Smoking Cessation after Acute Myocardial Infarction among Patients of Nork-Marash Medical Center in Armenia: a Cross-Sectional Survey

Master of Public Health Integrating Experience Project

Professional Publication Framework

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2016

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LIST OF ABBREVIATIONS

AMD   Armenian Dram

AMI   Acute Myocardial Infarction

BMI   Body Mass Index

CAD   Coronary Artery Disease

CDC   Center for Disease Control and Prevention

CES-D   Center for Epidemiological Studies Depression

CI   Confidence Interval

COPD   Chronic Obstructive Pulmonary Disease

CVD   Cardiovascular Disease

DHS   Demographic and Health Survey

ENRICHD   Enhancing Recovery in Coronary Heart Disease

ESSI   ENRICHD Social Support Inventory

FCTC   Framework Convention of Tobacco Control

FTND   Fagerstrom Test for Nicotine Dependence

GI   Gastro-intestinal Disease

IHD   Ischemic Heart Disease

IRB   Institutional Review Board

MI   Myocardial Infarction

NMMC   Nork-Marash Medical Center

NSTEMI	Non-ST Elevated Myocardial Infarction
OR	Odds Ratio
SD	Standard Deviation
SEQ-12	Self-Efficacy Questionnaire-12
STEMI	ST-Elevated Myocardial Infarction
VIF	Variance Inflation Factor
WHO	World Health Organization

ACKNOWLEDGEMENTS

ABSTRACT

Background: Coronary artery disease (CAD) is the leading cause of morbidity and mortality in the world. Myocardial infarction (MI) is one of the major clinical manifestations of CAD. One of the main modifiable risk factors for developing and recurrence of CAD is smoking. Smoking cessation after MI is associated with considerably lower mortality rate. The aim of the study was to investigate the smoking cessation practices and the factors associated with smoking cessation at 6 to 12 months after hospitalization among patients who were hospitalized at Nork-Marash Medical Center (NMMC) in Yerevan, Armenia with acute MI (AMI).

Methods: A cross-sectional survey was carried out in April 2016. All smoker AMI patients above age 18 who had experienced acute MI and were hospitalized at NMMC from March 2015 to August 2015 were included in the study. Data collection was done through medical chart review and interviewer administered telephone survey. The survey questionnaire included questions on socio-demographic characteristics, smoking behavior, nicotine dependence, self-efficacy, social support, and depression. Descriptive, comparative, simple and multiple logistic regression analysis were performed using STATA 13 software.

Results: Among 214 AMI patients hospitalized in NMMC, 58.88% were smokers. All 103 patients who participated in the study were males. The mean age of the participants was 58.73 (SD: 8.87). Almost all the smoker patients attempted to quit smoking after AMI, but only 54.37% of patients maintained non-smoking status at 6-12 months. Most of the patients (87.38%) reported that they had received the smoking cessation advice, but no assistance and no follow up arrangement were provided. The nicotine dependence level was identified as an independent predictor of smoking cessation after AMI with OR of 0.34 (OR=0.34, 95% CI: 0.20-0.57, $p<0.001$). Self-efficacy was another independent predictor of smoking cessation after AMI with an OR of 1.30 (OR=1.30, 95% CI: 1.15-1.46, $p<0.001$).

Conclusion: The present study was the first attempt to investigate smoking cessation practice and factors associated with it in Armenian population. The findings show that the recommended standard care for smoking cessation was not provided in the medical setting and 45.63% of patients continued smoking at 6-12 months after AMI. The level of nicotine dependence and self-efficacy were independent predictors of smoking cessation at 6 to 12 months after AMI. Further research is needed to better understand smoking cessation practices among AMI patients. The study suggests the need for the integration of recommended standard smoking cessation services into medical care for all AMI patients. In addition, the health care professionals should implement assessment of nicotine dependence level and /or self-efficacy of patients to identify those patients who are more likely to continue smoking and provide more intensive assistance.

1. <u>INTRODUCTION</u>

1.1. Cardiovascular disease (CVD)

Cardiovascular disease (CVD) is a number one cause of death and disability and a major public health concern worldwide (Figure 1).[1] CVDs are disorders of the heart and blood vessels which include coronary heart disease (CAD), cerebrovascular disease, rheumatic heart disease and other conditions. CVDs are responsible for 10% of the global disease burden.[1] The death rates from CVD have decreased by almost a third between 2001 and 2011 in the United States, but the burden and risk remains alarmingly high.[2] In 2011, approximately 787,000 people, which is about one of every three deaths, died from CVDs in US. Although, CVD mortality is now reducing in most European countries including Central and Eastern European countries, CVDs are still responsible for 47% of all deaths in Europe and 40% in the European Union.[3] Over 75% of global CVD deaths occur in low-income and middle-income countries.

CAD, also known as coronary heart disease (CHD) or ischemic heart disease (IHD), is a group of diseases that includes myocardial infarction (MI), angina and sudden coronary death.[4] According to WHO, among an estimated 31% of all deaths (17.3 million deaths) in 2008 caused by CVDs globally, 42% (7.3 million) deaths were due to CAD.[1] Over 375,000 people die annually due to CAD.[5] CAD accounts for the 45% of CVD deaths (7.2 million deaths/year: an estimated 3.8 million men and 3.4 million women), and 12% of all deaths worldwide.[6] It is estimated that each year CAD causes 1.95 million deaths in Europe .[7] Compared to Northern, Southern and Western Europe, mortality rates from CAD are relatively higher in Central and Eastern Europe.

MI is the myocardial cell necrosis caused by significant and sustained ischemia. It is mainly an acute manifestation of atherosclerosis-related heart disease.[8] The clinical presentation of MI can range from minor coronary event to serious clinical conditions or sudden death.[8] After acute MI, patients remain at high risk for recurrent cardiovascular events and mortality.

1.2. Risk factors of CVD/CAD

The majority of CVD is caused by risk factors that can be controlled, treated or modified, such as high blood pressure, tobacco use, raised blood glucose (diabetes), lack of physical activity, unhealthy diet, high blood cholesterol/lipids and overweight/obesity.[1] However there are also some major CVD risk factors that cannot be controlled such as age, gender and family history of having CVD.[1]

The leading CVD risk factor is raised blood pressure to which 13% of global deaths are attributed. In terms of attributable deaths the next important risk factors for CVD are tobacco use (9%), raised blood glucose (6%), physical inactivity (6%) and overweight and obesity (5%).[1,9]

The risk of non-fatal MI increases by 5.6% for each cigarette smoked and persists even at only one to two cigarettes per day.[10] According to the Center for Disease Control and Prevention (CDC) tobacco use more than doubles the risk of MI and even people who smoke fewer than five cigarettes a day can have early signs of CVDs.[11] The INTERHEART study on tobacco use and risk of MI in 52 countries showed that the risk of developing CAD is higher in female smokers, younger male smokers and heavy smokers.[12]

Current evidence suggests that reducing total CVD risk by lowering all modifiable risk factors results in the prevention of MI.[13]

1.3. Reoccurrence of CAD

Patients with previous MI have a higher risk for further coronary events.[14] Survivors of MI are at increased risk of recurrent infarctions and have an annual death rate of 5%, which is six times the rate in people of the same age who do not have CAD.[14]

According to WHO MONICA study conducted in 21 countries over 10 years, secondary prevention and changes in coronary care are strongly linked to decreased risk of coronary end-points.[14]

The major modifiable risk factors for recurrence of CAD are the same as the risk factors for its development.[15] Key preventive lifestyle recommendations for all post-MI patients are tobacco cessation, healthy diet and dietary supplements, limitation of alcohol consumption, physical activity as recommended, weight management, maintenance of blood pressure within goal levels, and proper management of risk factors related to diabetes.[15] Pharmacologic prevention options include the use of statin therapy, anticoagulant therapy as necessary, use of Renin-Angiotensin-Aldosterone System Blockers as indicated per condition, and use of Beta Blockers if not contraindicated.[15]

Contemporary secondary prevention programs which foster healthy behaviors, and promote active lifestyles, reduce cardiovascular risk and event rates. Those secondary prevention programs have reported improved survival for all types of CAD patients.[16]

A prospective randomized controlled trial, which was conducted among patients with CAD to determine effectiveness of lifestyle changes such as stopping smoking, low-fat vegetarian diet, moderate aerobic exercise and stress management training for coronary atherosclerosis showed that those changes might result in regression of even severe coronary atherosclerosis after one year.[17]

1.4. Smoking cessation after MI

There is a strong evidence from prospective cohort studies that smoking cessation decreases CAD mortality.[13] Several studies demonstrated that smoking cessation after MI is associated with considerably low mortality rate.[18,19] A meta-analysis of smoking cessation after MI showed a relative risk reduction for coronary mortality of 46%.[19] In a Cochrane review demonstrated that patients who quit smoking after a MI or cardiac surgery have reduced risk of death by at

least one third (36% reduction in all-cause mortality). The review also concluded that smoking

cessation is at least as beneficial as modifying other risk factors.[20] After one year of smoking

cessation the risk of CAD is becoming close to the risk for someone who never smoked.[21]

Another study showed that lifetime non-smoking and quitting before or after initial acute MI

confers survival benefits on post-MI patients.[18] Among survivors of initial AMI, never-smokers

had roughly one-half the risk of dying than those who continued to smoke after AMI. Those

smokers who quit before AMI and those who quit after AMI significantly decreased their risk of

dying, as compared with persistent smokers.[18] Furthermore, reduction of daily cigarettes among

those who continued to smoke was associated with higher survival. The study found that each

reduction of 5 cigarettes smoked/day after AMI was associated with an 18% [95% CI: 9% to

25%] decline in mortality risk ($p<0.001$).[18] Another study indicated that patients who continue

to smoke after MI have a 50% higher risk of recurrent coronary events compared to

nonsmokers.[22]

A nested case-control study which estimated the association measures between the fatal or non-

fatal reinfarction in patients who either continue to smoke or stop after a first infarction showed

that the risk of MI is three times higher in patients who continue to smoke after an acute

coronary event compared with patients who quit: patients who smoke after the first acute

myocardial infarction had an odds ratio (OR) of 2.83 (95% CI, 1.47-5.47) for a new acute

myocardial infarction. The study showed also that the risk of reinfarction in patients who stop

smoking is similar to the risk of non-smokers before the first infarction.[23]

Despite the fact that smoking cessation has well known advantages many patients continue

smoking after a diagnosis of CAD. A study showed that at one year after MI 52.3% of patients

quit smoking and 30.6% of patients decreased the amount of smoking. Therefore, 16% of

patients did not change their smoking behavior and 1.1% of patients smoked more than before an

MI.[24] The same study presented that the average time to restart smoking after discharge was 4±7.3 months with many patients restarting smoking within one month after discharge.[24]

1.5. Determinants of smoking cessation after MI

Several studies explored key determinants of successful smoking cessation among post MI patients.

A systematic review and meta-analysis of the impact of depression on subsequent smoking cessation in patients with CAD (1990-2013) showed that CAD patients with depressive symptoms are significantly less likely to quit smoking than their non-depressed counterparts.[25] Several studies showed that those patients who had longer hospital stay were more likely to quit smoking after discharge.[26,27,28]

Majority of the studies demonstrated that the level of nicotine dependency is a significant predictor of smoking cessation among post MI patients. Low dependency on tobacco among post MI patients was an independent predictor for smoking cessation.[29,30,31,32]

Some studies showed that those MI patients who used medication with antidepressants and sedatives at the time of admission were more likely to continue smoking after one year of hospitalization.[29,31]

Rosal et al. stated that patients who were determined to take action in quitting smoking had better smoking cessation results compares to those who showed no special interest in quitting smoking.[33] Higher self-efficacy was shown to be positively associated with smoking cessation rates.[33,32] Self-efficacy is the confidence in one's ability to effectively behave in a given situation.[34]

Studies showed that social support is not an independent predictor of smoking cessation after six months of hospitalization.[35] On the other hand some studies demonstrated that those patients

who received better social support were more likely to quit smoking.[28] Chouinard and Robichaud-Ekstrand in 2007 found that after 6 months post cardiac patients who received more social support with regard to their smoke-free behavior, were more confident to remain non-smoker, perceived less pros of continuing to smoke and were more likely to quit and maintain abstinence than those who did not.[36] There are several other studies that similarly reported that those patients who get social support to quit smoking were more likely to quit compared with those who did not received.[28,37,38]

Several studies found that the severity of CAD is a significant predictor of smoking cessation[24], but there are some studies that suggests that the severity of CAD is not a significant predictor of smoking cessation.[35]

The evidence on the association of demographic characteristics and smoking cessation is also contradictory. In some studies, sex, age, marital status, education were not significantly associated with smoking cessation after six months of hospitalization.[35] In contrast, other studies showed significant associations between sex, age, marital status, education and smoking cessation after MI.[26,28]

There are contradictory findings regarding anti-smoking advice received from a physician during hospitalization. Some studies suggested that the received advice significantly increased smoking cessation rates among post MI patients[39] but some studies did not found significant difference in smoking rates.[35,31]

Having history of vascular disease, and comorbidities such as COPD[29], diabetes,[31] or prior cardiac events[31] were shown to be independent predictors of smoking resumption in several studies. The literature also suggests that prior attempts of quitting are also important for the success of quitting after MI.[28,40]

1.6. Situation in Armenia

Coronary artery disease is the leading cause of death in Armenia. According to the latest WHO data published in May 2014 13,293 or 38.75% of total deaths in Armenia were attributable to CAD. The age-adjusted death rate is 323.68 per 100,000 of population, which puts Armenia in the 8th place in the world.[41]

Smoking prevalence among Armenian adult male population is one of the highest in the European region. According to Demographic and Health Survey (DHS) 2010, the proportion of current cigarette smokers among women and men has not changed much from 2005 to 2010. For women, the proportion of smokers in 2005 and 2010 was 2%. Among men, the proportion of cigarette smokers in 2010 was nearly the same as in 2005 (61% in 2005 and 63% in 2010) but lower than in 2000 (68%).[42] Compared with the estimates from DHS conducted in other former Soviet Union countries the prevalence of smoking among women is the lowest but the prevalence among men is the highest in the region.[42] According to other surveys and experts assessments the proportion of smoking women may be much higher (15-18%).[43]

Although Armenia was the first among former Soviet countries to join the WHO Framework Convention on Tobacco Control (FCTC),[44] a study conducted in 2014 to measure the progress in implementation of FCTC revealed that there is limited assistance to smokers willing to quit.[45]

There has been no research conducted in Armenia to explore the smoking cessation practices and the main factors associated with smoking cessation after experiencing MI. Such investigation could help to better organize the care and smoking cessation support for this group of patients and therefore improve the overall survival after MI in Armenia.

1.7. Aim of the study

The aim of the study is to investigate the smoking cessation practices and the factors associated with smoking cessation at 6 to 12 months after hospitalization among smoker patients who were hospitalized at Nork-Marash Medical Center (NMMC) with AMI.

Research questions

- What is the prevalence of smoking cessation at 6 to 12 months after experiencing AMI?

- What are the factors associated with quitting smoking after AMI?

- What are the methods, reasons and main barriers for smoking cessation among post AMI patients?

2. <u>METHODS AND MATERIALS</u>

2.1. Study design

The study design is quantitative cross-sectional. It allows investigating the prevalence and determinants of smoking cessation and other variables in the population of interest. It is also a relatively cheap and quick study method.[46]

2.2. Study population

The target population of the study included the patients living in Armenia who had experienced MI. Study population was identified as the patients hospitalized at Nork-Marash Medical Center (NMMC) from March 2015 to August 2015 with AMI.

The inclusion criteria were being a smoker at the time of AMI, age above 18 years, living in Armenia, and ability to communicate in Armenian. Dead patients and those whose medical records were missing were excluded from the study.

2.3. Study settings

The contact information of the patients was obtained from NMMC medical records. The NMMC is one of the largest cardiac hospitals in Armenia which was founded in 1992. It performs a range of services, diagnostic and therapeutic procedures related to heart disease.[47] The center has performed all types of surgeries for the treatment of congenital and acquired heart

disease, except transplantation, and various surgeries on the vessels and for the treatment of CAD.[47]

2.4. Sampling strategy

The student investigator checked the database of NMMC and extracted the contact information of all AMI patients hospitalized in NMMC from March 2015 to August 2015. The medical records of the patients were reviewed to identify smoking status at the time of AMI. All smoker AMI patients above age 18 were contacted for the phone interview. The patients whose smoking status was missing in their medical records were also contacted by phone.

Sample size was estimated based on available preliminary information from a physician working at NMMC that approximately 70 patients are being hospitalized at NMMC with AMI monthly, which means that during six month period there would be about 420 hospitalized patients with diagnosis of AMI. Considering one of the previous studies conducted in NMMC among post AMI patients in 2007, smoking prevalence of this population was approximately 70%,[48] Taking into account a nationwide population based cohort study aiming to examine short and long term mortality trends in Denmark, the 1 year mortality after AMI was 24.2%[49], which means that out of these 420 patients approximately 223 patients could be eligible for the study.

2.5. Data collection

Data collection was done through telephone survey and medical chart review. The telephone interview technique was chosen as a survey mode, since it is time-efficient and cost effective.[50] Before the telephone based interview the appropriate information was extracted using medical record abstraction form (Appendix 2). The student investigator recorded the names and contact information of patients for telephone interviews in the journal forms (Appendix 3). Each participant received an ID number, which was their sequential record review number. In order to ascertain patients' smoking status the screening question was included in the questionnaire about

their smoking status at the time of MI. The participants gave oral consent before the interviews (Appendix 4).

2.6. Study variables

The Dependent variable (outcome) of the study was smoking cessation at 6 to 12 months. The patients were classified as quitters if they had not smoked even a puff within the past 30 days.[35]

Independent variables included socio-demographic characteristics (age, gender, marital status, level of education, socio-economic status), smoking behavior (intensity, age of starting smoking, years of smoking, number and duration of quit attempts, reasons, methods, and barriers of quit attempt), level of nicotine dependence, depression, self-efficacy, social support, severity of the disease, presence of comorbidities and other CAD risk factors.

2.7. Study Instruments

Medical data about participants, including severity of CAD, presence of comorbidities and other CAD risk factors were obtained from the medical records. Interviewer-administered survey questionnaire consisted of several domains including socio-demographic characteristics, smoking behavior (intensity, age of starting smoking, years of smoking, number and duration of quit attempts, reasons, methods, and barriers of quit attempt), nicotine dependence, self-efficacy, social support, and depression (Appendix 1).

To assess smoking behavior of the participants the questions were developed using different guidelines and studies on smoking.[51,52,53]

In order to assess the level of readiness to change of smokers the stages of changes were determined. The participants were asked whether they are going to quit within the next 30 days or six months. Those participants who stated quitting in the next six months were classified as contemplators, those participants who stated quitting in the next 30 days were classified as perpetrators. Those participants who stated that they are not planning to quit smoking were

classified as being in the precontemplation stage. Those participants who reported quitting within the past 6 months or longer were at the stage of action and maintenance, respectively.

Nicotine dependence was measured using the Fagerstrom Test for Nicotine Dependence which has been found to have good test-retest reliability (Appendix 1).[54] This brief 6-item, self-report questionnaire can yield a total score of up to 10 and classifies smokers as having very low dependence (score 0-2), low dependence (score 3-4), moderate dependence (score 5), high dependence (score 6-7) and very high dependence (score 8- 10).

The depression of post MI patients was measured using modified version of the Center for Epidemiological Studies Depression (CES-D) scale.[55] The original scale involves 20 items and six aspects of depression: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance.[55] The validation of Armenian translation of the questionnaire has been done, which showed that the negatively formulated 16 items have high diagnostic accuracy and good factorial structure. The validated scale was widely used in Armenian population.[56] The 16 items with a 4-level response scale was used for this study. The total score for this instrument ranges from 0 to 48. A cut-off score of 13 or above was used as indicative for possible depression.[57]

In order to measure self-efficacy and one's ability to abstain from smoking was measured using widely used and validated Self-Efficacy Questionnaire (SEQ-12) (Appendix 1).[34] The questionnaire consists of 12-items which asks participants to indicate on a 5-point scale whether they could refrain from smoking in various high risk situations from 1 (not sure at all) to 5 (absolutely sure). SEQ-12 consisted of two six items subscales which respectively measured confidence in ability to refrain from smoking when facing internal stimuli (e.g. feeling depressed) and external stimuli (e.g. being with a smoker).[34]

In order to measure social support the Enhancing Recovery in Coronary Heart Disease (ENRICHD) Social Support Inventory (ESSI) scale was used.[58] This scale was developed for

patients with MI. It includes 7 items in 4 domains of social support: emotional, instrumental, informational and appraisal. It was validated and widely used in this population group.[35] For this study the 7th item was excluded because marital status was examined separately among socio-demographic factors. The remaining 6 items were summed to create a total score. The ESSI scores ranged from 6 to 30. Higher scores indicated greater social support. According to standard criteria low social support was defined as total score of ≤ 18.[59]

The instrument was pre-tested among 6 patients and the appropriate changes were performed.

2.8. Data Entry and Analysis

Data entry and recoding were performed using SPSS 22.0 statistical package. Statistical analysis was done using SPSS 22.0 and STATA 13.0. The student investigator did a single data entry, followed by logical and range checks to ensure the accuracy of data.

In order to summarize participants' characteristics and smoking cessation prevalence descriptive statistics was used. Categorical data was provided as frequencies, numeric data as means and SDs. Participants were categorized into quitters and non-quitters. Simple comparative analysis included t-tests for continuous variables, chi-square test for categorical data, and Fisher's test for the variables with small frequencies. Logistic regression modeling was used to control for possible confounding. In all analyses, statistical significance was accepted at $p < 0.05$. The power analysis was performed to ensure how much the study was able to detect statistically significant difference in outcomes.

2.9. Ethical Considerations

The research proposal was reviewed and approved by the Institutional Review Board (IRB) of the American University of Armenia. Oral informed consent was obtained from each participant of the study before the telephone interview (Appendix 4). The identifiable information was coded to assure confidentiality of participants. The participants were informed about the study

aim and were able to stop the interview at any time. Personal information about the study participants was available only to research team and the journal forms (Appendix 3), which include names and contact numbers were destroyed after the completion of the study.

3. __RESULTS__

3.1. Administrative results

The list of 282 patients hospitalized at NMMC with AMI from March 2015 to August 2015 was provided by the NMMC. Out of these 282 patients, 6 patients' medical records were missing and out of the remaining 276 patients 141 patients did not meet the inclusion criteria (according to medical records 62 patients were excluded because they had the diagnosis other than AMI, died or had missing contact information, and 79 patients were not smokers at the time of AMI) and were excluded from the study. For the telephone interview 128 patients were contacted while 7 patients could not be contacted because of wrong numbers. Out of 128 patients/relatives contacted by phone, 3 patients had died, 8 patients were out of the country, 4 patients refused to participate in the survey and 10 patients identified themselves as not smokers at the time of AMI. The remaining 103 participants completed the interview. The flow chart showing the stages of recruitment is presented in the Figure 2.

The power was calculated based on two-sample comparison of means for self-efficacy and nicotine dependence score and it was 1.00. The actual power based on means of having smoker family member was 0.58 (Appendix 5).

3.2. Descriptive statistics

The overall point prevalence of smoking among patients at the time of AMI diagnosis was 58.88% (126 out of 214). The smoking status was not recorded in 4.21% (9 out of 214) cases. Out of 214 AMI patients 85.05% (n=182) were men and 14.95% (n=32) were women. According to the medical records smoking prevalence among men was 70.69% (n=123), while among women it was 9.68% (n=3).

All 103 patients who participated in the study were males. The mean age of the participants was 58.73 (SD: 8.87). Most of the participants (65.69%) had more than 10 years of education. Majority of the participants (57.84%) were unemployed. The vast majority (88.95%) of participants were married at the time of the interview. Many of participants (43.96%) reported having household monthly income less than 100,000 AMD, 27.47% reported having monthly income from 101,000 to 200,000 AMD, and 28.57% had an income above 201,000 AMD.

Out of 103 patients 54.37% quitted smoking immediately after the AMI and 45.63% continued to smoke at the time of the interview (6-12 months after the AMI). Table 1 shows the descriptive statistics of the participants by their current smoking status. Descriptive statistics showed that those patients who quit smoking were younger than those who continued: the mean age of quitters was 58.11 (SD: 8.40) vs. non-quitters 60.51 (SD: 9.19) (p=0.173).

The majority of participants (80.65%) had ST-segment elevated myocardial infarction and the rest had non-ST segment elevated myocardial infarction. The mean duration of hospital stay was 5.17 days (SD: 4.06). According to medical records many of the participants had family history of CAD (57.73%), hypertension (72.00%) and were overweight or obese (68.93%), some of them had hypercholesterolemia (6.45%). Few of the participants had previous cardiac surgery (15.69%), cerebrovascular disease (2.94%), diabetes (17.65%), respiratory disease (11.76%), urogenital disease (17.65%), GI disease (24.51%) and other comorbidities (12.62%) such as peripheral vascular disease, rheumatism and spinal hernia. Only 22.55% of the participants had heart related other hospitalization after AMI.

Current smokers smoke on average 16.89 (SD: 11.95) cigarettes per day. Almost all (97.87%) current smokers reported having at least one quit attempt in their life. The mean number of quit attempts among all the participants before AMI was 3.19 (SD: 3.19). The mean longest duration of those quit attempts was 11.31 months (SD: 19.95). All those participants who were currently not smoking quitted smoking successfully after the first quit attempt. The mean longest duration

of quit attempt among 93.62% (n=44) of current smokers who tried quitting after AMI and failed was 1.95 months (SD: 2.20).

The main reasons for quitting smoking in quitting and non-quitting groups of participants were advice from a physician (53.57% vs. 61.36%, respectively, p=0.435) family pressure (17.86% vs. 29.55% , respectively, p=0.168) and health concern (80.36% vs. 47.73%, respectively, p= 0.001). The vast majority (85%) of participants stated that they have quitted by using their will power. There was only one non-quitter participant who used medication such as nicotine replacement therapy (nicotine patch) as a method for quitting, but it was not helpful. Four people (2 in quitting group and 2 in non-quitting group) used e-cigarettes to quit. There was no difference between the quitters and non-quitters in terms of cessation method used. Many of the participants (20.99%) mentioned that they do not know any effective smoking cessation method. The main barriers for quitting included cravings for cigarette (30.36% quitters vs. 63.63% non-quitters, p=0.001), influence of other smokers (10.71% quitters vs. 31.82% non-quitters p=0.009), loss of way to handle stress (12.50% quitters vs. 43.18% non-quitters, p=0.001), and low self-control (31.82% of non-quitters), which were significantly different between quitters and non-quitters. Most of the quitters mentioned (62.50%, n=35) that they did not have any difficulties while quitting smoking (p<0.0001).

Most of the patients (87.38%) had received smoking cessation advice from the physician and there was no significant difference between the two groups (82.14% in quitting group vs. 93.62% in non-quitting group, p=0.081). Only one non-quitter patient stated about receiving some form of assistance (self-help material). No follow-up arrangement was done by the physicians.

Non-quitter patients were classified according to their readiness to quit: 27.66% patients stated that they want to quit in the next 6 month and were classified as contemplators, 27.66% patients were in preparation stage, since they wanted to quit within the next month, 25.53% were not planning to quit smoking and were classified as being in the precontemplation stage.

Consequently, those patients who reported quitting smoking were abstinent for more than 6 months and were in the stage of maintenance. Out of those patients who planned to quit in the next 30 days or 6 months, 8.57% (n=3) were confident that the attempt will be successful, 31.43% (n=11) stated that it may be successful, 31.43% (n=11) stated that it may succeed or fail, and 28.57% (n=10) thought that the quit attempt is more likely to fail. Majority of these patients stated that they will rely on their will power (80.00%) and only one patient thought to try nicotine replacement therapy as a method for quitting.

All the 103 participants completed Fagerstrom test for nicotine dependence to measure their level of nicotine dependence at the time of AMI and the mean score was 6.30 (SD: 2.37) showing overall high dependence level of participants.

Among all the participants the mean overall score of self-efficacy was 33.55 (SD: 16.49). The mean score for internal stimuli was 15.90 (SD: 8.74) and for external stimuli was 17.65 (SD: 8.46).

The mean current social support score among the study population was 25.55 (SD: 5.03). The study participants were categorized into two groups with no depression and with possible symptoms of depression: 25.56% vs. 74.44%, respectively, showing high proportion of possible depression symptoms among study participants. This variable had missing values exceeding 10% of the total sample size (12.62%, n=13: 2 of them were from non-quitting group, 11 were from quitting group).

3.3. Comparative and Simple Logistic Regression Analysis

The results of simple logistic regression analysis for unadjusted associations between current smoking status and independent variables are presented in the Table 2.

The quitters and non-quitters were marginally statistically significantly different in terms of marital status (p=0.091) but the unadjusted logistic regression showed no significance. The

quitters and non-quitters were different by their level of education (49.09% of quitters >13 years of education vs. 29.79% of non-quitters, p=0.047). Those participants who had higher education had 2.27 times higher odds of quitting smoking (95% CI: 1.00-5.15, p=0.049). The two groups were not different in terms of employment status. There was a difference between the quitters and non-quitters in terms of household monthly income, but the difference was marginally statistically significant (p=0.088). The unadjusted logistic regression showed that having higher income was associated with substantially higher odds of quitting (OR=2.79, 95% CI: 1.06-7.34, p=0.037).

Regarding the medical variables, such as type of AMI, time of hospital stay, other risk factors of CAD (family history of CAD, BMI, hypertension, hypercholesterolemia), comorbidities (previous cardiac surgery, cerebrovascular disease, diabetes, respiratory, urogenital and GI diseases) and severity of AMI there were no significant differences between quitters and non-quitters.

The quitters and non-quitter were statistically significantly (p=0.008) different in terms of having other hospitalizations after the AMI because of heart related problems. Those patients who had other hospitalization after AMI had 4.09 times higher odds of quitting smoking (95% CI: 1.38-12.09, p=0.011).

The quitting and non-quitting groups were statistically significantly different in terms of number of smoker family members, age of first cigarette, age of stating daily smoking and the overall years of daily smoking. The simple logistic regression showed that those participants who had started smoking earlier had an estimated crude OR of 1.20 (95% CI: 1.06-1.36, p=0.004). The number of years of smoking was also associated with current smoking status (OR=0.95, 95% CI: 0.92-0.99, p=0.017) and those patients who smoke for a long time are more likely to continue smoking.

The estimated crude OR of the association between current smoking status and having a smoker family member was 0.49 (95% CI: 0.26-0.96, p=0.037), suggesting that each additional smoking family member decreases the odds of quitting 0.49 times. The mean number of quit attempts before experiencing AMI was statistically significantly different between the quitters and non-quitters (3.64 vs. 2.58, p=0.0236). The results showed that each additional quit attempt in the past makes it 1.44 times more likely to quit smoking after AMI (OR=1.44, 95% CI: 1.03-2.01, p=0.031). The longest period of quit attempts before AMI was not significantly different between the groups (mean duration in months for quitters was 9.96 vs. 13.18 for non-quitters, p=0.5817).

Those patients who mentioned the reason for their last quit attempt to be the health concerns had 4.48 times higher odds of quitting smoking (95% CI: 1.85-10.86, p=0.001). The estimated crude ORs of the association between the current smoking status and barriers for quitting were 0.25 (95% CI: 0.11- 0.58, p=0.001) for cravings for cigarette, 0.26 (95% CI: 0.09-0.74, p=0.012) for influence of other smokers and 0.19 (95% CI: 0.07-0.51, p=0.001) for loss of way to handle stress. These ORs showed that those patients who had experienced such difficulties during the quit attempt were less likely to sustain their quitting status.

The quitting and non-quitting groups were statistically significantly different in terms of their level of nicotine dependence measured by Fagerstrom scale: 4.98 (SD: 0.27) in quitting group vs. 7.87 (SD: 1.75) in non-quitting group (p<0.0001). The estimated crude ORs of the association between the current smoking status and the level of nicotine dependence before experiencing AMI was 0.43 (95% CI: 0.31-0.59, p<0.001), suggesting that those participants with high level of nicotine dependence are less likely to successfully quit smoking.

The participants at the time of AMI were significantly different in terms of self-efficacy as well. The difference was significant for both internal and external stimuli (p<0.0001). The mean overall score was 45.55 (SD: 11.91) and 19.26 (SD: 7.04) for quitters and non-quitters,

respectively (p<0.0001). The results showed that each unit increase in self-efficacy score increases the odds of quitting smoking 1.30 times (OR=1.30, 95% CI: 1.17-1.44, p<0.001).

Similarly, the participants were different in terms of their current social support scores: mean score of 27.96 (SD: 3.03) and 22.83 (SD: 5.46) for quitters and non-quitters, respectively (p<0.0001), indicating that the quitters had significantly higher score. The estimated crude ORs of the association between the current smoking status and the current social support score was 1.30 (OR=1.30, 95% CI: 1.17-1.44, p<0.001), meaning that quitters had 1.30 times higher social support score compared to non-quitters.

The current depression was significantly different for the groups (p<0.001). The OR for the association between the current smoking status and current depression was 7.49 (95% CI: 2.29-24.50, p=0.001).

3.4. Multiple Logistic Regression Analysis

To investigate the controlled association between the current smoking status and the independent variables multiple logistic regression was performed. All the variables which had significance level of <0.05 in the simple logistic regression were tested for multicollinearity by using Variance Inflation Factor (VIF) statistics. The analysis found that there was collinearity between the nicotine dependence score and self-efficacy score (Table 3). The correlation between the two covariates was negative, meaning that each unit increase in self-efficacy score decreases the score of nicotine dependence. As a result, two different multivariate models were developed. The model 1 is presented in the Table 4. It includes all the significant covariates from the simple logistic regression (level of education, household monthly income level, age of first cigarette, age of daily smoking, years of smoking, having smoker family member, number of quit attempts before AMI, having other hospitalization after AMI, nicotine dependence score) besides self-efficacy score. After running the regression only nicotine dependence score have sustained statistically significantly associated with the current smoking status of the participants. The

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results indicated that after adjusting for level of education, household monthly income level, age of first cigarette, age of daily smoking, years of smoking, having smoker family member, number of quit attempts before AMI, having other hospitalization after AMI, each additional unit increase of nicotine dependence score decreasing the odds of quitting smoking by 0.34 times (OR=0.34, 95% CI: 0.20- 0.57, p<0.001). The second model is presented in the Table 5. The second model includes all the significant covariates from the simple logistic regression except nicotine dependence score. Self-efficacy remained significantly associated with the current smoking status of participants in this model. After adjusting for level of education, household monthly income level, age of first cigarette, age of daily smoking, years of smoking, having smoker family member, number of quit attempts before AMI, having other hospitalization after AMI each unit increase in self-efficacy score increases the odds of quitting smoking 1.30 times (OR=1.30, 95% CI: 1.15-1.46, p<0.001).

4. **DISCUSSION**

4.1. Limitations of the study

We would like to acknowledge several limitations of this study. First, the study relied upon self-reported smoking status of participants and did not use any biochemical validation method to measure it. Second, although the scales included in the study instrument were internationally validated, only one of them was validated specifically for use in Armenian population. The research team is planning to perform validation studies for these scales in the future. Also, since the data collection was retrospective, a recall bias cannot be ruled out. It was not possible to measure social support and depression of the participants retrospectively and those two variables measured the current situation.

The power calculation revealed that the study did not have enough power to detect the associations between current smoking status of participants and other covariates (Appendix 5). The sample size was limited due to inaccurate or missing contact information. It was also not

possible to conduct interviews with female patients (out of 3 female smoker patients one was not contacted because of wrong phone number, the other patient was out of the country, and the next patient identified herself as not smoker at the time of AMI) as a result all the study participants were males.

The sample represents participants from a single hospital which may limit the generalizability of the results to other settings.

4.2. Strengths of the study

To our knowledge, this is the first study investigating smoking cessation prevalence, practices and factors associated with smoking cessation in Armenia.

Medical record reviews and all phone interviews were conducted by one student investigator, which made the data collection more consistent. Another strength of the study was a very high response rate (96.58%).

The power calculations for nicotine dependence and self-efficacy scores showed that the study had enough power to make inferences for those factors.

4.3. Main Findings

The present study investigated the smoking cessation practices and the factors associated with smoking cessation at 6 to 12 months after hospitalization among patients who were hospitalized at Nork-Marash Medical Center (NMMC) with AMI and who were smokers at the time of AMI.

The study showed that the prevalence of smoking among AMI patients in NMMC was 58.88%. Smoking prevalence among AMI patients for men and women were 70.69% and 9.68%, and these percentages were higher compared to the smoking prevalence for males and females in general population (63% and 2%, respectively).[42]

The current study confirmed the association between post AMI patients' current smoking status and their level of nicotine dependence previously reported in the literature.[29,32,60,31] The study

showed level of nicotine dependence is an independent predictor of smoking cessation after AMI with OR of 0.34, which means that those patients who were more dependent to smoking before AMI had higher probability to continue smoking after the hospitalization. The assessment of level of nicotine dependence would be important for the health care provider to determine what smoking cessation approach would be more appropriate for the patients.[61]

Self-efficacy was another independent predictor of smoking cessation after AMI in this study. In concordance with the vast majority of literature self-efficacy was stronger in quitters, which demonstrated that they were certain that they could refrain from smoking in difficult situations. Many earlier investigations found self-efficacy as an independent predictor of smoking cessation after AMI.[32,33,34,62]

According to several studies about two third of post AMI patients quit smoking after admission to the hospital.[28, 60] The present study showed that almost all the patients attempted to quit smoking after AMI while only 54.37% of patients maintained their quitting status at 6 to 12 months follow-up. Many of the participants relapsed within short period of time (mean duration of the longest quit attempt after AMI was 1.95 months), which is consistent with the literature.[24]

The main reasons for quitting smoking reported by the study respondents were advice from the physician, health concern and family pressure, but there was no significant difference in reasons for quitting smoking between the quitters and non-quitters. Most of the patients (87.38%) reported that they had received the smoking cessation advice, but some of them quitted and the others did not quit. Similar results were found in other studies showing that simple advice to stop smoking is not sufficient for the smoker patients to quit smoking. [28,32]

Most of the medical records (95.79%) included smoking cessation status of the AMI patients which demonstrates that physicians asked smoking status of patients; however, the information about the number of smoked cigarettes and years of smoking was not recorded. This demonstrated that the assessment of the level of nicotine dependence was not performed.

Although it is well documented that smoking cessation after experiencing AMI is associated with decreased risk of recurrence of coronary events, no smoking cessation assistance or follow-up arrangement was provided by the doctors as recommended by the international tobacco dependence treatment guidelines.[63]

The study revealed that 85% of participants attempted to quit smoking by using their will power and many of them mentioned that they are not aware of smoking cessation approaches, which might be an additional barrier for smoking cessation among AMI patients. By increasing their knowledge about smoking cessation methods, health care providers can support those patients who want to quit smoking. The main barriers for quitting identified by the respondents were cravings for cigarette, influence of other smokers and loss of way to handle stress. These findings are consistent with the literature.[64]

The type of AMI, time of hospital stay, other risk factors of CAD (family history of CAD, BMI, hypertension, hypercholesterolemia), comorbidities (previous cardiac surgery, cerebrovascular disease, diabetes, respiratory, urogenital and GI diseases) were not associated with smoking cessation in our study. This might be explained by the small sample size used in the current study.

5. CONCLUSION & RECOMMENDATIONS

The present study was the first attempt to investigate smoking cessation practice and factors associated with it in Armenia. The results showed that 58.88% of patients were smokers at the time of AMI and 45.63% of them continued smoking at 6-12 months after AMI. The recommended standard care for smoking cessation was not provided in the medical setting and patients relied only on their will for quitting and did not receive professional assistance. The level of nicotine dependence and self-efficacy were independent predictors of smoking cessation after AMI.

Further research is needed 1) to explore reasons/obstacles for not providing recommended standard smoking cessation services to AMI patients; 2) to further explore smoking cessation practices among AMI patients with expanded sample size to increase accuracy of the findings; and 3) to investigate smoking cessation practices in other medical settings among patients with AMI.

The study suggests the need for the integration of recommended standard smoking cessation services into medical care for all AMI patients. In addition, the health care professionals should implement assessment of nicotine dependence level and /or self-efficacy of patients to identify those who are more likely to continue smoking and provide more intensive assistance.

Smoking is one of the totally preventable and very prevalent risk factors for development and recurrence of CAD in Armenia. It is well documented that smoking cessation is associated with decreased risk for CAD and guidelines strongly recommend patients and their families to quit smoking and avoid second hand smoke. However, as discovered in the current study, although majority of patients attempted to quit smoking after AMI, many patients relapsed within a short period. This demonstrates the need for implementation of proper smoking cessation services and targeted help for this population, which would improve the quitting outcomes and overall survival of AMI.

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TABLES

Table 1. Descriptive characteristics by current smoking status of the patients

Variable	Smoking Status		p-value
	Non-quitter **45.63%** **(n=47)**	**Quitter** **54.37%** **(n=56)**	
Age (years)			
mean	60.51	58.11	0.173
SD	9.19	8.40	
Gender			-
Male	47 (100)	56 (100)	
Level of education, n (%)			
8 year or less	4 (8.51)	3 (5.45)	
10 years	15 (31.91)	13 (23.64)	0.335
Professional technical	14 (29.79)	12 (21.82)	Fisher's exact
Institute/University	13 (27.66)	26 (47.27)	
Postgraduate	1 (2.13)	1 (1.82)	
Level of education, n (%)			
≤13	33 (70.21)	28 (50.91)	0.047
>13	14 (29.79)	27 (49.09)	
Marital status, n (%)			
Single	2 (4.26)	0 (0.00)	
Married	40 (85.11)	51 (91.07)	0.160
Widowed	4 (8.51)	1 (1.79)	Fisher's exact
Divorced	0 (0.00)	1 (1.79)	
Refused to answer	1 (2.13)	3 (5.36)	
Marital status, n (%)			
Married	40 (86.96)	51 (96.23)	0.091
Without a couple	6 (13.04)	2 (3.77)	
Employment status, n (%)			
Employed	16 (34.04)	27 (49.09)	0.125
Unemployed	31 (65.96)	28 (50.91)	
Household monthly income (AMD), n(%)			
< 50,000	3 (6.38)	11 (19.64)	
50,000 – 100,000	18 (38.30)	8 (14.29)	
100,001 – 200,000	15 (31.91)	10 (17.86)	0.006
200,001 – 300,000	5 (10.64)	14 (25.00)	
>300,000	3 (6.38)	4 (7.14)	
Refuse to answer	3 (6.38)	9 (16.07)	
Household monthly income (AMD), n(%)			
≤200,000	36 (81.82)	29 (61.70)	0.034
>200,001	8 (18.18)	18 (38.30)	
Number of people living in the household			
mean	3.89	4.35	0.128
SD	1.46	1.49	
AMI type, n (%)			
STEMI	34 (72.34)	41 (73.21)	0.721
NSTEMI	9 (19.15)	9 (16.07)	

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Time of hospital stay (days)				
	Mean	5.00	5.32	0.690
	SD	3.97	4.17	
History of CAD, n (%)				
	Yes	24 (57.14)	32 (58.18)	0.918
	No	18 (42.86)	24 (57.14)	
BMI (kg/m^2)				
	Mean	27.79	27.10	0.490
	SD	5.12	4.28	
BMI (kg/m^2)				
	≤25	33 (70.21)	38 (67.86)	0.797
	>25	14 (29.79)	18 (32.14)	
Hypertension, n (%)				
	Yes	34 (73.91)	38 (70.37)	0.694
	No	12 (26.09)	16 (29.63)	
Hypercholesterolemia, n (%)				
	Yes	1 (2.50)	5 (9.43)	0.178
	No	39 (97.50)	48 (90.57)	
Having any risk factor, n (%)				
	Yes	45 (95.74)	55 (98.21)	0.458
	No	2 (4.26)	1 (1.79)	
Previous cardiac surgery, n (%)				
	Yes	8 (17.02)	8 (14.55)	0.732
	No	39 (82.98)	47 (85.45)	
Cerebrovascular disease, n (%)				
	Yes	1 (2.17)	2 (3.57)	0.678
	No	45 (97.83)	54 (96.43)	
Diabetes, n (%)				
	Yes	10 (21.74)	8 (14.29)	0.326
	No	36 (78.26)	48 (85.71)	
Respiratory diseases, n (%)				
	Yes	4 (8.70)	8 (14.29)	0.383
	No	42 (91.30)	48 (85.71)	
Urogenital diseases, n (%)				
	Yes	7 (15.22)	11 (19.64)	0.560
	No	39 (84.78)	45 (80.36)	
GI diseases, n (%)				
	Yes	8 (17.39)	17 (30.36)	0.130
	No	38 (82.61)	39 (69.64)	
Having any comorbidity, n (%)				
	Yes	27 (58.70)	39 (70.91)	0.199
	No	19 (41.30)	16 (29.09)	
Severity of AMI, n (%)				
	Single vessel disease	28 (60.87)	31 (55.36)	0.847
	Two vessel disease	9 (19.57)	12 (21.43)	
	Three or more vessel disease	9 (19.57)	13 (23.21)	
Other hospitalization after AMI due to heart disease, n (%)				0.008
	Yes	5 (10.64)	18 (32.73)	
	No	42 (89.36)	37 (67.27)	
Age of first cigarette (years)				0.003

	Mean	14.83	16.89	
	SD	3.29	3.37	
Age of daily smoking				
	Mean	17.17	18.84	0.007
	SD	2.70	3.44	
Years of smoking				
	Mean	40.40	35.00	0.015
	SD	11.55	10.30	
Number of smoker family members				
	Mean	0.62	0.35	0.034
	SD	0.64	0.59	
Current smoking status				
	Daily	39 (82.98)		
	Less than daily	8 (17.02)		
	Not at all		56 (100)	
Smoking in the last 30 days				
	Yes			
	No		56 (100)	
Duration of quitting, months				
	Mean		9.30	
	SD		1.79	
Amount of daily smoked cigarettes				
	Mean	16.89		
	SD	11.95		
Attempt to quit, n (%)				
	Yes	46 (97.87)		
	No	1 (2.13)		
Quit attempts, n (%)				
	Before AMI	2 (4.35)	0 (0.00)	
	After AMI	20 (43.48)	20 (35.71)	0.178
	Both	24 (52.17)	36 (64.29)	
Number of quit attempts before AMI				
	Mean	2.58	3.64	0.024
	SD	1.70	1.87	
Longest period of quitting before AMI (months)				
		13.18	9.96	0.582
	Mean	27.88	11.58	
	SD			
Number of quit attempts after AMI				
	Mean	1.08	1.00	0.183
	SD	0.33	0.00	
Longest period of quitting after AMI (months)				
	Mean	1.95	9.30	
	SD	2.20	1.79	
Reasons for last quit attempt, n (%)				
	Family pressure	13 (29.55)	10 (17.86)	0.168
	Health concern (for self and family members)	21 (47.73)	45 (80.36)	0.001
	Cost	0 (0.00)	1 (1.79)	0.373
	Advice from physician	27 (61.36)	30 (53.57)	0.435
Methods used for last quit attempt, n (%)				
	Will power		47 (83.93)	0.735

Behavior approach (stay away from smokers, distract, drink tea and so on)	38 (86.36) 3 (6.82)	2 (3.57)	0.460
Medical measures (like nicotine replacement, Cytisine, Varenicline…)	1 (2.27)	0 (0.00)	0.257
Family help		2 (3.57)	0.706
Commercial cessation products	1 (2.17) 2 (4.55)	2 (3.57)	0.805

Barriers for quitting, n (%)

Cravings for cigarette	28 (63.63)	17 (30.36)	0.001
Influence of other smokers	14 (31.82)	6 (10.71)	0.009
Loss of way to handle stress	19 (43.18)	7 (12.50)	0.001
A lack of available cessation methods	1 (2.27)	0 (0.00)	0.257
Fear of gaining weight	0 (0.00)	3 (5.36)	0.119
Lack of support from family and others	0 (0.00)	1 (1.79)	0.373
Low self-control	14 (31.82)	0 (0.00)	< 0.001
There were no barriers	7 (15.91)	35 (62.50)	< 0.001

Advice from doctor, n (%)

Yes	44 (93.62)	46 (82.14)	0.081
No	3 (6.38)	10 (17.87)	

Form of assistance, n (%)

No assistance	46 (97.87)	56 (100.00)	
Provision of self-help materials	1 (2.13)	0 (0.00)	

Arrange follow up, n (%)

Yes	0 (0.00)	0 (0.00)	-
No	47 (100)	56 (100)	

Readiness to quit, n (%)

I am planning to quit in the next 6 months.	13 (27.66)
I am planning to quit in the next 30 days.	13 (27.66)
I would like to cut down the amount of cigarettes	9 (19.15)
I am not planning to quit.	12 (25.53)

Self-confidence in quitting attempt, n (%) (35)

Will be successful	3 (8.57)
May be successful	11 (31.43)
May succeed or fail	11 (31.43)
Likely to fail	10 (28.57)

Method for quitting in the future, n (%)

Will power	28 (80.00)
Medical measures (like nicotine replacement, Cytisine, Varenicline…)	1 (1.86)

Fagerstrom score of nicotine dependence

Mean	7.87	4.98	
SD	1.75	0.27	< 0.001

Self-efficacy score, mean (SD)

Internal stimuli	8.68 (3.68)	21.96 (0.93)	< 0.001
External stimuli	10.57 (4.11)	23.59 (6.32)	< 0.001
Global score	19.26 (7.04)	45.55 (11.91)	< 0.001

Social support

Mean Score	22.83	27.96	
SD	5.46	3.03	< 0.001
Moderate/High	39 (82.97)	55 (98.21)	
Low	8 (17.02)	1 (1.79)	0.006

Depression

Yes	26 (57.78)	4 (8.89)	
No	19 (42.22)	41 (91.11)	< 0.001

Table 2. Simple Logistic Regression Analysis

Variable		Odds Ratio (95% CI)	p-value
Age (years)			
		0.97 (0.93-1.02)	0.191
Level of education (years)			
	<13	1.00	
	>13	2.27 (1.00-5.15)	0.049
Marital status			
	Married	3.83 (0.73-19.98)	0.122
	Single/Widowed/Divorced	1.00	
Employment status			
	Employed	1.87 (0.84-4.17)	0.125
	Unemployed	1.00	
Household monthly income (AMD)			
	<100,000	1.00	
	100,001 – 200,000	0.74 (0.27-2.03)	0.554
	>200,001	2.49 (0.88-7.03)	0.086
Household monthly income (AMD)			
	≤200,000	1.00	
	>200,001	2.79 (1.06-7.34)	0.037
Number of people living in the household			
		1.24 (0.94-1.65)	0.131
AMI type			
	STEMI	1.00	
	NSTEMI	0.23 (0.30-2.32)	0.722
Time of hospital stay (days)			
		1.02 (0.92-1.13)	0.690
History of CAD			
	Yes	1.04 (0.46-2.35)	0.918
	No	1.00	
BMI (kg/m^2)			
	≤25	1.00	
	>25	0.90 (0.39-2.07)	0.797
Hypertension			
	Yes	0.84 (0.35-2.02)	0.694
	No	1.00	
Hypercholesterolemia			
	Yes	4.06 (0.46-36.23)	0.209
	No	1.00	
Having any risk factor			
	Yes	2.44 (0.21-27.84)	0.471
	No	1.00	
Previous cardiac surgery			

	Yes	0.83 (0.29-2.41)	0.732
	No	1.00	

Cerebrovascular disease

	Yes	1.67 (0.15-18.99)	0.681
	No	1.00	

Diabetes

	Yes	0.60 (0.22-1.67)	0.329
	No	1.00	

Respiratory diseases

	Yes	1.75 (0.49-6.23)	0.388
	No	1.00	

Urogenital diseases

	Yes	1.36 (0.48-3.85)	0.561
	No	1.00	

GI diseases

	Yes	2.07 (0.80-5.36)	0.134
	No	1.00	

Having any comorbidity

	Yes	1.72 (0.75-3.92)	0.201
	No	1.00	

Severity of AMI

Single vessel disease	1.00	
Two vessel disease	1.20 (0.44-3.29)	0.717
Three or more vessel disease	1.30 (0.48-3.52)	0.599

Other hospitalization after AMI due to heart disease

	Yes	4.09 (1.38-12.09)	0.011
	No	1.00	

Age of first cigarette (years)

	1.20 (1.06-1.36)	0.004

Age of daily smoking

	1.20 (1.04-1.37)	0.011

Years of smoking

	0.95 (0.92-0.99)	0.017

Number of smoker family members

	Yes	.4168 (.186975 .9293)	
	No		0.032

Number of quit attempts before AMI

	1.44 (1.03-2.01)	0.031

Longest period of quitting before AMI (months)

	0.99 (0.97-1.02)	0.533

Reasons for last quit attempt

Family pressure	0.52 (0.20-1.33)	0.172
Health concern (for self and family members)	4.48 (1.85-10.86)	0.001
Advice from physician	0.73 (0.33-1.62)	0.435

Methods used for last quit attempt

Will power	0.82 (0.27-2.52)	0.735
Behavior approach (stay away from smokers, distract, drink tea and so on)	0.51 (0.08- 3.17)	0.467

Family help	1.59 (0.14-18.16)	0.708
Commercial cessation products	0.78 (0.11-5.75)	0.806
Barriers for last quitting		
Cravings for cigarette	0.25 (0.11- 0.58)	0.001
Influence of other smokers	0.26 (0.09-0.74)	0.012
Loss of way to handle stress	0.19 (0.07-0.51)	0.001
There were no barriers	8.81 (3.33-23.29)	<0.001
Advice from doctor		
Yes	0.31 (0.08-1.22)	0.093
No	1.00	
Fagerstrom score of nicotine dependence		
	0.43 (0.31-0.59)	< 0.001
Self-efficacy score		
Global score	1.30 (1.17-1.44)	< 0.001
Social support		
Mean Score	1.33 (1.18-1.50)	< 0.001
Moderate/High	11.28 (1.36-93.89)	0.025
Low	1.00	
Depression		
Yes	7.49 (2.29 - 24.50)	
No	1.00	0.001

Table 3. Multicollinearity testing using VIF statistics

Variable	VIF	VIF-SQRT	Tolerance	R-squared
Level of education (years)				
≤13 years	1.36	1.17	0.7339	0.2661
>13 years				
Household monthly income (AMD)				
≤200,000	1.35	1.16	0.7429	0.2571
>200,000				
Age of first cigarette (years)	1.46	1.21	0.6865	0.3135
Years of smoking	1.34	1.16	0.7461	0.2539
Smoker family member	1.07	1.03	0.9348	0.0652
Number of quit attempts before AMI	1.26	1.12	0.7907	0.2093
Other hospitalization after AMI due to heart disease	1.14	1.07	0.8750	0.1250
Fagerstrom score of nicotine dependence	2.91	1.71	0.3434	0.6566
Self-efficacy score	2.52	1.59	0.3963	0.6037
Mean VIF	1.60			

Table 4. Multiple Logistic Regression: Model 1

Variable	Odds Ratio (95% CI)	p-value
Nicotine dependence score (Fagerstrom test)	0.34 (0.20- 0.57)	<0.001
Level of education (years)		0.956
≤13 years 1.00		
>13 years 1.04 (0.25-4.31)		
Household monthly income (AMD)		0.783
≤200,000 1.00		
>200,000 1.27 (0.23-6.95)		
Age of first cigarette (years)	0.94 (0.78-1.14)	0.529
Years of smoking		0.216
	0.96 (0.90-1.02)	
Smoker family member		0.138
Yes 0.40 (0.12-1.35)		
No 1.00		
Other hospitalization after AMI due to heart disease		0.333
Yes 2.33 (0.42-12.93)		
No 1.00		
Number of quit attempts before AMI		0.886
	1.03 (0.73- 1.45)	

Table 5. Multiple Logistic Regression: Model 2

Variable		Odds Ratio (95% CI)	p-value
Self-efficacy score			
		1.30 (1.15- 1.46)	<0.001
Level of education (years)			0.728
	≤13 years	1.00	
	>13 years	0.70 (0.10-5.12)	
Household monthly income (AMD)			0.475
	≤200,000	1.00	
	>200,000	2.31 (0.23-22.77)	
Age of first cigarette (years)		1.07 (0.82-1.39)	0.609
Years of smoking			0.775
		0.99 (0.91-1.07)	
Smoker family member			0.533
	Yes	0.60 (0.12-3.01)	
	No	1.00	
Other hospitalization after AMI due to heart disease			0.232
	Yes	5.58 (0.33-93.63)	
	No	1.00	
Number of quit attempts before AMI			0.881
		1.04 (0.65- 1.66)	

FIGURES

Figure 1. Global distribution of major causes of death including CVDs in 2008[1]
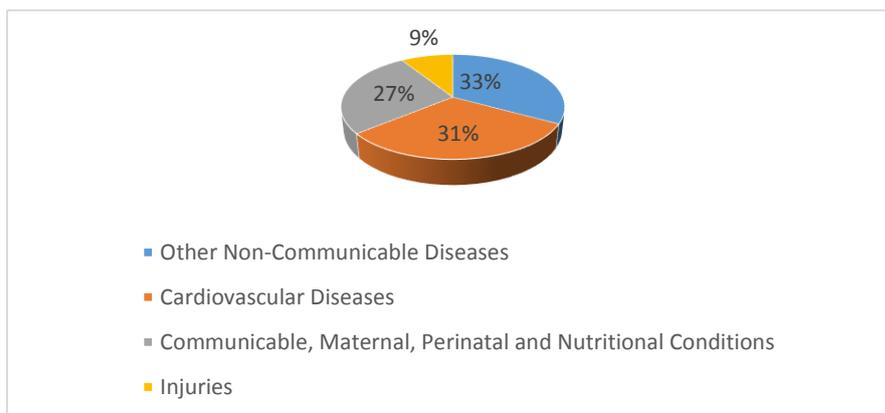
Figure 2. Participants' flow chart


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                          ┌─────────────────────┐
                          │   List of patients  │
                          │        n=282        │
                          └─────────────────────┘
                                    │
        ┌──────────────────┐        │        ┌───────────────────────────────┐
        │ Missing medical  │◄───────┤        │ Excluded: not AMI & missing   │
        │    records       │        ├───────►│ phone numbers (n=62), not     │
        │      n=6         │        │        │ smoker at the time of AMI (n=79) │
        └──────────────────┘        │        │            n=141              │
                                    │        └───────────────────────────────┘
        ┌──────────────────┐        │
        │  Wrong numbers   │◄───────┤
        │      n=7         │        │
        └──────────────────┘        │
                                    ▼
                          ┌─────────────────────────┐
                          │ Patients/relatives      │
                          │   contacted  n=128      │
                          └─────────────────────────┘
                                    │
                                    │        ┌───────────────────────────────┐
                                    ├───────►│       Died: n=3               │
                                    │        │  Out of the country: n=8      │
        ┌──────────────────┐        │        └───────────────────────────────┘
        │ Refused to       │◄───────┤
        │ participate n=4  │        │        ┌───────────────────────────────┐
        └──────────────────┘        │        │ Excluded: identified          │
                                    ├───────►│ themselves as not smokers at  │
                                    │        │ the time of AMI   n=10        │
                                    ▼        └───────────────────────────────┘
                          ┌─────────────────────────┐
                          │ Completed interviews    │
                          │        n=103            │
                          └─────────────────────────┘
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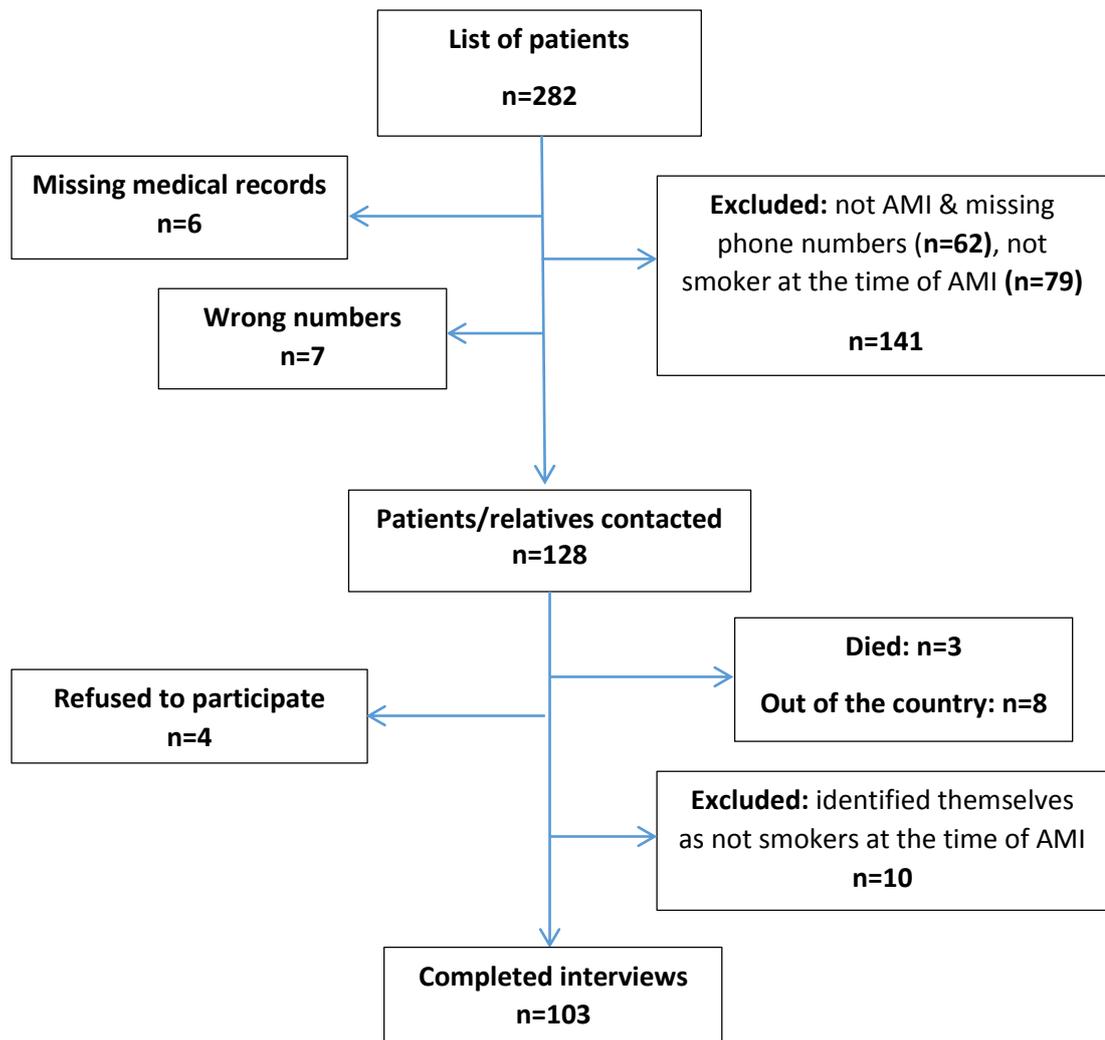
APPENDICES

Appendix 1: Patient questionnaire (English version)

Questionnaire

ID_____ Start Time:____/____

Date (DD/MM/YY)_____/____/_____ End Time: ____/____

DOMAIN I: Smoking behavior

Screening question:

1.	Have you been a smoker at the time of hospitalization to NMMC in …/date/ because of MI?	□ 1) Yes →*go to next question* □ 0) No → *thank the participant and end the interview*

Instructions: Now I will ask you some questions about your smoking behavior.

2.	At what age did you smoke your first cigarette?	_____ years of age
3.	How old were you when you first started smoking daily?	_____ years old
4.	Overall how many years have you smoked daily?	_____ years
5.	How many people in your household smoke besides you?	_____
6.	Do you currently smoke tobacco?	□ 1) Daily →*go to question 9* □ 2) Less than daily→ *go to question 9* □ 3) Not at all
7.	Have you smoked any cigarettes in the last 30 days (even a puff)?	□ 1) Yes □ 0) No
8.	How much time has passed since you have quitted smoking?	_____(days, weeks, months) → *go to question 11*
9.	How many cigarettes/day do you smoke now ?	_____
10.	Have you ever made an attempt to stop smoking?	□ 1) Yes □ 0) No → *go to question 17*
11.	Have you made an attempt to stop smoking before MI (or after MI *if have not quit*).	□ 1) Before □ 2) After → *go to question 13* □ 3) Both
12.	How many times have you tried to stop smoking for one day or longer because you were trying to quit BEFORE MI?	_____ times

12.1.	What is the longest period of time you have quit smoking for BEFORE MI?	_____ (hours, days, weeks, months) *(IF the answer for 11 was BEFORE → go to question 17)*
13.	How many times have you tried to stop smoking for one day or longer because you were trying to quit AFTER the MI?	_____ times *(if answer is 1 and he is a quitter, go to question 14)*
13.1.	What is the longest period of time you have quit smoking for after MI?	_____ (hours, days, weeks, months)
14.	What were the reasons of quitting the last time you were trying to stop smoking? *(more than one answer)*	□ 1) Family pressure □ 2) Health concern (for self and family members) □ 3) Advice and example from others □ 4) Cost □ 5) Restrictions on smoking in workplace, on public transportation, at home □ 6) Social stigma □ 7) Advice from physician □ 8) Other (please specify)_____
15.	What were the methods of quitting most often used the last time you were trying to stop smoking? *(more than one answer)*	□ 1) Will power □ 2) Behavior approach (stay away from smokers, distract, drink tea and so on) □ 3) Medical measures (like nicotine replacement, Cytisine, Varenicline…) □ 4) Family help □ 5) Commercial cessation products □ 6) Other (please specify)_____
16.	What were the main barriers/challenges you faced when you attempted to quit smoking? *(more than one answer)*	□ 1) Cravings for cigarette □ 2) Influence of other smokers □ 3) Loss of way to handle stress □ 4) A lack of available cessation methods □ 5) Fear of gaining weight □ 6) Lack of support from family and others □ 7) Low self-control □ 8) There were no barriers □ 9) Other (please specify)_____

5 A's approach

17.	After the MI have you ever been advised	□ 1) Yes

	by the physician to quit smoking?	□ 0) No
18.	Have you received the following forms of assistance with quitting?	□ 1) Provision of self-help materials □ 2) Identification of a quit date □ 3) Discussion of smoking cessation medications □ 4) Prescription of smoking cessation medications □ 5) Other (please specify)- _____
19.	After the MI have the physician arranged follow up support?	□ 1) Yes □ 0) No

Instructions: Read the following three questions only for current smokers.

20.	Please choose the statement that best describes your current goals.	□ 1) I am planning to quit in the next 6 months. □ 2) I am planning to quit in the next 30 days. □ 3) I would like to cut down the amount of cigarettes □ 4) I am not planning to quit.
21.	If you try to quit smoking, how would you describe your self-confidence in successfully quitting smoking?	□ 1) Will be successful □ 2) May be successful □ 3) May succeed or fail □ 4) Likely to fail
22.	What method will you use for quitting smoking in the future? *(more than one answer)*	□ 1) Will power □ 2) Behavior approach (stay away from smokers, distract, drink tea and so on) □ 3) Medical measures (like nicotine replacement, Cytisine, Varenicline…) □ 4) Family help □ 5) Commercial cessation products □ 6) Other (please specify)_____

DOMAIN II: Fagerstrom Test for Nicotine Dependence

Instructions: The following several questions are about your smoking behavior during one month BEFORE MI.

23.	How soon after you wake up did you smoke your first cigarette?	□ 1) Within 5 minutes (3) □ 2) 6-30 minutes (2) □ 3) 31-60 minutes (1) □ 4) After 60 minutes (0)
24.	Did you find it difficult to refrain from smoking in places where it is forbidden (e.g. in church, at the library, in cinema, etc.)?	□ 1) Yes (1) □ 0) No (0)
25.	Which cigarette would you hate most to give up?	□ 1) The first one in the morning (1) □ 2) All others (0)
26.	How many cigarettes/day did you smoke?	□ 1) 10 or less (0) □ 2) 11-20 (1) □ 3) 21-30 (2) □ 4) 31 or more (3)
27.	Did you smoke more frequently during the first hours after waking than during the rest of the day?	□ 1) Yes (1) □ 0) No (0)
28.	Did you smoke if you are so ill that you are in bed most of the day?	□ 1) Yes (1) □ 0) No (0)

DOMAIN III: Self-Efficacy

Instructions: The following are some situations in which certain people may be tempted to smoke. Please indicate whether you were sure that you could refrain from smoking in each situation BEFORE MI.

29.		Not sure at all	Not very sure	More or less sure	Fairly sure	Absolutely sure
1.	When I felt nervous	□ 1	□ 2	□ 3	□ 4	□ 5
2.	When I felt depressed	□ 1	□ 2	□ 3	□ 4	□ 5
3.	When I was angry	□ 1	□ 2	□ 3	□ 4	□ 5
4.	When I felt very anxious	□ 1	□ 2	□ 3	□ 4	□ 5
5.	When I wanted to think about a difficult problem	□ 1	□ 2	□ 3	□ 4	□ 5
6.	When I felt the urge to smoke	□ 1	□ 2	□ 3	□ 4	□ 5
7.	When having a drink with friends	□ 1	□ 2	□ 3	□ 4	□ 5
8.	When celebrating something	□ 1	□ 2	□ 3	□ 4	□ 5
9.	When drinking beer, wine or other spirits	□ 1	□ 2	□ 3	□ 4	□ 5
10.	When I was with smokers	□ 1	□ 2	□ 3	□ 4	□ 5

| 11. | After a meal | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 12. | When having coffee or tea | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

DOMAIN IV: Social support

Instructions: Please answer the following questions and choose the response that most closely describes your current situation.

30.		None of the time	A little of the time	Some of the time	Most of the time	All the time
1.	Is there someone available to you whom you can count on to listen to you when you need to talk?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2.	Is there someone available to give you good advice about the problem?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3.	Is there someone available to you who shows love and affection?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4.	Is there someone available to help you with daily chores?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5.	Can you count on anyone to provide you with emotional support (taking over problems or helping you making difficult decision)?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6.	Do you have as much contact as you would like with someone you feel close to, someone in whom you can trust and confide?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

DOMAIN V: Depression

Instructions: Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past seven days.

31.		Rarely or none of the time (0-1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4days)	Most or all of the time (5-7 days)

1	I was bothered by things that usually don't bother me.	□ 1	□ 2	□ 3	□ 4
2	I did not feel like eating; my appetite was poor.	□ 1	□ 2	□ 3	□ 4
3	I felt that I could not shake off the blues even with help from my family or friends.	□ 1	□ 2	□ 3	□ 4
4	I had trouble keeping my mind on what I was doing.	□ 1	□ 2	□ 3	□ 4
5	I felt depressed.	□ 1	□ 2	□ 3	□ 4
6	I felt that everything I did was an effort.	□ 1	□ 2	□ 3	□ 4
7	I thought my life had been a failure.	□ 1	□ 2	□ 3	□ 4
8	I felt fearful.	□ 1	□ 2	□ 3	□ 4
9	My sleep was restless.	□ 1	□ 2	□ 3	□ 4
10	I talked less than usual.	□ 1	□ 2	□ 3	□ 4
11	I felt lonely.	□ 1	□ 2	□ 3	□ 4
12	People were unfriendly.	□ 1	□ 2	□ 3	□ 4
13	I had crying spells.	□ 1	□ 2	□ 3	□ 4
14	I felt sad.	□ 1	□ 2	□ 3	□ 4
15	I felt that people dislike me.	□ 1	□ 2	□ 3	□ 4
16	I could not get "going."	□ 1	□ 2	□ 3	□ 4

DOMAIN VI: Socio-demographic questions

32.	From what part of Armenia you are?	□ 1. Yerevan □ 2. Aragatsotn □ 3. Ararat □ 4. Armavir □ 5. Gegharkunik □ 6. Kotayk	□ 7. Lori □ 8. Shirak □ 9. Syunik □ 10. Tavush □ 11.Vayots Dzor
33.	What is your gender? (do not read)	□ 1) Male □ 2) Female	
34.	Date of birth	____/_____/_____(day/month/year)	
35.	What is your completed educational level?	□ 1) School (8 years or less) □ 2) School (10 years) □ 3) Professional technical (10-13) □ 4) Institute/ University □ 5) Post-graduate	
36.	Are you currently employed?	□ 1) Employed □ 2) Unemployed □ 3) Student □ 4) Other _____	
37.	What is your current marital status?	□ 1) Single □ 2) Married □ 3) Widowed □ 4) Divorced/Separated □ 88) Refuse to answer	
38.	On average, what is your household income per month?	□ 1) Less than 50,000 drams □ 2) From 50,000 - 100,000 drams □ 3) From 100,001 - 200,000 drams □ 4) From 200,001 - 300,000 drams □ 5) Above 300,000 drams □ 88) Don't know/Refuse to answer	
39.	How many people live in your family, including you?	_____	
40.	After the hospitalization at NMMC in …(mention the date) have you had another hospitalization because of heart health problems.	□ 1) Yes □ 0) No	

Patient questionnaire (Armenian version)

Հարցաշար

Տարբերակման համար՝ ID_____   Հարցագրույցի սկիզբ   ____/____

Ամսաթիվ (օր/ամիս/տարի)____/____/_____   Հարցագրույցի ավարտ ____/____

Բաժին I Ծխելու վարքագիծ

Սկրինինգային հարց.

1.	Դուք ծխու՞մ էիք, երբ……(ամսաթիվ) ինֆարկտի պատճառով ընդունվեցիք Նորք Մարաշ Բժշկական Կենտրոն:	□ 1) Այո → *անցնել հաջորդ հարցին* □ 0) Ոչ → *շնորհակալություն հայտնել մասնակցին և ավարտել հարցագրույցը*

Ցուցումներ՝ Այժմ ես կտամ հարցեր ձեր ծխելու վարքագծի վերաբերյալ:

2.	Ո՞ր տարիքում եք ծխել ձեր առաջին ծխախոտը:	_____ տարեկանում
3.	Քանի՞ տարեկան էիք, երբ սկսեցիք ծխել ամեն օր:	_____ տարեկան
4.	Ընդհանուր առմամբ քանի՞ տարի եք ծխել ամեն օր:	_____ տարի
5.	Բացի ձեզանից քանի՞ ծխող է բնակվում ձեզ հետ:	_____
6.	Դուք ներկայումս օգտագործու՞մ եք ծխախոտ:	□ 1) Ամեն օր → *անցնել հարց 9* □ 2) Պակաս քան ամեն օր → *անցնել հարց 9* □ 3) Ընդհանրապես չեմ օգտագործում
7.	Վերջին 30 օրերի ընթացում օգտագործել ե՞ք ծխախոտ:	□ 1) Այո □ 0) Ոչ
8.	Որքա՞ն ժամանակ է, որ դադարեցրել եք ծխելը:	_____ (օր, շաբաթ, ամիս) → *անցնել հարց 11*
9.	Ներկայումս օրական քանի՞ ծխախոտ եք օգտագործում:	_____
10.	Երբևէ փորձե՞լ եք դադարեցնել ծխելը:	□ 1) Այո □ 0) Ոչ → *անցնել հարց 17*
11.	Փորձե՞լ եք դադարեցնել ծխելը ինֆարկտից առաջ (կամ հետո՝ *եթե չի դադարեցրել*):	□ 1) Առաջ □ 2) Հետո → *անցնել հարց 13* □ 3) Ե՛վ առաջ, ն՛ հետո
12.	Ինֆարկտից ԱՌԱՋ քանի՞ անգամ եք փորձել դադարեցնել ծխելը մեկ օրով կամ ավելի երկար ժամանակով:	_____ անգամ

12.1.	Ո՞րն է եղել ձխելը դադարեցնելու ձեր ամենաերկար ժամկետը ինֆարկտից ԱՌԱՉ:	_____ (ժամ, օր, շաբաթ, ամիս) *(եթե հարց 11-ի պատասխանը եղել է ԱՌԱՉ →անցնել հարց 17)*
13.	Քանի՞ անգամ եք փորձել դադարեցնել ձխելը ինֆարկտից ՀԵՏՈ մեկ օրով կամ ավելի երկար ժամանակով:	_____ անգամ *(եթե պատասխանն է 1 և ներկայումս համարվում է չձխող անցնել հարց 14)*
13.1.	Ո՞րն է եղել ձխելը դադարեցնելու ձեր ամենաերկար ժամկետը ինֆարկտից ՀԵՏՈ:	_____ (ժամ, օր, շաբաթ, ամիս)
14.	Որո՞նք էին ձխելը դադարեցնելու պատճառները ձխելը դադարեցնելու ձեր վերջին փորձի ժամանակ: *(մեկից ավելի պատասխաններ)*	□ 1) Ընտանիքի կողմից ճնշումը □ 2) Առողջական խնդիրները (իմ և ընտանիքի անդամների համար) □ 3) Խորհուրդները և մյուսների օրինակները □ 4) Գինը □ 5) Ծխելու արգելքները աշխատավայրում, հանրային տրանսպորտում, տանը □ 6) Սոցիալական ստիգման □ 7) Բժշկի խորհուրդը □ 8) Այլ (նշել) _____
15.	Ծխելը դադարեցնելու նպատակով, ո՞ր մեթոդներն եք առավել հաճախ օգտագործել ձխելը դադարեցնելու ձեր վերջին փորձի ժամանակ: *(մեկից ավելի պատասխաններ)*	□ 1) Կամքի ուժ □ 2) Վարքային մոտեցում (հեռու մնալ ծխողներից, ցրվել, թեյ խմել և այլն) □ 3) Դեղորայք (օր. նիկոտինային փոխարինող բուժում) □ 4) Ընտանիքի աջակցություն □ 5) Ծխելը դադարեցնելու կոմերցիոն արտադրատեսակներ □ 6) Այլ (նշել) _____
16.	Որո՞նք էին ձեր ձխելը դադարեցնելու փորձի ժամանակ ունեցած դժվարությունները:	□ 1) Ծխելու անհագ ցանկությունները □ 2) Այլ ծխողների ազդեցությունը □ 3) Սթրեսին դիմակայելու անկարողությունը □ 4) Ծխելը դադարեցնելու մեթոդների անհասանելիությունը □ 5) Քաշ հավաքելու վախը □ 6) Ընտանիքի և մյուսների կողմից աջակցության պակասը □ 7) Յացր ինքնավերահսկումը □ 8) Դժվարություններ չեն եղել □ 9) Այլ (նշել) _____

5 A-երի մոտեցումը

17.	Ինֆարկտից հետո բժիշկը ձեզ խորհուրդ տվե՞լ է դադարեցնել ծխելը:	□ 1) Այո □ 0) Ոչ
18.	Ստացե՞լ եք ծխելը դադարեցնելու աջակցության հետևյալ ձևերից որևէ մեկը.	□ 1) Ինքնօգնության տպագիր նյութեր □ 2) Ծխելը դադարեցնելու օրվա որոշում □ 3) Ծխելը դադարեցնելու դեղամիջոցների քննարկում □ 4) Ծխելը դադարեցնելու դեղամիջոցների նշանակում □ 5) Այլ (նշել)_____
19.	Ինֆարկտից հետո բժիշկը կազմակերպե՞լ է հետևողական այց կամ հեռախոսազանգ ծխելը դադարեցնելու գործընթացը քննարկելու համար:	□ 1) Այո □ 0) Ոչ

Ցուցումներ՝ հետևյալ երեք հարցերը կարդալ միայն ներկայումս ծխողների համար:

20.	Խնդրում եմ ընտրել այն պնդումը, որը ամենալավ կերպով է բնութագրում Ձեր ներկայիս նպատակները:	□ 1) Պլանավորում եմ դադարեցնել ծխելը մոտակա 6 ամիսների ընթացքում □ 2) Պլանավորում եմ դադարեցնել ծխելը մոտակա 30 օրերի ընթացքում □ 3) Ցանկանում եմ նվազեցնել ծխախոտի քանակը □ 4) Ծխելը դադարեցնելու պլաններ չունեմ
21.	Եթե փորձեք դադարեցնել ծխելը, ինչպե՞ս կնկարագրեք ձեր ինքնավստահությունը ծխելը դադարեցնելու հաջողության հարցում:	□ 1) Կստացվի □ 2) Հնարավոր է ստացվի □ 3) Կարող է ստացվել կամ չստացվել □ 4) Ամենայն հավանականությամբ չի ստացվի
22.	Ապագայում ծխելը դադարեցնելու նպատակով ո՞ր մեթոդը կօգտագործեք: *(մեկից ավելի պատասխաններ)*	□ 1) Կամքի ուժ □ 2) Վարքային մոտեցում (հեռու մնալ ծխողներից, գրվել, թեյ խմել և այլն) □ 3) Դեղորայք (օր. նիկոտինային փոխարինող բուժում) □ 4) Ընտանիքի աջակցություն □ 5) Ծխելը դադարեցնելու կոմերցիոն արտադրատեսակներ □ 6) Այլ (նշել) _____

Բաժին II Նիկոտինային կախվածության Ֆագերստրոմի թեստը

Ցուցումներ՝ Հետևյալ մի քանի հարցերը վերաբերվում են ձեր ծխելու վարքագծին ինֆարկտից մեկ ամիս ԱՌ-ԱՋ ընկած ժամանակահատվածին:

23.	Առավոտյան արթնանալուց որքա՞ն ժամանակ հետո էիք ծխում առաջին ծխախոտը:	□ 1) Մինչև 5 րոպե (3) □ 2) 6-30 րոպե (2) □ 3) 31-60 րոպե (1) □ 4) 60 րոպեից ավել (0)
24.	Դժվա՞ր էր զերծ մնալ ծխելուց այն վայրերում, ուր ծխելն արգելված է (օր՝ եկեղեցի, կինոթատրոն, գնացքում, ռեստորանում և այլն):	□ 1) Այո (1) □ 0) Ոչ (0)
25.	Ո՞ր սիգարետից էր հրաժարվելն ամենադժվարը:	□ 1) Առավոտյան առաջին (1) □ 2) Ցանկացած հաջորդ (0)
26.	Քանի՞ ծխախոտ էիք օրական ծխում:	□ 1) 10 կամ պակաս (0) □ 2) 11-20 (1) □ 3) 21-30 (2) □ 4) 31 կամ ավելի (3)
27.	Արթնանալուց հետո առաջին ժամերի ընթացքում ավելի՞ հաճախ էիք ծխում, քան օրվա մյուս հատվածում:	□ 1) Այո (1) □ 0) Ոչ (0)
28.	Ծխու՞մ էիք, երբ հիվանդ էիք և ստիպված էիք օրվա զգալիշիր մասն անցկացնել անկողնում:	□ 1) Այո (1) □ 0) Ոչ (0)

Բաժին III Ինքնավստահություն

Ցուցումներ՝ Ստորև ներկայացված են իրավիճակներ, որոնց ժամանակ որոշ մարդիկ ցանկանում են ծխել։ Այժմ խնդրում եմ վերհիշել ինֆարկտից առաջ ձեր ծխելու վարքագիծը։ Խնդրում եմ նշել արդյո՞ք դուք վստահ էիք, որ կարող եք զերծ մնալ ծխելուց յուրաքանչյուր իրավիճակում։

29.		Ընդհանրա պես վստահ չէի	Այնքան էլ վստահ չէի	Քիչ թե շատ վստահ էի	Բավականի ն վստահ էի	Լիովին վստահ էի
1.	Երբ նյարդայնացած էի	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2.	Երբ ընկճված էի	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3.	Երբ բարկացած էի	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4.	Երբ շատ անհանգիստ էի	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5.	Երբ ցանկանում էի մտածել դժվար հարցի շուրջ	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6.	Երբ զգում էի ծխելու ցանկություն	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7.	Երբ խմում էի ընկերներիս հետ	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8.	Երբ տոնում էի ինչ-որ բան	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9.	Երբ խմում էի գարեջուր, գինի կամ այլ ոգելից խմիչքներ	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10.	Երբ ծիտողի հետ էի	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11.	Ուտելուց հետո	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12.	Երբ խմում էի սուրճ կամ թեյ	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Բաժին IV Սոցիալական աջակցություն

Ցուցումներ՝ Խնդրում եմ պատասխանել հետևյալ հարցերին և ընտրել այն
պատասխանը, որը ամենալավն է բնութագրում ձեր ներկայիս միճակը:

30.		Երբեք	Հազվադեպ	Երբեմն	Հաճախ	Մշտապես
1.	Կա՞ այնպիսի մեկը, ով կլսի ձեզ, երբ խոսելու կարիք ունենաք:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2.	Կա՞ այնպիսի մեկը, ով ձեզ լավ խորհուրդներ կտա խնդրի մասին:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3.	Կա՞ այնպիսի մեկը, ով սեր և համակրանք է ցույց տալիս ձեր նկատմամբ:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4.	Կա՞ այնպիսի մեկը, ով օգնում է ձեզ առօրյա գործերում:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5.	Կա՞ այնպիսի մեկը, ով ձեզ էմոցիոնալ աջակցություն կցուցաբերի (խնդիրները կլուծի կամ կօգնի կայացնել դժվար որոշումներ):	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6.	Ունե՞ք այքան շփում, որքան կցանկանայիք այն մարդու հետ ում ձեզ մոտ եք համարում, ում կարող եք վստահել և ապավինել:	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Բաժին V Դեպրեսիա

Ցուցումներ ՝ Վերջին 7 օրվա ընթացքում Դուք որքա ՞ն հաճախ եք զգացել Ձեզ այնպես, ինչպես նկարագրված է ՝

31.		Հազվադեպ կամ երբեք (0-1 օր)	Երբեմն (1-2 օր)	Բավականին հաճախ (3-4 օր)	Մշտապես (5-7 օր)
1.	Ես հուզվում էի այնպիսի բաներից, որոնք սովորաբար ինձ չեն հուզում	☐ 1	☐ 2	☐ 3	☐ 4
2.	Ես չէր ուզում ուտել: Վատ ախորժակ ունեի	☐ 1	☐ 2	☐ 3	☐ 4
3.	Ես չէի կարողանում ազատվել տխրությունից՝ անգամ ընտանիքիս և ընկերներիս օգնությամբ	☐ 1	☐ 2	☐ 3	☐ 4
4.	Ես չէի կարողանում ուշադրությունս կենտրոնացնել արածիս վրա	☐ 1	☐ 2	☐ 3	☐ 4
5.	Ես ինձ ընկճված էի զգում	☐ 1	☐ 2	☐ 3	☐ 4
6.	Ես ամեն ինչ անում էի մեծ դժվարությամբ	☐ 1	☐ 2	☐ 3	☐ 4
7.	Ես մտածում էի, որ կյանքս իզուր է անցել	☐ 1	☐ 2	☐ 3	☐ 4
8.	Ես վախս էի զգում	☐ 1	☐ 2	☐ 3	☐ 4
9.	Ես վատ էի քնում	☐ 1	☐ 2	☐ 3	☐ 4
10.	Ես ավելի քիչ էի խոսում, քան սովորաբար	☐ 1	☐ 2	☐ 3	☐ 4
11.	Ես ինձ միայնակ էի զգում	☐ 1	☐ 2	☐ 3	☐ 4
12.	Մարդիկ անբարյացկամ էին	☐ 1	☐ 2	☐ 3	☐ 4
13.	Ես լացի պոռթկումներ էի ունենում	☐ 1	☐ 2	☐ 3	☐ 4
14.	Ես տխուր էի	☐ 1	☐ 2	☐ 3	☐ 4
15.	Ես զգում էի, որ դուր չեմ գալիս մարդկանց	☐ 1	☐ 2	☐ 3	☐ 4
16.	Ես չէի կարողանում հունի մեջ ընկնել	☐ 1	☐ 2	☐ 3	☐ 4

Բաժին VI Ժողովրդագրական տվյալներ

32.	Հայաստանի ո՞ր մասից եք:	☐ 1) Երևան	☐ 7) Լոռի
		☐ 2) Արագածոտն	☐ 8) Շիրակ
		☐ 3) Արարատ	☐ 9) Սյունիք

		□ 4) Արմավիր □ 10) Տավուշ
		□ 5) Գեղարքունիք □ 11) Վայոց Ձոր
		□ 6) Կոտայք
33.	Ձեր ծննդյան թիվը:	_____ (օր/ամիս/տարի)
34.	Ձեր սեռը: **(չկարդալ)**	□ 1) Արական □ 2) Իգական
35.	Ի՞նչ կրթություն ունեք:	□ 1) Դպրոց (8 տարի և քիչ) □ 2) Դպրոց (10 տարի) □ 3) Միջնակարգ մասնագիտական (10-13) □ 4) Ինստիտուտ/Համալսարան □ 5) Հետդիպլոմային
36.	Դուք ներկայումս աշխատում ե՞ք:	□1) Աշխատում եմ □ 2) Չեմ աշխատում □ 3) Ուսանող եմ □ 4) Այլ _____
37.	Ինչպիսի՞ն է ձեր ամուսնական կարգավիճակը ներկայումս:	□ 1) Չամուսնացած □ 2) Ամուսնացած □ 3) Այրի □ 4) Ամուսնալուծված □ 88) Հրաժարվում եմ պատասխանել
38.	Որքա՞ն է ձեր ընտանիքի միջին ամսական եկամուտը:	□ 1) 50,000 դրամից քիչ □ 2) 50,000 - 100,000 դրամ □ 3) 101,000 - 200,000 դրամ □ 4) 201,000 - 300,000 դրամ □ 5) Ավելի քան 300,000 դրամ □ 88) Չգիտեմ/Հրաժարվում եմ պատասխանել
39.	Ձեզ հետ միասին քանի՞ մարդ է ապրում ձեր ընտանիքում:	_____
40.	ՆՄԲԿ … (նշել ամսաթիվը) ընդունվելուց հետո, ունեցե՞լ եք այլ հոսպիտալացում սրտի հետ կապված առողջական խնդիրների պատճառով:	□ 1) Այո □ 0) Ոչ

Appendix 2: Medical record data abstraction form

ID number_____ **Demographic characteristics**

1.	Date of birth	___/___/___
2.	Gender	□ 1) Female □ 2) Male
3.	Type of MI	□ 1) STEMI □ 2) NSTEMI
4.	Date of hospital admission	___/___/___
5.	Date of discharge	___/___/___
6.	Type of received care	□ 1) PCI □ 2) CABG □ 3) Medications □ 4) Other (specify)_____

Risk factors of CAD and Comorbidities

7.	Smoking status at the time of MI	□ 1) Yes □ 0) No
8.	Family history of CAD	□ 1) Yes □ 0) No
9.	BMI	_____ Weight_____kg Height_____cm
10.	Hypertension	□ 1) Yes □ 0) No
11.	Hypercholesterolemia	□ 1) Yes □ 0) No
12.	Previous cardiac surgery	□ 1) Yes (specify) _____ □ 0) No
13.	Cerebrovascular disease	□ 1) Yes □ 0) No
14.	Diabetes	□ 1) Yes □ 0) No
15.	Respiratory diseases	□ 1) Yes □ 0) No
16.	Urogenital disorders	□ 1) Yes □ 0) No
17.	GI diseases	□ 1) Yes □ 0) No
18.	Other (please specify)	_____

Severity of CAD

19.	Number of diseased vessels	□ 1) Single □ 2) Two □ 3) Three or more
20.	Types of diseased vessels	_____ _____ % of narrowing

Appendix 3: Journal form for the telephone survey

ID	Name of participants	Contact Number	Date of admission to NMMC	Contact Date	Disposition codes	Other (e.g. Date of death)

Options for disposition codes:

1. Valid response (complete survey was received)

2. Incomplete response (participant refuses to fully complete the survey)

3. Refusal (participant refuses to complete the survey)

4. Absent from the country

5. Impossible to contact (temporary discontent/no answer)

6. Dead

7. Not at home

8. Made and arrangement for interview later on

Appendix 4: Consent form (English version)

<div align="center">

American University of Armenia

School of Public Health

Institutional Review Board #1

Consent form post MI patients

</div>

Title of research project: Smoking cessation after acute myocardial infarction among patients of Nork-Marash Medical Center.

Hello, my name is Varduhi Hayrumyan. I am a second year graduate student at School of Public Health at the American University of Armenia. As part of my thesis project, and with the support of the faculty members and in collaboration with Nork-Marash Medical Center, I am conducting a study to investigate the smoking cessation practices and the factors associated with smoking cessation at 6 to 12 months after experiencing acute myocardial infarction among patients who were hospitalized at the Nork-Marash Medical Center. You have been contacted because based on NMMC records you were hospitalized at NMMC with MI from March, 2015 to August 2015 and were reported as a smoker at the time of MI. Your contact information has been obtained from the NMMC database with their permission.

If you are willing to participate in this study I will ask you some questions concerning your health. Your participation in the study is voluntary. You may skip any question you think is inappropriate and stop the interview at any moment you want with no further negative consequences. The interview will take place once at any time that is convenient for you and will last no more than 15 minutes.

There will be no monetary benefits for you if you participate in this project. The information provided by you will be very helpful for understanding the smoking cessation practices and main

factors associated with smoking cessation, which later could help to improve the process of smoking cessation counseling for other patients. There is no penalty for refusing to participate. Whether or not you are in the study will not affect your future treatment at the NMMC. The information provided by you is fully confidential and will be used only for the study. Only aggregate data will be reported. Contact information will be destroyed upon completion of the research.

If you have more questions about this study you can contact principal investigator Dr. Arusyak Harutyunyan, by the following number (+374 60) 612621. If you feel you have not been treated fairly or think you have been hurt by joining this study, please contact Dr. Kristina Akopyan, AUA Human Subject Protection Administrator at the American University of Armenia (+374 60) 61 25 61.

If you agree to be involved in this study, could we continue?

Consent form (Armenian version)

Հայ աս տան ի Ամ ե ր ի կ յ ան Հ ամ ալ ս ար ան

Հ ան ր ա յ ի ն առ ո ղ ջ ապ ահ ու թ յ ան բ աժ ի ն

Գ ի տահ ե տագ ո տտակ ան է թ ի կ ա յ ի թ ի վ 1 հ ան ձ ն աժ ո ղ ո վ

Ի ր ազ ե կ հ ամ աձ ա յ ն ու թ յ ան ձ ն

Հետազոտության անվանումը ՝Սրտամկանի սուր ինֆարկտից հետո ծիսելը
դադարեցնելու գործընթացը Նորք Մարաշ Բժշկական կենտրոնի հիվանդների
շրջանում

Բարև Ձեզ, իմ անունը Վարդուհի Հայրումյան է: Ես Հայաստանի Ամերիկյան
համալսարանի Հանրային Առողջապահության բաժնի մագիստրատուրայի
ավարտական կուրսի ուսանող եմ: Ես, որպես իմ ավարտական գիտական
աշխատանքի մի մաս, հետազոտական խմբի անդամ դասախոսների աջակցությամբ
և Նորք-Մարաշ բժշկական կենտրոնի հետ համատեղ, իրականացնում եմ
հետազոտություն ուսումնասիրելու սրտամականի սուր ինֆարկտից հետո
հիվանդների ծիսելը դադարեցնելու գործելակերպը և դրա հետ կապված գործոնները:
Դուք ընտրվել եք, որովհետև Նորք-Մարաշ բժշկական կենտրոնում գրանցված
տվյալների համաձայն Դուք հոսպիտալցվել եք 2015 թվականի մարտից օգոստոս
ընկած ժամանակահատվածում և այդ ժամանակ եղել եք ծխող: Ձեր
հեռախոսահամարը վերցվել է ՆՄԲԿ-ից՝ տնօրինության համաձայնությամբ:

Եթե Դուք համաձայն եք մասնակցել այս հետազոտությանը, ապա ես Ձեզ կտամ որոշ
հարցեր Ձեր առողջությանն վերաբերյալ: Ձեր մասնակցությունը այս
հետազոտությանը կամավոր է: Դուք իրավունք ունեք չպատասխանել այն հարցերին,

որոնք Ձեզ կարող են տհաճություն պատճառել և կարող եք դադարեցնել հարցազրույցը ցանկացած պահի՝ առանց որևէ հետագա բացասական հետևանքների: Հարցազրույցը տեղի կունենա մեկ անգամ, Ձեզ առավել հարմար ժամանակ, և կտևի ոչ ավելի քան 15 րոպե: Այս հետազոտությանը Ձեր մասնակցության դեպքում որևէ դրամական խրախուսանք նախատեսված չէ: Ձեր կողմից տրամադրված տվյալները շատ կարևոր են գիտական տեսանկյունից և օգտակար կլինեն ծխելը դադարեցնելու գործելակերպը և դրա հետ կապված գործոնները հասկանալու և հետագայում այլ հիվանդների համար ծխելը դադարեցնելու խորհրդատվության գործընթացը բարելավելու համար: Հետազոտությանը չմասնակցելը չունի որևէ բացասական հետևանք: Անկախ նրանից Դուք կմասնակցեք այս հետազոտությանը թե ոչ, ոչինչ չի ազդի Ձեր ՆՄԲԿ հետագա այցելությունների վրա: Ձեր կողմից տրամադրված ողջ տեղեկությունները զգդտնի կպահվեն և կօգտագործվեն միայն հետազոտության համար: Միայն ընդհանրացված արդյունքները կներկայացվեն զեկույցում: Ձեր անձնական տվյալները անմիջապես կոչնչացվեն հետազոտության ավարտից հետո:

Հետազոտության հետ կապված հետագա հարցերի համար կարող եք զանգահարել հետազոտության համահեղինակ՝ Արուսյակ Հարությունյանին, (+374 60)612621: Եթե կարծում եք, որ հետազոտության ընթացքում Ձեզ հետ լավ չեն վերաբերվել և/կամ հետազոտությունը Ձեզ վնաս է հասցրել, կարող եք զանգահարել ՀԱՀ-ի Էթիկայի հանձնաժողովի ադմինիստրատոր Քրիստինա Հակոբյանին, հետևյալ հեռախոսահամարով (+374 60) 61 25 61:

Եթե համաձայն եք մասնակցել այս հետազոտությանը, կարո՞ղ ենք շարունակել:

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Appendix 5. STATA Output Analysis

1. Collinearity testing

```
. collin self_effic FAG_score q_2 newq_5 q_12 q_40 educ newinc q_4
(obs=90)
```

  Collinearity Diagnostics

Variable	VIF	SQRT VIF	Tolerance	R-Squared
self_effic	2.52	1.59	0.3963	0.6037
FAG_score	2.91	1.71	0.3434	0.6566
q_2	1.46	1.21	0.6865	0.3135
newq_5	1.07	1.03	0.9348	0.0652
q_12	1.26	1.12	0.7907	0.2093
q_40	1.14	1.07	0.8750	0.1250
educ	1.36	1.17	0.7339	0.2661
newinc	1.35	1.16	0.7429	0.2571
q_4	1.34	1.16	0.7461	0.2539

  Mean VIF   1.60

	Eigenval	Cond Index
1	6.4534	1.0000
2	1.0349	2.4972
3	0.7278	2.9778
4	0.6213	3.2228
5	0.4527	3.7757
6	0.3593	4.2382
7	0.2459	5.1227
8	0.0608	10.2995
9	0.0378	13.0639
10	0.0061	32.4429

```
 Condition Number       32.4429
 Eigenvalues & Cond Index computed from scaled raw sscp (w/ intercept)
 Det(correlation matrix)   0.1174
```

2. Multiple Logistic Regression: Final Model 1.

```
. logistic newq_6 newq_5 FAG_score q_2 q_4 q_12 q_40 newinc educ

Logistic regression                             Number of obs   =         90
                                                LR chi2(8)      =      54.94
                                                Prob > chi2     =     0.0000
Log likelihood = -34.892966                     Pseudo R2       =     0.4405

------------------------------------------------------------------------------
      newq_6 | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      newq_5 |   .3966396   .2471917    -1.48   0.138     .1169269    1.345481
   FAG_score |   .3406475   .0909132    -4.04   0.000     .2018988    .5747472
         q_2 |   .9402546   .0919543    -0.63   0.529     .7762477    1.138913
         q_4 |   .9594401    .032075    -1.24   0.216     .8985896    1.024411
        q_12 |   1.025409   .1797297     0.14   0.886     .7272807    1.445748
        q_40 |   2.331398   2.037364     0.97   0.333     .4205015    12.92603
      newinc |   1.270285   1.101035     0.28   0.783     .2323337    6.945289
        educ |   1.040458    .754607     0.05   0.956     .2511183    4.310927
       _cons |   23945.34   86765.52     2.78   0.005     19.72001    2.91e+07
------------------------------------------------------------------------------
```

3. Multiple Logistic Regression: Final Model 2.

. logistic newq_6 newq_5 self_effic q_2 q_4 q_12 q_40 newinc educ

```
Logistic regression                             Number of obs   =         90
                                                LR chi2(8)      =      83.44
                                                Prob > chi2     =     0.0000
Log likelihood =  -20.63988                     Pseudo R2       =     0.6690
```

newq_6	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]	
newq_5	.597634	.4933423	-0.62	0.533	.1185155	3.013669
self_effic	1.297222	.0774755	4.36	0.000	1.153924	1.458316
q_2	1.071267	.1440385	0.51	0.609	.8230917	1.39427
q_4	.9879024	.0421474	-0.29	0.775	.9086546	1.074062
q_12	1.036821	.2496731	0.15	0.881	.6467385	1.662182
q_40	5.577444	8.026489	1.19	0.232	.3322559	93.62627
newinc	2.305291	2.693821	0.71	0.475	.2333802	22.77128
educ	.7031599	.7123703	-0.35	0.728	.0965391	5.121594
_cons	.0058652	.0192444	-1.57	0.117	9.45e-06	3.640697

4. Power Calculation Based on the Means of Nicotine Dependence Score

```
. sampsi 7.87234 4.982143, sd1(1.752229) sd2( 1.986235) n1(47) n2(56)

Estimated power for two-sample comparison of means

Test Ho: m1 = m2, where m1 is the mean in population 1
                  and m2 is the mean in population 2

Assumptions:

        alpha =   0.0500   (two-sided)
           m1 =   7.87234
           m2 =   4.98214
          sd1 =   1.75223
          sd2 =   1.98624
sample size n1 =       47
           n2 =       56
        n2/n1 =     1.19

Estimated power:

        power =   1.0000
```

5. Power Calculation Based on the Means of Self-Efficacy Score

```
. sampsi 7.255319 33.55357, sd1(7.035525) sd2(11.90557) n1(47) n2(56)

Estimated power for two-sample comparison of means

Test Ho: m1 = m2, where m1 is the mean in population 1
                  and m2 is the mean in population 2

Assumptions:

        alpha =   0.0500   (two-sided)
           m1 =   7.25532
           m2 =   33.5536
          sd1 =   7.03552
          sd2 =   11.9056
sample size n1 =       47
           n2 =       56
        n2/n1 =     1.19

Estimated power:

        power =   1.0000
```

6. Power Calculation Based on the Means of Number of Smoker Family Member

```
. sampsi .6170213 .3518519, sd1(.6444813) sd2( .5878457 ) n1(47) n2(56)

Estimated power for two-sample comparison of means

Test Ho: m1 = m2, where m1 is the mean in population 1

                 and m2 is the mean in population 2

Assumptions:

         alpha =   0.0500  (two-sided)
            m1 =  .617021
            m2 =  .351852
           sd1 =  .644481
           sd2 =  .587846
sample size n1 =       47
            n2 =       56
         n2/n1 =     1.19

Estimated power:

         power =   0.5811
```