

Prevalence of Drug Abuse and its Risk Factors among Attendees of Healthcare Centers in Saudi Arabia: A Systematic Review

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Abstract

Objectives: To investigate the prevalence and associated factors of drug abuse among the Saudi population. **Methods:** To locate relevant material, we searched PubMed, SCOPUS, Web of Science, and Science Direct thoroughly. The Rayyan QRCI was used during the procedure. **Results:** We included six studies with a total of 33222 patients, and 20,803 (62.6%) were males. Drug abuse prevalence ranged from 2.4% to 58.8%. The most common drugs used were amphetamine-cannabis benzodiazepine, Amphetamines & cannabis, Stimulants & cannabis, Heroin & alcohol, Khat chewing, and Marijuana & narcotic drugs. Patients' age, smoking habits, past medical history, and age at the beginning of drug use, male gender unmarried people, and Saudi nationals, used drugs at substantially greater rates. Interestingly, participants with higher education levels were more likely to use drugs such as amphetamines and cannabis while lower educational attainment were more likely to use Khat. **Conclusion:** When it came to substance misuse, the general Saudi population that visited health facilities had a pretty high rate. In light of these findings, we recommend carrying out additional research to obtain more precise and pertinent information about the incidence of substance usage in Saudi Arabia. To determine the incidence of morphine abuse across various populations, including healthcare professionals and people with chronic pain—such as sickle cell patients—we advised conducting additional research.

Keywords: Drug abuse; Substance abuse; Saudi Arabia; Systematic review.

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INTRODUCTION

It is common to consume psychoactive substances like alcohol, khat, and tobacco [1, 2]. 2.3 billion people drink alcohol currently, with young people (15–19 years old) making up 27% of current drinkers, according to the World Health Organization's (WHO) 2016 Global Status Report [3]. The primary cause of morbidity [4, 5] and the cause of almost 250 million disability-adjusted life years [6] in 2015 was the use of psychoactive substances. According to recent trends, the use of psychoactive substances has significantly expanded, particularly in developing nations like sub-

Saharan Africa [5], and it is becoming a bigger social and public health issue. Harmful drug use has contributed to disproportionately high rates of sickness and death in low-income countries along with poverty [7, 8]. Rapid changes in the economy, society, and culture are what are driving the rise in drug use.

The International Classification of Diseases and Health Problems defines drug dependency as a collection of physical, behavioral, and cognitive occurrences when substance use takes precedence over previously valued behaviors in an individual. Impaired control over drug usage is a result of psychological or psychic dependence.

However, tolerance and withdrawal symptoms are brought on by physiological or physical reliance [9].

A staggering 275 million individuals use illicit substances, including cocaine, amphetamines, opiates, and cannabis, according to the United Nations Office on Substances and Crime. The annual frequency of abusing illicit drugs reached 5.6% in 2016. 192 million people worldwide are said to abuse cannabis more frequently than any other substance [10]. The WHO reports that up to 168,000 people died in 2015 as a result of drug overdoses, with opioid overdoses accounting for the greatest number of deaths [10]. Saudi Arabia is regarded as an Islamic nation that follows Sharia law, which outlaws narcotics. For this reason, it is illegal to use or sell these medications. Furthermore, in Saudi Arabia, engaging in addictive behavior is frowned upon and socially unacceptable. The reporting incidence of substance addiction in Saudi Arabia is influenced by all of these factors [11]. The purpose of this systematic review is to investigate the prevalence and associated factors of drug abuse among the Saudi population.

METHODOLOGY

Study Design and Duration

This systematic review was conducted in accordance with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards [12]. The start of this systematic study took place in February 2024.

Search strategy

To locate pertinent material, a thorough search was conducted across four main databases: PubMed, SCOPUS, Web of Science, and Science Direct. We solely looked through English databases, and we considered each one's particular needs. The following keywords were transformed to PubMed Mesh terms in order to locate the pertinent studies; "Substance abuse," "Drug abuse," "Alcohol," "Psychoactive substance," and "Khat chewing." The Boolean operators "OR," "AND," and "NOT," matched the required keywords. Among the search results were full-text publications in English, freely accessible articles, and human trials.

Selection criteria

We considered the following criteria for inclusion in this review:

- Studies that analyzed the prevalence and associated factors of drug abuse among the Saudi population.

- Only studies that included patients admitted to primary healthcare centers (PHCCs), referral hospitals, or outpatient clinics.
- Only human subjects.
- English language.
- Free accessible articles.

Data Extraction

Two verifications of the search method's output were conducted using Rayyan (QCRI) [13]. By applying inclusion/exclusion criteria to the aggregated search results, the researchers evaluated the relevance of the titles and abstracts. Every paper that met the inclusion requirements was thoroughly scrutinized by the reviewers. The authors talked about methods for resolving disputes. A pre-made data extraction form was used to upload the approved study. The authors extracted data about the study titles, authors, study year, city, participants, gender, type of included participants, data collection tool, prevalence of drug abuse, most common drug used, and main outcomes. A separate sheet was created for the risk of bias assessment.

Strategy for Data Synthesis

The research's findings and components were qualitatively assessed by compiling summary tables containing data from pertinent studies. The most effective method of utilizing the data from the included study articles was selected after the data for the systematic review was gathered.

Risk of Bias Assessment

Using the ROBINS-I risk of bias assessment technique for non-randomized trials of treatments, the quality of the included studies was evaluated [14]. The seven examined themes included confounding, study participant selection, intervention classification, deviation from planned interventions, incomplete data, outcome evaluation, and choice of reported result.

RESULTS

Search results

The systematic search produced 622 study articles in total, of which 302 duplicates were eliminated. After 320 studies had their titles and abstracts screened, 291 were not included. After 29 reports were requested to be retrieved, 2 articles were not found. After screening 27 studies for full-text assessment, 11 were rejected due to incorrect study results, 8 were rejected due to incorrect population type, and 2 articles were editor's letters. This systematic review included six eligible study articles. A synopsis of the procedure for choosing studies is provided in Figure 1.

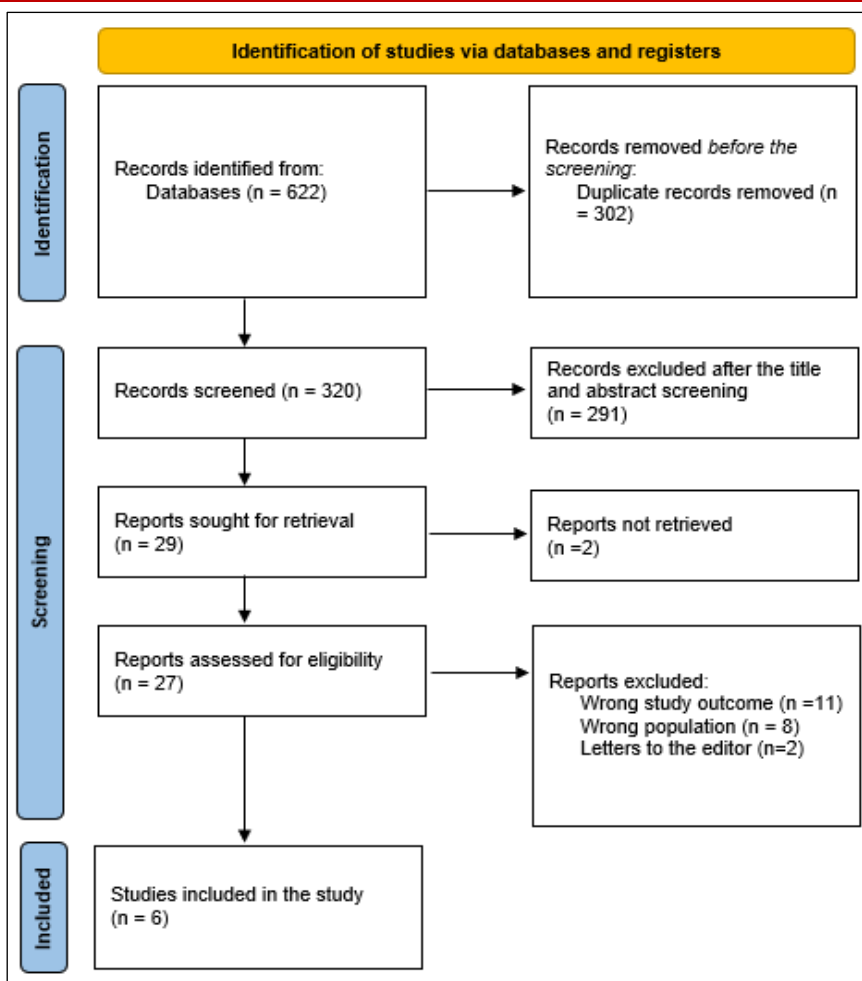


Figure 1: Study selection is summed up in a PRISMA flowchart

Characteristics of the included studies

Table (1) presents the sociodemographic characteristics of the included study articles. Our results included six studies with a total of 33222 patients, and 20,803 (62.6%) were males. All of the included studies were cross-sectional studies [15-20]. Three studies were conducted in Jeddah [15, 18, 20], one in Riyadh [16], one in Madinah [17], and one in Jazan [19].

Table (2) presents the clinical characteristics. Four studies collected data through interviews [15, 18-20], and two were self-administrated questionnaires [16, 17]. Drug abuse prevalence ranged from 2.4% [18] to

58.8% [20]. The most common drugs used were amphetamine-cannabis benzodiazepine [15], Amphetamines & cannabis [16], Stimulants & cannabis [17], Heroin & alcohol [18], Khat chewing [19], and Marijuna & narcotic drugs [20]. Patients' age, smoking habits, past medical history, and age at the beginning of drug use [16], male gender unmarried people, and Saudi nationals [17, 19], used drugs at substantially greater rates. Interestingly, participants with higher education levels [17] were more likely to use drugs such as amphetamines and cannabis while lower educational attainment were more likely to use Khat [19].

Table 1: Sociodemographic characteristics of the included participants

Study	Study design	Country	Participants	Mean age	Gender (Males)
Alodhayani <i>et al.</i> , 2022 [15]	A retrospective cross-sectional	Jeddah	200	NM	0
Aldlgan <i>et al.</i> , 2019 [16]	Cross-sectional	Riyadh	197	26.5	197 (100%)
Hussein <i>et al.</i> , 2015 [17]	Cross-sectional	Madinah	187	27.9	103 (55%)
Osman, 1992 [18]	A retrospective cross-sectional	Jeddah	27,516	29.04 ± 8.7	17,254 (62.7%)
Mahfouz <i>et al.</i> , 2015 [19]	Cross-sectional	Jazan	4305	10 to ≥ 65	3016 (70.1%)
Al-Qusibri <i>et al.</i> , 2017 [20]	Cross-sectional	Jeddah	817	15 to ≥ 19	265 (32.4%)

*NM=Not-mentioned

Table 2: Clinical characteristics and outcomes of the included studies

Study	Population	Tool	Prevalence of drug abuse	The most common drug used	Causes and main outcomes	ROBIN-I
Alodhayani <i>et al.</i>, 2022 [15]	Females attending outpatient psychiatric clinics	Interview-based	116 (58%)	amphetamine-cannabis-benzodiazepine	Patients' age, their smoking habits, their past medical history, and their age at the beginning of drug use were all determined to be important variables in both single and multiple substance use.	High
Aldlgan <i>et al.</i>, 2019 [16]	Patients attending a referral hospital	A self-administered questionnaire	100 (50.7%)	Amphetamines (30.9%) & cannabis (30.1%)	NM	Moderate
Hussein <i>et al.</i>, 2015 [17]	Patients attending a referral hospital	A self-administered questionnaire	72 (39%)	Stimulants (41%) & cannabis (33%)	Men, those with higher education levels, unmarried people, and Saudi nationals all used drugs at substantially greater rates.	Low
Osman, 1992 [18]	Patients attending outpatient psychiatric clinics	Interview-based	670 (2.4%)	Heroin (43.5%) and alcohol (16.1%)	The primary causes of alcohol misuse were: social psychological issues, namely sleeplessness, anxiety, and social anxiety (52.6%), peer pressure, and international travel (35.6%), and 11.5% did not provide a response.	Moderate
Mahfouz <i>et al.</i>, 2015 [19]	Patients attending PHCCs	Interview-based	1431 (33.2%)	Khat chewing	Males chewed khat at a considerably higher lifetime prevalence than females. The most significant independent predictors of khat chewing were gender, lower educational attainment, smoking status of the subject, and having a buddy who chewed khat.	Moderate
Al-Qusibri <i>et al.</i>, 2017 [20]	Patients attending PHCCs	Interview-based	480 (58.8%)	Marijuana & narcotic drugs	The likelihood of substance misuse was found to be heightened by gender and an unrested parental connection.	Moderate

*NM=Not-mentioned

DISCUSSION

In this systematic review, we have tried to provide an overview of the prevalence of current substance use in the Saudi population attending different healthcare centers. The reported prevalence of any substance (khat, alcohol, or amphetamine) ranged from 2.4% [18] to 58.8% [20]. Roba *et al.*, reported a 37.16% substance abuse prevalence among students in Ethiopia [21]. There could be a difference in the study population and study circumstances, which would explain the observed difference. This suggests that in order to postpone exposure and avoid exposure to many

substances, future research should concentrate on discovering a gateway substance for other substances.

All of the publications discovered statistically significant results for the potential risk factors of drug misuse, despite the variability of the study designs and substances under consideration. In this study, patient's age, smoking habits, past medical history, and age at the beginning of drug use [16], male gender unmarried people, and Saudi nationals [17, 19], used drugs at substantially greater rates.

Numerous research' conclusions [22, 23] indicate that addiction can occasionally result in the development of new addictions. It is important to think carefully before using opioids to treat pain, and their comprehension is required.

Family structures were found to have both positive and negative relationships with drug misuse among teenagers within the family factor domain. Paternal knowledge has been repeatedly found to be a protective factor against substance dependence, as reported in one study [24].

Interestingly, participants with higher education levels in this study [17] were more likely to use drugs such as amphetamines and cannabis while lower educational attainment were more likely to use Khat [19]. In Yemen and Saudi Arabia's southern regions, choking khat is a prevalent habit [25]. With a prevalence of up to 18.8%, Saudi Arabia demonstrated the highest level of khat usage among university students in a meta-analysis [26]. It is linked to psychological dependence to chew khat. The length of each session is closely related to the level of dependency. More than six-hour sessions raise the rate of reliance [27]. Amphetamine was found to be the most commonly abused illegal drug among Saudis in addiction treatment settings, ranging from 4% to 70.7%, and there had been an increase in amphetamine usage over the previous ten years, according to the review paper on alcohol consumption noted above. Peer pressure and psychological stress were found to be the most frequent causes that could result in substance addiction. These elements were also discovered to be responsible for drug abusers' relapse after receiving treatment [28]. Students whose family income was less than 5,000 SR per month had a lower frequency of illicit drug misuse (18%) than students whose family income was between 5,000 and 10,000 SR per month (46.3%) and more than 10,000 SR per month (35.6%) [29].

Together with the design-related constraints inherent in cross-sectional research, this systematic review and meta-analysis has a number of additional drawbacks. We used a review methodology that summarized the body of research on the risk and protective variables associated with drug misuse among Saudi citizens. There are some potential limitations to this work, even though this systematic review expands upon the findings of a thorough assessment of studies conducted in various settings. Because we limited our search to English articles and only extracted articles from the three search engines above, we might have overlooked some other crucial elements.

CONCLUSION

The purpose of this review of articles was to determine how common substance misuse is in Saudi Arabia. When it came to substance misuse, the general Saudi population that visited health facilities had a pretty

high rate. In light of these findings, we recommend carrying out additional research to obtain more precise and pertinent information about the incidence of substance usage in Saudi Arabia. In order to determine the incidence of morphine abuse across various populations, including healthcare professionals and people with chronic pain—such as sickle cell patients—we advised conducting additional research.

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