

## Substance Abuse amongst Middle Eastern Community in Metro Detroit, Michigan, USA

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### Abstract

**Background:** Substance abuse is a global endemic costing billions. Its impact on healthcare is unparalleled, hence assessing risk factors and prevalence is necessary. The study objective was to review substance abuse amongst Middle Eastern community in Metro Detroit, Michigan US.

**Methods:** A random sample (n=337) of Iraqi (Arab vs. Chaldean) who were residents in metro Detroit area were studied. The substance abuses studied were alcohol, amphetamine, sedative and street drugs. Chi-square test, Binary logistic regression and linear regression analysis were used.

**Results:** Study results concluded that there was significant difference in the prevalence of substance abuse in the two groups, with Chaldeans having higher 'all substance abuse' prevalence. On further analysis, Chaldeans had a higher prevalence in alcohol (51%), whereas Arabs had more street drug use (9.8%) (p<0.001). Being a male, Chaldean, and having depression are a risk factor predictor for combined substance abuse. Depression was the common risk factor predictor for all combined substance, sedative and street drug use. Risk factor predictors for excellent health were among Chaldean, young, and those who do not report symptoms of depression. Employed and those who have stayed in the USA for a long time. Amongst the users, Arabs had a higher prevalence of hypertension, headache, amnesia, muscles or tendons conditions, and depression (p<0.005).

**Conclusion:** There was significant difference between Arab and Chaldean in prevalence of substance abuse. Chaldeans had more alcohol usage, whereas Arabs had more street drug use. Individuals with depression and of Chaldean ethnicity have a high risk factor for combined substance—especially alcohol.

**Keywords:** Alcohol; Street drugs; Amphetamine; Arab; Chaldean; Immigrant

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### Introduction

Substance abuse in this study includes alcohol, illicit drugs, sedatives, amphetamines and street drugs, which is one of the most costly burdens to our healthcare system, with costs up to \$400 billion [1]. Michigan has the largest number of Arab population in the whole country, including Chaldeans [2]. The number of Iraqi (Arab and non-Arab) Americans in USA is over 102000 [3]. Even though Arabs comprise 0.52% of the USA population [3] very little is known about the prevalence and risk factors of substance abuse Middle Eastern population of metro Detroit [4].

Currently, in the USA the most common addictions are as follows: alcohol with 18 million users, and marijuana 14 million, painkillers

1.8 million [5]. These numbers show us the high prevalence of addictions in the USA. In Michigan, statistics show us 10.7% of the population over 12 years of age reported use of illicit drugs; this excluding alcohol use. Alcohol, which is consumed by 60% of Michigan residents [6]. If we go further down the branch to Arab Americans in Michigan only, which we are focusing on in our study, their prevalence of alcohol use is 45.6% [7]. In Detroit alone, Arab Americans of Iraqi origin reported alcohol use in 13.4% [7]. Marijuana (as one of the street drugs) use is 1.5% in immigrant Arab American population, and prescription drug use 0.6% in the same group [8]. There is currently not sufficient literature regarding amphetamines use in Arab Americans.

Immigrants are a vulnerable sect of our society, with high chances of using illicit drugs and alcohol [9]. Psychiatric disorders like depression and stress are highly prevalent amongst substance abusers [10] and immigrants are more likely to have such disorders, which can be attributed to the stressors of immigration process [9]. A study in Europe showed Iraqi immigrants are three times more likely to be diagnosed with depression and anxiety, as compare to their native counterparts [11].

Immigrating to a new country has its challenges; some of them include language barrier, cultural differences, and discrimination [12]. For Arab Americans, of them being 25-30% Muslim [13], they face an added challenge of religious and cultural acceptance of substance abuse as well.

In comparison to the west, in most Middle Eastern countries, illicit drugs and alcohol are prohibited [14], mainly due to religious reasons, and hence this community has to deal with a conflict of cultural vs. religious values when they move to a western society. That being said, substance abuse is more common now in the immigrants second generation for a similar reason [15, 16], as they have adopted the norms of the society they are currently in residing.

One can argue that immigrating to a new country will motivate people to stay in touch with their culture, so they do not forget their roots and can embark their culture knowledge to the second-generation immigrants. This is evident by the fact that immigrants of the same origin in USA are more geographically concentrated in certain areas than others [17]. This helps preserve culture and values of their origins [18].

Chaldeans, the Christian minority does not have any religious barrier against alcohol [17], but still have lower prevalence of its use, proving that society and culture molds a person's habits.

Not only on the use of alcohol, but the two ethnicities of Middle East – Arab and Chaldean have many differences. Most of these revolve around the difference between the religions - Islam (the religion followed by Muslims) vs. Christianity. Some of the differences include; Muslim women are required to cover their head, Muslims are prohibited from drinking alcohol or using any illicit drug use, and Muslim men are allowed to marry more than once. These values are different from Christianity where women are not required to cover heads, men can only marry once and alcohol and illicit drug use are not prohibited.

In the same context of cultural norms, Arab Americans were also found to have lower lifetime use of marijuana and non-medical prescription drugs, when compared with white non-Hispanic USA born individuals, but similar to immigrants from other countries like Iran, Pakistan, and Afghanistan [18].

Stressor of the current political instability in their home countries, places Iraqi immigrants in a 'high stress' group as well. This is evidenced in the survey for by National Latino, which showed that Latin immigrants had a lower prevalence of substance abuse as compare to their native born counterparts [19]. This can be attributed to the political stability of their home country, as compare to Iraqis who came to USA fleeing war torn areas, and on refugee statuses.

Age and gender disparities are also evident amongst substance abusers [20]. With research showing that marijuana and alcohol use is higher in male population as compare to the female counterparts. Females, on the other hand, had higher use of prescription drug use [20-22].

If we examine the marital status amongst substance abusers, studies have shown that married individuals have a lower risk of substance abuse [23]. The National institute of Alcohol Abuse and Alcoholism statistics reveal that the lowest percentage of heavy drinkers is amongst married individuals. Interestingly, it's also important to take notice that those who got married from being single or divorced showed a marked decrease in alcohol use [24]. Hence, it is reasonable to conclude that being married has a decrease likelihood of substance abuse as compared to being single and divorced [24].

Occupation status and education also play an integral role in likelihood of abusing substances. These are the, all areas where immigrants face problems when they arrive to in a new country [12]. Lower education or no recognition of education in the USA can increase psychological stressors leaning them to illicit drugs and alcohol use [12].

Individuals' education levels have shown a negative correlation with substance abuse [25]. High school students that are heading to college have a lower chance of heavy drinking and use of illicit drugs when compared to students who are not's [26]. A 2010 National survey of Drug use and health showed the lowest prevalence of substance abuse was in individuals who were college graduates, whereas the highest was in those who had some college education and second highest in those who had less than a high school education.

The purposes of our study is to examine and compare the prevalence rate and predict risk factors of substance abuse amongst Iraqi Arab Americans (Arab) and Iraqi non-Arab American (Chaldean) in metro Detroit, Michigan. We hypothesize that Non-Arabs (Chaldeans) will have a greater prevalence of substance abuse when compared with their Iraqi Arab counterparts, owing to cultural and religious factors.

## Methods

### Participants

A survey was conducted in areas of metropolitan Detroit where high number of Iraqi Americans reside. Study was announced by radio, television, and flyers in targeted areas, which were most popular amongst Iraqi Americans in 2004. Male and female Arabic speaking research assistants and retired Iraqi physicians conducted the survey. Having retired physicians conduct the survey increased the number of people consenting to participate in the study, because culturally physicians are well respected and participants are more honest about their substance abuse habits with physicians. This resulted in 5,490 addresses being collected. These addresses were then coded and entered into SPSS. A sample of 7.5 % (411 addresses) was randomly selected, because of limited funding. 44 of these were excluded because

they did not meet the criteria (e.g. not born in Iraq, or had moved at the time of research visit). Out of the 367 eligible candidates 17 declined to participate, for reasons including lack of time, lack of interest in the study or no reason mentioned at all. The final list included 350 participants, then 13 participants were also excluded because of having ethnicity that differed from the groups we are studying. Therefore, our final study group was of 337 participants by 2005 [27]. All participants were residents of Michigan who had been residing in the state for more than 20 years, and immigrants who had come to the US after 1980 or 1991. Target of the survey was to study the health conditions of the population irrespective of their substance abuse habit; hence we could also assess risk factors by studying their current habits. We then classified the groups according to ethnicities - Iraqi Arabs American (Arab) (n=184) and Iraqi Non-Arabs American (Chaldeans) (n=153). **Table 1** shows the demographics of the study populations by ethnicity.

### Measures

The structured questionnaire used in the interview process was a validated instrument used in large-scale surveys [27]. The survey included 108 questions covering different aspects of participants' health and background. Questions included information about their demographics, status of immigration, year of immigration, health problems and their substance abuse habits. The questions

were phrased to be answer in a 'yes or no' format (For e.g. have you ever used illicit drug (sedative, amphetamine and street drugs) or drink alcohol – Yes or No). The four substances abused were combined in a new variable named "Combined substance". This variable was classified into those who are involved in combined substance and those who are not. We established a new variable for depression based on the 10 questions related to depression questionnaire, participant have to answer one of the two options for each question, the options are (1) yes and (2) no. The scale ranged from 0 to 9. Stressors were assessed in the population by questions asking 8 questions (e.g. witnessed anyone dying, been under small arms fire and exposure to dead bodies), participant have to answer one of the three options for each question, the options are; (1) expose to <5 day, (2) 5-30 days and (3) 31+ days. The range of stressor scale was between 0 and 24.

The questionnaire included 37 health conditions (disease or symptoms) which participants were asked to answer as 'yes or no'. These questions were classified according to those who were involved in combined substance vs. those who are not. We then applied chi-square for each of the 37 health conditions amongst those who are involved in combined substance to test if there is significant difference between Arab and Chaldeans. Those with significant differences are mentioned in the results.

**Table 1** No. & % of the study population by those who used or not Substance abuse by ethnicity.

Variable		Never Substance abuse drug		Use Substance abuse		*P1	*P2	*P3
		Chaldean (n=71)	Arab (n=131)	Chaldean (n=82)	Arab (n=53)			
Mean (SD)								
<b>Year In US</b>		21.3 (11.4)	12.1 (6.2)	22.2 (10.2)	12.4 (8.0)	n.s	n.s	0.003
<b>Age</b>		48.2 (6.3)	43.0 (7.1)	47.6 (7.4)	45.2 (7.4)	0.001	n.s	n.s
<b>Stressor</b>		1.9 (3.0)	2.6 (3.0)	2.2 (2.9)	3.2 (2.9)	n.s	n.s	n.s
<b>Group</b>	<b>Subgroup</b>	<b>NO. (%)</b>				<b>*P1</b>	<b>*P2</b>	<b>*P3</b>
<b>Study group</b>	Post-1991	25 (35.2)	105 (80.2)	28 (34.1)	40 (75.5)	n.s	n.s	0.001
	1980-90	21 (29.6)	22 (16.8)	25 (30.5)	8 (15.1)			
	Pre-1980	25 (35.2)	4 (3.1)	29 (35.4)	5 (9.4)			
<b>Gender</b>	Female	50 (70.4)	69 (52.7)	12 (14.6)	16 (30.2)	0.004	0	0.012
	Male	21 (29.6)	62 (47.3)	70 (85.4)	37 (69.8)			
<b>marital status</b>	Single	15 (21.1)	11 (8.4)	9 (11.0)	5 (9.4)	n.s	n.s	0.021
	Married	56 (78.9)	120 (91.6)	73 (89.0)	48 (90.6)			
<b>Education</b>	H.S. +	35 (49.3)	84 (64.1)	51 (62.2)	31 (58.5)	n.s	n.s	0.044
	< H.S.	36 (50.7)	47 (35.9)	31 (37.8)	22 (41.5)			
<b>Work</b>	No	33 (46.5)	76 (58.0)	13 (16.0)	32 (60.4)	0	n.s	n.s
	Yes	38 (53.3)	55 (42.0)	68 (84.0)	21 (39.4)			
<b>Health insurance</b>	No	21 (29.6)	33 (25.2)	42 (52.4)	10 (18.9)	0.003	n.s	n.s
	Yes	50 (70.4)	98 (74.8)	39 (47.6)	43 (81.1)			
<b>Income</b>	\$10,000 +	14 (73.7)	36 (70.6)	27 (87.1)	11 (50.0)	n.s	n.s	n.s
	\$ ≤ 10,000	5 (26.3)	15 (29.4)	4 (12.9)	11 (50.0)			
<b>Smoke</b>	No	57 (80.3)	100 (76.3)	38 (46.3)	31 (58.5)	0	0.014	n.s
	Yes	14 (19.7)	31 (23.7)	44 (53.7)	22 (41.5)			
<b>Depression</b>	No	19 (28.4)	24 (18.3)	26 (34.2)	1 (1.9)	0	0	0
	Minor	41 (61.2)	55 (42.0)	32 (42.1)	16 (30.2)			
	Major	7 (10.4)	52 (39.7)	18 (23.7)	36 (67.9)			

Test of significant: n.s. = not significant; \*P1 between those who never use in both Chaldean and Arab; \*P2 ; between those who use in both Chaldean and Arab; \*P3: Between Chaldean Vs Arab among those who used illicit drug

The participants were also asked to fill responses regarding their self-rated health (SRH). This SRH scale is shown to help predict future health and mortality in current healthy subjects [28].

### Procedure/interview process

This study was approved by IRB [WSU/IRB/HIC# 086903B3E].

Participants were assured their specifications will be kept confidential and were interviewed in their native language by Arab speaking research assistants and followed a structured survey that was also written in Arabic.

### Statistical analysis

Different statistical analyses were used to compare and predict risk factors for substance abuse amongst Iraqi Arabs vs. Iraqi Non-Arabs (Chaldean). These include chi-square, linear regression analysis and logistic regression analysis using SPSS version 22.

## Results

Of the 337 total participants, 45.4% were Chaldeans and 54.6% were Arabs. **Table 1** shows test of significant between those

who never used combined substances in both Chaldean and Arab (\*P1); also between those who used combined substance (irrespective of its types) in both Chaldean and Arab and also between those who used combined substance (irrespective of its types) vs. not (\*P3). It is of interest to see significant differences in all the three set of analysis among gender and depression variables.

**Table 2** shows the prevalence rate of different substances abused (Alcohol and illicit drug) between Arab and Chaldeans. Of significance were, combined substance (53.6%) and alcohol (51%), which were more in Chaldeans as compare to Arab individuals (p<0.001). Whereas Arabs had significant more street drug use (9.8%) (p<0.001).

**Table 3** reveals four binomial logistic regression analysis tests, one for each combined substance and one for 'combined substance. In each analysis, risk factors were predicted. Being a male is a risk factor for combined substance abuse, with were 4.8 times more chance than females. Whereas, being a female and Chaldean carries aware 4.3 times more chance for the same, compared to their Arab counterpart. When we predict risk factors

**Table 2** Prevalence rate of Illicit drugs by ethnicity.

Substance Abuse	Chaldean (n=153)	Arab (N=184)	Total (n=337)
	<b>No. (%)</b>		
Drink alcohol*	78 (51.0)	34 (18.5)	112 (33.2)
Use street drug*	2 (1.3)	18 (9.8)	20 (5.9)
Use Sedative	5 (3.3)	11 (6.0)	16 (4.7)
Use Amphetamine	1 (0.7)	6 (3.3)	7 (2.1)
All substances abuse*	82 (53.6)	53 (28.8)	135 (40.1)
<b>Frequency of all Substance abuse *</b>			
0	71 (46.4)	131 (71.2)	202 (59.9)
1	78 (51.0)	40 (21.7)	118 (35.0)
2	4 (2.6)	10 (5.4)	14 (4.2)
3		3 (1.6)	3 (0.9)
*P <0.001			

**Table 3** Binary Logistic regression analysis to predict risk factor for substance abuse.

Binary logistic regressions analysis *	B	Sig.	Odd Ratio	95% C.I. for OR	
				Lower	Upper
<b>Likelihood for having any of the Substance abuse</b>					
Female (Ref)	1.57	0.001	4.8	2.58	8.93
Arab (Ref)	1.45	0.001	4.27	2.19	8.34
High scale Depression	0.19	0.001	1.2	1.08	1.34
<b>Likelihood for having Drink alcohol</b>					
Female (Ref)	2.09	0.001	8.08	3.85	16.96
Arab (Ref)	1.72	0.001	5.6	2.74	11.44
Have health insurance (Ref)	0.68	0.035	1.98	1.05	3.72
Never smoke tobacco(Ref)	0.6	0.053	1.82	0.99	3.35
<b>Likelihood for having Sedative</b>					
High school and above	0.27	0.02	1.31	1.04	1.65
<b>Likelihood for having street drugs</b>					
High scale Depression	0.53	0.001	1.7	1.26	2.3
<b>Likelihood for having Amphetamine</b>					
No predictor					

\*Variable(s) entered on step 1: Age, Year In US, study Group, Gender, Marital Status, Education, Ethnicity, Occupation, Health insurance, Income. In step 2 the following variables we entered: Smoke status, Stressor, Depression

**Table 4** Linear regression analysis to predict risk factors for excellent health.

Likelihood of SRH to predict risk factors	Standardized Coefficients Beta	t	Sig.	95.0% C.I. for B	
				Lower Bound	Upper Bound
All Medical Conditions Combined	0.38	7.57	0	0.11	0.19
Employed	-0.2	-4	0	-0.69	-0.23
Longer stay in US	-0.2	-3.93	0	-0.03	-0.01
Younger the age	0.16	3.72	0	0.01	0.04
Chaldean	0.13	2.48	0.013	0.06	0.51
No depression	0.1	2.05	0.041	0.01	0.5

Variable(s) entered: Age, Year In US, Gender, Marital Status, Education, Ethnicity, Occupation, Health insurance, Smoke status, Psychological Stressor, Depression, substance abuse, Chemical/other Environmental exposure and all medical condition combined

for combined substance. Depression was the common risk factor predictor for all combined substance, sedative and street drug use. However, no predictors were as found for amphetamine.

**Table 4** shows the outcome of the linear regression for predicting risk factors for excellent health. These were among Chaldean, young, employed and those who have stayed in the USA for a long time and those who do not have depression and with less medical conditions.

Of the total 37 health condition (diseases or symptom) studied in the substance abusers, only 5 showed significance between Arab vs. Chaldeans, with Arabs having a higher prevalence. The prevalence of these five health condition are as follows (the first number representing Arab and the second representing Chaldean): hypertension (26.4/11.5%), headache (47.2/31.3%), amnesia (58.5/41.2%), muscles or tendons conditions (58.5/40.5%) and depression (52.8/37.4%),  $p < 0.005$ . Chaldeans users had a higher prevalence of rheumatism (13.4/25.4 %),  $p < 0.005$ .

## Discussion

The results of this study confirm the hypothesis that prevalence of combined substances abused is greater in Chaldean (53.6%) as compare to their Arab counterparts (28.8%).

Results are indicative of significant difference in Arab and Chaldean in combined substance and in alcohol and street drug. Though amphetamine was not significant, Arabs had a higher prevalence. The findings also confirm that amphetamines usage exists amongst Arab and Chaldeans. Alcohol has a higher prevalence in Chaldeans, which coincides with Arfken's study [17], but surprisingly street drug use is more in Arabs.

Depression was one of the predictor in combined substance and street drug, which is parallel with Ross paper [10], showing that psychiatric disorders are higher in substance abuse and is also a risk factor.

Those who reported a Risk factors for excellent health, by the SRH survey, include are Chaldean (compared to Arab), employed, younger individuals, and those who do not have depression. They have a longer period of stay in USA. Hence, agreeing with Brown's [15] and Wright [16] results that culture influences individual's habits, so one adapts the norms of the society they live in.

Contrary to Dick's study [23], our results showed married

individuals who use combined substances are greater than individuals who are single, and in people with a greater than high school education, this rejects the findings of Dick's [23, 29, 30].

## Limitations

The study has some limitations: as the study survey was not designed to assess substance abuse, but to assess general health among Iraqi. Also, the questionnaire answers were based on person self-report. On the other hand, the study has positives points, as it was based on a random sample with a big sample size, participants were from the same country, and shared the same culture.

## Conclusion

The results of the study could conclude that the prevalence of overall combined substance was higher in Chaldeans compared to Arab counterparts (53.6% vs. 28.8%), with majority constituting - alcohol 51% in Chaldean and 34% in Arab. Also the predictors of combined substance show that individuals with depression and of Chaldean ethnicity have a high risk factor for combined substance— especially alcohol. Further research is recommended to explore, in detail, substance abuse in the Middle Eastern population of USA to establish strong intervention programs and increase awareness of substance abuse amongst Middle Eastern population.

## Recommendations

The results of our study could suggest some recommendations to Primary care providers so they consider screening for substance abuse in Arabs, even though in particular most of them are Muslims, and have a religious restriction on substance abuse. Also substance abuse evaluation in psychiatric patients and psychiatric evaluation in substance abuse patients should be adequately examined.

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