Failure to Quit Smoking Extent and Determinants among Attendees of Tobacco Cessation Clinic

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Authors' contributions

This work was carried out in collaboration among all authors. Author RHA designed the study, searched the literature, wrote and reviewed the final manuscript. Author AHA did the data sorting, analysis, and reviewed the manuscript. Author AMYA did the literature review, data collection design, results writing and reviewed the manuscript.Author AA entered the data, did literature review, wrote and reviewed the manuscript. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Smoking is a global health risk factor despite the efforts to control and the existance of tobacco cessation program. The objective of this study was to measure the proportion of people who failed to quit smoking at the end of six months after attending the smoking cessation clinic and to identify the factors associated with failure to quit. We used an analytical cross-sectional design which was conducted at Taif city, Saudi Arabia between January 2019 and March 2020. The attendees of smoking cessation clinic were invited to participate in the study. We used a questionnaire as the data collection too. The statistical package for the social sciences (IBM Corp. Released 2020. IBM SPSS Statistics for Windows, Version 27.0. Armonk, NY: IBM Corp) was used to analyze the data. The total responses was 393, out of them 201 (51.1%) failed to quit smoking after six months. Age, marital status, income, and occupation were significantly associated with the outcome variable (quit or not). Even before attending the clinic (62.3%) have indicated previous failed attempts. Among

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the different types of smoking, hookah showed a significant association with failure, while nicotine dependence did not showed any significance. Failure to quit was associated with advanced age, smoking hookah, while those who indicated the price of tobacco products as a reason to quit were more prone to fail in quitting smoking. In conclusion, smoking cessation can be influenced by a sociodemographic factors, willingness and family support. Smoking hookah is associated with higher rates of failure to quit smoking.

1. INTRODUCTION

Tobacco smoking is a significant public health problem worldwide. It is a preventable cause of morbidities and mortalities; cancers, lung diseases, and cardiovascular diseases are among the most significant co-morbidities. Smoking is an epidemic responsible for killing nearly seven million people each year. One tenth of smoking-attributed deaths is a result of secondhand smoke [1]. Data extracted from the last national survey done in 2013 showed that the overall prevalence of smoking was(12.2%), and smoking was different between genders which was (21.5%) for males, and (1.1%) for females [2]. Furthermore, in the period between (2005–2010), the estimated economic burden of tobacco in productivity waste and premature deaths in the Kingdom of Saudi Arabia (KSA) is nearly 25 billion Riyals [3]. The health, social, and economic load of tobacco use costs the KSA up to five billion Riyals yearly, while the premature deaths in the same period estimated to be 177,000 deaths [3].

Smoking cessation is defined as confirmed persistent abstinence from cigarettes and/or other tobacco products for at least 6 months, but preferably for 1 year [4]. Improvements in life expectancy, quality of life and the prevention of many diseases are of the most remarkable benefits of smoking cessation [5]. Ministry of health (MOH) in Saudi Arabia established the tobacco control program (TCP) since 2014, to stand against all types and forms of tobacco use. Unfortunately, smoking prevalence almost doubled from 2001 to 2012 [6]. The TCP is the foundation of the MOH's long-term control plans against all forms of tobacco use. Such programs include health education to raise awareness and the establishment of a series of specialized tobacco control clinics across Saudi Arabia. Additional tobacco control initiatives include warning labels for each tobacco box, raising taxes 100%, and banning smoking advertisements in the mass media [7]. Previous studies have identified some factors that contribute to a successful smoking cessation. The use of varenicline as a pharmacotherapy was significantly associated with successful quitting [8]. Other factors that have been identified as well, number of cigarettes, duration of smoking, dependency level, number of counseling session, and self-preparedness [9].

TCP is relatively a young public health program in KSA. The program needs to be evaluated to measure its performance. It is essential to understand the factors which affect the quitting of tobacco use among those who enrolled in the program. Therefore this study was aimed to detect the proportion of people who failed to quit smoking at the end of six months after attending the smoking cessation clinic and to determine the factors that affect the quitting of tobacco use.

2. MATERIALS AND METHODS

2.1 Study Design

Analytical cross-sectional study investigating the rate of smoking cessation failure using a self-reported online questionnaire from January 2019 to March 2020.

2.2 Study Population

People attending the main smoking cessation clinic in Taif city, KSA. The Saudi guidelines for smoking cessation services defined the successful quitter as the smoker who succeeds in being able not to smoke for at least six months [10].

All male patients benefiting from the main tobacco cessation clinics in Taif city, whom ages range from 18 to 65 years were the target population for the present study. The exclusion criteria were females, patients who did not complete at least one month in the smoking cessation program, those who did not attend a minimum of two counseling sessions, and patients who were terminally ill.

2.3 Study Setting

This study was conducted in Taif city, west region of KSA. At the time when this study was conducted, Taif city had three TCP clinics: TCP clinic in Alshaily, TCP clinic in king Faisal hospital, and TCP clinic in Aljawhara primary care center.

2.4 Sample Size

Assuming (50%) as a prevalence of failure to quit smoking after attending the TCP, considering a (95%) confidence interval, (80%) power and (5%) precision , the minimal calculated sample size was (384).

2.5 Data Collection

The questionnaire was filled by the participants through sending them the link to the online form. Data collection questionnaire was developed after extensive search in the literature. Questions were collected from different studies having a validated questionnaire. No validity tests were applied to the final version of the questionnaire, the questions were obtained from valid instruments in the literature [11-12]. The binary outcome variable was the status of smoking at the end of six month period (quit or failed to quit). The questionnaire also contained questions inquiring about sociodemographic characteristics, smoking history, Fagerstrom test for nicotine dependence, and information about previous quitting trials [12]. Adding the variables of sociodemographic characteristics to the questionnaire included large number of groups for a single variable. This may in turn cause a statistical invalidity to use the Chi-square test and conclude results. Factors relating the main objective of a binary type were tested using Fisher exact test.

2.6 Statistical Analysis

The statistical package for social sciences (IBM Corp. Released 2020. IBM SPSS Statistics for Mac, Version 27.0. Armonk, NY: IBM Corp) was used to analyze the data. Median and interquartile range were used to summarize continuous variable, while proportions and frequency tables were used to summarize categorical variables. The outcome was dichotomous (being able to quit smoking for at least six months); cross-tabulations and Chi-square test were used with categorical independent variables. Binary logistic regression was used to find significance for age as a predictor for failure to quit smoking. P-values less than 0.05 were considered as statistically significant.

3. RESULTS

A total of 393 smokers have submitted an electronic responses. The questionnaire included questions limited only for a specific targeted groups of the participants. For example, we inquired about type of smoking (cigarettes, hookah and electric cigarettes), depending on the choices the participants made, questions regarding the dosage and frequency of each type were only available for those who use that type of smoking. The age range was (18-65 years) with median of 35 year and interquartile range (IQR= 27-50 years). The main outcome variable of the present study was status of smoking (Quit - Failed to Quit) after attending smoking cessation clinic for at least six months. Of the total sample, 201/393 (51.1%) have failed to stop smoking for at least six months. Advanced age was associated with failure to quit smoking (P<0.001). All the participants were of a male gender, singles were 36.3%, the majority (68.4%) had bachelor degree or higher, (27.5% indicated high school as educational level, (1.5%) elementary school, (1.3%) primary school and (1.3%) only read and write. Regrding accupation, (14.5% were students, (42.3%) were governmental employees, (15.1%) in the private sector, (16.1%) retired, (4.8%) had free business and (7.1%) had no job. Income was more than 10,000 among (46.6%), from 6,000 to 10,000 among (19.3%), from 3,000 to 5,999 among (8.9%), less than 3,000 among (9.7%) and (15.5%) indicated that they do not have incomre. Sociodemographic characteristics and their associations with smoking cessation are shown in (Table 1). Participants reported a various comorbidities and events which can be considered as complications of smoking. History of chronic diseases was also obtained. Responses were as follow, cardiovascular diseases (28.9%), hypertension (52.2%), hyperlipidemia (44.4%), nervous system diseases (10%), diabetes (40%), chronic respiratory disease (17.8%), psychiatric illness (6.7%), kidney disease (3.3%), liver disease (0.5%) and no malignancy was reported . History of major medical conditions was also inquired. Responses were as follow, heart attack (3.8%), brain stroke (1.3%), arrythmia (14.8%), angina pectoris (7.4%) and breathing difficulty (23.4%). Comorbidities and health issues with the related p-values are shown in (Table 2).

Smoking hookah was prevalent with a percentage of (46.1%). While only (10.4%) indicated the use of smokeless tobacco. Cigarettes were the most common method of smoking with (71.8%) (Fig. 2). Smoking hookah was associated with failure to quit smoking (P=0.007; Relative risk=1.3) (Table 3). Half (50%) of cigarettes smokers consume between 10 to 20 cigarettes per day, (22%) smoke less than 10, while those who smoke more than 20 and 30 were (16.7%) and (11.3%), respectively. The frequency of smoking hookah was measured by week; the majority (59.1%) smoke one to three times per week, (21%) smoke hookah 4-7 times, and (19.9%) smoke hookah more than 7 times each week. The majority (74%) of smokeless tobacco users reported consuming less than one bag or two to four bags each week, distributed equally for each of the two groups. However, (26%) consumed more than five bags each week. From a monetary point of view, (31.6%) spend less than 250 Saudi Riyals (SR) monthly on smoking, (38.2%) spend (251-500) SAR, (15.2%) spend (501-750), and (15%) spend more than 750 SAR each month on smoking. Other smoking related factors and the related significances were showed in (Table 4).

Nicotine dependence for both tobacco and smokeless tobacco were measured in the questionnaire. Smokeless tobacco users were less dependent; only 21/27 showed significant dependence. More than one third 73/190 of cigarettes smokers showed significant dependence. However, neither of the dependence categories showed any significance association with failure to quit smoking. Tobacco dependence was prevalent among (38.4%), while nicotine dependence was prevalent among (22.2%). Percentages of tobacco and nicotine dependences were showed in (Fig. 1).

Participants were asked about the factor that mostly has helped them to reduce or quit smoking; personal willingness was chosen by more than half of the participants (54.7%). Furthermore, respondents were asked to choose the domains that motivate them to quit smoking; to live a better life was the most common domain chosen 183/221 (82.8%), other reported domains were disease prevention (56.6%), family reasons (46.2%), religious reasons (37.6%), price of tobacco products (27.1%), and laws or regulations (16.7%) (Table 5). Those who indicated the price of tobacco products were more prone to fail in quitting smoking (P= 0.025, RR=1.3). Other factors failed to showed any significance.

Table 1. The association of socio-demographic characteristics with failure to quit smoking

	Stopped smoking for at least for 6 months		
	Yes (%)	No (%)	P-value*
Marital Status			
Single	55 (38.5%)	88 (61.5%)	0.002
Married	137 (54.8%)	113 (45.2%)	
Education			
Read and Write	3 (60%)	2 (40%)	N/A**
Primary School	3 (60%)	2 (40%)	
Elementary School	4 (66.7%)	2 (33.3%)	
High School	52 (48.1%)	56 (51.9%)	
Bachelor	85 (45.7%)	101 (54.3%)	
Higher Education	41 (55.4%)	33 (44.6%)	
Income (SR)			
No Income	34 (55.7%)	27 (44.3%)	0.004
Less than 3000	10 (26.3%)	28 (73.7%)	
3000 to 5999	12 (34.3%)	23 (65.7%)	
6000 to 10000	43 (56.6%)	33 (43.4%)	
More than 10000	100 (54.6%)	83 (45.4%)	
Job			
Student	18 (31.6%)	39 (68.4%)	0.002
Government Employee	83 (50%)	83 (50%)	
Private Sector	25 (42.4%)	34 (57.6%)	
Retired	44 (69.8%)	19 (30.2%)	
Free Businesses	9 (32.1%)	19 (67.9%)	
No Work	12 (42.9%)	16 (57.1%)	

*P-value calculated using Chi-square test. **Invalid P-value due to expected value less than 5 in more than (20%) of the cells.
*** Saudi Riyals. Number=393.

Table 2. Association of health related issues and smoking cessation

	Stopped smoking for at least for 6 months		
	Yes (%)	No (%)	P-value
Chronic diseases	53 (58.9%)	37 (41.1%)	0.03*
Hypertension	29 (61.7%)	18 (38.3%)	0.571*
Hyperlipidemia	26 (65%)	14 (35%)	0.292*
Diabetes	24 (66.7%)	12 (33.3%)	0.221*
Cardiovascular Diseases	18 (69.2%)	8 (30.8%)	0.204*
Chronic respiratory diseases	10 (62.5%)	6 (37.5%)	0.746*
Nervous System Diseases	5 (55.6%)	4 (44.4%)	0.549**
Psychiatric Illness	3 (50%)	3 (50%)	0.479**
Kidney Diseases	2 (66.7%)	1 (33.3%)	0.663*
Liver Diseases	2 (100%)	0 (0%)	0.344**
Previous Health Issues			
Breathing Difficulty	40 (43.5%)	52 (56.5%)	0.238*
Arrythmia	27 (46.6%)	31 (53.4%)	0.704*
Angina Pectoris	15 (51.7%)	14 (48.3%)	0.748*
Heart Attack	10 (66.7%)	5 (33.3%)	0.154*
Brain Stroke	3 (60%)	2 (40%)	0.679**

*P-value calculated using Chi-square test. **P-value calculated using Fisher exact test. Number of patients with chronic conditions=90; Number of patients with previous health issues=199

Table 3. The association between smoking hookah and failure to quit smoking

	Quit smoking		P-value
Smoking hookah	No	Yes	
Yes	106 (58.6%)	75 (41.4%)	0.007
No	95 (44.8%)	117 (55.2%)	

Number=393

Table 4. Smoking related factors and their association with failure to quit smoking

	Stopped smoking for at least for 6 months		
Variables	Yes (%)	No (%)	P-value*
Age when started to smoke			
Less than 10 Years Old	11 (33.3%)	22 (66.7%)	0.079
10-18 Years Old	93 (53.8%)	80 (46.2%)	
More than 18 Years Old	88 (47.1%)	99 (52.9%)	
Smokers at home			
Smoking Sibling	61 (46.2%)	71 (53.8%)	0.801
Smoking Parents	49 (43.8%)	63 (56.2%)	0.308
Smoking Grandparents	15 (55.6%)	12 (44.4%)	0.325
Reason of Start Smoking			
Friends (309)	161 (52.1%)	148 (47.9%)	0.013
Stress (173)	76 (43.9%)	97 (56.1%)	0.083
Imitation (161)	74 (46%)	87 (54%)	0.339
Family (81)	37 (45.7%)	44 (54.3%)	0.521
Smoking Advertisements (44)	23 (52.3%)	21 (47.7%)	0.630

*P-value calculated using Chi-square test. Number of patients who had a smoker at home=118; Total number of patients=393

Table 5. Reasons to quitting smoking among the participants

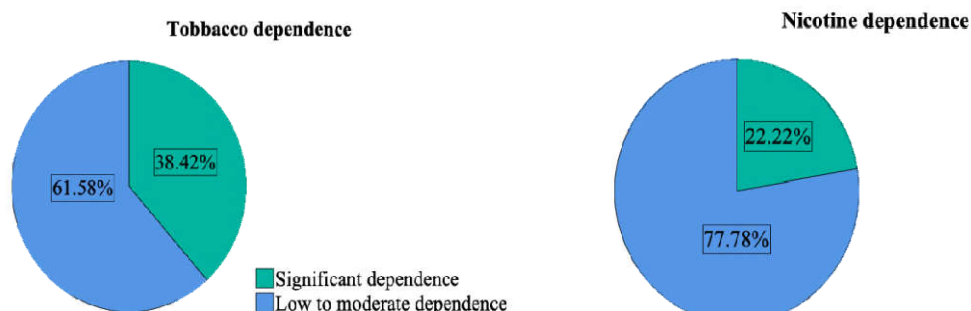| Reason to quit	N	%
Diseases	125	56.6%
Increased price	60	27.1%
Religious reasons	83	37.6%
Family reasons	102	46.2%
To live a better life	183	82.8%
Laws and regulations	37	16.7%
Presence of cessation clinics	85	38.5%

Number=221

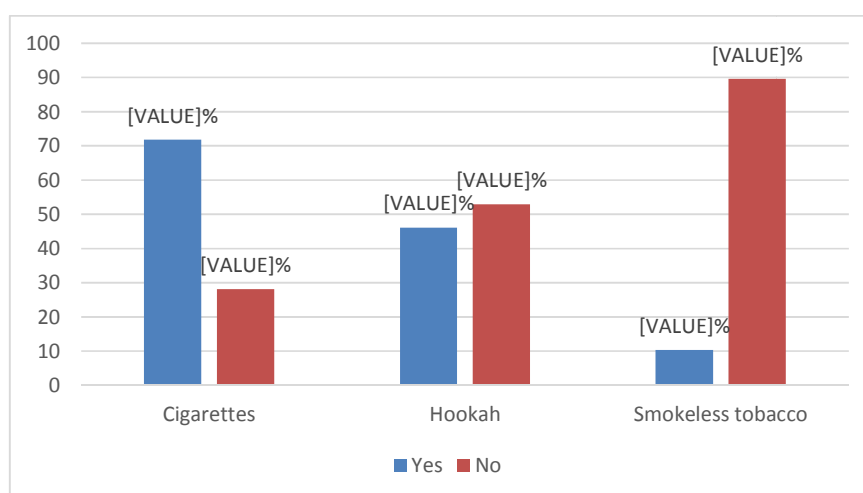**Fig. 1. Tobacco and nicotine dependence among the participants**

Fig. 2. Different methods of smoking among our participants

4. DISCUSSION

The main outcome variable of the present study was status of smoking (Quit - Failed to Quit) after attending smoking cessation clinic for at least six months, in which the failure rate was (51.1%). This is comparable to what was found in a study done by López-Torrecillas *et al*., in which the smoking abstinence rate at six months and 12 months were (44.8%)) and (36%)) respectively [13].

As concluded in the present study, cigarette smoking is the most common form of smoking (71.8%), which is consistent with what was found in a previous literature [14]. In fact, (50%) of cigarette smokers involved in our study consume 10-20 cigarettes daily, (22%) consume less than 10 cigarettes, and (16.7%) and (11.3%) represent those who smoke more than 20 and 30 cigarettes per day, respectively. This proves that the number of cigarettes smoked per day is a major factor in determining whether smoking

cessation would be more achievable or not, which was further evident by the results of another study demonstrating the failure rates of smoking cessation trials at 12 months [15]. The aforementioned failure rates were as follows; those who smoked 1-10 cigarettes had (55.6%) dropouts, those who smoked 11-20 cigarettes had (98%) dropouts, and lastly those who smoked more than 20 and 30 cigarettes had 100% failure rate [10]. On the other hand, hookah smoking, waterpipe tobacco smoking (WTS), prevalence was (46.1%), and smokeless tobacco comprised (6.9%)) of smoking methods (Fig. 2). However, the prevalence of hookah smoking in other countries is much lower; the United States of Americans (USA) (1%), Lebanon (4%), Pakistan (4%) [14,16]. Moreover, we have concluded that hookah smoking is associated with higher failure rates of quitting (Table 3), and according to the previous literature, this is mainly due to people thinking that they can easily quit it whenever they want and that it is only occasional [17]. However, signs

of dependency appear rapidly among hookah users, as smoking it only occasionally (7.5 waterpipes per month) for less than a year is enough for them to be dependent [17]. As for smokeless tobacco prevalence, (2.1%) in the USA which is comparable to our study [14].

Marital status was found to be a significant factor for smoking cessation, since as our results concluded, out of the (48.9%) who abstained from smoking for at least six months, which were 192 participants, 137 (54.8%) of them were married compared to 55 (38.5%) who were singles (Table 1). This was further supported by another study involving 156 patients in the smoking cessation program, most of them were married (86.5%) [15]. Furthermore, the higher educational level was, the higher smoking cessation rate will be, since as per Holm *et al*, those with university educational level had more success rate than those with high school educational level [18]. This correlates well with our results as those with any educational level higher than bachelor's degree had (55.4%) success rate in stopping smoking for at least six months (Table 1).

Studies have shown that dependence is strong predictor of smoking cessation. Tobacco dependence was present among (38.4%) and nicotine dependence was present among (22.2%) (Fig. 1). However, this study indicates that there are no effects for dependence on smoking. The results may suggest that high addiction levels can predict very early relapses. If the results of the study were to be replicated, then dependent smokers would have something to smile on as they might expect and anticipate greater difficulties in totally quitting smoking for a prolonged period, proposing that if they manage to survive the urge to snoke within the first days, they are in a better position to succeed in quitting as anyone can quit smoking [19]. With that, the frequency of strong impulses to smoke forecasted a relapse after the first month, which is something related to dependence. Regarding what motivates them to quit smoking, a couple of reasons were mentioned such as the harmfulness of smoking and how it affects their health in deleterious ways [20]. Other reported reasons were the high price of cigarettes as well as other smoking forms and the pressure from the family members especially the kids desiring to hug their parents without smelling cigarettes on them [20]. In comparison, when respondents of the present study were asked about the commonest cause that motivated them to quit,

they chose "to live a better life" (82.8%) . Additionally, other motivators included disease prevention (56.6%), family reasons 46.2%), religious reasons (37.6%), price of tobacco products (27.1%), and laws or regulations (16.7%) .

Counseling approach and exploring patients potentials towards smoking cessation have been used. However, introducing pharmacotherapy may improve the rate of quitters significantly. It was found that bupropion combined with behavioral counseling was superior to placebo with (43%) quitters at the seventh week. This finding was significant (P-value<0.001) [19]. Nicotine replacement therapy has also shown higher rates of abstinence. On the other hand, bupropion and nicotine patch had the highest rates (35.5%) of abstinence compared to nicotine patch alone (16.4%) and bupropion as amonotherapy (30.3%), this finding was statistically significant (P-value<0.001) [21].

5. CONCLUSIONS

The failure of smoking cessation for at least six months after attending smoking cessation clinic was 201/393 (51.1%). Marital status, income, and occupation were significantly associated with the outcome of being able to quit smoking. Failure to quit was associated with advanced age, smoking hookah, and those who indicated the price of tobacco products as a reason to quit were more prone to fail in quitting smoking. Personal willingness was the most common factor associated with successful cessation attempts. We recommend involving behavioral methods to help smokers motivate themselves and strengthen the willingness to quit smoking. We recommend interventions targeting health professionals for smoking cessation, their involvement on various factors such as the level of training instead of professional discipline and access to smokers. Hence, the recommendation for healthcare professionals is relevant to all healthcare professionals. The necessary feature of individual smoking cessation includes: Asking; Advising (to stop); Assisting (to stop), and Arranging (follow up).

CONSENT

The authors declare that they have obtained individual informed consent from all the participants in this study. The participants were informed that the data will be used for scientific

purposes only and the final results will be published.

ETHICAL APPROVAL

The ethical approval for the study was obtained from the research and ethics committee of the Ministry of Health and the research ethics team in the Saudi Preventive medicine board. IRB registration number (HAP-02-T-067).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX (The questionnaire "English version")

Joint Program of Preventive Medicine in Taif

(A study to measure the proportion of attendees of Taif tobacco cessation clinic who failed to quit smoking and identify the factors associated with failure to quit smoking)

CONSENT FORM

Dear participant:

- • I am Dr.Rafat Abushanab, a physician in residency program under Saudi board of preventive medicine.
- • I am conducting a research aims to measure the proportion of people who failed to quit smoking at the end of six months after attending the smoking cessation clinic in Taif city.
- • This research aims to identify and measure the factors associated with failure to quit smoking.
- • This study is part of the graduation requirements for the certificate of specialization in the Saudi Board of Preventive Medicine. Your participation will not cause any loss or damage.
- • All the information of this questionnaire will be treated confidentially and it will be used only for research purposes.
- • The participants are free to withdraw anytime from participating in this research.
- • For any inquiries please contact me at 0598888438

Researcher: Dr. Rafat Hussam Abushanab

Please Mark Yes if you accept to participate ☐Yes   ☐No
Participant signature
Please select the applicable answers by marking it

Section1: Personal **information:**

1- Age:

2-Social status:

- o   single
- o   married
- o   divorced
- o   widower

3-Level of education:

- o   I read and write.
- o   Primary school
- o   Middle school
- o   Secondary school
- o   Colleege Degree
- o   Higher degree

4-Monthly income:

- o   No income
- o   Less than 3000 riyals
- o   3000 to 5999
- o   6000 to 10,000
- o   More than 10,000 riyals

5- Job

- o   student
- o   Government employee
- o   Private sector employee
- o   Retired
- o   Free business
- o   I don't work.
- o   Other (select):

6- Mobile number:

Section 2: Medical History

1- Do you have any chronic medical diseases?

☐ Yes   ☐ No

If the answer **is no,** please skip question 3.

2- What chronic diseases do you suffer from?

Yes	No	Chronic disease
		Cardiovascular disease
		High blood pressure
		High fat (cholesterol and triglycerides)
		Diseases of the nervous system
		Diabetes
		Chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease
		Mental illness
		Kidney disease
		Liver disease
		Malignant diseases (cancer)

Have you ever been exposed to any of the following cases?

Yes	No	
		Heart attack (heart attack)
		Stroke
		Arrhythmia
		Angina (severe chest pain)
		Any breathing difficulties.

Section 3: History of smoking

1. At what age did you start smoking?

- o   Less than 10 years.
- o   10 to 18 years old
- o   More than 18 years old

2- Is there any smoker in the house?

☐Yes   ☐No

If the answer **is no,** please skip question 3.

o   Father or mother
o   One of the brothers.
o   Grandpa or Grandma.

3- What are the reasons for starting smoking?

Yes	No	
		Friends
		Being influenced by someone
		Family
		Stress and anxiety
		Smoking ads

4- The number of forms of tobacco youuse: specify everything that applies

o   Cigarettes
o   Hokkah
o   Smokeless tobacco (sweika- snort)
o   E-cigarette

5- If you smoke Hokkah ,how many heads a week?

If you don't smoke Hokkah, skip to question 6.

o   I don't smoke shisha.
o   1 to 3 heads a week.
o   From 4 to 7 heads a week.
o   More than 7 heads a week

6. If you use electronic cigarette, has it had an impact on your quitting smoking?

If you don't smoke e-cigaretee, skip to question 7.

o   Electronic cigarettes didn't work at all.
o   helped me to some extent to reduce smoking
o   You helped me give up smoking completely.

7.How much do you spend per month on tobacco **products?**

o   Less than 250 riyals
o   From SR 251 to SR 500
o   From SR 501 to SR 750
o   More than SR 751

Section 4: Measuring nicotine dependence for cigarette smokers only

If you don't smoke cigarettes, skip this Section.

1- Have you been a smoker for more than 15 years?

o   Yes
o   No

2. When do you smoke your first cigarette after waking up?

o   In five minutes.
o   6-30 minutes
o   31-60 minutes
o   In 60 minutes.

3. Do you find it difficult to refrain from smoking in places where smoking is prohibited?

o Yes
o No

4. What cigarette do you hate to give up?

o First cigarette in the morning.
o Other cigarettes

5. How many cigarettes do you smoke a day?

o 10 cigarettes or less
o 11 cigarettes to 20 cigarettes
o 21 cigarettes to 30 cigarettes
o More than 30 cigarettes

6. Do you smoke more during the early hours after waking up than the rest of the day?

o Yes
o No

7. Do you smoke if you are very sick and bedridden most of the day?

o Yes
o No

Section 5: Measuring nicotine dependence on non-smoking tobacco users (**sweika, snort, tambak)**

If you don'tuse smokeless tobacco, skip this section.

1. When do you use smokeless tobacco after waking up?

o Within 30 minutes of waking up.
o 30 minutes after waking up.

2. Do you deliberately swallow tobacco or tobacco liquids?

o never
o sometimes
o always

3- What is the hardest time for you to refrain from using smokeless tobacco?

o Morning time immediately after waking up
o Other periods rest of the day

4. How many bags of smokeless tobacco are used each week?

o Less than a bag a week.
o 2 to 4 per week
o More than 5 a week

5. Do you use smokeless tobacco when you are sick or **have sores in the mouth?**

o Yes
o No

6. Do you find it difficult to refrain from using **smokeless tobacco** **in** places where it **is prohibited?**

- o Yes
- o No

Section 6: Attempts to stop smoking

1. Have you had previous smoking cessation experiences before?

If the answer **No** skip to question number six.

- o Yes
- o No

2. How many previous attempts to stop smoking?
.
3. How long have you lasted without smoking?

- o Less than a month.
- o From one to three months.
- o From 3 months to 6 months
- o More than 6 months

4- When was the last attempt to stop smoking?

- o Less than a month.
- o From one to three months.
- o From 3 months to 6 months
- o More than 6 months

5- Are you currently a smoker after attempts to stop before? There's been a setback.

- o Yes (i.e. relapse, go to question 7)
- o No

6. What are the reasons for stopping smoking?

Yes	No	
		Health reasons
		Financial reasons (increased prices of tobacco products)
		Religious reasons
		To live a healthy, better life.
		Regulations and laws from the employer or the surrounding environment
		Presence of anti-smoking clinics

7. What are the causes of relapse**? Select everything that applies**

Yes	No	
		Cost of treatments to help stop smoking
		Mood swings
		Working environment and surrounding environment
		Fear of failure of smoking cessation
		A failed previous experiment to stop or quit smoking
		The urgent desire to smoke
		No support from friends and family
		Different life pressures

8. What methods helped you stop smoking?

Yes	No	
		Willpower to take off
		Stimulation sessions provided by the clinic
		Nicotine patches
		Nicotine gum
		Emulsion discs
		Exercise
		Pharmacological therapy, for example, Champex.

9. What is the most method helped you stop smoking? Select only one

- o Willpower to take off
- o Stimulation sessions provided by the clinic
- o Nicotine patches
- o Nicotine gum
- o Exercise
- o Pharmacological therapy, for example, Champex.

Quote from the Saudi Guide to Smoking Cessation Services " Quitting smoking is the person who was a smoker and then stopped smoking permanently for at least six months continuously"

After attending the smoking cessation clinic, have you been able to stop smoking for at least six consecutive months?

- o Yes
- o No

If the answer is no.

What are the reasons that prevented you from smoking?

Yes	No	
		Cost of treatments to help stop smoking
		Mood swings
		Working environment and surrounding environment
		Fear of failure of smoking cessation
		A failed previous experiment to stop or quit smoking
		The urgent desire to smoke
		No support from friends and family
		Different life pressures