Barriers of Smoking Quitting among Cardiac Patients at Assiut University Heart Hospital

Fatma Elzahraa Abd- Elnaser Ahmed[1], Shalabia Elsayed Abozead[2], Ahmed Abdel Galeel Ahmed[3] & Neama Mamdouh Mostafa[4]

[1] Demonstrator of Medical-Surgical Nursing, Faculty of Nursing, Assiut University, Egypt.

[2] Professor of Medical-Surgical Nursing, Faculty of Nursing, Assiut University, Egypt.

[3] Assistant Professor of Cardiology, Faculty of Medicine, Assiut University, Egypt.

[4] Lecturer of Medical-Surgical Nursing, Faculty of Nursing, Assiut University, Egypt.

Abstract

Background: Cigarette smoking plays a central role in the individual predisposition to many diseases including heart diseases. Smoking quitting has many barriers that cause a person to continue smoking. **Aim:** To assess barriers of smoking quitting among cardiac patients at Assuit University Heart Hospital. **Research question:** What are barriers of smoking quitting among cardiac patients? **Research design:** A descriptive exploratory research design was utilized to conduct this study. **Subjects:** sixty-two adult male patients having cardiac disease and smokers. **Setting:** This study was conducted in the cardiovascular medicine department and outpatient clinic at Assuit University Heart Hospital. **Tools:** Interview questionnaire include personal data, medical data, cigarette smoking history, and barriers to smoking cessation scale. **Results:** Mean age of patients was (48.19 ± 10.13) years old, there was asignificant statistically difference between ischemic heart disease and total barriers to smoking cessation (p .v = .040) and there were barriers for smoking quitting that ranged from medium to large barriers. **Conclusion:** It was concluded that there were barriers of smoking quitting ranging from large, medium, and small. **Recommendation:** Further research studies are needed focusing on how to detect and resolve barriers to smoking cessation, especially in individuals having health disorders.

Keywords: Barriers, Cardiac, Quitting & Smoking.

Introduction

The "Top Ten Cardiovascular disease Risk Factors 2021 Update" by the American Society for Preventive Cardiology (ASPC) mentioned ten risk factors including Unhealthy nutrition (2.9%), physical inactivity (5.5%), dyslipidemia (4.5%), hyperglycemia (5.8%), high blood pressure (12.8%), obesity (4.8%), considerations of select populations such as older age, race and sex differences, alcohol use (3.8%), smoking (8.7%), kidney dysfunction and familial hypercholesterolemia are among the ten CVD risk factors. **(Bays et al., 2021).**

Cigarette smoking is a significant risk factor for cardiovascular disease. According to WHO statistics, smoking is responsible for 10% of all CVDs. According to the European Society of Cardiology, smoking is responsible for 25% of middle-aged cardiovascular deaths worldwide, as well as 28% of cardiovascular deaths in males aged 35 to 69 years. People who smoke one cigarette per day have a40–50% higher CVD risk than those who smoke 20 cigarettes per day. **(Байта et al., 2021).**

Barriers were defined as circumstances that made it difficult or impossible for a person to quit smoking. Perceived barriers to smoking cessation can inhibit engagement in smoking cessation efforts among smokers who want to quit. These perceived barriers to successful quitting are divided into two broad categories: intrapersonal barriers (e.g., ingrained habit and dependency), and social-environmental barriers (e.g., lack of cessation resources). **(Jitnarin et al., 2021).**

Tobacco control and smoking cessation promotion have been advocated all over the world because quitting smoking rates are low, with less than one out of every ten attempts succeeding, which can be attributed in part to theunderutilization of proven treatments such as behavioral counseling and pharmacological therapies. Using behavioral counseling or cessation medications nearly doubles quit rates, with greater effectiveness when used in conjunction. **(Marler et al., 2019).**

The European Network for Smoking and Tobacco Prevention (2020) recommends that all health professionals screen their patients for tobacco use and provide at least brief tobacco cessation support through using 5As evidence-based framework (Ask, Advise, Assess, Assist, Arrange). These five strategies involve asking all patients about their smoking status, advising those who smoke to quit, assessing readiness to quit, assisting them with making a quit plan by providingbriefbehavioral counselingandrecommending/ prescribing smoking cessation medications, or providing brief counseling

nonmotivated smokers to encourage them to quit, and arranging a follow-up. **(Grech, 2021).**

Significance of the study:
From the clinical experience of the researcher during the practical training period for two years at University Heart Hospital in Assiut, it has been observed that many patients who are readmitted to the inpatient department or visit the cardiac outpatient clinic frequently in hospital smoke and continue to smoke despite having the cardiac disease. And after reviewing the literature reviews it found that smoking is a major risk factor for cardiovascular disease (CVD) and one of the most serious hazards the world has ever faced, killing over 8 million people each year. **(Salman & Doherty, 2020).** The global consumption of tobacco products rises every day; over 23% of the world's adults smoke tobacco products, including over 1 billion men and 250 million women. By 2050, the World Health Organization (WHO) predicts that there will be around 1.5 billion tobacco smokers globally. **(Perez-Warnisher et al., 2019)**. As a result, this study was conducted to collect data that helped in assessing barriers to smoking quitting in those patients.

Aim of the study:
The aim of this study was to assess barriers of smoking quitting among cardiac patients at Assiut University Heart Hospital.

Research question:
What are barriers of smoking quitting among cardiac patients?

Patients and Method:
Research design: A descriptive exploratory research design was utilized to carried out this study.

Setting: This study was carried out in the cardiovascular medicine department and outpatient clinic at Assiut University Heart Hospital.

Sample size: The sample included all patients who attended Assiut University Heart Hospital in the cardiovascular medicine department and outpatient clinic through the period of six months and the total number of patients during this period was sixty-two adult male patients.

Subjects: The study included sixty-two adult male patients who attended Assiut University Heart Hospital in the cardiovascular medicine department and outpatient clinic in the period of six months, their age was ranged from 18 to 65 years and smoker.

Tools of the study: To collect relevant data for this study, two tools were used.

Tool (I): Patient assessment:
This tool was developed by the researcher based on the national and international literature **(Foster et al., 2015), (Bodin et al., 2017), (Ahalt et al., 2019)** and

(Mohamed et al., 2019) to assess socio-demographic data of the patients, medical data and cigarette smoking history. It consisted of three parts:

Part 1: Patients personal data:
 This part was included socio-demographic data of studied patients such as (name, age, marital status, level of education……etc).

Part 2: Medical data: This part was included:
- Medical history such as (presence of diabetes, hyperlipidemia, pulmonary problems, gastrointestinal problems, arthritis and dementia).
- Cardiac medical history such as (presence of previous myocardial infarction, previous heart catheter stent, coronary artery bypass graft, current chest pain, congestive heart failure, family history of coronary heart diseases, cerebrovascular disease, high Blood Pressure, Peripheral vascular disease.
- Investigations: such as CBC, ABG, Hgb, ECG finding, Echo finding and Ejection Fraction %.

Part 3: Cigarette Smoking History:
This part was included fifteen questions asked to patients to assess smoking history such as how old were you when you first tried a cigarette? , Where did you first smoke?, With whom did you first smoke?, how much did you enjoy smoking? , For about how many years have you smoked every day? , how many cigarettes per day have you smoked?, how much of each cigarette do you smoke? , How many of your friends smoke or use tobacco? .

Tool (II): Barriers to smoking cessation scale:
This scale was developed by (**Macnee & Talsma, 1995**).

It included a 19-item Likert-type scale which was developed to test the perceived barriers to smoking cessation, each item was rated as the following 0 (Not a barrier), 1 (Small barrier), 2 (Medium barrier), 3 (Large barrier) and patient choose from 0 to 3 according to what represents this barrier for him.

Scoring of this scale:
Total score of 0-57 was computed as the sum of the individuals rating of the 19 barriers and categorized as the following: (< 25%) → (score from 0 to < 14,25) considered as not barrier, (25% < 50%) → (score from 14,25 to < 28,5) considered as small barrier, (50% < 75%) → (score from 28,5 to < 42,7) considered as medium barrier and (≥ 75 %) → (score from 42,7 to 57) considered as large barrier with higher scores indicating greater perceived barriers to quitting smoking.

Procedure:
This study was carried out in two phases:
I: Preparatory phase:
Tools development:
Data collection tools were developed based on reviewing the current, past, local and international related literature in the various aspects using books,

articles, periodicals, magazines, and references were done.

Content validity and reliability:

Content validity was done by 5 experts from the Medical-Surgical Nursing staff and cardiovascular medicine staff who examined the tools for clarity, relevance, comprehensiveness, and understanding. Minor modifications were made, and correction was carried out accordingly and then the tools were designed in their final format and tested for reliability. **Reliability** of the tool was measured by Cronbach's alpha coefficient (r-0.72).

Pilot study:

A pilot study was conducted on 10 % of the study subjects (6 patients) to test the tools' applicability and clarity. The data from the pilot study were analyzed; no changes were made to the tools used, so the 10% of subjects chosen for the pilot study were included in the study.

Ethical approval:

Permission to conduct this study was granted by the ethical committee of the Faculty of Nursing. An official letter was issued from the Dean of the Faculty of Nursing to the Head of the cardiovascular department in order to collect the necessary data. After explaining the nature and purpose of the study, oral consent was obtained from patients or guidance who were willing to participate in the study. During the application of the research, there was no risk to the study subjects. The study adhered to standard ethical principles in clinical research. Confidentiality and anonymity were assured. Patients had the right to refuse or participate and/or withdraw from the study without any rationale at any time.

Development of the interview questionnaire for cardiac smoker patients:

It was developed in English language and designed to collect data regarding personal data, medical data, cigarette smoking history and barriers to smoking quitting among cardiac patients.

Implementation phase:

- Once permission was granted to proceed with the proposed study, the researcher initiated data collection.

- Data were collected in one session with each cardiac smoker patient either in the outpatient clinic from Sunday to Wednesday any time from eight o'clock in the morning until twelve in the afternoon and in the cardiovascular medicine department during morning and afternoon shifts. From the available patients who were presented during these times, the smoker cardiac patients are interviewed.

- During each session the researcher introduced herself, explained the purpose of the study, and obtained the patient's verbal consent to participate in the study on a voluntary basis.

- Each patient who took part in the research (**62 patients)** was interviewed individually to obtain data that were established using an interview questionnaire and the researcher gathered the data. The session took about 10-15 min.

- The collection of data lasted over the period from July 2021 to December 2021.

Statistical analysis:

The researcher entered the data using a personal computer. All data were entered into statistical packages for the social sciences (SPSS) version 23.0 software for analysis and figures were created in Excel. The researcher analyzed, categorized, and then coded the content of each tool. Categorical variables were described by number and percent, whereas continuous variables were described by the mean and standard deviation (Mean, SD). Chi-square test and Fisher exact test were used to compare between categorical variables, where compare between continuous variables by t-test. $p < 0.05$ was considered statistically significant.

Results

Table (1): Frequency and percentage distribution of personal data for the studied patients (n=62)

Items	N	%
Age group :		
18 < 30	2	3.2
30 < 40	11	17.7
40 < 50	17	27.4
50 ≤ 65	32	51.6
Mean ±SD	548.19 ± 10.13	
Sex:		
Male	62	100.0
Marital status:		
Single	7	11.3
Married	54	87.1
Divorced	1	1.6
Educational level:		
Illiterate	16	25.8
Read and write	7	11.3
Primary school	6	9.7
Secondary school	27	43.5
High education	6	9.7
Occupation:		
Manual	48	77.4
Intellectual	13	21.0
Others	1	1.6

Table (2): Frequency and percentage distribution of barriers to smoking cessation for the studied patients (n=62)

Items	N	%
No encouragement or help from friends:		
Not a barrier	47	75.8
Small barrier	7	11.3
medium barrier	3	4.8
Large barrier	5	8.1
Having strong feelings such as anger, or feeling upset when you are by yourself:		
Not a barrier	8	12.9
Small barrier	7	11.3
medium barrier	6	9.7
Large barrier	41	66.1
Withdrawal symptoms:		
Not a barrier	33	53.2
Small barrier	4	6.5
Medium barrier	12	19.4
Large barrier	13	21.0
Feeling less in control of your moods:		
Not a barrier	12	19.4
Small barrier	5	8.1
Medium barrier	5	8.1
Large barrier	40	64.5
Family members or significant others encouraging you to smoke:		
Not a barrier	13	21.0

Items	N	%
Small barrier	4	6.5
Medium barrier	17	27.4
Large barrier	28	45.2
Miss the companionship of smoking:		
Not a barrier	50	80.6
Small barrier	4	6.5
Medium barrier	4	6.5
Large barrier	4	6.5
No encouragement or help from family members or significant others:		
Not a barrier	50	80.6
Small barrier	6	9.7
Medium barrier	5	8.1
Large barrier	1	1.6
Having strong feelings such as anger, or feeling upset when you are with other people:		
Not a barrier	11	17.7
Small barrier	2	3.2
Medium barrier	8	12.9
Large barrier	41	66.1
Thinking about never being able to smoke again:		
Not a barrier	10	16.1
Small barrier	6	9.7
Medium barrier	24	38.7
Large barrier	22	35.5
Friends encouraging you to smoke:		
Not a barrier	10	16.1
Small barrier	4	6.5
Medium barrier	14	22.6
Large barrier	34	54.8
Thinking about cigarettes all the time:		
Not a barrier	7	11.3
Small barrier	9	14.5
Medium barrier	15	24.2
Large barrier	31	50.0
Not knowing for how long it will be very hard not to smoke:		
Not a barrier	10	16.1
Small barrier	11	17.7
Medium barrier	22	35.5
Large barrier	19	30.6
No encouragement at work for not smoking:		
Not a barrier	9	14.5
Small barrier	4	6.5
Medium barrier	41	66.1
Large barrier	8	12.9
Being addicted to cigarettes:		
Not a barrier	6	9.7
Small barrier	6	9.7
Medium barrier	15	24.2
Large barrier	35	56.5
Fear of failing to quit:		
Not a barrier	12	19.4
Small barrier	11	17.7

| Items	N	%
Medium barrier	22	35.5
Large barrier	17	27.4
Lack of understanding from family and significant others about what it is like to quit smoking:		
Not a barrier	56	90.3
Small barrier	5	8.1
Large barrier	1	1.6
Seeing things or people which remind you of smoking:		
Not a barrier	12	19.4
Small barrier	5	8.1
Medium barrier	12	19.4
Large barrier	33	53.2
Feeling lost without cigarettes:		
Not a barrier	14	22.6
Small barrier	11	17.7
Medium barrier	23	37.1
Large barrier	14	22.6
Fear of weight gain:		
Not a barrier	60	96.8
Small barrier	1	1.6
Large barrier	1	1.6
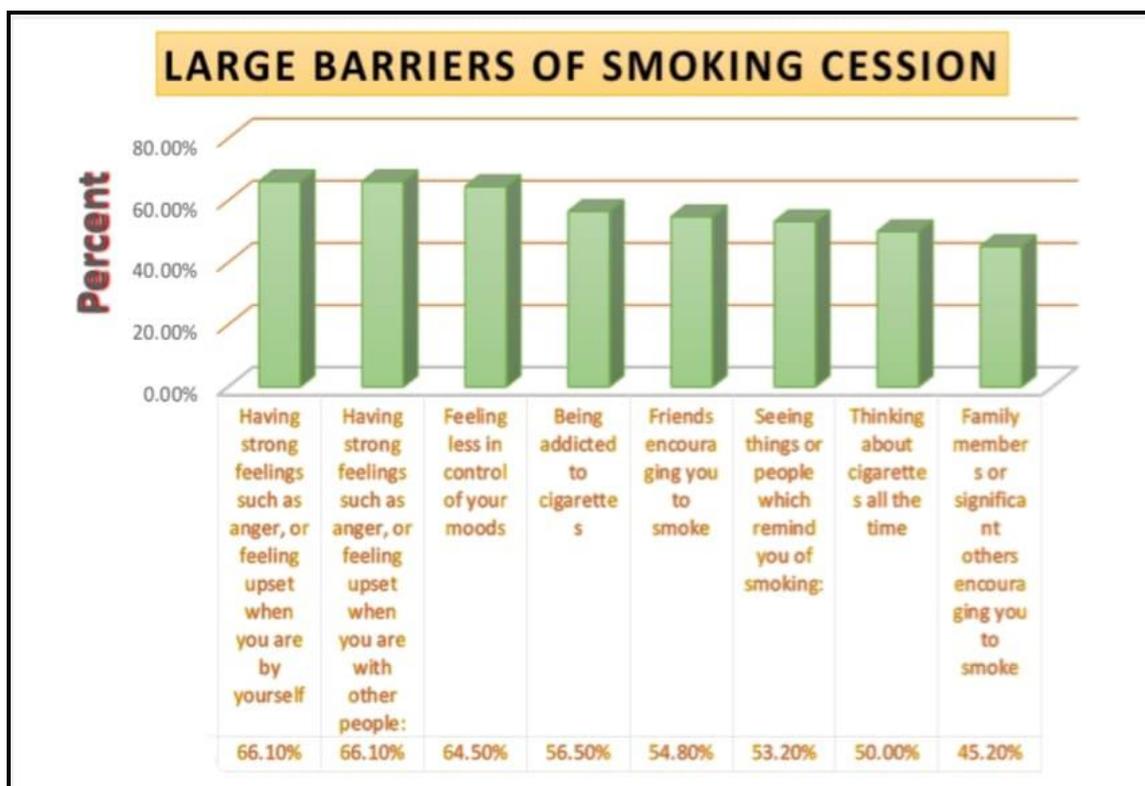
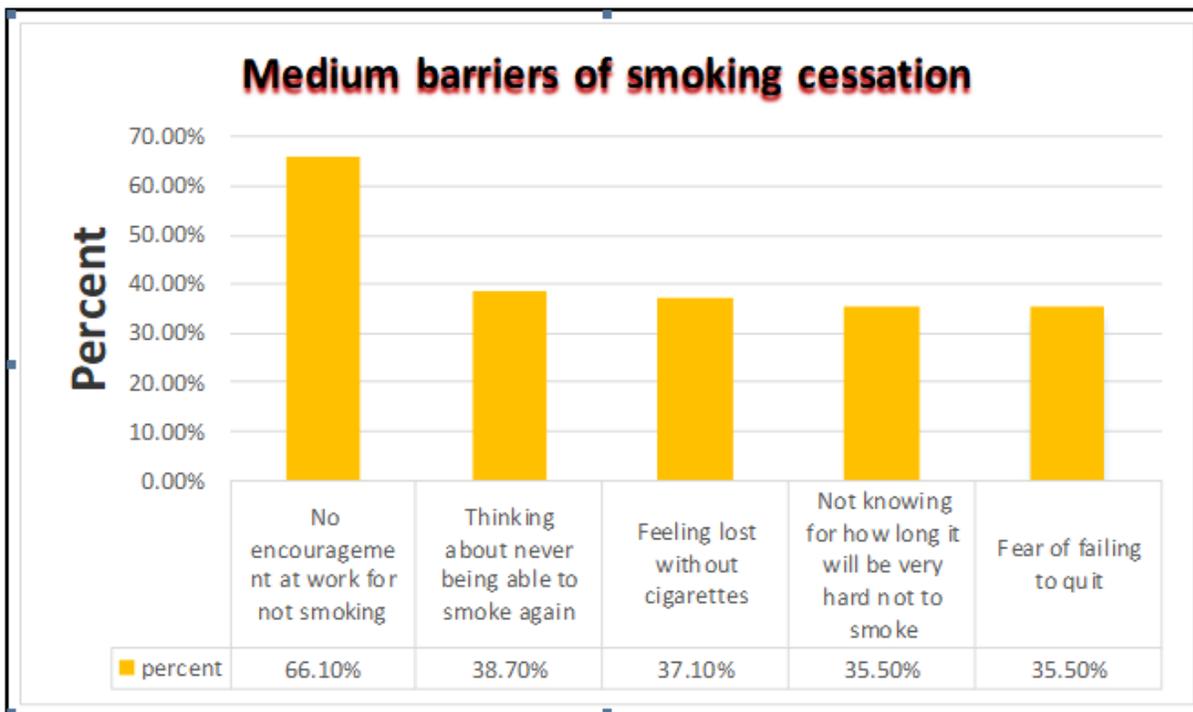**Fig. (1): Percent of large barriers for smoking cessation obtained by patients (n=62)**

Fig. (2): Percent of medium barriers for smoking cessation obtained by patients (n=62)

Table (3): Correlation between medical diagnosis and total barriers to smoking cessation for the studied patients (n=62)

Items	Smoking barriers				Total	X2	P. Value
	Not barrier	Small barrier	Medium barrier	Large barrier			
Ischemic heart disease	37.5%	85.0%	77.4%	100.0%	75.8%	8.32	.040s
Rheumatic heart disease	62.5%	40.0%	38.7%	33.3%	41.9%	1.64	.649ns
Heart failure	12.5%	10.0%	16.1%	0.0%	12.9%	.88	.83ns
Ns = significant difference P>0.05							
S = significant difference P ≤ 0.05			**Chi-Square Tests**				

Table (1): Clarifies that all studied sample were males (100%), their age ranged 50 ≤ 65 years (51.6 %) with mean ± SD 548.19 ± 10.13, the majority of them were married (87.1 %), more than two-fifths of them had secondary education (43.5%) and more than three quarters working in manual occupations (77.4 %).

Table (2): Shows that fear of weight gain was not a barrier for smoking cession in the vast majority of cases (96.8 %) followed by a lack of understanding from family and significant others about what it is like to quit smoking in the majority of cases (90.3 %). No encouragement at work for not smoking constitutes a medium barrier in almost two-third of

cases (66.1 %). Having strong feelings such as anger or feeling upset when by himself & having strong feelings such as anger or feeling upset when with other people constitute large barriers in almost two-third of cases (66.1%), followed by feeling less in control of moods constitute large barriers in more than half of cases (64.5 %).

Table (3): Reveals that there was significant statistically difference between ischemic heart disease and total barriers to smoking cessation (p .v = .040).

Figure (1): Demonstrates that having strong feelings such as anger or feeling upset when a patient by himself or with other people constitutes a large

barrier in almost two-third of studied patients (66.1%). Feeling less in control of moods (64.5 %), being addicted to cigarettes (56.5 %), friends encouraging smoke (54.8%) and seeing things or people which remind smoking (53.2%) constitute a large barrier in more than half of studied patients. Thinking about cigarettes all the time constitutes a large barrier in half of the studied patients (50.0%). Family members or significant others encouraging smoke constitutes a large barrier in more than two-fifths of studied patients (45.2%).

Figure (2): Reveals that no encouragement at work for not smoking constitutes a medium barrier in almost two-third of studied patients (66.1%). Thinking about never being able to smoke again (38.7%), feeling lost without cigarettes (37.1%), not knowing for how long it will be very hard not to smoke (35.5%) and fear of failing to quit (35.5%) constitute a medium barrier in more than one-third of studied patients.

Discussion

Cardiovascular diseases (CVDs) have been identified as the leading cause of death worldwide. Unhealthy dietary habits, obesity, physical inactivity, and smoking are known to be major risk factors for CVDs, with cigarette smoking being the most conspicuous factor, accounting for 10% of total CVD deaths. Smoking, both active and passive, is significantly associated with an increased risk of CVD incidence and mortality, and it is a public health hazard that should be avoided. Smoking cessation is a difficult mission because smokers face numerous obstacles that impede their ability to successfully quit. **(Khoramdad et al., 2020) (Leng & Mu, 2020).**

As a result, the current study was designed to assess barriers of smoking quitting among cardiac patients.

In light of the demographics of the patients studied, the current study discovered that the age of the study participants was ranged from fifty to less than or equal to sixty-five years. This conclusion is confirmed in the study by **(Tomioka et al., 2020)** who discovered that men aged fifty to sixty-four years had cardiovascular illnesses related to current cigarette smoking. From the researcher's opinion, this result may be due to aging and the long-term deleterious effects of smoking on the cardiovascular system.

In regard to marital status, the current study found that the majority of the studied cases were married. This result was in disagreement with the finding of **(Wang et al., 2020)** who reported that being unmarried is especially dangerous for men as loneliness and stress enhance their propensity to smoke which raises their risk for chronic diseases including cardiovascular diseases. Also, This study's findings contradicted those of **(Ramsey et al., 2019)**, who discovered that single / never married adults had a higher prevalence of current cigarette smoking than married adults. From the researcher's point of view, resorting to smoking can be a way for a single and married person to escape from the pressures faced, but resorting to smoking can increase among married people because of the many responsibilities they bear which make them tenser.

The current study revealed that all studied sample were males & more than three-quarters of them worked in manual occupations. This finding is reinforced by the findings of **(Amiri et al., 2019)**, who found that smoking was prevalent in 95 percent of men and 5 percent of women. Also, This result was in an agreement with the finding of **(Wei-Wei et al., 2017)** who found that the current smoking rate in men was 52.9 percent and 2.4 percent in women. **(Madureira et al., 2020)** also, reported that the majority of smoking employers (77.4%) were employed in manual occupations. In the researcher's view, this result may be due to that smoking in men is considered a common habit especially with manual jobs while smoking in women is often seen as inappropriate and is associated with a social stigma, so women underreport smoking.

Concerning the level of education, the current study revealed that more than two-fifths of the studied patients had secondary education. This finding was comparable to one found in a research by **(Perez-Warnisher et al., 2019)** who stated that people with the lowest levels of education and income were the most likely to smoke. This result was also in an agreement with the finding of **(Sanderson et al., 2019)** who mentioned that having more years of education leads to a reduced likelihood of smoking and vice versa. The researcher believes that these results may be due to a lack of sufficient awareness in those groups and their falling behind this bad habit, therefore, neglecting their education.

The current study results revealed that there was a significant statistically difference between ischemic heart disease and total barriers to smoking cessation. This finding was consistent with the findings of **(Shields & Wilkins, 2013)** who stated that active daily smokers had a 60% higher risk of coronary heart diseases incidence. Also, this result comes in the same line with the study of **(Ehteshami et al., 2014)** who reported that the more cigarettes smoked daily, the greater the risk of cardiovascular disease, particularly ischemic heart disease. From the researcher's opinion, this result is due to that smoking is a major contributor to the incidence of ischemic heart disease due to the deleterious effects it induced on the coronary arteries.

In this study, the result revealed that fear of weight gain was not a barrier for smoking cession in the vast majority of cases. In accordance with the current study results **(Germeroth & Levine, 2018)** support this finding in their study as they stated that weight gain in men is not a major concern for them, whereas women are more concerned about weight gain after quitting smoking and are more afraid of weight gain, which could be due to their lower tolerance or greater focus on their body image. Furthermore, the findings of this study were consistent with those of a study conducted by **(Olando et al., 2020)** who found that weight gain was not identified as a barrier to cessation among the study participants and that the study sample saw obesity as a sign of good health and found it attractive. The researcher's opinion for this result is that men don't care about their appearance unlike women, so they didn't express any concern regarding weight gain as a barrier for smoking quitting.

Another finding in the present study regarding barriers for smoking quitting revealed that lack of understanding from family and significant others about what it is like to quit smoking was not a barrier for smoking cession in the majority of cases. This finding was incongruent with **(Oates et al., 2020)** who pointed that the lack of understanding from family and friends, as well as a lack of support while attempting to quit, were recognized obstacles that functioned as a barrier rather than a facilitator in quitting tobacco. The researcher believes that this result is due to that smokers are indulged in their desire to smoke and don't pay attention whether others advise them or not, so the lack of support and explanation from significant others about what it is like to quit smoking was not an obstacle to the smoking cession.

The present study showed that no encouragement at work for not smoking was a medium barrier in two-third of cases. This study result was in line with **(Syamlal et al., 2014)** who stated that there was a low prevalence of smoking among teaching and legal occupations, which could be explained in part by the fact that a large percentage of workers in these occupations are covered and required to follow smoke-free workplace policies, including smoke-free workplaces, as opposed to workers in manual occupations, who have no such policies. From the perspective of the researcher, these results would be because that more than three-quarters of cases working in manual occupations and didn't have workplace policies that hinder them smoke.

Having strong feelings such as anger or feeling upset when by himself & having strong feelings such as anger or feeling upset when with other people was large barriers in two-third of cases and feeling less in control of moods was a large barrier in more than half of cases. This discovery was supported by (**Martinez et al., 2021)** who said that smoking was a "coping mechanism" for dealing with the stresses of living under the burden of intersecting social and economic inequities, a means of coping with or easing feelings of anger, upset, anxiousness, or depression, and a way to relax and that this was a barrier to comprehensive and sustainable tobacco cession. From the researcher's point of view, smoking was a way for smokers to get rid of and escape from the stressors of life, in this way it was difficult for smokers to quit.

Conclusion:

Based on the findings of the current study, it is possible to conclude that there was a significant statistically difference between ischemic heart disease and total barriers to smoking cessation and there are barriers for smoking cessation ranging from large, medium, and small such as having strong feelings such as anger, or feeling upset when a person by himself, having strong feelings such as anger or feeling upset when a person with other people, feeling less in control of moods, being addicted to cigarettes, friends encourage smoking, seeing things or people which remind smoking, thinking about cigarettes all the time and family members or significant others encourage smoking, no encouragement at work for not smoking, not knowing for how long it will be very hard not to smoke, thinking about never being able to smoke again and these findings provided an answer to the research question.

Recommendations:

The following recommendations were made based on the findings of the current study:
- Further research studies are needed focusing on how to detect and resolve barriers to smoking cessation, especially in individuals having health disorders.
- Replication of the same study on a larger probability sample at different geographical locations for data generalizability.

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