterioration, medical institutions should have appropriate rules and regulations that forbid drug use and abuse.
3. To prevent medical students from consuming and utilizing drugs, it is important to make them unavailable to them.
4. Medical students should be made aware of the risks associated with drug use and misuse in order to deter them from doing so.

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