Cigarette smoking is a major health problem that is responsible for a wide range of preventable health problems throughout the world. It is estimated that over the next 20 to 30 years, cigarette smoking will result in 10 million deaths annually on a worldwide basis, of which 70% will occur in developing countries.

In 1981, the most recent year for which official data are available, Saudi Arabia imported 36.5 million kg of tobacco, costing an estimated 979 million Saudi riyals (260.64 million US dollars) for a population of about 15 million people.

Lung cancer, a smoking-related disease, is a leading cause of cancer deaths among Saudi males, suggesting that cigarette smoking is becoming an important public health problem among men in Saudi Arabia.

Nonetheless, there are no statistics available about the current prevalence of cigarette smoking in our community in Saudi Arabia. Therefore, this study determined the prevalence of smoking among males in our community in Saudi Arabia. We also conducted additional analyses to identify behavioral factors related to smoking in our population.

Methods
Subjects for this study were patients attending the primary care clinics of the Department of Family and Community Medicine of Alkharj Military Hospital in Saudi Arabia. We included all male patients, ages 12 and above, seen in the clinics between November 1 and November 30, 1999.

Subjects were divided into three groups: smokers, ex-smokers, and nonsmokers. Smokers were defined as individuals who reported smoking one or more cigarettes per day during the last month. Ex-smokers were defined as subjects who previously smoked but who had quit smoking for 1 month or more. Nonsmokers were those who had never smoked.

As each patient presented to the clinic, the patient’s primary care physician explained the study and obtained verbal consent. Each subject was then presented with a
questionnaire containing the items listed in Tables 1 and 2. The questions could all be answered with simple numerical responses or by providing yes or no answers to questions with multiple response options.

Data were analyzed by $\chi^2$ test using Epi-Info® software. $P$ values of less than .05 were considered statistically significant.

**Results**

Data were collected for a total of 634 subjects. The subjects’ average age was 37.3 years (range 13 years to 73 years). A total of 312 (49.2%) of the subjects were nonsmokers, 104 (16.4%) were ex-smokers, and 218 (34.4%) were smokers. The average age of nonsmokers, ex-smokers, and smokers was 39.6 years, 40.2 years, and 32.1 years, respectively.

The average duration of smoking was 12.1 years (range=2 months to 45 years), and average cigarette consumption was 18.6/day (range=2 cigarettes to 80 cigarettes per day). Figure 1 shows a detailed pattern of cigarette consumption by smokers. Significantly more smokers used 11–20 cigarettes per day than 1–10 cigarettes per day ($X^2=13.62, P<.001$) or 21–30 cigarettes per day ($X^2=59.50, P<.0001$).

Detailed analysis of smokers’ cigarette consumption, average age, influencing factors, knowledge of risk factors, and attitudes are shown in Tables 1 and 2. Table 2 and Figure 2 show the most common reasons for starting smoking. Friends’ influence was a more

### Table 1

**Profile of Smokers According to Number of Cigarettes Smoked Per Day**

<table>
<thead>
<tr>
<th>Number of cigarettes smoked per day</th>
<th>1–10</th>
<th>11–20</th>
<th>21–30</th>
<th>31–40</th>
<th>&gt; 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of smokers</td>
<td>64</td>
<td>101</td>
<td>28</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>Average age (years)</td>
<td>30</td>
<td>38</td>
<td>47</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td>Married (number of subjects)</td>
<td>34</td>
<td>62</td>
<td>23</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>Single (number of subjects)</td>
<td>30</td>
<td>39</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of years smoking</td>
<td>9.4</td>
<td>17.8</td>
<td>26.4</td>
<td>21.4</td>
<td>12.3</td>
</tr>
</tbody>
</table>

### Table 2

**Factors Influencing the Onset of Smoking and Awareness of Smoking Risks, According to Number of Cigarettes Smoked Per Day**

<table>
<thead>
<tr>
<th>Number of cigarettes smoked per day</th>
<th>1–10</th>
<th>11–20</th>
<th>21–30</th>
<th>31–40</th>
<th>&gt; 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors influencing onset of smoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td>42</td>
<td>70</td>
<td>23</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Family</td>
<td>14</td>
<td>12</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Family and friends</td>
<td>7</td>
<td>13</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Friends and advertisement</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No reason stated</td>
<td>3</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thought of stopping</td>
<td>50</td>
<td>73</td>
<td>20</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Know dangers to self</td>
<td>66</td>
<td>102</td>
<td>29</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Know dangers to others</td>
<td>58</td>
<td>86</td>
<td>26</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Smoking clinic useful</td>
<td>57</td>
<td>88</td>
<td>22</td>
<td>8</td>
<td>2</td>
</tr>
</tbody>
</table>

**Figure 1**

Number of Cigarettes Used by Smokers, According to Age Group

![Number of Cigarettes Used by Smokers, According to Age Group](image)
common reason for starting smoking than was the influence of a family member ($X^2=139, P<.0001$) or advertisements ($X^2=180, P<.0001$).

Among 218 smokers, 162 (74.3%) had considered stopping smoking, and 146 (91.1%) had actually attempted to stop. The average number of attempts at stopping was 2.4 per person. Reasons for failed attempts at stopping included: 45 (34%) subjects reported that the reason was lack of will power, 26 (19.7%) reported that a family member or friend influenced them to continue smoking, 19 (14.4%) cited social problems, and 2 (1.5%) cited withdrawal symptoms. Four (3%) cited a combination of the aforementioned reasons, and 36 (27%) of subjects cited no reason. Most of the smokers (177 or 81.2%) thought that a specialized smoking clinic would be effective in helping smokers to stop smoking, while 23 (10.5%) were not sure if this would help, and 18 (8.3%) thought that it would not be helpful.

**Discussion**

Our results showed a high prevalence of smoking—34.9% of males in our study reported smoking. This prevalence is higher than has been reported in other studies in Saudi Arabia and the United Kingdom.\(^9\)-\(^11\) We believe that the actual prevalence of smoking may be even higher than our data indicate, because King Abdulaziz banned smoking on religious grounds in Saudi Arabia in 1926.\(^12\) Thus, social, cultural, and religious inhibitions may have prevented smokers from providing accurate information about their smoking habits.

Our data indicate that smoking among our subjects began at a young age. The average age of smokers in the study was 32.1 years, and their average duration of smoking was 12.1 years. This implies that the average smokers started smoking at about age 20.

Our results also suggest that the influence of friends and family was a key factor involved in the decision to begin smoking. The influence of friends and family is not surprising, given that other studies have found that young people start smoking largely because of social reasons such as peer pressure.\(^13\)-\(^15\) Although not measured in this study, two additional factors that may contribute to smoking in Saudi Arabia are unrestricted tobacco sales to minors and the low price of cigarettes. The average price for a pack of 20 cigarettes in Saudi Arabia is $1.30 (US), compared with about $3 (US) in the United States and $5.40 (US) in Norway.\(^16\)

The prevalence of smoking among our subjects occurred even though Saudis have a relatively high level of knowledge about the harmful effects of smoking. For example, 30% of smokers in China believe that smoking is harmful, while, based on our study and others, 70%–90% of Saudis believe it is harmful.\(^10,17,18\)

Two important limitations to our study should be noted. The first is that we studied individuals attending primary care clinics at one health care institution. These individuals may not have been fully representative of the Saudi population. The second limitation is that our study was confined to males, since sociocultural restrictions limited our ability to study women.

In conclusion, our results show a high prevalence of smoking in our Saudi community. Smokers begin smoking at a young age, and this occurs despite the awareness of the general public about the ill effects of smoking. There is an urgent need for public health efforts to decrease the rate of cigarette smoking and for regulation of tobacco companies marketing their products to minors.

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