

## Health Needs for Patients Undergoing Cardiac Catheterization

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### ABSTRACT

**Background:** Cardiac catheterization is a procedure used to diagnose and treat various forms of heart and vascular disease. **Aim:** This study is aimed to assess the health needs for patients undergoing cardiac catheterization. **Design:** A descriptive research design was conducted in this study. **Sample:** A convenient sample of newly patients from both genders undergoing cardiac catheterization (68 patients) from the Cardiac Catheterization Unit at the General Port-Said Hospital in Port-Said City. **Tools:** A structure interview tool consists of four parts: a) Demographic data and Patients' medical history. b) Health needs pre cardiac catheterization. c) Health needs during cardiac catheterization. d) Health needs post cardiac catheterization. **Results:** The results revealed that there is a high statistically significant relation between total health needs before, during and after cardiac catheterization. **Conclusion:** There was no statistically significant relation between patients needs before cardiac catheterization and their demographic characteristics as gender, hospital stay, education, job and social status, there was statistically significant relation between patients needs during cardiac catheterization and their demographic characteristics regarding to gender, job and social status, also there was statistically significant relation between patients' needs after cardiac catheterization and their demographic characteristics regarding to the hospital stay and social status. **Recommendations:** The study recommended that conducting educational and training program for nurses regarding care of patients undergoing cardiac catheterization.

**Keywords:** *Health needs, patients, cardiac catheterization*

## INTRODUCTION

Cardiac catheterization has been widely used as a diagnostic measure or a treatment modality for specific cardiac or vascular defect. Although many noninvasive diagnostic techniques have been commonly used, cardiac catheterization still remains the most definitive procedure and currently is considered the gold standard for the diagnosis, evaluation, and treatment of cardiac diseases (*Edmond & Strange, 2008*).

Coronary angiography is defined as injection of radio-opaque dyes into cardiac chambers, coronary arteries or great vessels is injected through the catheter so that X-ray videos of the valves as well as determination of ventricular contractility. It allows a physician to check the internal blood pressure on the heart, assess blood supply, view the coronary arteries on the surface of the heart and check the level of oxygen in the blood (*Gallo, Hudak & Fontaine, 2005*).

Cardiac catheterization is a procedure that produces special "pictures" of the arteries that supply blood to the heart (the coronary arteries) and of the main pumping chamber of the heart (the left ventricle). These images can reveal if one or more of the coronary arteries is blocked or if the left ventricle is functioning properly and pumping blood throughout the body. It additional obtained information about the pressure in the different chambers of the heart and about whether the heart valves are working normally or are leaky or stenotic (*Davidson & Bonow, 2011*).

Cardiac catheterization has reduced morbidity as a result of cardiovascular disease. Otherwise, these invasive procedures are generally safe, but not free of complications, the risk of any major complication from a heart catheterization is one in 1,000. The most common complication is a disturbance in heart rhythm which is why the patient's heart rhythm is monitored continuously before, during, and after the procedure. Other possible complications include blood clots, heart attack, damage to the accessed artery, or hematoma (collection of blood under the skin). Every effort is made to minimize the risk of any complication, and the staff is fully prepared to treat any complication could be occurred (*Applegate, Sacrinty & Kutcher, 2008*).

In addition, the risk of major complications is under 1% major complications that may include cerebrovascular stroke, cardiac perforation, and cardiac arrhythmias.

Patients with comorbid conditions such as left ventricular dysfunction, valvular heart disease, a prior coronary artery bypass grafting (CABG), congestive heart failure, and renal insufficiency are at higher risk for complications (*Kern, 2013*).

Patients undergoing cardiac catheterization have various needs such as physical, psychological and social needs. Physical needs include preparation of the insertion site, while the psychological need for expressing and reassurance before cardiac catheterization. Patients also have the need for information about the feeling may experience during the procedure, potential complications and post procedure care. Critical care nurse play very important role in preventing complications as bleeding, retroperitoneal hematoma, false aneurysm, myocardial infarction, particularly for high risk patients. This can be achieved through meeting patient's needs and providing planned effective nursing care that requires specialized medical and nursing interventions that should be carried out by skilled staff to improve patient outcomes and minimize mortality and morbidity rates following cardiac catheterization (*Harper, 2007*).

### **Significant of the study:**

Cardiac catheterization is considered one of the methods for diagnosis and treatment of coronary and heart diseases are carried for by millions of cases annually. Although cardiac catheterization has reduced morbidity and mortality for cardiovascular disease, it may result in a variety of complications. These complications ranged from minor problems to major problems that may require immediate interventional or surgical attention (*Shea, 2016*). Therefore, health needs assessment for patients at the entrance to a cardiac catheterization should provide evidence based nursing interventions, meet the patient's needs, and decrease the level of anxiety for patients undergoing cardiac catheterization. Also assess health needs for patients post cardiac catheterization aimed to assist the patients to recover successfully, increase patient safety, and reduce the risk of complications following cardiac catheterization, in addition to identifying patients at risk for complications that occur after a catheterization.

### **AIM OF THE STUDY**

This study aims to assess health needs of patients undergoing cardiac catheterization.

**Research question**

What are the health needs of patients undergoing cardiac catheterization?

**SUBJECTS AND METHODS:****Research Design:**

A descriptive research design was used for this study.

**TECHNICAL DESIGN:****Study Setting**

This study was conducted in the cardiac catheterization unit in the general Port- Said hospital in Port Said city.

**Study Subjects:**

A convenient sample of newly patients undergoing cardiac catheterization from both sexes admitted to the cardiac catheterization unit within 6 months (68 patients).

**TOOL FOR DATA COLLECTION:**

A structure interview tool was used for data collection; it was adapted from (*Elsayed 2010*) to assess health needs of patients undergoing cardiac catheterization. This tool consists of four parts:

**PART (I): Patient's demographic characteristics and medical history:**

It consisted of demographic characteristics and medical history of patients under study as (age, gender, level of education, job, social status, current medication, causes of cardiac catheterization, history of associated diseases).

**PART (II): Observational checklist regarding patients' needs pre cardiac catheterization:**

Checklist was intended for assessment of patient's needs pre cardiac catheterization. It included the following parts:

1. Physical needs (12 steps) and done by a nurse, doctor or patient or their involvement together for simplify the steps of procedure.
2. Psychological needs (7 steps) and done by a nurse or doctor or their involvement together for simplify the steps of procedure.
3. Safety needs (4 steps) and done by a nurse or doctor or their involvement together for simplify the steps of procedure.
4. Information needs (8 steps) and done by a nurse or doctor or their involvement together for simplify the steps of procedure.

**PART (III): Observational checklist regarding patients' needs during cardiac catheterization:**

Assess patient's needs during cardiac catheterization .It included the following parts:

1. Psychological needs (2 steps) and done by whom nurse or doctor or their involvement together for simplify the steps of procedure.
2. Physical safety needs (1 step) and done by whom nurse or doctor or their involvement together for simplify the steps of procedure.
3. Information needs (7 steps) and done by whom nurse or doctor or their involvement together for simplify the steps of procedure.

**PART (IV): Observational checklist regarding patients' needs after cardiac catheterization:**

Assess patient's needs after cardiac catheterization .It included the following parts:

1. Physiological needs, which divided as the following items:
  - Hemodynamic stability (8 steps) and done by whom nurse or doctor or their involvement together for simplify the steps of procedure.
  - Giving fluid (3steps) and done by whom nurse, doctor or patient or their involvement together.
  - Oxygen administration by doctors orders and done by whom nurse or doctor or their involvement together.
  - Early ambulation after 6-8 hours using (3steps) and done by whom nurse, doctor or patient or their involvement together.
2. Psychological safety (5 steps) and done by whom nurse or doctor or their involvement together for simplify the steps of procedure.
3. Physical safety (8 steps) and done by whom nurse, doctor or patient or their involvement together.
4. Information needs after discharge (6 steps) and done by whom nurse or doctor or their involvement together for simplify the steps of procedure

**Scoring System:**

Giving a score of (one) for the step done correctly, and giving (zero) for the step not done or not applicable and whom by (nurse, physician and patient). The total health

needs before, during and after cardiac catheterization was considered adequate if the percent score was 60% or more and inadequate if less than 60%.

## **OPERATIONAL DESIGN**

The operational design consists of the preparatory phase, pilot study, validity and reliability, and fieldwork.

### **The Preparatory Phase**

It includes reviews of recent, relevant and related to literature, different national and international studies and theoretical knowledge of various aspects of the problems using books, articles, internet, periodical magazines.

### **Pilot study:**

A Pilot study was carried out on 10 % of the study sample to test clarify and feasibility of the tools and to estimate the time needed for the interview, and then they were excluded from the sample.

### **Content Validity:**

The tool was ascertained by 9 jury of expertise from Nursing and Medical staff who reviewed the tools for clarifying, relevance, comprehensiveness, understandable and applicable.

### **Reliability:**

Reliability of the tool was checked by testing for its internal consistency using a Cronbach Alpha reliability test. It was found that (0.84) physical needs before cardiac catheterization, (0.71) psychological needs before cardiac catheterization,(0.74) patient needs for information before cardiac catheterization, (0.52) physical and psychological patients needs during cardiac catheterization,(0.58) patients' needs for information during cardiac catheterization, (0.67) physical needs after cardiac catheterization, (0.75) psychological needs after cardiac catheterization and (0.59) physical safety after cardiac catheterization.

### **Field Work:**

- After obtaining the official permission from directors of the mentioned settings to conduct the study and finalization of the tool, the investigator met each patient

individually and the purpose of the study was explained. An oral consent of each eligible patient was obtained before their participation, techniques to assure and verify results.

- Participants were 68 patients obtained by using a convenience sampling technique; the researcher included all patients undergoing cardiac catheterization at the previous mentioned hospital. Both male and female patients with first done cardiac catheterization procedure. Data collection extended to six months from November, 2015 to April, 2016 during the morning shifts from 8:00 am to 2:00 pm and afternoon shifts from 2:00 to 8:00 pm for 1 to 2 days per week (Saturday, Tuesday).
- Time needed for filing structured interview sheet ranged from admitting patients to cardiac catheterization unit to discharge at least (6 hours) for each patient. The study was conducted on 68 patients using an observation checklist.

#### **ADMINISTRATIVE DESIGN:**

An official letter permission was taken from the Dean of the Faculty of Nursing in Port- Said University to the Directors of the General Port- Said hospital to obtain their cooperation and permission. Written approval was obtained to conduct the study after explaining the purpose and objective of the study.

#### **Ethical Considerations:**

The aim of the study was explained to the director of the previous mentioned hospital before asking patients to participate in the study. An oral consent of each eligible patient was obtained before their participation and ensures confidentiality of the collected data. The researcher emphasized that participation was absolutely voluntary and each patient has the right to withdraw from the study at any time with no explained reasons.

#### **STATISTICAL DESIGN:**

##### **Statistical analysis:**

The raw data were managed and coded. Then, the data were entered into SPSS system files (SPSS package version 18) using a personal computer. Output drafts were checked against the revised code data for typing and spelling mistakes. Finally, analysis and interpretation of data were conducted to realize the study aim.

## RESULT":

**Table (1):** Shows the demographic characteristics. It was observed that, the mean age of the study sample was ranged from  $56.51 \pm 8.25$ . Regarding gender, 72.1% of them were male. Concerning social status, 70.6% of them was married, in relation to educational level, 42.6% & 10.3% had secondary school, read and write respectively. As regards to the job, 39.7% & 14.7% of them were free of works and house wife respectively. The same table also illustrates that, 79.4% of them had 6 hours hospital stay, while 20.6% of them had 24 hours.

**Table (2):** Total scores of the health needs before, during and after cardiac catheterization clarifies that, there was a highly statistically significant relation ( $p < 0.001$ ) between total health needs before, during and after cardiac catheterization.

**Figure (1):** Shows the total health needs before the cardiac catheterization it was showed that 67.6% had adequate total needs and 32.4% inadequate needs.

**Figure (2):** Shows the total health needs during cardiac catheterization that 77.9% had adequate total needs and 22.1% inadequate needs.

**Figure (3):** Shows the total health needs after cardiac catheterization that, 70.6% had adequate total needs and 29.4% inadequate needs.

**Table (3):** Relation between patients' needs before cardiac catheterization and their demographic characteristics shows that, there was no statistically significant relation between patient's needs before cardiac catheterization and their demographic characteristics, e.g.; gender, hospital stay, education, job, and social status.

**Table (4):** Relation between patients' needs during cardiac catheterization and their demographic characteristics this table illustrates that, there was statistically significant relation between patients' needs during cardiac catheterization and their demographic characteristics regarding to gender, job, social status whereas ( $p \leq 0.05$ ).

**Table (5):** Relation between patients' needs after cardiac catheterization and their demographic characteristics this table illustrates that, there was statistically significant relation between patients' needs after cardiac catheterization and their demographic characteristics regarding to the hospital stay and social status whereas ( $p \leq 0.05$ ).



**Table (1):** Demographic characteristics of the studied patients (n = 68)

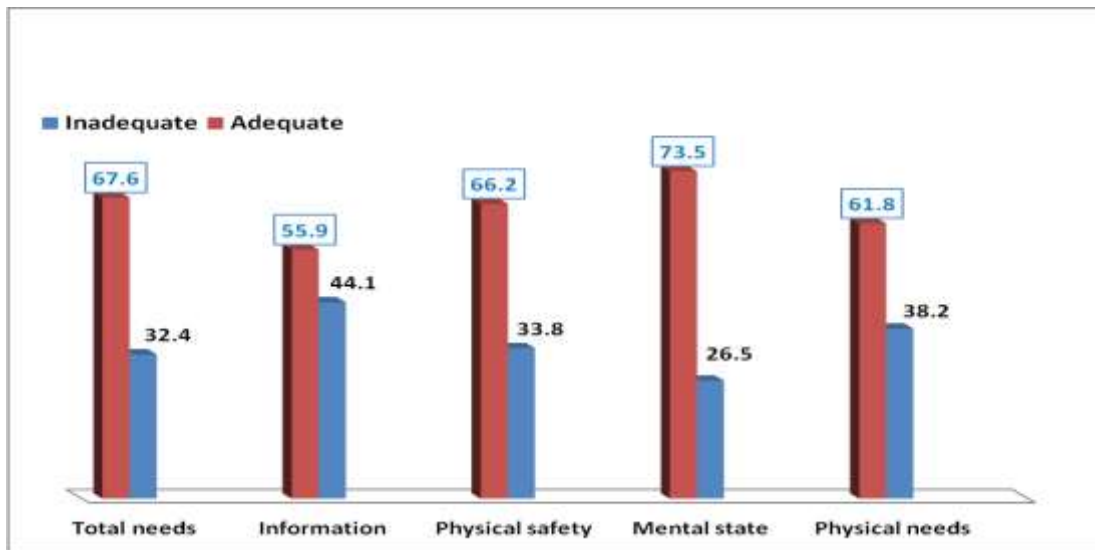
Items	Frequency n=68	Percentage %
<b>Age: Mean ± SD</b>	56.51 ±8.25	
<b>Gender:</b>		
Male	49	72.1
Female	19	27.9
<b>Hospital stays per hours:</b>		
6	54	79.4
24	14	20.6
<b>Education</b>		
University	9	13.2
Secondary	29	42.6
Basic education	10	14.7
Read and write	7	10.3
Illiterate	13	19.1
<b>Job</b>		
Employee	20	29.4
Free works	27	39.7
Housewife	10	14.7
Not work	11	16.2
<b>Social Status</b>		
Single	2	2.9
Married	48	70.6
Divorce	3	4.4
Widower /widow	15	22.1

**Table (2):** Total scores of the health needs before, during and after cardiac catheterization among the studied patients (n = 68)

Patients' needs	Inadequate		Adequate		t-test	p-value
	No	%	No	%		
<b>Before catheterization</b>	22	32.4	46	67.6	131.89	0.000**
<b>During catheterization</b>	15	22.1	53	77.9		
<b>After catheterization</b>	20	29.4	48	70.6		

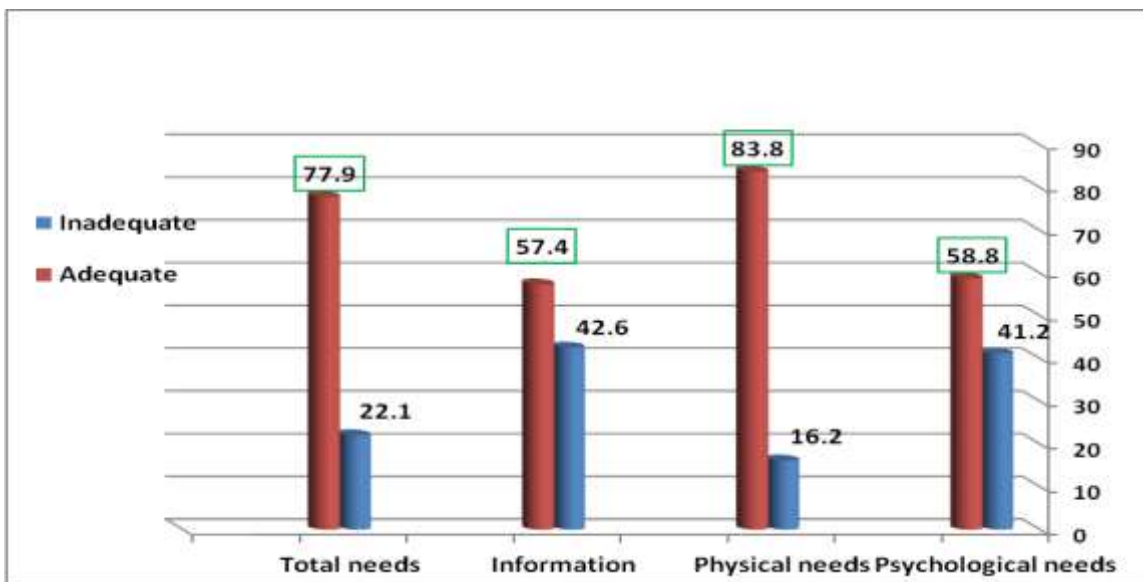
\*\* Significant difference in means,  $p < 0.001$ .

**Figure (1):** Total score of the health needs before the cardiac catheterization of the studied patients (n = 68)



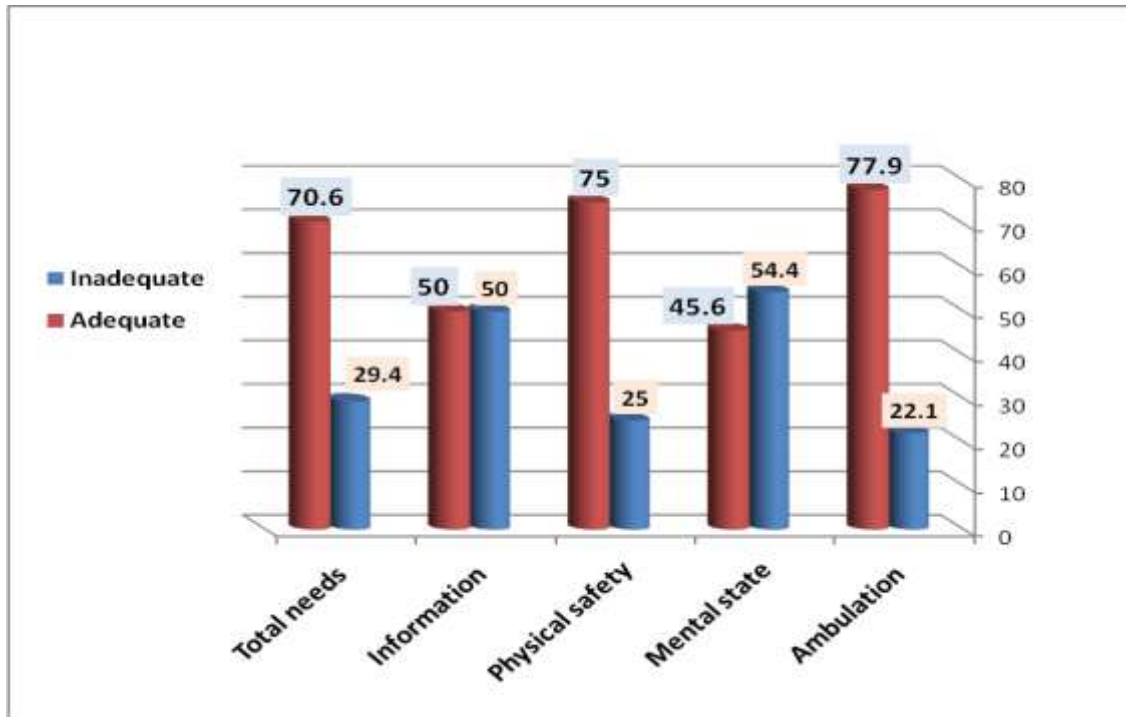
- Adequate ( $\geq 60\%$ )
- Inadequate ( $< 60\%$ )

**Figure (2):** Total score of the health needs during the cardiac catheterization of the studied patients (n = 68)



- Adequate ( $\geq 60\%$ )
- Inadequate ( $< 60\%$ )

**Figure (3):** Total score of the health needs after the cardiac catheterization of the studied patients (n = 68)



- Adequate (≥60%)
- Inadequate (<60%)

**Table (3):** Relation between patients' needs before cardiac catheterization and their demographic characteristics (n=68)

Items	Patients' needs before catheterization				X <sup>2</sup>	p-value
	Inadequate		Adequate			
	No	%	No	%		
<b>Gender:</b>						
Male	18	81.8	31	67.4	1.53	0.215
Female	4	18.2	15	32.6		
<b>Hospital stay per hours:</b>					0.889	0.346
6	16	72.7	38	82.6		
24	6	27.3	8	17.4		
<b>Education</b>					1.41	0.847
University	4	18.2	5	10.9		
Secondary	10	45.5	19	41.3		
Basic education	2	9.1	8	17.4		
Read and write	2	9.1	5	10.9		
Illiterate	4	18.2	9	19.6		
<b>Job</b>	7	31.8	13	28.3	1.46	0.691

Employee	7	31.8	20	43.5		
Free works	3	13.6	7	15.2		
House wife	5	22.7	6	13.0		
Not work						
<b>Social Status</b>						
Single	1	4.5	1	2.2		
Married	15	68.2	33	71.7	2.14	0.542
Divorce	2	9.1	1	2.2		
Widower/widow	4	18.2	11	23.9		

**Table (4):** Relation between patients' needs during cardiac catheterization and their demographic characteristics

Items	Patients' needs during catheterization				X <sup>2</sup>	p-value
	Inadequate		Adequate			
	No	%	No	%		
<b>Gender:</b>						
Male	11	73.3	38	71.7	6.91	0.026*
Female	4	26.7	15	28.3		
<b>Hospital stay per hours:</b>						
6	12	80.0	42	79.2	0.004	0.949
24	3	20.0	11	20.8		
<b>Education</b>						
University	2	13.3	7	13.2	2.77	0.596
Secondary	5	33.3	24	45.3		
Basic education	4	26.7	6	11.3		
Read and write	2	13.3	5	9.4		
Illiterate	2	13.3	11	20.8		
<b>Job</b>						
Employee	4	26.7	16	30.2	3.05	0.052*
Free works	8	53.3	19	35.8		
House wife	2	13.3	8	15.1		
Not work	1	6.7	10	18.9		
<b>Social Status</b>						
Single	1	6.7	1	1.9	8.86	0.031*
Married	12	80.0	36	67.9		
Divorce	2	13.3	1	1.9		
Widower/widow	0	0.0	15	28.3		

\*Significant at the ( $p \leq 0.05$ )

**Table (5):** Relation between patients' needs after cardiac catheterization and their demographic characteristics

Items	Patients' needs after catheterization				X <sup>2</sup>	p-value
	Inadequate		Adequate			
	No	%	No	%		
<b>Gender:</b>						
Male	15	75.0	34	70.8	0.122	0.727
Female	5	25.0	14	29.2		
<b>Hospital stay per hours:</b>						
6	13	65.0	41	85.4	3.59	0.058*
24	7	35.0	7	14.6		
<b>Education</b>						
University	2	10.0	7	14.6	1.05	0.901
Secondary	9	45.0	20	41.7		
Basic education	4	20.0	6	12.5		
Read and write	2	10.0	5	10.4		
Illiterate	3	15.0	10	20.8		
<b>Job</b>						
Employee	7	35.0	13	27.1	2.69	0.442
Free works	9	45.0	18	37.5		
House wife	3	15.0	7	14.6		
Not work	1	5.0	10	20.8		
<b>Social Status</b>						
Single	0	0.0	2	4.2	5.06	0.016*
Married	16	80.0	32	66.7		
Divorce	2	10.0	1	2.1		
Widower/widow	2	10.0	13	27.1		

\*Significant at the ( $p \leq .05$ )

## DISCUSSION:

In the present study, findings regarding patient's characteristics revealed that, mean age of the studied patients was  $56.51 \pm 8.25$ . This finding was consistent with (*Andrea et al., 2010*) who reported that cardiac catheterization founded among patients over 50 years, where the aging of the patients has led to an increase in coronary heart disease.

As regards the gender and marital status of this study most patients were male and married. These findings are supported by (*Quintana et al., 2009*) who found that the male patients were at high risk than female patients for cardiac catheterization, this can be attributed to the higher exposure to life stress. (*Mahgoub et al., 2013*) who reported that the most patients undergoing cardiac catheterization procedures are male and married.

Concerning the level of education, the present study reveals that more than one third of the studied patients had secondary educated level. It is supported by (*Norton, 2012 & Diab, 2011*) who mentioned that uneducated and less educated people had decreased awareness toward the follow up routine and were more exposed to accidental cardiac disorders.

Regarding to study subject's job, the present findings revealed that more than one third of the sample had free work, These findings go on the same line with (*Uzun et al., 2008*) who added that the life threatening consequences because of not getting appropriate treatment due to no income or low income and individuals with higher annual income may be optimistic about getting the best possible treatment for their heart problems and had better quality of life.

In relation to total health needs before, during and after cardiac catheterization, the present study revealed that there is a highly statistically significant correlation between before, during, and after cardiac catheterization, these findings were agreed with (*Molazem et al., 2011*) who founded that a positive correlation between before, during and after cardiac catheterization have a positive effect on patient outcomes.

As regards to the relation between patient needs before cardiac catheterization and their demographic data characteristics, the current study showed that there is no

significant correlation between patient needs before cardiac catheterization and demographic characteristics e.g. gender, job, social status, hospital stay, and educational level. This result was agreed with the (*American Heart Association, 2007*) which reported that no statistically significant correlation between patient needs before cardiac catheterization and their demographic characteristics because the characteristics are variable in each patient and do not affect the health needs of patients before cardiac catheterization.

As regards to the relation between patient health needs during cardiac catheterization and their demographic data characteristics, the present study revealed that there is a significant correlation between patient gender, social status, job and their health needs during cardiac catheterization. These results were agreeing with (*Allender et al., 2008*) who mentioned that, male, and married patients had a higher percent of needs than female. In addition to (*Uzun et al., 2008*) who noted that, patients with poor job conditions had the highest percentage of needs during a cardiac catheterization procedure.

In relation to patient's needs after cardiac catheterization and their demographic data characteristics, the present study revealed that there is a significant correlation between patient's needs after cardiac catheterization and their demographic characteristics regarding to the hospital stay and social status. This result agrees with (*Allender et al., 2008*) who reported that, married patients had the highest percentage of needs after the cardiac catheterization procedure. In addition to (*Chambers et al., 2009*) who explored that, the length of the patient stay in the hospital will depend on his condition, and patients need to stay 6 hrs. (Diagnostic cardiac catheterization) or 24 hrs if he/she have an additional procedure, such as stent placement.

## **CONCLUSION:**

Overall the study has indicated that, more than half of the studied patients got health needs before cardiac catheterization whereas, the highest needs were psychological, followed by physical safety, physical need, and then later educational needs. Moreover, three fourth of the studied patients got health needs during cardiac catheterization. Whereas, the highest needs were physical need, followed by psychological and then later educational needs. In addition, most of the studied patients got health needs after cardiac catheterization whereas, the highest needs were

physiological needs followed by safety, information needs and then later psychological needs.

There was no statistically significant relation between patients needs before cardiac catheterization and their demographic characteristics as; gender, hospital stay, education, job, and social status.

There was statistically significant relation between patients' needs during cardiac catheterization and their demographic characteristics regarding to gender, job and social status.

There was statistically significant relation between patients needs after cardiac catheterization and their demographic characteristics regarding to the hospital stay and social status.

## **RECOMMENDATIONS:**

### ***For patients:***

- Provide physical preparation, diagnostic evaluation and psychological support for patients before cardiac catheterization to detect any abnormalities, prevent the occurrence of complications and alleviate patients stress, anxiety after the cardiac catheterization procedure.
- Continuous assessment of the informational needs of the patients and provide them with booklets, videos to reinforce learning regarding cardiac catheterization procedures.
- Provide information discharge as care of the operative site, reporting of warning signs and symptoms, medication (dose, route, time, name and side effect of medications).

### ***For nurses:***

- Conducting educational and training program for nurses regarding care of patients undergoing cardiac catheterization.

### ***For health sector or hospitals:***

- For hospital managers it is important to implement effective policies for caring of patients undergoing cardiac catheterization.



- Availability of clinical nursing practice guidelines regarding cardiac catheterization in hospitals to ensure optimal patient care.

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## الإحتياجات الصحية للمرضى الخاضعين لقسطرة القلب

هدى عبده محمود زغلول، أ.م.د. إيمان صالح محمد شاهين، أ.م.د. شيرين أحمد أحمد  
قلادة

بكلوريوس تمريض كلية التمريض – جامعة قناة السويس، أستاذ مساعد تمريض الباطني والجراحي كلية  
التمريض جامعة بورسعيد ، أستاذ مساعد تمريض الباطني والجراحي كلية التمريض جامعة بورسعيد

## الخلاصة

قسطرة القلب هي إجراء تستخدم لتشخيص وعلاج مختلف أمراض القلب و الأوعية الدموية. تهدف هذه الدراسة الى تقييم الإحتياجات الصحية للصحية للمرضى الذين يخضعون لقسطرة القلب ولقد أجريت دراسة وصفية في مستشفى بورسعيد العام بوحدة قسطرة القلب في مدينة بورسعيد علي 68 من المرضى الجدد من الجنسين. وقد جمعت تلك المعلومات عن طريق استمارة إستبيان، تتكون من أربعة أجزاء كالتالي: الجزء الأول: استمارة إستبيان لتقييم البيانات الاجتماعية والتاريخ الطبي للمريض ، الجزء الثاني: استمارة لتقييم الإحتياجات الصحية للمريض قبل قسطرة القلب، الجزء الثالث: استمارة لتقييم الإحتياجات الصحية للمريض أثناء قسطرة القلب، الجزء الرابع: استمارة لتقييم الإحتياجات الصحية للمريض بعد قسطرة القلب . وقد أظهرت النتائج أن توجد علاقة أو فروق عالية ذات دلالة إحصائية بين إحتياجات المرضى قبل، أثناء وبعد قسطرة القلب. أيضا أظهرت الدراسة أن لا توجد علاقة أو فروق ذات دلالة إحصائية بين إحتياجات المرضى قبل قسطرة القلب فيما يتعلق بالخصائص الديموجرافية لديهم من حيث الجنس، السن، الوظيفة، مستوى التعليم، توجد علاقة أو فروق ذات دلالة إحصائية بين إحتياجات المرضى أثناء قسطرة القلب فيما يتعلق بالخصائص الديموجرافية لديهم من حيث الجنس، الوظيفة، الحالة الاجتماعية، أيضا أظهرت الدراسة أن توجد علاقة أو فروق ذات دلالة إحصائية بين إحتياجات المرضى بعد قسطرة القلب فيما يتعلق بالخصائص الديموجرافية لديهم من حيث إقامة المستشفى، الحالة الاجتماعية. وقد أوصت الدراسة بضرورة عمل برنامج تعليمي وتدريبى للتمريض العاملين في وحدة قسطرة القلب لتوفير الإحتياجات الصحية للمرضى الذين يخضعون لقسطرة القلب.

الكلمات المرشدة: الإحتياجات الصحية، للمرضى الخاضعين، قسطرة القلب