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Master of Science Thesis

**INVESTIGATION OF THE SATISFACTION LEVELS OF THE
PATIENTS WHO HAVE PERCUTANEOUS CORONARY
INTERVENTION WITH THE HEALTH SERVICES**

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PATIENTS WHO HAVE PERCUTANEOUS CORONARY
INTERVENTION WITH THE HEALTH SERVICES**

BY

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ACCEPTANCE AND APPROVAL

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ETHICAL DECLARATION

The thesis entitled “**Investigation Of The Satisfaction Levels Of The Patients Who Have Percutaneous Coronary Intervention With The Health Services**” was prepared and presented as a thesis written by me and following the scientific, academic rules, and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and me. I reached the thesis; therefore, all of the used sentences and interpretations within the work belong to me.

I declare the information mentioned above to be correct.



Signature

10/02/2023

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ABSTRACT

INVESTIGATION OF THE SATISFACTION LEVELS OF THE PATIENTS WHO HAVE PERCUTANEOUS CORONARY INTERVENTION WITH THE HEALTH SERVICES

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Master of Science in Internal Medicine Nursing

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Aim: This study was conducted to determine the satisfaction level of patients who underwent percutaneous coronary intervention with health services.

Methodology: The data of the descriptive cross-sectional study were collected at Maysan Heart Center between April 2022 and September 2022. The sample consists of 307 individuals. Data were collected with sociodemographic form and Patient Satisfaction Scale-III (PSQ-III). In the analysis of data, t-test and ANOVA tests were used in the analysis of descriptive statistics (number, percentage, mean, standard deviation) and quantitative data.

Results: 64.2% of the participants were male, 30.6% were between the ages of 55-64, 81.4% were living in rural areas, 73% were married, 25.1% were primary school graduates, 49% of them were not working, 54.4% are middle-income. Of the patients, 43.6% had coronary artery insufficiency, 7.2% were smokers, 72.6% had never been to a hospital, 78.5% had never had an operation before, and 77.5% were specialist physicians. 78.2% of them stated that they waited less than 30 minutes at the center's outpatient reception, and 72.6% of them waited less than 1 week for the procedure. The mean total score of PSQ-III was 184.57 ± 15.54 . The satisfaction level of the male participants, those living in rural areas, primary school graduates, retirees, those working in public institutions, those with a high-income level, those without chronic

diseases, those who smoked, those who had no previous hospital experience, and those who had not undergone any surgery, were higher than the other groups ($p<0.05$).

Conclusion and Recommendations: According to the results of our study, the satisfaction level of the participants from the health services is high. Nursing care directly affects the satisfaction level. It can be suggested that sample practices affecting satisfaction in this center be shared with public institutions and organizations and supported.

2023, 98 pages

Keywords: Percutaneous Coronary Intervention, Patient Satisfaction, Health Services



ÖZET

PERKÜTAN KORONER GİRİŞİM YAPILAN HASTALARIN SAĞLIK HİZMETLERİNDEN MEMNUNİYET DÜZEYLERİNİN İNCELENMESİ

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2023

Giriş: Kardiyovasküler Hastalıklar (KVH) tüm dünyada en sık görülen ve yaşamı tehdit eden kronik hastalıkların başında gelmektedir. Irak’ ta da benzer şekilde KVH sık görülmektedir. Hastalığın tanı ve tedavisinde sıkça perkütan koroner girişim uygulanmaktadır. İnvaziv girişim olduğu için riskleri olan bu işlem esnasında bireyler sıkça anksiyete, stres yaşayabilmektedir. Hastaların endişelerinin azaltıldığı, kaliteli bakımın sağlandığı bir ekip çalışmasına gereksinim vardır. Hemşireler hastalarla en çok zaman geçiren ve iletişim kuran grup oldukları için bu konudaki yaklaşımları çok önemlidir.

Amaç: Perkütan koroner girişim yapılan hastaların sağlık hizmetlerinden memnuniyet düzeylerini belirlemek amacıyla yapılmıştır.

Metodoloji: Tanımlayıcı kesitsel araştırmanın verileri Nisan 2022 ile Eylül 2022 arasında Maysan Kalp Merkezi’ nde toplanmıştır. Örneklem 307 bireyden oluşmaktadır. Veriler sosyodemografik form ve Hasta Memnuniyet Ölçeği-III (HMÖ-III) ile toplandı. Verilerin analizinde; tanımlayıcı istatistikler (sayı, yüzde, ortalama, standart sapma) ve nicel verilerin analizinde t-testi ve ANOVA testi kullanılmıştır.

Bulgular: Katılımcıların %64,2'si erkek, %30,6'sı 55-64 yaşları arasında, %81,4'ü kırsalda yaşamakta, %73'ü evli, %25,1'i ilkokul mezunu, %49,2'si çalışmıyor, %54,4'ü orta gelirlidir. Hastaların %43,6'sında koroner arter yetmezliği olduğu, %7,2'sinin sigara kullandığı, %72,6'sının hiç hastaneye gitmediği, %78,5'inin daha önce ameliyat geçirmediği, %77,5'inin uzman hekim tarafından yönlendirildiği, %78,2'si merkezin

poliklinik resepsiyonunda 30 dakikadan az sürede beklediği ve %72,6'sı işlem için 1 haftadan az beklediğini belirtmiştir. HMÖ-III toplam puan ortalaması $184,57 \pm 15,54$ 'tür. Erkek katılımcıların, kırsal kesimde yaşayanların, ilkokul mezunlarının, emeklilerin, kamu kurumunda çalışanların, gelir düzeyi yüksek olanların, kronik hastalığı olmayanların, sigara içenlerin, daha önce hastane deneyimi olmayanların ve herhangi bir ameliyat geçirmemiş olanların memnuniyet düzeyi diğer gruplardan anlamlı düzeyde yüksektir ($p < 0.05$).

Sonuç ve Öneriler: Bireylerin sağlık hizmetlerinden memnun olması hastalıkların önlenmesi ve mevcut hastalıkların yönetimi açısından çok önemlidir. Ayrıca sağlık çalışanlarının mesleki doyumunu arttırmak gibi sekonder kazanımları da olabilir. Çalışmamızın sonucuna göre katılımcıların sağlık hizmetlerinden memnuniyet düzeyi yüksek düzeydedir. Hemşirelik bakımı memnuniyet düzeyini doğrudan etkilemektedir. Bu merkezde memnuniyeti etkileyen örnek uygulamaların kamu kurum ve kuruluşlarıyla paylaşılması ve desteklenmesi önerilebilir.

2023, 98 Sayfa

Anahtar Kelimeler: Perkütan Coroner Girişim, Hasta Memnuniyeti, Sağlık Hizmetleri

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INDEX OF ABBREVIATIONS AND SYMBOLS

WHO	World Health Organization
ACC	American College of Cardiology
AHA	American Heart Association
NIH	National Institutes of Health
LAD	Left Anterior Descending
PCI	Percutaneous Coronary Intervention
ICU	Intensive Care Unit
EU	Eroupean Union
UNO	United Nations Organization
SDGs	Sustainable Development Goals
CVD	Cardiovascular Disease
CHD	Coronary Heart Diseases
EMR	Eastern Mediterranean Region
VF	Ventricular Fibrillation
pVT	paroxysmal ventricular tachycardia
OHCA	Out-of-Hospital Cardiac Arrest
CAD	Coronary Artery Disease
PSQ-III	Patient Satisfaction Questionnaire-III
IHD	Ischemic Heart Disease

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1. INTRODUCTION

People who live in low-income and middle-income nations are disproportionately more affected by cardiovascular diseases, It is regarded as the world's top cause of death and fatality. (Mortality, 2015). It was estimated that cardiovascular diseases were the cause of 29 percent of deaths worldwide and 16.7 million deaths in the year 2002. Furthermore, In terms of disability-adjusted life years, it was estimated that cardiovascular disease was responsible for 43% of worldwide morbidity and death. It is estimated that cardiovascular illness, both directly and indirectly, costs the United States of America roughly 300\$ billion yearly. This amount is equivalent to the gross domestic product of the whole African continent. It is abundantly clear that even a minute percentage of such a cost has the ability to inflict massive upon the economies and growth trajectories of African nations (World Health Organization, 2002).

In addition, developing nations account for 78 percent of all deaths worldwide and 86 percent of all deaths and morbidities caused by cardiovascular diseases (Mathers et al., 2000). More than 1 million cardiac catheterizations are conducted annually in the U.S. to detect and treat coronary heart disease and associated illnesses. Since Mason Sones first selective coronary angiography in the 1950s, catheterization has grown in scope and technology to cover coronary, peripheral vascular, and structural heart treatments. Many practices have arisen based on facts, while many traditions have been maintained based on assumptions and theories. Some of these traditions are followed without proof. The 2016 Society for Cardiovascular Angiography and Interventions expert consensus statement on optimum catheterization practices covered pre-procedure, intra-procedural, and post-procedure procedures (Virani et al., 2020).

To get diagnostic information about the heart and blood arteries, a catheterization procedure involves inserting a catheter into either the left or right side of the patient's heart. Coronary angiography is a process in which contrast material is injected into the coronary arteries. Then x-ray guidance is used to identify the coronary architecture and evaluate the degree of luminal blockage (Mitchell et al., 2020). Meanwhile is the cardiac catheterization procedure which is a frequent diagnostic technique done >2 million times

annually with negligible risk in the United States. Bleeding and hematoma are the most prevalent hazards of cardiac catheterization. Rare concerns include contrast dye response, contrast dye-induced renal dysfunction, irregular cardiac rhythm, and infection. Very uncommon complications 1 percent include heart attack, stroke, the need for urgent cardiac surgery, and death. Cardiac catheterization is a procedure that is done in a specialist x-ray room in an operating or procedure room. Although sedation may be used, the patient is typically awake throughout the process. The doctor uses a local anaesthetic to numb the blood artery's area (typically in the groin, wrist, or neck) (Kosova & Ricciardi, 2017).

The doctor uses a needle to assist in implanting a plastic tube called a sheath into the blood vessel after the spot is numb. They then insert a long, thin tube (catheter) into the patient's body and guide it toward the heart using x-ray imaging. The catheter used to draw blood samples, assess pressure, or perform a coronary angiography by injecting dye into the heart's arteries (Kosova & Ricciardi, 2017). The questions regarding physicians' conflicts of interest and the safety of patients are the ones that are the most challenging to answer. Following deliberations, surveys, interviews, and correspondence with members of the cardiology community that is supported by the ACC and the AHA, the task force concluded that access to emergency hospitalization might be delayed in freestanding catheterization laboratories, and appropriate oversight may be lacking in some of these facilities (Otto et al., 2021).

The consensus was that the most conservative and circumspect approach possible should be taken toward the more contemporary settings at this juncture. The establishment of new cardiac catheterization services or the extension of current services must be justified by patient need. Documentation of this requirement must be based on objective estimates of the number of individuals who fulfill the widely recognized criteria for laboratory testing and who are diagnosed or suspected of having cardiac illness. Concerns regarding the absence of data from prospective clinical trials on patient safety in such a group necessitate a cautious attitude toward new catheterization services, particularly those that do not have in-house cardiac surgical support (Pepine et al., 1991).

The results of noninvasive cardiac testing, such as an electrocardiogram, echocardiogram, or stress test, are typically used in conjunction with a patient's medical history and physical examination before deciding whether or not to proceed with cardiac catheterization. Typical examples of such symptoms include discomfort in the chest (also known as angina), difficulty breathing, fatigue, dizziness, or palpitations. A cardiac catheterization not only provides a map of the coronary arteries but can also help determine how well the valves located in between the chambers of the heart are functioning and how well the heart muscle is pumping blood throughout the body (Lange & Hillis, 2003).

Before undergoing major surgery, such as replacing a heart valve or another significant procedure, a cardiac catheterization provides conclusive evidence of narrowing in the coronary arteries and also has the potential to rule out the presence of coronary artery disease. If significant coronary blockages are present, angioplasty or stenting (also known as Percutaneous coronary intervention) can be performed, often during the same procedure, to improve blood flow to the heart muscle and help relieve symptoms. This is done during the procedure known as a percutaneous coronary intervention. NIH mentioned that it is also possible to execute this technique in an emergency for patients who are suspected of having a heart attack. This operation aims to detect blood clots in the coronary arteries and quickly restore blood flow to the heart muscle (NIH, 2022).

On the other hand, in the catheterization operation room, a professional team of technicians and nurses will assist in positioning the patient flat on an x-ray table. A light sedative will be administered for your comfort and relaxation. The injection sites are cleaned with antiseptic soap, and a local anaesthetic is given, generating a transient stinging sensation. Traditional access sites for left heart catheterization and coronary angiography have been the femoral artery in the leg. However, the radial artery in the wrist is increasingly utilized because it provides better patient comfort and may lower the risk of bleeding. After the region has been rendered numb, the artery or vein is accessible with a needle to permit the insertion of a thin wire and implantation of a sheath. Catheters are inserted into the heart via the sheath using x-ray guidance (Glowny & Resnic, 2012).

The important of the study revolves around the fact that heart diseases are very dangerous and are on a continuous and rapid rise of cardiovascular diseases as life-threatening

medical problem that requires a combination of treatment methods as well as skilled and professional health personnel to guarantee a successful result. Several studies examined patients' awareness and understanding of extra components of cardiac catheterization. During their stay for medical treatment, many patients suffered needless harm. Consequently policy and practice are geared toward improving patient safety and satisfaction. Furthermore, cardiac care nurses must provide therapy to patients after cardiac catheterization. Patients should be treated in accordance with established guidelines in order to prevent the spread of very deadly infectious illnesses. The significance of this research stems from the fact that it throws light on one of the critical phenomena that have begun in the nursing intervention. Patient satisfaction refers to an individual's emotions regarding clinical nurses' practices.

1.1 Objectives of the study

This study was conducted to determine the satisfaction level of patients who underwent percutaneous coronary intervention with health services.

1.2 Statement of the problem

This study was conducted to determine the satisfaction level of patients who underwent percutaneous coronary intervention with health services.

1.3 Limitations of the study

The difficulty of completing the research work facilities by government departments in the governorate due to their commitment to certain laws from the ministry. Thus, this negatively affected the study deadlines and caused a delay in the collecting samples stage. Also, the difficult period of covid-19 pandemic made communication and reaching out to patients more restricted.

2. LITERATURE REVIEW

2.1 Cardiac Catheterization

Cardiac catheterization is the insertion of a catheter into the left and/or right heart to diagnose the heart and/or blood arteries. Coronary angiography involves injecting contrast material into the coronary arteries under x-ray guidance to identify coronary architecture and assess luminal blockage. The standard for people with established or suspected coronary artery disease (Mitchell et al., 2019). It is abundantly clear that the process of cardiac catheterization has been subjected to and will continue to be subjected to significant development. Notable are the recent very quick expansion of catheterization labs and the creation of new kinds of catheterization laboratories. This pattern has persisted for many years.

Because there are no universally accepted definitions for these more modern laboratories, meaningful communication can be challenging. The new settings are of particular concern because of the questions they raise about the quality of patient care as a result of their location, mobility, organizational structure, and ownership (Al-Hijji et al., 2017). It is anticipated that cardiovascular diseases will become the primary cause of the global health burden by the year 2020, accounting for 73 percent of the entire number of deaths that occur worldwide and 56 percent of the total number of illnesses (Mathers et al., 2000). This accelerated rate of globalization has resulted in the export of risk factors from the West, such as smoke, processed foods, and lifestyles associated with a high cardiovascular disease CVD risk that is represented in television and movies (Mbewu, 1998).

2.1.1 Historic background

It is said that the Reverend Stephen Hales produced the first measurement of blood pressure and cardiac output in 1711 by using brass pipes that he placed into the venous and arterial systems of a horse. Hales is credited with this achievement. Additional research was carried out by Auguste Chauveau and Étienne-Jules Marey, who used a double cardiac catheter approach to make graphic recordings of the auricular and

ventricular pressures in a horse. These pressures were measured using a double cardiac catheter (Lewis, 1994).

Consequently, we were able to deduce the composition of mixed venous blood. Utilizing rebreathing procedures, this was accomplished, although the results were never totally satisfying. The fact that these two researchers were pulmonologists was underlined throughout their Nobel Prize acceptance speeches. Dickinson Richards's talk focused mostly on the many forms and phases of emphysema, and he also included the relatively new notion of the alveolar-capillary block, which he believed was responsible for the hypoxemia of certain lung disease patients (Richards, 1957).

Cournand and colleagues measured pulmonary artery pressure in 1945. A novel double-lumen catheter assessed the pulmonary artery and right ventricle. Catheter articles introduced the figure. Cournand's 1956 Nobel Prize speech included the following. The first double-lumen catheter and pulmonary artery tracing were published. Probably mitral stenosis. Shadow artifacts cover the top right ventricular pressure trace. The Nobel Prize figure hides the higher trace (Cournand et al., 1945). Interventional cardiology is focused on the treatment of structural heart problems using catheters. It involves catheter-based techniques like angioplasty and stenting to diagnose and treat cardiovascular disorders, including congenital and structural heart problems. Andreas Gruentzig is widely regarded as the founding father of interventional cardiology (Barton et al., 2014).

In September 1977, he became the first person to successfully conduct coronary angioplasty on an awake individual. He opened the blocked left anterior descending (LAD), a branch of the left coronary artery that is often implicated in myocardial infarction patients. Until the 1950s, Dr. Mason Sones methods, which include cutting soft tissue to view an artery or vein and passing a catheter through it, were utilized. Sven Ivar Seldinger, a radiologist, invented the percutaneous method that is now frequently utilized (Nossaman et al., 2010). Cardiac catheterization has a history in Intravenous cardiology methods and availability for coronary revascularization, notably percutaneous coronary intervention (PCI), has increased during the last several decades. The teaching is mostly based on the trainer's abilities and ideas, and these methods are usually learned via apprenticeship (Mitchell et al., 2019).

PCI, commonly known as angioplasty, is a procedure that is used to unblock clogged coronary arteries in the heart. It increases blood flow and lowers mortality in people with acute coronary syndrome. Catheterization, either femoral or radial, is used to conduct most of the operations in cardiology. The major benefits of employing the catheterization technique include a quick recovery with early ambulation, less surgical problems, lower hospital costs, and a lower risk of scarring. As a result, it improves the patient's comfort (Sasko Kedev et al., 2014).

In addition, angioplasty is currently regarded as the gold standard therapy for acute myocardial infarction. This study will examine the advantages and disadvantages of trans-radial vs trans-femoral catheterization approaches. Transfemoral is favored over trans-radial owing to the limitless repeatability of puncturing, ease of access, shorter exposure to radiation, and lower contrast (Sinha SK et al., 2016).

Right heart catheterization, which detects congenital and acquired right heart illnesses and monitors ICU patients with significant cardiovascular abnormalities, was also researched. Bedside pulmonary artery catheterization became common for critically ill patients 40 years ago. This strategy was implemented without clinical or cost-effectiveness analyses. Critically ill individuals benefit little from pulmonary artery catheterization, according to randomized, controlled research, the right heart catheter safely delivers fluids, medications, and parenteral nourishment proximal to the right auricle (atria). This article discusses right heart catheterization, which allowed researchers to analyse circulatory dynamics in healthy people and cardiovascular disease patients, and pulmonary artery catheter difficulties (Nossaman et al., 2010).

Over 1 million cardiac catheterizations are conducted yearly in the U.S. because right heart catheterization accurately and easily measures cardiac events in normal and pathological states (Greenberg et al., 2009). To include the following cardiac catheterization indications, Coronary artery disease, whether suspected or known Unstable angina, New-onset angina Ischemia without symptoms, Examination before to a major surgical surgery, Positive test for exercise tolerance, Unusual chest discomfort or a coronary spasm, Myocardial infarction, post-infarction unstable angina, failed thrombolytic Shock, Mechanical complexities, Unexpected cardiovascular death,

Congenital heart disease, Valvular heart disease Dissection of the aorta, Tamponade or pericardial constriction Cardiomyopathy (heart disease), Initial and follow-up transplant evaluation (Mahdi & Mohammad 2016).

2.2 Patient satisfaction

Patient satisfaction is a valuable indicator in examining patterns of communication, so even while patients may not be able to assess certain technical features, they represent the finest source of reliable information on clarity of explanations, helpfulness of information they are getting, obstacles to accessing treatment, or the physician's interpersonal behavior (Epstein et al., 1996).

In health care assessment methods, measuring "satisfaction" has always been central. Nonetheless, there has not always been a careful approach to its application, where this idea is known to reflect a complicated array of theoretical constructs encompassing attitudes, expectations, and perceptions, which may be both positive and negative. These ideas should be tested and evaluated using tried and true techniques. Patient satisfaction has been the focus of research for decades, yet there is no universal definition or agreement over what the phrase encompasses (Redshaw, 2008).

Patient satisfaction is a real assessment criterion for health care and, by extension, nursing care quality. It offers key resources for procedures such as monitoring patients' expectations and satisfaction with the quality of nursing care, increasing nursing service quality by identifying areas of failure, and planning and executing training that is required (Alhusban & Abualrub, 2009). Total quality management comprises professional knowledge, skill, the deployment of relevant technology, and the patients' perceptions of the treatment they have received (Özsoy et al., 2007).

An important component of hospital quality management systems in today's consumer-oriented healthcare markets is a patient-centered assessment of satisfaction with the quality of nursing care received. As a result, this data may be utilized for healthcare planning and assessment. Patients' perspectives are the finest source for informing clinicians on what is essential (Abdel Maqsood et al., 2012).

2.3 Health care services

Although the need for medical attention is growing, public funding is not keeping up. Effective resource management is essential due to ethical, social, political, and economic considerations. The economic efficiency of health care in any EU member state may be improved with better access to cost information. However, every given member state has a certain amount of room in which to make decisions (Mogyorosi & Smith, 2005).

In order to maintain cost-effectiveness, efficiency, and timeliness while delivering high-quality services, the health care industry, like any other service company, requires continuous and systematic innovation. Many managers and experts believe that cloud computing will enhance health-care services, advance health-care research, and alter the face of information technology (Kuo, 2011). Patient satisfaction scores are increasingly being touted as a measure of treatment quality, however, satisfaction levels may not account for patient disparities that may be attributed to sociodemographic variables or the kind of sickness, rather than the quality of care provided (Blenkiron & Hammill, 2003).

The term health care services refers to any services provided by a health care professional or an individual working under the supervision of a health care professional that relate to the diagnosis, prevention, or treatment of any human disease or impairment; or the evaluation or care of the health of human beings (Carlini et al., 2019). Health care services are essential for civilizations centered on patients. Health care services are intrinsically intriguing since they are services that the majority of folks do not want yet do need at some point. In addition, health care services must fulfill the physical, psychological, and social requirements of those seeking treatment (Purcărea et al., 2013).

2.4 The importance of health care services toward patient satisfaction

Measuring patient satisfaction with nursing care has the potential to improve nursing service quality by simplifying the development of care standards while tracking both outcomes and patients' perceptions of quality. Patient satisfaction is influenced by a variety of factors and may be difficult to quantify. For example, a continual scarcity of nursing personnel, resulting in an insufficient nurse-to-patient ratio to satisfy all requests,

sociodemographic variables, and the patient's health state are all factors that influence satisfaction (Buchanan et al., 2015).

In the United States, pain is the most common cause for people to seek medical attention or visit an emergency room. Pain affects individuals both acutely and chronically, therefore it's crucial to understand the treatment options for each of these conditions. The treatment of chronic pain, in particular, necessitates consideration of biological, psychological, and social factors—a biopsychosocial approach is an essential component that impacts pain perception and coping (Staudt, 2022). The Pain as the Fifth Vital Sign Initiative was set up to improve the quality of pain care in all clinical settings. The Iraqi health care system had been addressed recently as showed in figure 2.1 and elaborate the organizations and departments that consists of.

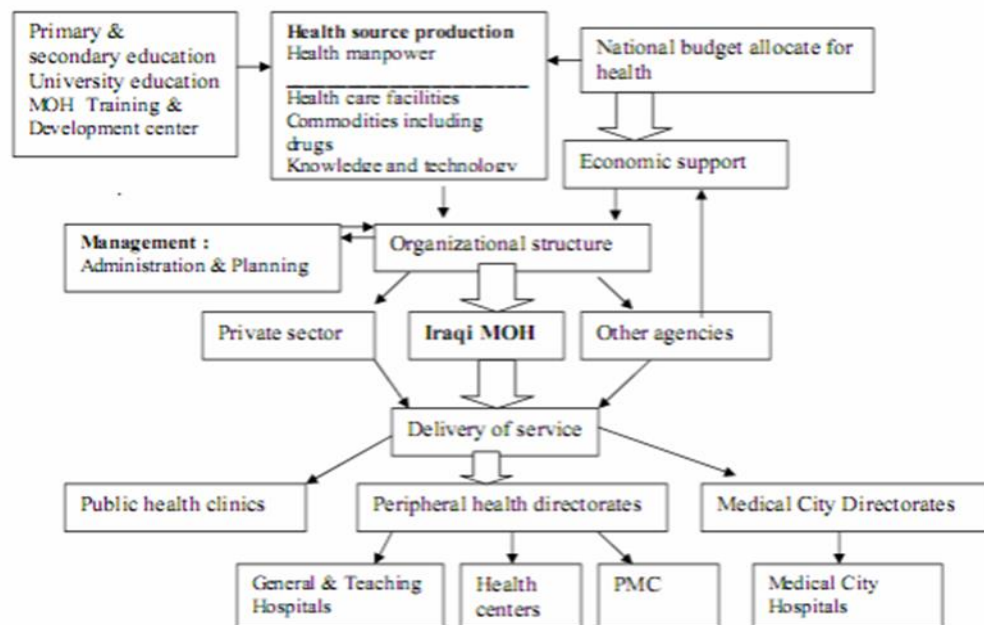


Figure 2.1: A simplification of the National Iraqi Health systems (Al-Mosawi, 2020).

The Iraqi health care system is also provide and support the fact of the importance of detect and address the problem of pain not being treated well enough for that reason many studies have been accomplished in this field. The studies looked at policy changes like making pain screenings mandatory and adding questions about pain to patient satisfaction surveys.

These policies haven't helped improve how pain is treated, and they may have contributed inadvertently to the opioid crisis.

To better measure pain, a team of professionals from different fields needs to work together and use tools that measure pain in more than one way. The inter-professional team can use these tools that measure pain in more than one way to get a full picture of the pain experience (such as psychological, spiritual, and social pain, as well as how it affects daily life) and set goals that are realistic and meet the needs of the patient. For multi-dimensional pain assessments to be used in busy clinical settings, nurses will have to take the lead. The nurses can try to make sure that the patients fill out the questionnaires before they come in. Nurses can also lead the way in using new technologies like tablets, smart phones, and mobile apps to collect patient-specific information at home or in a waiting room before a visit (Scher et al., 2018).

2.5 The effecting factors on patient satisfaction through health care services

Nursing care has an essential influence in the patient's overall happiness. The notion of patient satisfaction with nursing care may be better defined and clarified by using a nursing model (Wagner & Bear, 2009).

Ongoing study on failed care shows solid proof of the problem's pervasiveness and, more crucially, the danger it causes to patient safety. Hospital-acquired infections, discharge planning, fatalities, falls, patient movement, nutrition, and psychological and emotional support are patient outcomes documented in the literature on missing care that have been connected with the quality of care provided. Care priority and completion may be influenced by the time necessary to accomplish a care activity and the immediate impact that delaying or completing this duty may have on patients' satisfaction (Cho et al., 2017).

Due to a lack of consumer resources, developing countries are doing all they can to ensure that their people have access to basic healthcare. A vital role played by public hospitals in delivering basic health care services to residents, and the outpatient department plays a particularly important role in this. A world devoid of even the most basic health care services would be one filled with hopelessness and misery. A healthcare system widely acknowledged to be of poor quality would only lead to more pain and

unhappiness if it were implemented everywhere. The expense of healthcare would rise much more under this hypothetical system, raising patient anxiety and stress. If a healthcare facility is unable to alleviate patients' suffering, it serves no purpose. Every country's healthcare system is a linchpin for advancement since it affects so many other areas, including medicine, morality, politics, society, and business. In addition, it has a variety of monetary repercussions (Bahadori et al., 2018).

Healthcare system is one of the major sustainable development goals (SDGs) of schedule 2030 of the United Nations Organization (UNO), and it is title: "ensure healthy lives and promote well-being for all at all ages," as well as its aim to achieve global health concealment, reasonably priced medications, accessible, efficient and useful quality, and reach to quality essential healthcare for all (WHO, 2018). Without excellent health, no matter how affluent people are, nothing in life is worthwhile. The industrialized world is progressively expanding its health industries by promoting health tourism as a source of income for their national economies. Contrarily, by regularly using their services at the cost of the taxes paid by their own citizens, policymakers in developing nations, benefit the health sector of industrialized nations (Javed & Ilyas, 2018).

The patients may feel warmth if the dye is administered via the catheter to see the coronary arteries. During the examination, they will be awake and may be asked to follow directions while the x-ray camera glides over the table. The duration of cardiac catheterization is around 45 minutes depending on the degree and pattern of any coronary artery blockages discovered by coronary angiography, three frequent treatment options are medication therapy, percutaneous coronary intervention, and cardiac surgery. If percutaneous coronary intervention is provided, the interventional cardiologist will assess if a bare metal or drug-eluting stent (covered with a medicine to reduce scar tissue development) is needed. If a coronary stent is inserted, you will begin taking clopidogrel (Plavix), prasugrel (Effient), or ticagrelor (Brilinta) to prevent blood clots in the artery (Glowny & Resnic, 2012).

Typically, what to Anticipate Prior to the Procedure is patients may consume liquids until midnight the night before a catheterization. Most common drugs, including aspirin, clopidogrel, prasugrel, and ticagrelor, may be taken with a drink of water on the morning

of the exam. Certain oral anticoagulants, such as warfarin or dabigatran (Pradaxa), as well as all injectable anticoagulants, should be withheld as advised by the supervising doctor. If the patients have diabetes mellitus, they should refrain from taking oral diabetes medicines the night before and morning of the surgery, and patients may be told to alter their insulin dosage (Kern et al., 2015).

During hospitalization, patients' glucose levels will be regularly checked. If they have had an adverse response to contrast dye in the past or if their kidney function is compromised, they should inform the physician and inquire about pretreatment. Once they arrive at the hospital, they will change into a hospital gown and an intravenous line will be placed in their arm. Typically, the hair on the wrist, arm, and legs will be shaved. Staff will evaluate the medical history and answer their and the family's queries. After discussing and reviewing a document explaining the procedure's specifics and dangers, they will be asked to sign a permission form (Sorajja et al., 2021).

Following the operation, the catheter is removed from the access site. In addition to applying manual pressure, an internal plug or stitch may be employed to shut the blood artery. If the leg was utilized, the patient will be expected to lay flat with the leg extended for many hours while using a bedpan or urinal. If the wrist or arm was utilized, they may immediately get up and go to the restroom with help once they are awake and attentive. A band placed on the wrist will sustain pressure and limit wrist mobility for many hours. They may get intravenous fluids and may eat and drink as tolerated. A nurse will constantly monitor their recuperation and review your discharge instructions. If angioplasty or stenting was done, patients may be required to spend the night in the hospital (Kern et al., 2015).

Europe produced age-standardized total CVD death rates and CHD mortality rates (per 100,000 individuals, for all ages) (Nichols et al., 2013). The data comes from the most current accessible year from 2004 to 2011, with the vast majority coming from 2009 to 2011. These age-standardized figures were augmented by death rates for those under 65 years old (Grasgruber et al., 2016). Globally, cardiovascular diseases (CVD) constitute the major cause of death and disability. (Murray et al., 2012). Approximately two-thirds (63%) of early adult fatalities (15–69 years) and three-quarters (75%) of all adult deaths

are linked to non-communicable illnesses, with CVD being the leading cause according to World Health Organization. 2010. It is anticipated that by 2030, more than 23,3 million individuals would die yearly from cardiovascular disease (Mathers & Loncar, 2006).

It is projected that the death rate due to cardiovascular disease will rise more rapidly in the Eastern Mediterranean Region (EMR) in the next ten years than it would in any other worldwide area, except Africa. There is a high prevalence of cardiovascular disease risk factors among the people residing in the EMR. These risk factors include smoking, lack of physical exercise, depression, overweight and obesity, hypertension, and diabetes mellitus (Turk-Adawi et al., 2018). According to the 2015 Institute of Medicine, paper Strategies to Improve Cardiac Arrest Survival: A Time to Act, around 395 000 Americans experience an out-of-hospital cardiac arrest (OHCA) year. The survival rate ranges from 6% to 10%, resulting in >350 000 fatalities annually, making sudden cardiac arrest synonymous with sudden cardiac death. (Graham et al., 2015).

As a result of this extensive body of information, it has become clearer that patients who arrive with VF/pVT and out-of-hospital cardiac arrest (OHCA) have substantial coronary arterial disease CAD; unless otherwise mentioned, henceforth defined as 1 narrowing of coronary luminal diameter of >70 percent. Diagnostic and interventional approaches to detect and correct this possible cause of heart failure have been complicated by the mounting evidence of severe CAD in patients with VF/pVT cardiac arrest, raising important scientific challenges (Benjamin et al., 2017).

In addition, WHO predicts that the number of individuals with diabetes will quadruple by 2030, from 180 million to 360 million. In 2005, around 1,1 million individuals with diabetes died. 18 Our research revealed that 45 percent of diabetic patients and 55 percent of non-diabetic patients had a history of elevated cholesterol levels. In addition, 56,3 percent have a cholesterol history of elevation (Debakey & Gotto, 2012). More than seven million individuals lose their lives to smoking and tobacco use each year; smokers in low- and middle-income nations, in particular, have a higher risk of dying from their habit. Smoking was the cause of heart disease for 56.3% of patients, and passive smoking was the cause for 78.75% of those patients. (Abd et al., 2019).

3. MATERIAL AND METHODS

3.1 Design of the study

The descriptive cross-sectional study design was used in this study.

3.2 Setting of the Study

This study applied at Maysan Governorate specialty center of heart diseases in the private and general wards at the Maysan Heart Center in order to identify and evaluate the patient satisfaction who undergoing cardiac catheterization procedure and by applying certain questionnaire that targets the patient's lifestyle in Maysan city.

3.3 Study samples

Participants were selected by simple random sampling method. A total number is 307 patients, were admitted to the heart center wards in Maysan Heart Center. Ten percent (n=31) of the patients had been taken for the pilot study in purpose for many benefits such as knowing the exact sample size, how efficient the questionnaire is and help to exclude the factors that affect the questions form negatively from the study sample. Three patients also excluded (two patients were males apologized to participate in this study, and one female patient). By knowing the number of patients with cardiac catheterization that had been calculated annually as 1522 patient in Maysan heart center, the sample size of the thesis had been calculated by using an international equation well known globally, and they are,

- **Krejcie and Morgan** (Krejci & Morgan, (1970) .

$$n = \frac{x^2 Np(1 - p)}{e^2(N - 1) + x^2 P(1 - P)}$$

$$5846002 / 19051 = 306.86$$

n= Sample size

N = Population size

e= Margin of error

x= Chi-square of degree of freedom 1 and confidence 95% = 3.841

p = Proportion of population (if unknown, 0.5).

3.3.1 Inclusion Criteria: Patients who are aware, oriented, and steady, age must be at least 35 years old, Both male and female genders were included, the patients whom been admitted to the center in order to get treatment and performed a heart catheterization procedure on and remained at a heart center for four hours or longer.

3.3.2 Exclusion Criteria: Patients in critical condition, who are unresponsive or confused. In the meanwhile, patients with one or more impairments in the five senses are unable to react or provide a reasonable response. Patients who experiencing psychological or cognitive disorders. Also, participants were admitted to the center under 35 years of age and 0-18 yrs old had been excluded. The participants who refused to participate in the study, willingly were excluded as well.

3.4 Study Instrument

A sociodemographic and clinical features data form and the Patient Satisfaction Questionnaire III (PSQ-III) were used as data collection tools.

3.4.1 Socio-Demographic and Clinical Features of Participants:

This form was created by the researchers in order to determine the sociodemographic and clinical features data of the patients. The first part contains demographic data of the patients, as attached in (Appendix 1) which involved (7) items such as (age, gender, residence, marital status, level of education, occupational status and income level. The second part of the instrument contains (9) items (Appendix 1) enlisted as the following: (Medical diagnosis, presence of chronic illnesses, smoking, drinking alcohol, number of admissions to the center, number of previous surgeries, types of referrals, the amount of time that you spent in the reception room, the amount of time the patient spent waiting for the procedure (Mahdi & Mohammad, 2016).

3.4.2. Patient Satisfaction Questionnaire III (PSQ-III): The scale is an international instrument use to measure patients' satisfaction toward specific medical purposes around the world. This scale has an original version called the PSQ, Willis H. Ware and his

colleagues created the Patient Satisfaction Questionnaire (PSQ), which has 80 questions (Ware et al., 1976). After that two version came PSQ-1 and PSQ-II. The PSQ-III is a more modern version of the questionnaire. The PSQ-III was a 51-item questionnaire that assesses overall satisfaction with medical treatment as well as satisfaction with six areas of care: technical quality, interpersonal style, communication, financial aspects of care, time spent with doctor, and accessibility of care. It includes background information, psychometric analysis findings, and scoring criteria for measures derived from periodic satisfaction surveys. The PSQ-III contains (51) items and utilizes the 5 points of answers (strongly agree, agree, uncertain, disagree and strongly disagree) The PSQ-18 is a compact version that preserves many of the features of its full-length predecessor. The internal consistency dependability of the PSQ subscales is satisfactory. Furthermore, the equivalent PSQ-18 and PSQ-III subscales are highly correlated. When the requirement for brevity limits administration of the full-length PSQ-III, the PSQ-18 may be adequate and it published by (Marshall & Hays, (1994) (Appendix 4).

The PSQ-III is the foundation of Mahdi & Mohammed's (2016) study, which is based on the PSQ-III. because the Arabic version of used the PSQ-III and developed it by taking (14) experts' opinions and evaluations as validity and reliability of his research. Mahdi & Mohammad (2016) instrument involved 3 parts, and the third part of the patient satisfaction form involved (60) items, (8) sub-domains (access-availability-convenience, communication, financial, general satisfaction, interpersonal aspects, technical aspect, time spent with the medical team, nursing care), and his questionnaire used the 3-point answers (agree, uncertain, disagree) while the statistical distribution of patients by their responses towards all the domains Unsatisfied (mean of score 1-1.66), Unsatisfied to a specific limit (mean of score 1.67-2.33), Satisfied (mean of score 2.34 and more) (Appendix 3).

The reason Mahdi & Mohammad (2016) changed the scale is that the PSQ-III does not meet the nursing characteristics and requirements. Also, PSQ-III was made to measure patient satisfaction from a medical view. The researcher had to change Mahdi & Mohammad's (2016) scale because it has many repeated items and lacking to specific options like recommendations, especially among Maysan residents; the researcher found that the majority of people depend on the patient's experiences with healthcare providers.

The approval of the Arabic version author's had been confirmed as an academic requirement by e-mail (Appendix 2).

This study used a three parts questionnaire, the first part is socio-demographic, the second being is clinical features, and the third part involved eight subdomains. (Appendix 1) they are: communication, financial aspect, general satisfaction, interpersonal aspect, technical aspect, nursing care, recommendation aspect and preparations aspect (Mahdi & Mohammad, 2016).

A total of 46 questions were distributed throughout the subdomains as follows:

Communication sub-dimension (5 questions), Financial sub-dimension (5 questions), General satisfaction sub-dimension (7 questions), Interpersonal sub-dimension (3 questions), Technical sub-dimension (6 questions), Nursing care sub-dimension (10 questions), Recommendation sub-dimension (3 questions), Preparation sub-dimension (7 questions) (Appendix1).

As the researcher used the 46-item form, the scores ranged from 46 to 230 points came from the division of the five points of the scale and each point take 46 point and as the points goes up, the score become higher by multiplying the 46 with itself so, the satisfaction score can be considered as Good. The classification of satisfaction score was interpreted as the following: 46-82.8 Very poor, 82.9-119.6 Poor, 119.9-156.4 Moderate, 156.5-193.2 Good, and 193.3-230 Very good.

3.4.2.1 Validity & reliability

The original instrument was taken from Mahdi & Mohammad (2016) questionnaire and has been developed and modified by the researcher to meet the environmental needs and enhance the patients' responses making it easier to answer. The reason to make a developed version is that the researcher and the experts together found a few repeated questions, missing some options about the surrounding area of the patients, and found out that changing the 3-point scale to a 5-points likert scale gives the patients more freedom and conceptual flexibility to answer the questionnaire. A panel of ten experts evaluated the validity of the research instruments, each of them having more than ten years of expertise

in their specialty, to analyze the questionnaire's content on patients' satisfaction with health care services. The experts were distributed as follows:

(3) experts from the Faculty of Nursing / University of Missan.

(1) experts from the Nursing department/ College of Almanara.

(1) expert from the Faculty of Nursing / University of Karbala.

(1) expert from the Faculty of Nursing / University of Basra.

(1) expert from the Faculty of Nursing / University of Kirkuk

(3) cardiac specialists from the Ministry of Health working at Maysan heart center (Appendix 5).

Moreover, those experts were asked to examine the instrument, its content, clarity, relevance, and sufficiency; some components were excluded, while others were included after a face-to-face conversation with the expert, and the instrument was deemed legitimate after taking all comments and suggestions into account. All specialists approved the final draft. Reliability analysis is carried out to test whether the statements in the scales are consistent and whether all statements measure the same subject (Ural & Kılıç, 2006).

Table 3.1 Cronbach's Alpha Values for the Satisfaction Measurement Tool of Patients who had Cardiac Catheterization Procedure

	Cronbach's Alpha
Communication	0.717
Financial	0.726
General Satisfaction	0.807
Interpersonal	0.767
Technical	0.809
Nursing Care	0.817
Recommendations	0.806
Preparations	0.754
Total Satisfaction	0.930

Reliability analysis is carried out to test whether the statements in the scales are consistent with each other and whether all of the statements measure the same subject (Ural & Kılıç, 2006). In the reliability analysis, the Cronbach's Alpha (α) coefficient value varying between 0-1; If it is between 0.00-0.40, the scale is not reliable; It is considered to be a poorly reliable scale between 0.40 and 0.60, a good reliable scale between 0.60 and 0.80, and a highly reliable scale between 0.80 and 1.00 (Tavşancıl, 2005). When the results were examined, the Satisfaction Scale was found to be Cronbach's Alpha 0.930, and it was found to be a highly reliable scale. In addition, sub-dimension reliability was calculated in the range of 0.717-0.817, and it entered the very reliable range.

3.5 Data Collection

To collect the research data at the Maysan governorate heart center, a questionnaire was delivered to the patients who were admitted to the heart center's private and general wards and by using an interview style (face-to-face). Following the calculation of the sample size as (307). The first step is to introduce the researcher self, the thesis, and the study purposes, followed by obtaining permission from the patients if they agree to participate and ensuring that their replies will be concealed and that they may take their time and feel

free to respond. Each interview lasted between 15-20 minutes, depending on the participants' replies. The sample collection period began on (April 28th, 2022 - September 1st, 2022). The catheterization procedure consists of multiple phases, beginning with the pre-procedure, which is intended to prepare patients for the treatment and maintain their vital signs, mental stability, and fasting for eight hours prior to transferring them to the next stage. After the cardiac catheterization has been performed at the catheterization lab, the patient is transported to the recovery room until their condition has stabilized, this stage called intra-procedure. In the post-procedure period, patients are observed in the general or private wards for four hours for diagnostic catheterization and for twenty-four hours for PCI (Percutaneous Coronary Intervention) before being discharged. The interview portion of the questionnaire is administered thirty to sixty minutes prior to the patient's release. The first two floors of the facility have 25 beds with three shifts accessible 24 hours a day, seven days a week. The catheterization lab is also open seven days a week. The nursing crew for each shift consists of two nurses.

3.6 Ethical Consideration

The study was authorized by Maysan Health Directorate's research ethics committee. Before performing the research, verbal and written agreement was obtained from the administration of the Maysan Center for Heart Disease and Surgery on date of April 28th, 2022, with a document number (255) represented by the head manager and the department of nurses' manager (Appendix 6). Before the research is conducted, subject ethical agreements (consent forms) were collected from each patient at the same date on April 28th 2022, in the center who has granted written or verbal assent to participate (Appendix 1).

3.7 Data Analysis

The data obtained in the research were analysed using the SPSS (Statistical Package for Social Sciences) for Windows 25.0 program. Descriptive statistical methods (frequency, percentage, mean, standard deviation) were used while evaluating the data. In addition to

the normality tests whether the data is normally distributed or not, with histogram, Q-Q graph and box-plot graphics; skewness, and kurtosis; It can be evaluated with distribution measures such as the coefficient of variation (Hayran & Hayran, 2011).

To ensure normality, the values should be observed close to a 45-degree line in the scattering diagram of the data and should be positioned by centering the median line of the box in the box line graph (Büyüköztürk, 2011). Regular distribution fitness was checked with kurtosis skewness values. It was determined that the data showed normal distribution and independent samples t-test for two groups; test for comparison of more than two groups; for the multiple comparison tests, Bonferroni was used if variance homogeneity was not achieved. The kurtosis and skewness values of the instrument used to measure the satisfaction of patients who underwent cardiac catheterization are according to the results, it was concluded that the measurement tool and sub-dimensions had a normal distribution in the range of ± 3 ; thus, parametric tests should be used.

4. RESULTS

Table 4.1 Distribution of sociodemographic variables

Variable		(n=307)	
		n	%
Gender	Men	197	64.2
	Women	110	35.8
Age groups	35-44 years	53	17.3
	45-54 years	81	26.4
	55-64 years	94	30.6
	65 years and more	79	25.7
Residence	Rural	57	18.6
	Urban	250	81.4
Marital status	Single	29	9.4
	Married	224	73.0
	Divorced	14	4.6
	Widow	40	13.0
Educational status	The illiterate	53	17.3
	Literate people	40	13.0
	Primary school graduate	77	25.1
	Secondary high school graduate	52	16.9
	High school graduate	54	17.6
	Institutes	13	4.2
	University or Master's	18	5.9
Occupational status	Government employee	46	15.0
	Freelance	72	23.5
	Unemployed	151	49.2
	Retired	38	12.4
Income level	Low	107	34.9
	Middle	167	54.4
	High	33	10.7

The distribution of demographic characteristics of the participants is given in Table 2. 64.2% of the participants were male; 30.6% of them lived in the 55-64 age range, and 81.4% lived in rural areas. 73% of the participants are married, and 25.1% are primary school graduates. 49.2% of people are unemployed; 23.5% stated that they are Freelance. 54.4% of the participants are in the middle-income group.



Table 4.2 Distribution of clinical features (n=307)

Variable			
		n	%
Clinical features	Coronary artery insufficiency	134	43.6
	Artery Blockage	64	20.8
	Arterial stenosis	89	29.0
	M.I	14	4.6
	Heart attack	6	2.0
Chronic disease	Yes	226	73.6
	No	81	26.4
Hypertension		191	62.2
DM		113	36.8
Brain Strock		4	1.3
Smoking	Yes	145	47.2
	No	162	52.8
Drinking alcohol	Yes	1	0.3
	No	306	99.7
Previous admission to the hospital	None	223	72.6
	One time	69	22.5
	Twice	11	3.6
	Thrice	4	1.3
Number of previous surgeries	No surgery	241	78.5
	One	62	20.2
	Two	4	1.3
Referral type	Specialist physician referral	238	77.5
	Hospital referral	69	22.5
The time you spend at the center's outpatient reception	less than 30 min	240	78.2
	30-45 minutes	63	20.5
	45-60 minutes	4	1.3
Waiting time to do the procedure	less than 1 week	223	72.6
	1-4 weeks	84	27.4

43.6% of the patients had coronary artery insufficiency; 29% stated that they had arterial stenosis problems. It is seen that 73.6% of the patients have a chronic disease. It was observed that 47.2% of the patients smoked, and 0.3% used alcohol. When the number of hospital admissions was examined, it was seen that 72.6% had never been to the hospital, and 22.5% had applied to the hospital once. It was observed that 78.5% of the people had not undergone surgery before. While 77.5% of the patients stated that a specialist physician directed them, 78.2% spent less than 30 minutes at the center's outpatient reception, and 72.6% of them stated that they waited less than 1 week.



Table 4.3 PSQ III scale total and sub-dimension mean scores

	Min	Max	Average	SD
Communication	14.00	25.00	19.50	2.32
Financial	10.00	25.00	16.26	2.79
General Satisfaction	24.00	35.00	28.21	2.59
Interpersonal	9.00	15.00	12.06	1.43
Technical	16.00	30.00	23.67	2.99
Nursing Care	32.00	50.00	41.89	3.83
Recommendations	10.00	15.00	13.14	1.44
Preparations	21.00	35.00	29.84	2.79
Total Satisfaction	152.00	222.00	184.57	14.54

The descriptive statistics of the tool used to measure the satisfaction of patients who underwent cardiac catheterisation are given in Table.1 communication for sub-dimensions is 19.50 ± 2.32 ; 16.26 ± 2.79 for financial; 28.21 ± 2.59 for overall satisfaction; 12.06 ± 1.43 for interpersonal; 23.67 ± 2.99 for technique; 41.89 ± 3.83 for nursing care; 13.14 ± 1.44 for the suggestion; 29.84 ± 2.79 for preparations; for total satisfaction was calculated as 184.57 ± 15.54 .

Table 4.4 Comparison of sociodemographic variables with PSQ-III mean scores

		Communication	Financial	General Satisfaction	Interpersonal	Technical	Nursing Care	Recommendation	Preparations	Total Satisfaction
		Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD
Gender	Man	19.65±2.37	16.75±2.95	28.45±2.67	12.24±1.4	23.9±3.23	42.46±3.7	13.28±1.39	30.35±2.56	187.08±14.86
	Woman	19.25±2.22	15.38±2.24	27.77±2.39	11.75±1.44	23.25±2.46	40.88±3.86	12.87±1.48	28.93±2.98	180.08±12.84
Test değeri		1.464	4.574	2.219	2.923	1.974	3.519	2.424	4.388	4.325
p value		0.144	0.000*	0.027*	0.004*	0.049*	0.000*	0.016*	0.000*	0.000*
Age groups	35-44 years (1)	19.08±2.5	16.11±2.44	28.09±2.84	12.08±1.43	23.55±2.05	42.64±3.43	13.34±1.27	29.64±2.01	184.53±10.09
	45-54 years(2)	19.98±2.14	16.01±2.55	28.77±2.38	12.11±1.21	23.57±3.16	42.44±3.7	13.04±1.53	30.25±2.46	186.16±14.67
	55-64 years (3)	19.3±2.35	16.74±3.11	27.8±2.63	11.86±1.68	23.67±3.3	41.61±4.18	13.27±1.57	29.74±3.39	183.99±17.49
	65 years and more (4)	19.56±2.31	16.04±2.83	28.2±2.5	12.24±1.32	23.86±3.01	41.16±3.67	12.95±1.27	29.66±2.79	183.67±13.13
F test		1.990	1.380	2.097	0.920	0.167	2.591	1.185	0.808	0.472
p value		0.115	0.249	0.101	0.433	0.919	0.055	0.316	0.490	0.702
Living place	Rural	20.33±1.82	15.05±2.69	28.79±2.73	12.58±1.53	24.12±2.32	42.54±3.55	13±1.4	30.96±2.03	187.39±10.91
	Urban	19.32±2.39	16.54±2.74	28.08±2.54	11.94±1.39	23.57±3.12	41.74±3.88	13.17±1.45	29.58±2.88	183.93±15.19
t test		3.582	-3.697	1.886	2.868	1.518	1.425	-0.796	4.268	1.990
p value		0.001*	0.000*	0.060	0.005*	0.132	0.155	0.427	0.000*	0.049*
Marital status	single + divorced (1)	18.14±2.2	16.4±2.33	27.09±1.27	11.35±1.25	22.67±2.61	41.77±3.15	13±1.29	29.79±2.54	180.21±10.66
	Married (2)	19.75±2.29	16.54±2.88	28.42±2.71	12.17±1.41	23.74±2.96	42.27±3.82	13.27±1.45	30.16±2.54	186.32±14.56
	Widow (3)	19.63±2.2	14.53±2.06	28.2±2.65	12.23±1.54	24.35±3.37	39.9±3.99	12.55±1.38	28.1±3.71	179.48±16.09
F test		9.136	9.448	12.908	6.421	3.534	6.786	4.733	5.726	7.053

p value		0.000*	0.000*	0.000*	0.002*	0.030*	0.001*	0.012*	0.005*	0.002*
Bonferroni		1<2,3	3<1,2	1<2	1<2,3	1<3	3<2	3<2	3<1,2	1,3<2
Educational status	The illiterate (1)	19.47±2.1	14.23±2.41	28.32±2.09	12.32±1.16	23.±2.85	40.81±3.89	12.4±1.06	29.72±3.01	180.96±11.31
	Literate people (2)	19.4±1.96	16.65±2.12	27.65±2.52	11.4±1.32	23.08±2.75	40.55±4.01	12.63±1.82	29±3.26	180.35±15.52
	Primary school graduate (3)	19.87±2.54	15.79±2.9	28.7±2.94	12.47±1.54	24.53±3.24	42.74±3.72	13.95±1.24	30.4±2.59	188.45±15.63
	Secondary high school graduate (4)	20.06±2.06	16.69±3.13	28.19±2.28	11.98±1.34	23.25±2.9	41.94±2.95	13.2±1.18	29.77±2.43	184.9±13.62
	High school graduate (5)	19.02±2.6	17.31±1.84	28.17±2.79	12.2±1.55	23.93±2.98	43.24±4.23	13.07±1.45	30.06±2.86	187±14.63
	Institute + university + master's degree (6)	18.71±2.24	17.84±2.54	27.61±2.55	11.35±1.23	22.52±2.61	40.94±3.23	13.35±1.31	29.45±2.57	181.77±14.34
F test		2.203	13.875	1.168	5.267	2.889	4.067	12.345	1.573	3.061
p value		0.058	0.000*	0.329	0.000*	0.015*	0.002*	0.000*	0.168	0.010*
Bonferroni			1<2,3,4,5,6 ; 3<5,6		2,6<1,3	6<3	6<3	2<3,5		1<3
Occupational status	Government employee (1)	19.02±2.63	18.13±2.23	28.11±3.07	11.91±1.53	23.26±3.54	44.09±4.02	13.59±1.29	30.22±3.09	188.33±16.67
	Freelance (2)	19.64±2.62	16.65±2.89	28.61±2.9	12.22±1.59	24.11±3.25	42.03±4	13.25±1.54	30.19±2.6	186.71±16.83

	Unempl oyed (3)	19.43±2.01	15.13±2.54	28.04±2.33	11.9±1.32	23.31±2.63	41.12±3.54	12.81±1.42	29.57±2.84	181.31±12.27
	Retired (4)	20.13±2.43	17.74±1.98	28.24±2.28	12.58±1.35	24.76±2.86	42.05±3.41	13.68±1.14	29.76±2.58	188.95±12.94
F test		1.471	23.335	0.719	2.794	3.375	7.602	7.398	6.451	5.839
p value		0.227	0.000*	0.543	0.041*	0.021*	0.000*	0.000*	0.000*	0.001*
Bonferroni			3<1,2,4;2<1		3<4	3<4	2.3<1	3<4	3<1	3<1,4
Income level	Low (1)	19.36±2.1	14.87±2.9	27.92±2.12	11.99±1.31	23.37±2.64	40.65±3.7	12.5±1.26	29.19±2.92	179.84±11.91
	Middle (2)	19.48±2.33	16.43±2.11	28.24±2.71	11.96±1.49	23.53±3.08	42.05±3.67	13.43±1.42	30.07±2.58	185.19±14.59
	High (3)	20.12±2.89	19.91±1.76	29±3.16	12.82±1.36	25.33±3.2	45.12±2.99	13.73±1.35	30.79±3.06	196.82±14.75
F test		0.991	77.234	1.913	5.644	5.987	19.581	18.925	5.524	19.374
p value		0.376	0.000*	0.154	0.005*	0.003	0.000*	0.000*	0.004*	0.000*
Bonferroni			1<2,3;2<3		1,2<3	1,2<3	1<2,3;2<3	1<2,3	1<2,3	1<2,3; 2<3

*p<0,05

The comparison results of the scores obtained from the communication, financial, general satisfaction, and interpersonal dimensions according to the demographic characteristics of the participants are given in Table.5. According to the results; there is no statistically significant difference in the scores obtained from the communication dimension according to the gender of the participants ($p>0.05$). There is a statistically significant difference in the scores obtained from the financial, general satisfaction, and interpersonal dimensions according to the gender of the participants ($p<0.05$). It was seen that the scores of male participants were higher than female participants. There is no statistically significant difference in the scores obtained from communication, financial, general satisfaction, and interpersonal dimensions according to the age of the participants ($p>0.05$).

No statistically significant difference in the scores obtained from the general satisfaction dimension according to the place where the participants live ($p>0.05$). There is a statistically significant difference in the scores obtained from the communication, financial, and interpersonal dimensions according to the place where the participants live ($p<0.05$). For communication and interpersonal sub-dimensions, those living in rural areas had higher scores than those living in urban areas; For the financial sub-dimension, it was seen that those living in urban areas scored higher than those living in rural areas.

There is a statistically significant difference in the scores obtained from the communication, financial, general satisfaction, and interpersonal dimensions according to the marital status of the participants ($p<0.05$). According to the multiple comparison tests performed to find the differing groups, the scores of singles for communication and interpersonal are lower than those of married and widowed; For the financial sub-dimension, widows score lower than those who are single and married; For general satisfaction, single people have lower scores than married people. There is no statistically significant difference between the scores obtained from the dimensions of communication and general satisfaction according to the educational status of the participants ($p>0.05$).

However, there is a statistically significant difference in the scores obtained from the financial and interpersonal dimensions according to the educational status of the participants ($p<0.05$). According to the multiple comparison tests performed to find the

differing groups, illiteracy scores for the financial dimension were lower than the other groups; primary school graduates received lower scores than high school and institute graduates. For interpersonal, high school and institute graduates scored lower than illiterate and primary school graduates. There is no statistically significant difference in the scores obtained from the dimensions of communication and general satisfaction according to the participants' profession ($p>0.05$). However, it was found that there was a statistically significant difference between financial and interpersonal dimensions.

For financial, the unemployed scored lower than the government employees, Freelance, and retired; It was observed that self-employed workers received lower scores than governmental employees. For the scores obtained from the interpersonal dimension, it was seen that the unemployed received lower scores than the retired ones. There is no statistically significant difference between the scores obtained from the dimensions of communication and general satisfaction according to the income status of the participants ($p>0.05$).

However, for the financial sub-dimension, the scores of people in the low-income group are higher than those in the middle and high-income groups; It was seen that the scores of the people in the middle-income group got lower scores than those in the high-income group. For the interpersonal dimension, people in the low and middle-income groups scored lower than those in the high-income group. The comparison results of the scores obtained from the dimensions of technical, nursing care, suggestions, and preparations according to the demographic characteristics of the participants are given in the table. According to the results. There is a statistically significant difference in the scores obtained from the dimensions of technical, nursing care, suggestions, and preparations according to the gender of the participants ($p<0.05$). According to the results, it was determined that the men's scores were higher.

There is no statistically significant difference in the scores obtained from the dimensions of technical, nursing care, suggestions, and preparations according to the age of the participants ($p>0.05$). There is no statistically significant difference in the scores obtained

from the dimensions of technical, nursing care, and suggestion according to the place of residence of the participants ($p>0.05$). However, for the sub-dimension of preparations, it was seen that those living in rural areas had higher scores than those living in urban areas. There is a statistically significant difference in the scores obtained from the dimensions of technical, nursing care, suggestions, and preparations according to the marital status of the participants ($p<0.05$).

According to the multiple comparison tests, the scores of singles for the technical were lower than those of widows; widows were lower than married ones for nursing care and recommendation dimensions; For the preparations sub-dimension, it was determined that widows scored lower than those who were married and single.

There is a statistically significant difference in the scores obtained from the dimensions of technical, nursing care, and suggestion according to the educational status of the participants ($p<0.05$). For the technical and nursing care sub-dimension, the scores of the graduates of the institute compared to the primary school graduates; For the suggestion sub-dimension, the scores of illiterate students are lower than primary and high school graduates. There is a statistically significant difference in the scores obtained from the dimensions of technical, nursing care, suggestions, and preparations according to the gender of the participants ($p<0.05$).

For the technical and recommendations sub-dimension, the unemployed compared to the retired; for the sub-dimension of nursing care, Freelance and unemployed scored lower than government employees; For the preparatory sub-dimension, it was seen that the unemployed received lower scores than those who were civil servants. There is a statistically significant difference in the scores obtained from the dimensions of technical, nursing care, suggestions, and preparations according to the income level of the participants ($p<0.05$). For the technical dimension, those with low and medium incomes are lower than those with high income; those with low income for nursing care are lower than those with medium and high income; It was seen that those with middle-income status got lower scores than those with high-income status. For the suggestions and preparations

dimensions, it was observed that those with low-income levels scored lower than those with medium and high-income status.

It was determined that the total satisfaction scores showed a statistically significant difference according to the gender of the participants ($p < 0.05$). It was determined that men's scores were higher than women's scores. It was determined that the total satisfaction scores did not show a statistically significant difference according to the age of the participants ($p > 0.05$). It was determined that the total satisfaction scores showed a statistically significant difference according to the place where the participants lived ($p < 0.05$). People living in rural areas have higher satisfaction levels than those in urban areas. It was determined that the total satisfaction scores showed a statistically significant difference according to the marital status of the participants ($p < 0.05$).

According to the multiple comparison tests performed to identify the groups that differed, it was determined that the single and widowed individuals scored lower than the married ones. It was determined that the total satisfaction scores showed a statistically significant difference according to the educational status of the participants ($p < 0.05$). It was determined that illiterate students scored lower than primary school graduates. It was determined that the total satisfaction scores showed a statistically significant difference according to the participants' profession ($p < 0.05$). It was seen that those who were unemployed received lower scores than those who were government employees and retired. It was determined that the total satisfaction scores showed a statistically significant difference according to the income status of the participants ($p < 0.05$). Those with low-income status are middle and high; It was determined that those with middle-income status got lower scores than those with high-income status.

Table 4.5 Comparison of clinical features with PSQ-III mean scores

		Communication	Financial	General Satisfaction	Inter-personal	Technical	Nursing Care	Recommendation	Preparations	Total Satisfaction
		Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Clinical features	Coronary artery insufficiency (1)	19.28 $\pm$ 2.34	15.9 $\pm$ 2.76	28.2 $\pm$ 2.75	12.28 $\pm$ 1.4	24.04 $\pm$ 3.17	42.02 $\pm$ 3.74	13.25 $\pm$ 1.35	29.84 $\pm$ 2.55	184.83 $\pm$ 14.18
	Artery blockage (2)	19.89 $\pm$ 1.9	16.14 $\pm$ 2.4	28.36 $\pm$ 2.39	11.84 $\pm$ 1.39	23.52 $\pm$ 2.59	42.75 $\pm$ 3.65	13.27 $\pm$ 1.36	30.14 $\pm$ 1.72	185.91 $\pm$ 12.22
	Arterial stenosis (3)	19.4 $\pm$ 2.63	16.85 $\pm$ 3.02	27.96 $\pm$ 2.55	11.79 $\pm$ 1.56	23.09 $\pm$ 2.87	40.62 $\pm$ 3.68	12.78 $\pm$ 1.47	29.34 $\pm$ 3.49	181.82 $\pm$ 16.12
	Other (4)	20.2 $\pm$ 1.85	16.4 $\pm$ 2.82	28.9 $\pm$ 2.27	12.50 $\pm$ 0.83	24.3 $\pm$ 3.23	43.95 $\pm$ 4.07	13.55 $\pm$ 1.85	31.05 $\pm$ 3.28	190.85 $\pm$ 14.66
F test		1.655	2.157	0.832	3.350	2.165	6.685	2.950	2.493	2.536
p value		0.177	0.093	0.477	0.019*	0.092	0.000*	0.033*	0.060	0.057
Bonferroni										3 < 4
Chronic disease	Yes	19.38 $\pm$ 2.28	15.92 $\pm$ 2.68	28.03 $\pm$ 2.48	12.01 $\pm$ 1.44	23.56 $\pm$ 2.87	41.72 $\pm$ 3.9	13.2 $\pm$ 1.38	29.62 $\pm$ 2.82	183.44 $\pm$ 3.65
	No	19.85 $\pm$ 2.43	17.22 $\pm$ 2.89	28.72 $\pm$ 2.83	12.2 $\pm$ 1.43	23.98 $\pm$ 3.32	42.38 $\pm$ 3.59	12.96 $\pm$ 1.58	30.43 $\pm$ 2.64	187.74 $\pm$ 16.46
t test		-1.570	-3.690	-1.943	-0.992	-0.996	-1.345	1.270	-2.248	-2.107
p value		0.118	0.000*	0.054	0.322	0.321	0.180	0.205	0.025*	0.037*
Smoking	Yes	19.86 $\pm$ 2.39	16.73 $\pm$ 2.98	28.69 $\pm$ 2.69	12.41 $\pm$ 1.45	24.17 $\pm$ 3.14	42.31 $\pm$ 3.81	13.1 $\pm$ 1.4	30.5 $\pm$ 2.44	187.77 $\pm$ 15.03
	No	19.19 $\pm$ 2.23	15.84 $\pm$ 2.54	27.78 $\pm$ 2.42	11.75 $\pm$ 1.35	23.22 $\pm$ 2.79	41.52 $\pm$ 3.82	13.17 $\pm$ 1.48	29.25 $\pm$ 2.96	181.71 $\pm$ 13.5
t test		2.520	2.827	3.127	4.174	2.790	1.816	-0.384	4.049	3.723
p value		0.012*	0.005*	0.002*	0.000*	0.006*	0.070	0.701	0.000*	0.000*
Admission to the hospital	None (1)	19.59 $\pm$ 2.29	16.66 $\pm$ 2.71	28.32 $\pm$ 2.55	12.17 $\pm$ 1.39	23.88 $\pm$ 2.92	42.39 $\pm$ 3.44	13.29 $\pm$ 1.43	30.27 $\pm$ 2.37	186.59 $\pm$ 13.29
	One time (2)	19.65 $\pm$ 2.45	14.9 $\pm$ 2.59	28.36 $\pm$ 2.65	12.12 $\pm$ 1.32	23.72 $\pm$ 3.11	41.07 $\pm$ 4.12	12.97 $\pm$ 1.26	29.36 $\pm$ 3.16	182.16 $\pm$ 15.39

	twice + thrice (3)	17.6±1.24	16.53±3.02	25.8±1.66	10.13±1.3	20.27±0.46	38.2±5.31	11.6±1.45	25.53±3.02	165.67± 13.98
F test		16.265	11.343	7.111	15.663	10.950	11.168	10.997	18.915	17.477
p value		0.000*	0.000*	0.001*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Bonferroni		3<1,2	2<1,3	3<1,2	3<1,2	3<1,2	3<1,2	3<1,2	3<1,2	3<1,2
Number of previous surgeries	No surgery	19.69±2.28	16.45±2.74	28.44±2.47	12.17±1.38	23.75±3.06	41.94±3.61	13.23±1.44	30.19±2.64	185.86± 14.52
	One + two	18.82±2.37	15.56±2.88	27.38±2.85	11.67±1.57	23.38±2.74	41.71±4.56	12.8±1.38	28.55±2.98	179.86± 13.73
t test		2.738	2.317	2.978	2.549	0.895	0.378	2.142	4.361	3.008
p value		0.007*	0.021*	0.003*	0.011*	0.371	0.706	0.033*	0.000*	0.003*
Referral type	Specialist physician referral	19.55±2.3	16.44±2.71	28.19±2.55	12.08±1.39	23.69±3.08	41.94±3.8	13.24±1.36	29.95±2.67	185.09± 14.54
	Hospital referral	19.35±2.42	15.64±2.98	28.28±2.73	11.99±1.59	23.61±2.67	41.72±3.95	12.78±1.64	29.43±3.18	182.8±1 4.53
t test		0.637	2.119	-0.244	0.502	0.196	0.413	2.109	1.360	1.153
p value		0.525	0.035*	0.808	0.616	0.845	0.680	0.037*	0.175	0.250
The time you spend at the center's outpatient t reception	less than 30 min	19.7±2.21	16.13±2.76	28.26±2.43	12.15±1.33	23.93±2.92	42.02±3.67	13.15±1.38	29.93±2.68	185.26± 13.9
	more than 30 minutes	18.79±2.57	16.75±2.85	28.03±3.09	11.75±1.73	22.76±3.1	41.43±4.35	13.07±1.63	29.52±3.19	182.1±1 6.5
t test		2.877	-1.616	0.558	1.773	2.847	1.112	0.400	1.043	1.576
p value		0.004*	0.107	0.578	0.080	0.005*	0.267	0.689	0.298	0.116
Waiting time to do the procedur e	less than 1 week	19.53±2.28	16.34±2.72	28.21±2.62	12.04±1.38	23.77±2.9	41.78±3.95	13.14±1.43	29.71±2.92	184.52±1 4.72
	1-4 weeks	19.43±2.45	16.06±2.97	28.2±2.52	12.12±1.59	23.42±3.24	42.18±3.5	13.13±1.46	30.18±2.41	184.71±1 4.13
t test		0.353	0.775	0.026	-0.401	0.914	-0.803	0.044	-1.434	-0.104
p value		0.725	0.439	0.980	0.689	0.362	0.423	0.965	0.153	0.917

It was determined that communication, financial, and general satisfaction scores did not show a statistically significant difference according to the participant's clinical features ($p>0.05$). It was determined that the scores obtained from the interpersonal dimension showed a statistically significant difference according to the clinical features of the participants, and it was determined that those with arterial stenosis had lower scores than those with other problems (MI and heart attack). It was determined that communication, general satisfaction, and interpersonal scores did not show a statistically significant difference according to whether the participants had a chronic disease or not ($p>0.05$).

However, for the financial sub-dimension, it was determined that the scores of those without chronic disease were higher than those with chronic disease. It was determined that communication, financial, general satisfaction, and interpersonal scores showed a statistically significant difference according to the smoking status of the participants ($p<0.05$). It was determined that smokers had higher scores than non-smokers. It was determined that there was a statistically significant difference between the participants' communication, financial, general satisfaction, and interpersonal scores according to the state of admission to the hospital ($p<0.05$). According to the multiple comparison tests performed to determine the groups that differ in terms of communication, general satisfaction, and interpersonal sub-dimensions, it was determined that those who applied to the hospital two or three times had higher scores than those who applied less and did not. It was determined that those who were admitted to the hospital once had lower scores than those who did not apply at all and those who applied more than twice.

It was determined that there was a statistically significant difference in the participants' communication, financial, general satisfaction, and interpersonal scores compared to the number of previous surgeries ($p<0.05$). It was determined that the scores of those who did not have surgery were higher than those who had surgery. It was determined that the participants' communication, general satisfaction, and interpersonal scores did not show a statistically significant difference according to the type of referral ($p>0.05$). However, for the financial sub-dimension, it was determined that those who came with the guidance of specialist physicians received higher scores than those who came with hospital referrals.

It was determined that the participants' financial, general satisfaction, and interpersonal scores did not show a statistically significant difference according to the time spent at the outpatient reception ($p>0.05$). For the communication sub-dimension, it was determined that there was a statistically significant difference, and those who waited less than 30 minutes scored higher. It was determined that the participants' communication, financial, general satisfaction, and interpersonal scores did not show a statistically significant difference according to the expected time to perform the transaction ($p>0.05$). It was determined that the technical and preparation scores did not show a statistically significant difference according to the participants' clinical features ($p>0.05$).

However, it was determined that there was a statistically significant difference for technical and preparations sub-dimensions, and those with arterial stenosis scored lower than the other group (MI and heart attack). It was determined that there was no statistically significant difference between the participants' technical, nursing care, and suggestion scores according to whether they had a chronic disease ($p>0.05$). However, it was found that there was a statistically significant difference for the sub-dimension of preparations, and those without chronic disease scored higher. It was determined that the nursing care and recommendations scores did not show a statistically significant difference according to the smoking status of the participants ($p>0.05$).

However, it was determined that there was a statistically significant difference according to smoking status for technical and preparation scores, and smokers got higher scores. It was determined that the scores of technical, nursing care, recommendations, and preparations showed a statistically significant difference according to the state of applying to the hospital ($p<0.05$). According to the results, it was determined that those who applied to two or more hospitals scored lower than those who never applied to the hospital and those who went to the hospital once. It was determined that the participants' technical and nursing care scores showed a statistically significant difference according to the number of previous surgeries ($p<0.05$). However, it was found that there was a statistically significant difference for the suggestions and preparations sub-dimensions, and those who did not have surgery scored higher than those who had surgery once or twice.

It was determined that the technical, nursing care and preparation scores did not show a statistically significant difference according to the type of referral of the participants ($p>0.05$). However, there is a statistically significant difference for the recommendation sub-dimension, and the scores of those who come with the referral of specialist physicians are higher. It was determined that the scores of nursing care, recommendation, and preparations did not show a statistically significant difference according to the time spent by the participants at the outpatient clinic reception ($p>0.05$). It was determined that there was a statistically significant difference for the technical sub-dimension, and those who waited less than 30 minutes scored higher than those who waited more than 30 minutes. It was determined that the technical, nursing care, recommendation, and preparation scores did not show a statistically significant difference according to the time the participants waited for the procedure ($p>0.05$).

It was determined that the total satisfaction scores did not show a statistically significant difference according to the participants' clinical features ($p>0.05$). It was determined that the total satisfaction scores showed a statistically significant difference according to whether the participants had a chronic disease ($p<0.05$). It was determined that those who stated they did not have a chronic disease had higher scores. It was determined that the total satisfaction scores showed a statistically significant difference according to the smoking status of the participants ($p<0.05$). It was determined that smokers had higher satisfaction scores than non-smokers. It was determined that the total satisfaction scores showed a statistically significant difference according to the hospital admission status of the participants ($p<0.05$). It was determined that those who applied to the hospital two or three times had lower scores than those who applied less.

It was determined that the total satisfaction scores of the participants showed a statistically significant difference according to the number of previous surgeries ($p<0.05$). It was determined that the scores of those who did not have surgery before were higher than those who have had surgery. It was determined that the total satisfaction scores of the participants did not show a statistically significant difference according to the type of referral ($p>0.05$). It was determined that the total satisfaction scores of the participants did not show a statistically significant difference according to the waiting time at the outpatient clinic reception ($p>0.05$). It was determined that the total satisfaction scores

did not show a statistically significant difference according to the waiting time of the participants to perform the procedure ($p>0.05$).



5. DISCUSSION

This research provides an ordered explanation and a somewhat grounded discussion of the findings, including references to relevant research and articles.

5.1. Participants' Socio-Demographic Information

In terms of age, the majority of them, 30.6%, are between the ages of 55 and 64, as seen in (table 4.1 Distribution of sociodemographic variables). This finding is corroborated by Wu et al., (2014) and Oliveira-Filho et al. (2012), who found that the research sample's average age is 52 years old. Furthermore, according to the findings of Zarei et al. (2015), the average age of the patients was 48 ± 16.9 . Finally, Pini et al., (2014) findings show that the majority of patients are (55-65) years old, which supports the current research outcome.

Throughout the present study's data analysis, the study results demonstrate that the majority of the participants, 64.2%, were male, as shown in (table 4.1 Distribution of sociodemographic variables). This finding is consistent with the findings of Mahdi & Mohammed (2016), who claimed that the majority of patients with ischemic heart disease are men. The researcher thinks that this conclusion pertains to gender variations in the bodily system and physiology, as well as in role-playing and duties in life. On the other hand, and from a unique perspective, Iraqi men continue to suffer from a lack of qualified medical personnel and, in some places, security issues, severely affecting healthcare services after decades of war and sanctions, in addition to the complex life condition and elevated poor level people ratio.

In terms of residence situation, 81.4% of them reside in rural regions. This research contradicts that. Furthermore, Abdullateef, (2011). agrees with the current research's findings, discovering that 78.8% of his study sample was urban. When we compare the urban residential area to the rural residential area, it is clear that living in rural areas with walkable green spaces positively influenced the longevity of rural citizens regardless of their age, sex, marital status, baseline functional status, and socioeconomic status, in addition to natural foods, fruits, and vegetarianism. In comparison to rural residents, city dwellers worry about smoky weather, dangerous fast food, and psychological stress.

In terms of marital status, the bulk of the research participants, 73%, were married. This finding is consistent with the findings of Elgazzar & Keshk (2018) and Alemu et al., (2014), who discovered that a substantial proportion of research participants are married. Because the majority of respondents in this survey are elderly, the expected result is that

the majority of them are married. Furthermore, according to Iraqi society's conventions and traditions, most nurses want stability after leaving their jobs.

In terms of educational attainment, the majority of patients (25.1%), with the highest proportion having completed elementary school. This finding is consistent with the findings of Ying Chair et al., (2012), who found that (39.8%) of research individuals had completed elementary school. Another research by Giannakopoulou et al. (2010) found that 31.2% of patients were elementary school graduates, whereas 23.7% were high school graduates. Only 20.4% of them have a university diploma. Furthermore, Ko et al. (2009) disagree with these findings when they discover that the bulk of the research participants is from University or above.

Regarding occupational status, 49.2% of individuals are unemployed, while 23.5% are self-employed. Al-Hussein (2015) found that 52% of the study sample is unemployed, whereas Shinde and Alazzawi, (2020) found that 60% of research respondents are unemployed. These results back up the current study's conclusions on occupational status. When it comes to monthly income, the research findings suggest that 54.4% of participants fall into the middle-income category. Sreenivas and Babu (2012), agree with the current research result by revealing that the majority of study participants had a poor and inadequate monthly income alongside with Ahmed et al., (2017).

5.2 Clinical features of participants

The present study's findings indicated that (43.6%) of the patients had coronary artery insufficiency, as shown in (table 4.2 Distribution of clinical features). In recent years, the incidence has increased. IHD has grown more prevalent than at any previous moment in history, particularly in Iraq. and it resulted in a return to difficult living conditions as a result of political issues, security issues (terrorism), the inefficiency of health care services, polluted environment, lack of access for good food, and, lastly, a demanding lifestyle.

Sekhar et al., (2016) identified that chronic illnesses such as hypertension and diabetes mellitus are present in 73.6% of patients. Every patient who required a cardiac catheterization was at risk, with hypertension and diabetes mellitus regarded as risk factors for coronary artery disease.

Concerning smoking and drinking alcohol, the research sample showed that (47.2%) of the patients smoked and 0.3% drank alcohol; this item is connected to the psychological issue as well as the lack of law legislation in conservative Islamic countries.

The number of hospital admissions was reviewed in relation to admittance, and it was discovered that 72.6% had never been to the hospital. This was owing to the patient's financial situation.

In terms of past procedures, this research found that 78.5% of patients had never had surgery previously. AL-Biaty (2014)'s survey backs up this conclusion by confirming that several of their research participants had never undergone surgery before.

Finally, regarding how much time patients spend in the reception area, the present research emphasizes that a large percentage of study participants spent more than 60 minutes in the reception area. In line with previous research findings, Joshi et al. (2013) recognized in their study of patient satisfaction that the time it took to come to the hospital and meet with a doctor was too lengthy. In contrast, Qadri et al. (2012) discovered that the percentage of respondents who said their waiting time was great, very good, or good was 18%, 32%, and 20%, respectively. The majority of people had to wait 15-30 minutes before being called into the consultation room. 32.4% of patients stated they were not required to wait and were contacted immediately.

5.3 Discussion of Comparison of sociodemographic variables with PSQ-III mean scores

Table (4.4 Comparison of sociodemographic variables with PSQ-III mean scores) compares the scores derived from the communication, financial, general satisfaction, and interpersonal components based on the demographic characteristics of the participants. According to the findings, there is no statistically significant variation in the communication dimension scores based on the gender of the participants, location of the participants, educational status of the participants, the profession of the participants, and financial status ($p>0.05$) as shown in the (Table 4.4 Comparison of sociodemographic variables with PSQ-III mean scores).

This research supports Tang (2013) found no significant link between age, gender, marital status, and patient satisfaction, while Mukhlif (2015) found a non-significant relationship between gender, degree of education, profession, and patient satisfaction

concerning cardiac catheterization. Afzal et al., (2014) research findings support this conclusion, emphasizing that there was no statistically significant difference between patients' monthly income and satisfaction with healthcare services of ($p < 0.001$).

Furthermore, Bener and Ghuloum (2013) disagree with the findings by stating that a significant link was seen between patients' satisfaction with healthcare services and their monthly income at the ($p < 0.01$). In 2015, Ganasegeran and colleagues performed a patient satisfaction survey. Its findings show a substantial difference between patients' satisfaction with healthcare services and their monthly income, with a p-value of ($p < 0.001$). Finally, according to the p-value, Al-Hussein and Khaleel (2015) research validates the present study results by revealing a substantial relationship between patients' monthly income and their degree of satisfaction with healthcare services ($p < 0.00$).

Regarding the communication, financial, and interpersonal aspects based on where participants reside ($p < 0.05$), there is a statistically significant difference in the scores derived from the communication, financial, and interpersonal dimensions based on where participants live. For the communicative and interpersonal sub-dimensions, those living in rural areas outperformed those living in urban areas; for the financial sub-dimension, those living in urban areas outperformed those living in rural areas. There is also a statistically significant difference in the communication, financial, general happiness, and interpersonal aspects based on the participant's married status ($p < 0.05$). Al-Hussein and Khaleel's (2015) research backs up existing results by revealing a substantial According to the p-value, there is a comparison between patients' monthly income and their degree of satisfaction with healthcare services ($p < 0.00$).

In 2015, Ganasegeran and colleagues performed a patient satisfaction survey. Its findings show a substantial relationship between patients' satisfaction with healthcare services and socio-demographic factors such as marital status.

There is no statistically significant difference in the ratings derived from the aspects of communication and overall satisfaction based on the participants' educational level ($p > 0.05$). This conclusion accords with the results of Mandokhailet al., (2007), who found no significant association between patients' happiness and all of their demographic and clinical data, and these findings complement the existing research findings.

There is no statistically significant variation in the ratings derived from the communication and general satisfaction aspects based on the profession of the participants ($p>0.05$). This finding is consistent with the findings of Syed Shuja et al. (2012), who discovered substantial variations related to participants' employment.

There is no statistically significant difference between the scores obtained from the dimensions of Tang, (2013); their study findings show that there was no significant relationship between age, gender, marital status, and patient satisfaction, and Mukhlif, (2015) reveals that there was a non-significant relationship between gender, level of education, occupation, and patient satisfaction.

Communication and overall satisfaction differed according to participants' financial level ($p>0.05$). The ratings received from the aspects of technical, nursing care, advice, and preparations vary statistically and corresponded to the participants' gender ($p<0.05$), where the men's scores were found to be higher, according to the findings. Joy (2011) finds the same findings as the previous research and finds a non-significant relationship between patients' happiness and all demographic and clinical parameters except gender.

According to the age of the participants, there is no statistically significant variation in the ratings derived from the aspects of technical, nursing care, suggestions, and preparations ($p>0.05$). This research agrees that there was a non-significant relationship between patient satisfaction and their overall demographic and clinical variables of Ibrahim (2008).

There is no statistically significant difference in the scores derived from the technical aspects. According to Singh et al. (2013), 56% of the participating patients were happy with doctor communication, and 82% were confident in nurse communication, which is consistent with the current research results. Nursing care and suggestions differed according to the participants' residence ($p>0.05$).

According to the participants' financial position, there is a statistically significant difference in the ratings derived from the aspects of technical, nursing care, advice, and preparations ($p<0.05$). According to the survey results, the majority of respondents are happy with it in terms of financial issues. This outcome comes at a time when the majority of the research population needs a sufficient monthly income. According to the researchers, the cardiac facility where the current study is being conducted is governmental, and Iraq, when compared to others, has low healthcare service funds. The

cardiac catheterization technique is costly across the globe, yet one Iraqi cardiac hospital does it at an affordable cost when compared to others.

The overall satisfaction ratings revealed a statistically significant difference based on the gender of the participants ($p < 0.05$). Men's scores were found to be higher than women's results. Al Sharif (2008) performed a study of patient satisfaction on gender association in Iraq. They come to the conclusion that Iraqi participants are generally pleased with the healthcare services offered in both the public and private sectors. Private clinics are available.

Usually the most common form of health care, but, since public (governmental) clinics provide free treatments, poorer families use them more. This study's findings are consistent with previous research.

It was discovered that there was no statistically significant variation in overall satisfaction ratings based on the age of the participants ($p > 0.05$). According to the results of Mahdi & Mohammad, (2016), there is no notable link between age, gender, marital status, and patient satisfaction.

5.4 Comparison of clinical features with PSQ-III mean scores

It was established that there was no statistically significant difference in communication, financial, or overall satisfaction levels based on the participants' medical status ($p > 0.05$) in the (table 4.5 Comparison of clinical features with PSQ-III mean scores). These findings, according to AL-Biaty (2014), are compatible with several scientific data proving that the risk of ischemic heart disease rises with age. This fact is connected to a number of causes, one of which is that regular physical activity is more difficult for persons of advanced age, which is related to the physical deterioration of the ageism phenomena. He also adds that the risk of hypertension and diabetes mellitus grows with age, increasing the probability of ischemic heart disease in the elderly population.

It was concluded that there was a statistically significant difference in the ratings of technical, nursing care, suggestions, and preparations based on the status of applying to the hospital ($p < 0.05$). According to the findings, people who visited two or more hospitals scored worse than those who were never engaged and only visited the hospital once. According to the findings of Soleimanpour et al. (2011), pleased replies to the comfort and pleasantness of the waiting room were 81.3%, overall cheerfulness 86.5%, and overall cleanliness 77.8%.

The number of prior operations predicted a statistically significant difference in the participants' technical and nursing care assessments ($p < 0.05$). However, a statistically significant difference was discovered for the suggestions and preparations sub-dimensions, with those who did not have surgery scoring better than those who had surgery once or twice. Merkouris et al., (2013) research findings concur with the current study findings, revealing that the majority of survey respondents were mostly happy with the technical components of healthcare services.

It was concluded that there was no statistically significant difference in the technical, nursing care, and preparation ratings based on the kind of referral of the participants ($p > 0.05$). However, there is a statistically significant difference for the recommendation sub-dimension, and those that come with reference to a specialist physician get better ratings. Several studies on patient satisfaction with nursing care have been undertaken. For example, Villarruz-Sulit et al., (2009) research results agree with the current study in suggesting that the majority of patients were happy with this area of healthcare services. Furthermore, Soliman et al. (2015) discovered that the majority of the research samples were happy with the nursing care area.

The time spent by participants at the outpatient clinic reception did not reveal a statistically significant difference in terms of nurse care, advice, and preparations ($P > 0.05$). There was a statistically significant difference for the technical sub-dimension, with those who waited less than 30 minutes outperforming those who waited more than 30 minutes. According to Modebe et al. (2014), patient satisfaction was a critical part of the quality of care and played an important role in assessing the efficacy and quality of healthcare services provided to the public. They also discovered that the majority of patients were happy with the nursing care and other healthcare services offered by public hospitals.

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This research provides an ordered explanation and a relatively derived discussion of the findings, including references to relevant literature and research.

1. Sociodemographic data showed that men are the highest score alongside with aged 55-65, urban people, married, primary school graduates, unemployed, and having middle income of participants, been affecting patient satisfaction level that was approved statistically.
2. The satisfaction level were calculated as Good with an average (184.57).
3. Other factors like occupational status and income level have a direct effect on patient satisfaction.
4. The clinical features showed coronary artery insufficiency, present chronic diseases (HT and DM), non-smokers, non-drinkers, not having previous admission to the center, not having the previous procedure, also being referred by the physician recorded the highest values.
5. less than 30 min spent in the reception, less than 1 week waiting for the procedure to be done was the highest and the majority of the scores.
6. The findings approve that there is a connection between certain domains such as technical, nursing care, recommendation, and preparation according to gender. There is a statistically significant relationship between technical, nursing care, recommendation, and preparation according to marital status.
7. These domains also can relate statistically to occupational status and income level. Interpersonal has a connection with patient satisfaction through the clinical features of the patient who has coronary artery insufficiency than arterial stenosis. Smokers have high satisfaction than non-smokers.
8. Communication, financial, general satisfaction, and interpersonal have an effect on smokers; how many times the patient was admitted to the center before, the waiting time in the reception, and how many previous surgeries the patient had done.

6.2 Recommendation

Based on the findings of the investigation, the study suggests the following:

1. With suitable solutions targeted at the perfection of healthcare services, relevant, comprehensive population-based surveys may be carried out to gauge the satisfaction of cardiac catheterization patients with the healthcare services offered at cardiac centers.
2. In addition to nursing schools and health institutions, the relevance of patient satisfaction must be addressed in relation to healthcare services in the curriculum of medical and nursing organizations and educational establishments.
3. In order to improve the health provider staff's response to the policies that should be employed to improve the patients' happiness with health care services, health awareness that is pointed out by local and worldwide resources should be used appropriately.
4. Working in tandem with the Ministry of Health and other interested and concerned agencies to identify ways to improve residents' quality of life and lower the prevalence of chronic illnesses.
5. Implement educational and practical programs that better the skills of the doctors and nursing staff in cardiac centers about factors that impact patient satisfaction and make it apparent what the dangers are if not prevent any foreseeable harmful consequences.
6. The governorate administration and health ministries should be aware of the negative repercussions of not providing the catheterization laboratory with adequate supplies and equipment and how those consequences would impact the residents of Maysan city, privately and and find solutions for shortage of the staff, generally .

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APPENDIXES:

APPENDIX 1: Questionnaire form

APPENDIX 2: The Iraqi researcher's consent for using the patient satisfaction form.

APPENDIX 3: The Arabic version of the M. Mahdi scale.

APPENDIX 4: The Patient satisfaction questionnaire (PSQ-III).

APPENDIX 5: Lists of experts.

APPENDIX 6: The Iraqi ethical committee approval of collecting samples (Arabic version).

APPENDIX 6: The Iraqi ethical committee approval of collecting samples (Turkish version).

APPENDIX 1: Questionnaire form (English and Arabic versions, respectively)











APPENDIX 2: The Iraqi researcher's consent

APPENDIX 3: The Arabic version of the Mohammed Mahdi research's scale at Al-Najaf Al-ashraf Heart Center.













APPENDIX 4: The Patient satisfaction questionnaire (PSQ-III).











APPENDIX 5: Lists of experts.







APPENDIX 6: The Iraqi ethical committee approved collecting samples (Arabic version).























APPENDIX 6: The Iraqi ethical committee approval of collecting samples (Turkish version).

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