

## Smoking Behavior Among Patients With Coronary Artery Diseases

سلوك التدخين لدى المرضى المصابين بأمراض القلب الوعائي

\*Dr. Rajha A.H. Al-kassar

\*\*Dr. Dergham M. Hameed

### الخلاصة:

القلب الوعائي الـ صيب الملايين من الناس حو  
**الهدف:** تهدف الدراسة إلى تحديد اثر سلوك التدخين على المرضى المصابين  
**إجراءات البحث:** دراسة وصفية كمية أجريت في مدينة الصدر الطبية  
 2012 تم جمع عينة عشوائية بسيطة مؤلف 60 مريض مصابين  
 استبيانها لهذا الغرض مؤلفة من جزئين يحتوي على المعلومات الديموغرافية الجزء الثاني فيحتوي على معلومات  
 تخص مواصفات ممارسة التدخين لدى المريض. تم تحليلها إحصائياً (SPSS 16.0)  
**النتائج:** 46.7% من المرضى تم تشخيصهم بالنوبة الصدرية وحوالي 76.7% إصابتهم  
 10-1). 66.7% بالمرض مستمرين بالتدخين وكانت نسبة 38.3% مستمرين بالتدخين حتى بعد  
 إصابتهم. أما نسبة الذين يدخنون السكائر فقط نحو 85% الذين يدخنون السكائر والشيشة معا بحدود 15% .  
 لتعليم سلوك التدخين للمرضى بحدود 40%  
**الخلاصة:** من هذا نستنتج بان امراض القلب الوعائية تحصل عند الاشخاص الذين يدخنون بالنتيجة يظهر التدخين يؤثر سلبيا على  
 الشرايين التاجية .  
**التوصيات:** تشريع قانون منع التدخين في العامة من قبل البرلمان وتطبيق منهجية نظام الإقلاع عن التدخين من قبل الحكومة لرفع  
 مستوى الرغبة لدى المصابين بأمراض الشرايين التاجية للإقلاع عن التدخين. تهيئة مركز وقائي لتحسين وعي المجتمع بمضار  
 التدخين.  
 : تأثير سلوك التدخين مرضى شرايين القلب التاجية

### Abstract

Coronary Heart Diseases CHD are a global health problem which strikes millions of people worldwide and causing life time severs disability.

**Objective:** to determine the impact of smoking behavior on patients with Coronary Artery Diseases.

**Method:** A descriptive quantitative study is carried out at al sadder medical city from Feb.23, 2012 to April 15,2012 A simple randomized sample of 60 coronary Artery diseases patients who were admitted to the Al-sadder medical city. The data were collected through the use of semi-constructed questionnaire which consists of two parts; the first part consist (age, gender, educational level, marital status, diagnosis, duration of illness) and second part consist of (smoking behavior of the patients before and after CAD, kind of smoking, number cigarettes smoking, and period of smoking before and after CAD occurrence, source of smoking, reason discourage from quitting smoking, and the source of advice to stop smoking). After gathering the data, the information was statistically analyzed through the application of percentage and frequency by using ( SPSS) version 16.0.

**Results:** about (46.7%) of the patients were diagnosed with Angina. About (76.7%) of the patients have duration of illness from (1-10) years. (66.7%) of the patients were current smokers before CAD. And (38.3%) of patients were still persistent in smoking after CAD occurrence. (85%) of the patients were smoking cigarettes only and about (15%) smoke cigarettes and waterpipe. And (40%) of the patients the source in smoking behavior was the friends.

**Conclusion:** The study concluded that Coronary Artery Disease occurs in people with smoking behavior. Moreover, smoking behavior affected negatively on patients with coronary heart disease.

**Recommendations:** the enactment from the Parliament to ban smoking in public places and to implement systematic smoking cessation programs to promote CAD patients' motivation to quit smoking, and great a preventive center to improve community awareness about the harms of smoking.

**Keywords:** Impact, smoking behavior, patients with Coronary Artery Diseases

\*PhD in Nursing-college of nursing/University of kufa

\*\* PhD in Nursing-college of nursing/University of kufa

## INTRODUCTION

Coronary Artery Disease CAD is the most frequent cause of adult death in the Western World. In UK, one – third of men and one – quarter of women will die

because of Ischemic heart disease. In many developed countries, the incidence is rising in Eastern and Asia (Barnhouse, et.al, 2008 and Colledge, et.al 2010).

With the explosive rise in the incidence of coronary artery disease, it is now estimated that this will be the leading cause of mortality and morbidity even in the developing world by the year 2015 (Achari, & Thakur, 2004). Tobacco will become the single leading cause of death (Majra, and Basnet, 2008). Cigarette consumption is declining in developed nations, but unfortunately, it is increasing at the rate of 3-4% in the developing nations (Bhattacharyya et al, 2008). The World Health Organization estimates that worldwide 1.1 billion people smoke, aged 16 years and above. Eight hundred million of them are in the developing countries (World Health Organization Report, 2011). According to the American Heart Association, cigarette smoking is the most important preventable cause of premature death in the United States, accounting for 440,000 of the more than 2.4 million annual deaths (Richard and Fogoros, 2003; Martens K. 2011). The prevalence of smoking in European patients with established coronary disease is too high (Scholte, et al 2006). Most cases of heart disease are caused by atherosclerosis, which is a condition in which arteries become harden and narrow. It can keep the heart away from getting enough blood and oxygen, and can cause chest pain (angina). If a blood clot forms, it can suddenly cut off blood flow in the artery and cause a heart attack. Cigarette smoking speeds up the process of atherosclerosis by damaging the cells lining the blood vessels and heart (Smeltzer, et al, 2011).

Kumar et al, (2007) emphasized that Coronary Heart Diseases thought to be associated with the effect of nicotine and higher content of carbon monoxide produced by the smoker nicotine that increase myocardial workload and subsequent oxygen demand, carbon monoxide interferes with oxygen transport. Atherosclerosis and its major complication myocardial infarction are

strongly linked or probably relate to several changes including increase platelet aggregation decrease myocardial oxygen supply

(because of significant lung disease coupled with the hypoxia related to the content of cigarette smoking). This study aimed to find out the impact of smoking behavior on patients with Coronary Artery Diseases

## METHODOLOGY

### Design of the study:-

Descriptive quantitative design was carried out in order to achieve the early stated objectives.

### Setting of the study:-

The study was conducted at Al sadder Medical City in Al Najaf City from February. 23, 2012 to April 15, 2012

### Sample of the study: -

A representative sample of (60) patients with coronary artery diseases who were admitted to AL-sadder Medical City for treatment in Al Najaf Al Ashraf.

### Data collection:-

Data collection depended on semi-constructed questionnaire, which included two parts:

- Socio-demographic characteristics sheet consisted of (6) items which included (gender, age, marital status, level of education, diagnosis, duration of illness)
- Smoking behavior which was consisted of (6) items, that included kind of smoking, number of cigarettes smoked or water pipe, and period of smoking before and after CAD occurrence, smoking behavior, source of smoking, reason discourage quitting smoking, advice taken to stop smoking.

The data was collected through individual interview with the patients who were diagnosed as CAD in the hospital.

**Statistical Analysis:**

The data of the present study were analyzed through the use of statistical Frequencies and Percentage.

**RESULTS****Table (1): Characteristic of the patients included in the study**

| Variables         |                      | Frequency | Percentage   |
|-------------------|----------------------|-----------|--------------|
| Age/ in years     | 20-30                | 7         | 11.7%        |
|                   | 31-40                | 8         | 13.3%        |
|                   | 41-50                | 17        | 28.3%        |
|                   | 51-60                | 11        | 18.3%        |
|                   | 61-75                | 17        | 28.4%        |
|                   | <b>Total</b>         | <b>60</b> | <b>100 %</b> |
| Gender            | Female               | 10        | 16.7%        |
|                   | Male                 | 50        | 83.3%        |
|                   | <b>Total</b>         | <b>60</b> | <b>100 %</b> |
| Educational level | Illiterate           | 22        | 36.7%        |
|                   | Read and write       | 7         | 11.7%        |
|                   | Primary              | 11        | 18.3%        |
|                   | Secondary            | 9         | 15%          |
|                   | Institute/university | 11        | 18.3%        |
|                   | <b>Total</b>         | <b>60</b> | <b>100 %</b> |
| Marital status    | Single               | 2         | 3.3%         |
|                   | Married              | 51        | 85%          |
|                   | Widow                | 7         | 11.7%        |
|                   | <b>Total</b>         | <b>60</b> | <b>100%</b>  |

Table (1) shows that the highest percentage among age groups were (28.3%) for each age groups (41-50) and (61-75). And the highest percentage were male (83.3%) and the remaining were female. Regarding the educational level, illiterate represented the highest percentage (36.7%) among all others. Concerning Marital status, the highest percentage (85%) were married.

**Table (2): Type of heart problems among studied group**

| Diagnosis             | Frequency | Percentage  |
|-----------------------|-----------|-------------|
| Angina Pectoris       | 28        | 46.7%       |
| Myocardial infarction | 10        | 16.7%       |
| Heart failure         | 22        | 36.6%       |
| <b>Total</b>          | <b>60</b> | <b>100%</b> |

Table (2) reveals that most of the patients (46.7%) have angina pectoris, and (36.6%) have heart failure and (16.7%) have myocardial infarction

**Table (3): Duration of illness in years**

| Duration of illness | Frequency | Percentage   |
|---------------------|-----------|--------------|
| <1yr                | 10        | 16.6%        |
| 1-10 yr             | 46        | 76.7%        |
| >10yr               | 4         | 6.7%         |
| <b>Total</b>        | <b>60</b> | <b>100 %</b> |

Table (3) indicates that the majority of patients (76.7%) had (1-10) years duration of illness. And the lowest percentage (6.7%) in those with more than 10 years of illness.

**Table (4): Smoking behavior of the patients before and after CAD**

| Smoking behavior  |               | Frequency | Percentage   |
|-------------------|---------------|-----------|--------------|
| <b>Before CAD</b> | Persistent    | 40        | 66.7%        |
|                   | Former smoker | 20        | 33.3%        |
|                   | <b>Total</b>  | <b>60</b> | <b>100 %</b> |
| <b>After CAD</b>  | Persistent    | 23        | 38.3%        |
|                   | Relapse       | 20        | 33.3%        |
|                   | Quitter       | 17        | 28.4%        |
|                   | <b>Total</b>  | <b>60</b> | <b>100 %</b> |

Table (4) shows that (66.7%) of the patients were smoker before the disease started. And (38.3%) of the patients continue smoking after they become diseased with CAD, and only (28.4%) of the patients quit smoking.

**Table (5): kinds of smoking practices among patients with CAD**

| Kind of smoking           | Frequency | Percentage  |
|---------------------------|-----------|-------------|
| Cigarettes                | 51        | 85%         |
| Cigarettes and Water pipe | 9         | 15%         |
| <b>Total</b>              | <b>60</b> | <b>100%</b> |

Table (5) reveals that most of patients smoke cigarettes 85%, and the remaining (15%) smoke both cigarettes and waterpipe.

**Table (6): The period of smoking before and after CAD**

|                   | <b>Period of smoking</b> | <b>Frequency</b> | <b>Percentage</b> |
|-------------------|--------------------------|------------------|-------------------|
| <b>Before CAD</b> | <1-20 Years              | 51               | 85%               |
|                   | 21-30Years               | 3                | 5%                |
|                   | >30 Years                | 6                | 10%               |
|                   | <b>Total</b>             | <b>60</b>        | <b>100%</b>       |
| <b>After CAD</b>  | Stop smoking             | 17               | 28.3%             |
|                   | 1-11 months              | 42               | 70%               |
|                   | > 11 months              | 1                | 1.7%              |
|                   | <b>Total</b>             | <b>60</b>        | <b>100%</b>       |

Table (6) shows that most of the patients under study (85%) had a period of smoking (1-20) years before they affected with CAD.

**Table (7): The number cigarettes per day before and after CAD**

|                   | <b>Number of cigarettes per day</b> | <b>Frequency</b> | <b>Percentage</b> |
|-------------------|-------------------------------------|------------------|-------------------|
| <b>Before CAD</b> | <1 -39 cigarettes                   | 51               | 85%               |
|                   | >39 cigarettes                      | 9                | 15%               |
|                   | <b>Total</b>                        | <b>60</b>        | <b>100%</b>       |
|                   |                                     |                  |                   |
| <b>After CAD</b>  | Stop smoking                        | 17               | 28.3%             |
|                   | 1-39 cigarettes                     | 39               | 65%               |
|                   | >39 cigarettes                      | 4                | 6.7%              |
|                   | <b>Total</b>                        | <b>60</b>        | <b>100 %</b>      |

Table (7) indicated that (85%) of the patients smoke (1-39 cigarettes) and only (15%) smoke more than 39 cigarettes daily before CAD. The result shows that (65%) of patients smoke (1-39) cigarettes daily after they become diseased with CAD.

**Table (8): The number of water pipe before and after CAD**

|                   | <b>Number of waterpipe per day</b> | <b>Frequency</b> | <b>Percentage</b> |
|-------------------|------------------------------------|------------------|-------------------|
| <b>Before CAD</b> | Non                                | 51               | 85%               |
|                   | 1 time                             | 3                | 5%                |
|                   | >1 time                            | 6                | 10%               |
|                   | <b>Total</b>                       | <b>60</b>        | <b>100%</b>       |
| <b>After CAD</b>  | Non                                | 51               | 85%               |
|                   | 1 time                             | 3                | 5%                |
|                   | >1 time                            | 6                | 10%               |
|                   | <b>Total</b>                       | <b>60</b>        | <b>100%</b>       |

Table (8) indicates that there was no difference in the percentage of the patients who use waterpipe before and after the patients become diseased with coronary artery disease.

**Table (9): The source of smoking habit and the reason to stop and reason of smoking**

| Variables   |                                | Frequency | Percentage  |
|---|--------------------------------|-----------|-------------|
| <b>Source of smoking</b>  | Friends                        | 24        | 40%         |
|   | Brothers                       | 1         | 1.6%        |
|   | Parents                        | 10        | 16.7%       |
|   | More than one                  | 25        | 41.7%       |
|   | <b>Total</b>                   | <b>60</b> | <b>100%</b> |
| <b>Reason to stop smoking</b>                                     | Family or relative             | 2         | 3.3%        |
|   | Friends                        | 1         | 1.7%        |
|   | More than one reason           | 55        | 91.7%       |
|   | No one                         | 2         | 3.3%        |
|   | <b>Total</b>                   | <b>60</b> | <b>100%</b> |
| <b>Reasons that discourage CAD patients from quitting smoking</b> | Do not incline to stop smoking | 16        | 26.6%       |
|   | Social acceptance              | 22        | 36.7%       |
|   | More than one reason           | 22        | 36.7%       |
|   | <b>Total</b>                   | <b>60</b> | <b>100%</b> |

Table (9) shows that (41.7%) of the patients pickup the smoking habit from different sources and about (40%) of the patients their source for smoking was the friends. And (91.7%) of the patients get advice to stop smoking from more than one source while (36.7%) of the patients show that there reason for smoking was Social acceptance.

## DISCUSSION:

Results show that a person's risk of heart attack greatly increases with the number of cigarettes he or she smokes. There is no safe amount of smoking. (Lemone and Burke, 2008) mentioned that people who smoke a number of cigarettes a day have more than twice the risk of heart attack than nonsmokers. The more cigarettes smoking, the greater the risk of developing coronary heart diseases. The results showed that no matter how long a person been smoker or how much he smoke, quitting of smoking will reduce the chances of developing heart disease. Quitting smoking has definite health benefits. Ceasing smoking is helpful for those suffering from coronary heart disease. (Parker, 2012). The result shows that (38.3%) of the patients persisted on smoking after they been diagnosed. The result was in agreement with the study of Achari and Thakur, (2004) who indicated in their study that the majority of the CHD patients continue to smoke after

their disease occurrence. In a study of Abu-Baker, et al. (2010) to compare the frequency of cigarette smoking before and after diagnosis of CAD, showed that after disease occurrence only (29.7%) of the patients quit smoking, while (60.7%) continued smoking, and (9.6%) relapsed. In addition, the study shows that one out of each five patients smoked, despite a personal advice to stop. Thus, still there is a need for the development of effective smoking cessation programs (Scholte, et al 2006). For both males and females who stopped smoking, the risk of mortality from CHD is reduced by half. Nicotine also constricts arterial limiting tissue perfusion (blood flow and oxygen delivery) further nicotine reduces HDL level and increase platelet aggregation, increase the risk of thrombus. (Lemone and burke, 2008). Patients with an increased risk for heart disease is encourage to stop tobacco consumption through any mean possible, education programs, counseling,

consistent motivation, and reinforcement messages support group and medication (Smeltzer, et.al, 2012).

## CONCLUSION:

The study concluded that Coronary Artery Disease occurs in people with smoking behavior. Moreover, smoking behavior affected negatively on patients with coronary heart disease.

## RECOMMENDATIONS:

Based on the study conclusion, the study can recommend that:

1. Health oriented mass media approach should be employed by Ministry of Health to increase population knowledge and awareness of the harms of smoking
2. To complete the enactment from the Parliament to ban smoking in public places which will help to implement systematic smoking cessation programs to promote CAD patients' motivation to quit smoking
3. Great a preventive centers to improve community awareness about smoking harms
4. To encourage the nurses to learn about new methods to educate smokers' patients with coronary heart disease about the risk of smoking.

## REFERENCES :

1. Barnhouse, H.; Brugler, L.; and Carscadden, S.; (2008) Nursing Diagnosis Application To Clinical Practice; Risk for Ineffective Respiratory Function; 11<sup>th</sup> edition ; p.p.495-497.
2. Colledge, R.; Walker, R.; and Ralston, H.; (2010), Davidson's Principle And Practice Of Medicine ; Global Burden of Cardiovascular Disease; 21<sup>st</sup> edition ; p.p. 524-528
3. Achari, V.; and Thakur, A.K. (2004), Association of Major Modifiable Risk Factors Among Patients with Coronary Artery Disease - A Retrospective Analysis, Journal of the Association of Physicians of India Feb, Vol. 52
4. Majra, J. P. and Basnet J. (2008), Prevalence of Tobacco Use Among the Children in the Age Group of 13-15 Years in Sikkim After 5 Years of Prohibitory Legislation **Indian J Community Med.** April; 33(2): 124-126
5. Bhattacharyya, D.; Rai S. P.; and Neog LS; (2008) Therapy for Cessation of Smoking; **Medical Journal Armed Forces India**; 64 : 254-259
6. World Health organization Report (2011) WHO Global Treaty on Tobacco Control, WHO Report on the Global Tobacco Epidemic Page 13
7. Richard N. Fogoros, M.D., (2003), Heart Disease Leading Cause of Death in Smokers, November 28; [www.heartdisease.about.com](http://www.heartdisease.about.com)
8. Martens, K.(2011) Smoking and Heart Disease, Aug 09, <http://www.ktiv.com>
9. Scholte, W.; de Swart, E.; De Bacquer, D.; Pyörälä, K.; Keil U.; Heidrich, J.; Deckers, J.W.; Kotseva, K.; Wood, D.; and Boersma, E. (2006) Smoking Behaviour In European Patients With Established Coronary Heart Disease. **Eur Heart J.** Jan;27(1):35-41.
10. Smeltzer , S; Bare ,B . ; Hinkle, J . ; Cheever, K.: (2011), Brunner and Suddarths Text Book Of Medical surgical Nursing; assessment and management of patient with cardiovascular disorder; 12th edition ; Lippincott p.p. 856 – 857.
11. Kumar, V.; Abass, A.; Fasto N.; and Mitchell, R.; (2007) Robbins Basic Pathology; The Heart; 8<sup>th</sup> edition ; p.p.287-289.
12. Lemone, P; and Burke, K; (2008) Medical-Surgical Nursing; Responses to Altered Cardiac Function; 4<sup>th</sup> edition, p.p. 960-961.

13. Parker, S., (2012), Smoking and Health: The Facts  
[www.healthguidance.org](http://www.healthguidance.org)
14. Abu-Baker NN, Haddad L, Mayyas O. (2010) Smoking behavior among coronary heart disease patients in Jordan: a model from a developing country **Int J Environ Res Public Health.** Mar;7(3):751-64.