

Tobacco Smoking and Alcohol Drinking among Youth in Duhok, Iraq: A Cross-sectional Study

BAKHTIYAR AHMED RASHEED BABA HAJEE¹, SAAD YOUNIS AGHA²

ABSTRACT

Introduction: Tobacco smoking and alcohol drinking are among the high risk health behaviours that determine individual and community health, increasing risk of chronic diseases like cardiovascular diseases and cancer, and of early mortality.

Aim: To determine the prevalence and pattern of tobacco and alcohol use among youths in Duhok Province, Kurdistan Region of Iraq.

Materials and Methods: This community based cross-sectional study conducted from September 2020-January 2021 in Duhok Province, Iraq. Systematic random sampling was used to interview 729 youths (15-24 years) (366 males and 363 females), who visited the Premarital Screening and Counselling Health Clinic in Duhok city, Iraq. Data collection was done using questionnaire based on the World Health Organisation (WHO) STEPwise approach to Non

Communicable Diseases (NCD) surveillance. Data were analysed by Statistical Package for the Social Sciences (SPSS) version 26.0, and association between variables was calculated using the Chi-squared test and logistic regression.

Results: Prevalence of tobacco smoking among youth was 20.3%, (25.4% in males and 15.2% in females). Males were 2.2 times more likely to smoke tobacco (OR: 2.2). Nargila/waterpipes was the most commonly used tobacco product (19.5%) followed by cigarettes (14.1%). Prevalence of alcohol drinking was 4.0%, (7.1% in males and 0.8% in females).

Conclusion: Tobacco smoking among youth in Duhok was high, especially among females, with more use of Nargila/waterpipes. Exposure to second hand smoking was very high. Alcohol drinking was higher than WHO estimate for Iraq.

Keywords: Health risk behaviour, Nargila, Substance abuse, Waterpipes

INTRODUCTION

Tobacco smoking and alcohol drinking are among the high risk health behaviours, with increased risk of chronic diseases like cardiovascular, cancer, and early mortality [1,2]. Globally in 2019, 64.2% of deaths from tracheal, bronchus, and lung cancer, were attributed to smoking [3]. Tobacco use has negative health effects, with at least 70 toxic compounds having carcinogenic effect on human [4,5]. The most known alkaloid's component of tobacco is Nicotine which can affect the nervous system and is one of the highly addictive substances [6]. Tobacco use is influenced by multiple factors with direct effect of the culture. In many communities, young boys still think tobacco smoking is part of growing and having authority [4]. Peer groups have high influences on tobacco use among youth [7]. Tobacco industries promotion has resulted in initiating smoking tobacco among many youths [8].

Smoking among Iraq adolescent and youth (13-18 years) is among the highest rate in the Middle East (21.8%) [9]. In Erbil city, Iraq, 27.6% of youth (14-19 years) smoke cigarettes and 23.6% use waterpipe (Nargila/shisha) [10], and among Duhok universities' students 23.5% smoke cigarettes [11]. Stress and instability due to decades of wars in Iraq could have resulted in increasing tobacco use [12].

Alcohol use was the leading health risk factor globally in 2016, with 12.2% of deaths attributed to alcohol use among adult male (15-49) and 3.8% among females [13]. Use of alcohol is associated with violent behaviours among youth [14] and increase risk of infectious diseases like Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) and tuberculosis [15]. Alcohol uses continue to be the most used psychoactive substance in Iraq 3.2% [16,17]; in Erbil city 3.7% [10]; in Duhok, 5.4% of adult males reported consuming alcohol in 2004 [18]; and there are no recent estimates specially among youth (15-24 years) in Duhok, Iraq.

Thus, the aim of this study was to determine the prevalence and pattern of tobacco and alcohol use among youths in Duhok Province, Kurdistan Region of Iraq.

MATERIALS AND METHODS

This was a community based cross-sectional study conducted in Duhok Province, Iraq, between September 2020-January 2021. Ethical approval was obtained from Research Ethical Committee of Directorate General of Health, Duhok, Iraq. (Reference no. 29052018-4).

Inclusion criteria: This study included youth aged 15-24 years old, both males and females, attending the Premarital Screening and Counselling Health Clinic in Duhok, gave consent and accepted to participate in this study.

Exclusion criteria: Those unwilling to participate in this study, and those not within the 15-24 years range, were excluded from this study.

Sample size calculation: Study sample size was calculated using $\{n=(Z^2 P(1-P))/E^2\}$ formula [19], where, $Z=1.96$, with anticipated prevalence (P) of 0.5 {the anticipated prevalence (p) of 0.5 was taken to get higher sample size}, and type one error (E) of 0.05. The sample size was increased, multiplied by the estimated design effect of 2, including 10% non response rate, to have a more representative sample size. Thus, the total sample size was calculated as 768.

Study Procedure

Systematic random sampling was used to select eligible and willing youth (15-24 years). Due to COVID-19 pandemic restrictions, data collection couldn't be done in the community and instead done at the Premarital Screening and Counselling Health Clinic in Duhok city, Iraq. The clinic is the main health screening and counselling facility for young couples willing to marry, with the majority aged 18-30 years, and monthly around 450 couples visit this clinic.

Eligible youths, attending the clinic were randomly selected, based on systematic random sampling, where every third attendee

was requested to participate in the study. Those accepted were interviewed in private and suitable place.

Verbal consent was obtained from each participant, the data were collected using standardised questionnaire, which comprised of 62 questions, based on the WHO STEP-wise approach to NCD surveillance [20]. The questionnaire included, background and socio-demographic information (19 questions); tobacco (24 questions) products use, current and daily tobacco product smoking and use, exposure to second-hand smoking, attitude toward smoking, and tobacco product advertisement; and alcohol consumption, lifetime consumption of any alcohol, within the past 12 months, attitude toward smoking, and alcohol advertisement (19 questions) [Annexure-1].

STATISTICAL ANALYSIS

The study data were entered and scrutinised using Microsoft Excel spreadsheet, then analysed to measure the required frequencies, rates and proportions of the study variables using the SPSS version 26.0. Association between variables was calculated using the Chi-squared test and considered statistically significant if the p-value was <0.05. A logistic regression modelling was performed to examine the effects of gender, age groups, from Duhok district, sequence in the family, a friend offer a cigarette, someone smoke at home, seeing tobacco advertisement, university student, and lifetime use of alcohol, on the likelihood that participants currently smoke tobacco.

RESULTS

A total of 729 (366 males and 363 females) youths were successfully interviewed, out of the 768 selected sample with 94.9% response rate, with mean age of 19.4 years, and 456 (62.6) were students. A total of 148 (20.3%) of youths were current tobacco smokers, 96 (13.2%) smoked daily, and 82 (11.2%) were past smokers, of them 17 (2.3%) smoked daily, and stopped at mean age of 17 years and no one used smokeless tobacco products. A total of 142 (19.5%) smoke Nargila/Shisha and 103 (14.1%) manufactured cigarettes, while hand rolled cigarette, pipes and cigars were not smoked at all. A total of 101 (13.8%) would definitely smoke a cigarette offered by a friend, while 24 (3.3%), think will definitely smoke a cigarette in the next 12 months, and 16 (2.2%) have noticed any health hazard notice on tobacco packs [Table/Fig-1]. Sixty-one, (41.5%) of current tobacco smokers have tried to quit smoking, and 24.5% were advised to quit tobacco smoking during a visit to a medical doctor or other health workers. A total of 89 (60.5%) bought the tobacco they smoke while, 31 (21.1%) get it from a friend [Table/Fig-2].

The mean age for starting tobacco product smoking was 16.2 years. While the cost of tobacco product smoked in the past thirty days was 29,871 Iraq Dinars [Table/Fig-3].

Tobacco use	Males n=366		Females n=363		Total N=729		p-value*
	No.	(%)	No.	(%)	No.	(%)	
Currently smoke any tobacco products	93	(25.4)	55	(15.2)	148	(20.3)	<0.001
Currently smoke tobacco products daily	56	(15.3)	40	(11.0)	96	(13.2)	0.086
In the past, did ever smoke any tobacco products	38	(10.4)	44	(12.1)	82	(11.2)	0.498
In the past, did ever smoke daily	7	(1.9)	10	(2.8)	17	(2.3)	0.420
Smoke Nargila/Shisha/waterpipes	90	(24.6)	52	(14.3)	142	(19.5)	<0.001
Smoke manufactured cigarettes	85	(23.2)	18	(5.0)	103	(14.1)	<0.001
Smoke hand rolled cigarette, pipes, and cigars	0	0	0	0	0	0	NA
Currently or in the past use any smokeless tobacco products	0	0	0	0	0	0	NA

Someone smoke in your home during the past 30 days	347	(95.1)	358	(98.9)	705	(96.7)	0.004
Someone smoke in enclosed public places where you were during the past 30 days	340	(92.9)	353	(97.5)	693	(95.1)	0.005
If one of best friends offered a cigarette, would definitely smoke it	57	(15.6)	44	(12.1)	101	(13.8)	0.107
At any time during the next 12 months, think will definitely smoke a cigarette	13	(3.6)	11	(3.0)	24	(3.3)	0.426
Have rarely noticed tobacco advertisement, in the past 30 days	364	(99.5)	360	(99.1)	724	(99.3)	0.684
Have seen tobacco advertisement on lighter	286	(78.1)	349	(96.1)	635	(87.1)	0.451
Did see any tobacco advertisements at the place where cigarette/tobacco are sold during the past 30 days	87	(23.8)	13	(3.6)	100	(13.7)	<0.001
Have noticed any health hazard notice on tobacco packs, in the past 30 days	13	(3.6)	3	(0.8)	16	(2.2)	0.020

[Table/Fig-1]: Tobacco product use on the basis of gender.
*Chi-square, with considered statistically significant if the p-value <0.005

Behaviour	Males n=93		Females n=54		Total n=147*		p-value**	
	No.	(%)	No.	(%)	No.	(%)		
Have tried to quit smoking in past 12 months	27	(29.0)	34	(63.0)	61	(41.5)	<0.001	
Advised to quit smoking tobacco during any visit to a doctor or other health worker in the past 12 months	28	(30.1)	8	(14.8)	36	(24.5)	0.040	
How did usually get the cigarette/tobacco to smoke during the past 30 days.	I bought it	72	(77.4)	17	(31.5)	89	(60.5)	<0.001
	Someone bought it for me	5	(5.4)	8	(14.8)	13	(8.8)	
	I got it from my friends	12	(12.9)	19	(35.2)	31	(21.1)	
	I got it from my family	4	(4.3)	8	(14.8)	12	(8.2)	
	I got it some other way	0	0	2	(3.7)	2	(1.4)	

[Table/Fig-2]: Tobacco users' behaviors and actions on the basis of gender.
*Total number of current smokers (148). However, 147 participants answered these questions, and one participant's data was missing and not calculated
**Chi-square, with considered statistically significant if the p-value <0.005

Tobacco use characteristics	Males n=366	Females n=363	Total N=729	p-value*
	Mean±SD	Mean±SD	Mean±SD	
Age first started smoking (years)	15.71±2.15	17.06±2.72	16.20±2.45	0.001
Age stopped smoking (years)	17.13±2.23	16.90±2.08	17.02±2.15	0.623
Cost of tobacco in IQD, last 30 days	35,473±34059	20,222±27613	29,871±32591	0.006
Cigarettes smoked daily	9.71±6.51	8.50±5.16	9.50±6.29	0.462
Nargila/Shisha smoked weekly	1.93±1.29	1.46±0.98	1.76±1.20	0.024

[Table/Fig-3]: Tobacco use characteristics on the basis of gender.
*Chi-square, with considered statistically significant if the p-value <0.005

Binary logistic regression model was statistically significant, $\chi^2=27.583$, $p=0.004$. The model explained 9.7% (Nagelkerke R^2) of the variance in currently smoke tobacco and correctly classified 81.5% of cases, and shows that males were 2.21 times more likely to smoke tobacco than females, while not being the first child in the family, is less likely

to smoke, (Odds Ratio [OR] 0.607, 95% Confidence Interval [CI] 0.417-0.883) [Table/Fig-4].

Tobacco smoking predictors	OR*	95% CI**		p-value
Age groups (20-24 years old)	0.845	0.407	1.754	0.652
Gender (Male)	2.213	1.311	3.734	0.003
Someone smoke at home	0.335	0.069	1.615	0.173
Seeing tobacco advertisement	0.246	0.018	3.396	0.295
Sequence in the family (not being the first child)	0.607	0.417	0.883	0.009
Best friends offer a cigarette	1.435	0.294	7.005	0.655
Ever consumed alcohol	1.450	0.419	5.021	0.558
High school student	1.922	0.923	4.001	0.081
From Duhok district	0.705	0.406	1.222	0.213
Constant	6.296	-	-	0.269
χ^2	27.583		0.004	
% Correct Predictions	81.5			
Nagelkerke R ²	9.7%			
N	729			

[Table/Fig-4]: Binary Logistic Regression Model of predictors for being current smoker. *Odd Ratio; **Confidence Interval; ***Chi-square, with considered statistically significant if the p-value <0.005

Twenty-nine (4.0%) participants reported lifetime alcohol drinking, with 16 (2.2%) in the last 12 months, while 11 (1.5%) have stopped drinking alcohol due to health reasons. Ten (1.4%) have had got into

troubles once or twice with family or friends, missed school/work, or got into a fight as a result of drinking, while 7 (1.0%) have had trouble due to someone else drinking in the past 12 months. [Table/Fig-5]. The mean number of times having at least one standard alcohol drink in the past one year and 30 days, was 3.81 and 11.56, respectively, with an average of 2.56 standard drinks on one occasion, and on 1.2 times have six or more drinks in a single occasion. The mean number of standard alcohol drinks on Thursday was 4.31, while on Sunday was 0.75 [Table/Fig-6].

Statistically significant associated was found between tobacco and alcohol use and being male ($p < 0.001$) [Table/Fig-1,5].

DISCUSSION

The current rate of 20.3% tobacco smoking among both sexes is close to Iraq adolescents' national rate (21.8%) [9], and Duhok university students [11], but more than the 2018 WHO estimate of current tobacco use in Iraq (18.5%), the global prevalence among youth (17.0%) [21], and among secondary school students in Baghdad (16.1%) [22]. Although, this should be taken cautiously, as each study have targeted different age cohort. Female tobacco smoking is higher than the national Iraqi rate, other studies in Iraq, and countries in the region, except Lebanon [Table/Fig-7] [9,11,21,22]. The social changes that have occurred as a result of a growing economy and a wide use of social media could have resulted in some cultural changes related to female tobacco smoking, as traditionally female smoking was culturally not acceptable in Iraq until recent years [12].

Alcohol use	Males n=366		Females n=363		Total N=729		p-value*
	No.	(%)	No.	(%)	No.	(%)	
Lifetime use of alcohol	26	(7.1)	3	(0.8)	29	(4.0)	<0.001
Have consumed any alcohol within the past 12 months	14	(3.8)	2	(0.6)	16	(2.2)	0.580
Have consumed any alcohol within the past 30 days	14	(3.8)	2	(0.6)	16	(2.2)	0.580
Have consumed less than one drink per month in the past 12 months	3	(0.8)	1	(0.2)	4	(0.5)	0.693
Have stopped drinking due to health reasons	11	(3.0)	0	0	11	(1.5)	0.154
Consumed any homebrewed alcohol in the past 7 days,	1	(0.3)	0	0	1	(0.1)	0.875
I bought the alcohol I drink from a store, shop, street vender, during the past 12 months	11	(3.0)	2	(0.6)	13	(1.8)	0.769
Less than once monthly found that not able to stop drinking once you had started, in the past 12 months	6	(1.6)	1	(0.3)	7	(1.0)	0.860
Less than once monthly have you failed to do what was normally expected because of drinking in the past 12 months	5	(1.4)	1	(0.3)	6	(0.8)	0.785
Once or twice have drink so much alcohol that really got drunk in the past 12 months	6	(1.6)	1	(0.3)	7	(1.0)	0.309
Once or twice times have got into trouble with family or friends, missed school, or got into fights, as a result of drinking alcohol in the past 12 months	9	(2.5)	1	(.03)	10	(1.4)	0.433
Have had several times family problems due to someone else's drinking during the past 12 months	6	(1.64)	1	(0.27)	7	(1.0)	<0.001
Definitely will drink if one of best friends offered an alcohol drink	4	(1.1)	0	(0.0)	4	(0.5)	0.004
Less than monthly, needed a first drink in the morning to get after heavy drinking session	2	(0.5)	0	(0.0)	2	(0.2)	0.758
Some friends frequently drink 5 or more drinks on one occasion	69	(18.8)	12	(3.3)	81	(11.1)	<0.001
Daily see any alcohol advertisements during the past 30 days	64	(17.5)	21	(5.8)	85	(11.7)	<0.001

[Table/Fig-5]: Alcohol use on the basis of gender.

*Chi-square, with considered statistically significant if the p-value <0.005

Alcohol use characteristics	Males n=366		Females n=363		Total N=729		p-value*
	No.	Mean±SD	No.	Mean±SD	No.	Mean±SD	
Occasions have had at least one standard alcoholic drink in last 12 months	14	3.57±1.87	2	5.50±0.71	16	3.81±1.87	0.693
Occasions have had at least one standard drink in last 30 days	14	12.36±7.66	2	6.00±4.24	16	11.56±7.54	0.276
How many standard drinks during one drinking occasion in last 30 days	14	2.71±0.91	2	1.50±0.71	16	2.56±0.96	0.096
Largest number of standard drinks in a single occasion	14	5.14±2.03	2	3.50±0.71	16	4.9±1.98	0.288
Times have six or more standard drinks in a single occasion	14	1.36±2.06	2	0	16	1.2±1.97	0.381
Standard number of drinks have on Thursday	14	4.43±1.91	2	3.50±0.70	16	4.31±1.82	0.518
Standard number of drinks have on Sunday	14	0.86±1.41	2	0	16	0.75±1.34	0.417
Number of homebrewed spirit standard drinks in the past 7 days	1	3.00±0	0	0	1	3.00±0	NA

[Table/Fig-6]: Alcohol drinking characteristics on the basis of gender.

*Chi-square, with considered statistically significant if the p-value <0.005

Location/City	Author	Study population	Male	Female	Total	p- value**
Duhok, 2022	Present study	Youth 15-24 years old	25.4%	15.2%	20.3%	<0.001
Duhok, 2020, [11]	Kareem MA and Jader JA	Universities Students 18-24 years old	41.9%	6.8%	23.5%	<0.001
Baghdad, 2020, [22]	Al-Ani, et al.	secondary school students, 13-24	22.6%	9.1%	16.1%	<0.001
Iraq estimates 2018, [21]	WHO, 2019	15 years and older adult	34.7%	2.4%	18.5%	NA
Iraq 2012, [9]	Hussain HY and Abdul Satar BA	GYTS: 13-18 years old	27.1%	12.7%	21.8%	<0.001
Bahrain estimates 2018, [21]	WHO, 2019	15 years and older adult	33.9%	3.8%	18.8%	NA
Iran estimates 2018, [21]		15 years and older adult	19.8%	1.4%	10.6%	NA
Lebanon estimates 2018, [21]		15 years and older adult	38.7%	25.0%	31.8%	NA
Global estimate, 2015 [21]		Youth 15-24-year-old	27.6%	5.6%	17.0%	NA

[Table/Fig-7]: Tobacco smoking in Iraq and EMR [9,11,21,22].

**Chi-square, with considered statistically significant if the p-value <0.005

In this study, the daily cost of smoked tobacco was less than one dollar, which is consistent with the average cost of 0.78 USD for a pack of 20 cigarettes in 2015 [12]. With the 2020 gross domestic product per capita of US\$ 4,288.773 [23], the current tobacco smoking cost is affordable. WHO recommended 70% excise tax on cigarette retail costs, as a measure toward reducing tobacco usage through reducing tobacco affordability [6,24], but this yet to be implemented in Iraq.

Nargila/shisha or waterpipe smoking was the most common type of tobacco smoked, followed by Cigarette's, 19.5% and 14.1, respectively. Nargila/shisha smoking was less than university student in Lebanon 28% [25]. But, among female, was higher than those reported in Duhok Universities 11.8% [11]. This demonstrates a shift in the use of tobacco products among youth, as found among university students in Sulaymaniyah [26], and among Duhok universities students [11]. While in Erbil city, cigarette smoking was the first most common type of tobacco product used followed by Nargila/waterpipes (27.6% compared to 23.6%) [10]. Nargila/waterpipes smoking is increasing, especially among youth in Middle Eastern countries and among Arab-speaking communities in Western countries [25,27]. This needs further in-depth studies to reveal the social and cultural aspect related to this.

Among current smokers, less than half (41.5%), attempted to quit smoking, as less than one in four have been advised to quit smoking tobacco during any visit to a doctor or other health worker in the past 12 months. Frequent, simple, informative, culturally sensitive, and consistent advice on the health risks and hazards of smoking by medical doctors and other health staff are one of the most effective means to motivate tobacco smokers to quit [28]. Medical doctors and health staff need to be encouraged to provide such advice.

Exposure to second-hand smoking was very high at home, and in enclosed places. This was much higher than among 6-18-year-old school children in Baghdad (34.2%) [29], the 55.9% average reported from 68 Low-Income and Middle-Income Countries (LMIC) including 53.7% in Eastern Mediterranean Region (EMR) [30]. Smoking in closed spaces such as recreational, sport, public transport, indoor offices, educational and health facilities is common in the EMR countries as two third of recreational facilities and one third of health facilities show evidence of smoking [31]. As per the applied Iraqi Anti-tobacco law 19 of 2012 and Kurdistan region of Iraq law 31 of 2007 [32,33], tobacco smoking in indoor offices and public places is prohibited, yet this to be enforced due to ongoing security and political instability.

Lifetime alcohol use was low (4.0%), while alcohol drinker in the last 30 days was lower (2.2%). This was close to the reported 5.4% alcohol drinking among males in Duhok district [18], the 3.7% reported among high school students in Erbil [10]; and the 3.2% among Iraqi adult [16]. While, WHO estimate of current alcohol drinkers among 15-19-year-old in Iraq is lower (1.5%) especially among males (male 2.3% and female 0.7%) [15].

Limitation(s)

Due to Coronavirus Disease-2019 pandemic preventive measures, restricted access to schools and universities, youth attending premarital screening and counselling health clinic were selected to participant in this study.

CONCLUSION(S)

Tobacco smoking was high, among youth in Duhok Governorate, and notably among females. There was a shift in the type of tobacco product smoked, with Nargila/shisha or waterpipe smoking being the most common type. Exposure to second-hand smoking was very high, at home, and in enclosed places. Tobacco products were accessible and affordable for youth. Lifetime use of alcohol was relatively low, but higher than the WHO estimate of current alcohol drinkers among the 15-19-year-old in Iraq. Further researches are required to better understand the motives, causes and other social aspects for tobacco product smoking and alcohol drinking.

Acknowledgement

The support provided by Dr. Sirwan Mohammed Aswad, Department of Community Medicine, College of Medicine, Duhok University, and the Directorate General of Health-Duhok is highly appreciated.

REFERENCES

- [1] Tariq N, Gupta V. High Risk Behaviors. [Updated 2021 Jul 14]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan [cited 2021 Sep 14]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK560756/>.
- [2] Kvaavik E, Batty GD, Ursin G, Huxley R, Gale CR. Influence of individual and combined health behaviors on total and cause-specific mortality in men and women: The United Kingdom Health and Lifestyle Survey. *Arch Intern Med.* 2010;170(8):711-18. <https://doi.org/10.1001/archinternmed.2010.76>.
- [3] Global Burden of Diseases 2019 Respiratory Tract Cancers Collaborators. Global, regional, and national burden of respiratory tract cancers and associated risk factors from 1990 to 2019: A systematic analysis for the Global Burden of Disease Study 2019. *The Lancet Respiratory Medicine.* 2021;9(9):1030-49. [Doi: https://doi.org/10.1016/S2213-2600\(21\)00164-8](https://doi.org/10.1016/S2213-2600(21)00164-8).
- [4] Mishra S, Mishra MB. Tobacco: Its historical, cultural, oral, and periodontal health association. *J Int Soc Prevent Community Dent.* 2013;3:12-18. <https://doi.org/10.4103/2231-0762.115708>.
- [5] Drope J, Schluger N, Cahn Z, Drope J, Hamill S, Islami F, et al., editors. The Tobacco Atlas, 6th ed. Atlanta: American Cancer Society and Vital Strategies; 2018. The Tobacco Atlas- 6th Edition
- [6] Geiss O, Kotzias D. Tobacco, Cigarettes and Cigarette Smoke, Institute for Health and Consumer Protection. Italy: European Commission; 2007. P 45.
- [7] Hammond D. Smoking behaviour among young adults: Beyond youth prevention. *Tob Control.* 2005;14(3):181-85. <https://doi.org/Doi:10.1136/tc.2004.009621>.
- [8] National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health. Preventing Tobacco Use among Youth and Young Adults: A Report of the Surgeon General. Atlanta (GA): Centers for Disease Control and Prevention (US); 2012. 5. The Tobacco Industry's Influences on the Use of Tobacco among Youth. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK99238/>.
- [9] Hussain HY, Abdul Satar BA. Prevalence and determinants of tobacco use among Iraqi adolescents: Iraq GYTS 2012. *Tob Induc Dis.* 2013;11(1):14. <https://doi.org/Doi:10.1186/1617-9625-11-14>
- [10] Mahmood N, Othman S, Al-Tawil N, Al-Hadithi T. Substance use among high school students in Erbil City, Iraq: Prevalence and potential contributing factors. *East Mediterr Health J.* 2019;25(11):806-12. <https://doi.org/10.26719/emhj.19.022>.
- [11] Kareem MA, Jader JA. Prevalence of Cigarette and "Waterpipe" Smoking among "Duhok Universities" Students. *Polytechnic J.* 2020;9(2):63-69 [cited 2021 Sep 8]. Available from: <https://journals.epu.edu.iq/index.php/polytechnic/article/view/24>.

Do you remember how long ago it was? (RECORD ONLY 1, NOT ALL 3) Don't know 99 If the participant doesn't remember his/her age when started smoking, then record the time in years, months or weeks as appropriate.	In Years	<input type="checkbox"/>	T4a
	If Known, go to 5a/T5aw		
	OR in Months	<input type="checkbox"/>	T4b
	If Known, go to 5a/T5aw		
On average, how many of the following products do you smoke each day/week? (IF LESS THAN DAILY, RECORD WEEKLY) Don't Know 9999 For current smokers only. Specify zero if no products were used in each category instead of leaving categories blank.	DAILY↓ WEEKLY↓		
	Manufactured cigarettes	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T5a/T5aw
	Hand-rolled cigarettes	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T5b/T5bw
	Pipes full of tobacco	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T5c/T5cw
	Cigars, cheroots, cigarillos	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T5d/T5dw
	Number of Nargila/Shisha sessions	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T5e/T5ew
	Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> If Other, go to T5 other, else go to T6	T5f/T5fw
Other (please specify):	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T5 other/T5 other w	
During the past 12 months, have you tried to stop smoking? For current smokers only.	Yes 1 No 2		T6
During any visit to a doctor or other health worker in the past 12 months, were you advised to quit smoking tobacco? For current smokers only.	Yes 1 No 2 No visit during the past 12 months 3 If T2=Yes, go to T12; if T2=No, go to T9		T7
In the past, did you ever smoke any tobacco products?	Yes 1 No 2 If No, go to T12		T8
In the past, did you ever smoke daily?	Yes 1 No 2 If T1=Yes, Go to T12, Else Go to T10		T9
How old were you when you stopped smoking?	Age (years)	<input type="checkbox"/> If known, go to T12	T10
	Don't Know 99		
How long ago did you stop smoking? (RECORD ONLY 1, NOT ALL 3) Don't Know 99 If the participant doesn't remember his/her age when they stopped smoking, then record the time in weeks, months or years as appropriate.	Years ago	<input type="checkbox"/> If known, go to T12	T11a
	OR Months ago	<input type="checkbox"/> If known, go to T12	T11b
	OR Weeks ago	<input type="checkbox"/>	T11c
Do you currently use any smokeless tobacco products such as [snuff, chewing tobacco, betel]?	Yes 1 No 2 If No, go to T15		T12
Do you currently use smokeless tobacco products daily? For current users of smokeless tobacco products only.	Yes 1 No 2 If No, go to T14aw		T13
On average, how many times a day/week do you use (IF LESS THAN DAILY, RECORD WEEKLY) Don't Know 9999 For current users of smokeless tobacco only. Record daily consumption for daily users. If products are used less than daily by daily users, enter weekly consumption. Also enter weekly consumption for current, non daily users.	DAILY↓ WEEKLY↓		
	Snuff, by mouth	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T14a/T14aw
	Snuff, by nose	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T14b/T14bw
	Chewing tobacco	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T14c/T14cw
	Betel, quid	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T14d/T14dw
	Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T14e/T14ew
Other (please specify):	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> If T13=No, go to T16, else go to T17		T14other/ T14otherw

In the past, did you ever use smokeless tobacco products such as [snuff, chewing tobacco, or betel]?	Yes 1 No 2 If No, go to T17		T15
In the past, did you ever use smokeless tobacco products such as [snuff, chewing tobacco, or betel] daily?	Yes 1 No 2		T16
During the past 30 days, how did you usually get the cigarette/tobacco you smoke?	I bought it in a store, shop, or from a street vendor A I gave someone else money to buy it for me B I got it from my friends C I got it from my family D I stole it or got it without permission E I got it some other way F at a public event such as concert G		T16a
In the past 30 days, how much it cost you to buy/have tobacco product (all type of tobacco product, cigarettes, Nargelia, Cigar)	IQD <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		T16b
During the past 30 days, did someone smoke in your home?	Yes 1 No 2		T17
During the past 30 days, did someone smoke in closed areas in your workplace (in the building, in a work area or a specific office)?	Yes 1 No 2 Don't work in a closed area 3		T18
If one of your best friends offered you a cigarette, would you smoke it?	Definitely not 1 Probably not 2 Probably yes 3 Definitely yes 4		T19
At any time during the next 12 months, do you think you will smoke a cigarette?	Definitely not 1 Probably not 2 Probably yes 3 Definitely yes 4		T20
During the past 30 days, how often did you see any tobacco advertisements?	Never 1 Rarely 2 Sometimes 3 Almost daily 4 Daily 5		T21
If T21 answer was Yes, in which media channels/tools you saw the advertisement? You can choose more than one answer	TV 1 Radio 2 Newspaper 3 Magazine 4 Lighting banner 5 Banner 6 Billboard 7 Handout 8 Poster 9 Free gift 10 Lighters 11 Pen 12 Cup mat 13		T22
During the past 30 days, how often did you see any tobacco advertisements at the place where cigarette/tobacco are sold	Yes 1 No 2		T23
In the past 30 days, Have you noticed any health hazard notice on tobacco packs	Yes 1 No 2		T24

Alcohol consumption

The next questions ask about the consumption of alcohol.

Question	Response	Code
Have you ever consumed any alcohol such as beer, wine, spirits or Arak? Ask the participant to think of any alcohol, with the exception of alcohol-based medication that is taken due to health reasons. Even if the participant has only consumed a few sips of alcohol, the response should be "Yes".	Yes 1 No 2 If No, go to A16	A1

Have you consumed any alcohol within the past 12 months? Ask the participant to think of any alcohol, with the exception of alcohol-based medication that is taken due to health reasons. Even if the participant has only consumed a few sips of alcohol in the past 12 months, the response should be "Yes".	Yes 1 No 2 If Yes, go to A4		A2
Have you stopped drinking due to health reasons, such as a negative impact on your health or on the advice of your doctor or other health worker? This question is for those participants that did not drink during the past 12 months, but that have drunk in their lifetime.	Yes 1 If Yes, go to A16 No 2 If No, go to A16		A3
During the past 12 months, how frequently have you had at least one standard alcoholic drink? (READ RESPONSES, USE SHOWCARD) For those that have consumed alcohol in the past 12 months. A "standard drink" is the amount of ethanol contained in standard glasses of beer, wine, fortified wine such as sherry, and spirits.	Daily 1 5-6 days per week 2 3-4 days per week 3 1-2 days per week 4 1-3 days per month 5 Less than once a month 6 Never 7		A4
Have you consumed any alcohol within the past 30 days? Select the appropriate response. Even if the participant has only consumed a few sips of alcohol in the past 30 days, the response should be "Yes".	Yes 1 No 2 If No, go to A12f		A5
During the past 30 days, on how many occasions did you have at least one standard alcoholic drink? For those participants that only drank a few sips of alcohol during the past 30 days, the answer should be "Zero" occasions.	Number Don't know 99	<input type="checkbox"/> <input type="checkbox"/> If Zero, go to A12f	A6
During the past 30 days, when you drank alcohol, how many standard drinks on average did you have during one drinking occasion?	Number Don't know 99	<input type="checkbox"/> <input type="checkbox"/>	A7
During the past 30 days, what was the largest number of standard drinks you had on a single occasion, counting all types of alcoholic drinks together?	Largest number Don't Know 99	<input type="checkbox"/> <input type="checkbox"/>	A8
During the past 30 days, how many times did you have six or more standard drinks in a single drinking occasion?	Number of times Don't Know 99	<input type="checkbox"/> <input type="checkbox"/>	A9
During each of the past 7 days, how many standard drinks did you have each day? Don't Know 99 Ask the participant to think of each of the past 7 days. If no drinks record 0.	Monday	<input type="checkbox"/> <input type="checkbox"/>	A10a
	Tuesday	<input type="checkbox"/> <input type="checkbox"/>	A10b
	Wednesday	<input type="checkbox"/> <input type="checkbox"/>	A10c
	Thursday	<input type="checkbox"/> <input type="checkbox"/>	A10d
	Friday	<input type="checkbox"/> <input type="checkbox"/>	A10e
	Saturday	<input type="checkbox"/> <input type="checkbox"/>	A10f
	Sunday	<input type="checkbox"/> <input type="checkbox"/>	A10g
I have just asked you about your consumption of alcohol during the past 7 days. The questions were about alcohol in general, while the next questions refer to your consumption of homebrewed alcohol, alcohol brought over the border/ from another country, any alcohol not intended for drinking or other untaxed alcohol. Please only think about these types of alcohol when answering the next questions.			
During the past 7 days, did you consume any homebrewed alcohol, any alcohol brought over the border/ from another country, any alcohol not intended for drinking or other untaxed alcohol?	Yes 1 No 2 If No, go to A12f		A11
On average, how many standard drinks of the following did you consume during the past 7 days? Don't Know 99 Ask the participant to think of the past 7 days. Alcohol not intended for drinking should be treated like spirits. Record for each type of alcohol the number of standard drinks. If no drinks record 0.	Homebrewed spirits, e.g. sharab	<input type="checkbox"/> <input type="checkbox"/>	A12a
	Homebrewed beer or wine, e.g. beer, palm or fruit wine	<input type="checkbox"/> <input type="checkbox"/>	A12b
	Alcohol brought over the border/ from another country	<input type="checkbox"/> <input type="checkbox"/>	A12c
	Alcohol not intended for drinking, e.g. alcohol-based medicines, perfumes, after shaves	<input type="checkbox"/> <input type="checkbox"/>	A12d
During the past 30 days, how did you usually get the alcohol you drank?	I bought it in a store, shop, or from a street vendor A I gave someone else money to buy it for me B I got it from my friends C I got it from my family D I stole it or got it without permission E I got it some other way F at a public event such as concert G		A12f
During the past 12 months, how often have you found that you were not able to stop drinking once you had started?	Daily or almost daily 1 Weekly 2 Monthly 3 Less than monthly 4 Never 5		A13
During the past 12 months, how often have you failed to do what was normally expected from you because of drinking?	Daily or almost daily 1 Weekly 2 Monthly 3 Less than monthly 4 Never 5		A14
During your life, how many times did you drink so much alcohol that you were really drunk?	None 1		A14a
	1 or 2 time 2		
	3-9 times 3		
	10 times & more 4		
During your life, how many times have you got into trouble with your family or friends, missed school, or got into fights, as a result of drinking alcohol?	None 1		A14b
	1 or 2 time 2		
	3-9 times 3		
	10 times & more 4		
During the past 12 months, how often have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Daily or almost daily 1 Weekly 2 Monthly 3 Less than monthly 4 Never 5		A15
During the past 12 months, have you had family problems or problems with your partner due to someone else are drinking?	Yes, more than monthly 1 Yes, monthly 2 Yes, several times but less than monthly 3 Yes, once or twice 4 No 5		A16
During the past 30 days, how often did you see any alcohol advertisements?	Never 1 Rarely 2 Sometimes 3 Almost daily 4 Daily 5		A17
How many of your friends frequently drink 5 or more drinks on one occasion?	None 1 A few 2 Some 3 Most 4 All 5		A18
If one of your best friends offered you a drink, would you drink it?	Definitely not 1 Probably not 2 Probably yes 3 Definitely yes 4		A19