Motivational Factors for Cessation of Cigarette Smoking among Current Smokers in Aseer Region: A Cross-Sectional Study

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Abstract

Introduction: Smoking is considered one of the leading public health problems with a direct heavy toll on lives, and indirectly, via passive inhalation of tobacco smoke. Smoking is a severe public health problem and can lead to substantial health and economic consequences.

Aim of Study: To identify factors motivating smokers to quit smoking among adult Saudi smokers in the Aseer Region, Saudi Arabia.

Methods: This study followed a cross-sectional research design. It included 428 Saudi adults, who are currently cigarette smokers, registered at the Smoking Cessation Clinics in Aseer Region, and who wish to quit smoking. The selection of participants was done by systematic random sampling. The data was collected by using the "Tobacco Programme Management System" questionnaire, along with some other motivational factors for getting the maximum responses from the participants.

Results: The majority of quitters were males (95.6%). Almost two-thirds of quitters (60.3%) started smoking by the age of 15-20 years. Most quitters (75%) were cigarette smokers for more than 15 years. The main motives for quitting cigarette smoking were to improve health status (39.5%), followed by having a better quality of life (27.3%), and to save the costs of smoking cigarettes (19.9%). Motives for quitting differed significantly according to their place of residence, age groups, and educational level.

Conclusion: The majority of current Saudi cigarette-smoking quitters are young males, well-educated with no or low monthly income. Most smokers start cigarette smoking during their adolescence.

Recommendations: Parents should play an important role to motivate quitting smoking and keeping their young kids away from smoking. School-based tobacco prevention and cessation programs should be enforced.

Keywords: Cigarette Smoking, Smoking Cessation, Motives, Fagerström Scores.

Introduction

Smoking is considered one of the leading public health problems (1), with a direct heavy toll on lives, and indirectly, via passive inhalation of tobacco smoke (2). The "World No Tobacco Day," May 31st, is a reminder of its hazards and the importance of quitting smoking (3).

Tobacco use remains highly prevalent (4) due to reasons which are not completely clear and may be attributed to its addictive nature (5). Nicotine fulfills the criteria for drug dependency by promoting its compulsive use, its psychoactive effects, and reinforcing its use (6).

Among those who have tried to quit, the median prevalence of current daily smokers who quit for at least one day was 58.6% (5). However, smokers may need up to four attempts before achieving long-term abstinence (4). Relapse rates at one year range from 77% to 92% (7), indicating that the factors that keep smokers smoking are quite powerful and that cigarettes are, in fact, addictive (8).

Research efforts led to new ways that help smokers quit, e.g., nicotine replacement therapy and varenicline, which were successful for smoking cessation and relapse prevention. In addition, there are acupuncture, hypnosis, or psychopharmacological approaches, but these remedies are less well-proven and, therefore, not truly evidence-based (9).

The prevalence of smoking in Saudi Arabia is rapidly increasing (10). Al-Haddad et al. (11) reported a prevalence rate of 52.3% among attendants of the primary health care center in the Al-Qassim Region, while Abdalla et al. (12) reported that among male students in Tabuk aged 12-19 years 65% were ever smokers. However, Al-Doghether (3) stated that, in the Kingdom of Saudi Arabia (KSA), smoking cessation practices in primary health care centers have been inconsistent in providing advice and counseling regarding smoking cessation.

Problem Statement
Smoking is a severe public health problem and can lead to substantial health and economic consequences. Therefore, it is important to motivate smokers to quit smoking. However, smoking is usually difficult to stop, and attempts to quit smoking are associated with high rates of failure.

Relevance/ Rationale
All attendants of anti-smoking clinics are cigarette smokers who are motivated to quit smoking. Although being motivated to stop smoking is an important and necessary step, it may not be sufficient to quit smoking, with certain reasons making smokers unable to maintain long-term cessation. Therefore, it is necessary to identify various motives for smoking cessation and to identify reasons for success and failure to quit smoking.

Aim of Study
To identify factors motivating smokers to quit cigarette smoking and to identify reasons for the success or failure among Saudi smokers' in Aseer Region, Saudi Arabia.

Study design and methods

Following a cross-sectional research design, this study was conducted at the Smoking Cessation Clinics in Aseer Region, Saudi Arabia. The study population included Saudi adults (aged above 18 years), both males and females, who are currently cigarette smokers, registered at the Smoking Cessation Clinics in Aseer Region, and who wish to quit smoking.

The sample size was estimated according to the following formula: $(n=z2.p.q/d2)$ (13), where (n) is the minimum sample size; (z) statistics = 1.96, assumed prevalence (p) of 40.8% of smokers who attempt quitting, according to the study of Beyari and Salama (14) in Saudi Arabia, and an assumed acceptable error level (d) of 5%. The recommended sample size based on this calculation was 371 participants. However, the sample size was increased to 428 to maximize the response rate.

The Multistage Randomization technique was used for the selection of two cities within Aseer Region, (i.e., Abha and Khamis Mushait). There are five cessation clinics located in Khamis Mushait and Abha. Therefore, all smoking cessation clinics were included in the data collection (i.e., two from Abha and three from Khamis Mushait). Since the included sample size in the present study is 428, all participants were included equally from each smoking cessation clinic setting (85 each) to maintain uniformity. For selecting the participant's systematic random sampling technique was used. On average, the number of smokers who attend a smoking cessation clinic is 25 in one day. So, dividing 85 by 25, it came out to be 3.4.

Hence, the researcher decided to invite every 3rd smoker to participate in this study. Consequently, every 3rd 'Quitter' was interviewed until we reached 85 quitters from each Smoking cessation clinic.

All participants were included in the study on a voluntary basis until the desired sample size was met. At the initial stage, the study was introduced to the participants and then informed consent was received from them; after that Data Collection was started in Arabic or English Language according to the patient's preference.

Inclusion criteria: Adult Saudi cigarette smokers (aged above 18 years) who are registered under the smoking cessation clinics.

Exclusion criteria: Non-Saudi smoking quitters were not included, in addition to those who were not willing to participate in the study.

Data Collection methods and instruments

The data were collected during the period from April 2022 to June 2022. Data were collected using the "Tobacco Programme Management System" questionnaire, along with some other motivational factors which were also included in the Questionnaire to get the maximum responses for Quitting smoking at the Stop Smoking Clinics in Aseer Region. It includes the following parts:

1- Personal characteristics: Age, education, employment, marital status, occupation, and monthly income.
2- Smoking data: Age at start of smoking, any smoker at home, reasons for the beginning smoking, number of smoked packs per day, types of smoking, duration of smoking, and cost of smoking per month.
3- Nicotine Dependence Score: smoking period, number of packs per day, in addition to 6 questions whose scores sum up into the Fagerström score (out of 10). Quitters with scores less than 4 are considered "less dependent on nicotine"; Quitters with scores ranging from 4 to 6 are considered "moderately dependent on nicotine", while quitters with scores ranging from 7 to 10 are considered "highly dependent on nicotine" (13,15).
4- Examination: Height, weight, body mass index (BMI).
5- Quitting trials: number of attempts, reasons for relapse.
6- Motives for quitting smoking: As stated by participant.

Collected data were statistically analyzed using the Statistical Package for Social Sciences (IBM SPSS, version 28). Descriptive statistics (i.e., frequency and percentage for qualitative data and Mean±SD for quantitative data) were calculated. Testing significance of differences was applied using the X^2 test. Moreover, Pearson's correlation coefficient and linear regression were calculated between participants' BMI and their Fagerstrom scores. P- values <0.05 were considered statistically significant.

The ethical approval for conducting the present study was obtained from the Institutional Review Board (IRB) of the General Directorate of Health in Aseer Region (# H-06-B-091). An informed consent form was attached to the cover page of the study questionnaire. All participants were clearly informed about the study objectives and were asked to provide their consent to participate in this study on the first page of the questionnaire and then to answer the questions included in the questionnaire. Confidentiality, privacy, and anonymity were completely assured to all participants. Personal identifying data (e.g., name, ID, phone number, etc.) were obtained. Study questionnaires were received immediately after being filled in. Collected data were secured by restricting unauthorized access. Obtained data were stored and password-protected in the personal computer of the researcher, and were accessed only by her. A backup copy of the data was stored in an external storage media that was kept in the researcher's private locker at the office.

Results

Table (1) shows that 50.2% of participants lived in Abha City, while 40.8% lived in Khamis Mushait City. The majority of quitters were males (95.6%). The age group of 31.5% was 20-30 years, and that of 27.8% was 31-40 years, while 16.8% were above 60 years old. More than half of quitters (58.9%) were married. The educational level of 48.4% was secondary school, and 37.9% were university educated, while only 1.4% were illiterate. Almost half of the quitters were governmental employees (48.1%), almost one-third of quitters (30.1%) had no monthly income, 25.2% had 6000-10000 SR per month and 22.4% had more than 10000 SR per month. Only 34.1% had normal weight, while 41.8% were overweight and 21.3% were obese; their mean±SD was 27.2±5.6 kg/m2.

Table (2) shows that 60.3% of quitters started smoking by the age of 15-20 years, while 18.2% started cigarette smoking before the age of 15 years and 21.5% started cigarette smoking after the age of 20 years (Mean±SD: 17.8±5.6 years). Most quitters (75%) were cigarette smokers for more than 15 years. Almost half of cigarette smoking quitters (46%) had a high Fagerstrom grade, while 21.7% had a very high grade, Mean±SD: 6.03±1.97. Moreover, 13.3% had previous quit smoking attempts that failed, with the influence of friends being the most frequent reason for relapse (28.1%), followed by craving (22.8%) and nicotine withdrawal symptoms (15.8%).

Table (3) shows that the main motives for quitting cigarette smoking were to improve health status (39.5%), followed by having a better quality of life (27.3%), and to save the costs of smoking cigarettes (19.9%). The minimum response selected by participants was to avoid harming others (7.9%) and the rest (5.4%) selected other options.

Table (4) shows that stated motives for quitting cigarette smoking differed significantly according to their place of residence (p<0.001). The highest motive in Abha was to improve health status (44.2%), while that in Khamis Mushait was to have a better quality of life (36.2%).

Table (5) shows that stated motives for quitting cigarette smoking did not differ significantly according to gender of quitters. Most of the Quitters irrespective of Gender wanted to quit Smoking to have a better Quality of Life. Avoiding harming others is the minimum option selected by participants of both genders.

Table (6) shows that stated motives for quitting cigarette smoking differed significantly according to participants' age groups (p<0.001). The highest motive for those aged <20 years and those aged 20-30 years was to improve health status (37% and 48.1%, respectively), while the highest motive for those aged 31-40 and those aged 41-50 years was to have better quality of life (44.5% and 56.4%, respectively). The highest motive for those aged 51-60 was to avoid harming others (29.4%), while that for those aged above 60 years was to improve health status (66.7%).

Table (7) shows that stated motives for quitting cigarette smoking did not differ significantly according to the marital status of quitters. One interesting finding was that motives of the maximum respondents in both single and married participants were found to be to improve health status (45.5%, 35.3% respectively).

Table (8) shows that stated motives for quitting cigarette smoking differed significantly according to participants' educational level (p=0.015). The highest motive for illiterate and primary/intermediate educated quitters was to have a better quality of life (66.7% and 72.7%, respectively), while the highest motive for all other quitters with higher educational levels was to improve health status.

Table (9) shows that stated motives for quitting cigarette smoking did not differ significantly according to the monthly income of quitters. In any income group, (i.e., from no Income to more than 10,000 per month) the maximum participants' main motive for quitting smoking is to improve health (P=0.276).

Table (10) shows that stated motives for quitting cigarette smoking did not differ significantly according to the occupation of quitters (P=0.079). The minimum motive for quitting smoking was (to avoid harming others), whatever their occupation, either student or unemployed. Maximum responses were to (improve health status) irrespective of any occupation.

Table (11) shows that stated motives for quitting cigarette smoking did not differ significantly according to quitters' age at the start of smoking. The start age of smoking was not significant, but in this study, the maximum number of smokers were between age group of (15 to 20 years). Among all age groups, their motives were common, i.e., to improve health status.

Table (12) shows that stated motives for quitting cigarette smoking did not differ significantly according to the presence of other smokers among quitters' family members. There was no effect of the presence of smoker family members among the smoke quitters. The main motive was to improve health status irrespective of whether any family member smoker was present or not.

Table (13) shows that stated motives for quitting cigarette smoking differed significantly according to participants' Fagerström scores (p<0.001). The highest motive for those with <4 or 6-10 scores was to improve their health (61.9% and 41.2%, respectively), while the highest motive for those with 4-6 Fagerström scores was to have a better quality of life.

Table (14) shows that motives for quitting cigarette smoking differed significantly according to the presence of previous failed attempts to quit cigarette smoking (p<0.001). It is to be noted that those with previous attempts to quit had significantly higher motives to improve their health by quitting than those who tried to quit for the first time (68.4% and 35%, respectively).

Figure (1) shows that participants' BMI correlated significantly with their Fagerstrom scores (r=0.295, p<0.001). The regression equation for participants' BMI and their Fagerstrom scores was: Fagerstrom score = 3.31 + 0.1 x BMI.

Personal Characteristics	No.	%
Residence		
• Abha	215	50.2
• Khamis Mushait	213	49.8
Gender		
• Male	409	95.6
• Female	19	4.4
Age group (in years)		
• <20	46	10.7
• 21-30	135	31.5
• 31-40	119	27.8
• 41-50	39	9.1
• 51-60	17	4.0
• >60	72	16.8
Marital status		
• Single	176	41.1
• Married	252	58.9
Educational level		
• Illiterate	6	1.4
• Primary/intermediate	11	2.6
• Secondary	207	48.4
• University	162	37.9
• Others	42	9.8
Occupation		
• Student	109	25.5
• Governmental employee	206	48.1
• Private sector	35	8.2
• Unemployed/Retired	38	8.9
• Others	40	9.3
Monthly income (SR)		
• No Income	129	30.1
• < 3,000	45	10.5
• 3,000 – 5,999	50	11.7
• 6,000 – 10,000	108	25.2
• > 10,000	96	22.4
Body mass index (BMI)		
• Underweight	12	2.8
• Normal weight	146	34.1
• Overweight	179	41.8
• Obese	91	21.3
• Mean±SD	$27.2 \pm 5.6 \ kg/m^2$	

Table 1: Personal characteristics of study sample (n=428)

Table 2: Cigarette smoking quitters' characteristics related to smoking

Characteristics	No.	%
Age at start of cigarette smoking		
● <15 years	78	18.2
● 15-20 years	258	60.3
● >20 years	92	21.5
● Mean±SD	17.8±5.6 years	
Other cigarette smokers at home		
● No	272	63.6
● Yes	156	36.4
Cigarette smoking period		
● ≤ 15 years	107	25.0
● > 15 years	321	75.0
Fagerstrom grade		
● <4 (less dependent on nicotine)	63	14.7
● 4-6 (moderately dependent on nicotine)	183	42.8
● 6-10 (highly dependent on nicotine)	182	42.5
● Mean±SD	6.03±1.97	
Previous failed attempts to quit smoking		
● No	371	86.7
● Yes	57	13.3
Reasons for relapse (n=57)		
● Influence of smoker friends or family members	16	28.1
● Craving	13	22.8
● Nicotine withdrawal symptoms	9	15.8
● Weight gain	7	12.3
● Stress	7	12.3
● Sleep disturbances	5	8.8

Table 3: Main motives for quitting cigarette smoking

Main motive for quitting smoking	No.	%
To improve health status	169	39.5
To have better quality of life	117	27.3
To save smoking costs	85	19.9
To avoid harming others	34	7.9
Others	23	5.4

Table 4: Participants motives for quitting according to their residence

Motives for quitting	Abha		Khamis Mushait	
	No.	%	No.	%
To save costs of smoking	46	21.4	39	18.3
To avoid harming others	23	10.7	11	5.2
To improve health status	95	44.2	74	34.7
To have better quality of life	40	18.6	77	36.2
Others	11	5.1	12	5.6

X^2 = 19.157   P<0.001

Table 5: Participants motives for quitting according to their gender

Motives for quitting	Male		Female	
	No.	%	No.	%
To save costs of smoking	82	20.0	3	15.8
To avoid harming others	33	8.1	1	5.3
To improve health status	162	39.6	7	36.8
To have better quality of life	112	27.4	5	26.3
Others	20	4.9	3	15.8

X^2 = 4.402   P=0.354

Table 6: Participants' motives for quitting according to their age group

Motives for Quitting	<20 years		20-30 years		31-40 years		41-50 years		51-60 years		>60 years	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
To save smoking costs	13	28.3	40	29.6	20	16.8	5	12.8	3	17.6	4	5.6
To avoid harming others	6	13.0	5	3.7	9	7.6	5	12.8	5	29.4	4	5.6
To improve health status	17	37.0	65	48.1	33	27.7	2	5.1	4	23.5	48	66.7
To have better QOL	8	17.4	16	11.9	53	44.5	22	56.4	4	23.5	14	19.4
Others	2	4.3	9	6.7	4	3.4	5	12.8	1	5.9	2	2.8

X^2 = 112.794   p<0.001   QOL: Quality of life

Table 7: Participants' motives for quitting according to their marital status

Motives for quitting	Single		Married	
	No.	%	No.	%
To save costs of smoking	38	21.6	47	18.7
To avoid harming others	11	6.3	23	9.1
To improve health status	80	45.5	89	35.3
To have better quality of life	37	21.0	80	31.7
Others	10	5.7	13	5.2

X^2 = 8.639   P=0.071

Table 8: Participants' motives for quitting according to their educational level

Motives for Quitting	Illiterate		Primary/ Intermediate		Secondary		University		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%
To save cost of smoking	1	16.7	1	9.1	46	22.2	32	19.8	5	11.9
To avoid harming others	1	16.7	0	0.0	21	10.1	7	4.3	5	11.9
To improve health	0	0.0	2	18.2	81	39.1	64	39.5	22	52.4
To have better QOL	4	66.7	8	72.7	49	23.7	47	29.0	9	21.4
Others	0	0.0	0	0.0	10	4.8	12	7.4	1	2.4

X^2 = 30.599   P=0.015   QOL: Quality of life

Table 9: Participants' motives for quitting according to their monthly income (in SR)

Motives for Quitting	No income		<3000		3000-5999		6000-10000		>10000	
	No.	%	No.	%	No.	%	No.	%	No.	%
To save cost of smoking	22	17.1	9	20.0	15	30.0	22	20.4	17	17.7
To avoid harming others	14	10.9	2	4.4	1	2.0	7	6.5	10	10.4
To improve health	54	41.9	19	42.2	14	28.0	46	42.6	36	37.5
To have better QOL	35	27.1	10	22.2	15	30.0	30	27.8	27	28.1
Others	4	3.1	5	11.1	5	10.0	3	2.8	6	6.3

$X2 = 19.031$ $P=0.276$ QOL: Quality of life

Table 10: Participants' motives for quitting according to their occupation

Motives for Quitting	Student		Governmental		Private		Unemployed		Others	
	No.	%	No.	%	No.	%	No.	%	No.	%
To save cost of smoking	22	20.2	42	20.4	12	34.3	8	21.1	1	2.5
To avoid harming others	8	7.3	16	7.8	1	2.9	3	7.9	6	15.0
To improve health	48	44.0	78	37.9	12	34.3	11	28.9	20	50.0
To have better QOL	25	22.9	59	28.6	10	28.6	11	28.9	12	30.0
Others	6	5.5	11	5.3	0	0.0	5	13.2	1	2.5

$X^2 = 24.486$ $P=0.079$ QOL: Quality of life

Table 11: Motives for quitting according to their age at start of smoking

Motives for Quitting	<15 years		15-20 years		>20 years	
	No.	%	No.	%	No.	%
To save cost of smoking	20	25.6	51	19.8	14	15.2
To avoid harming others	8	10.3	19	7.4	7	7.6
To improve health	30	38.5	105	40.7	34	37.0
To have better QOL	16	20.5	68	26.4	33	35.9
Others	4	5.1	15	5.8	4	4.3

$X^2 = 7.377$ $P=0.497$ QOL: Quality of life

Table 12: Motives for quitting according to presence of a smoker family member

Motives for quitting	No		Yes	
	No.	%	No.	%
To save costs of smoking	54	19.9	31	19.9
To avoid harming others	22	8.1	12	7.7
To improve health status	98	36.0	71	45.5
To have better quality of life	83	30.5	34	21.8
Others	15	5.5	8	5.1

$X^2 = 5.063$ $P=0.281$

Table 13: Motives for quitting according to their Fagerström scores

Motives for Quitting	<4		4-6		6-10	
	No.	%	No.	%	No.	%
To save cost of smoking	3	4.8	33	18.0	49	26.9
To avoid harming others	6	9.5	17	9.3	11	6.0
To improve health	39	61.9	55	30.1	75	41.2
To have better QOL	12	19.0	67	36.6	38	20.9
Others	3	4.8	11	6.0	9	4.9

$X^2 = 36.194$ $P<0.001$ QOL: Quality of life

**Table 14: Motives for quitting according to presence of a previous failed attempt to quit**

Motives for quitting	No		Yes	
	No.	%	No.	%
To save costs of smoking	81	21.8	4	7.0
To avoid harming others	30	8.1	4	7.0
To improve health status	130	35.0	39	68.4
To have better quality of life	108	29.1	9	15.8
Others	22	5.9	1	1.8

X^2 = 24.285   P<0.001

Figure 1: Correlation between participants' Fagerstrom score and their body mass index

$Y=3.31 + 0.1 X$
$r = 0.295$
$P<0.001$
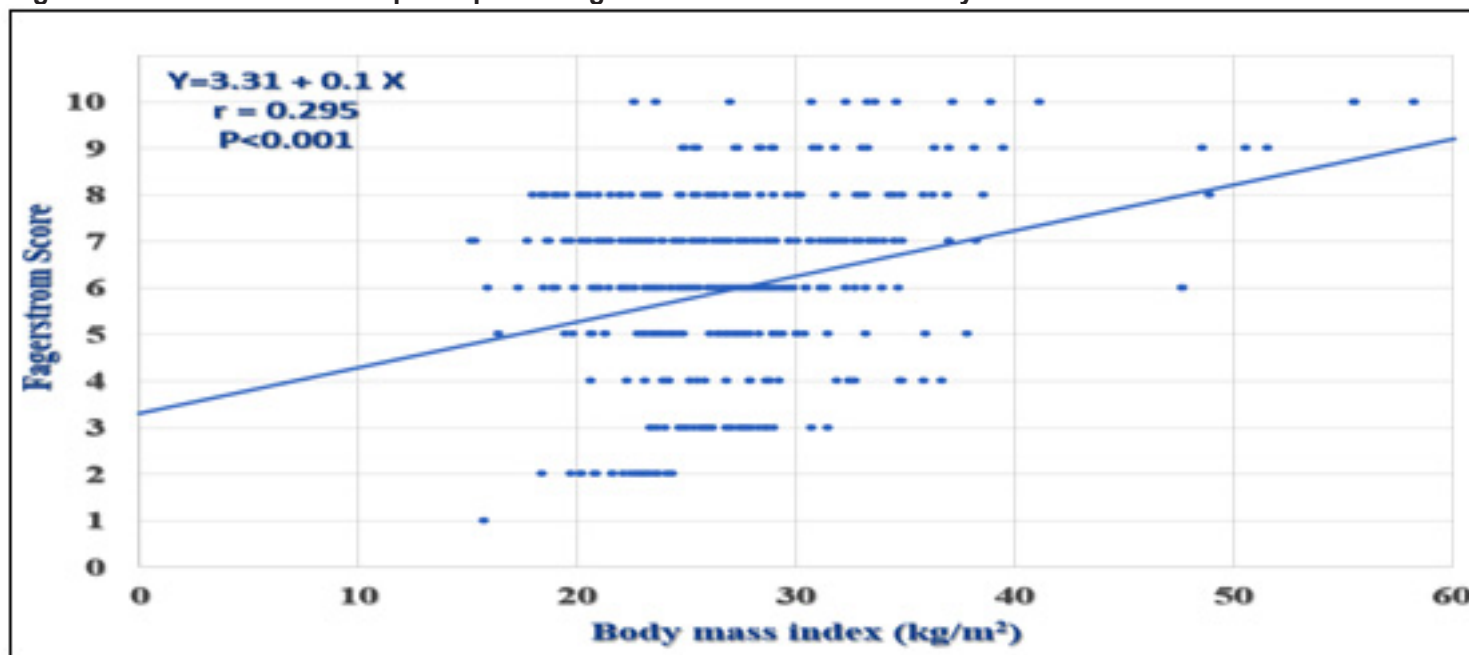
Discussion

To facilitate those wanting to quit smoking, it is important to recognize the factors that motivate successful cessation for smokers willing to quit and use these to support others' quit attempts (17). Therefore, the current study aimed to identify factors motivating smokers to quit cigarette smoking among adult Saudi smokers in Aseer Region, Saudi Arabia.

All study participants were registered in the Anti-smoking Clinics in Aseer Region, to receive support to quit smoking. They were living in either Abha City or Khamis Mushait City. The personal characteristics of our study sample revealed that the vast majority were males, and young (only 16.8% were above 60 years old).

These findings are in congruence with those reported by several other studies. In Saudi Arabia, Alasqah et al. (18) described a high gender difference in the prevalence of cigarette smoking, being 23.7% for males and 1.5% for females. Al-Turki et al. (17) noted that men are 13 times more likely to be smokers than women are. This could be attributed to the social stigma attached to women being smokers in Saudi Arabia. It is estimated that by 2025, 38% of males and 2% of females aged 15-24 years will be smokers (19).

So and Yeo (20) noted that smoking behavior often starts during adolescence, and those who start smoking early in adolescence are less likely to quit smoking. Park (21) stated that approximately 90% of new smokers are younger than 18 years of age. Palmer et al. (22) explained that young adults mostly become the victims of the toxic habit of cigarette smoking when they gain a certain degree of socializing, independence, and higher chances of mixing among groups. Therefore, Russo and de Azevedo (23) stressed that prevention campaigns targeting adolescents and tailored to this age group are needed in order to improve the outlook for the rates of smoking in the adult population.

The guidelines for school health programs for preventing tobacco use and addiction comprise the creation of relevant school policies around tobacco use; education of students on the negative physiological and social effects of tobacco use; integration of tobacco prevention education for all students; offering special training sessions to teachers and other program facilitators; engaging parents in all tobacco prevention efforts (24). Moreover, the study of Mpousiou et al. (25) indicated that school-based experiential smoking prevention programs could improve adolescents' smoking-related knowledge, enhance anti-smoking attitudes, and reinforce negative intentions toward tobacco products.

Hence, it is important to emphasize the pressing necessity to prevent and control smoking among adolescents in Saudi Arabia. School-based tobacco prevention and cessation programs should be enforced by the Ministries of Health and Education.

The present study showed that most participants started smoking during their adolescence, with about one-third having other cigarette smokers in their families. The majority were either moderately or highly dependent on nicotine.

Previous unsuccessful attempts to quit occurred in 13.3%. The main reasons for relapse among participants were social, through the influence of their smoker friends, or psychological, as manifested by their inability to overcome cigarette cravings or nicotine withdrawal symptoms. Other reasons included exposure to stresses that were usually relieved by smoking, such as weight gain, and sleep disturbances. Moreover, the present study revealed that participants' nicotine addiction correlated significantly with their extent of nicotine addiction, as expressed by their Fagerstrom scores.

Our findings are in congruence with those of Hitchman et al. (26), who reported that smokers with more smoking friends and those who live with other smokers are less likely to quit. Moreover, smokers who are often in the presence of other smokers are less likely to succeed in their quit attempts. In addition, smokers who had smoking friends were no more or less likely to attempt to quit or to succeed in their attempts to quit.

Mandil et al. (27) emphasized that the presence of smokers in the family has a very strong motivation for young boys to start smoking. Baig et al. (28) found that the majority of smokers had a close relative at home who was a smoker, either a father, a brother, a close relative, or multiple members of the same family. They explained that children frequently imitate their parents and do what they see, not what they are taught. Therefore, parents can play an important role in quitting the smoking addiction habit and keeping their children away from this addiction.

Social support is important for those wanting to quit in contexts of neighborhood with high smoking rates. Programs that increase social support from health care providers, friends, and family could be effective in meeting the need (29).

Baker et al. (30) reported that individuals attempting to break their dependence on nicotine typically report withdrawal symptoms and intense craving to smoke cigarettes. Al'Absi et al. (31) showed that craving increases during attempts to quit and that craving and heavy smoking are strong predictors of relapse in smokers who are trying to quit the use of tobacco.

Jesus et al. (32) highlighted the difficulty faced by tobacco users in coping with nicotine withdrawal symptoms, psychological dependence, and behavioral habits associated with smoking. Smoking is associated with pleasant and comforting feelings for many smokers. The manifestation of nicotine dependence is associated with physical components such as an intense desire to smoke and, in psychological terms; people view tobacco as a companion to deal with in moments of stress and frustration.

Şahbaz et al. (33) noted that patients who quit smoking for at least six months after treatment, experienced stress, which was the most important factor in their relapse and starting smoking again. Guirguis et al. (34) found that the most commonly reported worries about quitting were stress and weight gain. Similarly, Fidan et al. (35) added that stress and excessive desire to smoke are the most common reasons for relapse after quitting.

Sahle et al. (36) noted that concerns about weight gain after smoking cessation constitute a frequently cited barrier for relapsing after quitting attempts. Moreover, there are concerns that weight gain after smoking cessation could increase the risk of chronic diseases and potentially attenuate the benefits of quitting smoking. However, whether the health risks associated with weight gain after smoking cessation exceed the protective benefits of quitting smoking, remains inconclusive.

Ashare et al. (37) noted that sleep disturbance is a symptom of nicotine withdrawal, and sleep disturbances constitute an important side effect to be considered when providing treatment recommendations for smokers. Among those who relapse, increased sleep disturbance is more likely a side effect of treatment. Therefore, it may be important to identify circumstances under which sleep disturbance occurs and to identify individuals more likely to experience sleep disturbance.

The present study revealed that the main motives for quitting cigarette smoking were to improve health status, seek to obtain a better quality of life and save the costs of smoking cigarettes. Participants' motives for quitting cigarette smoking differed significantly according to their place of residence, age group, educational level, Fagerström scores, and presence of previous failed attempts to quit.

The significant difference in participants' motives varied according to their residence, where in Abha City, the highest motive was to improve health, while in Khamis Mushait City, it was to have a better quality of life. This may be attributed to the well-known fact that Abha is located at an altitude of around 2,200 meters above sea level, i.e., 200 meters higher than Khamis Mushait. Therefore, smokers in Abha City may suffer from more respiratory complaints than those in Khamis Mushait. Consequently, the Abha quitters are more motivated to obtain better health.

The findings of the present study are in accordance with those reported by several studies. Martins et al. (38) found that the commonest reasons for quitting smoking were to improve/protect their own health (74.5%), to

improve/protect the health of family members (14.8%), and to save money (14.5%). Guirguis et al. (34) found that the most commonly reported motivation for quitting was to improve quitters' health. In Brazil, Russo and de Azevedo (39) reported that health concerns were mentioned by smokers as the leading cause of uneasiness about the smoking habit, as well as the main reason for making the decision to quit smoking.

Ross et al. (40) argued that knowledge of the risks of smoking increases significantly both the quit motivation and the likelihood of quitting among current cigarette users. However, older age lowers both the probability of cessation intention and actual cessation. Moreover, those with greater nicotine dependence, as indicated by higher Fagerström scores, are less likely to progress towards cessation. Interventions addressing health and financial concerns might be more useful for targeting smokers, especially older ones, while interventions addressing social norms may be more useful for targeting younger smokers (41).

Therefore, health concerns should be raised as an argument toward promoting smoking cessation during the approaches taken by health professionals and in prevention campaigns, emphasizing the idea that quitting smoking at any time, even after the onset of smoking-related diseases, always brings health benefits to quitters. It is important that primary care professionals be made aware that they should address the importance of smoking cessation with all smokers to maintain good health, even before those smokers express interest in quitting smoking.

Ross et al. (40) raised the importance of considering the financial issues when planning to quit cigarette smoking. Smokers would be more inclined to quit aiming to save the cost of smoking if they were unable to find cheaper sources for their cigarettes. Smokers living in areas with higher cigarette prices and taxes are significantly more motivated to quit. Hence, Siahpush et al. (42) suggested that financial issues should be a focus for programs aiming to motivate smoking cessation, especially in low-income populations.

Cummings et al. (43) stated that supplementing the cost of or providing free medication and nicotine replacement products is critical; free provision or reimbursement for these products increases quitting attempts and abstinence. Interventions aimed at changing community norms may be important to reducing smoking rates in high-prevalence areas

Vieira et al. (44) reported that patients with lower educational levels were less successful in quitting smoking. These patients have higher nicotine dependence and depression levels and are likely to need more intensive and multidisciplinary support in order to be successful in their attempts to quit. Similarly, the study of Lund and Lund (45) concluded that educational level is a strong predictor of smoking behavior. There are more people with high educational levels among quitters, and there are more people with lower educational levels among unsuccessful quitters.

Strengths and Weaknesses of the Study
This study topic is an urgent research priority, declared by the World Health Organization through several strategies, such as monitoring tobacco use and prevention policies; protecting people from tobacco smoke; offering help to quit smoking; and warning against the dangers of tobacco. Moreover, this research is expected to help find the motives for quitting smoking in adult Saudi smokers. However, this study followed a cross-sectional design, which is good for hypothesis generation rather than hypothesis testing. Moreover, the study was conducted in a single study area, i.e., Aseer Region. Therefore, there may be limited generalizability of its results.

Conclusions

The majority of current Saudi cigarette-smoking quitters are young males, well-educated with no or low monthly income. Most smokers start cigarette smoking during their adolescence. Most quitters are moderately or highly nicotine-dependent. The main reasons for relapse are the influence of their smoker friends or family members, and their inability to overcome cigarette cravings or nicotine withdrawal symptoms. The main motives for quitting are to improve health status, to obtain a better quality of life, and to save the costs of smoking cigarettes. Motives for quitting differ significantly according to quitters' place of residence, age group, educational level, Fagerström scores, and presence of previous failed attempts to quit.

Recommendations

• Parents should play an important role in quitting smoking and keep their children away from smoking.
• School-based tobacco prevention and cessation programs should be enforced.
• Smoking cessation programs that increase social support from health care providers, friends, and family should be applied.
• For targeting older smokers, interventions addressing health and financial concerns might be more useful, while for targeting younger ones, interventions addressing social norms might be more emphasized.
• Since the price of cigarettes has been shown to be one of the motives to quit, the price of cigarettes is recommended to be increased.
• Primary care professionals should address the importance of smoking cessation to maintain good health with all smokers.
• Proper marketing for the activities of the smoking cessation clinics so as to persuade smokers to seek help.
• Further studies are needed to be conducted at different smoking cessation clinics all over the KSA

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