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Abstract

Purpose: The study aims to overview the smoking habits, their prevalence, and their correlation with socio-cultural determinants by screening smoking in the national heart institute population.

Methodology: A cross-sectional study was conducted in the form of a face-to-face survey. The interviews were carried out by a well-trained team of interviewers, using a survey according to a stratified random sampling approach. The study design was mainly about meeting up to about 300 health care workers and 300 patients visiting the clinics in the national heart institute. Then, start to gather information from them if they smoke and learn more about the type of smoking, they do and their smoking habits. The survey included questions for smokers about quitting trials and their reasons for sticking to smoking. After that, the interviewers tried to raise awareness about the negative impact of tobacco. The next step was to try to advise these smokers to quit.

Findings: The study cohort was 160 visitors (36%), 82 employee (19%), 76 nurses (17%), 64 patients (14%), 41 physician (9%) and 20 technician (5%). Regarding the education level, 63% had primary school education, 17% had a university level, and 15% were illiterate. Smoking prevalence was 60% of the patients, 45% of the visitors, and 30% of the health care workers. In the study sample, smokers were more likely to have diabetes (P0.071), to be hypertensive (P0.034), and to have a history of heart disease (P 0.004). They were more likely to be males (P<0.001). There was no significant difference between smokers and non-smokers regarding geographical residence or educational level. Smokers are more likely to be aware of smoking hazards, including heart problems, COPD, cancer, and E.D (P<0.001).

Recommendations: This cross-sectional survey study showed only the association, therefore, the cause, pathogenesis, and effect were not evaluated. The study recommend further research with pre specified outcomes.

Keywords: *Smokers, smoking cessation, quit smoking, smoking habits.*

Introduction

Epidemiologic evidence links smoking with adverse outcomes in patients with manifest coronary heart disease¹. Patients who continue to smoke after experiencing a myocardial infarction have a 50% higher risk of recurrent coronary events than nonsmokers². Their chance is equal to nonsmokers by three years after smoking cessation. The American College of Cardiology/American Heart Association has indicated that smokers recovering from acute coronary syndrome should receive counseling along with pharmacologic therapy (i.e., nicotine replacement and bupropion) and formal smoking cessation programs as appropriate³.

It is well established that smoking harms nearly every organ in the body, causing a wide range of diseases and reducing the quality of life and life expectancy⁸. Approximately 100 million persons died due to tobacco use in the 20th century, which is just a fraction of the number anticipated losing their lives during the 21st century. About 5.4 million deaths occur annually due to tobacco⁹. If urgent action is not taken by 2030, more than 8 million deaths annually will be witnessed and more than 80% of those deaths will be in developing countries⁹. If current trends continue, one billion persons worldwide will die during the 21st century⁹.

Health care professionals can have a significant public health impact by helping to counter tobacco use. However, research studies¹³ consistently demonstrate that students in the health professions receive insufficient training for providing comprehensive tobacco cessation counseling. As health experts and promoters, healthcare workers (HCWs) have an essential role in curbing the global tobacco epidemic¹⁰. HCW is well placed to promote smoking cessation and treat tobacco dependence in their patients, following evidence-based tobacco cessation guidelines^{11,12}. Data is needed to estimate the magnitude of the problem by surveying Healthcare professionals and patients.

Aim of the study

The study aimed to overview the smoking habits, their prevalence, and their correlation with socio-cultural determinants by screening smoking in the national heart institute population. A simple questionnaire focuses on patients visiting the nationwide heart institute outpatient clinics. The study aims to address the current smoking awareness, the barriers, and drivers behind quitting smoking and guide us in developing smoking cessation programs.

Material and methods

A cross-sectional study was conducted in the form of a face-to-face survey. The interviews were carried out by a well-trained team of interviewers, using a survey according to a stratified random sampling approach. The study design was mainly about meeting up to about 300 health care workers and 300 patients visiting the clinics in the national heart institute. Then, start to gather information from them if they smoke and learn more about the type of smoking, they do and their smoking habits. The survey included questions for smokers about quitting trials and their reasons for sticking to smoking. After that, the interviewers tried to raise awareness about the negative impact of tobacco. The next step was to try to advise these smokers to quit.

Inclusion criteria

Adult population (aged 18+) who visited NHI outpatient clinics and health care workers (doctors, nurses, employees, technicians, and workers).

Sampling

A stratified random sampling approach was adopted to ensure complete randomization. For health care workers, the unit selection was made based on the following categories (doctors, nurses, employees, technicians, and workers) then they were randomized according to the department they work in, e.g. (all doctors from the clinical pathology department, all nurses working in adult ICU and so on according to the overall target sample as (117 physician, 90 nurses, 48 employees, 18 technicians, and 27 workers).

For patients visiting the outpatient clinics; Selection of sampling points: a specific clinic each day was randomly chosen. The interviewers randomized patients as they randomly selected the first one in each clinic; then, four (4) patients were skipped then the interviewer proceeded to the next patient (according to their numbers).

Scripting

The researchers built a master script survey from the validated questionnaire.

Sample size

Sample size analysis was chosen and performed based on prevalence rate. After reviewing the literature, the researchers assumed the prevalence rate of Smoking in Egypt is 40.5, according to the world health organization. Using the online software with a significance level of 90% with a 5% margin of error, it is determined prospectively that a total of 261 participants (in each group) would give 99% power. So, it was planned to enroll at least 300 participants in each group, considering the possibility of incomplete surveys.

Outcome Measures

Measurement of smoking prevalence among healthcare workers and cardiac patients working and visiting NHI. The population was divided according to socio-cultural levels to compare the prevalence among different groups.

Analysis of data

The correlations between the socio-cultural levels and relevant numerical variables (mean of several cigarettes/ day) and the correlation between the socio-cultural levels and status of smoking, smoking habits, and previous cardiac events using the Spearman rank correlation. Other data correlations that could be collected from the datasheet were assessed.

Results

After excluding incomplete data, the study included 443 individuals. The smoking group was 239, and the non-smokers were 204. About 80% were males, and 20% were females as shown in figure 1.

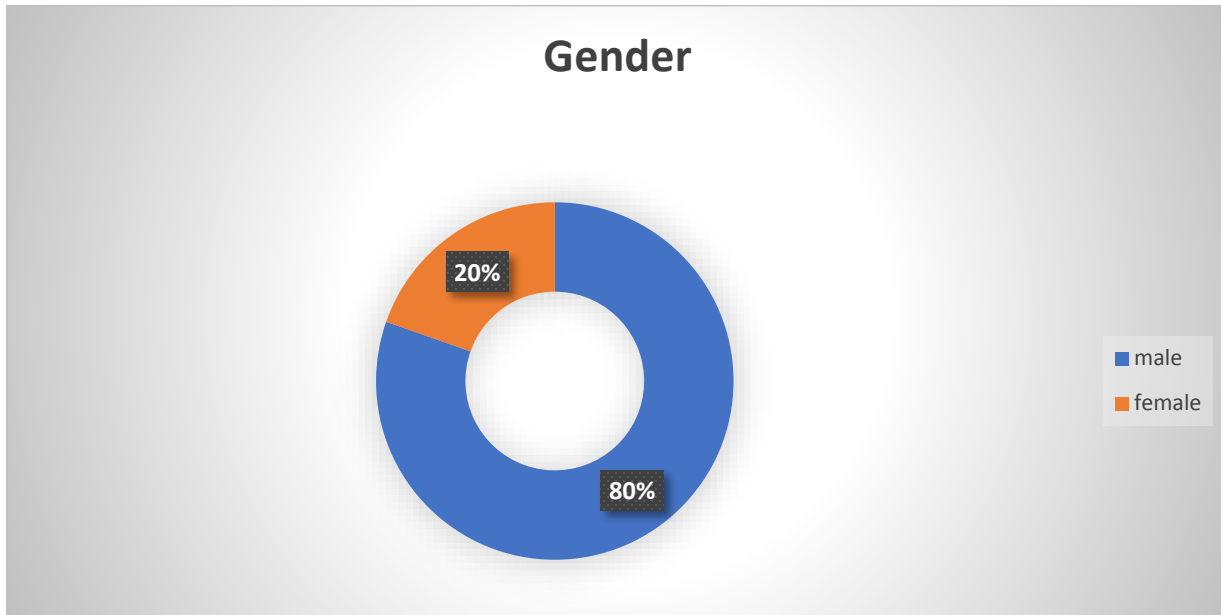


Figure 1: Gender of respondents

Most of the study cohort was between 30-60 years, with a minority below 30 years or above 60 years. The study cohort was 160 visitors (36%), 82 employee (19%), 76 nurses (17%), 64 patients (14%), 41 physician (9%) and 20 technician (5%) as shown in figure 2.

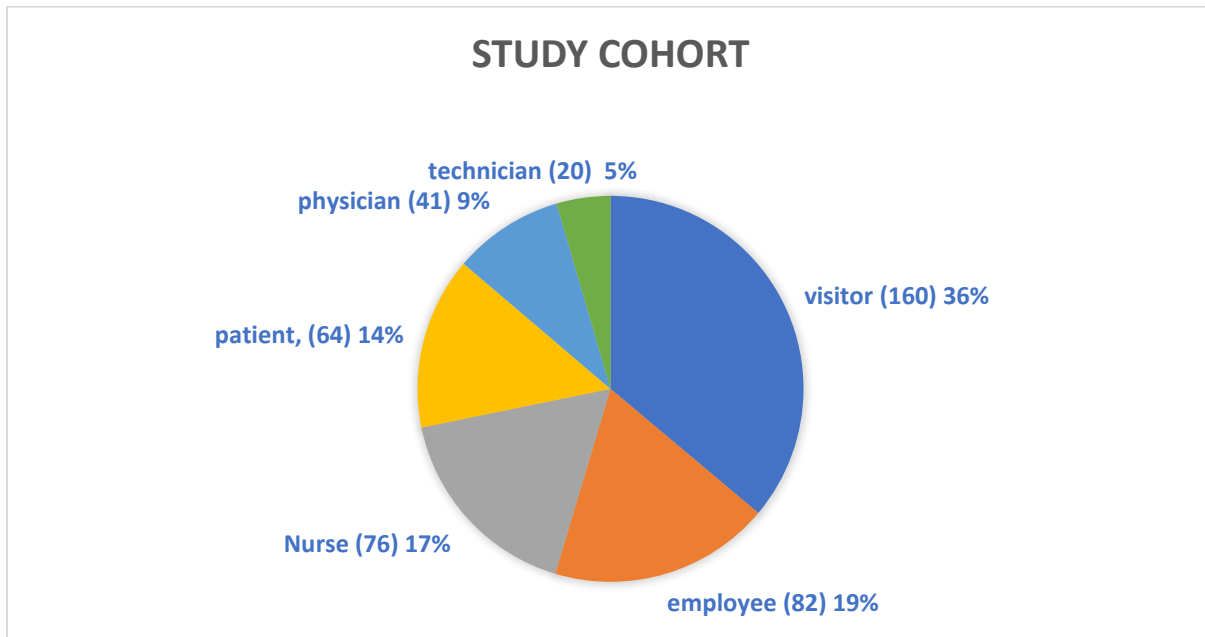


Figure 2: The study cohort

Regarding the education level, 63% had primary school education, 17% had a university level, and 15% were illiterate as indicated in figure 3.

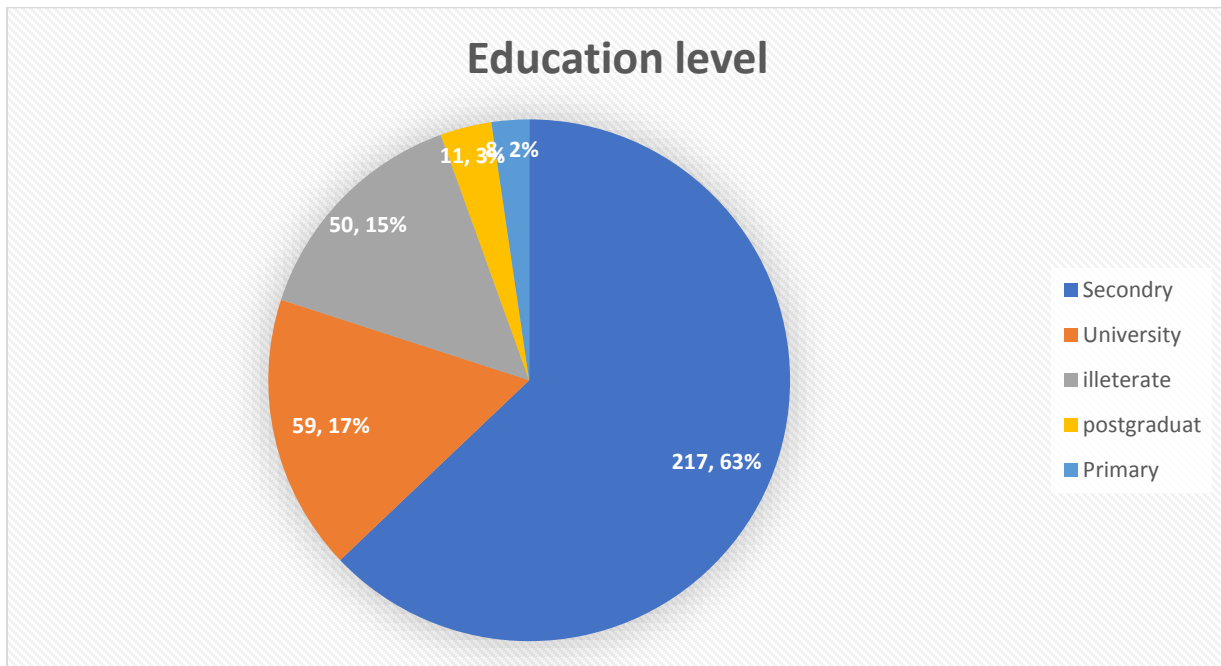


Figure 3: Education levels of the respondents.

Smoking prevalence was 60% of the patients, 45% of the visitors, and 30% of the health care workers. In the study sample, smokers were more likely to have diabetes ($P=0.071$), to be hypertensive ($P=0.034$), and to have a history of heart disease ($P=0.004$). They were more likely to be males ($P<0.001$). There was no significant difference between smokers and non-smokers regarding geographical residence or educational level. Smokers are more likely to be aware of smoking hazards, including heart problems, COPD, Cancer, and E.D ($P<0.001$). Of the smoking group, 72% were cigarette smokers, 23% smoked hookah, 3% smoked both, and 2% used a vape as shown in figure 4.

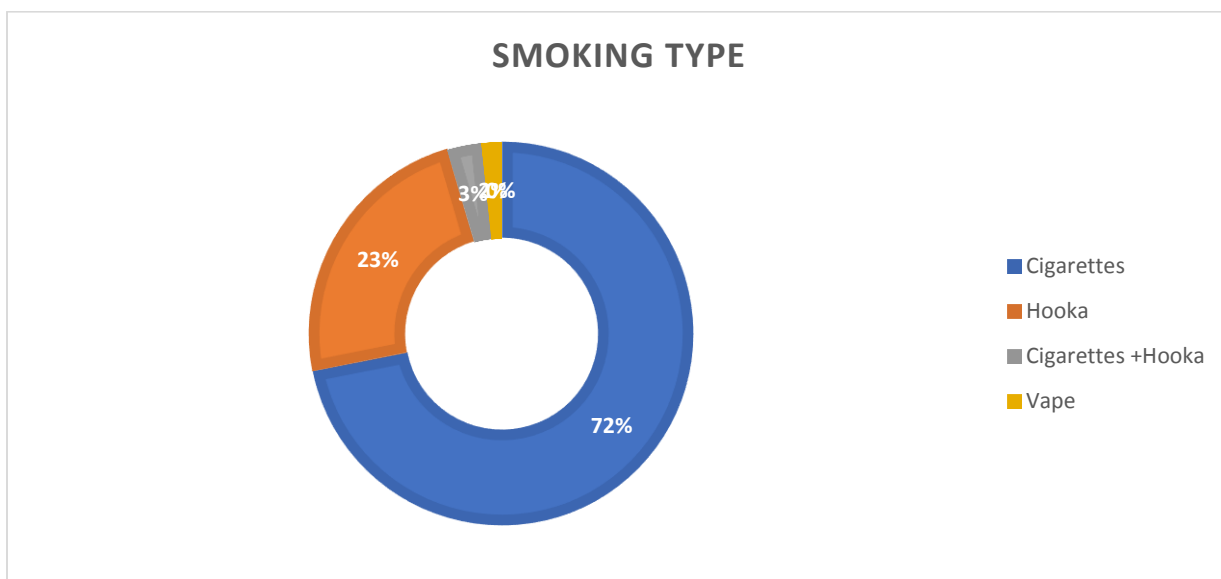


Figure 4: Smoking type used by respondents

As summarized in figure 5, the findings also found out that 86% of smokers had the will to quit while 14% of the respondents had no will to quit.

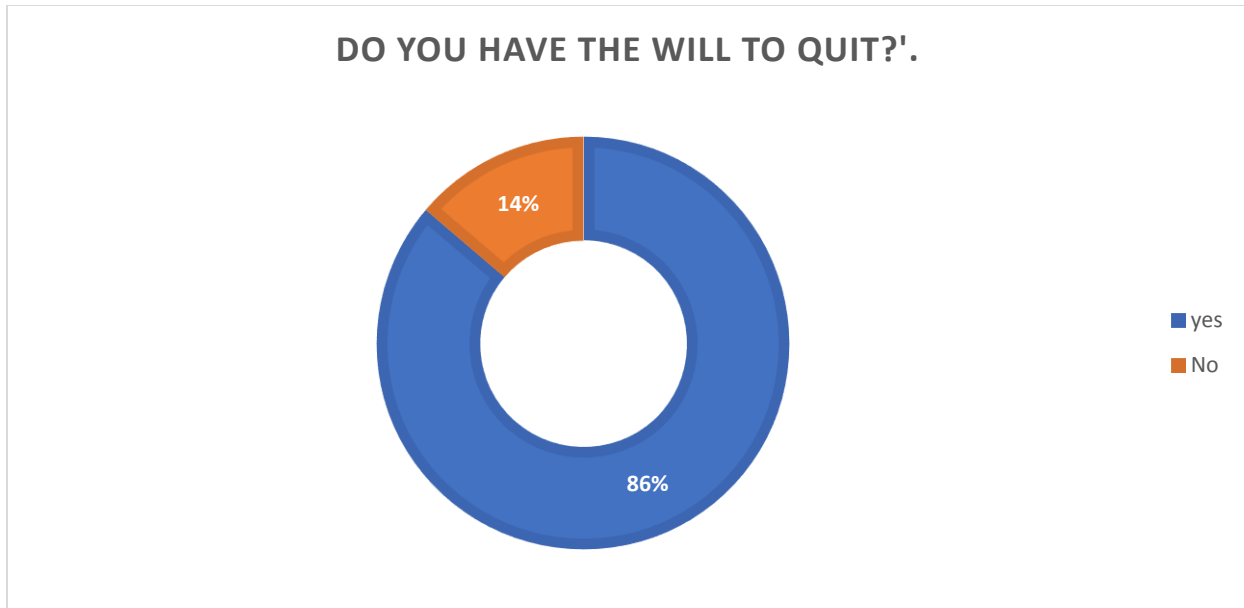


Figure 5: Willingness to quit smoking

The study's finding also showed that 74% of the respondents had a previous attempt to stop as indicated in figure 6.

Previous attempt to quit

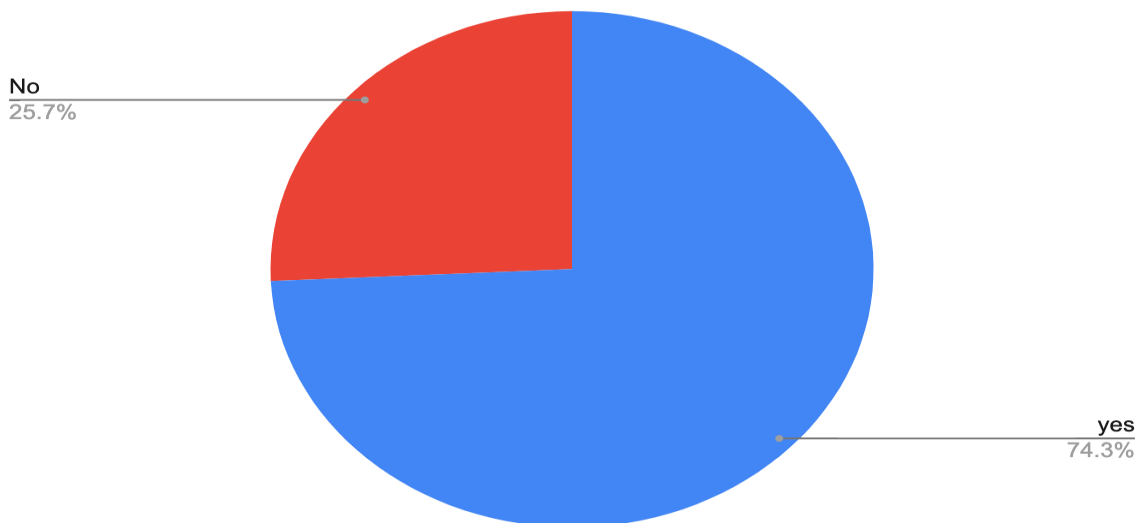


Figure 6: Previous attempt to quit smoking

Ex-smokers were only 2.7%. The findings also showed that friends encouraged smoking in 53% and a relative in 8.8%. While no external encouragement in 37% as summarized in figure 7.

Who encouraged you to smoke?

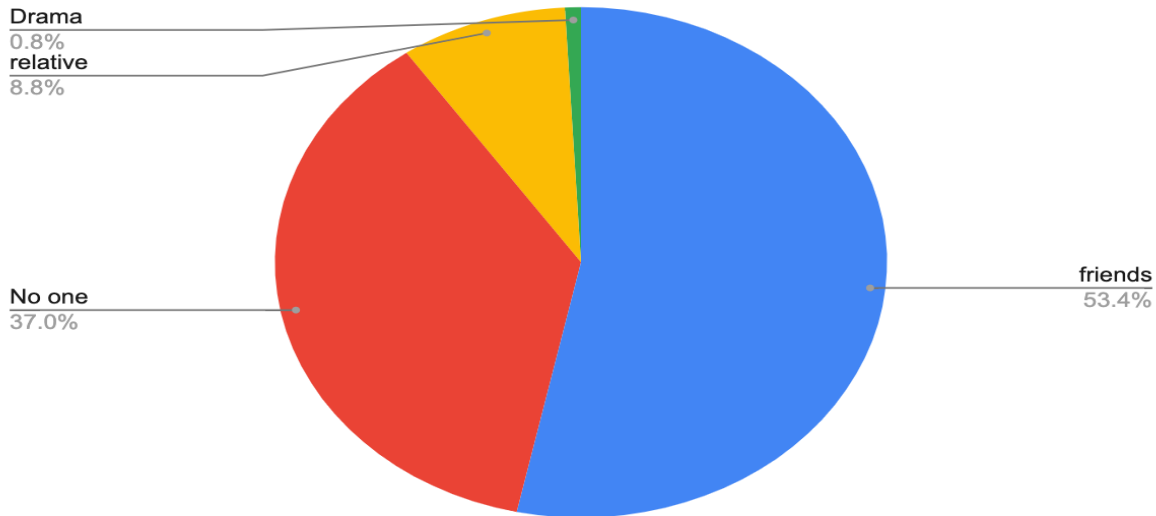


Figure 7: Who encouraged smoking?

Regarding smoking cessation, the sample showed that neither education level nor geographical distribution was correlated with successful quitting. The most frequent barrier against quitting in our survey was habituation (46%), followed by stress (29%). The most frequent trigger to stop is religious reasons 32%, followed by cost 22%. Less than 1% reported a previous trial of using aids to quit (nicotine patch, gum...), and less than 2% used e-smoking devices. The preferred aid to quitting was a smoking clinic (50%). While 12.9% prefer phone calls and 11.7% prefer WhatsApp contact.

Smoking Aid preference

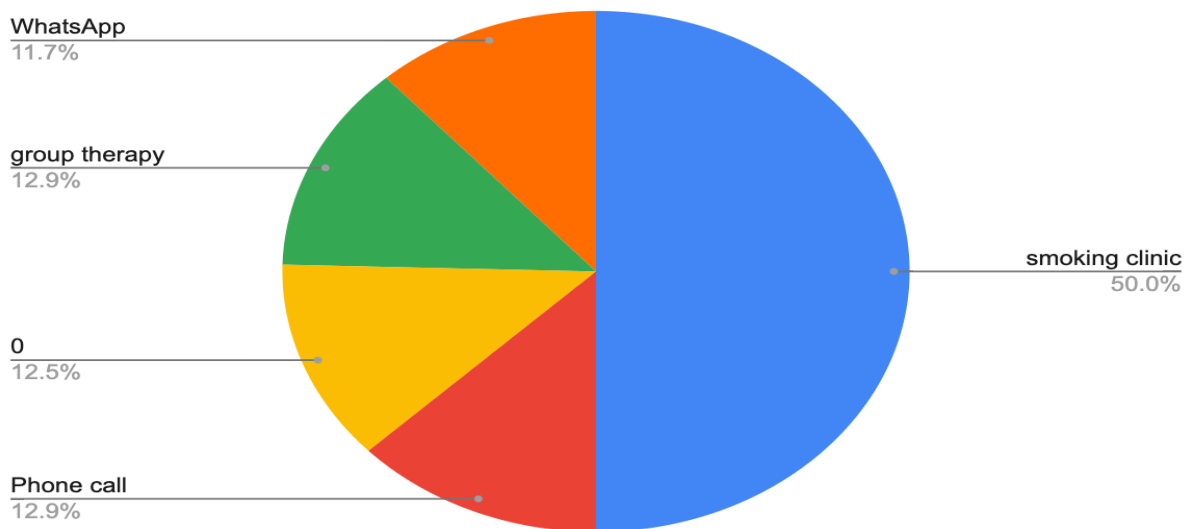


Figure 8: Smoking aid preference

There is no difference in personal behavior between those who tried previously to quit and those who never tried to stop, except that the will to stop was significantly higher for those who tried before to quit.

Discussion

Prevalence of smoking is high among all groups in our survey; including cardiac patients who presented to NHI outpatient clinic (60%) and among visitors who are not known to have any cardiac illness (45%) and healthcare facility workers (30%); all these numbers are higher than the average smoking prevalence in Egypt which is around 20.2%¹⁴. Traditional risk factors and history of heart diseases were more common in the smoking group in agreement with similar research in Egypt¹⁵. The willingness to quit smoking was very high among the smoker group with the previous attempt to quit at 76%; however, the failure rate is very high; ex-smokers were only 2.7%. This data is comparable to recent data from the Egyptian population, which showed that 28.1% of the participants reported a motivation to quit smoking. About 61.1% had made at least one attempt. The most extended duration of quitting was ≥ 5 years, as reported by 4.0% of the smoker¹⁵.

In the surveyed group, failure to quit smoking was not correlated with patient behavior, education, or co-morbidities. There was no difference between smokers who have a previous attempt to quit and those who never tried to quit, regarding the type of smoking, history of heart disease, co-morbidities, or education level. The most frequent barrier against quitting is habituation (46%), followed by stress (29%). The most frequent trigger to stop is religious reasons 32%, followed by cost 22%. which points toward different impressions that were recently reported in the general Egyptian population where the drive to quit smoking was prompted by the advice of a family member (39.9%) or a doctor (30.1%), concerns about smoking hazards (19.7%), or due to financial limitations (12.7%).

The reported high rate of failure to quit in the data is in parallel with a low rate of using cessation aids; less than 1% reported a previous trial of using aids to quit smoking (nicotine patch, gum...), and less than 2% were using e-smoking devices. The preferred assistance to quit was a smoking clinic (50%) to help to quit. While 12.9% prefer phone calls and 11.7% prefer WhatsApp contact.

Conclusion

The study conclude that smoking prevalence is high among patients with cardiac problems, healthy individuals, and health care workers at NHI outpatient clinics. The will to quit is high among all smokers. The failure rate of quitting smoking is very high. The findings point toward an essential need for a Smoking quit service to help patients or healthy individuals achieve smoking cessation. A smoking cessation clinic is the preferred aid by most of the study cohort.

Limitations

This cross-sectional survey study showed only the association, so the cause, pathogenesis, and effect were not evaluated. The observational data is considered a pilot for further research with pre-specified outcomes.

Ethical aspects

The researchers adhered to the strict rules during the study such as voluntary participation with informed consent, not harm, confidentiality, anonymity, and only assess the relevant components.

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