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RESEARCH ARTICLE

Drugs Abuse in Iraq for the Last Five Years

Duaa Ahmed Akhmais[1*], Baan.M .Al Jasani[2], Abeer Ahmed Akhmais[3]

[1] Department of Pharmacy, Faculty of Pharmacy, The University of Mashreq, Baghdad 10023, Iraq)
[2] Department of Pharmacology & Toxicology, College of Pharmacy, University of Basrah, Basrah, Iraq
[2] College of pharmacy, The University of Mashreq, Baghdad,10023, Iraq,
[3] Pharmacist at the Iraqi Ministry of Health

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***Corresponding Author:**

Duaa.a.akhmais@uom.edu.iq

ABSTRACT

Substance misuse is a pervasive global issue that governments, including those responsible for public health, grapple with. In Iraq, the issue is of recent origin and appears to be rapidly escalating. These circumstances have inspired all the pertinent individuals in the Iraqi community, both officially and unofficially, to actively voice their concerns and undertake actions aimed at addressing the issue through fundamental prevention (by means of widespread education), primary prevention (by implementing measures to decrease drug trafficking), secondary prevention (by providing treatment for drug users), and tertiary prevention (by rehabilitating those who have successfully recovered from drug abuse). This study was done as part of ongoing efforts to scientifically measure the extent of the problem in the country. This study is a retrospective cross-sectional analysis that examines the data collected by the Iraqi Community Epidemiological Workgroup from 2018 to 2022. It include the collection of pertinent data from the field of FORENSIC MEDICINE, including instances of abuse. Specifically, the data in this study consisted of records spanning from the year 2018 to 2022. The data clearly indicates a rising trend in the number of individuals affected by substance abuse. Substance misuse appears to be a significant social issue in Iraq. The numerical values pertaining to this issue are experiencing a significant and rapid increase. The exponential increase in the number of addicts in this manner signifies the absence of cognitive resilience throughout society.

INTRODUCTION

A toxicology screen is a diagnostic examination that assesses the approximate quantity and nature of both lawful and unlawful substances that have been consumed. It can be utilized for drug abuse screening, substance abuse problem monitoring, or drug intoxication and overdose evaluation (1).

Toxicology screening can be conducted expeditiously. The examination is typically conducted with either a urine or blood specimen. Occasionally, a specimen of saliva or hair may be utilized. The results can indicate the presence of either a single specific medication or a combination of multiple substances simultaneously. Additional testing may be necessary to ascertain the precise quantity of a certain medication present in the body and to validate the findings (2)

There are four main categories of toxicological screening: (3)

1. medical testing

2. employment drug testing
3. forensic analysis
4. athletics testing

Our review focuses on forensic analysis the primary objective of a forensic analysis is to examine, retrieve, record, and safeguard evidence in an inquiry. This initiative and its advantages also involve a meticulous examination of the incident and employ surveys to gather comprehensive data on how the breach or data loss occurred by assessing the causal relationship.

The primary utilization of forensic analysis includes: (4)

1. It assists in the retrieval, examination, and safeguarding of computer and associated materials in a manner that enables the investigative agency to present them as evidence in a court of law.
2. It is beneficial to hypothesize the purpose behind the crime and determine the primary perpetrator.
3. Developing protocols for a suspected crime scene to ensure the integrity of digital evidence collected.
4. Data acquisition and duplication involve the retrieval of lost files and partitions from digital media in order to extract evidence and verify its authenticity.
5. Facilitates rapid identification of evidence and enables estimation of the probable impact of malicious behavior on the victim.
6. Generating a comprehensive computer forensic report that provides a thorough account of the investigation procedure.
7. Preserving the evidence by maintaining the integrity of the chain of custody.

Narcotic drugs abuse in Iraq

Rising global issues Illicit drugs both mirror and exacerbate global tensions. The sources of these conflicts are evident: swift shifts in political alliances, diminished familial and communal unity, heightened rates of joblessness and inadequate employment, economic and social exclusion, and escalated criminal activity. While certain sectors, such as communications and technology, are experiencing significant advancements, the overall enhancement of people's quality of life has not met its full potential. This discrepancy is particularly evident given the increasing expectations of individuals who are aware that life may be improved.(5) The global changes facilitating the movement of people, goods, and money across countries at a low cost and with ease have also resulted in other repercussions. They have exacerbated the disparities and inequities around the globe, rendering them more conspicuous and less tolerable. Oftentimes, the disparities between the affluent and the impoverished expand. Furthermore, numerous emerging nations, particularly those in Africa and specific countries in Latin America and Asia, have largely been excluded from the advantages of global trade and investment expansions, resulting in limited economic progress.(6) This outcome has occurred in certain instances due to factors such as political instability, ethnic war, natural calamities, or economic mismanagement. The absence of economic advancement in many countries has resulted in a financial predicament, often leading to significant limitations on government services for the most vulnerable sectors of the population. The number (7).

Within this context, both the nation-state and its individual residents have become more vulnerable to the temptation of making money from the production and distribution of illegal drugs. Additionally, financial institutions and investors are more willing to accept profits made from these

illegal activities (8) .Presently, there exists a heightened awareness of the matters pertaining to illicit drugs and the illicit transportation of narcotics, beyond any previous period. The phrase "illicit drugs" include both narcotics and psychotropic meds (9). Among the more than 200 chemicals that are regulated, UNDCP focuses specifically on opium-heroin, coca-cocaine, cannabis, and amphetamine-type stimulants. These chemicals are deemed important for both emerging and industrialized nations (10).

Cultivating plants for pharmaceutical purposes

The manufacture of pharmaceuticals may be categorized into three distinct groups:

(a) Procedures that only depend on botanical resources.

(b) Processes that utilize a semi-synthetic approach, in which natural materials are partially altered using synthetic ingredients in order to get the end result.

(c) Procedures that only utilize artificial substances to manufacture ingestible medications.

Three instances of these substances are: (a) opium obtained from cultivated fields for individual consumption, (b) refined coca bush leaves employed in the production of cocaine, and (c) narcotics or psychotropic medications manufactured exclusively in laboratories or factories (11)

Overview of opium/heroin and coca/cocaine

Afghanistan, the Lao People's Democratic Republic, and Myanmar are the primary producers of opium worldwide. Additionally, there are several other countries that also cultivate opium, but in smaller quantities. The emergence of substantial communities of users and addicts in many nations signifies profound societal shifts that further complicate efforts to decrease drug manufacturing. Although social problems can be difficult to resolve, drug use has a significant impact on both the brain mechanisms that regulate individual behavior and the whole social environment. A portion of the illicit drug production that begins in remote areas of less developed countries is unavoidably redirected during transportation from the intended destination to local inhabitants. Often, the indigenous community serves as a reliable customer base for illegal manufacturing. (5) The boundary between producer and consumer countries is not absolute, and the conventional classification of countries as either producers or consumers is being superseded by the acknowledgment that consuming is a significant issue in production countries as well. For instance, in Myanmar, a prominent opium producer, authorities have documented a consistent rise in the misuse of opium and heroin since 1970. In Afghanistan, there was a significant increase in the growth of opium poppy in 1992, however the exact level of usage and addiction remains uncertain. Pakistan has approximately 650,000 individuals addicted to heroin, and there were no signs of the trend stopping.(11) Indigenous populations in the Andes have engaged in the practice of chewing coca leaves for numerous centuries. The plant is predominantly cultivated in Bolivia, Colombia, and Peru, with Peru boasting the highest plant production. The consumption of coca paste, commonly combined with tobacco or cannabis (known as basuco, pitillo, etc.), has become increasingly prevalent among the younger population in Bolivia, Colombia, and Peru. Cocaine is the primary active component of the coca leaf. It is obtained by extracting it from the leaves and is then used to produce other variations of the drug, such as coca paste or crack. The United States is the primary market for cocaine, experiencing significant growth duringthe 1980s. The media extensively covered the fatalities and physical harm associated with cocaine, and a significant proportion of those apprehended by law enforcement tested positive for cocaine consumption. The substantial revenues generated by the cocaine industry have stimulated the establishment of fresh manufacturing hubs and the extension into untapped markets, as well as the infiltration into lawful enterprises and political factions across multiple nations.

The potent addictive characteristics of cocaine can lead to a rapid escalation in the frequency of its use., quantities consumed, or concurrent use with other substances (12) The widespread misuse of cocaine has significantly impacted communities in numerous countries, often overwhelming social welfare, rehabilitation, and law enforcement organizations.

Sample Analysis

There exist multiple distinct difficulties in the process of choosing and gathering samples for both antemortem and postmortem toxicological analysis. The significance of any discovery is mostly established by the type and caliber of the sample(s) provided to the laboratory. Therefore, it is important to take into account various pre-analytical factors while collecting samples to ensure that they have adequate quality and quantity. The most crucial samples to collect in vivo include blood, plasma or serum, urine, hair, nails, exhaled air, oral fluid, and gastric content.

Postmortem samples can be abundant and provide distinct challenges as compared to samples taken from living organisms. The most crucial samples to collect are arterial or venous femoral and cardiac blood, urine, vitreous humor, stomach content, and organs (particularly the liver and lungs, always after evisceration). Occasionally, several alternative samples such as blood clots, blood from thoracic or abdominal cavities, cerebrospinal fluid, brain, spleen, bile, bone, synovial fluid, bone marrow, maggots, and skeletal muscle can be obtained in specific situations(13)

Currently, there is a lack of comprehensive and up-to-date guidelines for sample collection in Forensic and Clinical Toxicology, which can lead to errors and inconsistencies.

A urine drug test, commonly referred to as a urine drug screen or a UDS, is a non-invasive test. The urine analysis detects the existence of specific illicit substances and prescribed pharmaceuticals. The urine drug test typically detects the presence of amphetamines, methamphetamines, marijuana, cocaine, and opioids (narcotics).

The Iraqi Medical Legal Institute (MLI) operates a Forensic Toxicology Laboratory that primarily focuses on cases involving alcohol toxicity and victims of drug misuse. (1) The drugs that are highly noteworthy due to their widespread usage in Iraq and are mostly discovered in our MLI are:

A) Amphetamine

Amphetamines are a class of psychostimulant substances that enhance the transmission of signals between the brain and the body, resulting in increased speed of communication. (14) Certain varieties of amphetamines are medically prescribed by physicians to address illnesses such as attention deficit hyperactivity disorder (ADHD) and narcolepsy (a disease characterized by an overwhelming urge to sleep). Amphetamines have been utilized as a therapeutic approach for the treatment of Parkinson's disease. Illicitly manufactured and distributed amphetamines, such as speed, are available on the black market. Amphetamines have also been used as medications to increase performance. (15) The majority of individuals who have abused amphetamines need to provide a urine sample for the purpose of detecting the substance in order to compile a legal report (16). The test results become detectable in urine during a period of 4 days. Based on the data provided by the Iraqi Medical Legal Institute (MLI) for the years 2018 to 2022, the number of Amphetamine tablets has significantly increased from 624,207 to 11,828,802 during a span of three years (figure 1).

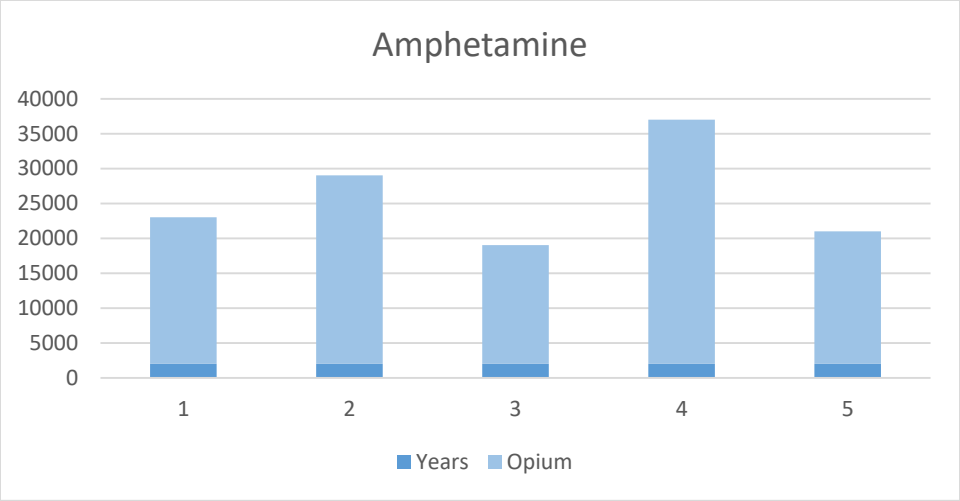

Figure 1: Iraqi Medical Legal Institute results of Amphetamine

B) Methyl amphetamine

Methylamphetamine is a sympathomimetic substance that acts indirectly and has central stimulant effects that are similar to dexamphetamine. Hepatic metabolism partially converts methylamphetamine into amphetamine.The substance is initially discovered in the form of white crystals and undergoes a transformation into amphetamine once inside the body (17) . Based on the data provided by the Iraqi Medical Legal Institute (MLI) for the years 2018 to 2022, the quantity of methylamphetamine has increased from 18,391,085 kg to 87,855,561 kg over a span of three years (figure 2).

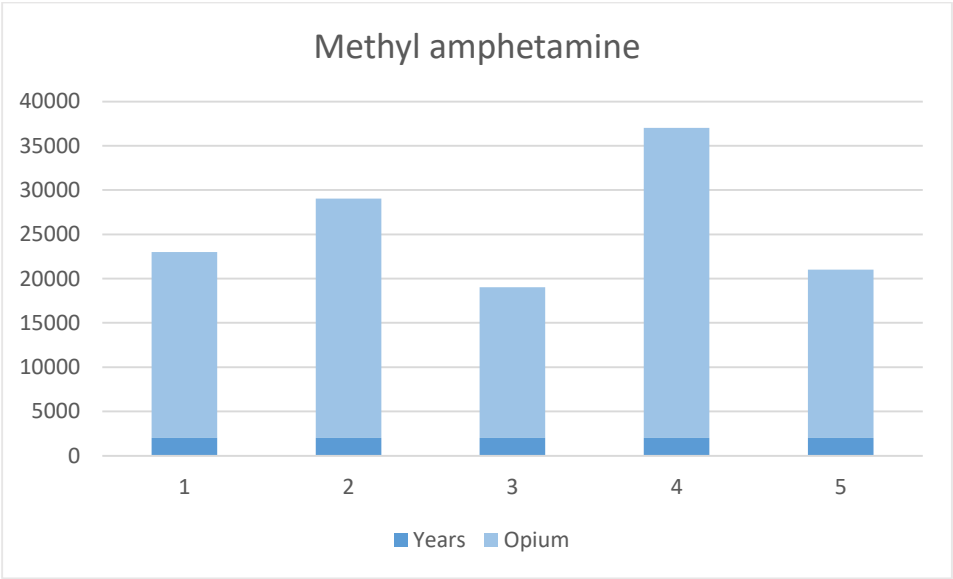

Figure 2: Iraqi Medical Legal Institute results of Methyl amphetamine

C) Opium and derivatives (is dried latex obtained from the seed capsules of the opium poppy Papaver somniferum.

This slurry can be either smoked, inhaled as cigarettes, arkella, or injected (11). Based on the data provided by the Iraqi Medical Legal Institute (MLI) for the years 2018 to 2022, the amount of opium has increased from 27,004,220 mg to 35,469,562 mg during a span of three years (figure 3).

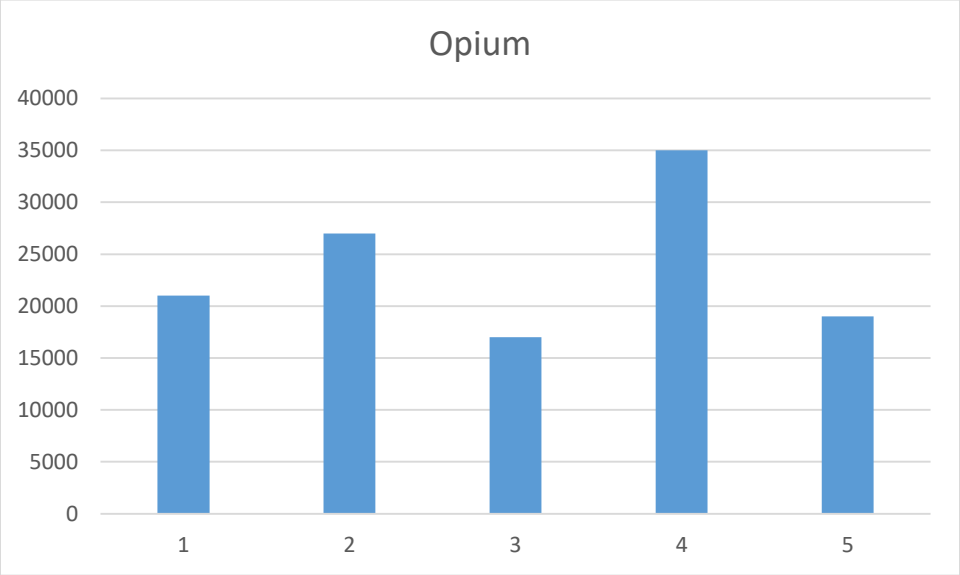

Figure 3: Iraqi Medical Legal Institute results of Opium and derivatives.

D) Cannabis

Cannabis is a multifaceted plant that contains more than 400 chemical entities, with over 60 of them being cannabinoid compounds. These compounds can have contrasting impacts on the body. Cannabis is the predominant illicit substance globally and its consumption has been linked to many mental health issues, particularly among theyouth [18] . The victim commonly consumes Erkella by smoking it, inhaling it, or mixing it with juices or other substances. The presence of THC, which is a sign of Erkella use, can be detected through a urine test. - THC can be discovered in the urine of non-dependent individuals who have ingested cannabis for the first time for a duration of 10 days. However, in chronic users, THC can still be detected in their urine even after a period of 10 days since quitting [18] . Based on the records from the Forensic Toxicology Lab at the Iraqi Medical Legal Institute (MLI) for the years 2018 to 2024, it was observed that the quantity of Cannabis increased from 147,164,168 mg to 178,692,620 mg during a period of three years figure 4.

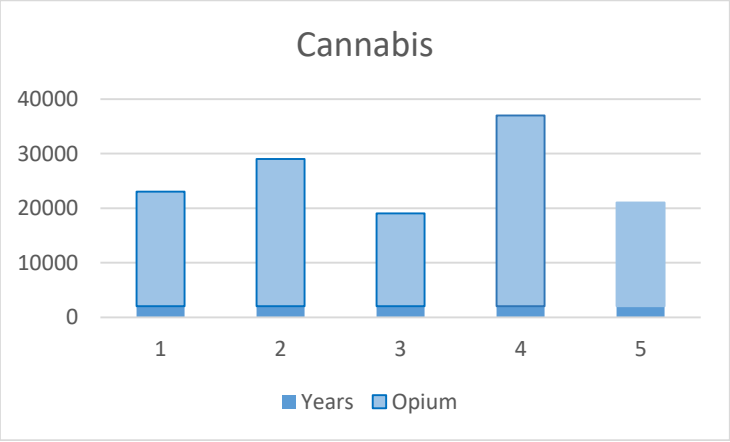

Figure 4: Iraqi Medical Legal Institute results of Cannabis

E) Benzhexole

Included in the 2017 catalog of controlled substances. Although benzhexole is an illegal drug, it is often illicitly replaced with acetaminophen by unauthorized manufacturers. Trihexyphenidyl functions as an anticholinergic agent and is prescribed to alleviate tremors, spasms, rigidity, and impaired muscular control observed in individuals diagnosed with Parkinson's disease [19] . Based on the data from the Forensic Toxicology Laboratory of the Iraqi Medical Legal Institute (MLI) for the years 2018-2022, we have determined the quantity of Benzhexole. The number of tablets did not reach 28202 during a single year prior to 2018.

F) Tramadol

Tramadol is a man-made compound that closely resembles codeine and has effects on the central nervous system.It is neither derived from opioids nor classified as a nonsteroidal anti-inflammatory (NSAID) medicine. Tramadol These actions involve the inhibition of norepinephrine reuptake in the central nervous system by affecting noradrenergic pathways, the inhibition of serotonin reuptake in the CNS by affecting serotonergic pathways, and the increase of GABA neurotransmitter in the brain by affecting GABAergic pathways.The medication is available in the form of injections, tablets, and capsules. Occasionally inhaled as smoke or vaporized. A urine sample is commonly utilized for the detection of tramadol. Test results typically become available within one day(20). Based on the data provided by the Iraqi Medical Legal Institute (MLI) Forensic Toxicology Lab for the years 2018 to 2022, there has been a significant increase in the quantity of Tramadol tablets. The number of tablets has risen from less than 10,000 to 130,057 during a period of three years.

G) Cocaine:

The substance is derived from the foliage of the coca plant, which predominantly thrives in the northern and western areas of South America. A substance resembling white powder was observed on a single occasion in the vicinity of MLI. [21] dministered intranasally by the victims. When inhaled or smoked, or when dissolved and administered intravenously, it undergoes degradation in the acidic H of the stomach.A urine sample is utilized for drug detection. Based on the data provided by the Iraqi Medical Legal Institute (MLI) for the years 2018 to 2022, the quantity of cocaine has witnessed a significant growth, rising from less than 1,000,000 kilograms to 35,000,000 kilograms over a span of one year.

Summary

Based on the statistics from the Forensic Toxicology Lab of the Iraqi Medical Legal Institute (MLI) for the years 2018-2022, there has been a significant and rapid increase in the prevalence of narcotic drug addiction **(table 1).**

Table 1: results of Iraqi Medical Legal Institute (MLI) for the years from 2018 to2022.

Narcotic drug	**2018**	**2019**	**2020**	**2021**	**0222**
Amphetamine	388048 tab.	624207 tab.	95568 tab.	101732 tab.	11828802 tab.
Methyl amphetamine	240520 Kg	118391 Kg	183628 kg	422248 kg	587855 kg

Cannabis resin	30803 kg	147164 kg	397678 kg	372713 kg	178692 kg
Opium	211171 Kg	270042 kg	175421 kg	354695 kg	199377 kg
Heroin	75678 Kg	115074 kg	84805 kg	200670 kg	224215 kg

CONCLUSION

There has been a significant rise in abuse across all Iraqi governorates over the past five years, particularly in the misuse of synthetic substances, stimulants, and cannabis. This necessitates increased and more concerted efforts to address this issue. It is imperative to incorporate the creation of an educational curriculum in schools as a means to proactively combat substance misuse.

RECOMMENDATIONS

Implement educational programs in schools that teach about the dangers of drug abuse.
Promote community-based initiatives to raise awareness.
Encourage parental involvement and education on how to discuss drug use with children.

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