Hossein Ansari¹, Mohammad Edris Arbabsahastian², Abolfazl Mohammadbeigi³, Younes Mohammadi⁴, Mohammad Taghi Arbabisarjou⁵

¹Health Promotion Research Center, Zahedan University of Medical Sciences, Zahedan, Iran.
²Master in Science of Nursing Education, Iranshahr University of Medical Sciences, Iranshahr, Iran.
³Assistant Professor, PhD in Epidemiology, Health policy and promotion Research Center, Department of Epidemiology and Biostatistics, Qom University of Medical Sciences, Qom, Iran.
⁴Assistant Professor of Epidemiology, Social Determinants of Health Research Center, Department of Epidemiology, School of Public Health, Hamadan University of Medical Sciences, Hamadan, Iran.
⁵Student Research Committee (SRC), Higher Education Complex of Saravan, IR Iran.

*Author for Correspondence: Mohammad Edris Arbabsahastan
Master in Science of Nursing Education, Iranshahr University of Medical Sciences, Iranshahr, Iran.

ABSTRACT
Background and purpose: Hookah using is one of main social problems among young adults that is increasing yearly. This study was aimed to evaluate the pattern and situation of hookah using among hookah user in Zahedan, Southeast of Iran, 2015. Materials and Methods: This cross-sectional study carried out on 600 hookah users of Zahedan city in 2015. The map of the Zahedan was divided to 5 districts (north, south, east, west and center). Then a start point selected randomly and all persons of the first hookah place were studied. Then with referring to next nearest hookah place, all persons in it were studied too. The sampling continued until all needed questionnaire filled in each districts. The data was collected using questionnaire and interview. The data were analyzed in Stata.12 software using Chi-square and Independent T test. Results: The mean age of the starting for hookah using among male and female was 17.1±6.13 and 21.2±5.6, respectively. About 53% of subjects used hookah in groups and 41.8% used hookah at least once a month. The odds of hookah using in group was related to marital status (P=0.001), living place (P=0.0001) and job status (P=0.003). On that other hand the chance of using hookah every other day was more among singles (P=0.002), males(P=0.0001), subjects lost one parent (P=0.005) and the persons with 10 educational level (P=0.0005) than the other groups. Conclusion: The pattern or levels of consumption and situation of hookah using are the most important factors in increasing the using hookah among adolescents that are related to some demographic characteristics of the users. However, have a good plan according to effective variables in this study could be helpful in decreasing and changing the pattern of hookah using among adolescents and young adults.

KEYWORDS: Hookah, hookah users, Zahedan.

INTRODUCTION
Today's hookah smoking is one of the most important social issues in the world that has spread particularly among adolescents and young. Despite legal efforts to prevent its use, it imposes health and economic costs to human society impose.¹ Hookah is a traditional way of a variety of narcotics and tobacco use² which it use is increasing in different populations day by day. The results of a research cleared that about 45 percent of high school students have experience of smoking hookah and 6% of them have used hookah at least once a month.⁴ In another which has conducted in center of Iran, The prevalence of hookah smoking has reported 42% among students.⁵ Recently, it has seen an increasing trend to group water-pipe smoking among young people and adolescents and it has converted to social behavior.⁶ The findings of studies have shown that regular consumers hookah tobacco consumers had had higher levels of carboxyhemoglobin in their blood²,⁷ and they are interfaced with several hazards.¹ Hookah group using can could start increasing consumption of illegal drugs, including cannabis and alcohol in youth.¹⁰ Some studies have demonstrated that consumers of hookah were adding wine and other alcoholic beverages to water source of hookah to create various odors and are added to tobacco or shisha water tank to create different effects and odors.¹¹ The evidences have demonstrated that Hookah contains hazardous substances and it is harmful and addictive as cigarettes smoking.¹² The hookah is
normally used when the young are coming together that this leads in familiarity with illegal substances and greater tendency to use other drugs among teenagers. Therefore, the study and determining the role of hookah is very important in this cases. In Iran, it has conducted limited studies and there has not conducted researches about this issue in Zahedan which located in south-east of Iran. The emerging illegal drugs such as pan and NAS has become prevalent in the South-East of Iran and has more prevalent than in other areas. Hookah smoking can possibly have a role in starting of consumption of these illegal materials. Due to the prevalence of tobacco consumption in all regions of Iran. With revealing the consumption patterns of hookah consumers the city of Zahedan, it will reveal the extent of the problem and with determining of its risk factors, the high risk groups will determine. If these factors determine, authorities can do some measures to decrease use of illegal substances in the young and adolescents with focuses on the high risk groups.

**MATERIAL AND METHODS**

This cross-sectional study (cross-sectional) has conducted on 600 hookah consumers in Zahedan in 2015. The research population was all hookah customers in hookah homes in Zahedan. The sample size determined 540 young based on pilot study and accuracy of 5%. Considering the effect of the project, one-fourth of population was estimated estimated 540 young. Whenever the researchers observe females in a hookah homes, they collected information from them which they were 60 female young. In beginning of project, the city of Zahedan divided in five area according City Map and from each area about 115 samples were participated in research. In next phase, one point as the point of beginning selected randomly and the first hookah home was found by seeking. All of subjects were ready to participate and had consent to cooperate with this research, their information was gathered by questionnaire and interviews. The interviews have performed by three trained experts. These experts had been trained about the research process and the interview methods through two-hour sessions by research team. The questionnaire was researcher-made which it was approved by related, validated and reliable questionnaires. The validity of questionnaire confirmed by panel experts with CVI=89% for each item. For determination of reliability, the questionnaire delivered to 35 subjects from research population. At least, the reliability calculated 0.74. This project has approved by Committee of Ethics affiliated to Zahedan University of Medical Sciences. The collected data were entered and analyzed by Stata.12. The used statistical formulas were $\chi^2$, exact $\chi^2$, independent T-test and, multiple logistic regression.

**FINDINGS**

In this research 600 young hookah consumers in Zahedan hookah homes were studied. The age mean of participants were 26.1 ± 5.1 that the girls was 5.3 and in the boys was 25.5 ± 4.1. There was not significant difference. The male participants were 71% (383 subjects) and the 82% of girls (49 subjects) were single and the rest of subjects were married ($P=0.043$). The boy participants have academic education (38%) and 23% of them had diploma. $\chi^2$ test showed that there is a significant difference between gender and education ($P=0.04$) and this difference is more in the female young.

The findings showed that the age of beginning for hookah use was 17.1 ±6/13 in males and it was 21.2 ±5.6. Here is seen a significant difference ($P=0.04$). The male participants had begun to hookah use earlier than females. Also, 21% (126 subjects) stated that the home has been first place for hookah use and the 79% (474 subjects) have reported the Hookah Homes or Out of Home has been the first place for acquiring experience. Among these findings, they female subjects were reported that they have been started hookah use for the first time out of home (100%). About the methods of use as personal or group, they reported that they have used the hookah in group (53%), two persons (39%/0 and alone and individually (8%). Use of hookah had a significant association with married status(62.5%), job ($P=0.003$), location of living ($P=0.002$), the persons are living in singleton houses(74.2%), collegians (61.2%) more than others used hookah in group method. From patterns of using hookah, minimum one time monthly (41.8%), minimum one time weekly (32.6%), one time each two days (12.6%) and the rest of subjects sometimes consumed hookah. The use patterns had a significant relationship with married status ($P=0.002$), gender ($P=0.0001$), Education level ($P=0.0003$) and, parents life situation($P=0.005$). The single subjects were used hookah one time each two-days (13%), in guidance education level (15.7%) and in the subjects were living with one of parent (18.8%) (See the table 1)

In this research, the causes and trends to hookah consumption were mentioned by participants as follows: fatigue and anxiety (34%) , recreation and leisure time (57%), knowing hookah harmless (42%) , easy access to hookah (36%), lack a bad social image such as cigarettes (44%) , keeping relationships and social integration (33%).
Table 1: Distribution of pattern and situation of hookah using among hookah users according to demographic characteristics in Zahedan, Southeast of Iran

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Hookah Use Situation</th>
<th></th>
<th>Hookah Using Pattern</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Alone N=48</td>
<td>Pair N=234</td>
<td>gregarious n=318</td>
<td>P</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single, n=432</td>
<td>31(7.2)</td>
<td>188(43.5)</td>
<td>219(49.3)</td>
</tr>
<tr>
<td></td>
<td>Married, n=168</td>
<td>17(10.1)</td>
<td>46(27.4)</td>
<td>105(62.5)</td>
</tr>
<tr>
<td>Sex</td>
<td>Male, n=540</td>
<td>42(7.8)</td>
<td>212(39.3)</td>
<td>286(53)</td>
</tr>
<tr>
<td></td>
<td>Female, n=60</td>
<td>6(10)</td>
<td>22(36.7)</td>
<td>32(53.3)</td>
</tr>
<tr>
<td>Educational Level</td>
<td>Guidance, n=223</td>
<td>19(8.5)</td>
<td>94(42.2)</td>
<td>110(49.3)</td>
</tr>
<tr>
<td></td>
<td>High school, n=233</td>
<td>11(7.6)</td>
<td>51(35.4)</td>
<td>82(56.9)</td>
</tr>
<tr>
<td></td>
<td>Academic, n=233</td>
<td>18(7.7)</td>
<td>89(38.2)</td>
<td>126(54.1)</td>
</tr>
<tr>
<td>Living Place</td>
<td>With parents, n=150</td>
<td>5(3.3)</td>
<td>100(66.7)</td>
<td>45(30)</td>
</tr>
<tr>
<td></td>
<td>Dormitory, n=221</td>
<td>13(5.9)</td>
<td>105(47.5)</td>
<td>103(46.6)</td>
</tr>
<tr>
<td></td>
<td>Single house, n=229</td>
<td>30(13.1)</td>
<td>29(12.7)</td>
<td>170(74.2)</td>
</tr>
<tr>
<td>Job status</td>
<td>Jobless, n=141</td>
<td>10(7.1)</td>
<td>63(44.7)</td>
<td>68(48.2)</td>
</tr>
<tr>
<td></td>
<td>Student, n=258</td>
<td>17(6.6)</td>
<td>83(32.2)</td>
<td>158(61.2)</td>
</tr>
<tr>
<td></td>
<td>Governmental job, n=54</td>
<td>10(18.5)</td>
<td>22(40.7)</td>
<td>22(40.7)</td>
</tr>
<tr>
<td></td>
<td>Self-employed, n=147</td>
<td>11(7.5)</td>
<td>66(44.9)</td>
<td>70(47.6)</td>
</tr>
<tr>
<td>Parent life</td>
<td>Both live, n=512</td>
<td>38(7.4)</td>
<td>196(38.3)</td>
<td>278(54.3)</td>
</tr>
<tr>
<td></td>
<td>Both died, n=24</td>
<td>4(16.7)</td>
<td>10(41.7)</td>
<td>10(41.7)</td>
</tr>
<tr>
<td></td>
<td>One died, n=64</td>
<td>6(9.4)</td>
<td>28(33.8)</td>
<td>30(46.9)</td>
</tr>
<tr>
<td>Birth Order</td>
<td>Single child, n=145</td>
<td>11(7.6)</td>
<td>60(41.4)</td>
<td>74(51)</td>
</tr>
<tr>
<td></td>
<td>First, n=151</td>
<td>13(8.6)</td>
<td>70(46.4)</td>
<td>68(45)</td>
</tr>
<tr>
<td></td>
<td>Last, n=144</td>
<td>10(6.9)</td>
<td>48(33.3)</td>
<td>86(59.7)</td>
</tr>
<tr>
<td></td>
<td>Other, n=160</td>
<td>14(8.8)</td>
<td>56(35)</td>
<td>90(56.2)</td>
</tr>
</tbody>
</table>

**DISCUSSION**

The research findings showed that the teenagers and young often use hookah in group method. The majority of subjects have used the hookah minimum one-time per week which this finding demonstrated high consumption of hookah (32.6%) at hookah homes in Iranian population. It seems that these days, it seems that Hookah consumption in Iranian teenagers has kept as a recreation and amuse, and it has become a habit unfortunately. In previous conducted research in west-north of Iran, the experience of hookah consumption estimated 45% and six percent of subjects were used the hookah at least one-time monthly.[4] In another study[16], the prevalence of hookah use for some times (13%) and in routine habit (6%) have reported.

In a research which conducted in the center of Iran[3], the prevalence of hookah consumption has reported 45%.

Due to differences in study participants and their diversity as well as keeping in mind the daily increasing rate of hookah consumption among Iranian adolescents and young[8,17], and in comparing with other foreign research results(3,8), this result shows that the times of hookah smoking among those who refer hookah homes is probably associated with the other illegal substances. The results showed that the subjects used hookah in group method (53%) which this rate is less than a research which conducted in Brazil.[14] It seems that hookah smoking in group method is an important factor for introducing other kind of illegal substances and their using. Hence, the hookah consumption not only have some other side effects[18,1], but also, it said that it has a relationship with trends to use other illegal substances and this is considered as a side effect. Informing youth and adolescents from the side effects of cigarettes and
hookah using and limitation of hookah homes in numbers are beneficial in the preventing of trends to use of illegal substances use. It seems that in recent years, the numbers of hookah homes in turn, the trend to use of hookah has been increased. [19,20] This factor leaded in higher trend to illegal and synthetic substances in female youth with making proper condition for group method using of hookah in different palaces. The 62% prevalence of smoking experience among girls, who consumed hookah, is well-known evidence in this research. This study showed that the low age of first use hookah, beginning in adolescence period, the age of beginning for use hookah is significantly lower in males than females. This result is consistent with previous conducted researches in Iran. [13,4] However, it seems that the females have more freedom and they early acquire experience use of substances in the adolescence’s period, and the young girls are more limited, restricted and more supervising than young boys in Iranian families. Seventy –four percent of men under 27 years and 48.6% of women were at same age group. 34.3% of all addicts were illiterate. [21] In this study, rate and concentration of hookah use was higher in singles than married, in males was more than females and it was higher in lower education level than literate subjects. As you know that married persons are over-occupied and then they were smoking hookah less and this factor is indicated the importance of occupation in Iranian youths. It seems that the subject with lower literacy have less knowledge about hazards of smoking and hookah even they consider it harmless and they pursue its using.

In past researches, the results showed that having smoking friends is effective in higher trend to hookah use [22] and group method using of hookah has a pivotal role in beginning and increasing the use of illegal substances such as cannabis and alcohol in adolescents [10] which is consistent with current study findings.

The persons have migrated to other cities for pursuing their education, the have used the hookah smoking as leisure time and amusing and they fall substance using. It is advised to educate them and increase knowledge and information about hazards of this habit. Also the researchers suggest to the authorities to make more recreation and amusing healthy facilities in deprived areas and for youths.

In this study, the cause for hookah using and the trends to hookah use were recreation and leisure time (57%), harmless of hookah smoking (42%). This points of views are consistent with other researches which conducted in Tehran and Nikshahr [22, 23]. There is a common belief in community that hookah using have not hazards and it used for leisure time [22]. Hence, it is needed to teach youths and teenagers in communities about the hazards and side effects if hookah use or smoker.

CONCLUSION
The hookah smoking is high in youth and adolescents who are referred to hookah homes in south –east of Iran and because it used in group method, therefore, hookah using has been common as a way for filling leisure time in youths. Unfortunately, the youths and adolescents have not informed about hookah hazards and its side effects in many cases yet, even they considered it harmless.

Therefore justify and orientation of households and diverse groups of community and educating them about the hazards of hookah in different organizations will be effective in preventing of hookah use epidemic in societies.

ACKNOWLEDGEMENT
The researchers appreciated of all youth and adolescents who have consciously cooperated and participated in this research. This project has financially and scientifically supported by Deputy of Research and Technology affiliated to Zahedan University of Medical Sciences. The authors are appreciated of Dr. Azizollah Arbabisarjou, Ph.D and faculty Member for editing and scientific, valued comments.

REFERENCES


