

Hookah Smoking and Associated Factors in Rural Region of Hormozgan, Iran

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Article information	Abstract
<p>Article history: Received: 31 Oct 2011 Accepted: 23 Nov 2011 Available online: 16 Oct 2012</p> <p>Keywords: Hookah (waterpipe) Logistic regression Rural population</p> <p>*Corresponding author at: Department of Public Health, health promotion Research Center, Faculty of Health, Hormozgan University of Medical Sciences, Bandar-e- Abbas, Iran. E-mail: taghamolaei@hums.ac.ir</p>	<p>Background: Smoking hookah is a traditional method of tobacco smoking which is common in Middle East and Arabic countries. The Hormozgan province is in the second rank of hookah use after Bushehr in Iran. This research is seeking to study the factors affecting hookah smoking in a sample of rural community of the Hormozgan province.</p> <p>Materials and Methods: From the total population of the Hormozgan province villages, 310 residents were selected through multistage sampling. The data were analyzed in a logistic regression model.</p> <p>Results: The prevalence of hookah smoking was 36.5%; 28.4% in men and 45.16% in women. Marital Status and Job are associated with Hookah smoking ($p < 0.05$), age (OR=1.04), gender (OR=4.43), cigarette smoking (OR=5.16), having a hookah smoker in the family (OR=1.9), and education (OR=0.34) were effective in hookah smoking.</p> <p>Conclusion: Considering the high prevalence of hookah smoking, appropriate educational programs should be designed in order to qualitatively study the reasons of region's people tendency toward the hookah.</p>

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Introduction

Smoking is one of the fundamental problems of public health [1, 2]. Tobacco smoking is the cause of many respiratory diseases and different cancers, so that the mortality rate from tobacco use was about a hundred million people in the twentieth century, which will rise to one billion by the end of 21st century [2].

Smoking hookah is regarded as a traditional way of tobacco use and is common among adults, especially older men in some Asian and African societies, especially in the Middle East and Arab countries [3]. Today this phenomenon is significantly seen also among women and girls [1]. Hookah smoking is considered as one of the global growing problems, particularly in the eastern Mediterranean basin countries including Arab countries, Turkey, and Iran [4, 5].

Studies show that smoking hookah increases the risk of cancer of the mouth, stomach, esophagus, and lungs, and reduces respiratory function and fertility [6]. Based on studies conducted in Egypt, the prevalence of hookah smoking is 11% in adults, and 12% in Lebanon. According to the Health and Disease Plan, the hookah use was about 5.3% in Iran and its consumption is increasing among the 15-24 years age group [7, 8].

Based on the National Plan of Health and Disease in 1991 and 1999, the prevalence of hookah smoking among 15 years and older people in Hormozgan was over 18.8%, while cigarette smoking in this age group was 8.7%. The studies showed that age, gender, cigarette smoking, family history of hookah smoking, marijuana addiction,

and alcohol use are affecting factors of hookah smoking [3, 5, 9-12]. Hormozgan is in the second place of hookah smoking after Bushehr in Iran [7]. Thus, this study was performed to evaluate influencing factors of hookah smoking in the villages of Hormozgan.

Materials and Methods

In this cross-sectional study, a sample of 310 persons was selected from the rural population over 20 years covered by health centers of Hormozgan through multistage sampling. Different villages were considered as clusters; then, the families were selected through systematic sampling in each village and one person was randomly selected from each family. The questionnaire was completed by local health workers through interviewing. This questionnaire was researcher-made and its validity (0.78) and reliability (0.81) were confirmed by Cronbach's alpha and correlation coefficient, respectively, in a preliminary study. The response rate to the questions was 100% in this study. The data were then collected and analyzed by SPSS-16 software.

Results

Of the 310 subjects participating in the study, 50% were male. The mean age was 36.7 years with a standard deviation of 14.3. Hookah smoking prevalence was reported 36.5% in the whole population; 28.4% in men and 45.16% in women. Hookah smoking pattern and its consumption history are depicted in table 1.

According to the χ^2 test, hookah smoking had a significant relationship with occupation ($p=0.034$) and marital status ($p=0.014$). The highest prevalence of hookah smoking was among fishermen (66%), then in housewives (45.5%). The lowest prevalence of hookah smoking was in employers of the public sector (23.5%). Hookah smoking prevalence was 8.6% in singles, 38.4% in married, and 43.8% in widowed people. The findings showed that 11.9% of individuals were smoked cigarettes.

To fit the data in the logistic regression model, at first, age, gender, education, occupation, marital status, cigarette smoking, and family history of hookah smoking were fed in as independent variables in the model, then the variables with no impact on improving the fitness of the model were automatically excluded [13]. Thus, the two variables of occupation and marital status, which did not have a role in explaining the model, were not entered in the regression model. The results of the estimation of the model coefficients are given in table 2.

Based on the logistic regression model, age, gender, women sexuality, cigarette smoking, and family history of hookah smoking variables had a positive impact, and the education variable had a negative impact on hookah smoking. The findings suggest that hookah smoking increases 4% for each year of age increment. Also, the hookah smoking rate among women was 4.43 times that of men, and this rate in smokers was 5.16 times that of non-smokers, and hookah smoking increases 90% in persons who had a hookah smoker in their family. According to this model, the amount of hookah smoking in literate people declined about 66% compared with illiterates.

Table 1. The pattern of hookah smoking

		N (%)
Hookah smoking per week	Once a day/daily	17 (14.9)
	Twice or more a day/daily	67 (58.8)
	Once a week	11 (9.6)
	Twice or more a week	19 (16.7)
Hookah smoking history	Less than 6 month	3 (2.6)
	6 month to 1 year	7 (6.1)
	1 to 5 years	21 (18.4)
	more than 5 years	83 (82.9)

Table 2. The estimation of logistic regression coefficients

Variable	OR	CI 95%	p-Value
Constant	0.08		<0.001
Age	1.04	(1.01-1.06)	0.005
Sex			
Male	1		
Female	4.43	(2.26-8.68)	<0.001
Cigarette smoking	5.16	(2.11-12.59)	0.001
Education			
Illiterate	1		
Having some literacy	0.34	(0.17-0.67)	0.002
Have a hookah smoker in Household	1.9	(1.08-3.34)	0.025

Discussion

The results of this study showed the high prevalence of hookah smoking in the rural community. Based on the

results of the Health and Disease Plan, hookah use in the Hormozgan province was 3.6%; 2.8% in urban population and 5% in rural areas. In a study conducted by Aghamolaei, the prevalence of hookah smoking was 9.1% in the total population; 4.6% in men and 13.6% in women [8].

Akl et al. reported the prevalence of hookah smoking 9-16% in the Persian Gulf area Arab countries, 11-15% in Egypt, and 25% in Lebanon [3]. The hookah smoking prevalence in this study is much higher than in other studies. In all of the mentioned studies, the rate of hookah smoking was higher in women than in men, which is consistent with the present study [2, 3, 7, 8]. In the study conducted by Aghamolaei, the highest rate of hookah smoking was in the age group of over 50 years (13.6%), and in a study conducted by Rashidipour, the highest rate of hookah smoking was in the age group of over 60 years (4.2%) [2]. In this study, the prevalence of hookah increased by aging, that is consistent with the present study [7, 8]. The highest prevalence of hookah smoking was among illiterate people (56%), which are consistent with similar studies in Bandar Abbas (20.6%) and in Semnan (4.1%) [2, 8].

Smoking prevalence in the present study was 11.9%, the prevalence of smoking in the health and disease plan and Aghamolaei's study were 11.9% and 11.7%, respectively, which is consistent with the results of the present study [7, 8]. In this study, the rate of hookah smoking was higher than cigarette smoking which is consistent with Maziak's study [5].

In this study, the relationship between factors associated with hookah use was evaluated using logistic regression. In a study conducted by Jani in Pennsylvania, the United States, in a sample of 18-22 years students, the cigarette smoking variable was not significant, that is contrary with the present study [14]. Regarding to Daffa's study conducted among Arab-American women living in California, using logistic regression, hookah use by a family member (OR=2.91) was an influential factor. This is consistent with the present study [10]. In Poder's study among the Arab population in Sydney, cigarette smoking had a positive impact (OR=4.48), which is consistent with the present study, but the age group of 40-59 years (OR=1.86) and 18-39 years (OR=2.94) used more hookah than the age group of 60 years and over, that is contrary with this research [12].

Hookah smoking has roots in the culture of the region's people and is used as a means of serving guests at parties, because cultural exchanges take place with Arabic countries of Persian Gulf in this region, and hookah smoking in these countries is more common than in other regions [3, 4]. In addition, relative cheapness and easy access to the hookah, ignorance of hookah hazards, lack of recreation, and unemployment are the factors that affect the high prevalence of hookah in the region.¹⁵ Regarding the affecting variables of this study, the hookah consumption can be somewhat reduced through identification of factors influencing women hookah smoking, informing them of the hazards of hookah, implementing programs similar to cigarette smoking

elimination, and designing appropriate programs for the elderly and illiterate. Fishermen are more affected due to high cultural exchanges with the countries of the Persian Gulf area. Also, the prevalence of hookah smoking in housewives is due to the lack of recreational activities and the use of hookah in meeting with friends and neighbors as a means of serving guests. By getting help from the healthcare workers and increasing people's awareness – especially in women – and providing beneficial and productive means of entertainment, hookah smoking can be somewhat reduced in the region.

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Conflict of Interest

The authors declare no conflict of interest.

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