Smoking among Malay Upper Secondary School Students in Shah Alam, Selangor, Malaysia

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Abstract

Introduction: In developing countries, around 1.1 billion smokers are present, which represent 70% of the world's smokers. Over 50% of them are living in Asia. Smoking-related mortality although it is preventable, unfortunately it is a significant cause of death in Malaysia.

Objectives: This study aimed to identify the prevalence of smoking and reasons to start smoking among upper secondary school students in Shah Alam Selangor.

Methods: Study population were selected from form 4 and 5 students, age ranging from 15 to 17 years old. This was a cross sectional study carried out at Sekolah Menengah Kebangsaan Sultan Salahuddin Abdul Aziz Shah in Shah Alam, Selangor, Malaysia over a six-month period

Results: Out of 210 students selected for the study, 18 were smokers giving a prevalence of 8.6%. Chi square analysis showed a significant association between gender and smoking ($p$-value < 0.001).

Conclusion: The finding of this study has highlighted the need for complete and integrated strategy to prevent teenage smoking.

Key words: Prevalence, Cross-Sectional, Smoking, Secondary school
Introduction

In developing countries, around 1.1 billion smokers are present, which represent 70% of the world's smokers. Over 50% of them are living in Asia.\(^1\)

Smoking-related mortality although it is preventable, unfortunately it is a significant cause of death in Malaysia. For the past three decades, smoking-related diseases accounted for approximately 10000 deaths annually and this figure is expected to rise to 30000 given the current trend.\(^2\)

According to National Health and Morbidity Survey (NHMS) which was conducted in 2006, in which a total number of 15639 Malaysian adults aged 18 years and above participated, the prevalence of smoking among adult males and females was 49.5% and 3.5% respectively. Smokers in urban area were 21.7% and smokers in rural area were 28.6%. Prevalence of smokers according to ethnicity was 27.9 %, 19.2%, 16.2% and 32.4% in Malays, Chinese, Indian, and others respectively. Mean age of smoking initiation was 18.3 years and the mean number of cigarettes smoked daily was 11.\(^3\)

Adolescence is understood as a transition period between childhood and adulthood during which major biologic, psychological and social changes occur. Environmental processes, exploration and experimentation with a wide range of behaviors including risk taking behaviors are part of normal adolescent development. This period is thus thought to be the point at which an individual is most vulnerable for involvement in high risk behaviors, including smoking.\(^4\)

The majority of smokers initiate smoking in adolescence. Those who do not smoke in adolescence are unlikely to smoke as adults. The role of peers in influencing smoking among adolescents has been investigated extensively. Peer influence was found to be the strongest risk factor for smoking among adolescents. Youths with more smoking friends had a higher tendency to smoke and current smokers started smoking with peers.\(^5\) Peer influence has been identified as a form of social reinforcement.\(^4\)

The Malaysian Global Youth Tobacco Survey conducted in 2003 found that one in three students have ever smoked cigarettes, while a significantly higher rate was found in males (53.6%) than females.\(^6\) It is estimated that 10,000 deaths annually due to smoking.\(^2\)

This study aims to determine the prevalence of smoking among upper secondary school students as this age group represent the usual time where smokers start smoking.\(^7\)

Methods

Study design and population

This is a cross-sectional study. The source population is form 4 and 5 students of Sekolah Menengah Kebangsaan Sultan Salahuddin Abdul Aziz Shah, Shah Alam, Selangor. Sample size was 210 and subjects were selected using simple random sampling.
Methods of data collection

A short questionnaire is used as the method of data collection. This was answered by the students with guidance from undergraduate medical students in Bahasa Melayu language. Socio-demographic characteristics including age, gender, and household income per month. The questionnaire also includes questions regarding smoking habit and the reasons the students decided to smoke.

Statistics

Data were entered and analyzed using statistical packages for social sciences (SPSS) version 19. The distribution and frequencies were examined. The continuous variables were expressed as mean and standard deviation or median and interquartile range. The frequencies and percentages for categorical variables were described.

Ethical approval and funding

The study protocol was approved by the research committee of, Management and Science University in its meeting dated 18th June 2013. (ref. no. SG-186-0613-HS).

Results

Data was entered, explored, cleaned and analyzed using SPSS version 19.

Characteristics of subjects

Total numbers of respondents was 210 students. The mean age of study subjects was 16.3 years with a standard deviation of 0.5 years. All of them were Malays. Thirty eight percent and 62% were males and females respectively. The percentage of smokers was 8.6 percent. The mean age when starting smoking was 13.1 years with a standard deviation of 3.4 years. Duration of smoking and the mean number of cigarette smoked are listed in table 1.

Reasons to start smoking

Among the smokers (n=18) the reasons to start smoking varied between peer pressure, for fun and recreation as well as to reduce stress. The prevalence of each reason is shown in table 2.

Association between smoking and gender
There was a significant association between gender and smoking status \((p\text{-value} < 0.001)\) whereby male gender is associated with smoking. The association is shown in table 3.

**Discussion**

In this study the prevalence of smoking among secondary school students was found to be 8.6%. Higher prevalence was reported by a study in a secondary school in Negeri Sembilan, Malaysia, in which the prevalence of smoking among secondary school teachers was 14\%.\(^7\) Much higher prevalence was reported in a study from Bolivia, which found that about 40\% of male and female adolescents from 13 to 18 years of age had smoked on 1 or more days in the 30 days preceding the interview.\(^8\) The mean age for starting smoking was 13 years old which is almost the same in previous finding by Lee et al., 2005.\(^7\) This finding shows that more attention should be directed to this age group as other studies showed that students aged 10-11 years old are less likely to start smoking as 94\% of them never smoked.\(^9\) The mean number of cigarettes smoked was 8 which are considered high by many standards.

Reasons to start smoking ranged between fun and recreational purposes, reduce stress and peer pressure which was found having the highest effect contributing to smoking initiation among adolescence. This finding is almost the same in many literatures as well as other Malaysian studies.\(^4,7\)

Male gender was significantly associated with smoking in this study as majority of smokers in Malaysia are males.\(^2\) This finding is supported by the study conducted by \(^7\) which found that the prevalence of smoking among the male students was higher (26.6\%) compared to the female students (3.1\%).

**Conclusion**

In this study, the need for complete and integrated strategy to prevent teenage smoking has been highlighted. Although the prevalence is relatively low (8\%), high attention should also be focused on peer effect which tends to be the main reason for the majority of students decided to start smoking (55\%). A comprehensive collaboration between stakeholders in the government, schools and families should be implemented in order to educate the children about the harmful effects of smoking.

**Limitations of the study**

Shah Alam city which is the place of study conduction is mainly a Malay city\(^10\) that’s why all the students in Sekolah Menengah Kebangsaan Sultan Salahuddin Abdul Aziz Shah were Malay and this can affect the generalization of the results of this study.
We recommend conduction of further research on smoking in other areas in Malaysia preferably including other races to compare the findings with our study.

Acknowledgment

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Conflict of interest: None of the authors has any conflict of interest in publishing this article.

References


2. MOH MoHM. 2003.


Asian Planning Schools Association (APSA), Grand Plaza Park Royal, Penang, Malaysia 2005.

**Table 1: Demographic characteristics of students (n=210)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (sd*)</th>
<th>n* (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age (years)</td>
<td>16.3 (0.50)</td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>16.3 (0.6)</td>
<td></td>
</tr>
<tr>
<td>- Female</td>
<td>16.3 (0.5)</td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>-</td>
<td>80 (38)</td>
</tr>
<tr>
<td>- Female</td>
<td>-</td>
<td>130 (62)</td>
</tr>
<tr>
<td>3. Age start smoking (years)</td>
<td>13.1 (3.4)</td>
<td></td>
</tr>
<tr>
<td>4. Duration of smoking (years)</td>
<td>2.1 (0.6)</td>
<td></td>
</tr>
<tr>
<td>5. No. of cigarettes/day</td>
<td>8.38 (7.39)</td>
<td></td>
</tr>
</tbody>
</table>

sd  Standard deviation  n  Frequency

**Table 2: Reasons to start smoking (n=18)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fun &amp; recreational purposes</td>
<td>3 (16.7)</td>
</tr>
<tr>
<td>2. Reduce stress</td>
<td>5 (27.8)</td>
</tr>
<tr>
<td>3. Peer pressure</td>
<td>10 (55.6)</td>
</tr>
</tbody>
</table>

Total  18 (100)

**Table 3: Association between smoking status and gender. (n=18)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Smoking status</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>26.5 (1)</td>
<td>&lt; 0.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Male</td>
<td>17</td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Female</td>
<td>1</td>
<td>129</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1  Chi square test was used
2  Significant at α=0.05