Comparison of cigarette and hookah smoking between physical education and non-physical education students

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Abstract

Introduction:
Physical activity has many advantages such as cardio-respiratory health promotion, prevention of some diseases and improvement of quality of life. In contrast, smoking tobacco products is one of the most important risk factors of non-infectious diseases, especially cardiovascular and cancers and may be influenced by physical activity of people. Therefore, the aim of this study was to compare cigarette and hookah smoking between physical education and non-physical education students.

Materials and Methods:
The target population of this study was all male and female students of Guilan University. The instrument used was the PDUQ questionnaire (Alpha value of 0.81). According to Odineski table, the questionnaire was randomly distributed among 144 students of P.E and 386 students of non-P.E. The collected data was analyzed using Chi-square test, and Pearson correlation coefficient (P<0.05).

Results:
The results of data analyses indicated that there was no significant relationship between the course and championship history with cigarette and hookah smoking. Also, cigarette and hookah smoking was observed more in males than females and the difference was statistically significant (P<0.001). The most important reason of tendency toward and prevalence of cigarette and hookah smoking in males was their intimate relationship with smoking friends, and in female it was mostly done for recreation and fun.

Conclusion:
In this study, the prevalence of smoking was 27.1 % in P.E males (11.8 % in females, (30.1 % in non-P.E males, (and 14.2%) in females, respectively, indicating that it is high as compared to other areas of the country. Holding educational programs and social interventions at university level seem necessary in order to prevent cigarette and hookah smoking.

Keywords: Tobacco Smoking, Students, Risk Factors

Introduction
Today, smoking is considered a global health challenge and a life-threatening factor in developed and developing countries (1). Cigarette is one of the main causes of lung, cardiovascular, and digestive diseases and cancers. The strong relationship of these diseases with smoking has been proven (2). Reports by the World Health Organization reveal that smoking is to blame for 4 million deaths annually, and this figure is anticipated to rise to 8.4 million by 2020 (3). Nearly 70% of these deaths occur in developing...
countries (2, 4). According to the WHO statistics, 1/3 of people over 15 years of age are smokers, of whom, 75% live in developing countries (5). Furthermore, use of hookah is commonplace in many countries, especially in Middle-Eastern and African countries. Today, amazingly this phenomenon appears to have revived, and has found popularity among the youth, with considerable use observed among women and girls (6, 7). Studies conducted on the harms caused by hookah have shown the relationship between its use and increased risk of cancers of the mouth, stomach, esophagus, lungs, reduced respiratory function, and reduced fertility. Moreover, higher rates of carboxy-hemoglobin have been found in hookah smokers’ blood, compared to non-hookah smokers (8). In a study, the prevalence of cigarette smoking among American students was reported closed to 30% (9). Another study on students of two American universities showed that 19% of students smoked hookah on daily basis, 41% smoked weekly, and 29% monthly (10). In a study in a British university, it was found that 8% of students regularly smoked hookah (11). The study by El Turkey showed that 13% of male students had recently been cigarette smokers, 5.3% were previous smokers, and 38.2% were exposed to second-hand smoke. Variety of tobacco used included 44.1% hookah, 32.2% cigarettes, and 23.7% both (12). Primak et al. reported that student athletes of American universities were more used to smoking hookah than non-athletes (13). In another study on Malaysian students, it was found that 9% of students smoked cigarettes, and 88% had fallen into the habit before entering university, and 28% smoked more than 10 cigarettes per day. For them, social factors and advertising were the most important causes of smoking (14). In a study in Yasoj, it was found that only 15.9% of students smoked cigarettes, 2.9% smoked cigarettes and hookah, 1.5% cigarettes and pipe, 9% smoked all three, and 9% smoked hookah and cigarettes, and reasons given for tendency toward cigarettes were curiosity, fun, and socializing with smokers, in that order (15). In addition, results of a study conducted on athletes in Ardebel town showed that 14.7% were habitual users, and 10.5% smoked hookah for fun, and majority were oblivious to destructive effects of hookah on their sporting performance (16). Various studies confirm that in both developed and developing countries, the prevalence of cigarette and hookah smoking is increasing among adolescents and age at onset of use is decreasing (17, 18). In people of various ages, studying period is the time, when many behavioral traits are being developed and consolidated, and use of cigarettes and hookah should be accurately considered and investigated (11, 18). The youth comprise the dynamic population in every society. Given young population of the country, and the prominent prospects of students, and also being role models for children and adolescents, use of cigarettes and hookah can indirectly cause increased tendency toward tobacco products outside the university (16, 17, and 19). Accordingly, considering increased inclination to use tobacco, in this study, in addition to examining the relationship between cigarette use and athletic history among students, cigarette and hookah use among male and female students of physical education and non-physical education is compared, so that in addition to rates of use, causes for inclination can also be determined.

Materials and Methods
This cross-sectional study was conducted with population of male and female students of Gilan University during academic year 2011-2012. Based on Odinski table and number of students in each discipline, 144 physical education students (63 male, and 81 female students), and 386 non-physical education
(184 male, and 202 female students) were selected using systematic random two-stage sampling method. Number of main categories was defined according to gender (boys and girls) and academic discipline (physical education and non-physical education). Data were collected using a questionnaire issued to students to complete anonymously. Explanations were given about study objectives, how to complete the questionnaire, and confidentiality of data, also importance of honest answering was emphasized. Students were requested to complete the questionnaire only if wished to do so. To prepare the questionnaire, standard substance use epidemiological questionnaire (Primak et al.) (13) was translated. Some questions were modified by experts’ comments, and its face validity was confirmed. Reliability was provided by Cronbach’s alpha of 0.81. The Cronbach’s alpha was reported 0.82 by Tarmian, Bolahri, and Piravi in Iran (20). Content validity was confirmed by addiction experts (17, 20). In this study a smoker is a person that smokes 1 cigarette per day or 10 cigarettes per week, and a hookah smoker is a person that smokes hookah at least once a day or 7 times per week. After completion of questionnaires by students, data were analyzed with SPSS-17 software using appropriate descriptive and inferential statistical methods including Kolmogrov-Smirnov, Chi-square, and Pearson’s correlation tests at significance level P<0.05.

**Results**

A total of 530 male and female physical education and non-physical education students of Gilan University were studied and their anthropometric details are presented in table 1.

**Table 1: Anthropometric details of subjects (mean±SD)**

<table>
<thead>
<tr>
<th></th>
<th>Physical education boys</th>
<th>Non-physical education boys</th>
<th>Physical education girls</th>
<th>Non-physical education girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>21.7±1.08</td>
<td>20.92±1.66</td>
<td>21.2±1.22</td>
<td>20.87±1.33</td>
</tr>
<tr>
<td>P</td>
<td>0.14</td>
<td>0.14</td>
<td>0.32</td>
<td>0.32</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>174.3±5.16</td>
<td>176.97±5.64</td>
<td>163.05±6.13</td>
<td>162.18±4.45</td>
</tr>
<tr>
<td>P</td>
<td>0.28</td>
<td>0.28</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>68.47±7.48</td>
<td>71.25±10.06</td>
<td>55.38±3.07</td>
<td>57.27±8.72</td>
</tr>
<tr>
<td>P</td>
<td>0.03*</td>
<td>0.03*</td>
<td>0.04**</td>
<td>0.04**</td>
</tr>
<tr>
<td>BMI</td>
<td>23±0.02</td>
<td>23±0.30</td>
<td>21±0.02</td>
<td>22±0.03</td>
</tr>
<tr>
<td>P</td>
<td>0.42</td>
<td>0.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Difference with non-physical education boys at significance level P<0.05  
** Difference with non-physical education girls at significance level P<0.05

Among the most important reasons for male students’ tendency to smoke cigarettes and hookah were friendly relationship with smokers 38%, fun and entertainment 22%, interest in smoking cigarettes and hookah 20%, satisfying inner needs and joy 13%, being far from family 7% (table 3). Also, the most important reasons for female students’ tendency to smoke were fun and entertainment 40%, satisfying inner needs and joy 28%, being far from family 13%, interest in smoking 12%, friendly relationship with smokers 7% (table 3).

**Table 3: Frequency of reasons for tendency to use cigarettes and hookah in subjects**

<table>
<thead>
<tr>
<th>Reasons for tendency to cigarette and hookah use</th>
<th>Boys (%)</th>
<th>Girls (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friendly relationship with smokers</td>
<td>38</td>
<td>7</td>
</tr>
<tr>
<td>Fun and entertainment</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td>Being far from family</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Interest in smoking cigarettes</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>Satisfying inner needs and joy</td>
<td>13</td>
<td>28</td>
</tr>
</tbody>
</table>

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Discussion
This study aimed to compare cigarette and hookah smoking among physical education and non-physical education students. In this study, the prevalence of cigarette and hookah smoking was higher compared to other studies on students across the country. In a report by an affiliated organization to the WHO, the prevalence of cigarette and hookah smoking among Iranian 15- to 19-year-old adolescents was 10.5% in boys and 7% in girls (5). Many studies have been carried out concerning the prevalence of smoking in student populations. In a study by Abedini et al. (2008), cigarette use was reported 9%, hookah 12%, and cigarette and hookah 20.5% (8).

In the present study on 530 physical education and non-physical education students of Gilan University, use of cigarette and hookah was 11.8% and 27.1% among girl and boy physical education students respectively, and 14.2% and 30.1% for girl and boy non-physical education students, and 20.8% in overall student population. Some studies have identified that prevalence of cigarette and hookah smoking increases with age (21-24). Possible reasons for higher prevalence of cigarette and hookah smoking in the present study, compared to other studies, could be age difference of subjects, cultural backgrounds, non-local students, indirect monitoring of families, and local climate.

Study results showed an insignificant relationship between cigarette and hookah use with athletic history and academic discipline. In other words, athletic history or academic discipline cannot be considered an essential factor in non-use of cigarettes and hookah in students. Nakhhostin et al. after two studies reported that because of the right information, the prevalence of hookah use among physical education students reduced from 35.6% to 13.3% after nearly a year. Other studies have reported that use of cigarettes and hookah among athletes reduces cardio-respiratory fitness (19, 20, and 23). Considering that cigarettes and hookah are more readily and abundantly available to the general public, and that they incur less social stigma than other substances, people, especially youths easily turn to using them. To deal with this problem, measures such as higher costs and taxes on cigarettes, restricted distribution, clean-up of adverts from related industries to reduce availability and use, increased education about cigarettes and hookah harms, and development of entertainment facilities among non-physical education and especially physical education students to enhance sporting performance, are recommended.

In relation to the prevalence of cigarettes and hookah smoking according to gender, the present study results, in line with other studies in Iran (17, 20) and some countries except England and the U.S. (23, 24), showed that the prevalence of cigarette smoking among girls is less than that in boys (25, 26, and 27), which may be due to causing more social stigma for girls in Islamic countries, and another reason could be due to self-report style of study (28). Normally, smoking cigarettes and hookah by women is considered a nonsocial behavior. Especially young women smoke less in public, and if tendency is created, they tend to use cigarettes and hookah for fun. Therefore, smoking cigarettes and hookah is significantly less in girls (12, 28). In relation to reasons for tendency to use cigarettes and hookah, most reasons found in this study are similar to findings in other studies. The most important reasons for smoking cigarettes and hookah in boys were friendly relationship with smokers, fun and entertainment, interest in use, satisfying inner needs and joy, and being far from family. Many studies confirm findings of this study, and propose friendship with smokers as the most important factor (17, 21, and 29). Cigarette and hookah smoking peers are one of the strongest predictors of use of cigarettes.
and hookah (30). This confirms how influential smoker friends are in tendency of adolescents toward smoking (28, 30). Priority of reasons for girls was fun and entertainment, satisfying inner needs and joy, being far from family, interest in smoking, and friendly relationship with smokers. While the most important reason for smoking among medical sciences students of Bandarabass and Yasuj was found fun and entertainment, in the present study, the same reason had the highest percentage among girls, which shows that the reasons for smoking among students are largely common, and require similar measures. Mosavi et al. found reasons for tendency to smoke as the lack of close relationship within the family, the lack of a healthy adult as a role model, high family stress, poor occupational incentives and prospects (31). Many studies have reported that having smoker friends and parents is considered a predicting factor for experiencing cigarettes (24, 25, and 32). Studying period, considering special circumstances, including the lack of parental supervision, living in dormitories, loneliness and being away from family, increases vulnerability of people in relation to use of cigarettes and hookah and other substances (29, 33). Given that at this age adolescents model each other, makes obvious the need for more supervision of parents on their children’s socializing and full understanding of their friendly relationships (32, 33).

**Conclusion**

According to the study results, the significant prevalence of cigarette and hookah use among students can expose them to addiction to these products and their complications in future. Thus, it seems necessary to conduct studies about the consequences of cigarette and hookah smoking and associated factors with dependence of use among students, and also studies on design and implementation of programs to prevent use of tobacco products in students, given the importance and role of students in the society.

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**Conflict of interests**

Authors had no conflict of interests in this study.

**References:**

Comparison of cigarette and water pipe


