Smoking habits in Syria and the influence of war on cigarette and shisha smoking.

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Abstract

Backgrounds: Shisha smoking has become an epidemic since the nineties and it adds an additional burden over cigarette smoking as it is more harmful, smoked socially and is widely accepted in many countries. We aim to discuss shisha and cigarette smoking prevalence in the Syrian community and university students with their associated risk factors and the relationship with many war factors.

Methods: Online surveys were used that contained demographic and war-related questions along with cigarette and shisha smoking pattern questions.

Results: The sample contained 987 responders with a mean age of 24.69, 25.7% being males, 16.4% smoking cigarettes, and 29.3% smoking shisha. Cigarette and shisha smoking was more common in males with $P < 0.0001$ (OR, 4.762; 95% CI 3.333-6.757) and $P = 0.047$ (OR, 1.364; 95% CI 1.003-1.855) for cigarettes and shisha respectively. Males also smoked daily, for longer years, more packs and more shisha every week than females $P < 0.05$. However, females were more social smokers. While cigarette smoking was more prevalent in older ages, shisha was so in younger ages. Having a job, certain types of work and students at certain faculties were correlated with smoking more $P < 0.05$. Losing someone due to the war and being distressed from war noises were also correlated with smoking. Field of education affected smoking patterns as medical field students smoked fewer cigarettes and shisha while social studies students smoked more. Being a labourer, working as a clerk or in a restaurant, or as a technician was more frequently associated with smoking. However, no associations were found with SES, marital status and changing place of living due to war.

Conclusions: Males tend to smoke more, heavier, more consistent, and for longer periods than females while women smoked shisha more socially. War increases smoking patterns while SES did not affect smoking in Syria. Shisha smoking increased and cigarette smoking decreased compared to previous studies and cigarette smoking remains lower than other regional countries, but shisha smoking is higher when compared to many other countries.

Background

Tobacco smoking is a critical risk factor for multiple medical conditions with an estimated eight million deaths every year. . Smoking can cause substantial expenses for healthcare, and it can also contribute to poverty, as it is an addictive habit that can cause individuals to prioritizing buying tobacco over their basic needs. Around 80% of smokers are in developing countries. second-hand smoking can also be harmful like first-hand smoking, as it was proven to cause serious cardiovascular and respiratory diseases (1). It is an epidemic that also affects young people, as smoking among high school students in Syria reached a percentage of 16% in males and 7% in females in 2000 (2). On the other hand, shisha or what is known as hookah, water pipe or narghile is becoming an epidemic and has been spreading since the nineties, especially after the introduction of flavoured and aromatic Shisha tobacco (Ma'assel) (3). Shisha is considered by the smoker as a pleasurable social experience while cigarette smoking is seen as a personal addiction (4). Shisha is mostly smoked indoors in cafés, shisha bars or at home which harms many non-smokers and causes them to be second-hand smokers. 3-hydroxypropylmercaptronic acid and benzene were

found in the urine of second-hand smokers, and tobacco specific nitrosamine and acrolein were found in children who lived with shisha smokers (5-7). We performed this cross-sectional study to assess smoking patterns in Syria during war time, the prevalence of cigarette and shisha smoking and their interaction with other variables in 2019, especially that shisha was not previously studied when being exposed to war or a stressful event, expensive costs of living, and political which the majority of the Syrian population suffered from. This study is also an update for smoking prevalence in Syria while comparing with other studies in many regional countries with the associated risk factors to detect changes in its patterns that might be related to war.

Methods

Online surveys were used so we can cover the largest population possible. This study was approved by Damascus University, faculty of medicine. Informed consent was taken for participating in the research, and for the use and publication of the data. We asked basic demographic questions such as gender, age, educational level and the province of current living. Socioeconomic status (SES) was assessed by using three questions; the education and the profession of the person or the providing family member, monthly family income and the profession. As a result, SES was divided into 5 different categories: lower, upper lower, lower middle, upper middle, and upper. We asked a few questions, directly and indirectly, about war including changing place of living due to the war, losing someone close, and having distress from war noises. Respiratory diseases in this study included chronic bronchitis, and chronic obstructive pulmonary disease (COPD). Education for subjects in the medical field included faculties of medicine, dentistry, and pharmacy. Social science included faculties of law, education, economy, literature and arts. We defined low educational level as having a high school degree or lower. We asked the subjects to declare having any medical condition or using any medication. We asked questions related to smoking habits of shisha and cigarettes including: the consistency of smoking, number of cigarette packs per day, number of shisha sessions per week, duration of shisha sessions and the preferred time of day for smoking. Being a technician meant for anyone who is a technician or working with a degree from an institution other than university. This study was approved by Damascus University, faculty of medicine.

Data were processed using IBM SPSS software version 26 for Windows (SPSS Inc, IL, USA). Chi-square, one-way ANOVA was performed to determine statistical significance between the groups. Pearson correlations were also calculated. We calculated odds ratios (ORs) and the 95% confidence intervals for the groups using Mantel–Haenszel test by using the same software. Values of less than 0.05 for the two-tailed P values were considered statistically significant. Data is available upon request.

Results

Our sample had 978 subjects with a mean age of 24.69 ± 7.603 with 25.7% being male. Smoking prevalence in Syrian provinces is in (Figure 1). Their characteristics are demonstrated in Table 1. In our sample, 372 (38%, CI 95%: 35.0%-41.1%) subjects smoked shisha, cigarettes or both, 160 (16.4%. CI 95%: 14.1%, 18.7%) subjects smoked cigarettes, 287 (29.3% CI 95%: 26.5%, 32.3%) subjects smoked shisha, and 76 (7.8% CI 95%: 6.0-9.5) subjects smoked both cigarettes and shisha. Furthermore, 112 cigarette smoking subjects

(6.4% of the sample, 70.9% of cigarette smokers) reported daily cigarette smoking without ceasing in the last year, and 115 shisha smoking subjects (11.8% of the sample, 40.4% of shisha smokers) reported daily shisha smoking without ceasing in the last year (Figure 2). Other factors of war and characteristics such as the current medical conditions and taking medications are demonstrated in Table 2. Our sample included 619 university students with mean age of 21.44 ± 1.811 and 140 (22.6%) being male. Prevalence of cigarette and shisha smoking in age groups according to gender are demonstrated in figure 3.

Among university students, 217 (35.1%, CI 95%: 31.3%-38.8%) subjects smoked shisha, cigarettes or both, 83 (13.4%, CI 95%: 11.1%, 16.0%) subjects smoked cigarettes, 182 (29.4% CI 95%: 26.0%, 33.1) subjects smoked shisha, and 48 (7.8%, CI 95%: 5.7%, 9.9%) smoked both shisha and cigarettes. Furthermore, 57 cigarette smoking subjects (9.2% of the sample, 68.7% of cigarette smokers) among university students reported daily cigarette smoking without ceasing in the last year, and 72 shisha smoking subject (11.6% of the sample, 39.8% of shisha smokers) reported daily shisha smoking without ceasing in the last year. In the sample overall, 10% (CI 95%: 7.8%-12.4%) of the females smoked cigarettes and 27.6% (CI 95%: 24.5%-30.9%) of them smoked shisha. While 7.9% (CI 95%: 5.6%-10.6%) of university students females smoked cigarettes, 28% (CI 95%: 23.8%-32.1%) of them smoked shisha. Furthermore, overall 34.7% (CI 95%: 28.3%-41.0%) of males smoked cigarettes and 34.3% (CI 95%: 29.1%-40.2%) of them smoked shisha. However, in university students 32.1% (CI 95%: 25.0%-40.7%) of males smoked cigarettes and 34.3% (CI 95%: 26.4%-42.1%) of them smoked shisha. Only 21 responders aged under 16 or 17 years, one (4.8%) of them smoked cigarettes, and four (19%) of them smoked shisha. Smoking patterns and characteristics of the subjects of our sample are demonstrated in Table 3. Education fields affected smoking patterns ($P<0.001$); subjects in non-medical education fields smoked cigarettes ($P<0.001$) or shisha ($P<0.001$) more than subjects in medical education fields. However, studying social studies was associated with smoking cigarettes $P=0.004$ and shisha $P=0.004$ more than studying other fields.

Male gender was associated more frequently with smoking cigarettes $P<0.001$ (OR, 4.762; 95% CI 3.333-6.757), smoking shisha $P=0.047$ (OR, 1.364; 95% CI 1.003-1.855), and both together $P<0.0001$ (OR, 3.236; 95% CI 2.012-5.208). Male gender was also more correlated with daily cigarette smoking rather than intermittent smoking $P<0.001$ (OR, 2.899; 95% CI 1.865-4.505). Male gender was also positively correlated with more years of smoking $P<0.001$, number of packs per day $P=0.009$ and frequency of shisha per week $P=0.004$ but not the duration of shisha session $P>0.05$. Females were found to be more social smokers than males $P<0.001$. Although cigarette smoking was found more frequently in older subjects (older than 30 years age groups) $P=0.008$, shisha smoking was found more frequently in younger subjects (younger than 30 years age groups) $P=0.023$. However, no significant difference was found in smoking shisha and cigarettes together between age groups. Furthermore, years of age were positively correlated with being a cigarette smoker $P=0.001$, but not with shisha smoking and smoking both together $P>0.05$. Comparing the age group of (18-24) years with other age groups, we found a significant difference in cigarette smoking $P>0.001$ (OR, 1.804; 95% CI 1.271-2.562) as cigarette smoking is more frequent in other age groups. Such is the case for smoking overall of cigarettes and/or shisha $P=0.005$ (OR, 1.486; 95% CI 1.125-1.962), but interestingly not with shisha smoking. Having a job was associated more frequently with smoking cigarettes $P<0.0001$ (OR, 2.286; 95% CI 1.621-3.225), shisha $P=0.008$ (OR, 1.463; 95% CI 1.102-1.942), and smoking them both $P<0.0001$ (OR, 2.634; 95% CI 1.636-4.238). Furthermore, type of job affected smoking patterns;

being a labourer (OR, 5.758; 95% CI 2.597-12.765), working as a clerk or in a restaurant (OR, 5.080; 95% CI 2.336-11.049), or a technician (OR, 2.617; 95% CI 1.596-4.292) were more frequently associated with smoking cigarettes $P=0.001$. Working as a clerk or in a restaurant (OR, 2.950; 95% CI 1.394-6.242), or a technician (OR, 1.986; 95% CI 1.296-3.042) were more frequently associated shisha smoking $P=0.004$. This was also for with smoking both shisha and cigarettes $P<0.001$ or any form of smoking $P<0.001$ (Figure 4). Losing someone in the war was associated with smoking cigarettes $P=0.002$, and smoking in general $P<0.001$; this loss included close family members, distant family members or friends. However, this association was not found with shisha smoking or smoking both shisha and cigarettes together $P>0.05$. Having distress from war noises was correlated with cigarette smoking $P=0.014$ (OR, 1.538; 95% CI 1.089-2.174) and smoking both cigarettes and shisha $P=0.037$ (OR, 1.642; 95% CI 1.027-2.632), but not with smoking shisha ($P>0.05$). Changing place of living due to war was not associated with smoking cigarettes, shisha, or both ($P>0.05$). However, number of times of changing place of living due to war was associated with smoking $P=0.032$, the higher the number of changing place of living due to war, the more frequently positive smoking cigarettes became, but this was not found with shisha smoking or cigarette and shisha smoking together ($P>0.05$). Shisha was also correlated with losing someone from the war $P=0.05$. More shisha smoking was found in high educational level subjects $P=0.042$ which was also found with shisha and cigarette smoking $P=0.002$. No statistically significant difference was found when comparing smoking cigarettes, shisha or both with marital status, SES, and having medical conditions ($P>0.05$). Comparisons of smoking cigarettes and shisha with other variables are demonstrated in Table 4. We did not find a correlation with marital status or SES in regards to consistency of smoking, number of cigarette packs, frequency of shisha every week, duration of shisha session, and preferred time for shisha $P>0.05$.

When using one-way ANOVA test, years of smoking, the number of cigarette packs, frequency of shisha per week, and duration of shisha per session were not associated with SES levels $P>0.05$. However, a lower SES was found in older ages above 30 years $P=0.0002$. We also found that more years of smoking was associated with type of work $P=0.010$ (Figure 4), but not with other variables of cigarettes, or shisha $P>0.05$. When using Pearson correlation, significant positive correlations were found between years of smoking and the number of packs per day $r=0.195$, frequency of shisha per week $r=0.309$ and duration of shisha per session $r=0.172$. Furthermore, a positive correlation was found between the frequency of hookah per week and the duration of hookah per session $r=0.182$. No correlations were found between age and the number of packs per day, frequency of shisha per week, and duration of hookah per session. For the number of packs there was no correlation with any hookah related variable $P>0.05$ (Table 4). Changing living place due to war was associated with number of packet per day $P=0.017$, and losing someone due to war was positively associated with losing someone due to war $P=0.022$.

Discussion

Although the number of cigarette smokers among males (34.7%) was approximately the same as male shisha smokers (34.3%), shisha smoking was more popular among females, as (27.6%) of them smoked shisha while only (10%) of them smoked cigarettes. We found that daily cigarette smoking and daily shisha smoking are more common among the male population. Shisha smoking habits in females are similar to what was found in one Iranian study (8). Males in both countries smoked cigarettes more than females, but

the rates found in Syria for both cigarette and shisha smoking remains much higher than in Iran as cigarettes smoking prevalence in Iran was 12.5% ($P=0.0022$) and shisha smoking prevalence was 2.7% ($P<0.0001$) is lower than what we found in our study with cigarette smoking and shisha smoking being 16.4% and 29.3% respectively. However, these numbers in Syria remain much lower than other countries such as Russia where tobacco smoking prevalence was 47% for males, and 15% for females (9), Lebanon had 48.7% prevalence for males and 29.4% for females, Jordan had 49.6% for males, but 5.7% for females which is lower than our findings, Iraq had 38.2% for males, but 1.9% for females which is lower than our findings, Turkey had 43.6% for males and 19.7% for females, China had 52.1% for males, but 2.7% for females which is lower than our findings, Greece had 35.0% for males and 41.0% for females (9). In Syria in 2002-2003 according to WHO estimates, tobacco smoking in males was 48.0%, in females was 8.9% and in general was 24.7% (9), in 2006 cigarette smoking was 56.9% for males and 17.0% for females (10) while in 2014 cigarette smoking was 42.2% in total (11) compared with our study where we found that cigarette smoking among males was 34.7% and among females was 10% and in total was 16.4% ($P<0.0001$ when compared with the previous two studies for either gender or in total). Another study found the male to female ratio for cigarette smoking to be (5.33) in Syria which is lower than Jordan (9.53) ($P<0.001$) and Saudi Arabia (27) ($P<0.0001$) (12-14). Egypt had 43.6% for males, but only 0.5% for females (9). The change in smoking habits in our study conducted in 2019 indicates that tobacco smoking rates for males could have decreased while it could have increased compared with 2002-2003. For shisha smoking, two most recent studies conducted in Syria showed that the prevalence of smoking shisha was 20.2% for females and 4.8% for males in 2006 (10) and was 15.6% for males and 7.4% for females in 2014 (11) compared with our study of 34.3% for males and 27.6% for females ($P<0.0001$ with both studies compared with our study for either gender). In Egypt 8.7% smoked shisha (9). However, shisha smoking was also studied among youth and adolescents and was 37.2% among youth in Lebanon and especially in Lebanese youth and university students reaches 65.3%. Other studies also found shisha smoking to be more common in university students and youth as it reaches 16.3% in Iran for university students, and 10.4% in Egypt for Egyptian youth, 32.7% in West Bank while Jordan had an increase of 7.3% of shisha smokers among youth to 18.9 from 2008 and 2011, and shisha smoking was 20.1% in Syrian youth in 2010 (15). We also found that the people who smoked for more years tend to smoke larger quantities per day, smoke more shisha every week, and longer periods of shisha in each session.

It was suggested that high stress jobs have a higher risk for daily tobacco smoking, suggesting that adjustments to stressful work environments should be taken into account to help in quitting smoking (16, 17). Furthermore, smoking has a burden on work productivity and quitting smoking could be beneficial for individuals and employers (18). We found an association between having a job, and certain types of work with smoking cigarettes and/or shisha with more years of smoking being also associated with type of work. We found that being a labourer, working as a clerk or in a restaurant, or a technician was more frequently associated with smoking cigarettes. This was also found with shisha $P=0.004$ as working as a clerk or in a restaurant, or a technician smoked shisha more and with smoking shisha and cigarettes together $P<0.001$. Shisha is considered as an element of the cultural identity and it grows a sense of togetherness while cigarette smoking is usually started in early adolescent life as males are becoming "real men". Interestingly, cigarette smokers feel stigmatised while shisha smoking is looked at as socially acceptable (4), which can

explain why we found that males smoked more packs for longer durations than females who prefer to smoke socially. This also can justify the lower rates of smoking reported previously among females in Syria and in other nearby countries. However, we used anonymous online surveys which can let them express without jeopardizing privacy.

In 2003 in Syria, it was found that among university students 25.5% of males and 4.9% of females smoked shisha with only 7.0% of males smoking shisha daily (19). Compared with our study where smoking shisha among university students was 34.3% for males ($P>0.05$) and 28% for females ($P<0.0001$), we found a significant difference from the previous study, suggesting that university student females smoke shisha more than in 2003. Not much is known about dangers of second-hand shisha smoking although our study found that 72.5% of shisha smokers smoked shisha socially. Most people smoke shisha socially in indoor places where the quality of air is even worse and can have high levels of harmful substances such as particulate matter (PM_{2.5}) and CO (20-22). Even when smoking shisha at home, these substances are found in the room where shisha is smoked and with higher levels than rooms where cigarettes were smoked (23). This high rate of social shisha smokers was also reported in 2004 in Aleppo (19).

We did not find a correlation between having any medical condition with smoking although smoking was found to increase the odds for hospitalisation, comorbidity and burden on healthcare in the Middle East (24). Although marital status was found to affect smoking patterns (25), we found that being single was correlated with less frequent smoking, but it was statistically insignificant. In addition, although low educational level and SES were found by several studies to be correlated with smoking and more difficulties in quitting (26, 27), we did not find such a correlation; we found that shisha smoking and smoking both shisha and cigarettes together were significantly correlated with higher education, but not with SES. We also found a significant difference in smoking with field of education; being a student in a medical field was associated with fewer cigarettes and shisha smoking but being a student in social studies was associated with smoking shisha and cigarettes more. One study did not find such a difference between dental and others (28). We found cigarette smoking to be positively correlated with being older, while shisha was so in the younger age group (18-30) despite that shisha was found to be more common in ages of 33-52 years in Malaysia (29).

Soldiers deployed at wartimes have a higher risk for tobacco smoking (30), and patients with PTSD symptoms tend to be more dependent on nicotine and smoke more cigarettes per day (31, 32); we found such an association for cigarette and/or shisha smoking with losing someone close due to war and being distressed from war noises. Cigarette smokers believe that smoking cigarettes is harmful but is used to cope with stress, while shisha smokers believed that it is harmless and is used for entertainment and leisure (4).

Conclusion

Shisha smoking has become an epidemic and had a significant increase in comparison with previous studies in the region especially in females $P<0.0001$. War influenced cigarette and shisha smoking patterns in that we found that people affected by war had a significant increase in smoking habits. More studies

should be conducted on the effect of stressful life-changing events on smoking habits and shisha smoking in particular and its use as a coping mechanism.

Declarations

Ethics approval and consent to participate:

This study was approved by faculty of medicine, Damascus University. Written consent from participants was taken before commencing as the first question had the consent form with options of agreeing and disagreeing. This study did not include any participants under the age of 16 years.

Consent for publication:

The consent form included approval for using and publishing their data with full anonymity without the name or any indicator attached and that their data will be freely available and may be seen by the general public.

Availability of data and materials:

Data and materials can be made available upon request.

Competing interests:

There is no conflict of interest to declare.

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Authors' contribution:

All Authors read and approved the manuscript.

AK : Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Supervision; Validation; original draft; Writing - review & editing.

MA: Data curation; Formal analysis; Software; review & editing; Validation.

AA: Formal analysis; Conceptualization; Validation; Writing editing.

AG: Software; Writing editing; original draft; review

LH: Original draft; Writing - review

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Abbreviations

SES	Socioeconomic status
PTSD	Post-traumatic stress disorder
WHO	World health organisation
PM	Particulate matter
OR	Odds ratio
CI	Confidence interval
CO	Carbon monoxide
SPSS Inc	Statistical Package for the Social Sciences incorporated
ANOVA	Analysis of variance
COPD	Chronic obstructive pulmonary disease

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Tables

1
 Characteristics of the responders

Characteristic	Count (n=978)	Percentage%
	21	2.1
	825	84.4
	96	9.8
	26	2.6
	251	25.7
	727	74.3
Living		
Latakia, Rif-Dimashq, and Aleppo	641	71.5
Latakia and Hama	128	14.3
Latakia region	5	0.6
Eastern Syria	24	2.7
Coast	95	10.6
	4	0.4
Education level		
Primary school	1	0.1
High school	61	6.3
University or higher institute certificate	773	79.4
Master or PhD	138	14.2
Smoking		
Non-smoker	607	62.1
Shisha	211	21.6
Cigarettes	84	8.6
Cigarettes and shisha	76	7.8
Religion		
Sunni	27	2.8
Lower	217	22.2
Middle	243	24.8
Middle	469	48.0
	22	2.2
Employment status		
Employed	620	63.9
Unemployed	351	36.1
Marital status		
Married	761	78.5
Relationship	7	0.7
Divorced	45	4.6
Widowed	144	14.9

d	8	0.8
ed	4	0.4
ed		

3 2 factors of war, the current medical conditions and medications

Characteristic	Count (978)	Percentage%
g the place of living		
	477	49.5
it not due to the war	179	18.6
	308	32.0
e being endangered by the war		
	309	32.0
	656	68.0
omeone due to the war		
	553	57.2
	413	42.8
stressed of the war noises		
	352	36.3
	617	63.7
conditions		
	551	64.8
intestinal	77	9.1
ary	7	0.8
c	16	1.9
ine	71	8.4
y	12	1.4
logical	26	3.1
al	30	3.5
a	14	1.6
.c reaction	46	5.4
	514	59.1
me supplements	45	5.2
er the counter drugs	83	9.5
escribed drugs	228	26.2

TABLE 3

Comparing Smoking Cigarettes and Shisha with Other Variables

	Cigarettes			Shisha			Cigarettes and Shisha			Cigarettes and/or Shisha		
	Non- cigarettes smokers (n = 818)	Cigarettes (n = 160)	P value	Non- Shisha smokers (n = 681)	Shisha (n = 287)	P value	Non both Cigarettes and Shisha smokers (n=902)	Cigarettes and Shisha (n = 76)	P value	Non smoker (n=606)	Cigarettes and/or Shisha (n=372)	P value
Gender			<0.001			0.047			<0.001			<0.001
Male	164	87		165	86		213	38		116	135	
Female	654	73		526	201		689	38		490	237	
Marital Status*			NS			NS			NS			NS
Single	647	114		530	231		699	62		477	284	
In a relationship	5	2		5	2		6	1		4	3	
Engaged	36	9		29	16		49	5		25	20	
Married	113	31		112	32		139	5		86	58	
Divorced	6	2		4	4		6	2		4	4	
Widowed	4	0		4	0		4	0		4	0	
Educational Level			NS			0.042			0.002			NS
Primary school	50	11		50	11		60	1		40	21	
High school	644	129		549	224		711	62		481	292	
Intermediate or higher institute	120	18		90	48		126	12		84	54	
Master or PhD												
SES			NS			NS			NS			NS
Low	197	47		181	63		230	14		147	97	
Medium	605	107		495	217		653	59		447	265	
High	16	6		15	7		19	3		12	10	
Age Groups			0.008			0.023			NS			NS
0-17	20	1		17	4		21	0		16	5	
18-30	698	127		566	259		758	67		506	319	
31-45	74	22		77	19		89	7		61	35	
46+	18	8		23	3		25	1		16	10	
Field of education			0.001			<0.001			0.004			<0.001
Medical School	222	27		190	59		236	13		176	73	
Pharmacist	125	12		106	31		133	4		98	39	
Dentist	32	5		26	11		33	4		25	12	
Engineering	104	25		78	51		115	14		67	62	
Social Science	187	49		145	91		211	25		121	115	
Science	27	6		29	4		31	2		25	8	
Medical	417	46	<0.001	356	107	<0.001	441	22	0.001	332	131	<0.001
Non-Medical	357	90		285	162		400	47		242	205	
Social	187	49	0.004	145	91	0.004	211	25	0.042	121	115	<0.001
Non-Social	587	87		496	178		630	44		453	221	
Working			<0.001			0.008			<0.001			<0.001

Negative	545	75	456	164	588	32	413	207
Positive	267	84	230	121	307	44	190	161
Type of Work			0.001		0.004		<0.001	<0.001
Labourer	15	12	20	7	23	4	2	3
Trained worker or Merchant	17	12	14	15	20	9	11	18
Technician	77	28	61	44	89	16	49	56
Post-graduate	141	26	118	49	154	13	105	62
			NS		NS		NS	NS
Medical condition	459	92	383	168	509	42	333	218
Negative	58	19	51	26	66	11	43	34
Gastroenterology	6	1	6	1	7	0	5	2
Respiratory	12	4	10	6	13	3	9	7
Cardiac	62	9	53	18	67	4	48	23
Endocrine	9	3	5	7	11	1	3	9
Urinary	22	4	19	7	23	3	18	8
Neurological	23	7	27	3	30	0	20	10
Skeletal	12	2	12	2	13	1	11	3
Asthma	42	4	34	12	44	2	32	14
Allergic reaction								
Losing someone close due to war			0.0003		0.050		0.053	<0.001
No	475	73	339	149	511	37	366	187
Yes a close family member	115	17	94	38	123	9	85	46
Yes a loved one or close friend	5	1	2	4	5	1	2	4
Yes a distant relative or friend	171	64	153	82	207	28	117	117
Being distressed from war Noises			0.014		NS		0.037	0.040
Negative	281	71	238	114	316	36	203	149
Positive	530	87	444	173	577	40	397	220
Changing place of living due to war			NS		NS		NS	NS
Negative	555	101	452	204	605	51	402	254
Positive	251	57	227	81	283	25	195	113

* Single vs non single was also statistically insignificant.

3 4
ng Patterns and Characteristics of Subjects

Cigarette smoking	Mean (n=298)	CI (95%)
Years of smoking	5.69 ± 5.024	3.939 - 6.131
Estimated number of packs	1.14 ± 0.504	0.435 - 0.568
Shisha smoking	Mean (n=278)	CI (95%)
Frequency of Shisha every week	3.074 ± 3.5459	2.7989 - 4.2463
Duration of Shisha	1.0594 ± 0.58105	0.50460 - 0.65941
Preferred time of Shisha count:		
Unspecific	9	3.1% (1.4-5.2)
Morning	70	24.4% (19.2-29.6)
Social	208	72.5% (67.2-77.7)

confidence interval.

Figures

Figure 1

that shows smoking patterns in Syrian provinces.

Figure 2

that shows consistency of cigarette and shisha smoking among males and females.

Figure 3

that shows type of work compared with smoking according to gender, and a means plot of years of smoking and type of work.

Figure 4

that shows cigarette and shisha smoking according to age groups and gender.