Journal of Ideas in Health

Breaking the silence: navigating adolescent knowledge, attitude, and perception on substance abuse in Diyala Province, Iraq

Saad Ahmed Ali Jadoo[1*], Ahmed Salih Mahdy[2], Baraa Najem Abed Al-Ezzi[3]

Abstract

Background: Drug use often leads to a range of health risks, social complications, and involvement in criminal behavior. This study aims to investigate adolescents' understanding, opinions, and perspectives on substance abuse.

Methods: Between October and December 2023, a cross-sectional study was undertaken in Diyala Province, Iraq. High school students were sampled using a multistage sampling technique. Bivariate analysis utilized independent sample t-tests and one-way analysis of variance (ANOVA). Additionally, a multivariable linear regression analysis was performed to predict factors associated with knowledge, attitudes, and perceptions. All statistical analyses were carried out using SPSS version 16.

Results: The study encompassed 365 students, with a mean age (SD) of 17.5 (+ 8.2), predominantly male (57.3%). Overall accuracy rates for knowledge, attitude, and perception stood at 87.1%, 86.7%, and 88.7%, respectively. Approximately 5.2% of the sample reported cannabis (hashish) use. Regression analysis revealed significant associations between higher knowledge scores and male gender (p=0.002, 95% CI:0.341, 0.729), urban residency (p<0.0001, 95% CI:1.165, 4.524), and monthly income > US$400 (p >0.0001, 95% CI:0.907, 1573). Attitudes toward drug abuse prevention were influenced by male gender and highly educated parental backgrounds (p<0.001, 95% CI:1.412, 5.223; p=0.002, 95% CI: 2.160, 4.881; p=0.007, 95% CI:1.810, 5.690). Perception scores were significantly associated with male gender (p=0.001, 95% CI: 0.430, 0.691), students from smaller families (p=0.013, 95% CI:2.201, 5.003), and those in the sixth class (p=0.021, 95% CI:1.423, 4.202).

Conclusion: While adolescents demonstrate a solid understanding of societal norms and consequences associated with substance abuse, there may still be areas where perceptions can be refined and aligned more closely with the realities of drug abuse.

Keywords: Adolescent, Drugs, Substance, Abuse, Addicts, Knowledge, Attitude, Perception, Iraq

Correspondence: Saad Ahmed Ali Jadoo
(saadalezzi@uodiyala.edu.iq)

[1]Department of Family and Community Medicine, College of Medicine, University of Diyala, 32001, Diyala, Iraq

Background

Substance abuse refers to the recurrent or prolonged state of intoxication resulting from the excessive consumption of various drugs or substances. It involves self-administration in ways that deviate from typical usage patterns [1]. Drug abuse and its illicit trade represent significant global challenges, particularly in countries like Iraq [2]. Alarmingly, the age of addiction onset has shifted to younger groups, with some as young as 8 years old, and the median age being 17 [3]. Notably troubling is the rise in the number of injection drug users, reflecting a concerning trend in substance abuse demographics. Adolescence marks a crucial stage of growth making adolescents highly susceptible to external influences including peer pressure, societal standards, and media depictions, shaping their views on substance abuse [4]. It's crucial to grasp adolescents' awareness of substance abuse for crafting successful prevention and intervention strategies. This understanding profoundly influences their decisions regarding substance use [5]. Adolescents' behaviors and choices about substance use depend on their attitudes. Positive attitudes may promote the likelihood of experimentation, while negative ones can deter substance abuse [6]. Adolescents' perceptions of substance abuse encompass their subjective understandings of substance-related behaviors and societal norms. Perceptions vary widely, necessitating tailored prevention strategies [7]. Drug addiction can lead to chronic neurological damage characterized by obsessive substance seeking and misuse, despite harmful outcomes. The National Institute on Drug Abuse (NIDA) likens addiction to cardiac problems, impacting both the individual and their loved ones. Substance abusers may escalate dosage and frequency, even in the early stages, leading to fatalities from overdose or HIV/AIDS complications. Despite the risks, many view substance use as a

pleasurable social activity [8]. Several studies [2,9-13] have been conducted in Iraq concluding that the causes of drug addiction among Iraqi adolescents are multifaceted. Factors contributing to substance abuse include the prevalence of violence and conflict, which create environments of stress, trauma, and instability [9,10]. Additionally, socioeconomic challenges, limited access to education and employment opportunities, and societal stigma surrounding mental health and addiction further compound the issue [11]. Peer pressure, curiosity, and a desire for escapism from challenging circumstances also drive adolescents towards substance abuse [12,13]. Lack of parental supervision and guidance, coupled with easy access to drugs, exacerbates the vulnerability of Iraqi adolescents to addiction [14]. Addressing these root causes requires comprehensive interventions that address social, economic, and cultural factors while providing support and resources for rehabilitation and recovery. This study aimed to explore adolescent understanding, perceptions, and attitudes toward substance abuse in Diyala Province, Iraq.

Methods

Study design and participants

A cross-sectional study was conducted from 1st October to 31st December 2023. Diyala Province (Governorate), is the home of approximately one and a half million residents across six districts including Baquba, Muqdadiya, Al-Khalis, Khanaqin, Baladruz, and Kifri. A multistage sampling method was employed for data collection. Initially, two districts were randomly chosen, followed by the random selection of two high schools from each district- two for boys and two for girls. Subsequently, four classes were randomly selected from each chosen school, comprising a total of sixteen classes. Class lists were obtained from school administrators, and an average of 20 to 30 students per class were randomly selected for participation. Researchers then personally reached out to each selected student, providing them with a hard copy of the questionnaire for completion. This systematic approach ensured representative data collection across diverse districts and school types within the governorate.

Inclusion and exclusion criteria

The study encompassed students aged 15 to 19 years of both genders who were available at the time of the research and willing to participate. Exclusions comprised students who declined involvement or provided incomplete data during the study period.

Samples Size

According to prior research conducted in Iraq by Mohammed et al. [13], approximately 42.6% of surveyed adolescent school students correctly defined substance abuse, the sample size calculator reached 407 on a margin of error of ±5%, a 95% confidence level, and a 10% non-response correction factor, utilizing the specified formula: $N= [Za^2 \times P \times Q/(M.E.)^2]$.

Study tool

A modified questionnaire was developed based on Bryan, et al. [15]. The questionnaire was written in English language, and then it was translated into the Arabic language. Fifteen respondents (not included in the study) were recruited to test pilot the study tool. "The first page of the questionnaire contained an assurance of the freedom to participate or withdraw and that all information and opinions submitted would be anonymous and confidential". The questionnaire contains four main sections. The first section contained information about the participants' social and demographic characteristics, including age, gender, parents' education and their employment status, place of residence, household income level, family members, and birth orders. The second section of the questionnaire was designed to assess participants' knowledge of substance abuse. This section contained 5 elements that focus on information about the common types of drugs in Iraq and the well-known words used to identify substance abusers. Participants were asked to answer if they knew someone taking hashish, having problems due to drugs, or if they ever tried hashish before. The third section of the questionnaire comprised 11 items to evaluate participants 'attitudes toward drug addicts in Iraq. The response to questions in the second, third, and fourth sections was given on a three-point Likert scale (Agree, Disagree, and Don't Know). Each correct answer was received on point. In the fourth section of the questionnaire, there were 12 items. The first six (1-6) were used to examine the perception of the extent of the drug problem in Iraq. The second six (7-12) was used to explore the perception of drug use among young people.

Dependent variables

Respondents were asked to respond to knowledge items as either "True" or "False". Incorrect responses were given a score of zero, and correct answers were assigned a score. The knowledge score, ranging from zero to 10, reflected higher substance abuse awareness with higher scores. Internal reliability was assessed using Cronbach's alpha, yielding a coefficient of 0.78, signifying good internal consistency. Respondents were asked to respond to attitude and perception items as either agree or disagree, with an additional "do not know" option. Incorrect or uncertain (do not know) responses were given a score of zero, and correct answers were assigned a score. Attitude scores ranged from zero to 11, with higher scores denoting a more positive stance toward substance abuse prevention. Cronbach's alpha coefficient for attitude was 0.75, demonstrating satisfactory internal reliability. Perception scores ranged from zero to 12, with higher scores indicating an improved understanding of substance abuse. Cronbach's alpha coefficient for perception was 0.71, indicating acceptable internal reliability.

Independent variables

For sociodemographic variables, gender was coded as one for females and zero for males. The age variable was categorized into two categories zero for less than 17 years and coded one for 17 years and above. Education was categorized and coded into zero (high academic) for college/university degrees, postgraduate degrees, and one (low educated) for high school or below. Work status is categorized and the value of zero is given to the employed and the value of one is given to the unemployed or housewife. Place of residency is coded as zero for rural and one for urban. Monthly income (Iraqi Dinar (IQD)1 = United State Dollar (USD) 0.0008, exchange rate on 1st October 2023) was divided into four categories: <USD 200, USD 200 to <400, USD 400 to1000, and more than USD1000. The variable of "Family members" was categorized into "zero" for less than 7 members and "one" for families included 7 and above. Birth order was categorized into "First", "Second", "Third" and above

the "Third". In Iraq, the high schools included three grades (Fourth, Fifth, and Sixth classes).

Statistical analysis
Univariate analysis was employed to summarize the frequency of social and demographic statistics. To evaluate differences in mean values for knowledge, attitude, and perception scores, independent sample t-tests and one-way analysis of variance (ANOVA) were utilized. The Bartlett test was applied to estimate overall mean differences. Furthermore, a multivariable linear regression analysis was conducted to predict factors associated with knowledge, attitudes, and perception. All statistical analyses were executed using SPSS version 16.

Results
Demographic information
A total of 410 students completed the questionnaire. After excluding 23 respondents who reported age either less than 15 or more than 19. Ten students were excluded because they did not sign the consent form another twelve were withdrawn from the study and the final sample consisted of 365 participants. As shown in Table 1, the mean age ($\pm$SD) of respondents was 17.5 ($\pm$ 8.2), ranged 15-19 years. Most of the students (57.3%) were males, second in the birth order (33.4%), from the urban region (64.1%), and living in families including less than 7 members with parents had low education levels. The household income for 223 (61.1%) of the surveyed students was below USD 400, however, 194 (53.2) of students' fathers have a job, compared to 251 (68.8%) of housewife's mothers.

Knowledge, attitude, and perception scores by social and demographic characteristics
As shown in Tables 2 and 3, the mean knowledge score was 8.71 (SD = 3.02, range: 0–10), and the overall accuracy rate for the

knowledge test was 87.1% (8.71 /10 * 100). The mean attitude score was 9.54 (SD = 3.67, range: 0-11), and the overall accuracy rate for the attitude test was 86.7% (9.54 /11 * 100), (Table 3 and 4). The mean perception score was 10.65 (SD = 3.82, range: 0-12), and the overall accuracy rate for the perception test was 88.7% (10.65 /12 * 100), (Table 3 and 5).

Demographic information
In Table 6, the mean scores for knowledge, attitude, and perception regarding substance abuse in Iraq vary based on social and demographic characteristics. Male gender (P=0.003), Urban residency (p=0.000), and income of >US$400 (P=0.000) significantly affect knowledge scores. Attitude scores, on the other hand, are impacted by male gender (p=0.0001), parental high education (p=0. 007, P=0.002), urban residency (P=0.000), and income of >US$400 (p=0.002). Perception scores are influenced by factors like male gender (P=0.001), family size of less than 7 members (p=0.006), income of >US$400 (p=0.001), urban residency (p=0.004), and sixth academic class (p=0.021). These findings underscore the multifaceted nature of substance abuse attitudes and perceptions across different demographics.

Regression analysis
Regression analysis showed that male gender (P =0.002), urban residents (P =0.000), and those with household income exceeding USD 400 monthly (P =0.000) were significantly associated with upper knowledge score. Regarding attitude scores, males (p=0.001), students of highly educated fathers (p=0.002), and highly educated mothers (p=0.007) were significantly associated with positive attitudes. Males (p=0.001), those living in families of less than seven members (p=0.013), and the students of the sixth class (p=0.021) were significantly associated with high scores of perception on substance abuse (Table 7).

Table 1: Social and demographic characteristics of the study participants (n=365)

Variables	Category	Number (%)
Age group	Mean $\pm$: 17.5 (8.2)	Range:15-19
Gender	Female	156 (42.7)
	Male	209 (57.3)
Family Members	Less than 7	209 (57.3)
	More than 7	156(42.7)
Father's education	Low education	187 (51.2)
	High education	178(48.8)
Mother's education	Low education	203 (55.6)
	High education	162 (44.4)
Area Residence	Urban	234 (64.1)
	Rural	131 (35.9)
Father's employment statues	Unemployed	171 (46.8)
	Employed	194 (53.2)
Mother's employment statues	Unemployed (housewife)	251(68.8)
	Employed	114 (31.2)
Level of income	<US $400	223 (61.1)
	>US$400	142 (38.9)
Birth orders	First	91 (24.9)
	Second	122 (33.4)
	Third	85 (23.3)
	Fourth and above	67 (18.4)
Class	1st class	123 (33.7)
	2nd class	125(34.2)
	3rd class	117(32.1)

Table 2: Responses to knowledge statements regarding substance abuse in Iraq (n=365)

No.	Statement	Categories	Yes N (%)	No N (%)
1	Which of the following drugs have you heard of?	Hashish	305(83.6)	60(16.4)
		Heroin	283(77.5)	82(22.5)
		Cocaine	269(73.7)	260(26.3)
2	Upon hearing the following words, it comes to your mind that somebody takes narcotic pills or has a substance abuse relationship.	Mkbsl (Encapsulated)	325(89.0)	40(11.0)
		(Mehashish) Stoned	298(81.6)	67(18.4)
		Crystal	169(46.3)	196(53.7)
		Tablets	112(30.7)	253(69.3)
3	I know someone who smokes Hashish.		63(17.3)	302(82.7)
4	I personally know someone who has/had a drug problem.		72(19.7)	293(80.3)
5	Have you ever taken cannabis e.g. hashish/marijuana		19(5.2)	346(94.8)

Table 3: Number of questions, range, scores, and levels of knowledge, perception, and attitude toward substance abuse (n=365)

Variables	Number of questions	Range of score	Total scores (mean ± SD)	Accuracy rate (%)
Knowledge	10	0-10	8.71 ± 3.02	87.1
Attitude	11	0-11	9.54 ± 3.82	86.7
Perception	12	0-12	10.65 ± 3.67	88.7

Table 4: Attitudes towards Drug Addicts in Iraq (n=365)

No.	Statement	Agree N(%)	Disagree N(%)	Don't know N(%)
1	Drug addicts or misusers must be considered sick or victims, not criminals.	170(46.6)	111(30.4)	83(23.0)
2	I would tend to avoid someone who is a drug addict because they really scare me.	318(87.1)	21(5.8)	26(7.1)
3	People who end up with a drug problem have only themselves to blame.	137(37.5)	57(15.6)	171(46.9)
4	Drug addicts are not given a fair chance to get along in society.	92(25.2)	100(27.4)	173(47.4)
5	Many drug addicts exaggerate their troubles to get sympathy	191(52.3)	93(25.5)	81(22.2)
6	Almost all drug addicts are dangerous.	202(55.3)	61(16.7)	102(28.0)
7	Our society is too tolerant towards drug users.	55(15.1)	147(40.3)	163(44.6)
8	I would be nervous about someone who uses illegal drugs.	265(72.6)	41(11.2)	59(16.2)
9	Drug education in school should start at the primary level	335(91.8)	17(4.7)	13(3.6)
10	Treatment should only be given to drug addicts who intend to give up drugs for good.	119(32.6)	129(35.3)	117(32.1)
11	Treatment should be available to all drug addicts, according to their needs.	97(26.6)	143(39.2)	125(34.2)

Table 5: Perceived extent of the drug problem in Iraq (n=365)

No.	Statement	Agree N(%)	Disagree N(%)	Don't know N(%)
1	Alcohol abuse causes more problems in society than drug abuse.	76(20.8)	231(63.3)	58(15.9)
2	Drugs are not really a problem to us here in this neighborhood.	317(86.8)	21(5.8)	27(7.4)
3	Most people are concerned about the drug problem in Iraq.	272(74.5)	49(13.4)	44(12.1)
4	The drug problem in Iraq is out of control	205(56.2)	107(29.3)	53(14.5)
5	Drug-related crime is a major problem in Iraq today	312(85.5)	32(8.8)	21(5.7)
6	The availability of illegal drugs poses a great threat to young people nowadays	329(90.1)	19(5.2)	17(4.7)
7	Most young people try out Hashish.	67(18.3)	83(22.7)	215(59.0)
8	Most young people today try out tablets.	93(25.5)	97(26.6)	175(47.9)
9	Normally, young people will try drugs at least once.	77(21.1)	143(39.2)	145(39.7)
10	Reports about the extent of drug usage amongst young people are exaggerated by the media	183(50.1)	121(33.2)	61(16.7)
11	All illegal drugs are equally harmful to your health.	335(91.8)	12(3.3)	18(4.9)
12	If you try drugs even once, you are addicted.	166(45.5)	92(25.2)	107(29.3)

Table 6: Comparison of social and demographic characteristics and mean Knowledge, attitude, and perception scores (n=365)

Variables		Total		Knowledge			Attitude			Perception		
		n	%	Mean	SD	P	Mean	SD	P	Mean	SD	P
Gender	Female	156	42.7	7.3	2.5	0.003	8.1	3.6	0.000	9.1	3.3	0.001
	Male	209	57.3	8.9	2.2		9.4	3.0		10.6	3.1	
Family Members	Less than 7	209	57.3	9.1	2.7	0.212	9.3	2.5	0.131	11.0	3.2	0.006
	More than 7	156	42.7	8.9	3.0		9.2	2.2		9.6	3.0	
Father's education	Low	187	51.2	7.7	2.8	0.241	8.3	2.7	0. 007	9.4	3.3	0.195
	High	178	48.8	7.9	2.6		9.7	2.3		9.7	3.1	
Mother's education	Low	203	55.6	8.2	3.2	0.214	8.5	1.9	0. 002	10.1	2.9	0.323
	High	162	44.4	8.1	3.4		9.7	2.2		10.5	3.4	
Residency	Urban	234	64.1	9.3	1.5	0.000	9.7	2.1	0.000	11.2	2.7	0.004
	Rural	131	35.9	7.6	2.8		8.8	3.4		9.7	3.5	
Father's employment	Unemployed	171	46.8	8.1	3.4	0.110	9.7	2.1	0.131	10.6	2.4	0.109
	Employed	194	53.2	8.4	3.1		9.9	1.8		10.2	2.6	
Mother's employment	Unemployed	251	68.8	8.6	3.1	0.109	9.0	1.7	0.305	9.9	1.9	0.211
	Employed	114	31.2	8.5	4.2		8.9	1.5		10.3	2.2	
Level of income	>US$400	142	38.9	9.1	2.0	0.000	10.0	1.2	0.002	11.3	2.4	0.001
	<US $400	223	61.1	7.7	2.8		8.5	1.5		9.0	3.0	
Birth orders	First	91	24.9	8.7	1.8	0.136	9.1	1.9	0.182	10.9	3.5	0.166
	Second	122	33.4	7.3	2.7		8.5	1.9		9.6	3.1	
	Third	85	23.3	7.0	2.0		8.5	1.9		9.7	3.2	
	≥ Fourth	67	18.4	7.3	2.5		9.2	1.3		9.3	3.6	
Class	4th class	123	33.7	8.6	2.8	0.317	9.4	2.1	0.430	9.0	2.5	0.021
	5th class	125	34.2	8.4	3.2		8.9	1.7		9.3	2.1	
	6th class	117	32.1	8.3	3.1		8.7	1.6		10.0	2.2	

Table 7: Regression results of knowledge, attitude, and perception-related factors (n=365)

Variable	B	SE	Beta	t	P-value	95% CI lower-Upper	Tolerance	VIF
Knowledge (Durbin-Watson= 1.668)								
Male (VS Female)	0.361	0.229	0.187	2.102	0.002	(0.341,0.729)	0.934	1.104
Urban (VS Rural)	2.107	0.258	0.443	7.101	0.000	(1.165,4.524)	0.865	1.109
>US$400 (VS <US $400)	1.577	0.205	0.231	4.534	0.000	(0.907,1.573)	0.913	1.106
Attitude (Durbin-Watson= 1.649)								
Male (VS Female)	1.277	0.207	0.203	3.821	0.000	(1.412, 5.223)	0.971	1.042
Students of Highly educated fathers (vs low educated)	1.236	0.349	0.216	1.942	0.002	(2.160,4.881)	0.984	1.105
Students of Highly educated mothers (vs low educated)	1.520	0.495	0.263	1.865	0.007	(1.810,5.690)	0.891	1.001
Perception (Durbin-Watson= 1.747)								
Male (VS Female)	0.451	0.236	0.192	3.212	0.001	(0.430, 0.691)	0.943	1.006
Family members < 7 (VS family members > 7)	0.427	0.502	0.203	1.005	0.013	(2.201, 5.003)	0.883	1.015
Class 6 (VS class 4, and 5)	1.145	0.324	0.219	3.131	0.021	(1.423, 4.202)	0.963	1.005

Discussion

The demographic profile of the surveyed Iraqi adolescents provides valuable context for understanding their knowledge, attitudes, and perceptions regarding drug abuse. The mean age of 17.5 years suggests that the study captured insights from late adolescence, a critical developmental stage where attitudes and behaviors toward substance use may crystallize. A report by United Nations (2018) suggests that drug abuse is a widespread concern, and manifests more prominently among younger demographics, particularly males aged 15 to 30 [16]. The Global Burden of Disease (GBD) study of 2013 highlights the heightened burden of drug abuse among adolescents and young adults, accounting for 14%

of health burdens in young men [17]. Substance use disorders contribute significantly to mortality rates among younger individuals, with cannabis being a prevalent choice among users [18]. In this study, approximately 5.2% of respondents (all males) admitted to experimenting with cannabis, while 19.3% were acquainted with individuals who smoke hashish, and 17.3% knew someone struggling with drug addiction. Over two-thirds were familiar with hashish, heroin, and cocaine. Notably, adolescents demonstrated the ability to discern the language of drug users, with exceptions like "tablets," which held varied interpretations, particularly among females. Furthermore, the mean knowledge score of 8.71

indicates a relatively high level of awareness among the participants, with an overall accuracy rate of 87.1%. This suggests that the majority of adolescents possess a solid grasp of drug-related information, which is essential for making informed decisions and engaging in preventive behaviors. The European Monitoring Centre for Drugs and Drug Addiction (2023) reported that in 2022, cannabis use among the EU population aged 15 to 34 was 15.1% (15.3 million), with males being twice as likely as females to report use [19]. Mavura et al. discovered a 12.8% prevalence of substance use among Tanzanian adolescents, with reported use of cocaine, heroin, and marijuana [20]. Haddad et al. [21] found Jordanian students to be knowledgeable about substance abuse's harmful effects on the body and society, though lacking in-depth knowledge [21]. Okwuikpo et al. [22] noted that 87.9% of Lagos State teenagers exhibited high knowledge of substance abuse, with 96.3% holding an overall positive perception of it [22]. The predominance of males underscores the importance of considering gender-related factors in addressing drug abuse issues. Nearly half of the surveyed students (46.6%) viewed addicts as victims rather than criminals, yet 37% blamed them for their addiction, and 52.5% believed they caused societal issues. A majority (87.1%) expressed fear of addicts, considering them a significant threat, while over two-thirds found them bothersome. Despite this, over 40.0% disagreed with the notion of Iraqi society's high tolerance toward drug users. Conversely, one-third advocated for addicts' integration into society and access to treatment as needed. The mean attitude score of 9.54 reflects generally positive attitudes towards drug abuse prevention and treatment, with an overall accuracy rate of 86.7%. In a study by Mohammed KM et al. [13], it was highlighted that both male (82.5%) and female (85.7%) participants agreed that avoiding friends who are substance abusers can effectively prevent substance abuse. Meanwhile, a Pew Research Center survey revealed that 46.0% of U.S. adults had a family member or close friend with a history of drug addiction. Federal data from 2016, as reported by the Substance Abuse and Mental Health Services Administration (SAMHSA), showed that approximately 7.4 million Americans aged 12 and older (2.7%) met the criteria for an "illicit drug use disorder" [23]. Chandler et al. [24] emphasized the significance of treating drug-involved offenders to combat substance abuse and associated criminal behavior. Additionally, Rahimian Boogar et al. [25] found that being male and having neurotic tendencies significantly predicted a positive attitude toward substance abuse among university students. Kapoor et al. [26] underscored how perceptions of drug addiction problems strongly shape attitudes toward drug abuse across various demographic factors like gender, age, and education. This emphasizes the importance of fostering positive attitudes among adolescents, as they can serve as protective factors against drug abuse initiation and escalation. Regarding perceptions, the mean score of 10.65 indicates a moderately accurate perception of drug abuse-related behaviors and consequences, with an overall accuracy rate of 88.7%. Furthermore, the findings suggest a complex perception of drug abuse among students in Iraq. While 85.0% view drugs as a significant crime beyond state control, nearly 90.0% see drug availability as a genuine threat to youth. Interestingly, over two-thirds believe drug issues don't directly affect their residential areas, yet about three-quarters believe most Iraqis are concerned about drugs. There's ambiguity regarding the normalcy of hashish or narcotic pill use among Iraqi youth. Despite this, over 90.0% agree on the harmful nature of narcotic drugs, with 50% acknowledging social media's influence on drug consumption. Moreover, the consensus is that even a single drug experience can lead to addiction, highlighting the need for comprehensive prevention and intervention strategies. Our study's findings resonate with those from Lagos State, where 96.3% of students exhibited an overall positive perception of

substance abuse [22]. Divya et al. [27] discovered that a majority (67.0%) of adolescent students in India expressed favorable attitudes towards the negative effects of substance abuse. Similarly, Nagar and Hamad [28] observed that occasional substance use is not widely perceived as harmless among teenage students. Masibo et al. [29] reported that Tanzanian students generally fail to recognize the potential benefits of substance use and perceive significant harm associated with abusing psychoactive substances. The regression analysis underscores the influence of social and demographic factors on adolescents' knowledge, attitudes, and perceptions regarding drug abuse. Male gender, urban residency, and higher household income correlate with greater knowledge scores, indicating disparities in access to information and resources across different demographic groups. Similarly, positive attitudes towards drug abuse prevention are associated with male gender and higher parental education levels. In contrast to previous studies conducted in Iraq [30] and South Africa [31], which reported ever-use substance prevalences of 22.5% and 1.1%, respectively, our findings diverge. However, our results corroborate the association between male gender and substance use. Furthermore, age emerged as a significant predictor of substance use, with older adolescents displaying a higher likelihood of engaging in substance use [30,31].

Conclusion

In conclusion, about five percent used substance at least once. The findings of this study shed light on the current landscape of adolescent knowledge, attitudes, and perceptions regarding drug abuse. By comparing these findings with earlier research, we can better understand trends and variations in adolescent perspectives on drug abuse and inform the development of targeted prevention and intervention strategies tailored to the needs of diverse populations...

Abbreviation

ANOVA: One-Way Analysis of Variance; SD: Standard Deviation; US$: United States Dollar; NIDA: National Institute on Drug Abuse; HIV/AIDS: Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome; IQD: Iraqi Dinar; GBD: Global Burden of Disease; EU: European; SAMHSA: Substance Abuse and Mental Health Services Administration

Declaration

Acknowledgment

None

Availability of data and materials

Data will be available by emailing saadalezzi@uodiyala.edu.iq

Authors' contributions

All authors equally conceived and designed the study, analyzed and interpreted the data; drafted the manuscript; and revised the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

We conducted the research following the declaration of Helsinki. The ethical approval was obtained from the Ethics Review Committee, College of Medicine, University of Diyala, Iraq (Ref No: 10-2023). Informed consent was obtained from the participants before filling out the survey questionnaire.

Consent for publication

Not applicable

Competing interest

The authors declare that they have no competing interests.

Author Details

[1]Department of Family and Community Medicine, College of Medicine University of Diyala, 32001, Diyala, Iraq
[2]Department of Consultation Clinics, Baquba Teaching Hospital, Diyala Health Directorate, 32001, Diyala, Iraq
[3]Department of Pediatrics, Albatool Teaching Hospital, Diyala Health Directorate, 32001, Diyala, Iraq

References

1. McLellan AT. Substance Misuse and Substance use Disorders: Why do they Matter in Healthcare? Trans Am Clin Climatol Assoc. 2017;128:112-130.

2. Al-Hemiary NJ, Al-Diwan JK, Hasson AL, Rawson RA. Drug and alcohol use in Iraq: findings of the inaugural Iraqi Community Epidemiological Workgroup. Subst Use Misuse. 2014 Nov;49(13):1759-63. doi: 10.3109/10826084.2014.913633.

3. Arteaga I, Chen CC, Reynolds AJ. Childhood Predictors of Adult Substance Abuse. Child Youth Serv Rev. 2010 Aug;32(8):1108-1120. doi: 10.1016/j.childyouth.2010.04.025.

4. Watts LL, Hamza EA, Bedewy DA, et al. A meta-analysis study on peer influence and adolescent substance use. Curr Psychol. 2023. https://doi.org/10.1007/s12144-023-04944-z.

5. Das JK, Salam RA, Arshad A, Finkelstein Y, Bhutta ZA. Interventions for Adolescent Substance Abuse: An Overview of Systematic Reviews. J Adolesc Health. 2016 Oct;59(4S):S61-S75. doi: 10.1016/j.jadohealth.2016.06.021.

6. Nawi AM, Ismail R, Ibrahim F, Hassan MR, Manaf MRA, Amit N, Ibrahim N, Shafurdin NS. Risk and protective factors of drug abuse among adolescents: a systematic review. BMC Public Health. 2021 Nov 13;21(1):2088. doi: 10.1186/s12889-021-11906-2.

7. Alhyas L, Al Ozaibi N, Elarabi H, El-Kashef A, Wanigaratne S, Almarzouqi A, Alhosani A, Al Ghaferi H. Adolescents' perception of substance use and factors influencing its use: a qualitative study in Abu Dhabi. JRSM Open. 2015 Mar 2;6(2):2054270414567167. doi: 10.1177/2054270414567167.

8. NIDA. Drug Misuse and Addiction. [Internet]. Bethesda (MD): National Institute on Drug Abuse; 2024 Jan 5 [cited 2024 Feb 24]. Available from: https://nida.nih.gov/publications/drugs-brains-behavior-science-addiction/drug-misuse-addiction.

9. AlObaidi A. Iraq: children's and adolescents' mental health under conditions of continuous turmoil. Int Psychiatry. 2011 Feb 1;8(1):4-5.

10. Al-Samarrai MAM, AL- Any BN, Al-Delaimy AK, Yahyaa BT, Ali Jadoo SA. Impact of internal displacement on psychosocial and health status of students residing in the hostel of Anbar University, Iraq. Journal of Ideas in Health. 2020 May 25 ;3(1):140-4. DOI: 10.47108/jidhealth.vol3.iss1.25.

11. Al Juboori R. Violence and Child Mental Health Outcomes in Iraq: Mapping Vulnerable Areas. Psychiatry International. 2024; 5(1):39-52. https://doi.org/10.3390/psychiatryint5010004.

12. Al-Imam A, Motyka MA, Hoffmann B, Al-Ka'aby H, Younus M, Al-Hemiary N, Michalak M. Risk Factors of Suicidal Ideation in Iraqi Crystal Methamphetamine Users. Brain Sci. 2023 Sep 2;13(9):1279. doi: 10.3390/brainsci13091279.

13. Mohammed MK, Ibraheem NM, Khudhair MA. Knowledge and attitude of substance abuse among the youths in Tikrit Iraq. J Popul Ther Clin Pharmacol. 2022 Jan 21;28(2):e92-e98. doi: 10.47750/jptcp.2022.865.

14. The New Humanitarian, Middle East and North Africa, Iraq, Human Rights News, Drug abuse among children on the rise; 9 May 2007. Available on: https://www.thenewhumanitarian.org/report/72042/iraq-drug-abuse-among-children-rise [Accessed on 10th December 2023].

15. Bryan A, Moran R, Farrell E, O'Brien M. Drug-Related Knowledge, Attitudes and Beliefs in Ireland: Report of a Nation-Wide Survey. Dublin: The Health Research Board; 2000.

16. United Nations. World Drug Report 2018. United Nations publication, Sales No. E.18.XI.9. 2018. Retrieved from https://www.unodc.org/wdr2018.

17. Degenhardt L, Stockings E, Patton G, Hall WD, Lynskey M. The increasing global health priority of substance use in young people. Lancet Psychiatry. 2016;3(3):251–64. doi:10.1016/S2215-0366(15)00508-8.

18. Ritchie H, Roser M. Drug Use - Our World in Data. Global Change Data Lab; 2019. Available from: https://ourworldindata.org/drug-use [Accessed 15 November 2020].

19. European Monitoring Centre for Drugs and Drug Addiction. European Drug Report 2023: Trends and Developments. Available from: https://www.emcdda.europa.eu/publications/european-drug-report/2023/cannabis_en [Accessed on 11 December 2023].

20. Mavura RA, Nyaki AY, Leyaro BJ, Mamseri R, George J, Ngocho JS, Mboya IB. Prevalence of substance use and associated factors among secondary school adolescents in Kilimanjaro region, northern Tanzania. PLoS One. 2022 Sep 2;17(9):e0274102. doi: 10.1371/journal.

21. Haddad L, Shotar A, Umlauf M, Al-Zyoud S. Knowledge of substance abuse among high school students in Jordan. J Transcult Nurs. 2010 Apr;21(2):143-50. doi: 10.1177/1043659609357632.

22. Okwuikpo MI, Chionye, SC, Ajaegbu VU, Maitanmi JO, Leslie TA. Knowledge And Perception Of Substance Abuse Among Teenagers In Selected Secondary Schools In Ajeromi Lga, Lagos State. IOSR Journal of Nursing and Health Science (IOSR-JNHS)2020; 9(3):42-50.

23. John Gramlich. Nearly half of Americans have a family member or close friend who's been addicted to drugs. Pew Research Center. October 26, 2017. Available from: https://www.pewresearch.org/short-

reads/2017/10/26/nearly-half-of-americans-have-a-family-member-or-close-friend-whos-been-addicted-to-drugs/ [Accessed on 20 December 2023].

24. Chandler RK, Fletcher BW, Volkow ND. Treating drug abuse and addiction in the criminal justice system: improving public health and safety. JAMA. 2009 Jan 14;301(2):183-90. doi: 10.1001/jama.2008.976.

25. Rahimian Boogar I, Tabatabaee SM, Tosi J. Attitude to substance abuse: do personality and socio-demographic factors matter? Int J High Risk Behav Addict. 2014 Sep 1;3(3):e16712. doi: 10.5812/ijhrba.16712.

26. Kapoor V, Tomar V, Bakhshi P, Shukla M, Kumar V. Perception, Attitude and Support of Society Towards Drug Abuse: Do Gender, Age and Education Matter? Journal of Health Management. 2021;23(2):264-274. doi:10.1177/09720634211011566.

27. Divya, T., Radhakrishnan, G., AnuChithra, S. (2018). The Level of Awareness and Attitude on Ill-Effects of Substance Abuse among Adolescent Students in Selected High Schools at Belgaum District, India. International Journal of Health Sciences & Research, 8 (3).

28. Nagar, S. A. &Hamed, W. S. (2018). Substance abuse as perceived by adolescents: A preventive approach for their safety. American Journal of Nursing Research, 6(5), 299-308

29. Masibo, R. M., Mndeme, E., Nsimba, S. E. D. (2013). An assessment of knowledge, attitudes and practices of psychoactive substance use among secondary school students in Dodoma Municipality, Tanzania. American Journal of Research Communication, 1(4), 200-240

30. Al-Hemiary NJ, Hashim MT, Al-Diwan JK, Abdul Razzaq E. Alcohol and drug abuse in post-conflict Iraq. (2016). Journal of the Faculty of Medicine Baghdad, 57(4), 290-294. https://doi.org/10.32007/jfacmedbagdad.574392.

31. Gordon K, Kutywayo A, Frade S, Naidoo N, Mullick S. Socio-demographic and social support factors related to substance use in South African in-school adolescents: Insights from the Girls Achieve Power (GAP Year) trial in three peri-urban settings. Gates Open Res. 2021 Nov 9;5:154. doi: 10.12688/gatesopenres.13422.1.