

Patients' Response to Treatment for Amphetamine and Cannabis Abuse in Eradah and Mental Health Hospital in Al-Qassim Region, Saudi Arabia

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Abstract

Amphetamine and Cannabis abuse is currently a major challenge in Saudi Arabia. The government has established variable hospitals for treatment. This study aims to assess the patients' response to treatment for amphetamine and cannabis abuse among attendees of Al-Eradah and Mental Health Hospital. This is an observational, cross-sectional study including 388 inpatients admitted in hospital. Male patients were 384, whereas the number of female participants was 4 female, of which were 320 amphetamine abusers and 68 cannabis abusers. The data was obtained from Al-Eradah and Mental Health Hospital database, Al Qassim region, Saudi Arabia during the year 2022. The data was entered into Excel and analyzed in SPSS 22.0. statistical software to get the descriptive statistics.

According to the recovery rate; 350 patients have recovered from amphetamine and cannabis addiction (289 patients and 61 patients, respectively). The total number of treatment nonrespondents was 28 patients, divided into 23 patients of amphetamine addicts and 5 patients of cannabis addicts. Amphetamine users have more relapses rate than cannabis users. There were no deaths and one patient escaped from the hospital. Amphetamine is the most common drug used in the study group. The rate of treatment respondents is higher than nonrespondents

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with a low relapse rate for both types of drugs and zero death among the patients of Al-Eradah and Mental Health Hospital in Al-Oassim Region, Saudi Arabia .

Keywords: *Hospitalization Cannabis, Amphetamine, Addiction, Drug database, Epidemiology, Cross-Sectional studies.*

1.Introduction

Amphetamine and cannabis drug abuse is currently a major issue worldwide and in Saudi Arabia. In 2016, 34 million individuals around the world consumed amphetamines as estimated by the UNODC, 2018 , It is frequently abused due to its euphoric and energetic effects. It is considered one of the biggest and most catastrophic challenges globally and is associated with a wide scale of poor health issues and raised mortality and morbidity rates worldwide [1].

Drug abuse therapy is considered to be defiance and complicated mainly in the case of a combination of more than one drug abuse which is called polysubstance abuse, and can lead to a dependence syndrome according to World Health Organization (WHO) reports for the prolonged polysubstance consumption [2]. Cannabis, usually known as "marijuana," is a psychotropic drug which is derived from the cannabis sativa plant that is widely used and regulated on a global scale [3]. It can be used in different routes; via smoking of dried herbs, or by using the e-cigarettes and other routes , Cannabis oil, often known as hashish oil, is a concentration of cannabinoids that are made by solvent-extracting the resin or raw plant material , The primary psychoactive component of cannabis is delta-9-tetrahydrocannabinol (THC), at least it contains about 65 compounds belonging to THC called cannabinoids that affect the brain cells by modulating and release of neurotransmitters [4].

Medical cannabis is the term related to some medical effects of cannabis. There are some studies with little evidence suggesting their use in reducing nausea and vomiting which is accompanied by chemotherapy, in patients with HIV/AIDs to improve their appetite [5].In addition, as a pain killer in case of severe pain. Otherwise, the evidence for its medical uses is still lacking and we cannot conclude about its safety and usefulness [6]. Amphetamines are the most widely used illegal hallucinating drugs after cannabis. They are a group of addictive drugs that agitate the central nervous system including amphetamine, methamphetamine (MA), and 3,4-methylenedioxy-methamphetamine (MDMA, or "ecstasy") [7]. Amphetamine is the most abused drug in Saudi Arabia, it's used under other names like Captagon, Biocapton, and Fitton. The most popular street names for amphetamine in Saudi Arabia are Alabyad (white), Abu mlaf, Lajah, Al qeshtah, and Al asfaar (yellow) [8].

It was first synthesized in 1927 after its discovery in 1910, more than a century ago. One of the more tightly monitored substances, it is a stimulant that causes higher amounts of

euphoria and a momentary alteration in mood. It is widely used and has the potential for misuse either intravenously or orally in the form of pills that can be placed on the tongue and quickly dissolve, followed by the ingestion of the disintegrants with saliva[9]. Amphetamine could be prescribed for treating attention deficit hyperactivity disorder (ADHD). Also, it is a treatment for central nervous system disorders such as narcolepsy [10]. Amphetamine consumption has been recorded to be elevated recently [11]. Millions of captagon pills have been utilized annually, which is recorded to be about one-third of the amphetamine consumption worldwide [12]. In addition, cannabis has been recorded to be the most repeatedly used drug followed amphetamine, opiates, and cocaine [12]. Drug abuse as amphetamine and cannabis has been recorded in many Islamic countries including Gulf cities [14] [15]. One of the countries jeopardized by this trade is Saudi Arabia; three out of four Saudis treated for drug problems are addicted to amphetamines, especially in the form of captagon [16]. The most well-recognized abused drugs were amphetamine, alcohol, and cannabis in Saudi Arabia as recorded by a study in the Psychiatric Rehabilitation Center (PRC) in Buraydah City[17]. The Government of Saudi Arabia has recognized and acknowledged substance abuse as a public health challenge. As a result, public and specialized hospitals have been established in many regions to face this major health issue [18]. Up until the early 1950s, there were no psychiatric hospitals in KSA, a modern state that was barely 20 years old. Progress began with the building in 1952 of the Taif Mental Hospital in Shahar [19]. Drug abuse treatment is difficult, and it is made even more difficult by the presence of polysubstance abuse, which is the abuse of multiple drugs at the same time rather than just one main drug. Using the drugs once a time is not being considered addicted and eligible for inpatient treatment. to be considered addicted, a person must exhibit the symptoms and indicators of addiction, as well as social and financial issues [17].After the hospital enrollment, the patient will be evaluated by the medical staff to assess his condition and prescribe the needed medicine as well as to decide if the patient needs hospital admission or merely receive therapy sessions. There are a few exceptions depending on the patient's condition, but a typical hospitalization lasts between 15 and 20 days. Meetings or individual sessions with psychologists, social workers, and a religious guide are all part of the treatment [19]. The medicinal therapy of amphetamine and cannabis withdrawal is probably symptomatic treatment. There is no specific medication for addiction treatment because the damage to the brain may be permanent. Pharmacological treatments have been focused on selective serotonin reuptake inhibitors and dopamine. Benzodiazepines are essential for relieving anxiety, convulsions, sleep disorders, and atypical antipsychotics for amphetamine psychosis [20]. Psychological interventions have included cognitive-behavioral therapy, family-based interventions, and counseling. Combined psychosocial support and pharmacotherapy is highly recommended in

decreasing the intake of amphetamine-type stimulants (ATS) and controlling the associated side effects [21]. In Saudi Arabia the most frequent drug abusers are in the age of 12–22 years, of which 40% are drug abuse dependent. The government of Saudi Arabia applies all the possible routes to increase the awareness about the bad health issues of drug abuse and improve social and cultural attitudes, lifestyles, and the prosecutions, of drug consumption [22][23].

It is frequently abused due to its euphoric and energetic effects. Amphetamine and cannabis abuse can lead to critical and dangerous neurological and psychological health drawbacks. There is apprehension that amphetamines and cannabis drug abuse will keep on, regardless of the attentiveness and efforts for prevention [24]. the increase of the prevalence of Amphetamine and cannabis abuse among adults in Saudi Society reflected by the increase in the number of attendees of Eradah and Mental Health Hospital Al-Qassim Region, Saudi Arabia in 2022, which makes this study more crucial to our knowledge, the number of studies on drug abuse consumption and response to treatment in Saudi Arabia is very small and most of the studies discussed the prevalence and the bad drawbacks of drug abuse. Therefore, the aim of the study is to assess the patients' response to treatment for amphetamine and cannabis abuse by estimating the number of patients who responded to therapy among attendees of Al-Eradah and Mental Health Hospital in Al-Qassim region, Saudi Arabia. in order to increase the awareness of Saudi community as well as neighboring countries to tackle the growth of this phenomenon.

2. Methodology

This is an observational, cross-sectional study including 388 subjects, of which were 320 amphetamine abusers and 68 Cannabis abusers. The data was obtained from Al- Eradah and Mental Health Hospital database, Al Qassim region, Saudi Arabia. The study has been conducted during the year of 2022 (from January 2022 to December 2022). This study examines the response of amphetamine and cannabis abusers to the therapy. Participants of this study are both males and females aged 18 years or above in Qassim Region, Saudi Arabia.

2.1 Inclusion criteria:

- Male and Female participants admitted in Al- Eradah and Mental Health Hospital
- 18 years old or above participants
- Agreed to participate in this study.

2.2 Exclusion criteria:

- Male and Female outside Al- Eradah and Mental Health Hospital
- Under 18 years old participants
- Declined to participate.

To achieve the goal of the study, reports, and data were collected from the Eradah and Mental Health Hospital database, Al Qassim region, Saudi Arabia. The number of patients who responded to treatment for cannabis and amphetamine abuse among Saudi citizens in Al- Qassim Region was estimated. Variables included were the type of abused drugs , the status of the patients if they are new or repeatedly admitted, the gender, the age, the number of relapses, the number of patient response to treatment , the way of the admission and the discharge from the hospital.

2.3 Ethical Considerations:

The study has the approval of the Regional Research Ethics Committee . Registered at National Committee of Bio & Med Ethics (NCBE), registration number H-04-Q-001. Moreover, the study obtained the approval of the Department of the Research Review Committee, the College of Applied Medical Sciences at Qassim University, and Al-Eradah and Mental Health Hospital. Before they completed the questionnaire, the participants received an explanation of the study's goals and an opportunity to provide their informed consent. All the information gathered for this study has been kept private and used solely for this research.

2.4 Statistical analysis

The collected data were entered, tabulated, and analyzed using Microsoft Excel 2023. The descriptive analysis was applied by calculating the number and percent of categorical variables. SPSS 22.0 program was applied for more data processing and analysis. The non-categorical variables correlation was tested by the Chi-square test (X^2 test). To check significant relations between substance used, and other variables, a Chi-square test has been done, where the null hypothesis refers to the non- significant relation between substance used and other variables. Correlation and difference between variables are considered statically significant when the P value <0.05 .

3. Result

The frequency and the percentage of all variables studied among the inpatients admitted in Al-Eradah and Mental Health Hospital in 2023, were presented in -Table(1). Sample size count as 388 admitted hospitalized inpatient (show in table 1), The overall number of male patients was 384 males consider as 317 amphetamine abuse and 67 cannabis abuse(show in graphs 1,2), whereas the number of female participants was 4 females , consider as 3 amphetamine abuse and 1 cannabis abuse. (show in Graphs 1,2).the percentage of Amphetamine abuse 320 (82.5%) male and female record higher than the percentage of Cannabis drug abuse 68 (17.5%) male and female (show in table 1) .The results reported that the highest percentage of Amphetamine abuse of the patients' age was from 30-39 years (35.8%) , while the highest percentage of Cannibis abuse of the patients' age was

from 20-29 years (8.2%) age from 18-19 years showed the lowest percentage of Amphetamine abuse = 4 (1.0%). age from 50 years showed the lowest percentage of Cannabis abuse = 0 (0.0%)(Table 1) – (Graphs 3,4). 180 patient(46.4%) relapsed one time and this is highest count and percentage of Amphetamine abuse relapsed patient recorded, while 39 patient (10.1%) relapsed for 3 time and this is lower account and percentage of Amphetamine abuse relapsed patient recorded. 37 patient(9.5%) relapsed one time and this is highest count and percentage of Cannabis abuse relapsed patient recorded, while 4 patients (1.0%) relapsed for 3 time and this is lower account and percentage of Cannabis abuse relapsed patient recorded. (Table 1)-(Graphs 5,6).The higher number of Amphetamine patient inter the hospital for treatment in different way record as 160 patient (41.2%), while the lower number of Amphetamine patient inter the hospital by Court order record = 0 (0.0 %). higher number of cannabis patient inter the hospital for treatment in different way record as 34 patients (8.8%), while the lower number of Cannabis patient inter the hospital by Court order record = 0 (0.0 %). (Table 1)-(Graphs 7,8). Strong finding result with recovery patient , the The higher number of Amphetamine patient response to the treatment record 289 (74.5%) from all 320 Amphetamine abuse, while death record 0(0.00) from all Amphetamine patient , on other hand Cannabis patient also record 61(15.7%) recover from all 68 Cannabis patient. (Table 1)-(Graphs 9,10).

The Chi-square analysis detects a significant difference between the age (30-39year) for the both participants patient (Amphetamine and Cannabis) and type of drug abused = ($X^2 = 31.274$, P-value = .001*) (Table1)

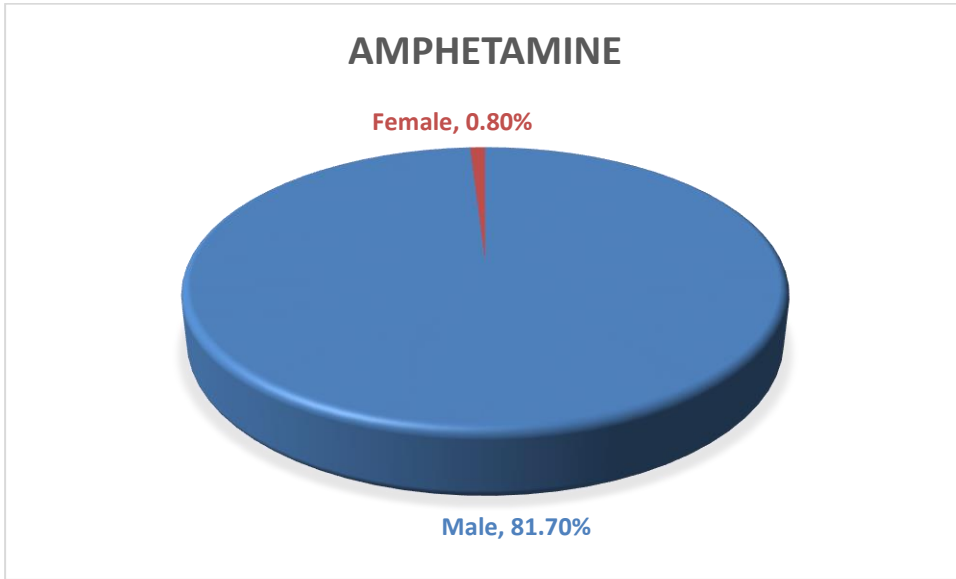
The results showed also a significant difference between 39 Amphetamine patient and 4 Cannabis patient relapsed for 3 time and the type of drug abused as listed in (Table 1) which record ($X^2 = 9.371$, P -value = .025*).

Table (1)

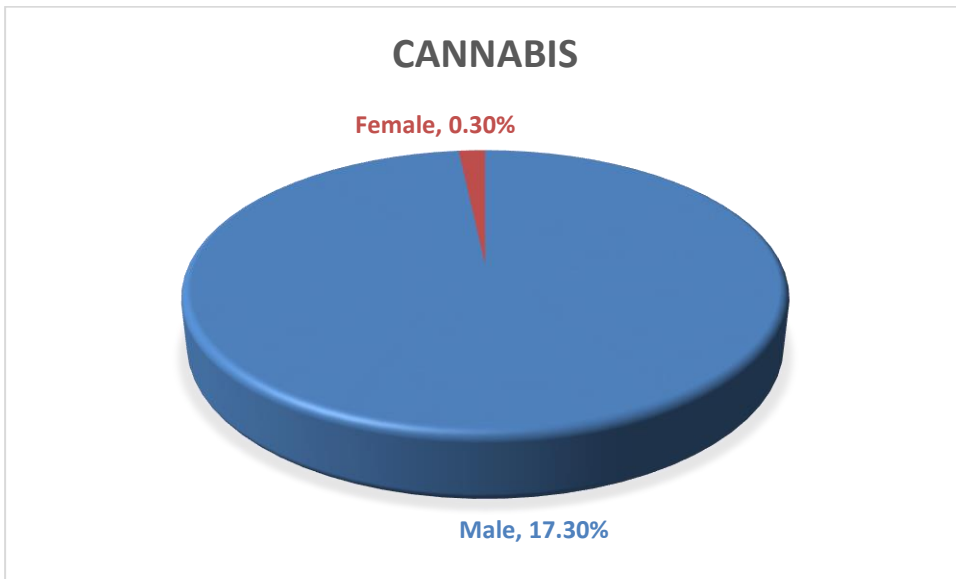
Correlations between substance used, and other variables, tested by chi-square (X2-square) and P –value for the year of 2022.(Amphetamine and Cannabis abuses).

		substance used				Chi-square	Sig.
		Amphetamine		Cannabis			
		Count	%	Count	%		
Sex	Male	317	81.7%	67	17.3%	0.156	.693
	Female	3	0.8%	1	0.30%		
	total	320	82.5%	68	17.5%		
Age	18-19	4	1.0%	1	0.3%	31.274	.001*
	20-29 years	61	15.7%	32	8.2%		
	30-39 years	139	35.8%	28	7.2%		
	40-49 years	85	21.9%	7	1.8%		
	50 years and above	31	8.0%	0	0.0%		
	total	320	82.40%	68	17.50%		
Relapses	once	180	46.4%	37	9.5%	9.371	.025*
	Twice	42	10.8%	18	4.6%		
	3 Times	39	10.1%	4	1.0%		
	4 Times	59	15.2%	9	2.3%		
	total	320	82.50%	68	17.40%		
Enter way	by himself	96	24.7%	21	5.4%	0.036	0.982
	Police	64	16.5%	13	3.4%		
	Court order	0	0.0%	0	0.0%		
	Others	160	41.2%	34	8.8%		
	total	320	82.40%	68	17.60%		
Exit way	Recover	289	74.5%	61	15.7%	0.276	0.965
	Medical referral	8	2.1%	2	0.5%		
	Escape	1	0.3%	0	0.0%		
	outside the medical approach	22	5.7%	5	1.3%		
	Death	0	0.0%	0	0.0%		
	others	0	0.0%	0	0.0%		
	total	320	82.60%	68	17.50%		

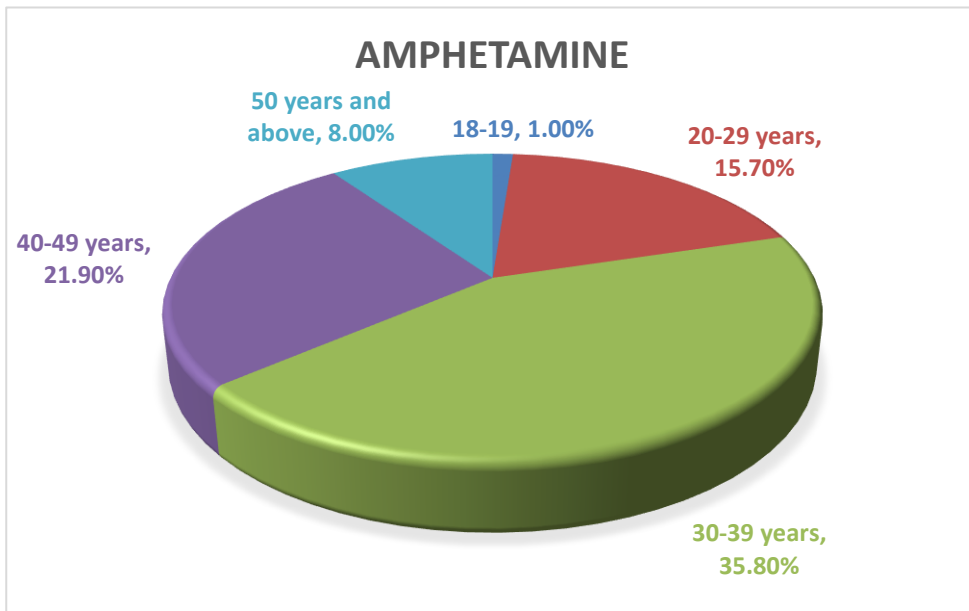
Graph (1) -Sex -Amphetamine



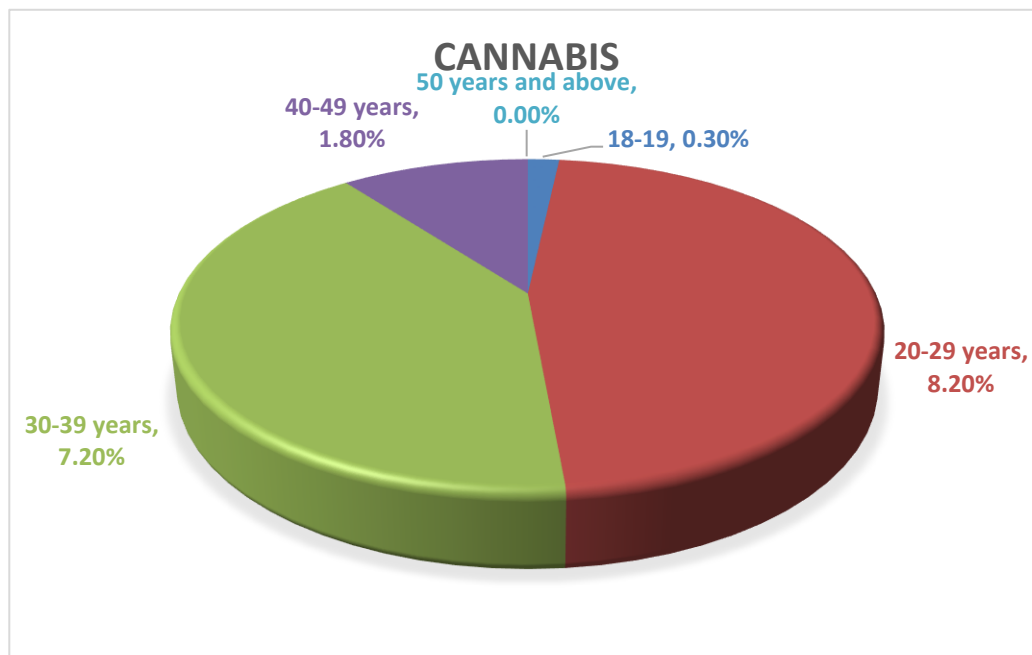
Graph (2) Sex-Cannabis



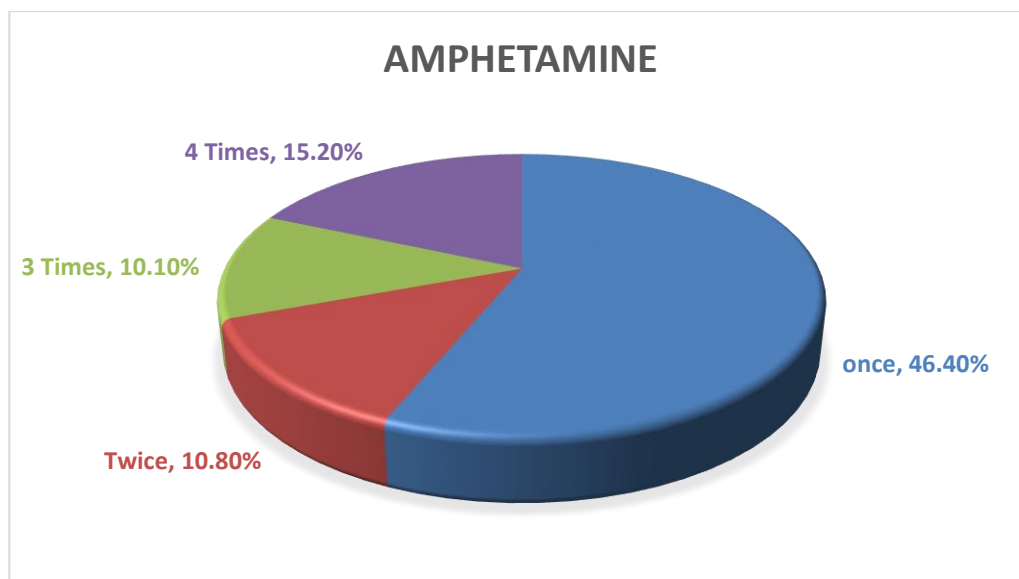
Graph (3) Amphetamine-Age



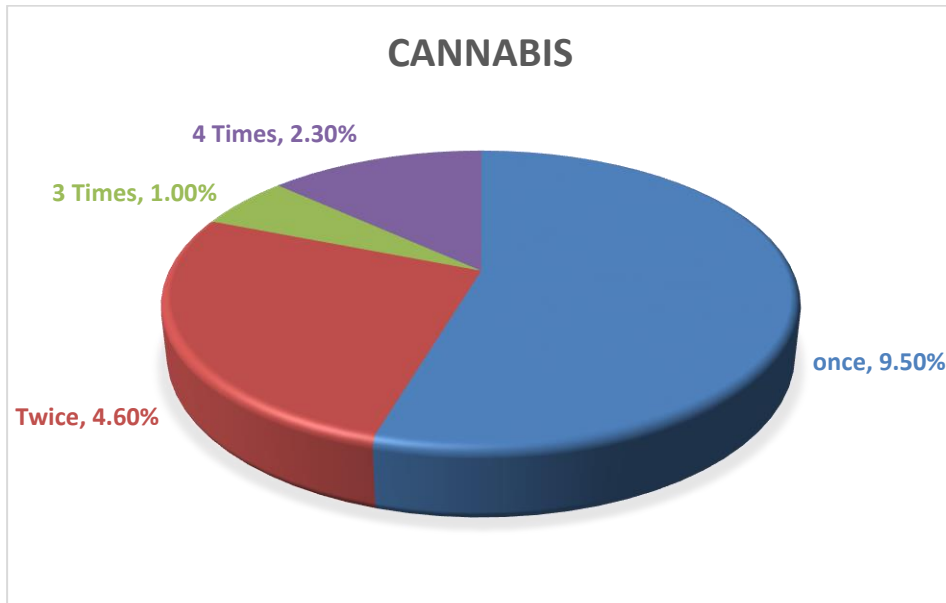
Graph (4) – Cannabis -Age



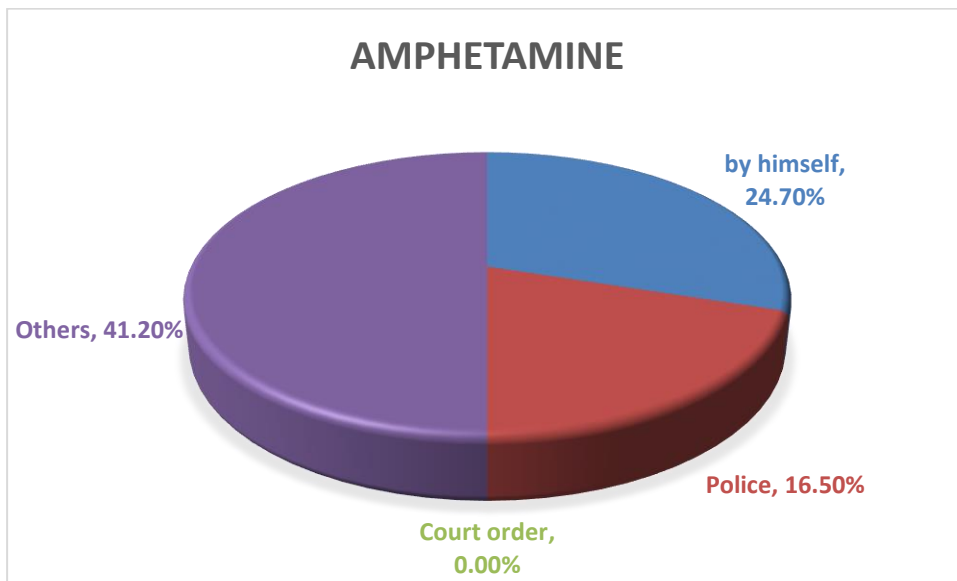
Graph (5) Amphetamine – Relapses



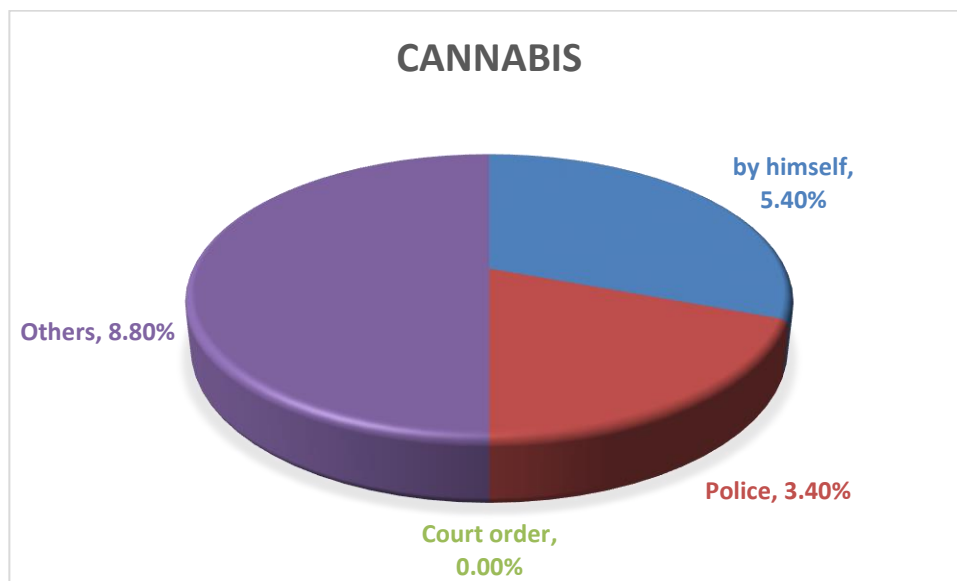
Graph (6) Cannabis - Relapses



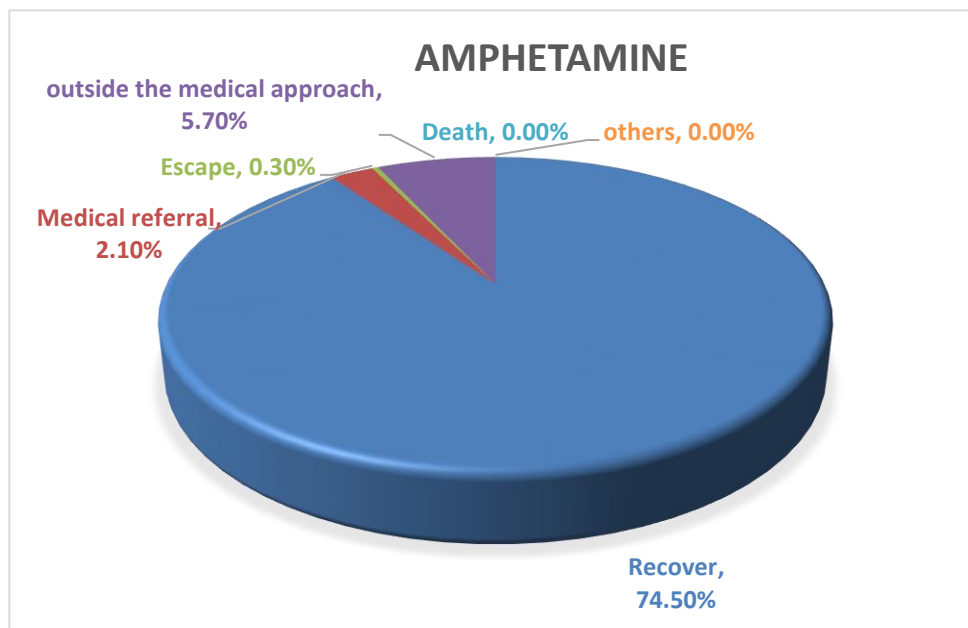
Graph (7) Amphetamine- Enter way



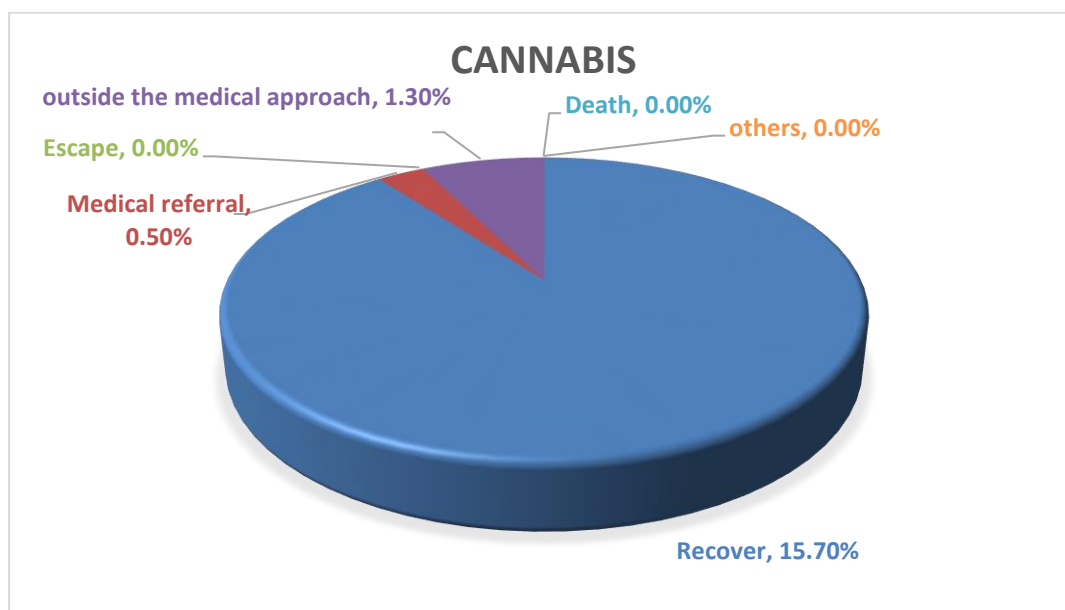
Graph (8) Cannabis- Enter way



Graph(9)Amphetamine-Exitway-Recover



Graph (10) Cannabis - Exit way-Recover



4. Discussion

The interest of the Kingdom of Saudi Arabia represented by the Ministry of Health and the Ministry of Interior in combating addiction has found great success in eliminating drugs in all their forms, developing a plan to treat addicts, following them up, and protecting society from the danger of addiction. Strong result finding from our study conducting from admitted amphetamine and cannabis patient in AL-Eradah and Mental Health Hospital, Al-Qassim Region, Saudi Arabia on 2023 year, indicate that fact, the highly percentage (74.5% amphetamine) and (15.7% cannabis) patient response to the treatment recorded were prove this statement. Our current findings is high prevalence of amphetamine drug abuse among adults male and female, more than cannabis drug consumption. This result similar to study of Aldlgan et al., (2019) [18] in Riyadh region which founded that amphetamine users have the highest percentage count in all studied conducted in Saudi Arabia. *In parallel to our results, in a survey study conducted by AL-Haqwi, 2010 [15] on Medical College students in Riyadh, Saudi Arabia, the percentage of amphetamine drug abuse was higher among other substances drug abuse.* Abomughaid et al., (2018) [8]. who conducted the study in the Aseer region, Saudi Arabia, showed that the prevalence of amphetamine abusers was 52% and for cannabis abusers was 25% during two years from Jan 2016 to Dec 2017. Saquib et al., (2020) have reported that about 8% of Saudis consume variable types of illicit drugs [25]. Moreover, Sweileh et al., (2014) [26] have stated that amphetamine and cannabis drug abusers had augmented in the previous 10 years in Saudi Arabia. In line with all these studies, a global report recorded that amphetamine and cannabis in sequence is the most popular consumed drugs among young adults [17] [27]. Our results reported a higher number of primary relapsing cases (46.4%) from amphetamine

and(9.5%) of cannabis patient for one time .other researcher discussed , that recurrent hospital readmissions and the relapse of drug abusers occur within about three years from the discharge, which may be due to the socioeconomic pressure and the psychological conditions . strong positive association between the relapse and the variable personal conditions is major fact of this status [17].

Al -Eradah and the Mental Health Hospital received 388 admitted hospitalized inpatient on 2023, The overall number of male patients was 384 males consider as 317 amphetamine abuse and 67 cannabis abuse, whereas the number of female participants was 4 females , consider as 3 amphetamine abuse and 1 cannabis abuse. This results indicate a significant decrease in the number of female patients incomparable to the number of male patients, that may be referred to the high restrictions and social constrictions among the females in the Qassim region. The same results were revealed by Alharbi et al., (2022) [28] and Ibrahim et al., (2018) [17], while Alghamdi et al., (2016) [29] who reported that the percentage of female drug abusers was 12% in Riyadh city. In addition, a study in Albany by Ridley and Coleman (2015) [27]revealed that males have been calculated to be more than half of the hospitalized patients in Western Australia. Saquib et al., (2020) [25]have reported the male gender as a significant risk factor for drug abusers in KSA. Alharbi et al., (2022) [28] explained the high prevalence of male addicts by having more freedom than females to go with their friends for a long time and they have the curiosity to try euphoric substances more than females in Saudi society mainly in Qassim region.*our findings point focusing in the high prevalence of amphetamine use among Saudi adults, especially those who are in the age group of 30 to 39 years, while the age of cannabis drug abusers mainly was from 20 -29 years.* Parallel to our results, Alharbi et al., (2022) [28] reported that the age group of amphetamine drug abusers was between 31 and 40 years old, and the age group of amphetamine plus cannabis users was between 20 and 30 years old. The most addicted age group in the study of Bamofleh et al., (2017) [30]was between 15-25 years. Similar findings were found in Abomughaid et al., (2018) [8] who claimed that the age of 19-28 years was the highest in consuming amphetamine drugs. All these results are consistent with that of the Saudi National Committee for Narcotics Control. [31]. A study conducted by Ibrahim et al., (2018) [17] in the Psychiatric Rehabilitation Center (PRC) of Buraydah records has reported that around 75% of the abusers were between the age of 20–40 years. 66% of them were secondary school students, 16.5% were elementary school children, and 9.6% were college graduates. Most of the patients who entered the Al Eradah and Mental Health hospital for treatment came by themselves and with full wellness to be treated from amphetamine (24.7%) and cannabis (5.4%). In addition, the percentage of patients who responded to treatment in the hospital was 74.5% of amphetamine addicts and 15.7% of cannabis addicts compared to the small number of patients who didn't respond to

treatment which indicates that the treatment in Al Eradah and Mental Health hospital is effective. The only two known methods to leave the hospital are through recovering or dying. There are no fatalities recorded in this study, although one patient escaped from the hospital, and another stopped receiving therapy. Amphetamines have contributed to increased suicidal attempts [32], and evidence assumes amphetamines could be a cause of death and suicidal attempts [33]. A meta-analysis study by McKetin et al ., (2019) [34] did not find evidence to confirm if amphetamine addiction is associated with or the cause of suicidal attempts among the addicts. but some author discussed that there is increase in the death rate from amphetamine drug abuse in Saudi Arabia by two-fold to reaching 0.04 for 100.000 [3]. In a previous study conducted in Jazan, Saudi Arabia, the result showed that the highest average of fatalities is by suicidal people who used amphetamines with other drugs [35]. The spread of amphetamine and cannabinoids into Gulf countries was estimated to be increased 3 times in the year 2016 when compared to the year 2015 as mentioned by Gulf News (2017)[12]. Amphetamine and cannabis drug abuse in the Kingdom of Saudi Arabia has a negative influence on Saudi society. Religious programs and frequent social campaigns are highly recommended to increase awareness and increase the recovery rate [30][16].

5. Conclusion

Amphetamines and cannabis drug abuse are currently one of the main problems facing Al-Qassim region society, Saudi Arabia. The Saudi government has constructed many hospitals to face this challenge and help treat drug abuse consumption, Al -Eradah and Mental Health Hospital is one of those dedicated hospitals which is specialized in drug abuse treatment in Al-Qassim region. The recovery rate of amphetamine drug users among the Al -Eradah and Mental Health Hospital attendees is up to 74.5%, while for the cannabis drug users is 15.7%. The study recorded less percentage of the therapy un respondents with no recorded fatalities.

Finally, we thank and appreciate the Kingdom of Saudi Arabia and the General Directorate for Drug Control for their efforts in the Anti-Narcotics Campaign 2023.

6. Recommendation

Great attention should be directed to face this serious issue. National rules and policies with more specialized social. religious. and medical programs, in regulation with general governmental and specialized organizations, are urgently required to defeat this problem.

Acknowledgments

Researchers would like to thank the Deanship of Scientific Research, Qassim University for funding publication of this project.

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