

Knowledge and Attitude of Saudi Population Regarding Shisha Smoking among Saudi Females in Makkah

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Abstract: Increased smoking is a worldwide problem that not only includes cigarette smoking but other types such as shisha smoking, which is especially common in Arab countries. In the Kingdom of Saudi Arabia about 30,000 people die every year because of smoking associated diseases. Few articles have been published about cigarette smoking among females but there is no research on shisha smoking among Saudi females. Aim of the study: To describe the Saudi Population attitudes toward shisha smoking among females and to describe their socio-demographic characteristics which affect their attitude. To measure the knowledge regarding shisha smoking and the hazards related to, and to test the relationships between knowledge and attitude of Saudi population toward shisha smoking among females. Methods: Convenient sample of ±100 males and females enrolled in the study, a scale used by other researcher was used to assess the knowledge and attitude of Saudi population regarding females' shisha smoking. Results: 85% of the participants have a correct knowledge about the health hazards of smoking and about 50% of them have a negative attitude regarding females' shisha smoking.

Keywords: Knowledge, Attitude, Saudi Population, Shisha, Smoking, Saudi Females, Makkah.

1. INTRODUCTION

Increased smoking is a worldwide problem that not only includes cigarette smoking but other types such as shisha smoking, which is especially common in Arab countries. Annually the tobacco use kills more than 6 Million people globally.¹⁻⁷ One person dies every 6 seconds as a result of smoking. By 2030 according to WHO the number will rise up to more than 10 million if the current trend continues. In the Kingdom of Saudi Arabia about 30,000 people die every year because of smoking associated diseases.^{8,10,11,12}

Shisha smoking is gaining popularity particularly in the Gulf region. In Saudi Arabia the trend of shisha smoking increased and became the most popular indoor social activity among females that was practiced in cafes and restaurants.

A study conducted by Naeem (2011) revealed that the prevalence of shisha smoking in school students in the Kingdom ranged between 12 to 30% which generally rose up to 37% in university students.¹⁰

Another study which involved three regions of Saudi Arabia showed that smoking prevalence was higher among the married population than among those in other marital-status and was significantly associated with level of education. The prevalence was higher among those who had lower and technical education. They reported that education was an important predictor of smoking, with a 20% increase in the odds for individuals in the lower educational category of the population.⁵

The reasons accredited to this trend are certain misconceptions that shisha smoking is not hazardous to health, since the tobacco is filtered through water before inhalation; nicotine content is less than that of cigarettes so it's less addictive and addition of fruit flavors makes it healthier. Another factor adding to its popularity is its social acceptability as compared to cigarette smoking by females and its portrayal is a symbol of modernization of the Saudi cultural heritage.^{6,7,8,10,11,12,15,16}

However, this practice has been decreased after the Royal order of prohibiting the smoking on 2012 including shisha smoking in the public areas which aimed to reduce the smoking rate up to 60%.^{9, 10, 8, 13, 14}

A study was approved in 1986 in Saudi Arabia showing upward trend of lung cancer which is the most health hazard of shisha smoking according to King Faisal Specialist Hospital and Research Centre in Riyadh, Saudi Arabia. The Kingdom spent a 10 billion during the last 25 years to treat smokers.¹ A recent systematic review found shisha smoking possibly associated with high percentage of lung cancer, esophageal cancer, low birth weight, and periodontal diseases.^{2, 3}

Egyptian researchers found that friendship, low educational level and fashion playing a big role in encouraging females to initiate shisha smoking. Seventy-four percent of the shisha smokers preferred this method of smoking as compared to cigarettes smoking because they believed it less harmful. More than half of the subjects (56.6%) were encouraged to start smoking by other females. Curiosity was a significant factor for initiation,⁴ in addition to social and academic stress, peer pressure and intimacy of the opposite sex generated by shisha sharing.⁷

Few articles have been published about cigarette smoking among females but there is very little information on shisha smoking among Saudi females. Identifying knowledge and attitude of Saudi population regarding shisha smoking among Saudi females may help focus prevention efforts.¹¹

RESEARCH PROBLEM AND PURPOSE

Based on the information on incidence and prevalence of smoking practices and their health related effects this study was conceptualized to assess the knowledge and attitude of Saudi society regarding females' shisha smoking in Saudi Arabia. Therefore, the socio-demographic data was collected because it will influence their attitude regarding Saudi female shisha smoking. The results of this study will help us to control the bad habit and stop the trend among Saudi females by increasing their awareness regarding the health hazards associated with shisha smoking.

RESEARCH OBJECTIVES

The purpose of this study was to assess the knowledge and attitude of Saudi Population toward shisha smoking among Saudi females.

The objectives of this research were:

- To describe the socio-demographic characteristic of Saudi population which affect their attitude regarding shisha smoking among females.
- Describe the Saudi Population attitudes toward shisha smoking among females .
- Measure the knowledge regarding shisha smoking and the hazards related to.
- To test the relationships between knowledge and attitude of Saudi population toward shisha smoking among females.

2. MATERIALS AND METHODS

Design:

Descriptive design

Setting:

This study was conducted in Makkah mall and Al-Deafah Mall in Makkah.

Population and sampling

Convenient sample of ± 100 males and females enrolled in the study with the following criteria; Saudi nationality, males and females, their age ranges between 15-55 years old and willing to participate in the study after receiving full information regarding the research.

Tools and measures

An anonymous self-administered questionnaire was used for data collection; it consists of three parts. The first part is a questionnaire used to collect the socio-demographic data which is developed by the researcher after literature review. It

consists of twelve questions about their characteristics, such as age, educational level, marital and occupational status. Also it collects data regarding their smoking pattern. The second part consists of instrument used to test the attitude. It consists of thirteen questions on a five Likert scale with ten positively and three negatively worded statements with response options of; strongly agree, agree, uncertain, disagree, and strongly disagree. Positive items are scored as one for (strongly agree) to five for (strongly disagree). With regard to the scores of the negative items in the questionnaire, they will be reversed. In other words, the grading was one for strongly disagree and five for strongly agree. For the simplicity of the results strongly agree and agree grouped together and coded as agree, also disagree, and strongly disagree grouped together and coded as disagree. This scale was used by Amin T.T et al., (2010)⁸, and Jawaid et al.,(2008)⁷. The reliability coefficient was 0.71. The third part of the questionnaire comprised of nineteen questions related to the attitude of Saudi population regarding Saudi female shisha smoking. This part used by AminT.T et al., (2010), and Jawaid et al., (2008) with a reliability coefficient (Cronbach’s α) of 0.85 was obtained. It was used with a nominal scale of yes, no and I don't know, correct answers received a score of one and incorrect and I don't know answers received zero^{7&8}.

To ensure that the survey questions were culturally and linguistically appropriate, Arabic and English committee members assessed the translation before commencing data collection.

Questionnaire administration:

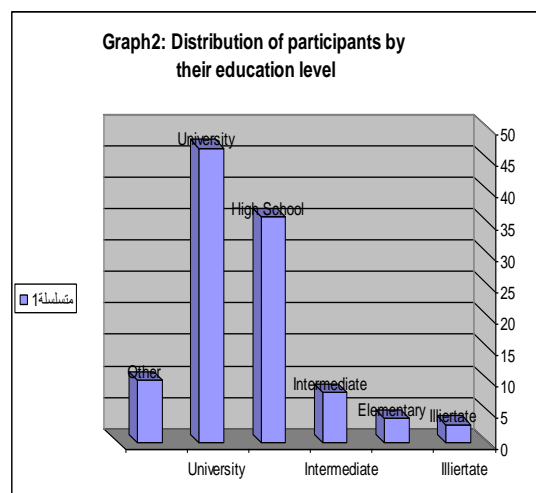
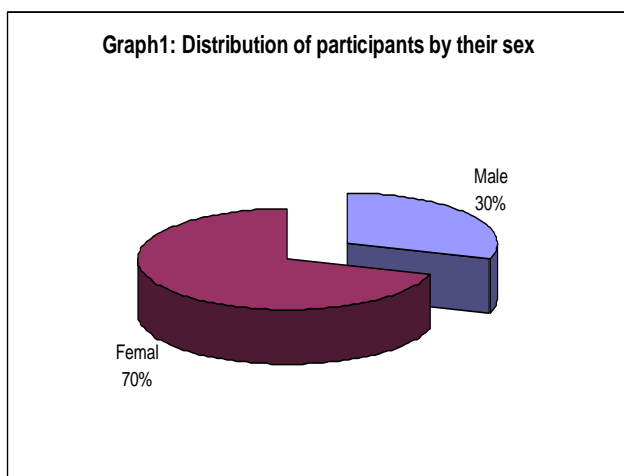
An interview was carried out for the purpose of orientation of each participant regarding the objectives, content and confidentiality of data. Each participant in the study signed their consent then completed the questionnaire. It took about 10-15 minutes to complete one questionnaire.

Data analysis

Statistical analysis: Data coded and analyzed using SPSS version 20. Descriptive statistical analysis used to determine frequency distribution, Mean and SD of socio-demographic data, knowledge and attitude of Saudi population toward shisha smoking among females. ANOVA and t and f-test were used to assess differences in Saudi population attitude toward shisha smoking among females and to test the relationships between knowledge and attitude of Saudi population attitude toward shisha smoking among females.

3. FINDINGS

Graph 1 shows the distribution of participants by their sex. The total population included was 108 of which 29.6% were males and 69.4% were females, their ages ranged from 16 to 50 with a mean of 29.72, with different educational level the highest percentage was university 43.5% as indicated in graph 2. Graph 3 shows that 60.2% of the participants were none employed and 57% were married as shown in graph 4.



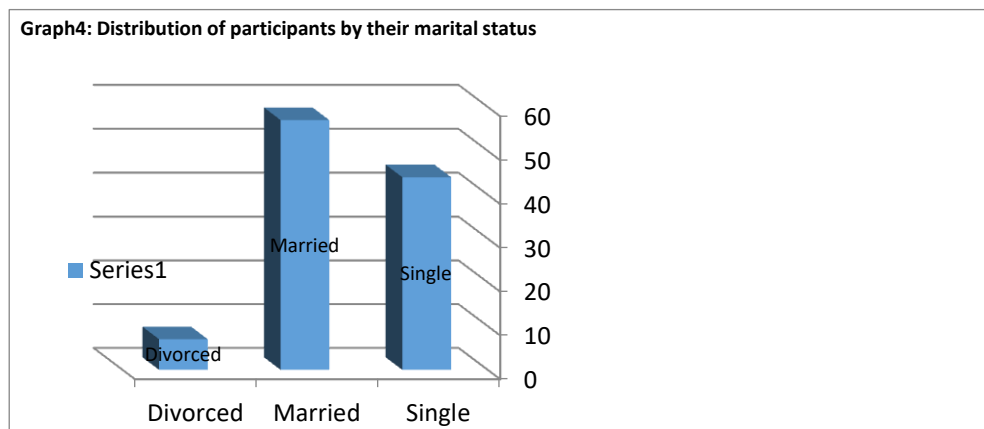
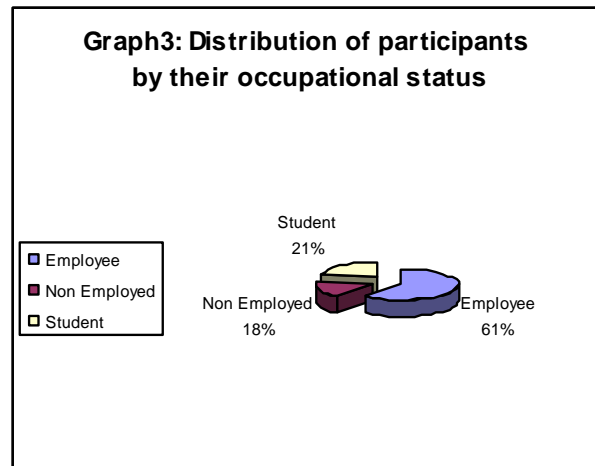


Table 1 shows the smoking pattern among the participants. It shows that:

Among current smokers both gender were 34 (31.5%) were smokers, whereas 9 (8.3%) were cigarettes smoker, 13 (12%) were shisha smoker, while 12 (11.1%) smoked both. Only 11(10.2%) of the participants reported that they consume shisha weekly.

When different factors associated with shisha smoking initiation were explored it appeared that leisure was the most common reason 10 (9.3%). Regarding person behind the initiation of cigarette smoking 6.5% claimed friends and 4.6% indicated stress, routine change and stress the common behind forces for initiation on shisha smoking.

Table I: The smoking pattern among the participants

ITEM	Number (%)
Smoking	
Yes	34 (31.5%)
No	74 (68.5%)
Type of smoking:	
cigarettes smokers	9 (8.3%)
shisha smoker	13 (12%)
Smoked both.	12 (11.1%)
Shisha average consuming	
6.5% Daily	
10.2% Weekly	
3.7% Monthly	

Factors associated with initiation of shisha smoking	
Leisure	
Friends	10 (9.3%)
Feminist group	2 (1.9%)
Curiosity	1 (.9%)
Stress	2 (1.9%)
	4 (3.4%)
person behind the initiation of cigarette smoking	
Friends	7 (6.5%)
stress	5 (4.6%)

Table II shows the Mean and Standard deviation of smoking pattern among participants. The most common age of initiation of shisha smoking was 22 years while the age of cigarette smoking initiation was 19 years. Thirty cigarette per day was the highest number of consumption, but 20 cigarettes was the most common number among the smokers.

Table II: Mean and Standard deviation of smoking pattern

Item	Mean	SD
Age of initiation cigarettes smoke shisha smoke	19.41	5.704
Age of initiation shisha smoke	22.76	5.558
No. of consuming cigarette per day	15.95	7.304

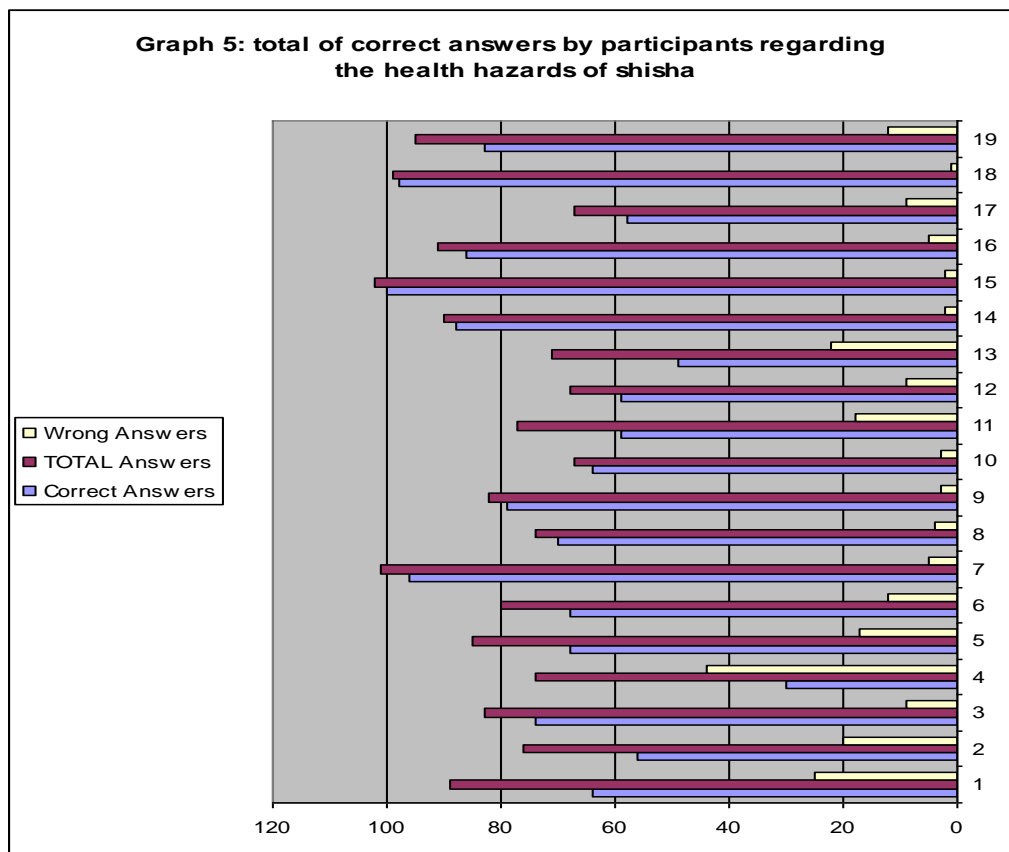
Table III displays responses of attitude items towards shisha smoking among Saudi females. Seventy-one (65.7%) disagreed with the social acceptance of female shisha smoking and only 29(26.8%) were agreed, 18.6% of the total participants believed that females shisha smoking provide a good opportunity to meet friends and family members while 75% disagreed. When we asked about whether their parents would object female shisha smoking compared to cigarettes, 77.8% disagreed, 87.9% were disagreed with the statement of shisha smoking is a sign of maturity, 21.3% agreed that shisha smoking relive tension and stress, 36.1% agreed that female who smoked shisha has more friends while 51.8% disagreed, 59.3% agreed that women movie stars who smoke shisha are less offensive than those smoking cigarettes, 61.1% don't believed that shisha smoking is a good stress-coping strategy among women, 42.6% agreed that shisha smoking by females more acceptable than cigarettes. And 79.7% of participants rejected both female shisha and cigarettes smoking.

Table III: Attitude of Saudi population regarding female shisha smoking

Statement	Agree N (%)	Uncertain N (%)	Disagree N (%)
Shisha smoking by females is acceptable by the society compared to cigarettes	29(26.8)	8 (7.4)	71 (65.7)
Females Shisha smoking represents a good opportunity to meet friends and family.	20 (18.6)	7 (6.5)	81 (75)
My parents would not object female smoking of Shisha compared to female cigarettes smoking	11 (18.6)	13 (12)	84 (77.8)
My parents would allow female to smoke Shisha at home but not cigarette	14 (13)	6 (5.6)	88 (81.4)
Shisha smoking is a sign of maturity	6 (5.5)	7 (6.5)	95 (87.9)
Smoking of Shisha relieves stress and tension	23 (21.3)	19 (17.6)	66 (61.1)
Women smoking Shisha have more friends than non-smokers	39 (36.1)	13 (12)	56 (51.8)

Women smoking Shisha are not odds as those smoking cigarettes	38 (35.2)	23 (21.3)	47 (43.5)
Women Movie stars smoking Shisha are less offensive than those smoking cigarettes	26 (24)	18 (16.7)	64 (59.3)
Shisha smoking is a good stress-coping strategy among Women	22 (20.4)	20 (18.5)	66 (61.1)
Shisha smoking is more acceptable than cigarettes for Women	46 (42.6)	6 (5.6)	56 (51.9)
Females should not smoke cigarettes but may smoke shish	15 (13.9)	6 (5.6)	87 (80.6)
Females should smoke neither cigarettes nor shisha	86 (79.7)	4 (3.7)	18 (16.6)

As regards the Saudi population knowledge about the health hazards of shisha smoking our results indicated a high awareness of health hazards of shisha smoking even among smokers; in general, the majority 85.12% answered the questions regarding the health hazard correctly. They believed that shisha causing cancer 97.8% as well as the respiratory problems 98%. Only 71.9% answered correctly on the statement that shisha lees dangerous than cigarette and only 40.5% believed that quitting shisha easier than cigarette, graph 5 shows the result.



Regarding the socio-demographic characteristics of Saudi population which affect their attitude regarding shisha smoking among females, table 4 shows that; there were a positive relationship between gender and attitude with a significant correlation t-test 2.355, with a significance of .020,also the smoking status with correlation of t-test -2.739and significance of .007, results showed that the differences in education level have an effect on the attitude with mean of 50.15 for the participants has the bachelor degree which is the highest and 36.5 for the elementary which is the lowest the t-test was 2.244 and significance of .055,the occupational status also has a relation with the attitude, employee has Mean of 49.56 and t-test of 2.665 with significance of .05, regarding the smoking type cigarette smokers have the highest with mean of 52.55 and t-test of 6.671and .004 significance, finally regarding the reason of initiation routine change had mean of 59.8 and t-test of 9.455 with significance of 0.

Table IV: socio-demographic characteristics of Saudi population and its effect on their attitude regarding shisha smoking among females

ITEM	MEAN	SD	t-test	Sig
General negative attitude toward female shisha smoking	47.68	9.98		
Sex and Attitude				
Male	49.34	9.18	2.355	.020*
Female	46.98	10.34		
SMOKING				
Smokers	43.84	12.82	-2.739	.007
Non-Smokers	49.46	8.06		
Education				
Illiterate	43.33	4.72	2.244	.055
Elementary	36.500	14.10		
Intermediate	42.62	16.78		
High school	47.44	9.46		
University	50.15	7.95		
other	46.80	10.29		
Employment				
Employee	49.56	10.36	f-test 2.665	.052
Non-Employed	42.52	9.35		
Student	46.65	8.13		
Smoking habits				
Cigarette Smoking	52.55	9.488	f-test 6.671	.004
Shisha smoking	35.84	9.906		
Smoking Both	46.33	12.765		
Reasons for Smoking				
Friends	31.75	10.71	f-test 9.455	.000
Leisure	57.00			
Routine	59.800	1.64		
No reason	36.80	3.70		
Pleasure	37.00			
Family	47.33	6.02		
Feminist group	26.00	4.00		
Curiosity	51.50	6.36		
stress	41.80	9.31		

Table V displays the relation between knowledge and attitude of Saudi population toward shisha smoking among females. Results indicated that 85.13 of the participants have a correct knowledge about the health hazards of shisha smoking. Also, there is a positive correlation between knowledge and attitude of Saudi population toward shisha smoking among females. The knowledge about the health hazards of shisha smoking among smokers have a mean of 53.11 and f-test of 4.990 and significance of .013.

Table V: The relationship between knowledge and attitude of Saudi population toward shisha smoking among females

ITEM	MEAN	SD	t-test/ f-test	Sig
Total Correct Knowledge	85.13	9.199		
The relationship between Knowledge and attitude among smokers				
Cigarette smokers			f-test 4.990	.013*
Shisha smokers	53.11	5.44		
both	45.07	6.39		
	51.08	6.69		

* P< 0.05 significant

4. DISCUSSION

There are few studies on knowledge and attitude regarding shisha smoking among Saudi population. In this study we aimed to assess the Saudi population knowledge and attitude regarding Saudi female shisha smoking. The World Health Organization (WHO) pronounced North Africa, east Mediterranean region of south-east Asia to have the highest rate shisha smoking (Jawaid, A. et al., 2008)⁷. Recent study was found a positive association between smoking status and age which support the first statement, in this study the shisha smokers were more likely to be cigarette smoking (62.6%). This finding is supported by (Amin T. et al., 2010)⁸, who found that among their participants who smoked both cigarettes and shisha, they initiated the shisha after the use of cigarette. Also the mean age of initiation of cigarette and the age of shisha was higher than those obtained from similar study conducted in Al-Hassa Saudi Arabia the mean age for cigarette smoking was 13 years and for shisha smoking was 15 years (Amin T. et al., 2010)⁸.

Shisha smoking is commonly practiced in groups, which is the most common factor behind the spread of this habit among females. The shisha is the center of social activity of conversation and passing time. the hose is usually used by all participants, shisha smoking has traditionally been a unique middle-east practice, associated with socializing, relaxing, the company of friends and the esthetics associated with the beauty of shisha themselves (Amin T. et al., 2010)^{8&13}.

The study showed that although female shisha smoking is widespread, it's not socially accepted. The majority of those who smoked reported the same. In other study conducted in Syria by Maziak W, et al 2004 they found that among Syrians population females' shish smoking is more socially accepted than females' cigarette smoking.

Many factors reported by the participants regarding their initiation of shisha smoking such as; leisure, effect of feminist groups, stressful lifestyle and peer pressure which was the most common factor. A participants in another study reported the same, a stressful life style and lack of entertainment are primary responsible for the recent surge of shisha smoking in Pakistan (Jawaid, A. et al., 2008)⁷.

Participant in this study were highly knowledgeable about the health hazards of shisha smoking. The majority reported that shisha smoking less harmful and less addictive than cigarettes smoking. Consisted with previous report (WHO, 2005; Anjam et al., 2008; Jawid et al., 2008)^{7&8} most shisha smoker believed that shisha less harmful than smoking cigarette, due to the natural flavors that been used with the shisha. In Gregov, M. et al , 2010 shisha smokers were also more likely to agree with the statement "shisha smoking is less harmful than smoking cigarette", but the majority of participants in this study didn't believe that shisha smoking less harmful¹⁶.

The study found a high level on understanding about the risks associated with smoking in Saudi Arabia, moreover despite that in many Saudi studies have shown a highest level on knowledge didn't affect smoking behavior (Amin, T.T., 2010). The socio-demographic characteristics were really affected the participants' attitude like the educational level and smoking status. Regarding the relation between knowledge and the attitude there was positive correlation between knowledge and attitude of Saudi population toward shisha smoking among females.

5. CONCLUSIONS

In conclusion the researchers found that the majority of the Saudi population in Makkah don't accept Shisha smoking by Saudi females and they aware about the health hazards and disease that caused by smoking shisha, their knowledge and attitude didn't affect their smoking status.

6. RECOMMENDATIONS

Based on the findings of this study it is recommended to enroll the health care providers in more investigation of the underlying causes of cigarettes and shish smoking and work with them. Use the fact that the population has a good knowledge and a negative attitude regarding smoking to change their habits. Strict legislation application of preventing provision of shisha products to minors. The premarital classes also can help to increase the awareness and to prevent the use in the future. Another study to measure the Saudi population attitudes toward shisha smoking among males is recommended to identify if this negative attitude for shisha in general or directed toward females' shisha smoking.

LIMITATIONS OF THE STUDY

This study was limited in accessing large number of Makkah Saudi citizen.

ETHICAL CONSIDERATIONS

Informed consent obtained from the participants and from the research committee of CON-J. The research proposal presented to the College of Nursing - Jeddah research committee for approval. The study conducted after receiving official approval. Identifying codes assigned to each participant to ensure that the data cannot be linked to individual participants. All raw and analyzed data kept in a locked file. Identifying information destroyed. Identifying information will not be used in any report. No one will have access to the data except the investigator.

The participants informed that their participation is voluntary.

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REFERENCES

- [1] El-Akkad,S.M. , Amer,M.H. , Lin,G.S , Sabbah,R.S., Godwin,J.T., (1986).**PATTERN OF CANCER IN SAUDI ARABS REFERRED TO KING FAISAL SPECIALIST HOSPITAL.**Cancer 58:1172-1178.
- [2] Akl,E.A. , Gaddam,S. , Gunukula,S.K. , Et,A.L. , (2010).**THE EFFECTS OF WATERPIPE TOBACCO SMOKING ON HEALTH OUTCOMES: A SYSTEMATIC REVIEW.**Int J Epidemiol 393; 834-857.
- [3] Raad,D. , Gaddam,S. , Schunemann,H.J. ,Irani, J. , Abou jaoude,P. , Honeine,R. , Akl,E.A. , (2011).**EFFECTS OF WATER-PIPE SMOKING ON LUNG FUNCTION.** Chest;139(4):764-774 doi:10.1378/Chest 10-0991.
- [4] labib,N. , Radwan,G. , Mikhail,N. , Mohamed,M.K. , El steouhy,M. , Loffredo, C. , Israel,E. , (2007) .**COMPARSION OF CIGARETTE AND SHISHA SMOKING AMONG FEMALE UNIVERSITY STUDENTS IN EGYPT.**Nicotine Tob Res ; 9(5):doi:10.1080/ 1462200701 239696. 591-596.
- [5] Jarallah,J.S , Al-Rubeaan,K.A. , Al-Numary,A.A. , Al-Ruhaily,A.A. , Kalantan,K.A. , (1999).**PREVALENCE AND DETERMINANTS OF SMOKING IN THREE REGIONS OF SAUDI ARABIA.**Tobacco controll 8:53-56.
- [6] Anjum,Q. , Ahmed,F. , Ashfaq,T. , (2008).**KNOWLEDGE ATTITUDE AND PRECEPTION OF SHISHA SMOKING (SHISHA)AMONG ADOLESCENTS AGED 14-19 YEARS.** JPMA 58:312.
- [7] Jawaid,A. , Zaker, A.M. , Rehman,T. , Nazir,M.R. , Gafoor,Z.A. , Afzal, O. , Khan,J.A. (2008) .**KNOWLEDGE,ATTITUDE AND PRACTICE OF UNIVERSITY STUDENTS REGARDING WATERPIPE SMOKING IN PAKISTAN.** The International Journal Of Tuberculosis And Lung Disease 112(9):1077-1084.
- [8] Amin,T.T. , Amr,M.A. ,Zaza, B.O. , Suleman,W. ,(2010).**HARM PRECEPTION ,ATTITUDE AND PREDICTORS OF WATERPIPE (SHISHA) SMOKING AMONG SECONDRY SCHOOL ADOLESCENTS IN AL-HASSA,SAUDI ARABIA.**Asian pacific Journal Of Cancer Prevention,Vol 11,293-301.
- [9] Tahar,A.Z., Sabra, A.A., Al-Mustafa,Z.Z., Al-Awami,H.R, Al-Kalaf,M.A., (2010).**SHISHA (SHISHA) SMOKING AMONG MALE STUDENTS OF MEDICAL COLLEGE.** Ann Saudi Med 30(3):222-226 doi:10.403/0256-4947.62838.
- [10] Naeem,Z. , (2011).**EMERGING TREND OF SHISHA USE IN SAUDI ARABIA.** International Journal Of Health Sciences Vol. 5, No. 2.Qassim University. V-VI
- [11] Al-Naggar, R. A, Saghir,F.S. ,(2001).**SHISHA SMOKING AND ASSOCIATED FACTORS AMONG MALAYSIAN UNIVERSITY STUDENTS.** Asian Pacific Journal of Cancer Prevention, Vol 12, 3049-3041.

- [12] Sabahy, A., Divsalar, K., Nakhaee, N., (2011). **ATTITUDE OF UNIVERSITY STUDENTS TOWARD WATER PIPE SMOKING: A STUDY IN IRAN.** Addict & Health 3(1-2): 9-14.
- [13] **Al-Zaidy, FOREIGN MINISTER REGULATIONS WILL DECREASE THE NUMBER OF ADDICTS TO 30% AND SMOKERS TO 60%. vol 16107. (22 Agu 2012) .**
- [14] **Jeddah WAC.(30 Jul 2012). Alriyadh, Vol 16107. FOREIGN MINISTER STRESS THE ADHERENCE TO STOP AND NONE SMOKING POLICY**
- [15] Anjum, Q., Ahmed, F., Ashfaq, T., (2007) **.SHISHA SMOKING- AN IMMINENT HEALTH HAZARD. The Journal of the Pakistan Medical Association, Vol. 57, No. 9. 430-431**
- [16] Gregor, M., Baker, J., Hayes, L., (2011). **WATER PIPE SMOKING: BEHAVIOR, KNOWLEDGE AND ATTITUDES AMONG THE ARABIC SPEAKING COMMUNITY In Victoria, Australia.** Quit Victoria