Original Article

The Determinants of Shisha Smoking in Medical Students

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Abstract

The shisha is a water pipe used to pass charcoal heated air through a flavored tobacco mixture.[1]

Objectives: To determine the association between various psycho-social factors and shisha smoking among medical students aged 18 – 26 years living in Lahore during one year.

Design: Case – control study.

Place and Duration: King Edward Medical University. From Jan 2012 to Dec 2012.

Subjects and Methods: A case – control study with 1:1 case to control ratio was conducted. A total of 100 persons (50 cases and 50 controls) were recruited in the study. Selection was made on laid down criteria from the students of King Edward Medical University, Lahore after taking due consent.Interviews were conducted through a pretested questionnaire. Data was collected, compiled and analyzed through SPSS version 20.

Results: All subjects were students of age 18 – 25 years. A total of 100 persons (50 cases and 50 controls) were recruited in the study. Shisha smoking was more prevalent in age group 18 – 22 years (67%), all were unmarried (100%). In bivariate analysis, shisha smoking in males was found to be significantly associated with fashion/social influence (OR: 103.5, 95% CI: 26.103 – 410.379), economic stress (OR: 2.875, 95% CI: 0.837 – 9.881), parental smoking (OR: 3.22, 95% CI: 1.412 – 7.355), flavor preferences (OR: 18.857, 95% CI: 6.580 – 54.045), lack of parental guidance (OR: 3.273, 95% CI: 0.627 – 17.071), depression (OR: 3.692, 95% CI: 1.520 – 8.970), easy accessibility (OR: 24.00, 95% CI: 5.253 – 109.650), bad company (OR:

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3.431, 95% CI: 1.461 – 8.057) and cultural influences (OR: 9.333, 95% CI: 1.994 – 43.681), However in multivariate analysis while controlling all other risk factors, fashion / social influence (OR: 59.030, CI: 10.390 – 335.363), flavor preferences (OR: 4.386, CI: 0.866 – 22.214) lack of parental guidance (OR: 13.031, CI: 0.756 – 224.518) and easy accessibility (OR: 18.579, CI: 1.742 – 198.118) were found significantly associated with shisha smoking in males.

Conclusion: Shisha smoking in males was found significantly associated with fasion / social influence, flavor preferences, lack of parental guidance and easy accessibility.

Key words: Bad company, depression, fashion,flavor preference, psychosocial, sheesha, smoking.

Introduction

A shisha is a water pipe used to pass charcoal heated air through a flavored tobacco mixture.

A Shisha also known as a waterpipe, narghile, or Qalyān (Gujarati), (Persian: Qalyān), is a single or multi-stemmed instrument for smoking flavored tobacco called (also known as *Shisha*) in which the smoke is passed through a water basin (often glass based) before inhalation.[1]

Despite of the potentially harmful effects of shisha smoking on health, it has become a new epidemic and has reached an alarming prevalence especially among people of 18 – 24 years of age including urban youth, college students and young professionals. As it contains high levels of nicotine (highly addictive), numerous toxic agents like carcinogens, heavy metals and other particulate matter, so, it is significantly associated with increased risk of lung cancer, respiratory illness, low birth weight, periodontal disease and infections. Using a waterpipe to smoke tobacco poses a serious potential health Hazard to smokers and others exposed to the smoke emitted.[17]

Using a waterpipe to smoke tobacco is not a safe alternative to cigarette Smoking.[18] A typical 1 – hour long waterpipe smoking session involves inhaling 100 – 200 times the volume of smoke inhaled with a single cigarette.[19]

Even after it has been passed through water, the smoke produced by a Waterpipe contains high levels of toxic compounds, including carbon monoxide, heavy metals and cancer – causing chemicals.[20] Commonly used heat sources that are applied to burn the tobacco, such as wood cinders or charcoal, are likely to increase the health risks because when such fuels are combusted they produce their own toxicants, including high levels of carbon monoxide, metals and cancer-causing chemicals.[21] Pregnant women and the fetus are particularly vulnerable when exposed either actively or involuntarily to the waterpipe smoke toxicants.[22] Second – hand smoke from waterpipes is a mixture of tobacco smoke in addition to smoke from the fuel and therefore poses a serious risk for non-smokers.[23] There is no proof that any device or accessory can make waterpipe smoking safer.[24] Sharing a waterpipe mouthpiece poses a serious risk of transmission of communicable diseases, including tuberculosis and hepatitis.[25] Waterpipe tobacco is often sweetened and flavored, making it very appealing; the sweet smell and taste of the smoke may explain why some people, particularly young people who otherwise would not use tobacco, begin to use waterpipes.[26]

There was a little data available on existing situation of alarming prevalence of shisha smoking among Pakistani youth. So, there was dire need to conduct a research study to find out the extent of shisha smoking among Pakistani youth and psychological factors contributing to it so that preventive measures may be adopted to eradicate shisha smoking and people should be made aware of all of its harmful effects on health.

Subjects and Methods

A case – control study was conducted to identify various psycho-social factors associated with shisha smoking in males of King Edward Medical University from Jan 2012 to Dec 2012. Study population was divided in two group i.e control group and case group. The control group comprised of males from age of 18 years to 26 years old who did not smoke shisha and case group composed of males of age 18 to 26 years old who smoked shisha. Total number of persons were 100 (n = 100). Simple Random sampling technique was used. Written consent was obtained from all selected study subjects. Data was collected by interviews using pretested and close ended questionnaire, while keeping all ethical and social considerations in mind.

The variables were Fashion, family or Parental Smoking. Easy Accessibility. Misconception of low ill effects. Lack of parental, neglected by parents. Lack of Constructive / Healthy activities. Depression, anxiety and stress by ICD.[27] Socio-economic Status. Relatively Cheaper In Pakistan. Lack of proper Check and Control by the Government Authorities. Recreation. Lack

Of awareness about ill effects in Society / Media lack of social campaigns and awareness programs on media. Strong cultural and Social Influences, smoke because of traditions and customs. Bad Company / Peer Pressure.

Data entry and analysis was done by statistical software SPSS version 20. After describing the demographic characteristics using frequency tables, simple and multivariate logistic regression was used to calculate odds ratio and their 95% confidence intervals.

Results

All subjects were male students of age 18-25 years. A total of 100 persons (50 cases and 50 controls) were recruited in the study. Shisha smoking was more prevalent in age group 18 – 22 years (67%), all were unmarried (100%).

In bivariate analysis, the psychosocial factors which were found significantly associated with shisha smoking were fashion / social influence (OR: 103.5, 95% CI: 26.103 – 410.379), economic stress (OR: 2.875, 95% CI: 0.837 – 9.881), parental smoking (OR: 3.22, 95% CI: 1.412 – 7.355), flavor preferences (OR: 18.857, 95% CI: 6.580 – 54.045), lack of parental guidance (OR: 3.273, 95% CI: 0.627 – 17.071), depression (OR: 3.692, 95% CI: 1.520 – 8.970), easy acessibility (OR: 24.00, 95% CI: 5.253 – 109.650), bad company (OR: 3.431, 95% CI: 1.461 – 8.057) and cultural influences (OR: 9.333, 95% CI: 1.994 – 43.681). Whereas lack of healthy activities and lack of awareness about ill effects in society were not significantly associated with shisha smoking in males.

Multivariate logistic regression model was used to control for possible confounding effect. It was observed that there were some changes between the crude odds ratios and the adjusted odds ratios. It was observed that after controlling for all the factors studied the strongest statistically significant association was exhibited by fashion / social influence (OR: 59.030, CI: 10.390 – 335.363), easy accessibility (OR: 18.579, CI: 1.742 – 198.118), lack of parental guidance (OR: 13.031, CI: 0.756 – 224.518) and flavor preferences (OR: 4.386, CI: 0.866 – 22.214).

Discussion

The determinants and risks of waterpipe smoking were first identified by Nafae et al. in 1973.[2] Over the next three decades,compelling evidence regarding the hazards of waterpipe smoking accumulated in the literature.[3] The growing evidence against the falsely acclaimed 'innocence' of waterpipe smoking has, however, been futile in preventing the increase in the practice. The World Health Organization (WHO) pronounced North Africa, East Mediterranean region and South – East Asia to have the highest rate of waterpipe smoking. The practice is also spreading fast among the youth of North America, Brazil and Europe at an alarming rate.[4] Even in the United States, evidence suggests a gradual rise in the prevalence of waterpipe smoking among young adults.[5-8] Tobacco use remains highly prevalent in Pakistan, with rates of as high as 33% among middl – aged males.[9] There is much diversity in the forms of tobacco use in Pakistan, including cigarettes, beedis, chewing tobacco, hookah and chillum. According to a large scale survey, one in every five Pakistani males has consumed more than 100 cigarettes / beedis or chillum/hookah in his lifetime.[10] There are few studies on knowledge and attitudes regarding waterpipe smoking in the general population, and most indexed literature on the topic originates from the Middle East. Varsano et al., in Israel, surveyed 388 high school students on their beliefs about waterpipe smoking and observed that the majority of the students as well as their parents perceived waterpipe smoking to be much less harmful than cigarette smoking.[11] A research conducted by a team from AKU and DOW university Karachi Pakistan, identified that peer pressure and boredom in youth were the most common reason of escalating popularity of waterpipe smoking among Pakistani youth.[12-13] Peer pressure and curiosity were cited as the most common triggers behind the initiation of waterpipe smoking by Egyptian females.[14] The psycho-social determinants of shisha smoking in males are complex and can differ from country to county or even from one community to another. Many psycho-social factors determine the cause of shisha smoking in males. The purpose of this study was to know the prevalence of shisha smoking in male medical students of urban Lahore and to explore the possible psycho-social determinants and their influence in developing the habit of shisha smoking among young medical students. Our study showed that fashion/social influence, lack of parental guidance , economic stress / low socio-economic status, flavor preferences, easy accessibility, cultural influences, depression, bad company / peer pressure and parental smoking were associated with shisha smiking in young male medical students. Most of our findings are in agreement with the

previous researches done on this topic, but our research showed that their degree of association is quite high as shown by the results. The data also shows that in our society lack of parental guidance is significantly associated with the use of tobacco smoking among male teenagers. This finding is consistant with the general perception in our society that parental care in early childhood is important for the social and moral development of child. Furthermore, fashion was an important factor in our study which contributed significantly to smoking behavior among young students. However, in previous researches which were mostly conducted across middle east and American universities, fashion did't come out to b an important factor of association. Easy accessibility and depression were also associated with smoking.[15-18]

In contrast to general perception that most people smoke shisha because they consider it safer than cigarette, our study showed that not a single medical student considered it safe; however few were not aware of the fact that it is more hazardous to health than cigarette. So in contrast to previous researches this was a new finding in our study that most of the medical students smoked shisha just for flavor and fun although they knew the hazardous effects of waterpipe smoking.

Conclusion

Shisha smoking is quite prevalent in young male medical students, between the age 18 – 26 years. The psycho-social determinants of shisha smoking identified include fashion / social influence, flavor preferences, lack of parental guidance and easy accessibility; while the lack of healthy activities and lack of awreness about ill effects were not associated with shisha smoking.

References

1. WHO Study Group on Tobacco Product Regulation (Tob Reg) an advisory note Waterpipe tobacco smoking: health effects, research needs and recommended actions by regulators, 2005.
2. Nafae A, Misra S P, Dhar S N, Shah S N. Bronchogenic carcinoma in Kashmir Valley. Indian J Chest Dis 1973; 15: 285–295.
3. Knishkowy B, Amitai Y. Water pipe (*narghile*) smoking: anemerging health risk behavior. Pediatrics 2005; 116: 113–119.
4. World Health Organization (Tobacco Free Initiative). Advisory note waterpipe tobacco smoking: health effects, research needs and recommended actions by regulators. Geneva, Switzerland: WHO, 2005. http://www.who.int/tobacco/global_interaction/tobreg/en/Accessed August 2007.
5. Centers for Disease Control and Prevention. Decline in smoking prevalence — New York City, 2002 – 2006. MMWR Morb Mortal Wkly Rep 2007; 56: 604–608.
6. Marshall L, Schooley M, Ryan H. Centers for Disease Control and Prevention. Youth tobacco surveillance—United States, 2001 – 2002. MMWR Surveill Summ 2006; 55: 1–56.
7. Ward K D, Vander Weg M W, Relyea G, Debon M, Klesges R C. Waterpipe smoking among American military recruits. Prev Med 2006; 43: 92–97.
8. Ward K D, Eissenberg T, Gray J N, Srinivas V, Wilson N, Maziak W. Characteristics of US waterpipe users: a preliminary report. Nicotine Tob Res 2007; 9: 1339–1346.
9. Ahmad K, Jafary F, Jehan I. Prevalence and predictors of smoking in Pakistan: results of the National Health Survey of Pakistan. Eur J Cardiovasc Prev Rehabil 2005; 12: 203–208.
10. Alam S E. Prevalence and pattern of smoking in Pakistan. J Pak Med Assoc 1998; 48: 64–66.
11. Varsano S, Ganz I, Eldor N, Garenkin M. Water pipe tobacco smoking among school children in Israel: frequencies, habits and attitudes. Harefuah 2003; 142: 736–741.
12. Shaikh B T, Kahloon A, Kazmi M. Students, stress and coping strategies: a case of Pakistani medical school. Educ Health 2004; 17: 346–353.
13. Nasir S J, Anila, Ahmed S M. Internal consistency of boredom proneness scale for a sample of Pakistani students. Percept Mot Skills 1996; 82: 367–370.
14. Labib N, Radwan G, Mikhail N. Comparison of cigarette and water pipe smoking among female university students in Egypt. Nicotine Tob Res 2007; 9: 591–596.
15. "Depression". National Institute of Mental Health. 2009-09-23. Retrieved 2010-05-22.
16. Annual Review of Psychology Vol. 53: 371-399 (Volume publication date February 2002) DOI:10.1146/annurev.psych.53.100901.135233
17. Maziak W, Ward KD, Eissenberg T. Factors related to frequency of narghile (waterpipe) use: the first insights on tobacco dependence in.
18. Knishkowy B, Amitai Y. Water-pipe (narghile) smoking: an emerging health risk behavior. Pediatrics, 2005; 116 (1): 113-119.
19. Shihadeh A et al. Towards a topographical model of narghile water – pipe café smoking: a pilot study in a high socioeconomic status neighborhood of Beirut, Lebanon. Biochemistry, Pharmacology, and Behavior, 2004; 79 (1): 75-82.
20. Maziak Wl. Tobacco smoking using a waterpipe: a re-emerging strain in a global epidemic. Tobacco Control, 2004; 13: 32-333.
21. Sajid KM, Akhter M, M alik GQ. Carbon monoxide

fractions in cigarette and hookah (Hubble bubble) smoke. Journal of the Pakistan Medical Association, 1993; 43 (9): 179-182.
22. Shihadeh A, Saleh R. Polycyclic aromatic hydrocarbons, carbon monoxide, — tar", and nicotine in the mainstream smoke aerosol of the nar ghile water pipe. Food and Chemical Toxicology, 2005; 43 (5): 655- 661.
23. Shihadeh A. Investigation of mainstream smoke aerosol of the argileh water pipe. Food and Chemical Toxicology, 2003; 41: 143-152.
24. Nuwayhid IA et al. Narghile (hubble-bubble) smoking, low birth weight, and other pregnancy outcomes. American Journal of Epidemiology, 1998; 148: 375-383.
25. Maziak W et al. Tobacco smoking using a waterpipe: a re-emerging strain in a global epidemic. Tobacco Control, 2004; 13: 327-333.
26. Knishkowy B, Amitai Y. Water-pipe (narghile) smoking: an emerging health risk behavior.Pediatrics, 2005; 116 (1): e113-119.
27. http://www.who.int/classifications/icd/en