

## RESEARCH ARTICLE

# Influence of Training about Carcinogenic Effects of Hookah Smoking on the Awareness, Attitude, and Performance of Women

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### Abstract

**Background:** Wrong attitudes and beliefs about the less carcinogenic effects of hookah smoking comparing to cigarette, easy availability, low cost, and other factors have caused that the usage of hookah smoking increase a lot in our country. Objective: This study has been done with the purpose of examining the influence of education about carcinogenic effects of hookah smoking on the awareness, attitude, and performance of women who refer to the healthcare and medical treatment centers. **Materials and Methods:** At this semi experimental study, 60 women who refer to the medical and hygienic centers of Bushehr were placed in 3 educational groups based on simple accidental sampling. The tool for data collection was a questionnaire including demographic features, awareness, attitude, and performance measurement. **Results:** according to the results, the amount of awareness in the majority (48%) of participants about carcinogenic effects of hookah smoking was in an average level. 100% of the participants had the awareness of over 33.1% and their attitude toward hookah smoking was 100% positive that after the intervention it was reported 5%. The participants' performance in hookah smoking before the intervention was only 25% desirable that after the intervention it was reported 73.3%. The results of Kolmogorov–Smirnov test also showed that the distribution of awareness, attitude, and performance was quite normal. **Conclusion:** according to the results, it's the society's basic need to warn people about carcinogenic effects of hookah smoking by increasing people's awareness through media, holding training courses, showing movies, and training booklets.

**Keywords:** Hookah- education- awareness- attitude- performance

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### Introduction

Nowadays tobacco smoking is one of the world health challenges and one of the death causing factors existing both in developed and developing countries. Long term addiction to tobacco is the main reason for soon deaths and incapability. The share of tobacco smoking in Iran is 23.4% for men and 19% for women (Meysamie et al., 2010). Smoking dependency is a well-known factor that is influential on people's health and life quality (Mancheri et al., 2013). Tobacco smoking in pregnant women has negative influence on the fetus. Some women are well aware of these dangers and most of them try to abandon smoking during the pregnancy period. In any way of tobacco smoking a lot of nicotine enters the person's blood (Martinasek., 2011). One of the most common ways of smoking in our country is smoking cigarette and hookah smoking. Hookah smoking users and the people around them are exposed to its imposing smoke, so just like hookah smokers people around them will injure from

different kinds of cancers, cardio-vascular and breathing diseases and its negative consequences during the pregnancy period (Dehdari et al., 2012; Al-Haqwi et al., 2010; Shahbazi and Heidari, 2014). Studies have shown that different factors like wrong attitudes and beliefs about less carcinogenic effects of hookah smoking comparing to cigarette, its easy availability, low cost and other factors are influential in the rise of hookah smoking (Heidari and Ghodusi, 2015). The best way to control the tobacco usage is prevention that can be done in 3 levels. Increasing the knowledge, changing the attitude, correcting the wrong beliefs and teaching special techniques are necessary and useful actions for prevention and treatment (Rahman et al., 2013). At the same time the necessary condition for any planning is the awareness of the current condition and knowing the influential factors on the mal action of smoking. It's clear that human behavior is a reflection of different element and teaching hygiene as the central hygienic activity and plan in order to be effective needs the understanding of behavior and the elements influencing it,

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to change or modify the existing behaviors and substituting them (Kusma et al., 2010; Zianezhad et al., 2014). Although once hookah smoking was a tradition among old people, nowadays this terrible tradition is being increased among young people specially young women at homes, recreation places, tea homes (Momenabadi et al., 2016), and as smoking has been increasing in our country and specially Bushehr city which is on the coast of Persian Gulf, the present study has been done with the purpose of examining the influence of education about carcinogenic effects of hookah smoking on the awareness, attitude, and performance of women who refer to the healthcare and medical treatment centers associated to the Bushehr University of Medical Sciences.

## Materials and Methods

### Setting

The present study is a simplified interfering, semi-experimental and accidental kind in which we have examined the influence of education about carcinogenic effects of hookah smoking on the awareness, attitude, and performance of women who refer to the healthcare and medical treatment centers dependent on the Bushehr University of Medical Sciences in November 2015 to October 2016. The study society was all the women who refer to the specified medical centers and has had hookah smoking experience continually or for fun.

### Study design

The sample size regarding the confidence amount was 95% and the mistakes at most was regarded 60 members. At this study simple accidental sampling method was used and we used the samples at hand up to the regarded amount and then we chose the samples according to sample criterion and sampling framework. Before starting the work, the purposes of the study were explained for all participants and they were assured about the confidentiality of answers and we got their satisfaction letter. The researcher filled the questionnaire by referring to the research environment before the test. Then the researcher went to the medical centers 3 days a week each time about 30 to 45 minutes and for 8 weeks and started instructing 3 groups each of which was 20 members, using training booklets, film, slides, discussion, and question and answering. It should be noted that research units were given a telephone number in the case they had any questions. 2 months after the intervention the researcher went again to the medical centers for the second evaluation and the questionnaires were filled with the cooperation of research units. The members were qualified to take part in the study based on these factors: having active case in Haft-e-Tir and Kheibar medical centers of Bushehr University of Medical Sciences, hookah smoking continually or for fun, willing to take part in the research, not having any hearing, talking, or psychological problems, not taking part in related training classes, not using the anti-depression and tension drugs, and not having recognition problems and medical education. The instruments of data collection included 4 sections: the first part including demographic information

such as individual information like age, income, and using the tobacco productions by family members and others. In second place was the questionnaire of awareness in which the researcher made the questionnaire based on the study framework. The questions were related to hookah smoking and its carcinogenic effects, inflectional diseases related to that, how to prevent its smoking and other questions that were based on 5 item scale of Likert: "I agree", "I agree completely", "I don't have any idea", "I disagree", and "I disagree completely" including 24 questions. At this research awareness means the collection of gained scores in research units for answering to the questions that were analyzed in two stages before and after the training and in three levels of poor (score under 16.4), average (score 16.4 to 33.1), and good (score above 33.1), based on the Likert 3 degree scale and the "Yes", "No", "I don't know" question. At the third part, the questionnaire is related to examining the attitude and the researcher made questionnaire was used with 15 questions in the form "I agree", "I agree completely", "I don't have any idea", "I disagree", and "I disagree completely". The sum of the gained scores were divided into two attitudes of negative (score under 95) and positive (above 45) based on the research units' attitudes. Then they were analyzed by the Likert 5 degree scale with the questions "I agree", "I agree completely", "I don't have any idea", "I disagree", and "I disagree completely". At last, in the fourth part, the researcher made questionnaire related to performance analysis with 8 questions was used. Its range was non-desirable performance (score under 4) and desirable performance (above 4) based on 2 degree Likert scale of yes/no question. In order to attain scientific confidence about the questionnaire the retest method was used. At this method the questionnaire form was delivered to 10 members who were qualified to enter the research society and in two levels with interval of 10 days will be filled by research units and the amount of consistency between two levels will be specified. Reliability of this questionnaire was obtained through Cronbach's alpha was equal to .79. It should be noted that at the end of study these 10 samples were deleted. The analysis of the data was done using the version 16 of SPSS software (SPSS Inc. Released 2009. PASW Statistics for Windows, Version 16.0. Chicago: SPSS Inc.). In order to arrange tables, descriptive statistical methods were used for analyzing the data.

## Results

Most of the participants (55%) were in the age group 20-29 at this research. 45% had under diploma education and only 5% had B.A and above that. 78.3% of participants started the first with their friend and 6.7% with their parents. Other personal features of them are presented in Table1.

According to the results of specifying the amount of awareness of participants about hookah smoking and after interfering in women, the amount of awareness in most of them (42%) about carcinogenic effects of hookah smoking was in an average level. Participants' awareness frequency about the carcinogenic effects of hookah smoking after the intervention indicates that 100% of participants are

Table 1. Sample Characteristics (n=60)

Variable	Frequency N (%)	Variable	Frequency N (%)
Age (years)		Income sufficiency	
20-29	33 (55)	Yes	25 (41.7)
30-39	19 (31.7)	No	35 (58.3)
40 ≤	8 (13.3)	Hookah smoking in recent months	
Age of first use (years)		Yes	60 (100)
20 >	38 (63.3)	No	0 (0)
20-24	10 (16.7)	History of consumption	
25 ≤	12 (20)	1 >	11 (18.3)
Consumer incentives		1-5	20 (33.3)
Friends	34 (56.7)	5-10	18 (30)
Spouse	3 (0.5)	10 ≤	11 (18.3)
Myself	12 (0.20)	History of consumption the family and friends	
Family	11 (18.3)	Yes	56 (93.3)
Family relationship with the consumer hookah		No	4 (6.7)
Sister/Brother	7 (11.7)	First start taking	
Spouse	10 (16.7)	Friends	47 (78.3)
Friends	25 (41.7)	Parents	4 (6.7)
Parents	18 (30)	Spouse	4 (6.7)
Decision to withdrawal		Loneliness	5 (8.3)
Yes	50 (83.3)	Level of education	
No	10 (16.7)	Illiterate	3 (0.5)
Tobacco type		High school diploma	27 (45)
Local	30 (50)	Diploma	14 (23.3)
Fruity	13 (21.7)	Associate Degree	13 (21.7)
Combination of both	17 (28.3)	Bachelor's Degree or higher	3 (0.5)

over 33.1 amount of awareness. Besides, the average awareness before the intervention was 24.72 that was 45.98 after the intervention.

Table 2. Awareness, Attitude and Performance of the Research Units before and after the Intervention

Indicator	Group	Before intervention N (%)	After intervention N (%)
Awareness	Low (16.4>)	6 (10)	0 (0)
	Moderate (16.4-33.1)	42 (70)	0 (0)
	High (33.1<)	12 (20)	100 (60)
	Mean ± SD	24.72 ± 8.41	45.98 ± 2.1
Attitude	Positive (45<)	60 (100)	3 (5)
	Negative (45>)	0 (0)	57 (95)
	Mean ± SD	65.5 ± 4.55	61.15 ± 8.18
Performance	Favorable	15 (25)	44 (73.3)
	Unfavorable	45 (75)	16 (26.7)
	Mean ± SD	2.72 ± 2.03	5.13 ± 1.79

Table 3. Comparisons between of the Research Units of Awareness, Attitude and Performance before and after the Intervention

Indicator	Statistics	N	Mean ± SD	Mean difference	P-value
Awareness	Before intervention	60	24.72 ± 8.41	23.21	0.001
	After intervention	60	45.98 ± 2.1		
Attitude	Before intervention	60	65.5 ± 4.55	28.25	0.001
	After intervention	60	31.15 ± 8.18		
Performance	Before intervention	60	2.72 ± 2.02	3	0.001
	After intervention	60	5.13 ± 1.79		

According to the Table 2 participants' attitude toward hookah smoking was 100% positive, that after the intervention 5% was positive and 95% negative. The participants' average attitude before the intervention was 65.5 that was changed to 31.15 after the intervention that shows the influence of training on participants' attitude toward hookah smoking.

Based on examining the condition of participant's performance about hookah smoking before and after intervention in women, the results showed that participant's performance in hookah smoking before the intervention was only 25% desirable that was reported 73.3% after the intervention. Also, the average of participant's performance was 2.72 before the intervention that was changed to 5.13 after the intervention (Table 2).

The results of Kolmogorov-Smirnov test showed that the distribution of awareness, attitude and performance score was normal. Besides, the comparison among the participants in attitude, awareness, and performance before and after the intervention proved that there is a significant difference before and after the intervention ( $t=23.21$ ,  $p<0.001$ ), that means the training of carcinogenic effects of hookah smoking was effective on the participants attitude toward carcinogenic effects of hookah smoking before and after the intervention ( $t=28.98$ ,  $p<0.001$ ) that means training about carcinogenic effects of hookah smoking was effective on the participants' attitude. Between the averages of participants performance about carcinogenic effects of hookah smoking before and after the intervention there was a significant difference ( $t=8.16$ ,  $p<0.001$ ) that means the training about carcinogenic effects of hookah smoking was effective on the participants performance (Table 3).

## Discussion

The amount of participants awareness about carcinogenic effects of hookah smoking was 10% little awareness, 42% average awareness, and 20% high awareness. Also, the participants average amount of awareness before the intervention was 24.72% and with deviation of 8.41. The results of Haroon et al., (2014) studies showed that participants' awareness was in an

average level that is 48%. The results of Cauchi and Mamo (2012) studies showed that most of the research units had average awareness that is compatible with the current study. Sarna et al., (2006) study proves this result. Al-Haqoi et al., (2010) and Van Devanter et al., (2016) results of studies is compatible with the research results. The frequency of participant's awareness about carcinogenic effects of hookah smoking before and after the intervention shows that 100% of participants had a high level of awareness. The results of Jradi and Al-Shehri (2014) showed that (60%) of research units had an average amount of awareness about carcinogenic effects of hookah smoking that is compatible with the current study. Comparing the condition of participants' awareness before and after the intervention shows that the difference between the average of before and after the intervention was (23.21) and the statistical t-test shows a significant difference before and after the intervention ( $p < 0.001$ ). The results of the study showed that before the intervention the participants' attitude toward hookah smoking was 100% positive that was 5% positive and 95% negative after the intervention. The average amount of participants' attitude before and after the intervention was 65.50 with deviation 4.55 that was changed to 31.15 and the deviation 8.18 after the intervention that indicates the negative attitude of participants toward hookah smoking. The results of Cauchi and Mamo (2012) also showed that positive attitude toward cigarette has a significant relationship with continuing its smoking and the negative attitude is in contrary with smoking cigarette. The results of Haroon et al., (2014) also showed that the positive attitude toward hookah smoking that is less dangerous than smoking cigarette is a factor not to abandon the hookah smoking that is compatible with the current study. The results of Tao et al., (2014) showed that there is a significant relationship between positive attitudes toward smoking cigarette and becoming a cigarette smoker and the negative attitude decreases the possibility of becoming cigarette smoker. The results of the current study are compatible with the results of Awojobi and Croucher (2012) studies. In examining the performance of participants it was concluded that the average of participants' performance was 2.72 before the intervention with deviation 2.03. The results of Haroon et al., (2014) studies showed that the participants of study had a desirable performance after the training period and is compatible with the current study. The comparison of participants' performance about hookah smoking before and after the intervention shows that the participants' performance hookah smoking was 25% desirable and 45% undesirable that was changed to 73.3% desirable and 26.7% undesirable after the intervention; besides, the participants' average performance before the intervention was 2.72 and the deviation 2.03 that was changed into 5.13 and the deviation 1.79 after the intervention. The difference between the average performance of participants before and after the intervention was (3.00) and t-test shows a significant difference before and after the intervention. ( $p = 0.001$ ), that is compatible with Barati et al. (2012) study about the abuse of ecstasy accompanied by training. Also it is compatible with the results of Warner

and Burkley (2006) Research and the usage of training. It should be noted that some factors such as mental and physical condition may be influential in answering. In order to prevent this influence, it has been tried to do the interview after the readiness declaration of participants.

In conclusion, it is necessary that those who are responsible of health matters in our country try to teach people by public media (radio, TV, newspapers, etc.), training films, and distributing training pamphlets; and it is a necessity to be aware of the current situation and recognizing the effective factors on smoking tobacco. As smoking tobacco is increasing specially among young women and girls and big tobacco companies are looking for a substitution for men users who had died soon, the country managers and organizers should take some serious actions in order to increase people awareness specially women.

#### Contributions

SM, MH study concept and design; MH, statistical analysis; SM, MH, SS drafting of the manuscript; SM, MH, LN, SS critical revision of the manuscript for important intellectual content; SM, MH, LN study supervision; MH, final approval.

#### Conflict of interest

All authors have no conflict of interest.

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