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Frequency of smoking cessation and associated factors among consumers of Cessation Clinics of the Ministry of Health, Saudi Arabia

Alaa A. Albeyahi[1], Mona E. Alzahrani[1], Nagla E. Mahmoud[1], Manayer S. Aleshiwi[1], Fatimah S. Rabhan[1], Sarah A. Bolbol[1,2], Ehsanullah K. Tarin [3], Nashwa M. Radwan[4,] Ali M. Alwadey [5]

[1] Primary Health Care Deputyship, Saudi Ministry of Health, Kingdom of Saudi Arabia
2Department of Community, Environmental & Occupational & Medicine, Faculty of Medicine, Zagazig University, Egypt
[3]Adjunct Faculty at University of Health Sciences, Pakistan
[4]Department of Public Health and Community Medicine, Faculty of Medicine, Tanta University
[5] Tobacco Control Program, Ministry of Health, Kingdom of Saudi Arabia

Abstract

Background: Smoking cessation clinics were established in Saudi Arabia in 2014 to control smoking among the Saudi population and aid in the realization of Saudi Vision 2030's goal of having a healthy nation. This study aims to determine the frequency of smoking cessation and its associated factors among consumers of the Ministry of Health (MOH) clinics as well as to measure their satisfaction with the services provided. **Methods:** A cross-sectional study of 800 participants was conducted from June to December 2019 at MOH smoking cessation clinics in Saudi Arabia. A pre-validated questionnaire was used to collect data via a phone interview through the Health Consultation Call Center (937) at MOH.

Results: The frequency of quitting smoking among the consumers of (MOH) smoking cessation clinics was 26.0%, and the frequency of relapses after attempting to quit smoking was 52.3%. The main indicators of quitting were related to contentment (89.4%), self-efficacy (77.9%), and social and family support (77.4%), as well as counseling services (82.7%) and Nicotine Replacement Therapy (NRT) (81.7%) provided by these clinics. About 70% of the participants were satisfied with the services.

Conclusion: The frequency of smoking cessation among consumers of MOH Cessation Clinics is 26.0%. Most consumers are satisfied with the services provided by these clinics. More considerable attention is recommended with stress on counseling, NRT services, and the establishment of social support groups to

[1] *Alaa A. Albeyahi*, Primary Health Care Deputyship, Saudi Ministry of Health, Kingdom of Saudi Arabia; Tel: 00966 548906765; Email: Albeyahi.alaa@hotmail.com.

assist in smoking cessation among consumers of these clinics. Further research on regular follow-up and available smoking cessation aids are required.

Keywords: Saudi Arabia, Smoking Cessation, Cessation Clinics, Relapse, Satisfaction.

1. Introduction

The tobacco epidemic is a significant public health problem affecting smokers and their family members, especially their children [1]. In some cultures, there is a stigma attached to smoking, which may influence social interaction and relationships. The economic burden of smoking is related to the direct costs of medication/ hospitalization and the indirect costs of lost productivity and premature death [2, 3].

Over 7 million people die yearly as a result of tobacco-related illnesses. Of these, more than 6 million are related to direct smoking and about 890,000 due to second-hand smoking [4].

In 2016, the frequency of smoking was around 14.9% among Saudi Arabians aged 15 and above [5]. As part of the National Tobacco Control Program, the Saudi Ministry of Health (MOH), established Smoking Cessation Clinics to achieve the National Transformation Program's objective of reducing the prevalence of smoking and fulfilling the Saudi Vision 2030 target of improving the nation's health [6]. Therefore, this study aims to determine the frequency of smoking cessation and its associated factors among these clinics and assess consumers' satisfaction with the services provided.

2. Subjects and Methods

2.1 Study design and setting

A cross-sectional study was conducted from January to June 2019 at MOH Smoking Cessation Clinics in Saudi Arabia. These clinics included 279 units (262 fixed units and 17 mobile ones) distributed across the Kingdom.

2.2 Study participants

The study included 800 participants (756 males and 44 females) of all age groups. They were randomly selected through a multistage sampling technique from 50000 consumers who visited the Smoking Cessation Clinics during the study. The first stage of the sample was proportional to 279 cessation clinics, and the second stage was a simple random sample from each clinic. The sample size was calculated using Epi Info software, hypothesizing a smoking cessation rate of 12%, with a 95% confidence interval, and 80% power (was 554 and increased to 800). The inclusion criteria were smokers of any age group, registered at the cessation clinic at least 6 months prior to the survey.

2.3 Study tools

A pre-validated questionnaire was used to collect data from the participants over the phone through the Health Consultation Call Center (937) at MOH. A panel of public health experts reviewed the questionnaire for content, clarity, and accuracy. The questionnaire contained different items, including socio-demographic variables, factors associated with smoking cessation, background variables for smoking relapse, and the consumers' overall satisfaction with the services provided by these clinics.

2.4 Statistical analysis

Data were analyzed using SPSS version 25 [7]. The frequency of quitting and smoking relapse after attempting to quit was measured, and variables associated with them were analyzed. Smoking cessation was defined as refraining from smoking for at least 3 months, and quitting attempts were defined as abstaining from smoking for at least one day [8]. Additionally, consumer satisfaction was divided into three categories: satisfied, neutral, and unsatisfied. Data were represented as percentages and compared using the chi-square test. The results were considered significant at p-value <0.05.

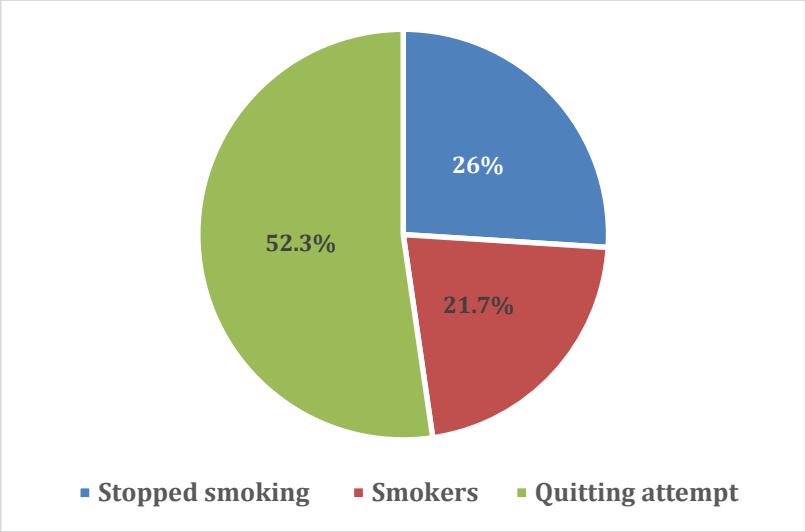
2.5 Ethical issues

Ethical approval was granted from the King Fahad Medical City Institutional Review Board (IRB#18-563E). Informed consent was given by the participants after the study was explained to them. The information taken was kept confidential and will not be used for any purposes other than the study. Those who refused to participate in the study were excluded

Results

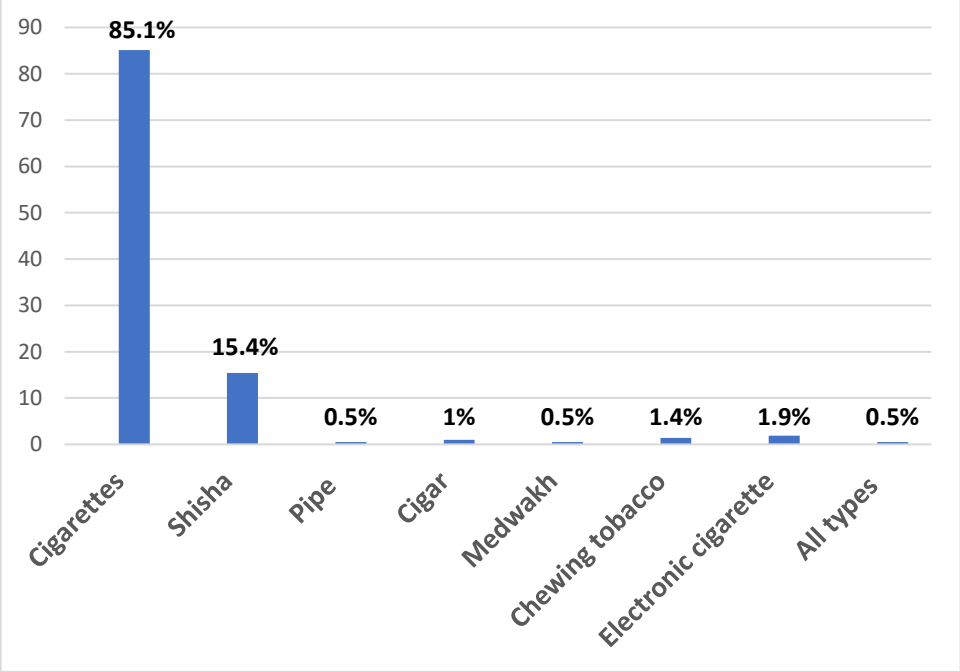
The study was conducted on 800 Saudis utilizing smoking cessation clinics across the Kingdom. The frequency of quitting smoking was 26.0%, while that of smoking relapse was 52.3%, and 21.7% remained smokers (Figure 1).

Figure 1: Frequency of smoking cessation among studied participants



The recorded types of smoking among the studied participants were cigarettes (85.1%), shisha (15.4%), electronic cigarettes (1.9%), chewing tobacco (1.4%), cigars (1%), pipes (0.5%), Medwakh (0.05%), and (0.5%) all types (Figure 2).

Figure 2: Types of smoking among studied participants



The main causes for success in quitting or smoking relapse among studied participants are explained in Figures 3 and 4. The reported reasons for success in quitting are: individuals' contentment

with quitting (89.4%), receiving counseling services (82.7%), nicotine replacement therapy (NRT) (81.7%), self-efficacy (77.9%), and social and family support (77.4%). On the other hand, the main reported causes of smoking relapse were stress and social problems (44.5%), being surrounded by smokers (42.6%), and severe withdrawal symptoms (15.1%).

Figure 3: Reasons for quitting success among studied participants.

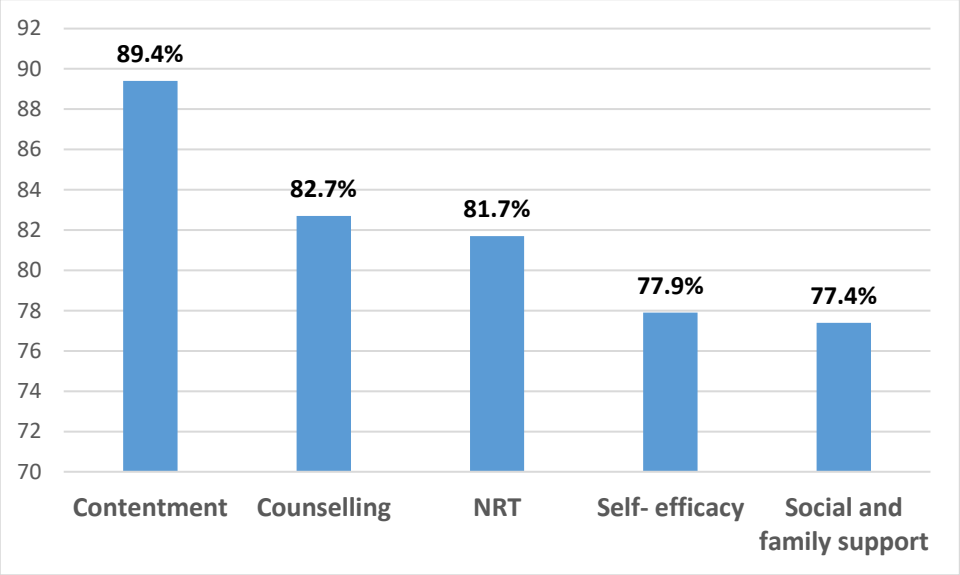
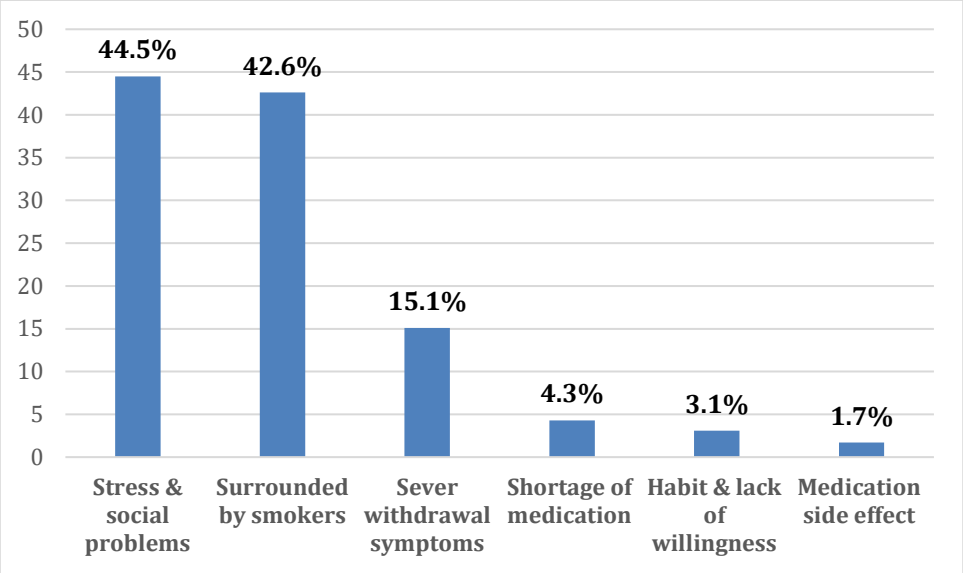


Figure 4: Causes of smoking relapse among studied participants.



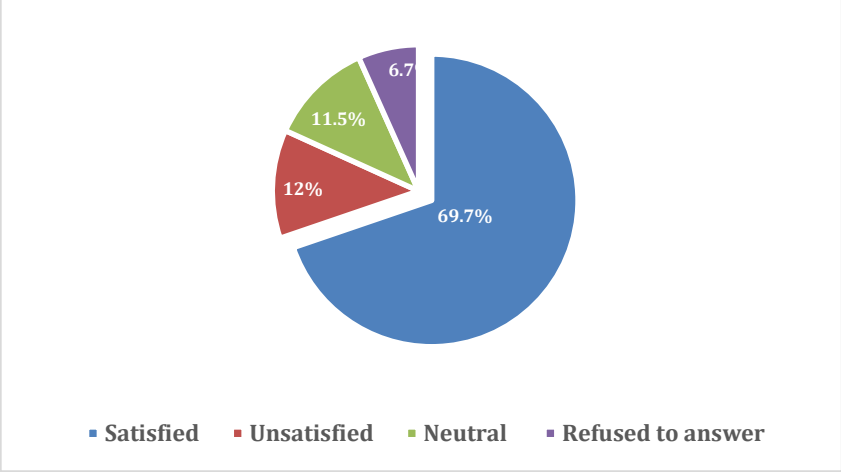
Socio-demographic characteristics, including gender, age, marital status, education, and income, played no significant role in smoking cessation or quitting attempts among the studied participants (P-value > 0.05) (Table 1). Around two thirds (69.7%) of the consumers were satisfied with the provided services, and only 12% were not satisfied, while 11.5% were neutral, and 6.7% refused to answer (Figure 5).

Table 1: Socio-demographic variables associated with smoking cessation and smoking relapse.

Characteristics	Smoking Cessation				P-value	Quitting Attempts				P-value
	Yes (no.208)		No (no.592)			Yes (no.418)		No (no.174)		
	No.	%	No.	%		No.	%	No.	%	
Gender:										
Male	202	26.7	554	73.4	0.054	394	71.1	160	28.9	0.297
Female	6	13.6	38	86.4		24	63.1	14	36.9	
Age (years):										
<21	4	25	12	75		10	83.3	2	16.7	
21- 40	164	28.2	417	71.8	0.114	304	72.9	113	27.1	0.121
41-60	36	19.3	151	80.7		97	64.2	54	35.8	
>60	4	25	12	75		7	58.3	5	41.7	
Marital status:										
Single	52	23.5	169	76.5	0.216	124	73.4	45	26.6	0.628
Married	154	27.4	408	72.6		284	69.6	124	30.4	
Divorced/Separated/Widow	2	11.8	15	88.2		10	66.7	5	33.3	

Education:										
Illiterate	2	18.2	9	81.8		3	42.8	4	57.2	
School education	130	27.2	348	72.8	0.577	242	69.7	105	30.3	0.191
Bachelor/Postgraduate studies	76	24.4	235	75.6		172	72.9	64	27.1	
Income:										
<3000	35	25.2	104	74.8	0.458	74	71.1	30	28.9	0.297
3000-<6000	47	28.3	119	71.7		86	72.9	32	27.1	
≥6000	118	26	336	74		237	70.5	99	29.5	
Refuse to answer	8	19.5	33	80.5		21	61.8	13	38.2	

Figure 5: Satisfaction with the Ministry of Health Smoking Cessation Clinic services among studied participants.



4. Discussion

The current study presents the frequency of quitting smoking and its associated factors among consumers of MOH Smoking Cessation Clinics in Saudi Arabia. The recorded frequency of smoking cessation among the study participants was 26%. The main reasons for quitting smoking reported in the current study were related to contentment, self-efficacy, and social or family support, as well as counseling services and Nicotine Replacement Therapy (NRT) provided by the clinics. Garvey et al. (1992) found that commitment, motivation, and confidence were necessary for helping smokers quit [9]. Similarly, previous studies recorded the significant role of self-efficacy and counseling in smoking cessation [10,11,12,13,14]. Moreover, Ranney et al. (2006) explained the substantial role that nurse counseling, self-help materials, and follow up contact played in aiding smokers in quitting [15]. At the same time, Silagy et al. documented that NRT increases the odds of successfully quitting [16].

Furthermore, previous studies recorded the role of pharmacotherapy, including NRT for smoking cessation [12,17,18]. Macleod et al. (2003) and Carpenter et al. (2004) recommended a combination of NRT and telephone counseling for effective smoking cessation [19,20]. The current study also showed that social support from friends and family was a critical factor for smoking cessation among participants. This finding was consistent with previous studies [21,22], which stated that relying on social support from family and friends was significantly associated with quitting smoking.

The current study reported that 52.3% of the included participants recorded a relapse after they attempted to quit, with the primary stated reasons being stress, lack of social or family support, and severe withdrawal symptoms. Previous studies showed relapse rates between 50% and 75% after quitting within one year [23]. This finding was consistent with that of García-Rodríguez et al. (1987), which indicated that the risk for relapse during the first 12 months of abstinence was over 50%, but decreased after the first year, and stabilized at around 10%, after 30 years of abstinence. They also stated that the first year after an attempt to quit constitutes the period with the highest risk for relapse. Although the risk of relapse decreases over time, it never fully disappears [24]. On the other hand, Bancei et al. (2007) and Oksuz et al. (2007) reported that non-daily smokers have a higher prevalence of cessation attempts—and therefore more relapse episodes—than regular smokers [25,26].

Cummings et al. (1985) showed that heavy smokers have a high risk of relapse in the first week after stopping smoking [27], while Al Abasi et al. (2004) stated that the first 24 hours of tobacco abstinence is the period in which there is the highest risk for relapse [28]. Many reasons could explain the protective effect of a long time in remission: increased self-efficacy [29,30], lower frequency and intensity of withdrawal symptoms [31], and development of coping behaviors [32-34].

In the current study, socio-demographic variables, including age, sex, education, occupation, and income, played no significant role in smoking cessation or relapse. This finding was inconsistent with previous studies, which showed that several socio-demographic variables could predict the relapse [3538]. García-Rodríguez et al. (2013) [39] found that younger age was the only risk factor for smoking relapse. In contrast, Hubert et al. (2013) found that age, body mass index and alcohol consumption were associated with smoking behavior [40]. Additionally, Monsoa et al. investigated European smokers participating in a smoking cessation program and found that age, sex, and housing conditions had a significant effect on smoking cessation [41].

Regarding the satisfaction with the cessation clinics, around 70% of the participants were satisfied, and the majority reported that the clinics' services helped them quit smoking. In line with our results, a study done in 2016 measured participants' satisfaction with smoking intervention programs

and found that overall satisfaction was very high [42]. The study measured satisfaction in terms of five different categories, including family and physician support, and satisfaction related to the services provided, such as the team, time, and methods used. Moreover, another study used two different interventions—the mHealth Reinforcement and the mHealth Monitoring—to monitor smoking status for four weeks. The study results showed that overall satisfaction was 83% in both interventions, and the majority of participants felt that the responses greatly helped them quit smoking [43].

4.1 Limitation

Our study has limitations that are common to all surveys. The self-report of cigarette and other substance use, as well as smoking cessation, are prone to social desirability and recall bias and are not confirmed by objective methods.

5. Conclusion

The frequency of smoking cessation among consumers of MOH Cessation Clinics is 26.0%. Most consumers are satisfied with the services provided by these clinics and mainly attributed their success in quitting to contentment, counseling, and NRT. Stress/social problems, having friends who smoke, and severe withdrawal symptoms were the most commonly reported factors for smoking relapse. More considerable attention to MOH smoking cessation clinics is recommended, with stress on counseling, NRT services, and the establishment of social support groups to support smoking cessation among consumers. Further research is required regarding regular follow-up and available smoking cessation aids.

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