Harm Perception and Attitudes towards E-cigarette Use Among Qatar University Students: A Cross-Sectional Study

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ABSTRACT

Background: Electronic cigarette (e-cigarette) use is becoming popular worldwide especially among youth. Research reported that university students have poor knowledge and misconceptions about the health risks of e-cigarettes, which may lead students to use them even in populations where prevalence of cigarette smoking is relatively low. At this age, the influence of peers is also significant. Understanding attitudes of college students towards the use of e-cigarettes is important for an effective tobacco prevention policy. In this study, we assessed the prevalence of e-cigarette use among university students as well as their knowledge and attitudes towards e-cigarettes.

Methodology: We conducted a cross-sectional study among Qatar University students using a self-administered online questionnaire. Descriptive univariate analysis of all variables was conducted as well as a bivariate analysis to check the association of e-cigarette use with selected variables. A binary logistic regression was conducted to assess predictors of e-cigarette use.

Results: The prevalence of e-cigarette use among students was found to be 14% where 32% of them were daily users. Approximately 42% of the participants agreed that 'e-cigarettes are less harmful to health compared to traditional cigarettes, and 45.7% of them agreed that 'e-cigarettes can prevent smoking traditional cigarettes. Among users, 75% think that they are less harmful than conventional cigarettes and almost 40% indicated that they used these products because they would help them quit smoking cigarettes. The prevalence of e-cigarettes use was 16.2% among males and 12.8% among females, which showed no significant difference between the two genders. Females were more likely to use e-cigarettes because they "don't smell" (P-value=0.023). The study showed a significant association between e-cigarette use and knowledge items (P-value < 0.05) and having a smoker among siblings or friends. At the multivariate analysis level, only the friends' effect remained significant after controlling for the other variables (OR= 7.3, P-value=0.000).

Conclusion: Our research found that university students have inadequate knowledge and misconceptions in regards to e-cigarettes use, especially among users. Effective smoking prevention policy and educational interventions are needed to enhance awareness among university students about the health effects associated with e-cigarettes use.

Keywords: Electronic cigarette, prevalence, knowledge, attitude, Qatar.

INTRODUCTION

- E-cigarette smoking is becoming common especially among adolescents and young adults (Brożek, et al., 2018). Three studies were conducted in Saudi Arabia to assess the prevalence of e- cigarette use among university students. The first study found that one in ten of the students smoked an e-cigarette (Almutham et al.,2019). The second study found that 27.7% of students of health sciences colleges used e-cigarettes (Qanash et al.,2019). The third study showed that one-quarter of university students had tried e-cigarettes (Awan, 2016). Another study that was conducted in Malaysia found that 74.9% of students smoked e-cigarettes (Puteh et al.,2018). Moreover, 6.2% of the university students in Pakistan used e-cigarettes (Iqbal, et al., 2018).

- E-cigarette use is prevalent among students have friends or family members who smoke. It is also more prevalent among males compared to females. Peer pressure, curiosity and, believing e-cigarette will help people to quit smoking played a major role in e-cigarette usage (Awan, 2016). Many studies showed that students have insufficient knowledge about e-cigarettes as the knowledge students get about e-cigarettes is mostly from social media and advertisement (Almutham, Altami, Sharaf, & AlAraj, 2019). Moreover, students who used e-cigarettes are most likely to concomitantly use other types of tobacco products such as conventional cigarettes and shisha compared to those who did not use e-cigarettes (Iqbal, et al., 2018).

- Side effects of e-cigarettes may include; headache, cough, chest pain and dizziness (Puteh et al., 2019). Moreover, nicotine in e-cigarettes may lead to addiction similar to conventional cigarettes (Qansah et al., 2019). Smoking these products can also cause rise in inflammation, oxidative stress, atherosclerosis and cardiovascular diseases (MacDoland & Middlekauff, 2019) as well as lung injury (Siegel et al., 2019).

- No studies have been conducted in Qatar to assess the prevalence and the factors affecting e-cigarette use among university students. Thus, this study aims at filling this gap through assessing the prevalence and the factors shaping e-cigarette use among youth through a sample from Qatar University students.

Results

Out of 741 (which is the targeted sample size), only 199 filled the questionnaire (26.8% response rate)

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Sociodemographic variables	62.8% of participants were female and 37.2% of them were male. The mean and median age of participants were 23 and 21 years respectively.
Smoking status of family and friends	27.1% of them had a smoking father, and 5.5% had smokers mother. 33.7% had one or more siblings smokers and 48.2% had at least one close friend who smokes.
Knowledge about e-cigarettes	The mean knowledge score for all participants was 3.2.
Tobacco products' use among participants	25.6% are currently using tobacco products. 14% were using e-cigarettes. The mean age for trying tobacco products for the first time was 16 years. 37.3% have been using them for more than 5 years and 52.9% of them for 1-5 years.
Practice of e-cigarettes among users	During past 30 days 32% of the smokers used e-cigarettes on a daily basis. 9.8% of the participants used electronic vapor products on campus indoors, and 7.3% used them both indoors and outdoors. 35.7% of students tend to use electronic vapor products during university hours, 50% in social occasions, and 53.6% during stressful situations. The mean age of starting e-cigarette smoking was 20 years.
Reasons behind e-cigarettes' use (attitude)	85.7% were using E-vapor products because they do not smell. 75% were using because they think they might be less harmful than conventional cigarettes. 71.4% used them because they think they might be less harmful than conventional cigarettes to people around them. 60.7% were used because they come in flavors they like, and they can use in places where smoking cigarettes is not allowed.
Association between e-cigarette use and socio-demographic variables	There is no statistically significant association between e-cigarette use and all socio-demographic variables (age, gender, colleges, level of education, marital status, nationality, income, and place of living).
Association between e-cigarette use and knowledge	Statistically significant association found between e-cigarette use and all knowledge items using a Chi-square test. All P-values were less than 0.05. The mean knowledge score for e-cigarette users was 3.2 compared to 2.5 for non-users (Independent t-test, P-value < 0.05)
Role of gender	The prevalence of e-cigarettes use was 16.2% among males and 12.8% among females, which showed no significant difference between the two genders. Females were more likely to use e-cigarettes because they "don't smell" (P-value=0.023).
Association between e-cigarette use and smoking status of family/friends	Significant association found between e-cigarette use and having a sibling who smokes and between e-cigarette use and having at least one close friend who smokes (chi-square test, P-value < 0.05).
Binary logistic regression model	Binary logistic regression was conducted to see the possible predictors of e-cigarette use. The variables that were found to be significant at the bi-variate analysis level were included in the regression model (knowledge score, siblings' effect and friends' effect). Only the friends' effect remained significant after controlling for the other variables (OR= 7.3, P-value=0.000)

Figure 1: Prevalence of Tobacco Products' use
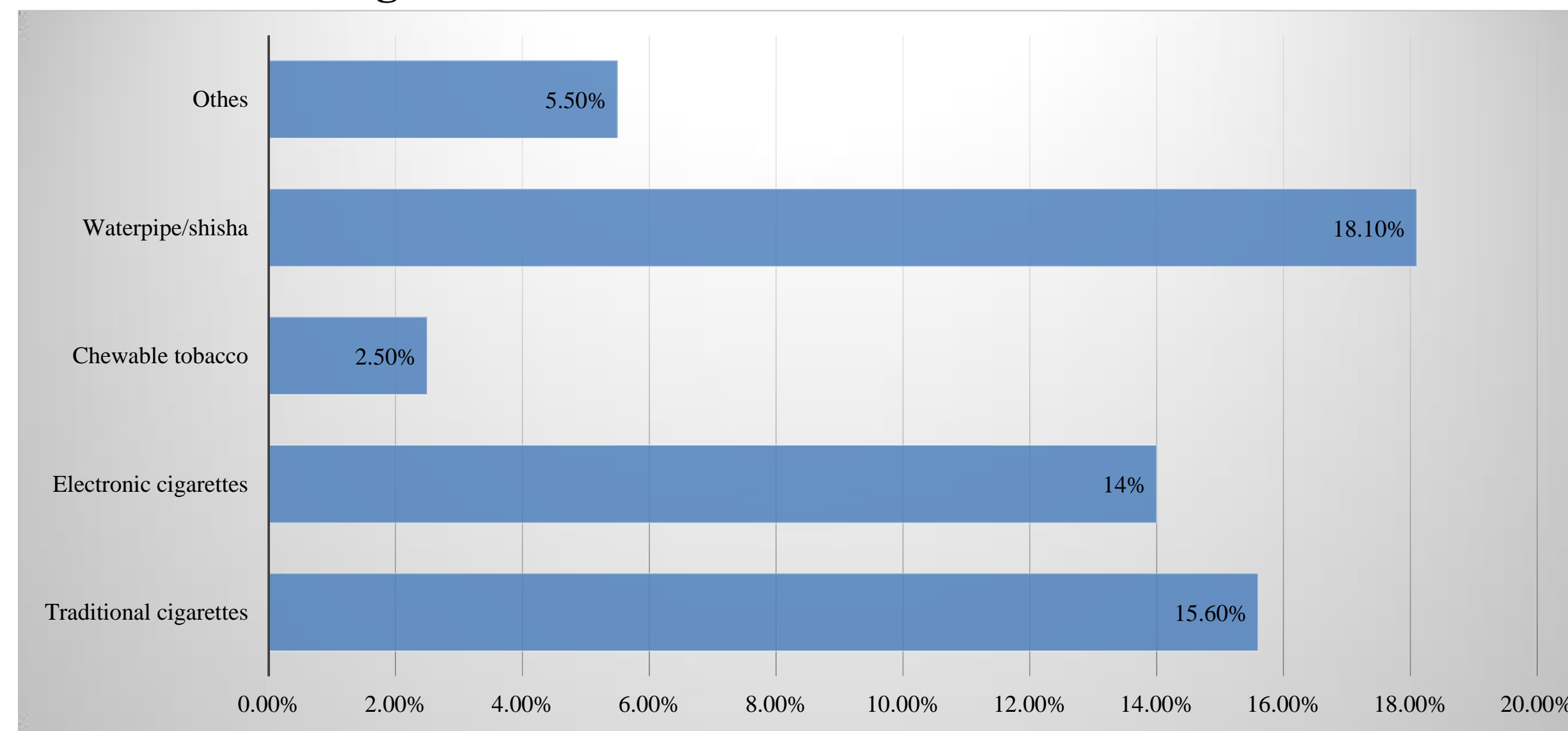
Figure 2: Reasons and attitude towards e-cigarette smoking
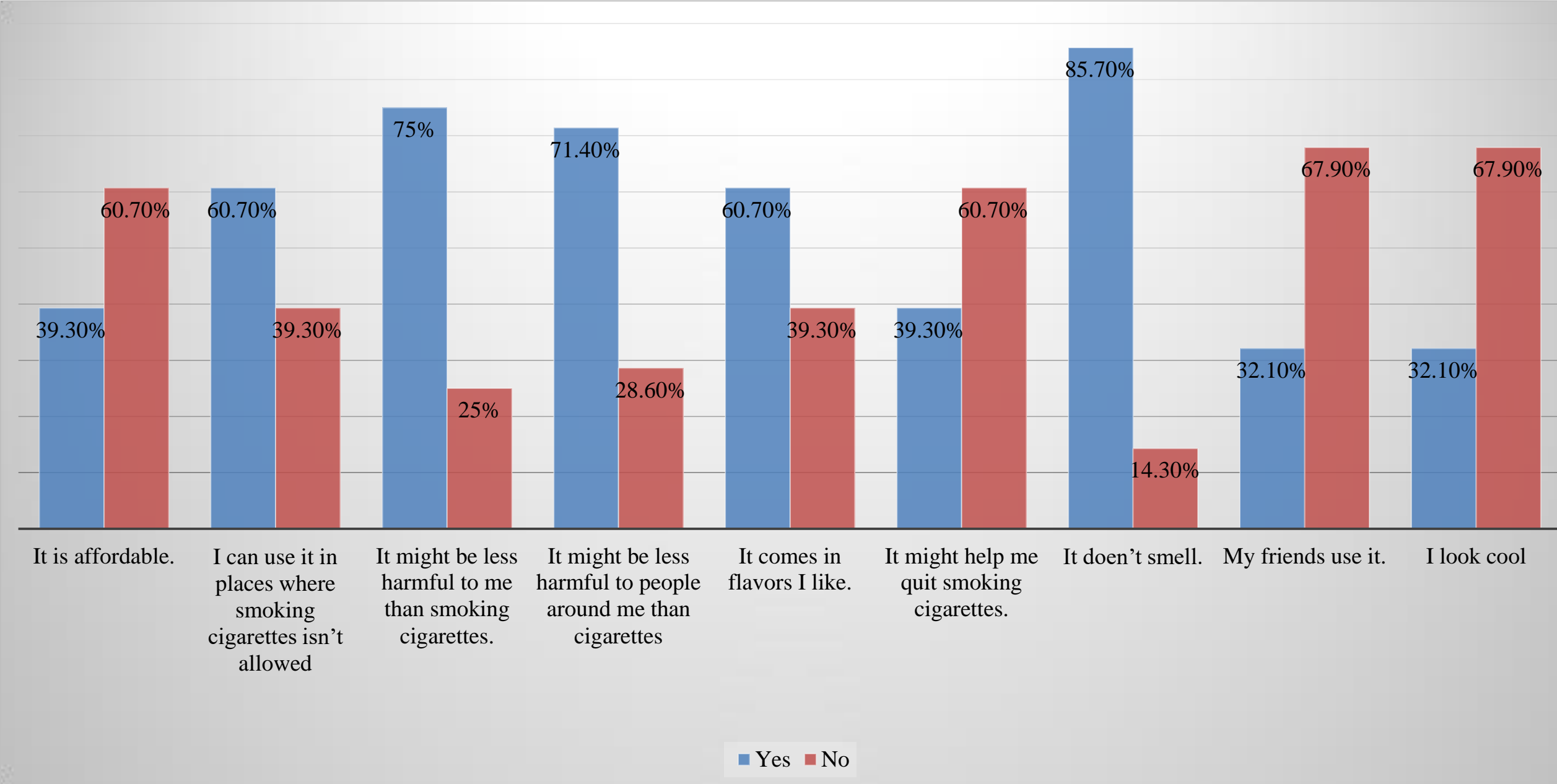
CONCLUSION

Based on our results, e-cigarette use is becoming popular among university students. Having poor knowledge about health risks associated with e-cigarettes use, misconceptions about e-cigarettes being less harmful than traditional ones and how they prevent/ help quit smoking traditional cigarettes, and having a sibling and/or a close friend who smokes were the main reasons behind their use. Therefore, there is a need to plan for educational campaigns on campus to educate university students about the health risks associated with e-cigarette smoking and advocate for an effective smoking prevention policy.

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METHODOLOGY

- ❖ The study is a cross-sectional study.
- ❖ Data was collected anonymously via self-administered online questionnaire in both English and Arabic.
- ❖ Inclusion criteria: 18 years and above , currently enrolled students.
- ❖ Sample size calculated using the Cochrane's formula: 741 participants.
- ❖ 95% CI at 2.5% margin of error (Average prevalence is 14%).
- ❖ Questions were obtained from several previous validated questionnaires which were slightly modified to suit the country's culture.
- ❖ We used face validity to assess the accuracy and the clarity of questions.

STATISTICAL ANALYSIS

- ❖ Data was analyzed by using SPSS version 26. Descriptive univariate analysis run on all variables.
- ❖ Bi-variate analysis was done to see the association between e-Cigarette use and all demographics and between e-Cigarette use and knowledge.
- ❖ All variables found to be significant at the bi-variate level were entered into a binary logistic regression model to assess possible predictors of e-cigarette use.

ETHICAL APPROVAL

- ❖ Ethical approval number of QU-IRB 1188-E/19 and informed consent to assure the confidentiality and anonymity of research respondents.