

Prevalence and Factors Associated With Tobacco Smoking Among Adults Attending Primary Health Care Centers at Ministry of Health Sectors, Jeddah, Saudi Arabia, 2015

Alaa Omar Al Ahdal^{1*}, Naeema A. Akbar²

¹MBBS, Family Medicine Resident,
The Joint Program of Family and Community Medicine, Jeddah, Saudi Arabia.

²MD, PD, FETP, ABCM, Epidemiologist,
Consultant Community Medicine, Preventive Medicine, Ministry of Health, Jeddah, Saudi Arabia.

ABSTRACT

Background: The aim of this study is to promote health by decreasing the prevalence of smoking among adult Saudi population attending Primary Health Care Centers at Ministry of Health in Jeddah, Saudi Arabia, 2015, by determining the prevalence of smoking and the effect of psychological stress and socio-demographic related with smoking among this group.

Methodology: A cross-sectional study conducted among 377 patients, both male and female patients attending the Primary Health Care Centers at the Ministry of Health sectors, Jeddah.

Results: Smoking was significantly correlated with employment as 52.5% of smokers were employed with a p-value < 0.00, majority of them were clerks. Parents smoking had a major influence on smokers with a statistically significance differences P-value < 0.00. Working hours also had an effect on smoking, where the mean number of working hours for smokers and non-smokers was 7.9SD±2.4 & 7.0SD±3.0 respectively with P-value = 0.001.

Conclusion: The study revealed a high smoking prevalence

and it addressed several factors associated with smoking behavior, including gender, parents smoking, occupation, job type and working hours per day. There is a need to work on developing social policies that reduce the prevalence of smoking and to include stress management in smoking cessation programs.

Keywords: Smoking; Prevalence; Socio-Demographic.

*Correspondence to:

Dr. Alaa Omar Alahdal,
Building number 6492, Postal code 23513
Dist Al Shatea; Street Juwairyah Bint; Jeddah, Saudi Arabia.

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INTRODUCTION

Smoking is a common problem behavior worldwide,¹ and is considered to be the single most preventable cause of premature deaths globally.² According to World Health Organization (WHO) the prevalence of smoking had been increasing worldwide and it is one of the biggest public health threats the world, 6 million persons die from smoking annually, this means one death every 6 seconds. It is estimated that by 2030 tobacco use will result in 8 million deaths worldwide each year³ 80% of all adult smokers begin smoking before the age of 18.⁴ Smoking is one of the most contributing factors to many diseases, for instance, smoking has been strongly associated with heart disease and stroke;⁵ in fact, it is estimated that smoking increases the risk of coronary heart disease and strokes by 2 to 4 times.⁶

Smoking also has its implications on the respiratory system where it increases the risk of lung cancers and other diseases such as chronic obstructive pulmonary disease and asthma attacks. In addition, smoking had been associated with different types of

cancers including, bladder, blood, esophagus, colon, and rectum.⁶ On the other hand, the consumption of tobacco can cause premature death, on average, smokers lose 15 years of their life, and up to 50% of smokers will die of tobacco-related causes.⁷ Furthermore, adults who continue smoking have a higher probability of death compared to patients with the same disease who never smoked or who quit smoking after being diagnosed with the disease.⁸

Many smoking risk factors specially psychosocial and economic are still unclear.⁹ They can negatively impact an individual's mental health and result in unhealthy behavior and an unhealthy lifestyle.¹⁰ However, smoking can often be a social activity; or knowing that smoking will make them feel better because it relieves their nicotine withdrawal symptoms.¹¹

Conducting this study will shed light on the problems that those smokers are exposed to and the investigator chose Ministry of Health (MOH), Primary Health Care Centers (PHCC) because

they represent a large proportion of Jeddah population, as these centers are distributed among all the five sectors of Jeddah, which covers large geographical areas.

Public health department is running smoking cessation intervention programs, but the associated risk factors are not being taken into consideration; knowing these factors in relation to smoking will help in designing more effective intervention programs.

The present study aimed to promote health by reducing the prevalence of smoking among adult Saudi population and to determine the effect of psychological stress and socio-demographic factors associated with smoking among adult patients.

MATERIALS AND METHODS

The present cross-sectional study was conducted among adult patients aged between 15-55 years, attending the Ministry of Health (MOH), Primary Health Care Centers (PHCC) in Jeddah during 2015. Every patient seen in the PHC was eligible to be included in the study. Patients younger than 15 years and above 55 years and mentally retarded patients were excluded from the study.

Approval was taken from the MOH Research Ethics Committee. Permission was taken from joint program of family medicine to conduct the research. Approval was taken from the administrative unit of each PHCC before distribution of the questioner. A Full explanation was done to patients and a verbal consent was taken

by accepting to answer the questionnaire and participation in the research was considered as consent. The sample size was estimated as 377 assuming that the prevalence of smoking in the community is 50% to get maximal sample size, with a 95% confidence level and acceptable p-value as 0.05. The sample was calculated by ROASOF program. Random cluster sampling technique was applied. The participants from each PHCC were selected through proportional allocation sampling of male and female in the waiting area. The researcher, with the help of 2 trained medical doctors as data collectors, distributed self-administered questionnaire.

Patients were told about the purpose of the study and only those who volunteered to participate were given the self-administered questionnaire. The participants were instructed to fill the questionnaire alone and to submit it back to the data collectors, which were standing outside the waiting area after they had completed their questionnaires. In cases where the data collector was a male, a female nurse assisted him in distributing the questionnaires to the female participants.

The data were verified and coded and entered into a personal computer. The Analysis was done using SPSS program, version 21, continuous variables were presented as a mean and standard deviation and categorical variables were presented as frequency and percentage.

Analytic statistics were done using chi-square test and fisher exact test for categorical variables, and for significant difference among continuous variables a t-test was used. P-value was set at 0.05.

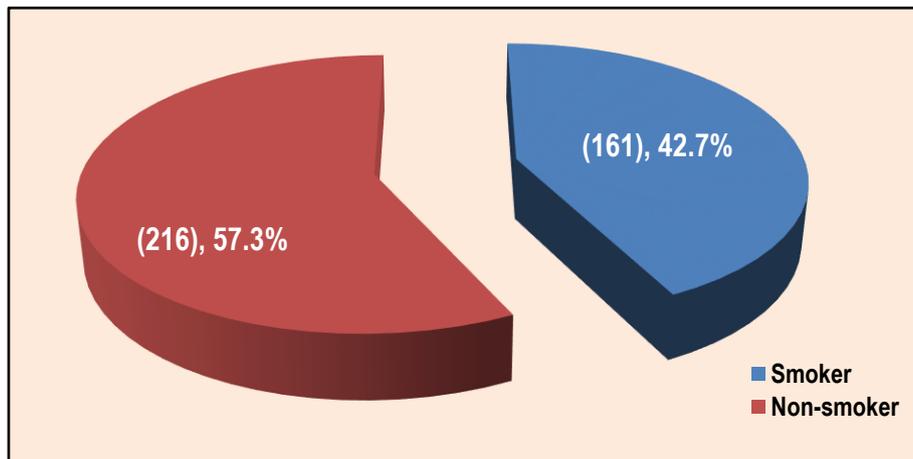


Figure 1: Smoking status among adult patients attending Primary Health Care Centers

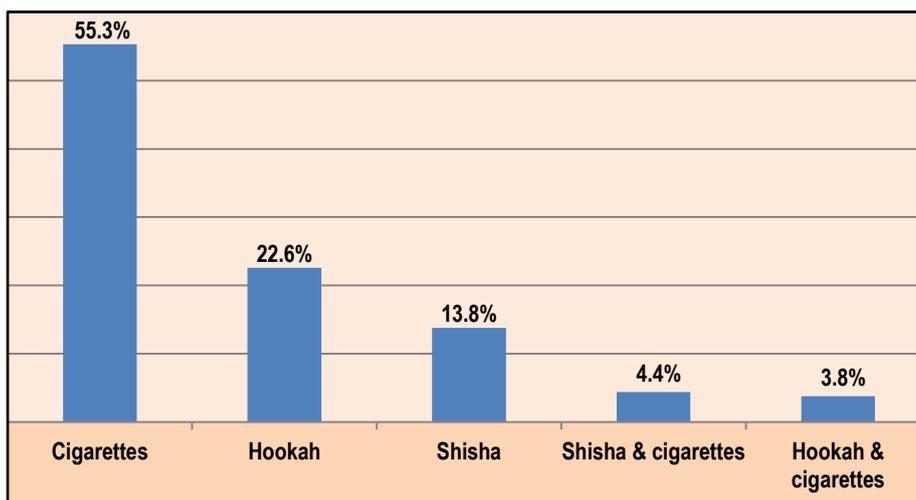


Figure 2: Type of smoking among adult patients attending Primary Health Care Centers.

Table 1: Smoking characteristics of adult patients attending Primary Health Care Centers.

Variables	N	%
Parents smoke		
Father	74	46
Mother	10	6.2
No one	69	42.9
Mother & Father	8	5
Current smoking status (N 157)		
Daily	118	75.2
Occasionally	39	24.8
Frequency of smoking /day (N 155)		
1-3/day	75	48.4
4-10/day	30	19.4
≥ 10/day	50	32.3
Duration of daily smoking		
1 month < 6 months	6	3.7
6 months < 1 years	22	13.7
1 year < 5 years	46	28.6
More than 5 years	87	54

Table 2: Smoking and demographic characteristics among adult patients attending Primary Health Care Centers at Ministry of Health, 2015, Jeddah, Saudi Arabia

Variables	Smoking status		Chi Square	P value
	Yes	No		
Gender				
Male	105 (56.1%)	82 (43.9%)	27.4	0.000
Female	56 (29.5%)	134 (70.5%)		
Nationality				
Saudi	131 (42.7%)	176 (57.3%)	0.001	1.0
Non- Saudi	30 (42.9%)	40 (57.1%)		
Marital Status				
Single	53 (48.6%)	56 (51.4%)	5.4*	0.12
Married	94 (39.3%)	145 (60.7%)		
Divorced	12 (57.1%)	9 (42.9%)		
Widowed	2 (25%)	6 (75%)		
Education qualification				
Illiterate	10 (45.5%)	12 (54.5%)	2.5*	1.0
Read and Write	4 (36.4%)	7 (63.6%)		
Intermediate	26 (49.1%)	27 (50.9%)		
High school	65 (42.5%)	88 (57.5%)		
College	50 (40%)	75 (60%)		
Master	6 (50%)	6 (50%)		
Doctorate	0 (0%)	1 (100%)		
Residence (N 361)				
Apartment	135 (43.3%)	177 (56.7%)	0.1	0.75
Villa	20 (40.8%)	29 (59.2%)		
Property type (N 370)				
Ownership	59 (37.6%)	98 (62.4%)	2.6	0.11
Rental house	98 (46%)	115 (54%)		
Monthly income				
≤ 3000 riyals	54 (39.1%)	84 (60.9%)	8.15*	0.14
3000 - 4,999 riyals	30 (46.9%)	34 (53.1%)		
5000 - 9,999 riyals	46 (52.9%)	41 (47.1%)		
10,000 - 14,999 riyals	18 (35.3%)	33 (64.7%)		
15,000 - 19,999 riyals	12 (40%)	18 (60%)		
≥ 20,000 riyals	1 (14.3%)	6 (85.7%)		
Parents smokes (N 372)				
Father	74 (66.1%)	38 (33.9%)	48.0	0.000
Mother	10 (62.5%)	6 (37.5%)		
No one	69 (29.2%)	167 (70.8%)		
Mother and father	8 (66.7%)	4 (33.3%)		

Occupation				
Employee	104 (52.5%)	94 (47.5%)	35.2*	0.000
Retired	13 (52%)	12 (48%)		
Housewife	13 (16.2%)	67 (83.8%)		
Student	30 (41.1%)	43 (58.9%)		
Jobless	1 (100%)	0 (0%)		
Job categories				
Teacher	12 (30%)	28 (70%)	15.6	0.02*
Clerks	33 (49.3%)	34 (50.7%)		
Medical	14 (63.6%)	8 (36.4%)		
Laborer	29 (70.7%)	12 (29.3%)		

Table 3: Smoking and associated factors among adult patients attending Primary Health Care Centers at Ministry of Health, 2015, Jeddah, Saudi Arabia

Variables	Smoking status		T test	P value
	Yes	No		
Age	33.2SD±10.5	32.0SD±10	1.6	0.1
Number of rooms	4.6SD±1.9	4.7SD±1.9	0.8	0.5
Number of persons in the house	5.0SD±3.0	5.3SD±2.3	1.2	0.24
Working hours per day	7.9SD±2.4	7.0SD±3.0	3.4	0.001

RESULTS

Total of participants in this study was 377; they were selected from a different PHCC in ministry of health, including: Mushrefa, Naim, Hamadaniya, Safa, Mahjar, Sahefa, kilo 14, Prince Abdulmajeed, Alshatea, and Alroways. The mean age of patients was 32.3SD±10. Regarding the number of rooms in the house the mean was 4.7SD±1.9. The mean number of persons living in the house was 5.1SD±2.5. The mean working hours per day were 7.4SD±2.7. 49.6 % (187) were male and 50.4% (190) were female, the majority of them was Saudi 81.4% (307) and married 63.4% (239).

The majority of employed participants 33.8% (67) were clerks, followed by laborers 20.7% (41), and 20.2% (40) were teachers. Medical jobs, government official and engineering constituted only 11.1% (22), 7.1% (14) & 6.1% (12) respectively.

Prevalence of smokers was 42.7% (161) as seen in figure 1, and the CI 95% (.38 – .48).

The majority 55.3% (88) smoked cigarettes, followed by 22.6% (36) smoked Hookah and Shisha 13.8% (22). Only 4.4% (7) smoked two types either shisha & cigarettes or 3.8% (6) hookah & cigarettes as seen in figure 2.

Among smokers (161), 46% (74) had smoker father, and only 6.2% (10) had smoker mother, while 5% (8) had both parents smoking. Most of the smokers were smoking on a daily basis 75.2% (118), while 48.4% (75) were smoking on an average of 1-3 times/day, and the duration of daily smoking was 1 year < 5 years at 54% (87) as seen in table 1.

There was a significant difference between smokers & non-smokers regarding the gender 56.1% (105) male were smokers while only 29.5% (56) female were smokers (chi-square test = 27.4, P-value < 0.00).

There was a significant difference in the statements of smoker parents. Within the smokers' group, 66.1% (74) had smoker father, 62.5% (10) had smoker mother and 66.7% (8) had smoker parents. On the other hand, out of the non-smokers' group, 33.9% (38) had non-smoker father, 37.5% (6) had non-smoker mother and 33.3% (4) had both non-smoker parents (chi-square test = 48.0, P-value < 0.00).

There was a statistically significant association between smoking and employment, as 52.5% (104) employee were smokers compared with 47.5% (94) non-smokers, followed by 41.1% (30) students were smokers compared with 58.9% (43) non-smokers, and among retired and housewife groups, 52% & 16.2% respectively (13) were smokers, while non-smoker group was 48% (12), 83.8% (67) respectively (chi-square test = 35.2, P-value < 0.00). In addition, there was a strong association between different job categories and smoking; 49.3% (33) of clerks were smokers compared to 50.7% (34) non-smokers and 30% (12) were smoker teachers compared to 70% (28) non-smokers (chi-square test = 15.6, P-value = 0.02).

There was no significant difference between smokers & non-smokers according to nationality, marital status, education qualification, residence, Property type and monthly income as seen in table 2.

A significant association was found between smoking and working hours; the mean number of working hours for smokers' and non-smokers' was 7.9SD±2.4 & 7.0SD±3.0 respectively, (t-test= 3.4, P-value = 0.001). On the other hand, there was no significant difference between smokers & non-smokers in relation to age, the number of rooms, and the number of the person in the house as seen in table 3.

DISCUSSION

The present study deals with quantifying the problems of smokers and analyzing the relationship of smoking to risk factors, where the main risk factors considered are age, gender, marital status, education qualification, occupational status, job type, monthly income, parents smoking and working hours per day.

The prevalence of smoking in our study was found to be 42.7% (161), compared to a study that was conducted in 2001 at PHCC of the Military Hospital at Al Kharj among 634 patients attending this center, where the prevalence was 34.3%. The difference in the results of smoking prevalence between our study and Al Kharj study is due the fact that the study was conducted in 2001, where the authors of the research done at Al Kharj mentioned that they

believe the prevalence among this population is higher than what their data indicated. In addition, their statement was supported by highlighting the fact that King Abdulaziz banned smoking in Saudi Arabia, due to religious factors; thus, these factors may have prevented smokers at the time from supplying accurate information on their smoking behavior.¹²

Furthermore, it is believed that there is a yearly increase in the prevalence of smoking worldwide, as mentioned by WHO in one of its articles.³ Hence, the difference between the percentage of prevalence between the two studies.

Among the smoking population in this study, 55.3% (88) reported cigarettes as the most common type of smoking followed by Hookah 22.6% (36) and then Shisha 13.8% (22). These results are in line with a study conducted in 1998 at Abha in a sample of 2419 among KSU students, which consisted of two groups, College of Education and Medical College students, as the study concluded that the most common type of smoking among these 2 groups was cigarettes 84.3% and 70.4% respectively, followed by hookah 39.6% and 51.9% respectively. This coincides with the fact that cigarettes are more accessible and easier to use than hookah; where smokers carry their cigarette packs with them most of the time, as well as most facilities provide designated smoking areas to allow them to smoke. This result is also consistent with the worldwide higher prevalence of cigarette smoking than other types.^{13,14} The data in our study showed that the mean age of the smoker among the participants was around 32.3 years. When the results of this study are supported by another study conducted at Al Kharj PHCC in Military Hospital among patients, where it was found that the average age of smokers was 32.1 years.¹²

Smoking prevalence is much higher among male than female. In our study, it showed that 56.1% (105) of the males and 29.5% (56) of the females with a significant difference among smokers and non-smokers group. Other studies also showed similar results, such as the study conducted in Ukraine 2009, which concluded that 62% (338) of males were smokers and 23% (263) were females.¹⁵

There was no significant association between marital status and smoking habit in this study, while an opposite result was found in a study conducted in Shiraz 2010, the authors concluded that out of a group of smokers prevalence found to be 9.7%.¹⁶ Our study results could explain that responsibilities and emotional stress can occur equally in married or unmarried individuals; in addition, the lack of healthy lifestyle habits and physical activity within the Saudi population, as well as the lack of viewing smoking as a socially prohibited behavior among singles and adolescents within the community, are the main reasons that could lead to increased smoking behavior within different social status groups.

Such smoking behavior was also evident in the results of this study on the factor of education quantification, where the findings showed no significant difference between the level of education and smoking. Out of the high school degree, 42.5% (65) followed by college degree 40% (50) were smokers. Such findings were also supported by a study conducted in South Korea 2013, where the results showed no significant relationship between education qualification and smoking.¹⁷ On the other hand, there are several studies that addressed the relationship between the educational level and smoking. Their findings indicated that individuals with lower educational qualification had the highest prevalence of smoking, such as the study conducted in Iran 2011, where it

showed that there is a strong association between this factor and smoking, as the overall prevalence of smoking was 26.2 %, while the smoking among the primary educational qualification was 54.3%.¹⁸

The results of this study found that 66.1% (74) of the smokers' group had a smoking father, while 62.5% (10) had a smoking mother, and 66.7% (8) had both smoking parents. Similar results were found in several other studies, including the study conducted in KSU in Riyadh 2014, where 31% (116) reported having smoking parents.

Moreover, a study conducted in 2010 among secondary school students in Riyadh showed that 22% of respondents reported that they had a smoking father, these results coincides with a research conducted in Cameron which concluded that 25.4% of the smoking population had a smoking parent, which indicates a strong influence of parents' smoking on an individual's smoking habits.¹⁹⁻²¹

Regarding the occupation factor, which is an important factor affecting lifestyle, our results showed a strong association between occupation and smoking, where 52.5% (104) of the employed were smokers. A cross-sectional study was conducted in Italy 2014 among 10,298 participants showed a significant association between occupational type and smoking; their results revealed that 27.7% (2854) were current smokers, out of which 22.2% (899) were clerks, this results support our study.²²

Our results showed a significant difference in working hours; the mean of working hours for smokers in our study was $7.9SD\pm 2.4$ and $7.0SD\pm 3.0$ for non-smokers. Similar results were found in several other studies, such as the study conducted in Hong Kong 2007, where the findings showed a strong association between working hours and smoking. The study showed that individuals working for more than 9 hours per day are more prone to smoking (27.2%), versus those who worked for 7 hours and less (11.6%).²³

CONCLUSION

The study revealed a high smoking prevalence and it addressed several factors associated with smoking behavior, including gender, parents smoking, occupation, job type and working hours per day. Intervention programs need to be designed to alter lifestyle habits that are stimulating smoking behavior. There is also a need to work on developing social policies that reduce the prevalence of smoking and to include stress management in smoking cessation programs.

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