The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Maged Hesham Ahmed Nabil [1] **Sahar Mahmoud Sayed Ahmad** [2], **Aliaa Mohammed Othman Elafandy** [3]

Bcs. Nursing sciences Faculty of Nursing Zagazig University [1]

Assistant Professor of Community Health Nursing, Faculty of Nursing Helwan University [2] [3]

Email: maged.hesham5@gmail.com

Abstract

Background: Coronary artery disease (CAD) is a cardiovascular disease which has been found to be the leading cause of death in both developed and developing countries. **Aim** to assess the experience of coronary artery disease patients with stents at Zagazig university hospital's cardiac outpatients' clinic. **Design:** Descriptive research design was applied in this study. **Sample:** A convenient sample was used 86 CAD, patients with stents. **Setting:** cardiac outpatient clinics at Zagazig university hospital, Zagazig city, Sharkia Governorate, Egypt. **Tools of data collection**: one tool was used for data collection that consisted of **5** parts: **1st:** Demographic data. **2nd**: Past and current medical history. **3rd** , **4th** and **5th:** coronary artery disease patients' knowledge, reported practice and attitude level regarding stent. **Result:** 62.8% of the studied patients had unsatisfactory level of total knowledge regarding stents, 57.0% of the studied patients had inadequate level of total reported practice regarding stents, and 51.2% of the studied patients had positive attitude regarding stents. **Conclusion:** There was statistically significant relation between patients' knowledge, reported practice and attitude about stents and their demographic characteristics as educational level. While, there were no statistically significant relation with their gender, marital status. The study revealed that, there were highly statistically significant positive correlation between total knowledge, total reported practice and total attitude regarding stents among the studied patients at (P= < 0.01). **Recommendations:** Disseminating health education program to increase cardiac patients' awareness regarding CAD and stent

Keywords: Cardiac Outpatients Clinic, Coronary Artery Disease, Experience, Patients, Stents, Zagazig University Hospital

Introduction

Coronary artery disease (CAD) is very common in both developed and developing worlds. In one study, it was estimated that CAD represented 2.2% of the overall global burden of disease and 32.7% of cardiovascular diseases. It costs over 200 billion dollars annually to the health care system in the United States of America (USA). It is estimated that 7.6% of men and 5.0% of women in the USA lived with coronary artery disease from 2009 to 2012 based on the national health survey done by the American Heart Association (AHA). This amount to 15.5 million Americans afflicted with the disease during this time *(Brown et al., 2022).*

Coronary stents are expandable tubular metallic devices which are introduced into the coronary arteries that demonstrate stenosis due to an underlying atherosclerosis disease. This revascularization procedure is termed as a percutaneous coronary intervention (PCI) or coronary angioplasty with stent placement. The

5349

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

coronary stent was first developed in the 1980s and has continued to evolve in terms of shape, structure, and the material used within them *(D'Aloia et al., 2019).*

Experience of cardiac patients with stents are different. Patients who have received a stent in the past may at some point consider the possibility of another. It may be difficult for patients to hear that stents in many circumstances are optional, likely do not reduce the chance of a heart attack, and may not even reduce symptoms of angina. Patients generally believed that the stent had benefited them, even if patients experienced continued angina symptoms after the stent or if patients did not have angina symptoms before the stent *(Ingle et al., 2021).*

The role of community health nurse is very essential to manage CAD involves modifying risk factors to prevent and slow disease progression. Since symptoms may not always be evident, it is important to identify people who are at risk for CAD. Nurses provide health promotion, Patient education about the disease process and progression along with necessary and lifestyle changes efforts that are directed toward controlling the modifiable risk factors for CAD *(Wagner, 2022).*

Significance of the study

The World Health Organization (WHO) reported that ischemic heart disease (IHD) was responsible for approximately nine million deaths in 2016 *(Nowbar et al., 2019).* Developed and developing countries show opposite trends in mortality due to CAD. In developed countries like the USA and the (United Kingdom) UK, mortality rates due to ischemic heart diseases are decreasing. Nevertheless, according to AHA, 16.5 million people older than 20 in the USA had coronary artery disease in 2018, and 55% of them were males. The status of CAD in developing countries is worse with increasing trends of mortality *(Benjamin et al., 2018).*

In Egypt, WHO showed in 2014 that CAD deaths reached 107,232 (23.14%) of all deaths. Age adjusted death rate is186.36/100,000 population; this ranks Egypt 23 in the world. CAD deaths were 78,897 (21.73%) of all deaths, which make CAD the first killer in Egypt in 2013. All of these numbers are considered bad rate in the health in comparison with other developed countries *(El-Moselhy et al., 2018).*

Aim of the study

The aim of the current study is to assess the experience of coronary artery disease patients with stents at Zagazig university hospital's cardiac outpatients clinic, aim was achieved through the following objectives:

1- Assess coronary artery disease patients' knowledge regarding stents.

2- Appraise coronary artery disease patients' reported practice regarding stents.

3- Assess coronary artery disease patients' attitude regarding stents.

Research question:

1- What is coronary artery disease patients' knowledge level regarding stent?

2- What is coronary artery disease patients' reported practice level regarding stent?

3- What is coronary artery disease patients' attitude level regarding stent?

4- Is there relationship between participants' demographic characteristics and their knowledge, reported practice and attitude?

Subject and methods:

I-Technical items:

Research design

A descriptive research design was applied to achieve the aim of this study.

Setting

The study was conducted at cardiac outpatient clinic in Zagazig university hospital in second floor which consists of 6 rooms for cardiac examinations, this clinic provides treatment and follow-up services for cardiac patients. So, choosing this place because it covers a large number of patients suffering from cardiac symptoms attended to cardiac outpatient clinic.

Sampling

A convenient sample consisted of 86 patients. They attending to outpatient clinic during 6 months through the period of the beginning of July 2022 until the end of December 2022 according to the following equation; Male and female patients and accepted to participate in the study.

5350

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

Sample size

The formula for determining sample size is given as:

$n = N/\{1 + N(e)^2\}$ *(Sreedharan et al., 2019).*

n = Sample size

N = population size 110

e = 0.05 is the level of precision.

$n = \{110/1+110) (0.0025)\} = 86$ was selected.

Tool for data collection

One tool was used to collect study sample for achieving of study aim that contain; **A structured interviewing questionnaire:**

This tool was developed by the investigator after reviewing the national and international related literature and contains five parts:

Part I: Demographic data of patient, this part consists of (7) items as age, gender, educational level, marital status, place of residence, income and occupation.

Part II: Medical history of a cardiac patients with stents. This part consisted of 2 parts. First; Past history of cardiac patient, this part consists of (8) questions about chronic genetic disease, smoking, past medical problem, past operations. Second; Present history of cardiac patient, this part consists of (8) questions as: taking medication in time, types of stents, number of stents, current complication or complaint, psychological stress.

Part III: Assessment of Patients' knowledge regarding stents.

This part consists of 2 subitems; A. Patient knowledge about CAD and consists of (8Q) closed ended questions about meaning of CAD, causes of CAD, signs& symptoms of CAD, risk factors, cardiac catheterization, treatment and complication of CAD. B. Patient knowledge about cardiac stent, this part concerned with Patients' knowledge regarding cardiac stent, and consists of (9Q) closed ended questions, such as meaning of cardiac stent, mechanism, causes, complications, signs and symptoms, medication, rest and follow up.

Scoring system

The part was contained of 17 questions, the total scores were 17 grades, the correct answer was scored as a one degree and the wrong answer or don't know was scored as a zero degree. These scores were summed and were converted into a percent score. It was classified into 2 categories:

- Satisfactory level if score ≥ 60%.
- Unsatisfactory level if score <60%.

Part IV: Assessment of Patients' reported practice regarding cardiac stents.

This part consisted of (30Q) closed ended questions about: A. follow up system; patient's need to go to the clinic, perform medical examinations, Benefit from the clinic's follow-up system, doing blood sugar analysis continuously, continuous blood pressure measurement. B. physical activities; walk continuously after the operation, doing exercise, back to smoking again after the operation. C. Rest and sleep; trouble sleeping, feeling tired after waking up. D. Taking medications; taking the medications on time, forgetting to take a specific treatment after the operation, need help finding out about medications. E. Nutrition; Follow specific diet after the operation, reduce salt and fat in food, eat fish and white meat instead of red meat, eat vegetables and fresh juices.

Scoring system of patient s' reported practices

The scale was contained of 30 items, the total scores of the scale were 60 grades, each item was evaluated as "done" was taken two score, "sometimes" was taken one score and "not done" was taken zero. These scores were summed and were converted into a percent score. It was classified into 2 categories:

- **Adequate level** if score ≥ 60%.
- **Inadequate level** if score <60%.

Part V: Assessment of Patients' attitude regarding CAD and stents.

5351

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

This part consisted of (18Q) closed ended questions as; thinking cardiac patients were suffering from psychological stress about stent or not, thinking the risk of death increases in cardiac patients who have stents or not, thinking that reducing blood cholesterol is very important after stenting., taking aspirin and blood anticoagulants is extremely important for heart patients, thinking that quitting smoking is very important for patients with CAD, thinking that cardiac patients who have stents should have regular follow-up in the heart clinic.

Scoring system:

The scale was contained of 18 items, the total score of patient's attitudes were *54* grades, each item was evaluated as "Agree" was taken two score, "Neutral" was taken one score and "Disagree" was taken zero score. These scores were summed up and were converted into a percentage score. It was classified into 2 categories:

- **Positive** attitude if score ≥ 60%.
- **Negative** attitude if score from <60%.

Validity:

The developed tool would be formulated and submitted to three experts in community health nursing (Helwan University) and two from medical surgical nursing (Helwan University) to assess the content validity, needed modifications were done.

Reliability:

To assess reliability, the study tools were tested by the pilot subject's reliability for calculating Cronbach's Alpha which was knowledge part 0.89 for the interview questionnaire sheet (Appendix I) practice part 0.76 and attitude part 0.88 for sheet (Appendix II).

Ethical considerations:

An official permission to conduct the proposed study was being obtained from the Scientific Research Ethics Committee at faculty of nursing Helwan University. Participation in the study was voluntary and subjects was be given complete full information about the study and their role before signing the informed consent. The ethical considerations were include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not be accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs was be respected.

II- Operational Item:

Preparatory phase:

It was included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Pilot study:

The pilot study has been conducted to test clarity of questions, applicability and understanding of tool. It has been conducted on 10 % of the sample (8) sample. There are no modifications in the tool so, the participants of pilot were included in the study.

Field work:

Data collection of the study was started at the beginning of January 2023 until the end of June 2023.The investigator introduced himself to the patients, explained the aim of the study and its implication and how to fill in knowledge questionnaire, and ensure their cooperation. Interviewing patients was carried out in specialized room in the outpatient cardiac clinic in Zagazig university hospital. The sheet took about 30 -45 minutes to complete. Data was being collected at 2days/week (Monday and Thursday from 9am to 12 pm) every week within 6 months. Interviewing sheet was be completed by the investigator from each patient.

III- Administrative Item:

A written approval letter was being issued from Dean of Faculty of Nursing, Helwan University. The letter was being directed to the director of Zagazig university hospital Clinics at (Sharqia-Egypt) for conducting

5352

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

the study. After explanation of the study aim and objectives, an official permission was obtained from the Dean of faculty of nursing and the general manager of Zagazig university hospital asking for cooperation and permission to conduct the study.

IV- Statistical Item:

Data collected from the studied sample was revised, coded and entered using personal computer (PC). Computerized data entry and Statistical analysis were fulfilled using Statistical Package for the Social Science (SPSS) version 24. Data were presented using descriptive statistic in the form of frequencies, percentages. Chi-square was used for comparisons between qualitative variables. Spearman correlation measures the strength and direction of association between two ranked variables.

Significance of the results:

- P-value > 0.05 Not significant (NS)
- P-value < 0.05 Significant (S)
- P-value < 0.01 Highly Significant (HS).

Results

Table (**1**) shows that, (64.0%)of the studied patients their age ranged between 30-< 50 years, the Mean SD of age was 51.41 ± 7.23 years. As regard to gender and marital status, (77.9% and 64.0%) of them were male and married, respectively. Also, (48.8%) of them had university education. Moreover, (54.7%) of them reside in rural areas. Furthermore, (69.8%) of them had enough income. Likewise, (58.1%) of them working.

Table (**2**) reveals that, there were statistically significant relation between patients' knowledge about stents and their demographic characteristics as, age, educational level and occupation at (P= < 0.05). While, there were no statistically significant relation with their gender, marital status, place of residence and monthly income at (P= > 0.05). There was statistically significant relation between patients' reported practice regarding stents and their demographic characteristics as, educational level place of residence and monthly income at (P= < 0.05). While, there were no statistically significant relation with their age, gender, marital status and occupation at (P= > 0.05).

Table (**3**) displays that, there were statistically significant relation between patients' attitude regarding stents and their demographic characteristics as, educational level and occupation at (P= < 0.05). While, there were no statistically significant relation with their age, gender, marital status, place of residence and monthly income at (P= > 0.05).

Figure (**1**) shows that, (62.8%) of the studied patients had unsatisfactory level of total knowledge regarding stents. While, (37.2%) of them had satisfactory level.

Figure (**2**) demonstrates that, (57.0%) of the studied patients had inadequate level of total reported practice regarding stents. While, (43.0%) of them had adequate level.

Figure (**3**) reveals that, (51.2%) of the studied patients had positive attitude regarding stents. While, (48.8%) of them had negative attitude.

Table (1): Frequency Distribution of the Studied Patients According to their Demographic Characteristics (n=86)

Items	No.	%
Age (year)		
18-<30	3	3.4
30-50	**55**	**64.0**
> 50	28	32.6
Mean ± SD	**51.41 ± 7.23**	
Gender		
Male	**67**	**77.9**
Female	19	22.1
Marital status		

5353

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

Married	**55**	**64.0**
Widowed	28	32.6
Divorced	1	1.2
Single	2	2.2
Educational level		
Illiterate	9	10.5
Read and write	19	22.1
Primary education	12	14.0
Secondary education	4	4.7
University education	**42**	**48.8**
Place of residence		
Rural	**47**	**54.7**
Urban	39	45.3
Monthly income		
Not enough	23	26.7
Enough	**60**	**69.8**
Enough and save	3	3.5
Occupation		
Working	**50**	**58.1**
Don't work	3	3.5
Pension	21	24.4
Craftsman	12	14.0

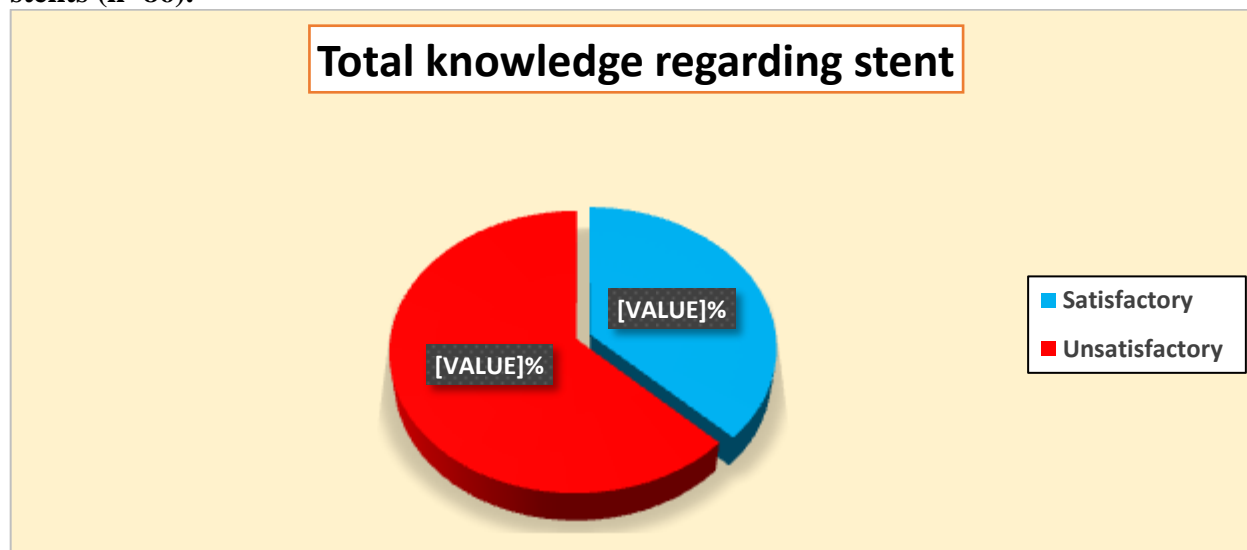**Figure (1): Percentage distribution of the studied patients according to their total knowledge about stents (n=86).**

Figure (2): Percentage distribution of the studied patients according to their total reported practice regarding stents (n=86).

5354

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic
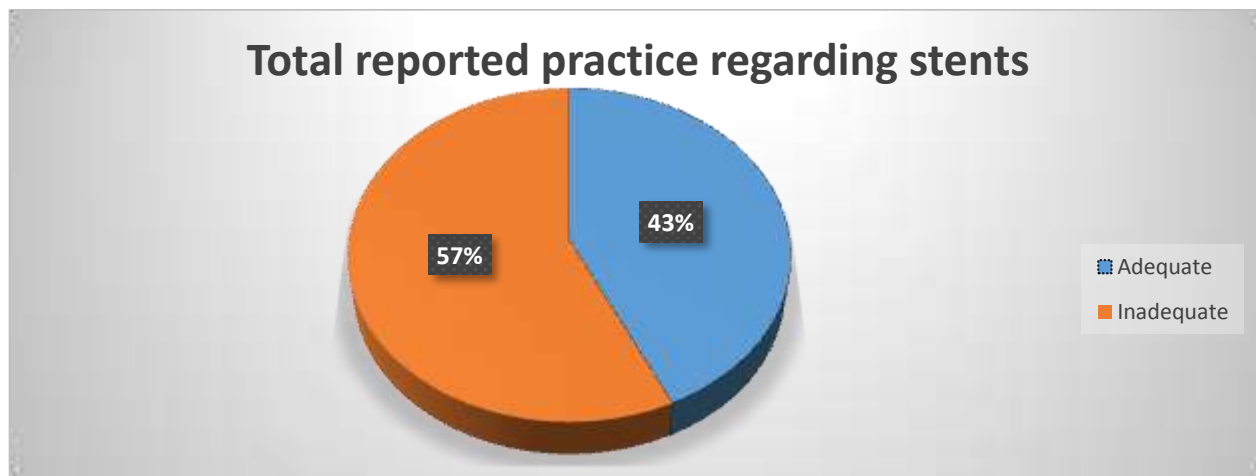
Section A-Research paper

Figure (3): Percentage distribution of the studied patients according to their total attitude regarding stents (n=86).

5355

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic
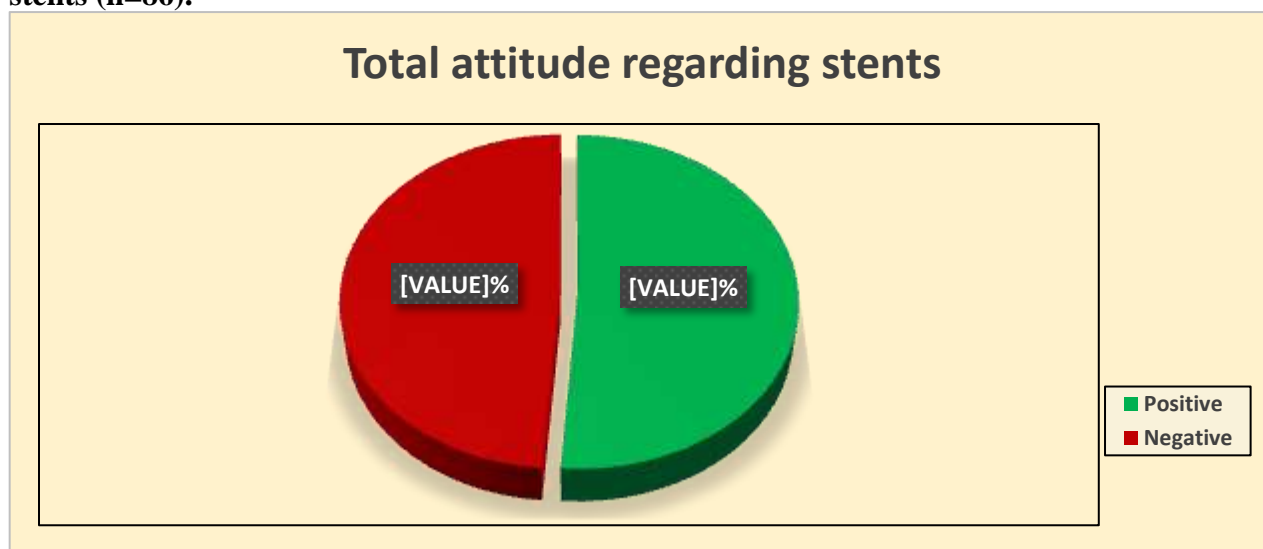
Section A-Research paper

Table (2): Relationship between Demographic Characteristics of the Studied Patients and their Total Knowledge and their Total Reported Practice Regarding Stents

Demographic characteristics		Levels of total knowledge				X²	P-Value	Levels of total reported practice				X²	P-Value
		Satisfactory (n=32)		Unsatisfactory (n=54)				Adequate (n=37)		Inadequate (n=49)			
		No.	%	No.	%			No.	%	No.	%		
Age (year)	18-<30	3	9.4	0	0.0	5.256	0.047*	1	2.7	2	4.1	1.912	0.384
	30-50	19	59.4	36	66.7			21	56.8	34	69.4		
	> 50	10	31.3	18	33.3			15	40.5	13	26.5		
Gender	Male	22	68.8	45	83.3	2.483	0.115	31	83.8	36	73.5	1.303	0.254
	Female	10	31.2	9	16.7			6	16.2	13	26.5		
Marital status	Married	22	68.8	33	61.1	5.045	0.169	27	73.0	28	57.1	5.013	0.171
	Widowed	8	25.0	20	37.0			9	24.3	19	38.8		
	Divorced	0	0.0	1	1.9			1	2.7	0	0.0		
	Single	2	6.2	0	0.0			0	0.0	2	4.1		
Educational level	Illiterate	3	9.4	6	11.1	7.064	0.011*	7	18.9	2	4.1	5.964	0.029*
	Read and write	7	21.8	12	22.2			7	18.9	12	24.5		
	Primary education	2	6.3	10	18.5			6	16.2	6	12.2		
	Secondary education	1	3.1	3	5.6			2	5.4	2	4.1		
	University education	19	59.4	23	42.6			15	40.5	27	55.1		
Place of residence	Rural	18	56.2	29	53.7	1.000	0.499	16	43.2	31	63.3	3.410	0.49*
	Urban	14	43.8	25	46.3			21	56.8	18	36.7		
Monthly income	Not enough	6	18.8	17	31.5	1.747	0.417	15	40.5	8	16.4	7.604	0.022*
	Enough	25	78.1	35	64.8			20	54.1	40	81.6		
	Enough and save	1	3.1	2	3.7			2	5.4	1	2.0		
Occupation	Working	22	68.8	28	51.9	6.519	0.035*	22	59.5	28	57.2	2.523	0.417
	Don't work	2	6.2	1	1.9			0	0.0	3	6.1		
	Pension	7	21.9	14	25.8			9	24.3	12	24.5		
	Craftsman	1	3.1	11	20.4			6	16.2	6	12.2		

5356

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

X^2: chi- square test.   No statistically significant at p > 0.05. * Statistically significant at p ‹ 0.05.

Table (3): Relationship between Demographic Characteristics of the Studied Patients and their Total Attitude Regarding Stents (n=86).

Demographic characteristics		Levels of total attitude				X^2	P-Value
		Positive (n=44)		Negative (n=42)			
		No.	%	No.	%		
Age (year)	18-<30	1	2.3	2	4.8	3.029	0.220
	30-50	25	56.8	30	71.4		
	> 50	18	40.9	10	23.8		
Gender	Male	32	72.7	35	83.3	1.404	0.236
	Female	12	27.3	7	16.7		
Marital status	Married	26	59.1	29	69.0	4.405	0.221
	Widowed	17	38.6	11	26.2		
	Divorced	1	2.3	0	0.0		
	Single	0	0.0	2	4.8		
Educational level	Illiterate	4	9.1	5	11.9	8.199	0.045*
	Read and write	11	25.0	8	19.0		
	Primary education	7	15.9	5	11.9		
	Secondary education	2	4.5	2	4.8		
	University education	20	45.5	22	52.4		
Place of residence	Rural	28	63.6	19	45.2	2.935	0.087
	Urban	16	36.4	23	54.8		
Monthly income	Not enough	12	27.3	11	26.2	0.397	0.820
	Enough	31	70.5	29	69.0		
	Enough and save	1	2.2	2	4.8		
Occupation	Working	26	59.1	24	57.1	9.562	0.023*
	Don't work	1	2.3	2	4.8		
	Pension	15	34.1	6	14.3		
	Craftsman	2	4.5	10	23.8		

X^2: chi- square test.   No statistically significant at p > 0.05. * Statistically significant at p ‹0.05.

Discussion

Ischemic heart disease is a major cause of mortality globally and in the US, with coronary heart disease accounting for the majority of CVD deaths. Inflammation and fibrosis play important roles in the development and progression of CVDs. The incidence of CAD is observed to rise with age, regardless of gender Acute coronary syndrome is caused by rupture of inflamed atherosclerotic plaque and subsequent atherothrombosis *(World Health Organization (WHO)., 2021).*

Demographic data of the studied patients.

 Regarding demographic data of the studied patients. The current study showed that, two third of the studied patients their age ranged between 30-< 50 years, the Mean SD of age was 51.41 ± 7.23 years. As regard to gender and marital status, the majority of them were male and married, respectively. This result agrees with *Watkins et al., (2013)* in a U.S.A. hospital, titled "Association of Anxiety and Depression with All- Cause

5357

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

Mortality in Individuals with Coronary Heart Disease", where 70% of the patients were men, but with an average age of 62 years old.

Regarding coronary artery disease patients' knowledge level with stent (Answer question 1). The current study showed that, more than half of the studied patients had unsatisfactory level of total knowledge regarding coronary artery disease and cardiac stent. While, more than one quadrant of them had satisfactory level. This agrees with **Mohammed et al., (2016)** in Assiut, Egypt titled "Impact of Designed Nursing Educational Protocol on Health Promotion for Patients Undergoing Coronary Artery Stent Outcome" which indicated that 100% of studied patients had poor knowledge about cardiac stents and after making health educational program their knowledge significantly increased. Agrees with **Yu et al., (2022)** in China titled "Knowledge, attitudes, and barriers related to medication adherence of older patients with coronary heart disease in China" which found that 63% of patients had poor knowledge about cardiac stents and medication related CAD. From the investigator point of view, these results might be due to the shortage of health education to cardiac patient with stents in post operation.

Regarding coronary artery disease patients' reported practice level with stent (Answer question 2). This study revealed that, more than half of the studied patients had inadequate level of total reported practice regarding stents. While, less than half of them had adequate level, this agrees with **De Barros & Ouvidor (2013)** in Portugal titled "The use of Drug-Eluting Versus Bare-Metal Stents in Percutaneous Coronary Intervention after an Acute Coronary Syndrome: Practices and Determinants in Routine Care" which indicated that 56% of patients had poor practice towards cardiac stents of following up and medications. From the investigator point of view, these results might be due to lack of knowledge related to cardiac stents as more than 50% of patients don't have high level of education.

Regarding coronary artery disease patients' attitude level with stent (Answer question 3). our study revealed that, more than half of the studied patients had positive attitude regarding stents. While, less than half of them had negative attitude. This matches with **Peterson et al., (2010)** in New York titled "Living with heart disease after angioplasty: A qualitative study of patients who have been successful or unsuccessful in multiple behavior change" indicated that 52% of patients had positive behavior and attitude towards their stents while 48% of patients had negative attitude towards CAD and their stent. From the investigator point of view, these results might be due to that many cardiac patients with stents have a lot of stress but they could adapt their problems in a good way.

Regarding relationship between participants' demographic characteristics and their knowledge, reported practice and attitude (Answer question 4). In our study, the minority of female and the majority of male had adequate levels of total knowledge and total reported practice. There was no statistically significant relation between patients' reported practice with their gender, this agrees with **Darvishpour et al., (2017)** a study in Iran titled "Factors associated with quality of life in patients undergoing coronary angioplasty" who aimed to determine patients' knowledge, the quality of life and its related factors in patients undergoing coronary angioplasty and reported that both of knowledge and the quality of life in the women was lower than men.

The present study showed that, there were no statistically significant relation between patients' attitude with their age and gender at (P= > 0.05), this agrees with **Della-Méa et al., (2018)** in Brazil titled "Anxiety and depression symptoms in in post-percutaneous coronary adults and elderly intervention" showed that patients with lower age showed a negative attitude and higher level of anxiety symptoms, women showed a higher prevalence of these symptoms *(p <.001)* at a severe level.

Regarding correlation between total knowledge, total reported practice and total attitude regarding stents among the studied patients. In our study, there were highly statistically significant positive correlation between total knowledge, total reported practice and total attitude regarding stents among the studied patients at (P= < 0.01),this agrees with **Zhuo et al., (2022)** in China titled "Depression and anxiety before and after percutaneous coronary intervention and their relationship to age" who aimed to explore the perceptions of patients undergoing percutaneous coronary intervention (PCI) regarding their pre-operative health education. They revealed that pre-operative education was a relief for most patients undergoing PCI.

Conclusion

5358

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

On the light of the current study and answers of the research questions, it concluded that, the majority of the studied patients had unsatisfactory level of total knowledge regarding stents. More than half of the studied patients had inadequate level of total reported practice regarding stents. More than half of the studied patients had positive attitude regarding stents. There was statistically significant relation between patients' knowledge about stents and their demographic characteristics as, age, educational level and occupation at ($P = < 0.05$). There was statistically significant relation between patients' reported practice regarding stents and their demographic characteristics as, educational level place of residence and monthly income at ($P = < 0.05$). there was statistically significant relation between patients' attitude regarding stents and their demographic characteristics as, educational level and occupation at ($P = < 0.05$).

There was highly statistically significant positive correlation between total knowledge, total reported practice and total attitude regarding stents among the studied patients at ($P = < 0.01$).

Recommendation

On the light of the results of the current study findings the following recommendations are suggested:

- Developing health educational programs that would help cardiac patients to improve knowledge, practice and attitude regarding patient with CAD.
- Encourage cardiac patients to make group discussion regarding CAD and cardiac stent to exchange their experience about the disease under observation from community health nurse.

References

Benjamin, E. J., Virani, S. S., Callaway, C. W., Chamberlain, A. M., Chang, A. R., Cheng, S., & Muntner, P. (2018). Heart disease and stroke statistics-2018 update: a report from the American Heart Association. Circulation, 137(12), e67-e492.

Brown, J. M., Zhou, W., Weber, B., Divakaran, S., Barrett, L., Bibbo, C. F., & Di Carli, M. F. (2022). Low coronary flow relative to myocardial mass predicts heart failure in symptomatic hypertensive patients with no obstructive coronary artery disease. European Heart Journal, 43(35), 3323-3331.

Darvishpour, A., Javadi-Pashaki, N., Salari, A., Sadeghi, T., & Taleshan-Nejad, M. (2017). Factors associated with quality of life in patients undergoing coronary angioplasty. International Journal of Health Sciences, 11(4), 35.

D'Aloia, M., Longo, A., & Rizzi, M. (2019). Noisy ECG signal analysis for automatic peak detection. Information, 10(2), 35.

De Barros, Vitor André Ouvidor. (2013). The use of drug-eluting versus bare-metal stents in percutaneous coronary intervention after an acute coronary syndrome: Practices and determinants in routine care (Order No. 29150692). Available from ProQuest Dissertations & Theses Global. (2689295453). Retrieved from https://www.proquest.com/dissertations-theses/use-drug-eluting-versus-bare-metal-stents/docview/2689295453/se-2.

Della-Méa, C. P., Bettinelli, L. A., & Pasqualotto, A. (2018). Anxiety and depression symptoms in in post-percutaneous coronary adults and elderly intervention. Acta Colombiana de Psicología, 21(2), 236-257.

El-Moselhy, E. A., Mohammed, A. S., Abd El-Aziz, A., Sadek, I., Hagrass, S. A., & Farag, G. A. S. (2018). Coronary artery disease among elderly Egyptian patients: I. socio-demographic, lifestyle, psychosocial, medical, and biochemical risk factors. Am J Gerentol Geriatr, 1(2), 1006.

Ingle, M. P., Lammons, W., Guigli, R., Kini, V., Matlock, D. D., Brereton, E., & Scherer, L. D. (2021).

5359

Eur. Chem. Bull. 2023,12(issue 1),5349-5360

The Experience of Coronary Artery Disease Patients with Stents at Zagazig University Hospital's Cardiac Outpatients Clinic

Section A-Research paper

Patient Perspectives on the Benefits and Risks of Percutaneous Coronary Interventions: A Qualitative Study. Patient preference and adherence, 15, 721.

Mohammed, G. (2016). Impact of designed nursing educational protocol on health promotion for patients undergoing coronary artery stent outcome. Assiut Scientific Nursing Journal, 4(7), 36–45. doi:10.21608/asnj.2016.58633

Nowbar, A. N., Gitto, M., Howard, J. P., Francis, D. P., & Al-Lamee, R. (2019). Mortality from ischemic heart disease: Analysis of data from the World Health Organization and coronary artery disease risk factors From NCD Risk Factor Collaboration. Circulation: cardiovascular quality and outcomes, 12(6), e005375.

Peterson JC, Allegrante JP, Pirraglia PA, et al. (2010). Living with heart disease after angioplasty: a qualitative study of patients who have been successful or unsuccessful in multiple behavior change. Heart Lung 2010;39(2):105-15.

Sreedharan, J., Chandrasekharan, S., & Gopakumar, A. (2019). An optimum sample size in cross sectional studies. International Journal of Scientific Research in Mathematical and Statistical Sciences, 6(1), 122–130. Accessed November12,2021,3pm, from https://doi.org/10.26438/ijsrmss/v6i1.122130.

Wagner, K. D. (2022). "Cells of the Cardiovascular System" The Editor's Choice Articles—Section 2020–2021. Cells, 11(14), 2173.

Watkins, L. L., Koch, G. G., Sherwood, A., Blumenthal, J. A., Davidson, J. R., O'Connor, C., & Sketch, M. H. (2013). Association of anxiety and depression with all-cause mortality in individuals with coronary heart disease. Journal of the American Heart Association, 2(2), e000068.

World Health Organization (WHO). (2021): cardiovascular diseases. World Health Organization. Accessed December 12, 2021, 3pm, from https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds).

Yu, M., Wang, L., Guan, L., Qian, M., Lv, J., & Deng, M. (2022). Knowledge, attitudes, and barriers related to medication adherence of older patients with coronary heart disease in China. Geriatric Nursing, 43, 235–241. doi:10.1016/j.gerinurse.2021.12.001.

Zhuo, W. Q., Wen, Y., Luo, H. J., Luo, Z. L., & Wang, L. (2022). Mechanisms of ferroptosis in chronic kidney disease. Frontiers in Molecular Biosciences, 9, 975582.

5360

Eur. Chem. Bull. 2023,12(issue 1),5349-5360