The Relationship between Drug Abuse and Academic Stress among Egyptian Undergraduate and High School Students

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Abstract

This literature review examines the relationship between drug abuse and academic stress among Egyptian undergraduate and high school students and other young people across the globe. The review also discusses the origin and impacts of drug abuse, as well as the bidirectional, strong relationship between drug abuse and academic stress. The findings showed that drug abuse is a persistent global problem, with family dysfunction, social pressure, and psychological factors being the major contributors. On the other hand, academic stress is mainly influenced by factors such as family and peer pressure, workload, and exam-related pressures. It has been found that students experiencing high levels of academic stress, e.g., practical educational students in Egypt, are more vulnerable to drug use. Additionally, the study emphasizes the persistent need for implementing intervention and prevention strategies in Egyptian schools and universities. The conclusion calls for the implementation of comprehensive programs to address these two issues, along with further empirical research to identify the best intervention strategies specially tailored to Egyptian students.

I. Introduction

Drug abuse, often referred to as substance abuse, is the intentional misuse of drugs for non-medical purposes. This abuse's definition may vary based on many factors, e.g., legal contexts, but it generally involves using a drug harmfully [1, 2]. The problem of drug abuse has been a persistent challenge globally [1, 3].

Drug abuse has many harmful consequences that negatively impact the health and security of nations. In addition, it is detrimental to individuals' physical and mental health. It was estimated that those who abuse drugs often experience a range of concurrent medical, psychological, and social conditions [1].

The history of drug abuse in Egypt can be traced back to ancient times, with the abuse of alcohol dating back to the Pharaonic era [4]. In modern times, drug abuse has been on the rise since the 1970s [5]. The first study conducted to investigate the prevalence of drug abuse in Egypt, published in Arabic, showed that 6.2% of the population reported using drugs at least once [3]. Subsequent studies confirmed the increased number of abusers in Egypt [5].

Stress, on the other hand, occurs, according to the stress and coping theory, when the demands of the situation exceed the individual's resources. In other words, stress occurs when situational challenges or stressors are overwhelming and beyond an individual's ability to cope effectively [6]. Concerning the specific type of stress being discussed, academic stress is defined as physical and emotional reactions resulting from academic demands exceeding students' adaptive capacities. It is reported that around 10–30% of students experience academic stress at some point during their academic journey [7].

Students experiencing academic stress often exhibit symptoms such as anxiety, depression, lack of concentration, sleep disturbances, loss of appetite, a state of remorse, poor academic performance, and other physical and mental disturbances [8-10]. Understanding academic stress is crucial to assessing its relationship with drug abuse and developing effective interventions.

The primary aim of this literature review is to examine the existing literature on the relationship between drug abuse and academic stress among Egyptian students. Specifically, the review aims to identify the prevalence rates, essential factors, and impacts of drug abuse on academic stress. In addition, this review discusses the efficiency of prevention strategies and interventions.

This literature review will be organized into key sections. Firstly, the review will begin by providing an overview of drug abuse and academic stress, discussing them in detail. Secondly, it will focus on the relationship between drug abuse and academic stress among Egyptian students. Then, it will discuss prevention strategies and current interventions. Finally, the literature review will identify gaps in the literature and propose recommendations for future research.

Understanding the relationship between drug abuse and academic stress is critical, as it is related to several matters. Both issues—drug abuse and academic stress—have a widespread impact on both students' well-being and academic performance. Identifying the relationship would show how drug abuse and academic challenges are connected, providing critical insights. Additionally, these insights are important for creating prevention strategies and interventions that help students deal with academic stress.

In addition, understanding the matter is specifically beneficial for Egyptian students as it discusses Egypt's sociocultural context. Focusing on Egyptian students, unique factors related to the Egyptian cultural context can be identified and, as a result, used to articulate accurate interventions that perfectly address the issue. Some factors may include educational systems, support institutions, and common social norms.

Although there were many previous studies discussing the relationship, the Egyptian context has not been adequately investigated. Despite being limited, few research articles highlighted drug abuse in Egypt among students, while fewer discussed the relationship between drug abuse and academic stress in Egypt. Nevertheless, the issue is still vague, with the majority of Egyptians unaware of drug abuse among Egyptian students.

As a result, one of the aims of the research is to raise awareness of such a critical matter. In addition, one common gap in the literature, which this study aims to fill, is presenting the findings without any proposed solutions or actual recommendations for those students, either in terms of interventions or initial preventions.

II. Drug Abuse Background

i. Understanding the Term Drug Abuse

Drug abuse, also known as substance abuse, is the detrimental use of psychoactive substances, meaning that these substances can affect the brain and alter one's mood, thoughts, feelings, perceptions, and behavior. The issue of drug abuse has severe implications for individuals, communities, and even societies worldwide [1]. Although the concept of drug abuse is widely known, its definition differs across different perspectives, depending on diverse cultural, legal, and religious frameworks [11, 12].

From a medical overview, drug abuse is often defined as the intentional misuse or excessive use of drugs for non-medical purposes, which further leads to physical, psychological, and social harm [13]. With regard to the legislation surrounding the issue, drug abuse in such a context refers to the controlled substances within a particular jurisdiction. For instance, some locations permit drug abuse due to religious beliefs or traditions; in this case, the drug use is licit, meaning that it is regulated and, thus, legal [14]. However, "illegal" or "illicit" drug abuse

refers to the unauthorized distribution, consumption, or even possession of drugs in a way that would harm people [15].

Further, in some religions, drug use is permitted as some drugs are used in religious ceremonies, rituals, and traditions [16, 17]. There are more contexts and factors affecting the definition and conception of drug abuse. For instance, some drugs are consumed because they have been socially approved, e.g., alcohol, nicotine, and caffeine [16].

Recently, drug abuse has been a persistent, global challenge. The problem poses a great danger to individuals and societies worldwide. Approximately 29.5 million people worldwide suffer from drug use disorders [18]. In regard to Egypt, drug abuse has been increasing since the 1970s [5]. The first study in Egypt, published in Arabic, examined the occurrence of drug abuse and found that 6.2% of the population had used drugs at least once [3]. Subsequent studies confirmed the growing number of drug abusers in Egypt [5]. This demonstrates the widespread prevalence of drug abuse both globally and specifically in Egypt.

ii. History of Drug Abuse in Egypt

The history of drug abuse in Egypt can be traced back to ancient times, with the abuse of alcohol dating back to the Pharaonic era [4, 19]. It was estimated that barley beer, rather than wine, is probably the oldest drink in history. The origin of this beverage dates back to 3400 BC in predynastic Egypt, relating to a period before the normally recognized dynasties [4]. However, more recent studies have discovered older beverages. It is claimed that the oldest beverage in history is mead [20].

Barely beer has soon become the national drink in Egypt. The king and nobles had their own breweries, allowing them to produce their own beer. However, the common people, including the poor, had to purchase their beer from beer shops known as the "house of beer." These shops were numerous and spread across the country [4].

The production of wine in predynastic Egypt also began early, dating back over 3000 years BC. Since domestic grape wine production was insufficient to meet population demand, the Egyptians turned their attention to making fruit wines, with figs, pomegranates, and dates being common fruits back then. Additionally, mixed or special wines were available. Further, the Egyptians flavored their wines by incorporating the juices of rue, hellebore, and absinthium. These illustrations provide evidence of the sophisticated drinking culture the ancient Egyptians had.

iii. The Most Commonly Used Types of Drugs

In Egypt, there were few studies attempting to find the common drug types, mainly between undergraduate students. Generally, it is estimated that the most commonly used drug worldwide is cannabis [18]. In 2020, more than 209 million people, aged 15–64, had used cannabis in the past year, representing more than 4 percent of the whole world [18].

In 2010, it was estimated that, following cannabis, amphetamine-type stimulants were the next most prevalent illicit drugs, followed by opiates and cocaine. Nevertheless, regarding the level of harm associated with drug use, opiates are considered the most detrimental [18].

Concerning Egypt, a study has shown that the most commonly used type of drug is cannabis [3]. Another study showed that the greatest type of addiction was smoking, with 16.8% of the student sample population being smokers. The study also showed that smoking prevalence was significantly higher in males (26.1%) than females (1.4%) [21]. Further, another study showed that tobacco was the most commonly used substance by Egyptian adolescents. However, it showed that tranquilizers ranked as the most frequently abused illicit drugs [1].

Another study, done among Sohag University students, found that cannabis was the most commonly used substance, with about 24.3% of the participants reporting previous use. This was followed by tramadol, alcohol, benzodiazepines, and

heroin with percentages of 8.9%, 13.5%, 6.8%, and 1.4%, respectively [22].

iv. The Factors Causing Drug Abuse

Drug abuse is a complex issue with multiple factors that influence it. The main factors being discussed in this section are environmental, sociocultural, and psychological factors.

Among the most crucial factors affecting the occurrence of this problem are environmental factors. These types of factors are mainly represented in family dysfunction, previous parental substance abuse, and poverty [23, 24]. Poverty and its associated aspects, such as unemployment and limited educational opportunities, were estimated to be among the main reasons for drug abuse [24-26].

Next, sociocultural factors, in addition to their important role in shaping attitudes and norms about drug abuse, play a pivotal role as they highly influence the issue. Firstly, social and peer pressure are among the most significant factors that impact substance use patterns [27, 28]. Further, cultural beliefs do influence abuse rates in society [29].

Psychological factors also contribute to drug abuse through various mechanisms. People may be resorting to drugs due to various psychological issues, such as depression, anxiety, or trauma. Drug abuse usually provides temporary relief or escapism from emotional distress [30-33].

v. Neurobiological Mechanisms of Drug Abuse and Addiction

Drug abuse and addiction have profound neurobiological underpinnings [34-36]. The brain's intricate circuitry and chemical signaling play a crucial role in shaping addictive behaviors. Substance abuse disrupts the balance of the brain's reward system, leading to long-lasting changes in neural functioning [34, 36]. By definition, addiction refers to compulsive drug-seeking and consumption despite negative consequences [35].

The brain's reward pathway plays a critical role in addiction. The main processes happening in the brain depend on the activation of this pathway. Drugs activate that pathway, leading to the release of dopamine, a neurotransmitter associated with pleasure and reward. The activation of the reward pathway reinforces drug-seeking behaviors and creates an association between drug use and pleasure, or so-called 'yumminess,' experience. Over time, the brain becomes dependent on the drug to maintain dopamine levels, resulting in addiction [37, 38].

Drugs such as cocaine, amphetamines, and opioids directly stimulate the release of dopamine. This flood of dopamine reinforces drug-taking behaviors, contributing to the cycle of addiction. The brain adapts to these changes by reducing dopamine receptors and dampening the natural reward response, leading to tolerance and the need for higher doses to achieve the desired effect [37, 39, 40].

III. Stress Background

i. Understanding the Term Stress

The French physiologist Claude Bernard claimed that "stress" is anything that seriously threatens homeostasis (from the Greek homoios, or similar, and stasis, or position), the physiological and psychological maintenance of stability and balance in the internal environment [41, 42]. Despite the prevalence of stress in modern society, there is no universally agreed-upon, stable definition of stress.

Its definition differs depending on who is asked and what one's discipline is. For instance, economists often define stressors in social or economic contexts, such as poverty. On the other hand, psychologists tend to focus more on individual-level life events such as divorce, physical abuse, and/or job loss. The variation in the definition and conceptualization of stress illustrated above highlights the interdisciplinary nature of stress research [41].

One commonly known definition of stress is the one proposed in the stress and coping theory, also known as the transactional model of stress and coping,

presented by Richard Lazarus and Susan Folkman in the late 1970s. According to this definition, stress occurs when the demands of the situation exceed the individual's resources. In other words, stress occurs when situational challenges, or stressors, are overwhelming and beyond an individual's ability to cope effectively [6]. The term is used to denote, as mentioned, the specific physiological response that organisms mount to nonspecific demands, including negative challenges such as starvation and infection and positive challenges such as foraging and mating opportunities [43].

There are mainly two types of stress: acute stress and chronic stress. Acute stress refers to short-term and immediate stress reactions in response to a specific situation. These situations are sudden and unexpected and are among the main causes of stress. Examples of these situations are the death of a loved one, a job loss, or a natural disaster. On the other hand, chronic stress is an ongoing and persistent stress that persists over an extended period. Examples of chronic stress are long-term academic demands, financial problems, relationship issues, or work-related stress [44, 45].

There are also other types of stress, such as daily hassles, traumas, non-events, and macro-stressors. Daily hassles refer to minor, everyday stressors and irritations that people encounter in their daily lives. Further, traumas are severe stressors that can be physical or psychological. Non-events are events that were expected to happen but did not, such as not getting a promotion. Additionally, macro-stressors are large-scale events that affect entire communities, such as wars or economic recessions [45].

ii. Factors Contributing to Stress

Factors causing stress are numerous, and there are many categories for classifying them. In this review, they will be classified into environmental, academic, personal, and social categories.

Firstly, environmental factors refer to the external circumstances that may cause stress. These factors include noise pollution, overcrowding, and living in unsafe neighborhoods [46, 47]. Another type of stress is academic stress, with the main stressors being family and peer pressure. In addition, the school's usual aspects such as workload, deadlines, and exams also play a role [48, 49]. Academic stress is thoroughly discussed later in the paper.

The third type is personal stress—personal factors involve personal characteristics and experiences that may influence stress. Some examples are perfectionism and self-imposed pressure [50]. Also, other stressors such as health issues, financial difficulties, and relationship problems are considered personal stressors [51].

Lastly, social stressors refer to social events that affect one's mental state. Socially stressful events, e.g., bullying, loss of a loved one, and psychological abuse, are estimated to contribute to psychopathology [52-55]. There may be more factors and categories of factors causing stress.

iii. Impacts of Stress

Stress has many severe negative impacts on various aspects of people's lives. Generally, stress's negative impacts interfere with the overall quality of life. These impacts manifest in two main ways, affecting one's physical and mental well-being.

Physically, chronic stress can lead to a range of health problems [56-58]. It is commonly known that stress causes increased blood pressure and heart rate [59]. Additionally, it has been estimated that the fight-or-flight response, which is a physiological reaction that occurs in response to a perceived threat and is often called the acute stress response, triggers rapid changes in the nervous, cardiovascular, immune, and endocrine systems. Further, cortisol and catecholamines are produced to increase energy availability, in addition to other conditions. These changes happen due to complex processes in the body [56].

Mentally, stress highly affects individuals' well-being. It usually causes conditions such as anxiety, irritability, and mood swings [41]. Chronic stress specifically causes mental health disorders such as anxiety and depression [42, 56, 60, 61]. In addition,

stress can affect memory and concentration, which may negatively impact academic performance [62, 63].

Although stress is known for its severe negative consequences, stressors may have positive impacts at mild levels. Positive impacts of stress include positive self-concept changes, beneficial changes in relationships with others, and personal growth. These impacts lead individuals to overcome challenges, meet deadlines, and eventually achieve their goals [64]. In addition, stress may help individuals build resilience and develop effective coping mechanisms that will later aid stress management [65]. However, the stress-positive impacts are context-dependent and vary among individuals. What may be motivating and beneficial for one person could be overwhelming and detrimental to another.

It is worth mentioning that there are even more types of stress. The National Scientific Council on the Developing Child has estimated three categories of stress. These categories include positive, tolerable, and toxic stress. Positive stress occurs after short-lived undesirable events, such as a child losing a toy or meeting new people for the first time. This type causes minimal functional changes and can be managed with the help of caring adults. Secondly, tolerable stress is more intense but still relatively short-lived. Examples of it are the death of a loved one or a natural disaster. With the support of a caring adult, tolerable stress can also be overcome. Lastly, toxic stress refers to stress resulting from intense adverse encounters suffered across an interval of time, such as abuse or neglect. However, appropriate support and intervention can help restore the stress response system back to its normal baseline [58].

IV. The Relationship between Drug Abuse and Academic Stress in Egypt

Drug abuse and academic stress have a bidirectional relationship in between, meaning that both have significant impacts on each other. These impacts are severe and detrimental to students' well-being, academic performance, and the overall quality of their lives.

These two variables have a positive feedback system in between. The concept of a positive feedback system arises in situations where the effects of one factor intensify the effects of the other factor, creating a cycle of reinforcement. For example, academic stress may cause anxiety and pressure, leading students to turn to drugs in an attempt to cope with the problem. However, instead of treating the problem, drug abuse further exacerbates academic stress, as it has many detrimental effects, e.g., affecting memory and concentration (62, 63). This would make the situation even more challenging for students.

Several studies have been made to investigate the relationship between drug abuse on academic stress, especially among youth, i.e., students. Acute administration of the most commonly abused drugs that activate brain reward pathways, e.g., alcohol, nicotine, cocaine, amphetamines, and marijuana, also activates brain stress pathways (66).

It has been shown that drug abusers, in contrast to non-drug abusers, show higher frequencies of psychological, cognitive, and physiological stress symptoms. Regular drug abusers particularly exhibit prominent cognitive stress symptoms (67).

Additionally, it has been shown that drug abuse's prevalence is lower among students in elementary school compared to those in high school. Despite this fact, there was an increase in abuse among students in the 8th grade of elementary school and the 9th grade of high school. Those two grades represent the finishing and starting grades of the two major school cycles in Brazil (67).

Despite the fact that it is more commonly known that drugs may lead to the development of long-term stress, it has also been shown that in some cases, the use of drugs decreases stress levels. For instance, exposure to opiates decreases cortisol levels in humans. Cortisol is a hormone associated with stress response, so opiates have an effect on reducing stress hormone levels in humans (66).

Additionally, prolonged and chronic use of drugs, as well as withdrawal from them, result in a

downregulation of the brain reward system. This opposes the main purpose of drug abuse, which is to seek and increase dopamine levels in the brain (66).

It has also been estimated that there is an inverse relationship between drug abuse and academic performance on standardized tests, with students under the influence of drugs having lower academic achievement. It was shown that students using cocaine tended to have significantly lower academic achievement on standardized tests (68).

Concerning how stress impacts drug abuse, in this review, the impacts are categorized into two main groups: direct and indirect. The direct effects of stress on abuse refer to situations when stress is the main reason for one's decision to abuse drugs. Drug abuse in this situation acts as a coping mechanism to help escape this stress.

On the other hand, indirect effects involve stress as a risk factor. Stress is associated with many issues, e.g., lack of academic performance, workaholism, eating disorders, and addiction to sex, that may lead to drug abuse (69-72).

Academic stressors, specifically, create fertile ground for the development of drug abuse. It has been shown that stress leads to drug use, especially in young adolescents (72, 73). Further, in a survey, students who reported engaging in drug use showed higher levels of depression and anxiety compared to those who did not (74).

A study claimed that the reasons affecting drug abuse in school can be categorized into three main pathways: peer-group sorting, students seeking to "fit in" at schools, and anxiety management (75). These three reasons compellingly explain why students may engage in drug abuse behaviors.

Firstly, peer-group sorting refers to the process by which students divide themselves into closely bonded peer groups, a seemingly frequent activity done by students because of school life. These groups are formed based on many factors, such as secondary school experiences, gender, ethnicity, and location. One main reason for this recurring action is the students' desire to gain acceptance as part of a specific group in school. Once students find their "group," they tend to "stick" together and form strong bonds throughout their school years (75).

An important part of this issue is group identities. Students have developed distinct identities such as academic achievers, sporty students, and hyper/naughty students, among others; this is usually done by the age of 14–15. The adoption, or rejection, of drugs becomes an important marker of identity between those groups. A 14-year-old female student mentioned that "There's all different kinds of groups [at this school]. Quiet people, loud people, and then blazers [cannabis users] like me!" (75).

In contrast to the "stars" and "sporty" students, the majority of "hyper''/''naughty" students came from low-income families, disengaged at school, and lacked connections to the main institutional markers of status and progress. Among these students, female students, in particular, who didn't feel part of the high-achieving culture at the school, adopted cannabis and engaged in other drug-use activities. These drug use behaviors represented alternative means of attaining status (75).

The second main pathway is the students' need to fit in at school. Those students may feel pressured and feel that schools are unsafe for them. For instance, students consistently report that school could be a "scary" place, and they were concerned with bullying, violence, and robbery—getting their phones and money stolen (75).

Some students would turn to smoking cannabis, for example, to appear "cool" and feel "safe" in school, especially if those students felt marginalized or disconnected from traditional measures of success. A 14-year-old female student stated, ''You smoke it [cannabis] for fun [but also] you wanna look bad. People think you're a bad boy or bad girl . . . With me they are cool and I'm safe with the boys here'' (75).

Lastly, students may turn to drugs to manage their anxieties. Students may abuse drugs to cope with anxieties related to schoolwork and to escape from

unhappiness in school. In this context, students usually abuse those drugs as a means to alleviate the pressures experienced in school (75).

Additionally, self and family pressure and a lack of social support would lead to drug abuse as a means to manage exam stress and escape the constant sense of failure. A teacher says, "One girl was caught recently sniffing solvents by her parents at home and she was the last person you would expect. People think you know which ones will be your future drug dealers and how many will do coke [cocaine]. With her it was pressure, pure and simple, she had a lot of expectations on her, from herself, her parents, the school and she had to find somewhere to escape it. She obviously couldn't raise it with anyone else so she dealt with it herself by getting high—this was going on for a long time we now know. This wasn't done with groups of friends, it was an outlet to alleviate pressure" (75).

The stress strengths differ with different schools, educational systems, majors, and school years. A study has shown that educational stress is much more common among medical students and is higher than the stress experienced by engineering students. Additionally, stress was found to be higher among final-year students than among first-year ones (76).

In regard to the Egyptian context, the same research findings are applicable to Egyptian students. Generally, abuse in Egypt has been a persistent challenge that the government is trying to stop. In 2020, among the largest quantities of opiates seized, Egypt ranked 15th in opium with 0.3 tons and 13th in heroin with 1.3 tons. In the same report, Iran ranked first in both, with 916 tons of opium and 31 tons of heroin. The United States ranked 5th in opium with 4.6 tons and 4th in heroin with 7.2 tons (18). For synthetic cannabinoids, in 2019, Egypt ranked first, followed by Turkey and the Russian Federation (18).

In an Egyptian study done among Mansoura University students, three groups of students were involved: practical, theoretical, and medical students. The study showed the percentage of students in the practical educational program was higher than in the other two programs in both drug

abuse and dependence (22). Although the study didn't mention the reasons behind this, some potential reasons may be practical performance pressure, workload, and technical challenges. Opposing these findings, a study claimed that there aren't significant differences regarding the type of college (77).

Additionally, it has been found that, among Kafr El-Sheikh University students, stress was a primary reason for commencing and continuing smoking (1). Additionally, a study showed that among substance abusers, 33.1% experienced depression, 25% experienced anxiety, and 14.8% experienced stress (76). Further, it has been reported that experiencing depression, anxiety, hallucinations, stress, and suicidal thoughts would make individuals vulnerable to developing substance abuse behaviors.

V. Intervention and Prevention Strategies

In this review, interventions and prevention strategies for drug abuse and academic stress are discussed. By definition, an intervention strategy is a set of actions created to tackle a certain issue. On the other hand, a prevention strategy refers to a set of actions implemented to stop the occurrence of an issue [78, 80].

Starting with drug abuse intervention, intervention workshops and programs have been aimed at preventing or reducing the negative consequences associated with drug abuse [78, 80]. There are several types of abuse interventions: behavioral therapies, medication-assisted treatment (MAT), support groups, family therapy, and holistic interventions [80-85]. However, there may be more types.

Behavioral therapies refer to those focusing on behaviors, thoughts, and attitudes related to drug abuse. There are many types of therapy, such as cognitive behavioral therapy (CBT), motivational interviewing (MI), and contingency management (CM) [81]. Firstly, CBT refers to a therapeutic strategy that mainly focuses on altering negative

thoughts and behaviors [86]. Secondly, MI refers to a strategy that enhances motivation and readiness for change [87]. Finally, CM is an intervention type that primarily relies on a reward system to reinforce desired behaviors and discourage drug use. It may involve providing incentives, such as vouchers or prizes [88].

Secondly, MAT refers to the intervention process where both medication use and counseling and behavioral therapies are combined to fight drug use [83]. Some common medications are disulfiram, naltrexone, acamprosate, and buprenorphine [83].

Further, support groups offer a supportive environment where people can share experiences and find peer support. Some examples of these groups are Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA) [82].

Family therapy, another intervention method, involves the family members involved in the intervention process. This intervention type mainly helps in improving communication and resolving conflicts [89, 90].

Lastly, holistic intervention refers to a comprehensive approach that focuses on all aspects of human well-being, including emotional, physical, social, and spiritual well-being [80]. Within holistic intervention, activities like art therapy, music therapy, dance/movement therapy, and drama therapy are utilized [80, 91].

Drug abuse prevention strategies aim to prevent the occurrence of drug abuse. The types discussed are universal, selective, and indicated preventions.

Firstly, universal prevention mainly targets the public. This prevention aims to raise awareness among the population. It provides the information and skills needed to prevent the abuse issue [92, 93].

Secondly, selective prevention refers to the process of targeting specific groups of people at higher risk for drug abuse [93]. This is determined by many factors, such as family problems, drug-using peers, and poor schooling [94].

Finally, indicated prevention is made for individuals who have already shown early signs of drug abuse or are at higher risk due to certain factors [93]. There may be more types of prevention strategies. The course time of intervention and prevention strategies and their sessions highly differ depending on the specific type.

Concerning academic stress intervention strategies, these strategies help students alleviate the stress caused by academia. These interventions focus on developing coping skills and, as a result, enhancing the overall quality of life. Coping refers to the efforts one may make to handle stressors. It helps students successfully manage stressful situations. Coping strategies act as adaptive responses to mitigate the negative impact of stress [95].

A successful type of stress intervention is stress management workshops [96]. It has been found that to reduce academic stress in higher institutions in Ghana, some solutions are effective. Those solutions included the following practices: setting realistic academic goals, scheduling academic work, maintaining healthy eating and sleeping habits, exercising, maintaining social relationships with family and friends, listening to music, and meditating [97]. There may be other types of interventions and activities to cope with academic stress.

With regard to prevention strategies for academic stress, one prevention strategy emphasizes self-regulation. Self-regulation refers to the capacity to be able to regulate one's emotions and manage internal states effectively. It has been estimated that individuals who struggle with ineffective self-regulation skills are at higher risk of developing mental health disorders [98].

In addition, mindfulness is also a helpful practice for managing self-regulation. The concept refers to being aware of the present moment, including feelings and surroundings, without judgment. Mindfulness involves paying attention in a purposeful and non-judgmental manner. It has been

estimated that by practicing mindfulness, individuals can reduce stress [98]. There may be other types of stress prevention strategies.

In Egypt, there are a plethora of drug and alcohol-treating hospitals, commonly named sanatoriums. These centers are available in most governorates. Besides, Egypt has the Fund for Drug Control and Treatment of Addiction (FDCTA), whose main aim is to not only prevent and fight drug addiction but also finance prevention projects. Through the fund's assistance, Egypt has many unpaid programs [99].

The FDCTA tries to raise awareness mainly through the media. Recently, the organization launched a campaign named "You are stronger than drugs," where the presenter was Mohamed Salah, the famous Egyptian football player and a role model for many Egyptian youth. This campaign solely resulted in a 400% increase in the calls received by rehabilitation centers in the years 2016 to 2018 [99].

Although there are many intervention programs, there is a persistent need for more programs that are both intervention and prevention-oriented. In particular, there is a need for prevention programs in schools and universities to raise awareness and educate students about the harmful effects of drug abuse.

In regard to academic stress, there are many non-profit, unofficial, online initiatives that help students. However, there is a need for official, long-term, and sustainable solutions for those looking for quality mental healthcare [100].

VI. Discussion

In this study, the definitions of drug abuse and academic stress were discussed while focusing on the main predictors and severe impacts. Additionally, the relationship between drug abuse and academic stress was explored, shedding light on the complex interplay between these two important issues and their impact on student health and academic performance.

The findings highlighted that drug abuse is a persistent, global problem threatening countries worldwide [1, 2, 5, 13]. Also, the study showed that the main predictors of drug abuse were family dysfunction, poverty, social and peer pressure, depression, anxiety, and trauma, among others. Abuse provides escapism from distress [28-31]. Regarding academic stress, the findings indicate that among the main factors contributing to academic stress, family and peer pressure, workload, deadlines, and exams were prominent [46, 47].

The findings of this study indicate that there is indeed an obvious relationship between drug abuse and academic stress, both between Egyptian undergraduate and high school students and generally worldwide. It was shown that students experiencing high levels of academic stress were more susceptible to engaging in drug abuse as a coping mechanism. This finding is consistent with previous research that claims that academic stress acts as a significant risk factor for drug abuse among students [64, 65, 66, 67, 68, 69, 70, 72, 73].

An important finding indicated that the relationship between drug abuse and academic stress is bidirectional, with both issues affecting each other. Further, it was highlighted that the two issues have a positive feedback system in-between, which means that a student may abuse drugs as a stress-coping mechanism, yet this would intensify the main issue.

The review suggests that the main findings researched in the global context are also applicable to Egyptian students. The review found that in Egypt, practical educational students had higher percentages of drug abuse and dependence than those in medical and theoretical programs [75]. The review suggests that the main reasons for this are practical performance pressure, workload, and technical challenges. It has also been shown that stress was a primary reason for commencing and continuing smoking [1].

This study highlights the persistent need for and importance of intervention and prevention programs for Egyptian students, acting as a solution for both issues. The study emphasizes the importance of

implementing various intervention strategies, such as cognitive-behavioral therapy (CBT), medication-assisted treatment (MAT), and others, as well as prevention strategies, including universal prevention, selective prevention, and others. These strategies play crucial roles in the treatment of drug abuse and the management of academic stress [79, 81, 84, 85, 86, 91].

Despite the efforts taken by FDCTA and the fact that there are many sanatoriums, there is a lack of school and university programs to raise awareness and educate students about the drug's severe consequences [99].

The review also shows that there is a need for academic stress intervention and prevention programs. The majority of current organizations are non-profit, unofficial, online initiatives that help students. However, it is evident that there should be more official, long-term, and sustainable solutions for those seeking academic stress treatment [100].

Despite the promising findings and insights presented in this study, some limitations must be acknowledged. The study focused on a specific context, the Egyptian students, and may not be generalizable to other populations. Thus, further research should be done to explore any cultural factors if other nations are discussed. Additionally, some of the reviewed studies included biases as they relied on self-reported measures. These biases were mainly sampling, recall, stigma, and social-desirability biases.

VII. Conclusion

The literature review highlights the strong relationship between drug abuse and academic stress in Egypt, while mentioning global aspects, emphasizing their detrimental effects on student health and academic performance. This study showed that those two issues are influenced by many factors, e.g., family dysfunction, social pressure, workload, and exams. Students experiencing higher levels of academic stress, such as those studying in practical educational programs, are more vulnerable to drug abuse. For the sake of addressing these challenges, intervention and prevention programs are tremendously crucial to be implemented among Egyptian students, especially since there is a lack of both programs for both drug abuse and academic stress. Particularly, there is a persistent need for the existence of these programs within educational institutions. Hence, I recommend the implementation of comprehensive intervention and prevention strategies in schools and universities, raising awareness, educating people, and providing support. Fostering a sense of community within those schools will further improve the ability of students to cope with both drug abuse and academic stress. Additionally, further empirical research should be conducted to accurately identify the best intervention and prevention strategies for Egyptian students in particular.

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IX. References

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