An-Najah National University Faculty of Graduate Studies

Treatment Satisfaction and Health Related Functional Outcomes among Patients with Coronary Artery Disease in Palestine

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III Dedication

To the soul of my dead father

Acknowledgement

First and foremost, I must acknowledge my limitless thanks to Almighty Allah, the Ever-Magnificent; the Ever-Thankful, for His help and bless. I am totally sure that this work would have never become truth, without His guidance.

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الإقرار

أنا الموقع أدناه، مقدم الرسالة التي تحمل عنوان:

Treatment Satisfaction and Health-Related Functional Outcomes among Patients with Coronary Artery Disease in Palestine

أقر بأن ما اشتملت عليه الرسالة هو من نتائج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل أو أي جزء منها لم يقدم من قبل لنيل أي درجة أو لقب علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's name:	اسم الطالب:
Signature:	التوقيع:
Date:	التاريخ:

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XI List of Abbreviations

ACE inh.	Angiotensin Converting Enzyme inhibitor		
ACS	Acute Coronary Syndrome		
AF	Atrial Fibrillation		
AMI	Acute Myocardial Infarction		
ARBS	Angiotensin Receptor Blockers		
BMI	Body Mass Index		
BP	Bodily Pain		
CABG	Coronary Artery Bypass Graft		
CAD	Coronary Artery Disease		
CKD	Chronic Kidney Disease		
CVD	Cardiovascular Disease		
DM	Diabetes Mellitus		
GH	General Health		
HC	Health Change in the past year		
HRFS	Health Related Functional Status		
HRQoL	Health Related Quality of Life		
HTN	Hypertension		
IHD	Ischemic Heart Disease		
IQR	Inter Quartile Range		
MH	Emotional well-being/mental Health		
MI	Myocardial Infarction		
NIS	New Isreal Shekel		
PCI	percutaneous Coronary Intervention		
PF	Physical Functioning		
QoL	Quality of Life		
RE	Role limitations due to Emotional health		
RP	Role limitations due to Physical health		
SD	Standard Deviation		
SF	Social Functioning		
SF-36	Short Form 36 survey		
SPSS	Statistical Package for Social Sciences		
TS	Treatment Satisfaction		
TSQM	Treatment Satisfaction Questionnaire for Medications		
VT	Vitality/Energy		
WHO	World Health Organization		

Treatment Satisfaction and Health Related Functional Outcomes among Patients with Coronary Artery Disease in Palestine. By Shurooq Radwan Salameh Supervisor Dr. Samah Al-Jabi

Abstract

Background: coronary artery disease (CAD) is considered the main reason of death worldwide. Patients after myocardial infarction (MI) may have symptoms- fatigue which is the most common of them- that worsen health related functional status. It has been found that improving treatment satisfaction can improve outcomes and survival of patients after acute coronary syndrome

Objectives: The purposes of this study were to assess treatment satisfaction and health related functional outcome among CAD patients.

Methodology: A cross sectional, observational study carried out at Dr. Khalil Suleiman Hospital. TSQM scale was used to evaluate treatment satisfaction, and 36-item short form health survey(SF-36) was used to evaluate health related functional outcomes among CAD patients in Palestine.

Results: 303 patients were participated in the study. Majority of them were males (66.3%). Their ages ranging from 36to 93 years. Most of them had co-morbidities and used poly pharmacy. In general most of the patients were satisfied in treatment, 38.9% of patients were satisfied in the ability of the medications to treat or to prevent their disease, also most of them

(71.9%) had no side effects. Treatment satisfaction scores were lower in elderly (p < 0.001) female gender (p < 0.001), patients with lower educational level (p < 0.001), patients with lower income level (p < 0.005), unemployed patients (p < 0.005) and patients with more co-morbidities or used more medications (p < 0.001). In regard to health related functional outcomes, most of patients (38.3%) described their health as fair, most of patients had physical and emotional limitations. In addition, 91.9% of the patients had limitations in doing vigorous activities and 60.7% of them had a limitation in doing moderate activities, 11.6% of patients felt downhearted most of the time and 21.5% of them felt downhearted some of the time. Poorer functional outcomes were associated with elderly (p < 0.001) female gender (p < 0.001), lower educational level (p < 0.001), lower income (p < 0.005), unemployed patients (p < 0.001), patients not married (p < 0.005), and patients with more co-morbidities and poly pharmacy (p <0.001). There was a significant positive correlation between global domain in TSQM scale and the domains of SF-36 scale (p < 0.001)

Conclusion: The results concluded that most of CAD patients were satisfied in their medications. On the other hand, most of them had physical and emotional limitations also this study revealed the impact of sociodemographic and clinical factors on treatment satisfaction and health related functional outcomes. Also the study concluded that there was a significant positive relationship between treatment satisfaction and health related functional outcomes among CAD patients. HealthCare providers should be aware of factors associated with poor treatment satisfaction and health related functional outcomes in CAD patients, in order to make early interventions that improve them.

Chapter One Introduction

1.1 Background

Coronary artery disease (CAD) is considered the main reason of death worldwide. In 2015, an estimated 17.7 million deaths were due to cardiovascular disease (CVD), performing 31% of global death. From these deaths an estimated 7.4 million were due to CAD, and 6.7 million were due to stroke (World Health Organization, 2016). In the United States of America one of every six death cases in 2010 has been due to CAD (Go et al., 2014). In the eastern Mediterranean region CAD increased by 17.2% from 1990 to 2013 and is considered the leading cause of death in 2013 (Mokdad et al., 2016).

In Palestine CAD was the leading cause of death in 2016. Death cases due to CVDs representing 30.6% of all deaths in Palestine, 16.6% of these deaths were due to CAD and acute myocardial infarction (MI). Furthermore, some studies portended, that CAD is estimated to cause 30.5% of global death in 2030 (Lozano et al., 2012).

On the other hand, CAD has been a leading cause of morbidity and mortality in industrialized countries, and it is increasingly prevalent in countries with emerging economies (Gaziano T.A. and J.M., 2012). Moreover, in the developing countries CVDs and related life style factors are the main causes of morbidity and mortality (Dekkers et al., 2011, Rahmati-Najarkolaei et al., 2015). Thus clinical management of these patients is considered a major concern in health care system (Alegre et al., 2016).

Coronary artery disease can be represented as acute coronary syndrome, chronic stable angina, ischemia without symptoms, and vasospastic angina (Wells et al., 2015).

It is necessary to promptly and effectively treat patients with CAD, especially those with acute coronary syndrome and prevent attack recurrence. In addition, secondary prevention of acute coronary syndrome is also considered an important issue, This can be achieved by pharmaceutical control of risk factors and patients self-management behavior (Weiner and Rabbani, 2010).

To improve patient compliance with their chronic treatment, patients should be satisfied with their acute care (Frick et al., 2012). Satisfaction is a patient reported outcome that considers the patients' evaluation of aspects of the medical treatment and health care systems. These types of measurement are increasingly recognized in the recent years. Treatment satisfaction includes patient-doctor interaction and satisfaction with drug therapy and other concomitant therapy. In addition, the satisfaction with medication can be defined as the patient's evaluation on the process of taking the medications and the associated results of its use. And it can improve medication adherence (Atkinson et al., 2004).

On the other hand, 20-30% of CAD patients still have angina symptoms despite of the medications used (Alexander et al., 2008, Alexander et al.,

2016). Alexander et al., (2016) suggested that patients with more angina symptoms are usually younger, more depressed, less satisfied with their treatment, and have a limitations on physical function and overall quality of life (QoL).

Measurements that evaluate health related functional status and QoL, have been used more and more in clinical setting at the individual-patient level (McHorney and Tarlov, 1995). Patients with CAD usually reported worsen QoL and other health related functional status (Xie et al., 2008). The World Health Organization (WHO) defines the QoL as "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, ambitions, standards and interests. Improving physical and health functions will be of great value for patients with CAD (Sischo and Broder, 2011).

1.2 Literature review

In the world

Treatment satisfaction is increasingly recognized as a quality indicator; also it has been used to measure and to predict functional status and outcomes for different diseases (Davies and Ware, 1988, Rosenthal and Shannon, 1997, Plomondon et al., 2008).

There is a positive relationship between patient satisfaction and using medical care services (Ware et al., 1975). Since 1990s the measurement of

patient satisfaction was used to find out the opinions of the patients about their care in most health care centers (Schulmeister et al., 2005).

Plomondon et al., (2008) concluded that angina attack in the six months following MI is present in almost 1 in 4 patients and strongly associated with lower treatment satisfaction with current angina treatment. In addition, symptoms and aspects of physician communication are independently associated with treatment satisfaction after acute coronary syndrome this suggested that innovation of communication and control of angina symptoms may lead to better treatment satisfaction (Beinart et al., 2003).

The ability of the patients to cope with chronic illness is more strongly associated with primary care satisfaction than the severity of the disease (Fan et al., 2005). Furthermore, there is a relationship between higher overall patient satisfaction with amended guideline adherence and lower inpatient mortality rates (Glickman et al., 2010). In addition, it has been found that improving treatment satisfaction can improve outcome and survival of patients after acute coronary syndrome (Giannuzzi et al., 2008, Redfern et al., 2009).

Asadi-Lari et al., (2003a) found that 92.5% of patients confirmed their trust in and satisfaction with the care given by their general practitioner; even so, one third experienced difficulty getting an appointment and a quarter wanted more time for each consultation or prompt referral to a specialist when needed. Around a third expressed dissatisfaction with advice from the practice nurse or hospital consultant. Overall 54% were highly satisfied with services, 33% moderately satisfied and 13% dissatisfied.

Patients after MI may have symptoms- fatigue which is the most common of them- that worsen health related functional outcomes (Gwaltney et al., 2017). In addition, CAD and hypertension are considered the leading cause of heart failure (Wells et al., 2015), and heart failure patients still have symptoms that limit their functional status, emotional status, and QoL (Juenger et al., 2002).

Moreover, CAD patients reported symptoms that affect functional and mental status, and health related QoL (Mayou and Bryant, 1993, Ulvik et al., 2008). The quality of patient care can be ameliorated by assessment of health related quality of life (HRQoL) (Oldridge et al., 2014).

On the other hand, social support is an important predictor of health outcomes after acute MI (Oldridge et al., 2014). Also the adverse cardiovascular outcomes can result from anxiety and depression (Huffman et al., 2013). In addition, depression and anxiety are very common in chronic stable angina (Palacios et al., 2018), and one of the most important risk factors for worse functional status of CAD patients is permanent depression (Wilcox et al., 2016). Furthermore, CAD patients who have depression, resort to report more angina symptoms, more physical limitations, less treatment satisfaction, and lower QoL (Spertus et al., 2000).

On the other hand, lower QoL in CAD patients was associated with women, lower educational level, and obesity (Shad et al., 2017). In addition, there is a gender differences in QoL in CAD patients, many studies suggested that is women tend to have worse HRQoL in comparison with men (Norris et al., 2004, Norris et al., 2008). Moreover, health related functional outcomes can be affected by race (Kressin et al., 2007, Bainey et al., 2011).

It is important to improve secondary prevention programs, because this will have a major impact in improving patients' functional outcomes, reduce hospitalization and recurrent MI, decrease mortality rate in CAD patients (Clark et al., 2005).

There is an interesting position, for health care professionals in clinical management plan of CAD patients. For example, health care professionals can improve QoL for those patients through many ways like life style modification, comprehensive care program incorporation and involvement of cardiovascular preventive strategies; especially for elderly with poor functional status and discharged with polypharmacy, (Runganga et al., 2014, Darvishpour et al., 2017, Bonaccio et al., 2018).

During the assessment of CAD patient revascularization, we should highlight on certain outcomes like functional status and QoL (Zhang et al., 2003). In addition, QoL and functional status can be considered good indicators in the evaluation of clinical course of the CAD (Hofer et al., 2004, Darvishpour et al., 2017). Furthermore, there are many studies that were conducted to assess functional outcomes after coronary artery bypass graft (CABG) and percutaneous intervention (PCI). Kulik, (2017) compared between PCI and CABG, at one and six month after revascularization, from the point of angina symptoms and QoL. He concluded that, at one month, PCI was associated with rapid recovery and short- term health status improvement compared with CABG, and at 6 month CABG was associated with greater angina relief and QoL improvement compared with PCI. Furthermore, among elderly patients with CAD, there is a high rate of mortality and morbidity and low QoL, so that the primary aim for patients undergoing CABG is not only to prolong life but to improve functional outcomes (Jarvinen et al., 2003). Thus, preoperative risk stratification may benefit from health status assessment as a mortality predictor (Rumsfeld et al., 1999).

Since patients with CAD are facing decreased heart and physical capacity preceded by the ischemic heart attacks, they are facing lower functional outcomes and poor QoL (Taghadosi et al., 2014). Furthermore, patient-reported health status is predictive of mortality, cardiovascular events, hospitalization and costs of care in patients with cardiovascular disease (Rumsfeld et al., 2013, Anker et al., 2014).

In Palestine

There are some studies about CAD in general performed in Palestine.

A study conducted in Gaza to illustrate gender differences in CAD patients, concluded that females were at higher risk for CAD progression (Jamee et al., 2013).

Furthermore, Sweileh et al., (2009) evaluated the utilization patterns of antihypertensive agents and blood pressure control among diabetic hypertensive patients with and without CAD, and they found that the most antihypertensive agent used was angiotension-converting enzyme inhibitors (ACE-I). On the other hand, the most common cause for non trauma death in Gaza was CVD in both genders (Vaktskjold et al., 2016).

To the best of knowledge, there has been no study conducted in Palestine to describe treatment satisfaction and health-related functional outcomes among CAD patients. However, some studies were conducted in Palestine to describe treatment satisfaction in patients with other diseases. For example, Sweileh et al., (2012) concluded that low satisfaction to anti-psychotic medications was associated with non-adherence to medication. In addition, low treatment satisfaction may be an important barrier for achieving high rates of adherence to antihypertensive medications (Zyoud et al., 2013). Furthermore, there was a pilot study among diabetic patients to describe medication adherence which suggested that improving treatment satisfaction can improve treatment adherence (Jamous et al., 2011). In addition, Al-Jabi et al., (2015) conducted a cross sectional study

to describe the relationship between treatment satisfaction and HRQoL and concluded that higher values on European Quality of Life scale (EQ-5D-5L) were associated with higher scores of treatment satisfaction.

1.3 Statement of problem and rational of study

Coronary artery disease is still considered the main cause of death in Palestine and in the most areas worldwide. Patients' satisfaction with their health care is an important measure of health care quality (Rosenthal and Shannon, 1997). In addition, improving patients' understanding and assistance with self-management of their medical conditions may lead to improved satisfaction and quality of care in patients with chronic medical conditions (Fan et al., 2005). Thus, it is important to improve all aspects related to patients and their diseases, like treatment satisfaction, patient adherence, patient compliance and knowledge about disease and medication that may affect patients' functional outcomes. Furthermore, to the best of knowledge, no study has been conducted in Palestine to describe treatment satisfaction and health related functional outcomes among CAD patients. Thus it is of great value to assess treatment satisfaction and healthrelated function outcomes among CAD patients from Palestine.

1.4 Objectives of the study

1.4.1 General objective

The main objective of the study was to assess treatment satisfaction and health-related function outcome among patients with CAD.

1.4.2 Specific objectives

- To determine the extent of satisfaction to treatment provided to patients with CAD.

- To determine the quality of health-related functional outcome among those patients.

- To assess the sociodemographic and medical related factors that affect patients' health-related functional outcome and treatment satisfaction.

- To assess the relationship between treatment satisfaction of those patients and their health-related function outcome.

1.5 Significance of the study

The result of this study was of significant value to the following:

- Determining the current state of treatment satisfaction among CAD patients.

- Helping plan the intervention needed to improve patients' health-related functional outcomes and their satisfaction to treatment.

- Improving effective communication and educational program for the patients through trained medical team especially clinical pharmacist.

Chapter Two Methodology

2.1 Study design and setting

This study was conducted at Khalil Suleiman Hospital – Jenin in the following wards: internal men ward, internal women ward and internal outpatient clinic. The design of this study was a cross sectional design.

2.2 Study participants

Patients were collected from men internal ward, women internal ward, and outpatients' internal clinic. Patients with previous history of stable angina, MI, unstable angina, CABG, PCI with stent placement were included. Patients included in this study, were admitted to hospital or visited the outpatients' clinic for cardiovascular cause or non-cardiovascular cause, but all of them had history of CAD.

2.3 Inclusion and exclusion criteria

2.3.1 Inclusion criteria

- Patients with confirmed CAD for at least three months and visiting the study setting during the study period.

- Patients who were 18 years old and above.
- Patients who agreed to participate.

2.3.2 Exclusion criteria

- Patients with mental disturbances.
- Patients with terminal illness.

2.4 Sample size

This study involved 303 patients. Raosoft calculator was used to calculate the sample size by assuming a response distribution to be 50%, and allowing 5% margin of error at 95% confidence interval (Raosoft Inc, 2004).

There is no accurate number for CAD patients, in Palestinian Ministry of Health. A pilot study was conducted by the researcher in Khalil Suleiman Hospital – Jenin to estimate the study population. By reviewing the patients' records for 2-month, it has been found that there were approximately 110 admissions to the internal wards, and 80 patients were visiting the outpatient clinic. Thus, the annual CAD admission was estimated to be 1140, and the recommended sample size was 288 patients. In addition, to decrease false results and maximize the reliability of the current study, the estimated sample size was increased by 5%.

2.5 Data collection

Data were collected by a clinical pharmacist who is a member of primary health care team and is familiar with work system at the study setting. Data were collected during the period of February to August 2017. To assess reliability and validity of data collection form, a pilot test on 20 patients was carried out. The study sample did not include the pilot sample.

A face to face administered data collection form in the native language was used after the participant agreement to participate (verbal consent form).

The data collection form was developed from previous studies that investigated treatment satisfaction and health-related functional outcomes among CAD patients (Hays et al., 1993, Atkinson et al., 2005, Bharmal et al., 2009).

This data collection form consisted of many parts (Appendix A):

- The first part contained the general socio-demographic characteristics: including age, gender, body mass index, marital status, monthly income, employment status, patient education and residency.

- The second part contained clinical factors and disease related parameters: such as disease duration, smoking status, exercise performance, presence of other related diseases and medications used.

- The third part discussed the treatment satisfaction tool.

The Arabic version of the Treatment Satisfaction Questionnaire for Medication (TSQM 1.4) was used to assess the treatment satisfaction. The permission to use this scale was obtained by An-Najah National University from Quintiles Strategic Research Services. The TSQM 1.4 consists of 14 items divided in four domains: effectiveness domain, side effect domain, convenience domain, and global domain, this scale is considered a psychometrically robust (Atkinson et al., 2005, Bharmal et al., 2009). Furthermore, competence of medical care and clinical effectiveness can be affected by medication non adherence which can be strongly predicted by global rating of treatment dissatisfaction. Also, patients who considered their medications not efficient, loaded with side effects, or cannot use them in a convenient way, were less likely taking medications as prescribed (Zyoud et al., 2013).

Through using TSQM scale we can make a comparison between different medications used to treat certain disease on the first three subscales (effectiveness, side effect, convenience), also we can assess overall rating of global satisfaction based on the relative importance of these primary subscales to patients. In addition, the validity and reliability of the TSQM have been demonstrated in English, Spanish, Arabic and French, providing a strong tool to assess patients' satisfaction with their medications used for many diseases (Liberato et al., 2016).

TSQM domains consist of Effectiveness (questions 1–3), Side Effects (questions 4–8), Convenience (questions 9–11), and Global Satisfaction (questions 12–14).

In addition, the scores of TSQM tool ranging from 0 to 100, higher score meaning higher satisfaction.

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Cronbach's alpha for all subscales of the TSQM exceeded 0.70.

- The fourth part consists of the RAND 36-item short-form (SF-36) scale.

The SF-36 scale is the most common and excessively used generic health status measure based on the previous one month's experience (Hays et al., 1993). In addition, Luan et al., (2017) reported in their metanalysis that the SF-36 scale and angina Seattle questionnaire were the most widely used in assessment of CAD patient HRQoL. the SF-36 tool contained 36 questions divided in 8 domains: general health, physical functioning, bodily pain, energy/vitality and fatigue, social functioning, mental health, role limitations due to physical problems, role limitations due to emotional problems, and self-assessment of health change compared to the last year (Ware et al., 2000). Overall, many studies concluded that SF-36 had good psychometric characteristics (Dempster and Donnelly, 2000). In this study, there are two main components of SF-36 tool; physical component and mental component. Physical component consists of physical functioning, bodily pain, general health role limitation due to physical problems; and mental component which consists of role limitations due to emotional problems, energy/vitality and fatigue, mental health and social functioning (Zhu et al., 2016). The SF-36 scale consists of eight scaled scores, which are the weighted sums of the questions in their section. Each scale is directly converted into a zero to one hundred score assuming each question carries equal weight. In addition, the lower the score in the scale means the more disability, and the higher the score the less disability.

Cronbach's alpha for all subscales of the SF-36 scale for our study exceeded 0.85.

2.6 Statistical data analysis

Statistical package for social science version 16 was used to analyze data (SPSS Inc., Chicago, IL, USA). Descriptive analysis presented the normally distributed continuous variables as means \pm standard deviations (SD), the not normally distributed continuous variables as medians (lower-upper quartiles), and the categorical variables as frequencies and percentages. Kolmogorov-Smirnov test was used to assess data normality. Differences in not normally distributed score results were evaluated using the Mann-Whitney U test / Kruskal–Wallis were performed, as appropriate. Correlation was assessed using the Spearman's correlations coefficient. The level of significance was determined at p < 0.05.

2.7 Ethical approval

Before start of the research, approval of Institutional Review Board (IRB) (appendix B), permission of local health authorities and agreement of Faculty of Graduate Studies at An-Najah National University were received in order to ascertain patients' rights, and facilitate the research progression. Only patients who agreed to participate were included in the study; after discussing the research objectives and protocols with each one, and obtaining a verbal agreement.

Chapter Three Results

3.1 Socio-demographic characteristics of the study patients

Three hundred and three patients diagnosed with CAD, were included in this study. The data were gathered from Khalil Suleiman Hospital – Jenin, in the following wards: men internal ward, women internal ward, and internal outpatient clinic.

Table 3.1 presents the socio-demographic characteristics of the study patients. The mean (\pm SD) of patients' age was 63.73 \pm 10.76 years, (range: 36 - 93 years). The majority of patients were males (201; 66.3%), giving a male to female ratio of 1.97:1. In addition, the most patients 219 (72.3%) were living in villages, followed by the 67 (22.1 %) who were living in urban area and 17 (5.6%) who were living in the camps.

Furthermore, the majority 256 (84.5%) of the patients interviewed reported that they lived with a spouse/partner, and only 47(15.5%) did not have a spouse/partner (they were widowed, or single). About their level of education, the majority of patients 165(54.5%) were illiterate or had a primary education, 24.8% of them completed their secondary education, and only 20.8% were university graduates.

Regarding the employment status, 234 (77.2%) patients were unemployed, 31 (10.2%) were employed, and 38 (12.5%) were previously employed. Regarding patient's family income, most patients (176 (58.1%)) were categorized to have moderate (2000-5000 NIS) income, 7(2.3%) had high (more than 5000 NIS) income, and 120 (39.6%) patients reported that they had poor income (less than 2000 NIS).

On the other hand, the mean (\pm SD) of BMI of the study patients was 28.45 \pm 5.06, ranging from 16.54 to 49.83. In addition, 38.6% or 34% of patients were overweight or obese respectively; while 27.1% had an average BMI, and 0.3% underweight. Regarding smoking status, among the 303 patients included, 136 (44.9%) were non-smokers, 67 (22.1 %) were previously smokers but currently non-smokers, while 100 (33%) were current smokers. The mean (\pm SD) years of smoking was 36.84 \pm 13.52 ranging from 7 to 80 years. Furthermore, about exercise doing, majority of patients did not make exercises 278 (91.7%), and only 25(8.3%) were making exercises. In addition, regarding those patients who were doing exercises, 64% were doing exercises seven times weekly, 20% once weekly, 8% two times weekly, 8% three or four times weekly, (Table 3.1).

Variable	Mean ± SD (range)
	Or
	N (%)
	Total = 303
Age (year)	63.73 ± 10.76 (36-93)
Gender	
Male	201 (66.3)
Female	102 (33.7)
Residency	
City	67 (22.1)
Village	219 (72.3)
Refugee camp	17 (5.6)
Marital status	
Married	256 (84.5)
Single	7 (2.3)
Widow	40 (13.2)
Level of education	
Illiterate and primary	165 (54.5)
Secondary	75 (24.8)
University	63 (20.8)
Employment status	
Employed	31 (10.2)
Unemployed	234 (77.2)
Previously employed	38 (12.5)
Income (NIS)	
Low (Less than 2000)	120 (39.6)
Moderate (2000-5000)	176 (58.1)
High (More than 5000)	7 (2.3)
BMI	28.45 ± 5.06(16.54-49.83)
BMI categories	
Underweight (16-18.5)	1 (0.3)
Normal (18.5-24.9)	82 (27.1)
Overweight (25-29.9)	117 (38.6)
Obese (30 or greater)	130 (34)
Smoking	
Current smoking	100 (33)
Non-smoke	136 (44.9)
Previously smoker	67 (22.1)
Smoking years	$36.84 \pm 13.52(7-80)$
Exercise	
Yes	25 (8.3)
No	278 (91.7)
Exercise per week	
Once weekly	5 (20)
Twice weekly	2 (8)
Three times weekly	1 (4)
Four times weekly	1 (4)
Seven times weekly	16 (64)

Table 3.1 Socio-demographic characteristics of the study patients (N=303)

Abbreviations: BMI: body mass index, NIS: new Israeli shekel, SD: standard deviation.

3.2 Clinical characteristics of CAD patients

Table 3.2 shows the CAD related clinical characteristics of patients. The mean (\pm SD) of CAD duration was 6.75 \pm 6.48 years, with a range from 0.25 to 40 years. In addition, the median (IQR) of the duration of the disease was 5 (2-10) years. Among the patients included, 168 (55.4%) were with a family history of CAD.

Variable	Mean ± SD
	Median (lower-upper quartiles)
	Or
	N (%)
	Total = 303
CAD duration (years)	6.75 ± 6.48 (0.25-40)
	5 (2-10)
Family history of CAD	
Yes	168(55.4)
No	135(44.6)

 Table 3.2 Clinical characteristics of the study patients.

Abbreviations: CAD: coronary artery disease, SD: standard deviation

On the other hand, the number of co-morbidities ranging from 1 to 7 with mean (\pm SD) 3.11 \pm 1.25, and median (IQR) was 3(2-4). Furthermore, regarding the presence of co-morbid diseases the most common co-morbid diseases were: dyslipidemia 299 (98.7%), HTN 235 (77.6%), and DM 163 (53.8%), (Table 3.3).

Variable	N (%)
	Total = 303
Dyslipidemia	299 (98.7)
Hypertension	235 (77.6)
Diabetes mellitus	140 (53.8)
Heart failure	92 (69.6)
Chronic kidney disease	28 (9.2)
Atrial fibrillation	26 (8.6)
Asthma	22 (7.3)
Arrhythmia	15 (5)

Table 3.3 Co-morbidities of the study patients

In addition, the patients were classified according to co-morbid diseases as following: 18(5.9%) of patients had one co-morbidity, and 86(28.4%) of patients had two comorbidities, (Table 3.4).

Table 3.4 Classification of patients according to co-morbidities

No of co-morbid disease	N (%)
	Total =300
One co-morbid disease	18(5.9)
Two co-morbid diseases	86(28.4)
Three co-morbid diseases	104(34.4)
Four co-morbid diseases	52(17.2)
Five co-morbid diseases and more	43(14.2)

3.3 Management and medications

Regarding patients' management, 124 (40.9%) were undergoing angiography only, 117 (38.6%) were undergoing angiography and angioplasty, 34(11.2%) were undergoing angiography and CABG, 28(9.2%) angiography, angioplasty, and CABG.

On the other hand, 108 (35.6%) patients repeated the angiography. Furthermore, the mean (\pm SD) of the number of catheterization was 1.81 \pm 1.560, with a range from 1to 11, and a median (interquartile range) of 2 (1-3). On the other hand, 48 (15.8%) repeated their angioplasty; with a total number of stents of 144, a mean \pm SD of 1.9722 \pm 1.59, with a range from 1 to 10, and a median (interquartile range) of 2 (1 - 3), (Table 3.5).

Variable	Mean ± SD
	Median (lower-upper quartiles)
	Or
	Ν
	Total = 303
Re-catheterization	
No	195(64.4)
Yes	108(35.6)
Re-angioplasty	
No	255(84.2)
Yes	48(15.8)
Catheterizations number	303
	1.81 ± 1.56
	2(1-3)
Stent number	144
	1.97 ± 1.59
	2(1-3)

 Table 3.5 Management and therapy type
Abbreviations: SD: standard deviation.

Regarding medications, the range number of medications used among CAD patients was 2-13, with a mean \pm SD of 6.09 \pm 1.92, and a median (interquartile range) of 6 (5-7).

Regarding the medications types, all patients were using aspirin (100%), and 296 out of 303 were using statins for dyslipidemia; most of them (258(85.1%)) were on atorvastatin. In addition, 206 (68%) were on bisoprolol. Regarding hypertension management, 161 out of 303 patients received ACE inhibitor, 150 (49.55%) patients were on enalapril. In addition, 80 patients received ARBs, among them 47 (15.5%) patients were on losartan. Also, 102 (33.7%) patients received amlodipine. On the other hand, the number of patients who received clopidogrel after stents or open heart was 34 (11.2%). On the other hand, patients who received diuretics were 141 patients, among them 79 (26.15%) were on furosemide. Patients who received isosorbide mononitrate as a vasodilator were 30 (9.9%) patients (Table 3.6).

Regarding DM management, 134 (44.2%) patients were on metformin, and 72 (23.8%) were on glimepiride. Also, patients who received insulin were 33(10.9%). Regarding heart failure and arrhythmia management, 14 (4.6%) patients were on amiodarone, 8 (2.6%) patients were on digoxin, and 6 (2%) were on entresto (sacubitril/valsartan), (Table 3.6).

Variable	N (%)			
	Total = 303			
Aspirin	303 (100)			
Statins				
Atorvastatin	258 (85.1)			
Simvastatin	21 (6.9)			
Rosuvastatin	17 (5.6)			
Bisoprolol	206 (68)			
ACE inhibitor				
Enalapril	150 (49.5)			
Ramipril	11 (3.6)			
ARBs				
Losartan	47 (15.5)			
Valsartan	23 (7.6)			
Candesartan	10 (3.3)			
Amlodipine	102 (33.7)			
Diuretic				
Furosemide	79 (26.1)			
Spironolactone	37 (12.2)			
Hydrochlorothiazide	25 (8.3)			
Clopidogrel	34 (11.2)			
Isosorbide mononitrate	30 (9.9)			
Metformin	134 (44.2)			
Glimepiride	72 (23.8)			
Insulin	33 (10.9)			
Salbutamol inhaler	19 (6.3)			
Budesonide inhaler	21 (6.9)			
Calcium carbonate	19 (6.3)			
Alfacalcidiol	19 (6.3)			
Amiodarone	14 (4.6)			
Digoxin	8 (2.6)			
Entersto	6 (2)			

Table 3.6 Medications used in the study patients

Abbreviations: ACE inhibitors: Angiotensin converting enzyme inhibitor, ARBs: Angiotensin receptor blockers.

3.4 Treatment satisfaction among CAD patients

There are four domains of TSQM; effectiveness, side effect, convenience and global domain (Table 3.7). Regarding effectiveness domains, 118(38.9%) patients were satisfied with the ability of the medications to treat or prevent their disease, and 85(28.1%) patients were very satisfied. Concerning the medication way in relief the patients symptoms, 109 (36%) patients were satisfied, and 87 (28.%) patients were very satisfied. However, 117 (38.6%) patients were satisfied with time their medication takes to begin working.

Regarding the second domain that was regarding medications' side effects, 85 (28.1%) patients experienced side effects, and 218 (71.9%) patients had no side effects. Concerning who had side effects, 28 (32.9%) patients were slightly bothered, and 25 (29.4%) patients were bothered from side effects. In regard to the interference of the medications' adverse effects with the physical health and ability to work (like energy levels and strength), 28 (32.9%) patients were bothered. Furthermore, 27(31.8%) patients slightly disturbed the mental health like ability to think, and 27(31.8%) patients never disturbed from their mental health related side effects.

In regard to interference of side effects with overall satisfaction to medications 22(25.9%) slightly affected.

Regarding convenience domain, 188 (62%) patients described that it was very easy to use the medications in its form. In regard to, medication use in each time, 183 (60.4%) patients mentioned that was very easy to use the medication each time.

Finally for global domain, concerning to which extent the patients were confident that the medications use is a good thing for them, approximately half of the patients (160(52.8%)) were very confident. Regarding how the

patients are certain that the good things for medications outweigh the bad things, 161 (53.1%) patients were very certain.

In regard to general satisfaction, 107 (35.3%) patients were satisfied, and 100 (33%) patients were very satisfied about their medications (Table 3.7).

Regarding the four domains of TSQM, the mean (\pm SD) of effectiveness domain was 68.26 \pm 20.96 ranging from 14.29 to 100, with median (IQR) of 71.42 (57.14 - 85.71). In addition, the mean (\pm SD) of side effects domain was 90.23 \pm 18.00 ranging from 30 to 100, with a median (IQR) of 100 (85 - 100). On the other hand, the mean (\pm SD) of convenience domain was 77.85 \pm 13.24, ranging from 14.29 – 100, with a median (IQR) of 85.71 (71.42 - 85.71). Furthermore, the mean (\pm SD) of global domain (\pm SD) was 69.46 \pm 19.80, ranging from 17.65 to 100 with a median (IQR) of 76.47 (58.82 - 82.35).

Table	3.7	The	distribution	n of	treatment	satisfaction	measures	among
TSQN	1 do	main	IS					

TSQM domains	Mean ± SD (range),
	Median (lower-upper quartiles)
	Or
	N (%)
	Total = 303
Effectiveness domain	68.26 ± 20.96 (14.29-100)
	71.42 (57.14 - 85.71)
Satisfaction with medication ability to prevent	
or treat disease	
Extremely dissatisfied	12(4)
Very dissatisfied	20(6.6)
Dissatisfied	20(6.6)
Slightly satisfied	28(9.2)
Satisfied	118(38.9)
Very satisfied	85(28.1)
Extremely satisfied	20(6.6)

TSQM domains	Mean ± SD (range),
	Median (lower-upper quartiles)
	Or
	N (%)
	Total = 303
Satisfaction with medication way in relief	
symptoms	
Extremely dissatisfied	14(4.6)
Very dissatisfied	24(7.9)
Dissatisfied	14(4.6)
Slightly satisfied	35(11.6)
Satisfied	109(36)
Very satisfied	87(28.7)
Extremely satisfied	20(6.6)
Satisfaction with the amount of time that the	
medication takes to start	
Extremely dissatisfied	16(5.3)
Very dissatisfied	22(7.3)
Dissatisfied	21(6.9)
Slightly satisfied	30(9.9)
Satisfied	117(38.6)
Very satisfied	78(25.7)
Extremely satisfied	19(6.3)
Side effects domain	90.23 ± 18.00 (30 - 100)
	100 (85 - 100)
Experience side effects	
Yes	85(28.1)
No	218(71.9)
Side effect bothering	
Extremely bothering	8(9.4)
Very bothering	22(25.9)
Bothering	25(29.4)
Slightly bothering	28(32.9)
Not bothering at all	2(2.4)
Side effect interference with physical health	
Extremely bothering	9(10.6)
Very bothering	22(25.9)
Bothering	28(32.9)
Slightly bothering	24(28.2)
Not bothering at all	2(2.4)
Side effects interference with mental health	
Extremely bothering	2(2.4)
Very bothering	11(2.9)
Bothering	18(21.2)
Slightly bothering	27(31.8)
Not bothering at all	27(31.8)
Side effects interference with medication	
Extremely bothering	6(7.1)
Very bothering	14(16.5)
Bothering	21(24.7)
Slightly bothering	22(25.9)
Not bothering at all	22(5.9)
-	

TSQM domains	Mean ± SD (range),
C C	Median (lower-upper quartiles)
	Or
	N (%)
	Total = 303
Convenience domain	$77.85 \pm 13.24 (14.29-100)$
	85.71 (71.42 - 85.71)
Medication use in current form	, , , , , , , , , , , , , , , , , , ,
Extremely difficult	2(0.7)
Very difficult	2(0.7)
Difficult	20(6.6)
Somewhat easy	23(7.6)
Easy	53(17.5)
Very easy	188(62)
Extremely easy	15(5)
Medication use in each time	
Extremely difficult	1(0.3)
Very difficult	2(0.7)
Difficult	22(7.3)
Somewhat easy	26(8.6)
Easy	53(17.5)
Very easy	183(60.4)
Extremely easy	16(5.3)
Medication use according to instructions	
Extremely inconvenient	1(0.3)
Very inconvenient	2(0.7)
Inconvenient	3(1)
Little convenient	27(8.9)
Convenient	101(33.3)
Very convenient	162(53.5)
Extremely convenient	7(2.3)
Global domain	69.46 ± 19.80 (17.65 - 100)
	76.47 (58.82 - 82.35)
How the patients confident that the	
medication is good thing	
Not at all confident	19(6.3)
A little confident	36(11.9)
Somewhat confident	58(19.1)
Very confident	160(52.8)
Extremely confident	30(9.9)
How the patients certain that the good things	
outweigh the bad things for medication	
Not at all certain	21(6.9)
A little certain	40(13.2)
Somewhat certain	56(18.5)
Very certain	161(53.1)
Extremely certain	25(8.3)
Satisfaction in general	
Extremely dissatisfied	12(4)
Very dissatisfied	17(5.6)
Dissatisfied	18(5.9)
Slightly satisfied	31(10.2)

TSQM domains	Mean ± SD (range), Median (lower-upper quartiles) Or N (%)
	Total = 303
Satisfied	107(35.3)
Very satisfied	100(33)
Extremely satisfied	18(5.9)

Abbreviations: SD: standard deviation, TSQM: Treatment Satisfaction Questionnaire for Medication.

3.5 Socio-demographic characteristics of the study patients with differences in treatment satisfaction scores

Table 3.8 shows the socio-demographic characteristics of the patients with difference to treatment satisfaction scores. According to patients' age, those patients with lower ages (i.e. 35-44, 45-54, 55-64, and 65-74) had a significantly highest median TSQM score (median 86.7) for the convenience domain compared to the higher ages 75-84, with a median (IQR) of 71.4(61.9-85.7) and ages of 85-94, with a median (IQR) of 61.9 (52.3-71.4).

Regarding patient's gender, male patients had higher median scores than females regarding convenience domain (85.7(80.9-85.7) versus 71.4(61.9-85.7), p < 0.001), and global domain (76.4(64.7-82.3) versus 70.5 (52.9-82.3), p < 0.001).

On the other hand, patients with higher level of education had higher median TSQM scores for effectiveness (p = 0.009), convenience (p < 0.001) and global (p < 0.001) domains. Furthermore, patients with higher

income had higher median TSQM scores for effectiveness and global domains.

On the other hand, patients who were previously employed had higher median TSQM scores regarding convenience (p = 0.002) and global (p = 0.036) domains (Table 3.8),

Table 3.8 Socio-demographic characteristics of the study patients with differences in treatment satisfaction scores

Variable	Frequency (%)	Effectiveness domain Median (IQR)	P- value	Side effect domain Median (IQR)	P- value	Convenience domain Median (IQR)	P- value	Global domain Median (IQR)	P- valve
Age categories 35 - 44 45 - 54 55 - 64 65 - 74 75 - 84 85 - 94	4(1.3) 67(22.1) 92(30.3) 86(28.3) 45(14.8) 9(2.9)	35.7(14.2-78.5) 71.4(57.1-85.7) 71.4(58.3-85.7) 71.4(61.9-85.7) 71.4(57.1-71.4) 71.4(54.7-71.4)	0.393	100(85-100) 100(80-100) 100(85-100) 100(87-100) 100(85-100)	0.863	85.7(82.1-85.7) 85.7(71.4-85.7) 85.7(82.6-85.7) 85.7(71.4-85.7) 71.4(61.9-85.7) 61.9(52.3-71.4)	<0.001	38.2(17.6- 76.4) 76.4(58.8- 82.3) 76.4(58.8- 82.3) 76.4(64.7- 82.3) 76.4(52.9- 76.4) 76.4(47.0- 79.4)	0.241
Gender Male Female	201(66.3) 102(33.7)	71.4(61.9-85.7) 71.4(55.9-85.7)	0.061	100(97-100) 100(80-100)	0.104	85.7(80.9-85.7) 71.4(61.9-85.7)	<0.001	76.4(64.7- 82.3) 70.5(52.9- 82.3)	<0.001
BMI Normal Overweight Obese	83(27.1) 117(38.6) 103(34)	71.4(61.9-85.7) 71.4(57.1-83.3) 71.4(57.1-85.7)	0.262	100(75-100) 100(87-100) 100(100-100)	0.626	85.7(71.4-85.7) 85.7(71.4-85.7) 85.7(71.4-85.7) 85.7(71.4-85.7)	0.459	76.4(64.7- 82.3) 76.4(58.8-	0.244

Variable	Frequency (%)	Effectiveness domain Median (IQR)	P- value	Side effect domain Median (IQR)	P- value	Convenience domain Median (IQR)	P- value	Global domain Median (IQR)	P- valve
								82.3) 76.4(58.8- 82.3)	
Education Primary Secondary Collage	165(54.5) 7524.8) 63(12.5)	71.4(54.7-78.5) 71.4(66.6-85.7) 71.4(71.4-85.7)	0.009	100(80-100) 100(100-100) 100(85-100)	0.152	76.1(61.9-85.7) 85.7(85.7-85.7) 85.7(80.9-85.7)	<0.001	70.5(52.9- 82.3) 82.3(76.4- 82.3) 76.4(64.7- 82.3)	<0.001
Income Low Moderate High	12036.9) 176(58.1) 7(23)	71.4(57.1-85.7) 71.4(57.1-85.7) 85.7(71.4-95.2)	0.044	100(80-100) 100(85-100) 100(85-100)	0.938	85.7(71.4-85.7) 85.7(71.4-85.7) 85.7(80.9-90.4)	0.228	76.4(58.8- 82.3) 76.4(58.8- 82.3) 88.2(76.4- 94.1)	0.023
Marital status Single Married Widow	7(84.5) 256(2.3) 40(13.2)	71.4(57.1-71.4) 71.4(57.1-85.7) 71.4(60.7-75)	0.484	100(60-100) 100(90-100) 100(76.2- 100)	0.690	76.1(61.9-85.7) 85.7(71.4-85.7) 73.8(61.9-85.7)	0.289	70.5(58.8- 76.4) 76.4(58.8- 82.3) 76.4(60.2- 76.4)	0.112

Variable	Frequency (%)	Effectiveness domain Median (IQR)	P- value	Side effect domain Median (IQR)	P- value	Convenience domain Median (IQR)	P- value	Global domain Median (IQR)	P- valve
Locality Urban Rural Camp	67(22.1) 219(72.3) 17(5.6)	71.4(71.4-85.7 71.4(57.1-85.7) 71.4(71.4-85.7)	0.113	100(85-100) 100(85-100) 100(90-100)	0.907	85.7(71.4-85.7) 85.7(71.4-85.7) 85.7(71.4-85.7)	0.897	76.4(64.7- 82.3) 76.4(52.9- 82.3) 82.3(70.5- 82.3)	0.064
Employment status Employed Unemployed Previously Employed	31(10.2) 234(77.2) 38(12.5)	71.4(52.3-85.7) 71.4(57.1-85.7) 76.1(70.2-85.7)	0.139	100(100-100) 100(83.7- 100) 100(88.7- 100)	0.351	85.7(80.9-85.7) 85.7(71.4-85.7) 85.7(79.7-85.7)	0.002	76.4(52.9- 82.3) 76.4(58.8- 82.3) 82.3(76.4- 82.3)	0.036

Abbreviations: BMI: body mass index, IQR: interquartile range.

3.6 Co-morbid diseases of the study patients with differences in treatment satisfaction scores.

Regarding the differences in number of co-morbid diseases, the results show significant differences in convenience (p < 0.001) and global (p = 0.029) domains. Patients with lower number of co-morbid diseases significantly have higher scores in both domains (Table 3.9).

As an example, regarding global domain, patients who had one co-morbid diseases had higher median (IQR) score of 82.3 (76.4 - 88.2), compared to those who had two co-morbidities (76.4 (58.8 - 82.3), or those who had three co-morbid disease 76.4(54.4-82.3), four co-morbid diseases 73.5(58.8-82.3), or five or more co-morbid diseases (70.5 (58.8 - 76.4)), (p = 0.029), (Table 3.9).

Variable	N(%)	Effectiveness	p-value	Side effects	p-value	Convenience	p-value	Global domain	p-value
		Median(IQR)		Median(IQR)		Median(IQR)		Median(IQR)	
One comorbid	18(5.9)	78.5(66.6-85.7)	0.347	100(100-100)	0.214	85.7(80.9-85.7)	< 0.001	82.3(76.4-88.2)	0.029
Two comorbid	86(28.4)	71.4(60.7-85.7)		100(93.7-100)		85.7(80.9-85.7)		76.4(58.8-82.3)	
Three comorbid diseases	104(34.4)	71.4(57.1-85.7)		100(86.2-100)		85.7(72.6-85.7)		76.4(54.4-82.3)	
Four comorbid diseases	52(17.2)	71.4(58.3-84.5)		100(71.2-100)		71.4(66.6-85.7)		73.5(58.8-82.3)	
Five or more comorbid diseases	43(14.2)	71.4(57.1-71.4)		100(80-100)		71.4(61.9-85.7)		70.5(58.8-76.4)	
	1								

Table 3.9 Co-morbid diseases of the study patients with differences in treatment satisfaction scores

3.7 Medications used by the study patients with differences in treatment satisfaction scores

Regarding the differences in number of medications used, the results show significant differences in convenience (p < 0.001) and global (p = 0.009) domains. Patients with lower number of medications significantly had higher scores in both domains (Table 3.10).

As an example, regarding global domain, patients who used 1 - 3 medications had higher median (IQR) score of 82.3 (76.4 - 82.3), compared to those who used 4 - 6 medications (76.4 (58.8 - 82.3), or those who used 7 or more medications (70.5 (58.8 - 82.3)) (p = 0.009), (Table 3.10).

Variables N (%) Effectiveness Side effects Convenience **Global domain** p-value p-value p-value p-value IQR IQR IQR IQR 1-3 19(6.2) 85.7(66.6-100(100-100) 0.055 85.7(80.9-85.7) < 0.001 82.3(76.4-82.3) 0.009 0.146 medications 85.7) 4-6 17758.4) 85.7(71.4-85.7) 76.4(58.8-82.3) 100(87.5-100) medications 71.4(61.9-85.7) 107(35.3) 76.1(66.6-85.7) 7 medications 100(80-100) 70.5(58.8-82.3) and more 71.4(57.1-80.9)

Table 3.10 Medications used by the study patients with differences in treatment satisfaction scores

3.8 Health related functional outcomes among CAD patients

Table 3.11 shows the results of the dimensions of SF-36 scale. Concerning health description in general, 116 (38.3%) patients described their health as fair, followed by as 82 (27.1%) who described their general health as good. In regard to the comparison between health now and one year ago, about half (164(54.1%)) of the patients reported that their health was somewhat worse than one year ago followed by 64 (22.1%) patients who reported that their health were much worse than one year ago.

Regarding the usual daily activities of the patients and their limitations due to CAD, most of the patients (276 (91.1%)) reported that their disease limited a lot their vigorous works such as running or carrying heavy objects. In addition, 184 (60.7%) patients had reported that their moderate activity such as moving table is limited a lot by CAD.

Regarding climbing several blocks, most patients 202 (66.7%) reported that this activity is limited a lot by their disease.

On the other hand, half of the patients (155 (51.2%) reported that bending or kneeling is limited a lot by CAD.

In regard to walking activities, 182 (60.1%) patients reported that walking more than one kilometer and half were limited a lot by CAD, 146 (48.2%) patients reported that walking around 500 meters were limited a lot by CAD. While 159 (52.2%) reported that walking one hundred meter is

not limited at all due to their disease. On the other hand, 229 (75.6%) patients reported that bathing or dressing were not limited at all due to CAD.

Concerning regular activities limitations due to physical health, most patients (220 (72.6%)) cut down the time amount they spent on activity and completed their activity less than they would like.

Moreover, regarding regular activities limitations due to mental health, 142 (46.9%) patients cut down the time amount they spent on activity and finished their activity less than they would like. and due to emotional work, 140 (46.2%) patients did not work carefully.

Regarding how much the physical or emotional health interfered with social activities in the previous month, nearly half (162, 53.3%) of them were not at all affected. Regarding bodily pain in the previous month, 84 (27.7%) patients had moderate pain and 73 (24.1%) patients had severe pain. Concerning the interference between bodily pain in the previous month with normal work, 88 (29%) patients were not affected at all and 77 (25.4%) patients were quite a bit affected.

Concerning how the patients felt and how things had been with them during the last month, 91(30%) patients felt pep a little of the time; 85 (28.1%) patients were feeling nervous a little of the time; 130 (42.9%) felt down a little of the time. 92 (30.4%) patients felt calm a little of the time, and 98 (32.3%) patients reported that they had high level of energy a little

of the time. On the other hand, 106 (35%) patients felt downhearted none of the time.

Regarding happiness, 86 (28.4%) patients reported that they were happy sometimes. On the other hand, 83(27.4%) patients felt tired most of the time.

In regard to how much of the time the physical health or mental health of patients interfered with social activities, 163(53.8%) patients affected none of the time.

On the other hand, patients were asked if they were easier to get sick than other people, the results shows that 89 (29.4%) patients considered this statement is mostly false.

Furthermore, 112 (37%) patients did not know if they will get worse, and 112 (37%) patients answered the statement if their health were excellent as mostly false, (Table 3.11).

Variable	Frequency
	N (%)
	Total = 303
General health	
Excellent	19(6.3)
Very good	19(6.3)
Good	82(27.1)
Fair	116(38.3)
Poor	67(22.1)
General health compared to one year ago	
Much better now than one year ago	14(4.6)
Somewhat better now than one year ago	18(5.9)
A bout the same	43(14.2)
Somewhat worse now than one year ago	164(54.1)
Much worse now than one year ago	64(22.1)
Vigours activities limited by CAD	
Yes limited a lot	276(91.1)
Yes limited a little	20(6.60
Not limited at all	7(2.3)
Moderate activities limited by CAD	
Yes limited a lot	184(60.7)
Yes limited a little	72(23.8)
Not limited at all	47(15.5)
Lifting or carrying groceries limited by CAD	
Yes limited a lot	138(45.5)
Yes limited a little	75(24.8)
Not limited at all	90(29.7)
Climbing several blocks limited by CAD	
Yes limited a lot	202(66.7)
Yes limited a little	69(22.8)
Not limited at all	32(10.6)
Climbing one block limited by CAD	
Yes limited a lot	116(38.1)
Yes limited a little	85(28.1)
Not limited at all	102(33.7)
Bending or kneeling limited by CAD	
Yes limited a lot	155(51.2)
Yes limited a little	63(20.8)
Not limited at all	85(28.1)
Walking more than one kilometer limited by CAD	
Yes limited a lot	182(60.1)
Yes limited a little	79(16.2)
Not limited at all	42(23.8)
Walking several blocks limited by CAD	
Yes limited a lot	146(48.2)
Yes limited a little	58(19.1)
Not limited at all	99(32.7)
Walking one block limited by CAD	
Yes limited a lot	77(25.4)
Yes limited a little	67(22.1)
Not limited at all	159(52.5)

Table 3.11 Distribution of health related outcomes in SF-36 dimension

Variable	Frequency
	N (%)
	Total = 303
Bathing or dressing limited by CAD	
Yes limited a lot	35(11.6)
Yes limited a little	39(12.9)
Not limited at all	229(75.6)
Cut down the amount of time spent on work due to physical	
health	
Yes	220(72.6)
No	83(27.4)
Accomplished the work less than the patients would like due to	
physical health	220(72.6)
ies No	220(72.0) 83(27.4)
NO Other activities limited by CAD due physical health	83(27.4)
Vos	215(71)
No	213(71) 88(29)
Extra effort the natients had to do other activities due to	00(27)
nhysical health	
V _{PS}	218(71.9)
No	85(28.9)
Cut down the amount of time spent on work due to emotional	
health	
Yes	14(246.1)
No	161(53.9)
Accomplished the work less than the patients would like due to	
emotional health	
Yes	142(46.1)
No	61(53.9)
Did not do work carefully due to emotional health	
Yes	140(46.2)
No	163(53.8)
Physical or emotional health interfered with social activities	
Not at all	162(53.5)
Slightly	35(11.6)
Moderately	59(19.5)
Quite a bit	33(10.9)
Extremely	14(4.6)
Bodily pain in the past month	59(10.1)
Non Voru mild	38(19.1) 17(5.6)
Mild	23(7.6)
Moderate	23(7.0) 84(27.7)
Severe	73(24.1)
Verv sever	48(15.8)
Bodily pain in the past month interfered with normal works	10(15.0)
Not at all	88(29)
A little bit	24(7.9)
Moderately	58(19.10
Quite a bit	77(25.4)
Extremely	56(18.5)
If the patients were feeling in pep in the past month	
All of the time	12(4)
Most of the time	51(16.8)
A good bit of the time	53(11.6)
Some of the time	83(27.4)

N (%) Total = 303A little of the time91(30)None of the time31(10.2)If the patients were nervous in the past month12(4)All of the time12(4)Most of the time48(15.8)Some of the time48(15.8)Some of the time23(7.6)If the patients felt so down in the past month11All of the time30(1)Most of the time30(1)Most of the time30(1)Most of the time31(10.9)Some of the time33(10.9)Some of the time53(17.5)A little of the time30(42.9)If the patients felt so down in the past month130(42.9)All of the time20(6.6)All of the time20(3.0.4)None of the time42(17.2)A good bit of the time52(3.7)A little of the time37(28.7)A little of the time32(3.0.4)None of the time52(3.7)A little of the time52(3.7)A little of the time52(3.7)Some of the time52(3.7)A little of the time52(3.7)A little of the time52(3.7)A little of the time52(3.7)Some of the time52(1.7)Most of the time52(1.7)Some of the time52(1.7)Some of the time52(1.7)Some of the time52(1.6)Some of the time52(1.5)Some of the time52(1.5)Some of the time52(2.5)A listle of th	Variable	Frequency
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A good of it of the timeB(29.4)A little of the time89(29.4)A little of the time40(13.2)If the patients felt in happiness in the past month36(11.9)All of the time36(11.9)Most of the time57(18.8)A good bit of the time46(15.2)Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)Most of the time83(27.4)	A good bit of the time	43(14.2)
A little of the time $35(28.1)$ None of the time $40(13.2)$ If the patients felt in happiness in the past month $36(11.9)$ All of the time $36(15.2)$ Most of the time $46(15.2)$ Some of the time $86(28.4)$ A little of the time $66(21.8)$ None of the time $12(4)$ If the patients were tired in the past month $25(8.3)$ Most of the time $83(27.4)$	Some of the time	89(29.4)
None of the time40(13.2)If the patients felt in happiness in the past month36(11.9)All of the time36(11.9)Most of the time57(18.8)A good bit of the time46(15.2)Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)All of the time83(27.4)	A little of the time	85(28.1)
If the patients felt in happiness in the past month36(11.9)All of the time36(11.9)Most of the time57(18.8)A good bit of the time46(15.2)Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)Most of the time83(27.4)	None of the time	40(13.2)
All of the time36(11.9)Most of the time57(18.8)A good bit of the time46(15.2)Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)Most of the time83(27.4)	If the patients felt in happiness in the past month	
Most of the time57(18.8)A good bit of the time46(15.2)Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)Most of the time83(27.4)	All of the time	36(11.9)
A good bit of the time46(15.2)Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)Most of the time83(27.4)	Most of the time	57(18.8)
Some of the time86(28.4)A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)Most of the time83(27.4)	A good bit of the time	46(15.2)
A little of the time66(21.8)None of the time12(4)If the patients were tired in the past month25(8.3)All of the time83(27.4)	Some of the time	86(28.4)
None of the time12(4)If the patients were tired in the past month25(8.3)All of the time83(27.4)	A little of the time	66(21.8)
If the patients were tired in the past month25(8.3)All of the time83(27.4)	None of the time	12(4)
All of the time 25(8.3) Most of the time 83(27.4)	If the patients were tired in the past month	
Most of the time 83(27.4)	All of the time	25(8.3)
	Most of the time	83(27.4)

Variable	Frequency
	N (%)
	Total = 303
A good bit of the time	44(14.5)
Some of the time	78(25.7)
A little of the time	67(22.1)
None of the time	6(2)
How much of the times the patients physical or emotional	
health interfered with social activities	
All of the time	15(5)
Most of the time	38(12.5)
Some of the time	61(20.1)
A little of the time	26(8.6)
None of the time	163(53.8)
If the patients got sick easier than others	
Definitely true	69(22.8)
Mostly true	56(18.5)
Do not know	62(20.5)
Mostly false	89(29.4)
Definitely false	27(8.9)
If the patients healthy as others	
Definitely true	8(2.6)
Mostly true	36(11.9)
Do not know	75(24.8)
Mostly false	145(47.9)
Definitely false	39(12.9)
If the patients expected to get worse	
Definitely true	40(13.2)
Mostly true	59(19.5)
Do not know	112(37)
Mostly false	65(21.5)
Definitely false	27(8.9)
If the patients considered their health as excellent	
Definitely true	17(5.6)
Mostly true	57(18.8)
Do not know	18(5.9)
Mostly false	112(37)
Definitely false	99(32.7)

Abbreviation: CAD: coronary artery disease.

Furthermore, Table 3.12 shows the median (IQR) for different dimensions

of SF-36 scale.

Table 3.12 Median (interquartile range) for the dimensions of SF-36scale.

Variables	Median (IQR)
Physical functioning	35 (10-65)
Role limitations due to physical health	0.0 (0.0-100)
Role limitations due to emotional health	100 (0.0-100)
Energy / Fatigue	65 (45-80)
Emotional well-being	76 (60-88)
Social functioning	100 (50-100)
Pain	45 (22.5-50)
General health	40 (25-50)
Compared to one year ago, how would you rate your health in general now?	25 (25-25)

3.9 Socio-demographic related factors of the study patients with differences in functional outcomes

As shown in Table 3.13, patients' age was significantly associated with physical function scores (p < 0.001), role limitations due to physical health (p = 0.004), and health change in the past year (p = 0.001). Younger patients significantly had higher physical functioning scores (p < 0.001). Patients aged from 35 to 44 years had higher median (IQR) physical functioning that was 47.5 (10 - 96.2) compared to patients in higher ages category. Furthermore, regarding general health compared with the past year, the median (IOR) scores for patients aged from 35-44 years was 12.5(0.0-43.7), compared to the median scores (median= 25) of higher age categories (p = 0.001).

Concerning gender, there is a significant difference for all SF dimensions (p < 0.05). The median (IQR) scores for physical functioning, pain, energy, emotional well being, social functioning, general health and general health

compared to the past year, were significantly higher for male than female patients.

On the other hand, regarding educational level, patients with higher educational level had higher median (IQR) scores than those with lower educational levels. As an example, patients who completed their higher education had higher physical functioning score (55 (25-80)) compared with patients with primary education (20 (10-50)), ($p \le 0.001$).

Regarding marital status, married patients had higher physical functioning scores (45 (16.2-70)) compared to single patients (20 (0-25) or widowed patients (10 (0-15), (p = 0.015).

Concerning income, income was significantly associated with some SF dimensions. In addition, employment status was significantly associated with all SF dimensions. In most domains the employed patients had the highest median (IQR) scores than those unemployed CAD patients.

However, in regard to BMI categories and locality ,there was no significant difference between BMI categories or locality with SF dimensions (p > 0.05) (Table 3.13).

Table	3.13	Socio-demographic	related	characteristics	of	the	study	patients	with	differences	in	functional
outcom	nes											

	n (%)	PF	RP	RE	VT	MH	SF	BP	GH	HC
		Median[IQ	Median[IQ	Median[I	Median[I	Median[IQ	Median[IQR]	Median[IQ	Median[IQ	Median[
		R]	R]	QR]	QR]	R]		R]	R]	IQR]
Age										
35-44	4(1.3)	47.5(10-	0.0(0.0-75)	100(25-	40(6.2-	22(16-49)	25(0.0-87)	40(0.0-95)	32.5(15-	12.5(0.0-
		96.2)		100)	81.2)				61.2)	43.7)
45-54	67(22.1)		0.0(0.0-100)			64(48-80)	100(50-100)	45(22.5-80)	45(30-55)	25(25-
		55(35-80)		100(0.0-	50(35-75)					50)
55-64	92(30.3)		0.0(0.0-100)	100)		60(41-80)	100(50-100)	35(22.5-	35(25-55)	
		35(15-70)		1.0.0 /0.0	37.5(21.2-			79.3)		25(25-
65-74	86(28.3)		0.0(0.0-62.5)	100(0.0-	70)	64(48-81)	100(50-100)	45(22.5-100)	40(25-51.2)	50)
		35(10-60)		100)	47.5(30-	(10, 50)		25/22 5	40/25 50	25/25
75-84	45(14.8)	1.5(0.0.05)	0.0(0.0-0.0)	100/0.0	65)	60(40-72)	75(37.5-100)	35(22.5-	40(25-50)	25(25-
05.04		15(0.0-35)		100(0.0-	10/27 5	11(20, 60)	50(25.05.5)	51.2)	20/12 5	31.2)
85-94	9(2.9)	10(0.0.10)		100)	40(27.5-	44(38-68)	50(25-87.5)	22.5(5-38.7)	20(12.5-	25(0.0
		10(0.0-10)		0.0/0.0	55)				52.5)	25(0.0-
				0.0(0.0-	25(20,57)					25)
				100)	35(30-57)					25(0.0
				0.0(0.0						25(0.0-
				0.0(0.0-						23)
	P(sig)	<0.001	0.001	0.060	0.403	0.06	0.070	0 175	0.554	0.001
gender	1 (sig.)	<0.001	0.004	0.009	0.475	0.00	0.079.	0.175	0.334	0.001
Male	201(66.3)	50(17.5-75)	0.0(0.0-100)	100(0.0-	50(30-70)	64(48-80)	100(50-100)	45(22 5-95)	40(30-60)	25(25-
Wate	201(00.3)	50(17.5-75)	0.0(0.0-100)	100(0.0-	50(50-70)	04(40-00)	100(50-100)	+5(22.5-95)	40(30-00)	50)
Female	102(33.7)	20(5-35)	0.0(0.0-0.0)	100)	35(20-55)	52(36-68)	62 5(37 5-100)	32 5(22 5-	35(20-45)	50)
I emaie	102(33.7)	20(3 33)	0.0(0.0 0.0)	0.0(0.0-	35(20 35)	52(50 00)	02.5(57.5 100)	48 1)	55(20 +5)	25(0.0-
				100)				10.1)		25(0.0
				100)						20)
	P (sig.)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.001	0.001

	n (%)	PF Median[IQ	RP Median[IQ	RE Median[I	VT Median[I	MH Median[IQ	SF Median[IQR]	BP Median[IQ	GH Median[IQ	HC Median[
		R]	R]	QR]	QR]	R]		R]	R]	IQR]
BMI										
Normal	82(27.1)	35(10-70)	0.0(0.0-100)	100(0.0-	40(25-70)	62(44-80)	100(50-100)	32.5(20-80)	35(25-55)	25(25-
(18.5-25)				100)						50)
Overweig	117(38.6)	45(17.5-70)	0.0(0.0-100)	100/0.0	50(32.5-	60(44-80)	100(50-100)	45(22.5-80)	40(30-55)	25/25
ht	102/24	25(10.55)		100(0.0-	70)		07 5(50 100)	15(00 5 00)	25/20 50	25(25-
(25 - 30)	103(34)	25(10-55)	0.0(0.0-0.0)	100)	40(20.55)	60(44-76)	87.5(50-100)	45(22.5-80)	35(20-50)	50)
Obese				0.0/0.0	40(20-55)					25/25
(30 and				0.0(0.0-						25(25-
more)				100)						25)
	P (sig.)	0.16	0.253	0.239	0.054	0.712	0.477	0.884	0.258	0.382
Education	- (5.8.)	0.10	0.200	0.207	0.001			0.001	0.200	0.002
Primary	165(54.5)	20(10-50)	0.0(0.0-0.0)	0.0(0.0-	35(20-55)	56(40-70)	75(43.7-100)	32.5(22.5-	35(20-45)	25(0.0-
				100)				57.5)		25)
Secondary	75(24.8)	55(35-85)	0.0(0.0-100)		55(30-75)	64(48-80)	100(62.5-100)	55(22.5-100)	40(30-60)	/
j				100(0.0-	()	- (/	100(62.5-100)			25(25-
Collage	63(20.8)	55(25-80)	25(0.0-100)	100)	60(40-75)	72(52-84)	· · · · · ·	65(22.5-100)	50(30-60)	50)
-										-
				100(0.0-						25(25-
				100)						50)
	P (sig.)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Marital										
status	7(2.3)	20(0.0-25)	0.0(0.0-0.0)	0.0(0.0-	25(20-45)	40(32-56)	50(37.5-62.5)	32.5(22.5-	35(20-50)	0.0(0.0-
Single				100)			100(50-100)	45)		25)
	256(84.5)	45(16.2-70)	0.0(0.0-100)		50(30-70)	64(44-80)		45(22.5-80)	40(26.2-55)	
Married				100(0.0-			56.2(28.1-100)			25(25-
	40(13.2)	10(0.0-15)	0.0(0.0-0.0)	100)	35(20-	48(40-64)		32.5(22.5-	35(16.2-45)	50)
Widow					43.7)			45)		
				0.0(0.0-						25(0.0-
	L			0.0)						25)
	P (sig.)	0.015	0.171	0.206	0.127	0.047	0.029	0.499	0.384	0.011

4	9
_	

	n (%)	PF	RP	RE	VT	MH	SF	BP	GH	НС
		Median[IQ	Median[IQ	Median[I	Median[I	Median[IQ	Median[IQR]	Median[IQ	Median[IQ	Median[
		R]	R]	QR]	QR]	R]		R]	R]	IQR]
Income										
Low	120(39.6)	25(10-50)	0.0(0.0-0.0)	0.0(0.0-	35(20-55)	56(40-72)	75(50-100)	33.75(22.5-	35(20-45)	25(0.0-
				100)				57.5)		25)
Moderate	176(58.1)	50(15-75)	0.0(0.0-100)		50(30-70)	64(48-83)	100(50-100)	45(22.5-90)	45(30-58.7)	
				100(0.0-						25(25-
High	7(2.3)	45(10-55)	0.0(0.0-75)	100)	60(40-70)	52(44-88)	75(25-100)	32.5(22.5-	50(30-55)	50)
				22.2/0.0				35)		25/0.0
				33.3(0.0-						25(0.0-
		0.001	0.001	100)	0.001	0.005	0.101	0.054	0.001	25)
-	P(sig.)	0.001	<0.001	0.015	<0.001	0.005	0.101	0.054	<0.001	0.013
Locality	(7(22,1)	25(10,70)	0.0(0.0.100)	100/0.0	45(20,70)	56(49.72)	100(50,100)	45(22.5.100)	40(20.55)	25/25
Urban	67(22.1)	35(10-70)	0.0(0.0-100)	100(0.0-	45(30-70)	56(48-72)	100(50-100)	45(22.5-100)	40(30-55)	25(25-
Dunal	210(72.2)	25(15 65)	0.0(0.0.50)	100)	15(25 65)	60(40.80)	87 5(50 100)	15(22.5	40(25,50)	50)
Kurai	219(72.3)	33(13-03)	0.0(0.0-30)	100/0.0	43(23-03)	00(40-80)	87.3(30-100)	43(22.3-	40(23-30)	25(25
Camp	17(5.6)	30(7.80)	0.0(0.0, 100)	100(0.0-	40(20,50)	56(12,78)	100(50,100)	11.3)	30(17.5	25(25-
Camp	17(5.0)	30(7-80)	0.0(0.0-100)	100)	40(20-30)	50(42-78)	100(30-100)	45(22.5-95)	30(17.5-	23)
				0.0(0.0-					+1.5)	25(0.0-
				100)						37 5)
				100)						6716)
	P (sig.)	0.924	0.067	0.667	0.426	0.835	0.633	0.385	0.208	0.499
Employm										
ent status										
Employed	31(10.2)	75(45-80)	100(0.0-100)	100(100-	60(40-75)	64(52-84)	100(62.5-100)	77.5(45-100)	50(35-65)	25(25-
				100)			75(50-100)			50)
Unemploy	234(77.2)	30(10-60)	0.0(0.0-0.0)	0.0(0.0-	40(25-60)	56(40-78)		32.5(22.5-	35(23.7-	
ed				100)			100(75-100)	61.2)	46.2)	25(25-
	38(12.5)	57.5(25-80)	75(0.0-100)		60(48.7-	76(63-88)		75(35-100)	50(38.7-60)	25)
Previously				100(0.0-	76.2)					
employed				100)						25(25-
										50)
	P (sig.)	<0.001	<0.001	<0.001	<0.001	<0.001	0.018	<0.001	<0.001	0.003

Abbreviations: BP: Bodily pain, GH: General health, HC: Health change in the past year, IQR: interquartile range, MH: Emotional well-being/ Mental health, PF: Physical functioning, RE: Role limitations due to emotional problems, RP: Role limitations due to physical health, SF: Social functioning, VT Vitality/Energy and fatigue.

3.10 Co-morbid diseases of the study patients with differences in functional outcomes.

As shown in Table 3.14, patients with higher co-morbid diseases significantly had lower scores in all dimensions of SF-36 scale (p < 0.05). As an example, regarding physical functioning, the patients with one co-morbid disease had the highest median (IQR) score (75.5(62.5-86.2)), compared with those with two-comorbid diseases (60 (30-81.2)), three co-morbid diseases (35 (16.2-63.7)), four co-morbid diseases (15 (0-28.7)), and five or more co-morbid diseases (5 (0-25)), (p \leq 0.001).

	n (%)	PF Median[Q1-	RP Median[Q1-	RE Median[VT Median[Q1-	MH Median[Q1-	SF Median[Q1-	BP Median[Q	GH Median[Q1-	HC Median[Q1-
		Q3]	Q3]	Q1-Q3]	Q3]	Q3]	Q3]	1-Q3]	Q3]	Q3]
One co- morbid disease	18(5.9)	77.5(62.5- 86.2)	100(0.0-100)	100(75- 100)	67.5(50-85)	82(55-88)	100(84.3- 100)	62.5(20- 100)	55(38.7-75)	37.5(25-75)
Tow co- morbid diseases	86(28.4)	60(30-81.2)	0.0(0.0-100)	100(33.3- 100)	60(38.7-75)	68(56-84)	100(75-100)	57.5(22.5- 100)	45(30-61.2)	25(25-50)
Three co- morbid diseases	104(34.4)	35(16.2- 63.7)	0.0(0.0-34.7)	66.6(0.0- 100)	45(30-63.7)	60(40-76)	100(50-100)	45(22.5- 80)	35(25-55)	25(25-43.7)
Four co- morbid diseases	52(17.2)	15(0.0-28.7)	0.0(0.0-0.0)	0.0(0.0- 100)	30(20-40)	50(40-60)	50(37.5-100)	32.5(10.6- 45)	35(16.5-45)	25(0.0-25)
Five and more co- morbid diseases	43(14.2)	5(0.0-25)	0.0(0.0-0.0)	0.0(0.0-1000)	35(20-45)	48(32-64)	50(25-100)	32.5(22.5- 45)	35(20-45)	0.0(0.0-25)
	P (sig.)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

 Table 3.14 Co-morbid diseases of the study patients with differences in functional outcomes

Abbreviations: BP: Bodily pain, GH: General health, HC: Health change in the past year, IQR: interquartile range, MH: Emotional well-being/ Mental health, PF: Physical functioning, RE: Role limitations due to emotional problems, RP: Role limitations due to physical health, SF: Social functioning, VT Vitality/Energy and fatigue.

3.11 Medications used by the study patients with differences in functional outcomes

Table 3.15 shows the difference in functional outcomes in regards to number of medications. The results show that CAD patients who used 1-3 medications had the highest median (IQR) in all SF-36 dimensions, (p < 0.05). As an example, patients who used 1-3 medications had the highest median (IQR) score in regards to physical functioning (65 (40-85)) compared with those using 3-6 medications (50(5-75)), and those using 7 and ore medications (10 (0-30)), (p \leq 0.001).

	n (%)	PF	RP	RE	VT	MH	SF	BP	GH	HC
		Median[Q1-	Median[Q1-	Median[Q1-	Median[Q1-	Median[Q	Median[Q1-	Median[Q	Median[Q1-	Median[Q1-
		Q3]	Q3]	Q3]	Q3]	1-Q3]	Q3]	1-Q3]	Q3]	Q3]
1-3 medications	19(6.2)	65(40-85)	100(0.0- 100)	1000(100- 100)	70(50-80)	84(68-88)	100(100- 100)	45(0.0- 100)	55(45-75)	25(25-50)
3-6 medications	177(58.4)	50(25-75)	0.0(0.0-100)	100(0.0- 100)	55(35-70)	64(52-80)	100(62.5- 100)	45(22.5- 90)	40(30-55)	25(25-50)
7 and more medications	107(35.3)	10(0.0-30)	0.0(0.0-0.0)	0.0(0.0-100)	30(20-45)	48(36-68)	50(37.5-100)	32.5(22.5- 45)	30(20-45)	25(0.0-25)
	P(sig.)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

 Table 3.15 Medications used by the study patients with differences in functional outcomes

Abbreviations: BP: Bodily pain, GH: General health, HC: Health change in the past year, IQR: interquartile range, MH: Emotional well-being/ Mental health, PF: Physical functioning, RE: Role limitations due to emotional problems, RP: Role limitations due to physical health, SF: Social functioning, VT Vitality/Energy and fatigue.

3.12 Relationship between satisfaction and functional outcomes scores.

There was a significantly positive correlation between global domain and physical functioning dimension in SF-36 scale (R = 0.281; $p \le 0.001$). In addition, there was a significantly positive correlation between global domain and role limitation to physical health dimension in SF-36 scale (R = 0.255; $p \le 0.001$). Furthermore, a significantly positive correlation was found between global domain and role limitation to emotional problems dimension in SF-36 scale (R = 0.222; $p \le 0.001$). In addition, there was a significantly positive correlation between global domain and energy dimension in SF-36 scale (R = 0.388; $p \le 0.001$). Furthermore, a significantly positive correlation was found between global domain and emotional well-being dimension in SF-36 scale (R = 0.381; $p \le 0.001$). Moreover, the results show a significantly positive correlation between global domain and social functioning dimension in SF-36 scale (R = 0.257; On the other hand, there was a significantly weaker positive $p \le 0.001$). correlation between global domain and pain dimension in SF-36 scale (R = 0.137; p = 0.017).

Chapter Four Discussion

4.1 Treatment satisfaction among CAD patients

The present study introduced extensive information about treatment satisfaction using TSQM scale and health related functional outcomes using SF-36 scale among patients with CAD in Khalil Suleiman hospital in Jenin city, Palestine. Referring to literature, TSQM and SF-36 scales have been used to evaluate treatment satisfaction and functional outcomes in CAD patients, and it is valid, reliable, and responsive in both specific and general disease populations.

Regarding treatment satisfaction, there are four domains for TSQM, effectiveness, side effect, convenience and global domains. Concerning effectiveness domain, the majority of patients in the current study were satisfied with the effectiveness of medications to treat or prevent their disease. However, the majority of patients were satisfied with the medications way in relief their symptoms and with the amount of the time takes to start working. In regard to side effects domain, majority of patients had no side effects. Concerning convenience domain, most of patients reported that the medication use was very easy and very convenient. Furthermore, regarding global domain, most of patients were satisfied. This study confirmed by many studies , for example Asadi-Lari et al., (2003a) concluded that the majority of CAD patients were satisfied with their given care. Also, Oterhals et al., (2006) reported that the majority of patients

were highly satisfied. Another study conducted in 2010 by Iliyasu et al., (2010) reported that 83% of patients were satisfied with their health care services.

In regard to side effects domain, majority of patients in the current study had no side effects. This result was consistent with a study by Liberato et al., (2016) who reported in their study that 81.1% patients had no side effects.

In the current study, convenience domain score was higher than that in a previous study (Liberato et al., 2016). Furthermore, in the current study global domain score was higher than effectiveness domain score, this result was confirmed by Liberato et al., (2016) study.

Regarding the relationship between age and treatment satisfaction, those patients with lower ages had significantly higher median TSQM scores for convenience domain compared to higher ages. This result was supported by the results of the study that concluded the elderly CAD patients were less satisfied compared to lower ages (Asadi-Lari et al., 2003a). Whereas another study conducted by Harmsen et al., (2008) concluded that older patients were more satisfied with their primary health care.

However, the patients aged from 35 to 44, had the lower score but not significant in effectiveness domain, similar result regarding age was found in a previous study in the United kingdom (Asadi-Lari et al., 2003a).

Concerning patients' gender, male patients had higher median scores than females regarding convenience and global domain, this result was confirmed by previous two studies (Asadi-Lari et al., 2003a, Mc Donnell et al., 2011).

On the other hand, patients with higher level of education had higher median scores for effectiveness, convenience, and global domains. However, another study conducted by Delestars et al., (2013) who reported that satisfaction with medication was not affected by educational level in patients with chronic diseases. On the other hand, another study conducted in 2009 by Biderman et al., (2009) reported that lower treatment satisfaction was observed among diabetic patients with lower educational level. Furthermore, another previous study concluded that, lower educational level can lead to lower treatment satisfaction (Iliyasu et al., 2010).

On the other hand, patients with higher income had higher median scores for effectiveness and global domain. This result was consistent with the result of the study that conducted in 2011 by de Jong-Watt and Sherifi, (2011) which concluded that higher satisfaction with treatment among ACS patients was associated with higher income level.

On the other hand, patients who were previously employed had higher median TSQM scores regarding convenience and global domain. A previous study conducted in 2007 showed that patients who had cost difficulties were less satisfied with plan of medications, also this study reported that the retirees expressed more satisfaction with plan therapy than current employees (Nau et al., 2007).

Regarding the differences in number of co-morbid diseases, the results show significant differences in convenience ($p \le 0.001$) and global (p = 0.029) domains. Patients with lower number of co-morbid diseases significantly had higher scores in both domains. Similar result was observed in the Asadi-Lari et al., (2003a) study which concluded that patients with CAD alone, had satisfaction scores higher than those with co-morbidities.

Regarding the differences in number of medications used, the results show significant differences in convenience ($p \le 0.001$) and global (p = 0.009) domains. Patients with lower number of medications significantly had higher scores in both domains. This result was supported by many studies; for example, a study conducted in 2014 by Loffler et al., (2014) reported that lower number of medications used was associated with higher satisfaction level. Another study conducted by Chaturvedi et al., (2018) who concluded that polypharmacy can worsen treatment satisfaction in diabetic patients.

4.2 Health related functional outcomes among CAD patients.

This study found that 38.3% of patients described their general health as fair, and when the patients were asked about their general health compared to one year ago, about half of the patients reported that their health was somewhat worse than one year ago. In a previous study, Rutledge et al.,
(2010) suggested that 39.35% of his sample study reported their self health as fair or poor. In addition most of patients had limitations in physical or emotional health which interfered with their usual daily activities.

Regarding physical activity, the majority of the patients had limitations in doing vigorous or moderate activities, carrying groceries, climbing several blocks, walking several kilometers and bending or kneeling; whereas the majority of them had no limitations in bathing or dressing and walking for a one hundred meter. Similar results were observed in a previous study such as a study that concluded the angina pectoris was significantly associated with physical function impairment (Ulvik et al., 2008). Another previous study concluded that CAD patients had worse physical function and overall quality of life (Alexander et al., 2016).

In addition, most of the patients reported that they had moderate pain which affected their normal works. On the other hand, Alexander et al., (2016) reported that 15% and 40% of their sample study, had daily and weekly angina which affected their physical activity. Furthermore, Sajobi et al., (2018) suggested that was approximately one quarter of their study patients had significant decline in health related quality of life over 5 year period.

Concerning mental health, the majority of the patients had emotional disturbances like nervousness, anxiety, feeling down, not feeling in happiness and calm. This result was supported by many studies. Kim et al., (2018) concluded that the CAD patients had lower scores of health related quality of life associated with higher depression, lower educational

level, and lower social support. In addition, Wang et al., (2016) reported in their study that anxiety, depression and perceived stress worsen the physical health of CAD patients. Furthermore, many studies confirmed that anxiety and depression were significant factors for poorer quality of life (Sherman et al., 2003, Hofer et al., 2005, Garster et al., 2009).

However, patients who expect to become worse were much more than those expect to become better, whereas most of them did not know. Most of patients did not consider their self as healthy as others. Similar results were found in several previous studies (Spertus et al., 2000, Trivedi et al., 2015, Palacios et al., 2018).

In regard to age with functional outcomes, patients with lower ages significantly had higher physical functioning scores (p < 0.001). This result was consistent with the study conducted by Gonzalez-Chica et al., (2016) that reported patients with higher ages had lower scores of HRQoL.

Regarding the association between functional outcome and the patient's gender; there was a significant difference for all SF dimensions (p < 0.05). The median (IQR) scores for physical functioning, pain, energy, emotional well being, social functioning, general health and general health compared to the past year, were significantly higher for male than female patients. This result was supported by several previous studies that concluded females with CAD had worse HRQoL than males with CAD (Westin et al., 1999, Agewall et al., 2004, Norris et al., 2008).

On the other hand, regarding educational level, patients with higher educational level had higher median (IQR) scores than those with lower educational levels. As an example, patients who completed their higher education had higher physical functioning score (55 (25-80)) compared with patients with primary education (20 (10-50)), (p \leq 0.001). This result was consistent with many previous studies such as (Meder and Farin, 2011, Shad et al., 2017, Kim et al., 2018).

Also, Gonzalez-Chica et al., (2016) concluded that low educational level related to poorer physical functioning in CAD patients.

Regarding marital status, married patients had higher physical functioning scores (45 (16.2-70)) compared to single patients (20 (0-25) or widowed patients (10 (0-15), (p = 0.015). Another study reported that married patients with CAD had higher scores of HRQoL than unmarried (Gonzalez-Chica et al., 2016). Also, a study conducted by Asadi-Lari et al., (2003b) reported that the CAD patients who lived alone had lower HRQoL scores.

Concerning income, patients with higher income had better health related quality of life. Forever patients who were employed or had previously employed had better quality of life. A previous study concluded that there was a significant relationship between lower social support and economic status and occupation (Lei et al., 2017).

On the other hand, concerning quality of life and co- morbidities, patients with more co-morbid diseases had worse quality of life; this result was supported by several studies (Goreishi et al., 2012, Assari et al., 2013, Shad et al., 2017). Furthermore, patients who used more medications had worse health related functional outcomes. Also, Runganga et al., (2014) reported in their study that patients with poly-pharmacy had more co-morbidities and lower physical activity, whereas those with non poly pharmacy had better physical activity.

4.3 Relationship between satisfaction and functional outcomes scores

Our study concluded that there was a significant positive relationship between treatment satisfaction and health related functional outcome. This study revealed that global domain in treatment satisfaction scale correlate positively with SF-36 subscales such as physical health, mental health, emotional well being and social functioning. Another study reported that global domain had a strong relationship with the scale dimension used to evaluate quality of life among CAD patients (Asadi-Lari et al., 2003a). In addition, Al-Jabi et al., (2015) conducted a cross sectional study to describe the relationship between treatment satisfaction and HRQoL and concluded that higher values on European Quality of life scale(EQ-5D-5L) were associated with higher scores of treatment satisfaction.

Chapter Five Conclusion and Limitations

5.1 Strength and limitations

To the extent of our knowledge, this research is the first in Palestine regarding CAD and its impact on functional outcomes and treatment satisfaction, providing a clear view into an unstudied field, and initiating a data base for future studies focusing on CAD patients from Palestine. Furthermore, the data were recruited via face- to- face interview giving complete and valid data. However, face-to face interview has some advantages as it give more accurate screening, can keep the patient focus while answering, can capture verbal and non-verbal cues, and can capture behavior and emotion. In addition, the quality of the questions of this study can be answered without any embarrassment. Also, this study discussed two scales in the same research, TSQM and SF-36 scales.

However, the current study had some limitations. First, it was a crosssectional; which prevents causal inferences to be recognized. Second, the sample population was selected by convenience sampling method that may affect results generalization. Third we cannot make classification for CAD patients as who's with MI or unstable angina as an example, because there is no accurate documentation regarding this issue. Lastly, the study was conducted only in one center in Palestine which is Khalil Suleiman hospital.

5.2 Conclusion

Regarding treatment satisfaction, there are four domains for TSQM, effectiveness domain, side effect domain, convenience domain, global domain.

- The majority of the patients were satisfied in the effectiveness of the medications.

- Most of the patients had no side effects.

- The majority of the patients used their medications very easily.

- Most of the patients were satisfied in the global domain.

- Treatment satisfaction scores decreased with age and this is significant in convenience domain.

- Male patients and who were more educated were more satisfied and found medication use very easy and convenient.

-Patients with higher income and employed or previously employed were more satisfied .

- Patients with more co-morbid diseases and who used more medications were less satisfied.

Regarding health related functional outcomes; SF-36 scale was used.

- The majority of patients described their health as fair, and somewhat worse compared to the last year.

- Most of patients had physical and emotional limitations, and bodily pain that affected their daily activities.

- Most of patients had emotional disturbances like nervousness, anxiety and feeling down.

- Patients with better health related functional outcomes were male, more educated, higher income, employed or previously employed, and married patients.

- Patients with worse health functional outcomes had more co-morbid diseases and used more medications, and elderly patients

There was a significant positive relationship between treatment satisfaction and health related functional outcome

5.3 Recommendations

• It is better to asses routinely, functional outcome and treatment satisfaction among CAD patients, to emphasize that all patients have good quality of life and satisfied with their medications, also this may help in treatment protocols changes according to their health. • Clinical pharmacist can play an important role to improve quality of life for the patients, through professional communication with the patient, and improve his satisfaction, which lead to improve adherence and compliance.

• Future studies regarding CAD should be encouraged to burden the knowledge in this field, to investigate the effect of unstudied factors on functional outcomes and treatment satisfaction among CAD patients, and to cover other geographical regions in Palestine.

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Appendixes

Appendix A

Data Collection Form

(English Version)

A. Patient demos	<u>graphic characteristics</u>				
A.1 Patient num	ber:				
A.2 Date of birth:		A.3 Age:	years		
A.4 Gender: D	Male \Box Female				
A.5Weight:	Kg	A.6Height:			
A./ Level of edu	cation:				
□ Primary	□ Secondary	□ University			
A.8 Income:					
□ Low	□ Moderate	□ High			
A.9 Marital Stat	us:				
□ Married	□ Single	Divorced/widowed			
A. 10 Locality:					
□ Urban		□ Camp			
A.11 Employmen	nt status				
□ Employed	□ Unemployed	□ Previously employed	before		
cancer onset					
A.12 Family hist	ory of ischemic heart dis	ease:			
□ Yes	□ No				

B. H	istory and disea	ise co-m	orbic	<u>lities</u>					
B.1 Date of Diagnosis:							_		
B.2	How many	years	do	you	suffer	from	ischemic	heart	disease
B.3: □ (Smoking:- Current smoking.			4					
	Non smoker	but none	currer	it smoi	king.				
Ye	ears of Smoking	:							
B.5:	Do you make ex	kercises							
$\Box Y $	es		\Box Hc	w mai	ny times	weekly:			
□ N	0								
	B.6: Co-morbi	dities:							
	Hypertensic	on				🗆 Dia	betes mellit	us	
	Dyslipidem	ia				□ Atri	ial fibrillatio	n	
□Heart failure				Polycystic Kidney Disease					
	□Nephrotoxic	ity				□UTI			
	□Systemic inf	fection				□Urin	ary Stones		
	□Anemia					□Hyp	erparathyro	idism	
chronic kidney disease				□ Oth	ers :				

C. Management and Medications

C.1:	Medications
U • ± •	111Culculuu

	Drug name	Drug dose	Frequency	Route
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

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D. Treatment Satisfaction Questionnaire for Medication (TSQM 1.4)

1. How satisfied or dissatisfied are you with the ability of the medication to prevent or treat

your condition?

- 1- Extremely Dissatisfied
- 2 -Very Dissatisfied
- 3- Dissatisfied
- 4- Somewhat Satisfied
- 5- Satisfied
- 6- Very Satisfied
- 7- Extremely Satisfied

2. How satisfied or dissatisfied are you with the way the medication relieves your symptoms?

- 1- Extremely Dissatisfied
- 2 -Very Dissatisfied
- 3- Dissatisfied
- 4- Somewhat Satisfied
- 5- Satisfied
- 6- Very Satisfied
- 7- Extremely Satisfied

3. How satisfied or dissatisfied are you with the amount of time it takes the medication to start working?

- 1- Extremely Dissatisfied
- 2 -Very Dissatisfied
- 3 -Dissatisfied
- 4- Somewhat Satisfied
- 5- Satisfied
- 6 -Very Satisfied
- 7 -Extremely Satisfied

4. As a result of taking this medication, do you experience any side effects at all?

- _1 Yes
- _0 No

5. How bothersome are the side effects of the medication you take to treat your condition?

- 1 -Extremely Bothersome
- 2- Very Bothersome
- 3- Somewhat Bothersome
- 4- A Little Bothersome
- 5- Not at All Bothersome

- 1- A Great Deal
- 2 -Quite a Bit
- 3 -Somewhat
- 4- Minimally
- 5- Not at All

7. To what extent do the side effects interfere with your mental function (i.e., ability to think clearly, stay awake, etc.)?

- 1- A Great Deal
- 2 -Quite a Bit
- 3- Somewhat
- 4- Minimally
- 5- Not at All

8. To what degree have medication side effects affected your overall satisfaction with the medication?

- 1 A Great Deal
- 2 Quite a Bit
- 3 Somewhat
- 4 Minimally
- 5 Not at All

9. How easy or difficult is it to use the medication in its current form?

- 1- Extremely Difficult
- 2- Very Difficult
- 3- Difficult
- 4- Somewhat Easy
- 5- Easy
- 6- Very Easy
- 7- Extremely Easy

10. How easy or difficult is it to plan when you will use the medication each time?

- 1- Extremely Difficult
- 2 -Very Difficult
- 3- Difficult
- 4 -Somewhat Easy
- 5-Easy
- 6 -Very Easy
- 7- Extremely Easy

11. How convenient or inconvenient is it to take the medication as instructed?

- 1 -Extremely Inconvenient
- 2 -Very Inconvenient
- 3 -Inconvenient
- 4 -Somewhat Convenient
- 5 -Convenient
- 6 -Very Convenient
- 7 -Extremely Convenient

12. Overall, how confident are you that taking this medication is a good thing for you?

- 1 Not at All Confident
- 2 A Little Confident
- 3 Somewhat Confident

4 Very Confident

5 Extremely Confident

13. How certain are you that the good things about your medication outweigh the bad things?

- 1- Not at All Certain
- 2- A Little Certain
- 3-Somewhat Certain
- 4 -Very Certain
- 5- Extremely Certain

14. Taking all things into account, how satisfied or dissatisfied are you with this medication?

- 1- Extremely Dissatisfied
- 2- Very Dissatisfied
- 3- Dissatisfied
- 4 -Somewhat Satisfied
- 5 -Satisfied
- 6 -Very Satisfied
- 7- Extremely Satisfied

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E. 36-Item Short Form Survey Instrument (SF-36)

Choose one option for each questionnaire item.

1. In general, would yo	u say your health is:			
1 - Excellent	2 - Very good	3 - Good	4 - Fair	5 -
Poor				

2. Compared to one year ago, how would you rate your health in general now?

1 - Much better now than one year agoSomewhat better now than one year ago3 - About the sameSomewhat worse now than one year ago

5 - Much worse now than one year ago

The following items are about activities you might do during a typical day. Does yo ur health now limit you in these activities? If so, how much?

	Yes,	Yes,	No, not
	limited	limited	limited a
	a lot	a little	t all
3. Vigorous activities, such as running, lifting heavy obj			
ects, participating in strenuous sports.			
4. Moderate activities, such as moving a table, pushing a			
vacuum cleaner, bowling, or playing golf.			
5.Lifting or carrying groceries.			
6.Climbing several flights of stairs.			
7.Climbing one flight of stairs.			
8. Bending, kneeling, or stooping.			
9.Walking more than a mile.			
10. Walking several blocks.			
11.Walking one block.			
12.Bathing or dressing yourself.			

During the past 4 weeks, have you had any of the following problems with your wo rk or other regular daily activities as a result of your physical health?

	Ye	Ν
	S	0
13. Cut down the amount of time you spent on work or other activities.		
14. Accomplished less than you would like.		
15. Were limited in the kind of work or other activities.		
16.Had difficulty performing the work or other activities (for example, it too		
k extra effort).		

2 -
During the past 4 weeks, have you had any of the following problems with your wo rk or

other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	Yes	No
17.Cut down the amount of time you spent on work or other activities		
18.Accomplished less than you would like		
19.Didn't do work or other activities as carefully as usual		

20.During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighb ors, or groups?

1 - Not at all. 2 – Slightly. 3 – Moderately. 4 - Quite a bit. 5 – Extremely.

21. How much bodily pain have you had during the past 4 weeks?

1 – None. 2 - Very mild. 3 – Mild. 4 – Moderate. 5 – Severe. 6 - Very severe.

22.During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

1 - Not at all. 2 - A little bit. 3 – Moderately. 4 - Quite a bit. 5 – Extremely.

These questions are about how you feel and how things have been with you during the

past 4 weeks. For each question, please give the one answer that comes closest to th e way you have been feeling. How much of the time during the past 4 weeks...

	Allo	Most	A good	Som	A littl	None
	f the	of th	bit of th	e	e	of th
	time	e	e time	of th	of the	e
		time		e	time	time
				time		
23. Did you feel full of pep?						
24. Have you been a very nervous						
person?						
25. Have you felt so down in the						
dumps that nothing could cheer you						
up?						
26. Have you felt calm and peacefu						
1?						
27. Did you have a lot of energy?						
28. Have you felt downhearted and						
blue?						
29. Did you feel worn out?						
30. Have you been a happy person?						
31. Did you feel tired?						

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32. During the past 4 weeks, how much of the time has your physical health or emo tional

problems interfered with your social activities (like visiting with friends, relatives, etc.)?

1 - All of the time.	2 - Most of the time.	3 -
Some of the time.		
4 - A little of the time.	5 - None of the time.	

How TRUE or FALSE is each of the following statements for you

	Definitel	Mostl	Don'	Mostl	Definitel
	y true	y true	t	y false	y false
			kno		
			W		
33. I seem to get sick a little easier tha					
n other people.					
34. I am as healthy as anybody I kno					
W.					
35. I expect my health to get worse.					
36. My health is excellent.					

Appendix B

Data Collection Form

(Arabic Version)

الرضا العلاجي والنتائج الوظيفية ذات الصلة بالصحة لمرضى مرض الشريان التاجي في فلسطين

أ-الخصائص الديمو غرافية للمرضى: رقم المريض:_____ 2- الجنس: ذكر أنثى 1-العمر_____سنة 4-الطول____سم 3-الوزن كغم 5_مستوى التعليم: ابتدائى ثانوي جامعى 6-الحالة الاجتماعية: أعزب متزوج مطلق أرمل 7_مستوى الدخل: منخفض متوسط عالي 8-مكان السكن: مدينة قرية مخيم 9-الحالة الوظيفية: موظف غير موظف متقاعد ب- الخصائص الإكلينيكية للمرضى : 1-الفترة الزمنية التي مضت منذ تشخيص مرض الشريان التاجي 2-تمت المعالجة: 1-أدوية فقط 2-قسطرة فقط 3 -تركيب شبكية أو أكثر 4-قلب مفتوح 3- 1.5 هل تم إعادة إجراء القسطرة: نعم لا 3.2 - عدد مرات القسطرة التي أجريتها

- 4- 4.1 هل تم إعادة تركيب الشبكية : نعم لا
 - 4.2 عدد الشبكيات
 - 5-1 15 التدخين:
 - مدخن غير مدخن مدخن سابق
 - 5.2 عدد سنوات التدخين
- 6- 6.1 هل تقو بعمل تمارين رياضية أو تمشي لفترة معينة: نعم لا
- 6.2 عدد المرات التي تقوم بها بعمل التمارين الرياضية أو المشي أسبو عيا ____
 - 7 هل يوجد في العائلة تاريخ مرضى لمرض الشريان التاجي؟
 - نعم لا

8-أمراض مزمنة أخرى:

ضغط	أمراض في الكلى
سکر ي	تشمع الكبد
ضعف عضلة القلب	التهاب الكبد
عدم انتظام دقات القلب	قصور الغدة الدرقية
اضطر اب في الدهنيات	نشاط الغدة الدرقية
الريو	أمراض أخرى

ج-استبيان الرضا العلاجي للأدوية المستخدمة في علاج مرض الشريان التاجي : إلى أي درجة أنت مقتنع أو غير مقتنع بمدى فعالية الأدوية لعلاج مرضك أو منعه ؟ -1 غير مقتنع بشدة -1 2- غیر مقتنع جدا 3- غير مقتنع 4- مقتنع قليلا 5- مقتنع 6- مقتنع جدا 7- مقتنع بشدة 2-إلى أي درجة أنت مقتنع أو غير مقتنع بالطريقة التي يخفف بها الدواء من أعراضك ؟ غیر مقتنع بشدة 2- غير مقتنع جدا 3- غير مقتنع 4- مقتنع قليلا 5- مقتنع 6- مقتنع جدا 7- مقتنع بشدة 3-إلى أي درجة أنت مقتنع أو غير مقتنع بالوقت اللازم ليبدأ الدواء بالتخفيف من أعراضك ؟ غیر مقتنع بشدة 2- غير مقتنع جدا 3- غير مقتنع 4- مقتنع قليلا 5- مقتنع 6- مقتنع جدا 7- مقتنع بشدة 4 - هل عانيت من آثار جانبية نتيجة استخدام الأدوية؟ لا نعم 5-إلى أي درجة أزعجتك هذه الآثار الجانبية؟ [-مزعجة بشدة 2-مز عجة جدا 3-مزعجة إلى حد ما 4-مزعجة قليلا 5-غير مزعجة 6-إلى أي مدى تعارضت الأثار الجانبية مع الصحة الجسدية والقدرة على أداء الوظائف (مثل :مستوى الطاقة، مستوى القوة الخ) 1-بشکل کبیر جدا 2-بشکل کبیر 3-إلى حد ما 4-بشكل قليل 5-لم تتعارض على الإطلاق

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7-إلى أي مدى تعارضت الآثار الجانبية مع الصحة الذهنية (مثل :القدرة على التفكير ،الكلام،الاستيقاظ الخ) 1-بشکل کبیر جدا 2-بشکل کبیر 3-إلى حد ما 4-بشكل قليل 5-لم تتعارض على الإطلاق 8-إلى أي مدى تعارضت الأثار الجانبية مع اقتناعك بالأدوية ؟ 1-بشکل کبیر جدا 2-بشکل کبیر 3-إلى حد ما 4-بشكل قليل 5-لم تتعارض على الإطلاق 9-هل تواجه صعوبة فى استخدام الأدوية بالشكل الحالى أم أن استخدامه سهلا ؟ 1-صعب بشدة 2-صعب جدا 3-صعب 4-سهل إلى حد ما 5-سهل 6-سهل جدا 7-سهل بشدة 10- هل تواجه صعوبة عندما تنوي استخدام الدواء في كل مرة أم أن ذلك سهلا؟ 1-صعب بشدة 2-صعب جدا 3-صعب 4-سهل إلى حد ما 5-سهل 6-سهل جدا 7-سەل بشدة 11-هل تجد أن استخدام الدواء مريح وملائم وفقا للتعليمات ام أن ذلك غير ملائم؟ 1- غير ملائم بشدة 2- غير ملائم جدا 3- غير ملائم 4-ملائم قليلا 5- ملائم 6- ملائم جدا 7-ملائم بشدة 12-بشكل عام هل أنت واثق أن استخدام هذا الدواء شيء جيد بالنسبة إليك؟ غير واثق على الإطلاق 2-واثق قليلا 3 -واثق إلى حد ما 4 -واثق جدا 5-واثق بشدة

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101 1-غير متأكد على الإطلاق 2-متأكد على الإطلاق 3-متأكد إلى حد ما 4-متأكد بلي حد ما 5-متأكد بلي حد ما 5-متأكد بشدة 1- غير مقتنع بشدة 2- غير مقتنع جدا 3- مقتنع جدا 4- مقتنع جدا 5- مقتنع جدا 7- مقتنع بشدة

د. استبيان النتائج الوظيفية ذات الصلة بالصحة لمرضى الشريان التاجي

102 استبيان صحي *ىئس*⊒ ئكر 🗆 انٹی مر_____ فهل العلمي: ابتدائي اعدادي ثانوي بكالوريوس 🔲 ماجستير دكتوراه

، فضلك، أجب على كل الأسطلة الموجودة في هذا الاستبيان. في حالة عدم وضوح أي سؤال، أرجو اختيار أقرب اجابة وومك للسؤال.

- بصورة عامة، كيف ترى حالتك الصحية؟

(اختر اجابة واحدة وضع علامة / أمام الاجابة المناسبة) معتارة جيدجدا جيدة لا بأس بها سيئة

- مقارنة بعام مضى، كيف تقيم حالتك الصحية الآن بصورة عامة؟

(الهتر اجابة واهدة وضبع علامة 🦯 أمام الاجابة المناسبة)

- 📋 أفضل بكثير مما كانت عليه قبل عام
 - 📋 🛛 أفضل نوعا ما من العام الماضيي
 - 🔲 تقريبا على ما هي عليه
 - أسوأ نوعا ما من العام الماضي
- 🗋 أسوأ بكثير مما كانت عليه قبل عام

الاجابة المناسبة)	سع علامة 🗸 تحت	(اختر اجابة راحدة ره	٣- تتعلق البنود التالية بأنشطة يمكن ان تقوم بها خلال يومك العادي.
	•		في الوقت العالي، الى أي مدى تقيدك حالتك الصحية:
لا تقيدني	نعم تقيدني	نعم تقيدني	
الطلاقا	قليلا	كثيرا	
			 أ) من ممارسة الأنشطة الشاقة مثل: الجري، حمل الاشياء الثقيلة او
			مزاولة الأنشطة الرياضية المجهدة جدا؟
			ب) من ممارسة الأنشطة متوسطة الجهد، كتحريك الطاولة أو التنظيف
			باستخدام المكنسة الكهربائية او تنظيف حديقة المنزل والعناية بها ؟
	D		ج) من حمل المشتريات من البقالة أو السوق المركزي (السوبرماركت)؟
			د) می صنعود اندرج اعده انوار :
	۵		هـ) من صعود الدرج لدور واحد فقط ؟
D			و) من الانحناء أو الركوع أو السجود ؟
	۵		ز) من المشي لأكثر من كيلومتر ونصف؟
			ح) من المشي لمسافة نصف كيلومتر؟
	۵		ط) من المشي نسافة مئة متر ؟
			ي) من الاستحمام أو أرتداء الملايس بنفسك؟

الصحة الجسمية

		 - تتعلق البنود التالية (أ ، ب ، ج ، د) بالمشاكل التي يمكن ان تواجهـــــك
لم 🗸 تحت الاجابة المناسبة)	(المتر اجابة واحدة رضىع عانه	فلال تأديتك لعملك ان للأنشطة اليومية المعتادة نتيجة لحالتك الصحية الجسمية.
		فلال الأسابيع الأربعة الماضية، على تسببت حالتك الصحية الجسنمية في:
¥	نعم	
		i) التقليل من الوقت الذي تقضيه في العمل او اي انشطة اخرى؟
		ب) التقليل مما تود النجازه من العمل أو أي أنشطة أخرى؟
		ج) تقييدك في أداء نوع معين من الأعمال أو أي أنشطة أخرى؟
		د) أن تجد صعوبة في تادية العمل أو أي أنشطة أخرى؟
		(على سبيل المثال، احتجت الى جهد اضافي لتاديتها)

الصحة النفسية

		· تتعلق البنود التالية (i ، ب ، ج) بالمشاكل التي يمكن ان تواجهك خلال		
من الاجابة المناسبة)	(اختر اجابة راهدة وضم علامة	تأديتك لعملك أن الانشطة اليومية المعتادة كنتيجة لحالتك الصحية النفسية.		
		(مثلا الشعور بالاكتئاب أن القلق)		
		خلال الاسابيع الأربعة الماضية، مل تسببت حالتك الصحية النفسية في:		
¥	نعم			
) التقليل من الوقت الذ ي تقضب ف ي العمل او اي انشطة اخرى؟		
		ب) التقليل مما تود النجازة من العمل أو أي أنشطة أخرى؟		
		ج) عدم النجاز العمل ال اي انشطة اخرى بالمرص المعتاد؟ ج)		

الصحة الجسمية او النفسية

· خلال الاسابيع الاربعة الماضية، الى اي مدى تعارضت صحتك الجسمية او النفسية مع تأديتك لنشاطاتك جتماعية المعتادة مع عائلتك أو أصدقائك أو جيرانك أو أي من المناسبات الاجتماعية الأخرى؟

کان هناك تعارض کبير جدا

شدة الألم

- ما شدة الألم الجسمي الذي عانيت منه خلال الاسابيع الاربعة الماضية؟

- الأسئلة التالية تتعلق بكيفية شعورك وطبيعة سير الأمور معك للال الأسابيع الأربعة الماضية، الرجاء اعطاء اجابة واحدة ثل سؤال بحيث تكون هذه الاجابة هي الأقرب الى الحالة التي نت تشعر بها.

لمال الأسابيع الأربعة الماضية، كم من الوقت:

	في كل الأرقات	في معظم الأرقات	في كثير من الأرقات	في بعض الأرقات	ني قليل من الأرقات	لم اشعر في أي وقت من الأوقات
i) شعرت بأنك ملئ بالحيوية والنشاط؟						
ب) كنت شخصا عصبيا جدا؟					٥	
ج) شعرت بأنك في حالة اكتئاب الى درجة لم يمكن معها ادخال السرور اليك؟					٥	
د) شعرت بالهدوء والطمأنينة؟					۵	
هـ) كانت لديك طاقة كبيرة؟						
و) شعرت بالاحباط واليأس؟						
ز) شعرت بأنك منهك (استُنْفِزت قُواك)؟						
ح) شعرت بأنك شخص سعيد؟						
ط) شعرت بأنك تعبان؟						

١- خلال الاسابيع الأربعة الماضية، ما مقدار الوقت الذي تعارضت فيه صحتك الجسمية أو مشاكلك النفسية مع الماطاتك الاجتماعية (مثل زيارة الأصدقاء والأقارب وغير ذلك) ؟

۱- ما مدى صبعة أو خطأ كل من العبارات التالية (أ ، ب ، ج ، د)							
لنسبة الى حالتك الصحية؟	(اختر اجابة واحدة وضع علامة 🗸 تحت الاجابة المناسبة)						
	محيحة	محيحة	¥	لحما	خط		
	بلاشك	غالبا	اعلم	غالبا	بلا شك		
i) يبدو أنني أصباب بالمرض أسبهل من الآخرين. 							
ب) حالتي الصحية مساوية لأي شخص أعرفه.							
ج) أتوقع أن تسوء حالتي الصحية.				D			
د) حالتي الصبحية ممتازة.							

 – خلال الاسابيع الاربعة الماضية، إلى أي مدى إذى الألم الجسمي إلى التعارض مع تأديتك لأعمالك المعتادة سواء داخل المنزل أو خارجه)؟

109 Appendix C

Institutional Review Board

An-Najah National University Faculty of medicine &Health Sciences Department of Graduate Studies



جامعة النجاح الوطنية كلية الطب وعلوم الصحة دائرة الدر إسات العليا

IRB Approval Letter

Study Title:

Treatment Satisfaction and Health-related Functional Outcomes among Patients with Coronary Artery Disease from Palestine

Submitted by: Shurooq Salameh

Date Reviewed: 14/12/2016 Date Approved: 17/1/2017

Your Study titled **"Treatment Satisfaction and Health-related Functional Outcomes among Patients with Coronary Artery Disease from Palestine"** with archived number(8) December 2016 was reviewed by An-Najah National University IRB committee and was approved on 17January 2017.

Hasan Fitian, MD

- sha .

IRB Committee Chairman An-Najah National University

ـــ نابلس - ص.ب 7 أو 707 || هاتف 2342902/4/7/8/14 (09) (09) || فاكسميل 2342910 (09) (970)

Nablus - P.O Box :7 or 707 | Tel (970) (09) 2342902/4/7/8/14 | Faximile (970) (09) 2342910 | E-mail : hgs@najah.edu

جامعة النجاح الوطنية

كلية الدراسات العليا

الرضا العلاجي والنتائج الوظيفية ذات الصلة بالصحة لمرضى مرض الشريان التاجي في فلسطين

إعداد

شروق رضوان سلامة

إشراف

الدكتورة سماح الجابي

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في الصيدلة السريرية، بكلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس – فلسطين.

الرضا العلاجي والنتائج الوظيفية ذات الصلة بالصحة لمرضى مرض الشريان التاجي من فلسطين إعداد شروق رضوان سلامة إشراف د. سماح الجابى

الخلفية: يعتبر مرض الشريان التاجي المسبب الأول للوفاة في العالم. إن المرضى بعد تعرضهم للذبحة للصدرية قد يستمروا بالمعاناة من أعراض المرض وخاصة التعب والوهن الذي قد يجعل النتائج الوظيفية ذات الصلة بالصحة أسوأ. لقد تبين أن تحسين الرضا العلاجي يؤدي إلى تحسين النتائج الوظيفية ويزيد من معدل توقع الحياة.

الأهداف: تقييم الرضا العلاجي وتقييم النتائج الوظيفية ذات الصلة بالصحة لمرضى الشريان التاجي.

المنهجية: هذه الدراسة عبارة عن دراسة وصفية تم تطبيقها في مستشفى الشهيد الدكتور خليل سليمان. وقد تم استخدام مؤشر TSQM لتقييم الرضا العلاجي ومؤشر SF-36 لتقييم النتائج الوظيفية ذات الصلة بالصحة.

النتائج: شارك في الدراسة 303 مريضا اغلبهم من الذكور (66.3%) حيث تراوحت أعمارهم من 36 إلى 93 عاماً. وكان اغلب هؤلاء المرضى يعانون من مراض مزمنة أخرى ويستخدمون العديد من الأدوية المزمنة. وأظهر مؤشر TSQM أن مستوى الرضا العلاجي مرتفع لدى غالبية المرضى حيث أن38.9% من المرضى كانوا مقتتعين بفعالية الدواء لعلاج المرض. بالإضافة إلى أن 71.9% من المرضى لم يعانوا من الآثار الجانبية للأدوية. كمان أن هناك ارتباط بين انخفاض مستوى الرضا العلاجي والتقدم في العمر والإناث وانخفاض مستوى التعليم وانخفاض مستوى الدخل والبطالة والمرضى الذين يعانون من العديد من الأمراض المزمنة ويستخدمون عدة أدوية. أما بالنسبة للنتائج الوظيفية ذا ت الصلة بالصحة فان مؤشر SF-36 أوضح أن غالبية المرضى يعانون مشاكل في الصحة الجسدية والنفسية. فقد وصف 38.3% من المرضى حالتهم الصحية بأنها لا بأس بها كمان أن91.9% من المرضى حد المرض من قدرتهم على ممارسة الأنشطة الشاقة و 60.7% من المرضى حد المرض من قدرتهم على ممارسة الأنشطة المتوسطة الجهد. كما أن 10.16% من المرضى شعروا بالإحباط في اغلب الأوقات و 21.5% من المرضى شعروا بالإحباط في بعض الأوقات. وتزداد هذه المشاكل بوجود العوامل التالية: التقدم في العمر والإناث وانخفاض مستوى التعليم وانخفاض الدخل والبطالة والمرضى الغير متزوجين والمرضى الذين يعانون من عدة أمراض مزمنة ويستخدمون العديد من الأدوية. كما خلصت هذه الدراسة أيضا إلى أن هناك علاقة بين الرضا العلاجي والنتائج الوظيفية ذات الصلة بالصحة لمرضى مرض الشريان التاجي.

الخلاصة: خلصت نتائج هذه الدراسة إلى أن أغلب مرضى الشريان التاجي لديهم مستوى عال من الرضا العلاجي ولكن في الوقت ذاته فان أغلب هؤلاء المرضى لديهم مشاكل في الصحة الجسدية والنفسية. كما أوضحت هذه الدراسة أثر العوامل الديموغرافية والسريرية على الرضا العلاجي والنتائج الوظيفية ذات الصلة بالصحة لمرضى الشريان التاجي. وأوضحت هذه الدراسة أيضا أن هناك علاقة بين الرضا العلاجي والنتائج الوظيفية ذات الصلة بالصحة لمرضى مرض الشريان التاجي. لذا يجب أن يكون مقدمو الرعاية الصحية مدركين للعوامل المصاحبة لانخفاض مستوى الرضا العلاجي وسوء النتائج الوظيفية ذات الصلة بالصحة لمرضى من أجل إجراء تدخلات مبكرة لتحسين مستوى الرضا العلاجي والنتائج الوظيفية بالصحة مرضى الشريان

