International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2016): 79.57 | Impact Factor (2017): 7.296

Guidelines Nursing Care for Patient with Cardiac Stent at Home

Faten Khayrat, Zainab Awad Mohamed

Community Nursing Department, Faculty of Nursing — Ain Shams University

Abstract: ***Aim*** *of the study is to measure the effect of a nursing intervention program at home to prevent recurrence of cardiac stent.* ***Research design****: A quasi experimental design was utilized.* ***Settings****: The study was conducted at outpatient clinics of cardiovascular surgery hospital of Ain Shams University hospitals.* ***Subjects****: A purposive randomly selected sample which composed of one hundred and thirty four clients after cardiac stent.* ***Tools of data collection****: First tool: Structured interviewing questionnaire, It was composed of 3 parts, part one: socio-demographic data, part two: Assess clients knowledge regarding cardiac stent .Part three: client practice related to behavioral habits, nutrition and physical activities. Second tool: Environmental for home condition (ventilation, cleanliness'). Third tool: Client medical record to assess client diagnosis, investigations, and treatments vital signs, and weight and height.* ***Results****: Revealed a highly statistical significant relation between clients practice and knowledge of clients regarding cardiac stent pre &post nursing intervention.* ***Conclusion****: This study concluded that, the nursing intervention program had a highly statistical significant relationship with improved knowledge and practices of clients of cardiac stent and change life style to prevent recurrence of cardiac stent.* ***Recommendations****: Building up a national strategy for home care for enhancement knowledge and help in change life style for cardiac stent clients to prevent recurrence cardiac stent. Expansion of health insurance services at home to covers the needs of cardiac stent clients by nursing*

Keywords: Nursing intervention, Cardiac stent, and Home care nurse

1. Introduction

CVDs (cardiovascular disease) are the number 1 cause of death globally: more people die annually from CVDs than from any other cause. An estimated 17.5 million people died from CVDs in 2012, representing 31% of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke. Over three quarters of CVD deaths take place in low- and middle-income countries. Out of the 16 million deaths under the age of 70 due to noncommunicable diseases, 82% are in low and middle income countries and 37% are caused by CVDs. **(World Health Organization, 2014)**

Home careis supportive care provided in the home. Care may be provided by licensed professionals who provide medical treatment needs or by professional caregivers who provide daily assistance to ensure the activities of daily living (ADLs) are met. In-home medical care is often and more accurately referred to as "home health care" or formal care. For terminally ill patients, home care may include hospice care. For patients recovering from surgery or illness, home care may include rehabilitative therapies **Christensen, & Grönvall. (2011).**

Community health nurse have an ideal opportunity to enhance health promotion activities that can reduce the risk of coronary artery disease as educators and role models for their families, communities and patient .for effective prevention and treatment, it is important that nurse consider the psychological parameter that may affect health behaviors community health nurse can promote healthy lifestyle patterns that reduce the risks of recurrence cardiac stent for example physical activity, regular meals and nutrition and weight counseling are all areas where nurse may help to reduce the risk factors (**Miller et al., 2010).**

Role of Community Health Nurse Toward Cardiac Stent Patient. Education is the process of acquiring knowledge and skills that can lead to changes in human behavior ,necessary for the maintenance or improvement of health .To achieve optimal benefit for patients, education should involve definition of goals, assessment of patient's needs, modification of patients behavior towards more self-control, activate participation in decision making , development of self –care to handle the heart disease and possible complication ,assessment of possible risk factors , implement of realistic goals ,support to adopt appositive attitude towards the disease and alleviate psychological distress **(Polikandrioti&Notkou, 2011).**

Nurses as health educators must build trust with community in order to educate people about cardiovascular disease prevention. The health educato must understand the community's dynamics and develop preventive education strategies that are culturally relevant ,easily understood ,affordable and appropriate .The nurse must know what kinds of foods are culturally acceptable ,affordable and easily available in the community ,rather than assuming that everyone will be able to obtain items . Health education about source of protein must include a wide variety of food options, such as eggs, beans, peanuts, meat, chicken, turkey, fish and more **(Marvaki et al., 2010).**Lifestyle changes in the form of increased physical activity, dietary modification/weight loss, and smoking cessation are of proven benefit and may improve outcomes in as quickly as six months. Drug therapies of proven benefit. These therapies work, in part, by ameliorating the risk attributable to the major modifiable risk factors of hypertension, dyslipidemia, diabetes, and smoking. Most clinicians prefer to recommend life style modifications prior to the initiation of drug therapy *(Eckel et al., 2013).*

Lifestyle changes can help prevent and control heart disease

and its risk factors, many public health efforts focus on providing communities with information about preventing and controlling modifiable risk factors .however, these communities need to be involved in developing health information to ensure it is culturally and linguistically appropriate, improve its acceptability, and stimulate adoption of healthy behaviors **(Tyus et al., 2008).**

Coronary heart disease is linked to various lifestyle factors such as diet, physical activities, smoking and stress .life-style changes are an important activity, smoking and stress. Life-style changes are an important part of any treatment for angina .some changes may be useful in reducing the frequency of attacks by identifying and modifying the activities and situations that precipitate these attacks. **Anand et al (2008)**

Regular physical activity is an important part of healthy heart program ,because physical activity both directly reduces heart disease risk and reduces chances of developing other risk factors for heart disease .regular physical activity reduce LDL(bad) cholesterol ,increase HDL (good)cholesterol, and lower high blood pressure and control diabetes .physical activity can help to lose excess weight or stay at desirable weight ,which will also help to lower risk of CAD **(Heliberg,2008).**

Quitting Smoking is complex because smoking is both pharmacological and psychological highly addictive .advice, encouragement and pharma- cologicalaid consistently improve success rates .nicotine replacement therapy is safe in patient with CAD and should routinely be offered .caregivers who live in the same household should also be encouraged to stop smoking .this reinforces the individuals effort and decrease the risk of ongoing exposure to environmental tobacco smoke **(Rigotti et al., 2010)**

Patient should be assessed for psychological distressed for psychosocial distressed and appropriate care offered intervention that can be used to reduce anxiety include: ensuring a quiet environment, preventing interruptions that disturb sleep, using a caring and appropriate touch teaching relaxation techniques .music therapy and pet therapy can also relax the patient and reduce anxiety. This approach can reduce symptoms and enhance quality of life **(Cole, 2007)**

The role of cardiac rehabilitation has been the focus of attention by the vast majority of professional with nurse to be in the front line .the main goal of cardiac rehabilitation is to prompt patients participate in their therapeutic treatment regimen to such an extent that they can achieve living almost a normal life .cardiac rehabilitation programs comprising prescriptive exercise, health education and counseling ,yield compelling improvements in cardiac morbidity and mortality of participants **(Beckie &Beckstead, 2010).**

2. Significance of the Study

In Egypt: the distributors of intervention tools for the years 2010 to 2015. Analysis of these data showed a steady growth of primary PCI, amounting to a threefold increase over the six-year period. There are increasing numbers of PCI-capable canters, especially in Cairo. Almost 55,000 PCIs are performed yearly in Egypt utilizing around 100,000 stents; the percentage of drug-eluting stents (DES) used has increased to 65- 70% (90% in private and insured patients). **Ahmed Magdy, *et al* (2017)**

According to latest WHO data published in coronary heart disease in Egypt reached 78,897 or 21, 37% of total population deaths .The leading global risks for mortality in the world are high blood pressure responsible for 13% of deaths globally tobacco use (9%) high blood glucose (6%) and overweight and obesity (5%). These risk are responsible for raising the risk of chronic disease such as heart disease, diabetes mellitus and cancer **(WHO, 2011).**

Stenting composed 84.2% of all PCIs percutaneous coronary intervention. Despite the widespread use of these devices, bare metal stents (BMS) have been associated with a 20-30% rest enosis rate requiring reintervention. Rest enosis occurs within the first 6-9 months after stent placement, and occurs in response to injury and inflammation. Making lifestyle changes can help prevent plaque from building up in arteries again. **Serruys P, *et.al.* 2006.**

3. Aim of the study

The aim of this study was to measure the effect of nursing intervention for patient with cardiac stent through:

1) Assessing client knowledge and practice related to lifestyle home according to patient needs after stent.
2) Designing and implementing nursing intervention at home care to prevent recurrence of cardiac stent
3) Evaluating the outcome of nursing intervention at home cares to prevent recurrence of cardiac stent.

Research hypothesis:

- The nursing intervention at home care will prevent recurrence of cardiac stents.
- Does the nursing intervention improve lifestyle (smoking, nutrition, exercise, stress and sleeping)?
- Is there a relation between nursing intervention and client complaining?

Subjects & methods:

Study design:
A quasi experimental design used to determine the effectof nursing intervention program on lifestyle of clients with cardiac stent.

Research Design
The study included four designs:

Technical Design.
The technical design included the research design, settings, subjects and tools used in the study.

Setting:
This study was conducted at the following settings, Ain Shams University Hospital outpatient clinic of cardiovascular surgery hospital .

Sampling:
A purposive randomly selected sample was used in the

study. All cardiac stent clients attending the selected setting for follow up and treatment after cardiac stent within six months until sample size was achieved both male and female ,their age (40-60) years as well as free from (diabetes mellitus)

One hundred and thirty four clients (134) have been selected for the study regardless of their age, educational level, and occupation, but all are attending to outpatient clinic after cardiac stent..

Tools of data collection:
Three tools were used to collect the data.
First tool: Structured interviewing
questionnaire for cardiac stent clients

It was developed by the researcher based on reviewing the current relevant literature. It was written in simple Arabic language to suite client's level of understanding.

This tool was validated by the expertise from faculty of Nursing .It included the following:
A) Bio.Sociodemographic data: age, sex, level of education, occupation, place of residence, marital status ….
B) Client knowledge about cardiac stent, complication after stent, medication used after stent.

Through pre-post program: Questions Prepared by the researcher based on literature concerning with clients knowledge about cardiac stent related to the meaning of stent , types, risk factors, treatment and complications.
Scoring system:

Answers were grouped into correct =1, while incorrect = 0 based on literature. Total clients knowledge was classified into the following scale good knowledge 1while poor knowledge scored0.

C) Client practice related to behavioral habits, nutrition and physical activities through: (pre/ post program).
Assess client's practice through asking questions regarding life style activities after cardiac stent)

Scoring system:
Cardiac stent clients reported practices were evaluated based on recent literature, their responses were divided into.
Correct answers were given 1 score,incorrect was given 0 score.

Third Tool: Medical records will be checked to collect data about client diagnosis and history background, vital signs, weight, height.

Scoring System:
Scoring system: According to the measure of the clients from the medical file normal measure (vital signs and body mass index) take 1 score abnormal range take 0 score

Content validity:
This tool was tested through five expertise from the staff of Faculty of Nursing, Community Health Nursing Department, Ain Shams University.

Administrative and Ethical Design:
An official permission was granted by submission of formal letter issued from the administrators of Faculty of Nursing Ain Shams University to administrators of cardiovascular and surgery hospital after explanation of purpose of the study and handing out copies of protocol in order to obtain official permissions of cooperation.
Ethical considerations:

Oral Consents from cardiac stent
Clients were obtained to ensure their willingness to engage in the study after explaining its purpose and nature. The investigator also provided strict concern to keep their privacy. Reassuring that study would never expose them to any harm, as information was kept confidential and they could withdraw from the study at any time.

Operational Design

A. Pilot Study
A pilot study was carried out on 10 clients who were excluded later in the study sample. The aim of the pilot study was to test clarity, simplicity and applicability of the study tools. Necessary modifications were carried out.

B. Field work
- Informed consent was secured before collecting data.
- For work organization, the researcher allocated 3 days each week (Saturday .Sunday, and Monday), between 1-8clients/ day, from 9 Am-2 Pm, for collection of data at selected settings.
- All clients were interviewed at outpatients clinics' halls and working areas,after explanation of study aim and objectives.
- Actual field work was carried out in the period from August 2015 to end of January 2016.
- The assessment phase (pre- test) was done for 134clients and post-test was carried out 6 months after program implementation.
- Teaching sessions were conducted at meeting halls and working areas of outpatient clinics
- The average time consumed to fill tools was 30 minutes

Statistical design:
Data were revised, coded, analyzed and tabulated using the number and percentage distribution and processed through computer SPSS version 21 was used for analysis of data.

The following statistical techniques were used:
Percentages, mean value, standard deviation, chi-square (X2), probation probability (p-value), T test.
Significance of results:
When P is < 0.05, it is statistically insignificant difference
When P is < 0.05, it is statistically significant difference
When P is < 0.01 or P< 0.001 it is high significant difference

4. Results

Table (1) Shows that that70.1% of clients were male, the mean age of clients 53.2±7.0regarding education level 17.2% of cardiac stent clients were illiterate, as regard occupation, 59.7% working in relation to marital

status87.3%were married ,in relation to working hours 50%of cardiac stent clients working 6hours daily

Table (2) Reflects that 83%had separatehome&62.7crowded index3or less & 37.3% had good home lighting &28.4% had good ventilation &28.4% had good home cleanness and 31.3 % had good furniture organization.

Table (3) shows that 42.5%of clients were adherence to physical exercise practicing in preprogram and raised to79.1% post programas regard time of exercise 20.9%of clients were practicing walking more than 30 minutes and raised to 59% post program

Table (I): Distribution of cardiac stent clients according to their socio- demographic characteristics (N=134)

Item	*No*	*%*
Gender:		
Male	94	70.1
Female	40	29.9
Age :		
40 -	47	35.0
50 -60	87	65
Mean±SD	53.2±7.0	
Marital status:		
Single	3	2.2
Marred	117	87.3
Widow	14	10.5
Education:		
Illiteracy	23	17.2
Basic	26	19.4
Secondary	55	41.0
University	30	22.4
Occupation:		
Working	80	59.7
Not working	54	40.3
Number of working hour's n=80		
6 - hour's	40	50.0
8 - hour's	24	30

Figure (2): Distribution of cardiac stent clients according to their home environment characteristics (n =134).

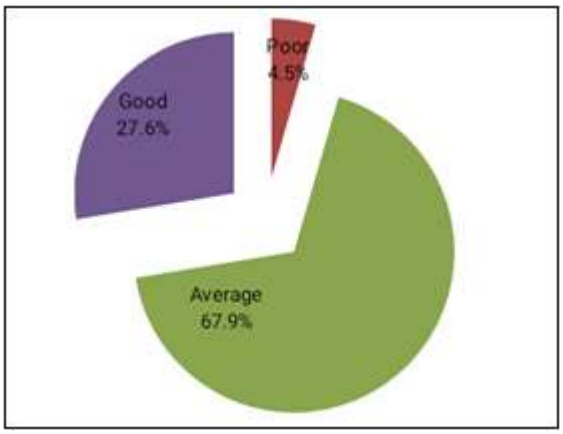

Figure 2: Assessment of home environmental of cardiac stent client's pre nursing intervention

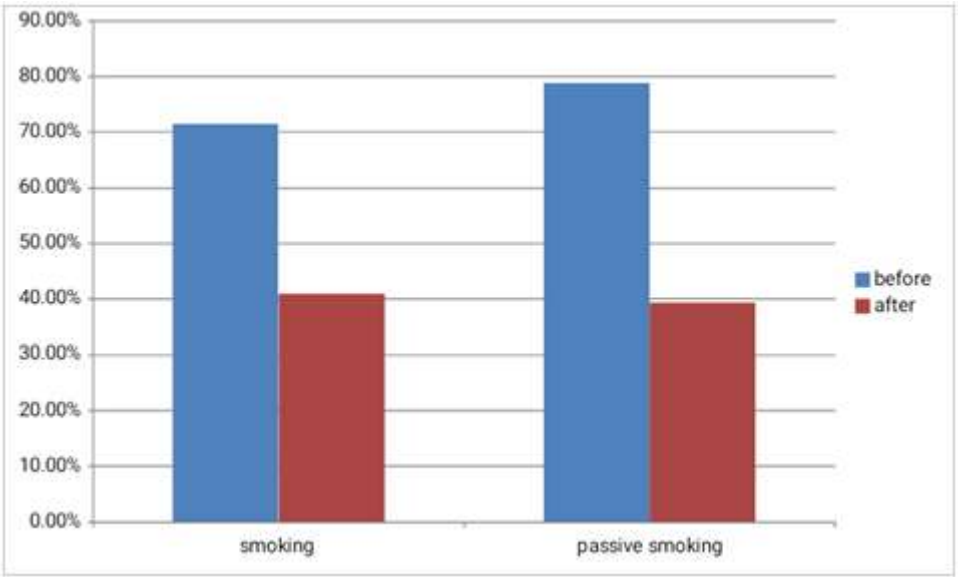

Figure 3: Distribution of the study sample according to their smoking practices pre/post interventionprogram (n =134).

Figure (3): shows that 71.6% of clients were smoking in preprogram compared to 41.0% in post program . Clients who are exposed to passive smoking in preprogram represent 78.9% compared to 39.4%post program

Table 5: Distribution of cardiac stent clients according to their daily consumption of waterand caffeine pre/post intervention program (n =134).

Water and Caffeine consumption	Preprogram		Postprogram	
	No	%	No	%
Water intake /day	45	33.6	21	15.7
>4glassess/day 4-6 glasses/day	52	38.8	45	33.6
6+glasses/day	37	27.6	68	50.7
Black Tea	95	70.9	40	30
- Coffee:	11	8.2	4	2.9
-Cola	19	14.1	7	5.2

Table (5): reveals that water and caffeine consumption /day70.95%&8.2%of clients were drinking black tea and coffee daily in pre program compared to 30%&2.9% post program.

Figure 5: Distribution of the study sample according to their total correct knowledge about cardiac stent pre/post intervention program (n =134).

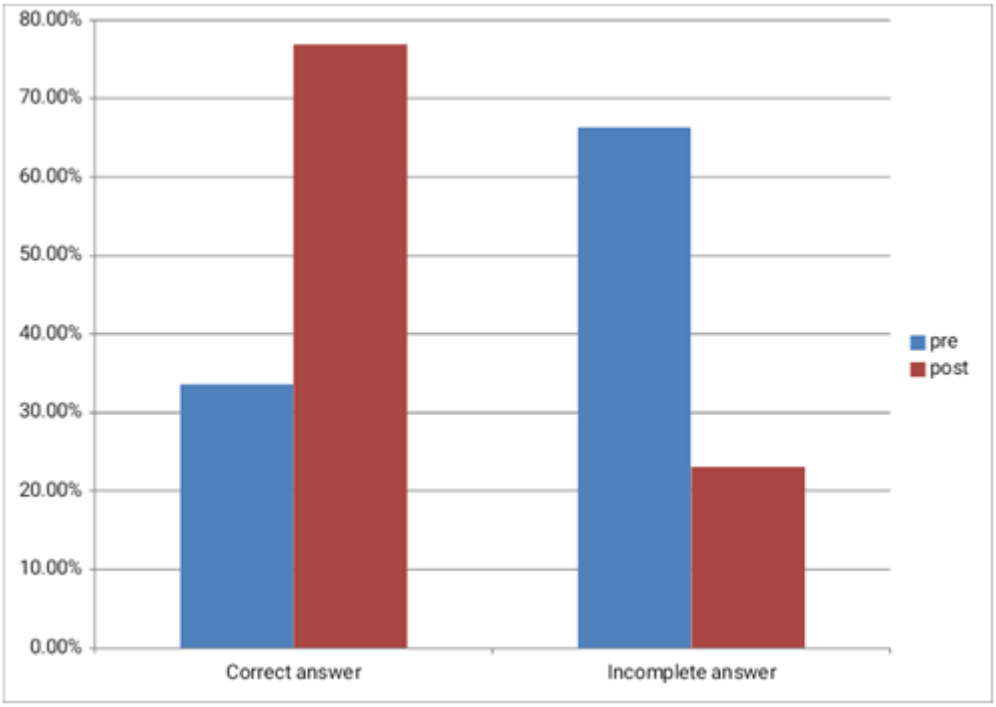

Figure 5: illustrates that 76.9of clients had correct knowledge regarding cardiac stent in post program compared to 33.6% in preprogram with highly statistical significance (p>0.001)

Table 12: Distribution of cardiac stent clients according to the effect of nursing intervention program regarding clients health problem (complain)(n =134).

Health problem	pre		post		Test of sig.	
	No	%	No	%	X2	P
1-Cough						
Always	96	71.6	55	41.0		
Sometimes	30	22.4	9	6.7	35.9**	<0.001
Never	8	6.0	70	52.2		
2-Constipation						
Always	102	76.1	45	33.6		
Sometimes	20	14.9	15	11.2	33.8**	<0.001
Never	12	9.0	74	55.2		
3- Hyperacidity						
Always	112	83.5	65	48.5		
Sometimes	12	9.0	9	6.7	62.1**	<0.001
Never	10	7.5	60	44.8		
4-Chest Pain						
Always	80	59.7	45	33.5		
Sometimes	45	33.6	49	36.5	32.7**	<0.001
Never	9	6.7	40	30.0		
5- Two Approaches					83.0**	<0.001
Always	57	42.5	106	79.1		
Sometimes	70	52.2	20	14.9		
Never	7	5.3	8	6.0		

Not metually exclusive

Table 12: Table shows that health problem of the client pre &post nursing intervention program (cough, constipation, hyperacidity, chest pain and two approaches) statistical significance (p<0.001)

Table 17: Distribution of cardiac stent clients according to their medical record pre/post intervention program (n=134).

Medical record	Pre		Post		Test of sig.	
	No	%	No	%	X2	P
1-LDL(Low-density lipoprotein)						
	110	82.1	129	96.2	32.6	<0.001
2-HDL(High density lipoprotein)						
	105	78.3	129	96.2	30.1	<0.001
4-Total cholesterol						
	100	74.6	124	92.5	28.2	<0.001

Table (17): shows that highly statistical significance differences between pre/post interventional program in relation to cholesterol and low-density lipoprotein measurement (p<0.001)

5. Discussion

The present study findings showed that the study sample age ranged between 40-60 years, with mean age ranged between (53.2±7.0 years).Regarding to gender more than two third of the study sample was male and one third was female This finding was consistent with the result of **Mary. (2016)**.The aim of this study was to investigate participants' risk factor profile, knowledge of coronary heart disease, and the influence of demographic and risk factors on this knowledge in Dublin, Ireland. This study found that Seventy-six percent were male and this result in disagreement with the study done in Tabriz university of medical science in Iran to assess socio-demographic status and coronary heart disease by **Steptoe &Kivimaki (2012)**who found that the mean age was forty four (range 17-70)years more than half of the

participants were women.

The present study findings showed that the study sample age ranged between 40-60 years, with mean age ranged between Regarding educational level among study sample the results revealed that less than half of the sample were secondary school less than one quarter were illiterate and also less than one quarter were university level .This finding was consistent with the result of **(Mary, 2016)** on study assess Cardiovascular Health Status by Occupational Group study nearly half of the study sample reported secondary school or equivalent as their highest education level. This result disagreement with the study done in Finland to assess difference between coronary artery disease patients educational groups which conducted by **Pekkanen et al. (2008)** reported that almost three quarter were illiterate, one quarter possessed no academic qualification and just five percent were on the college graduate level Regarding occupation, the present study revealed that more than half of the cardiac stent clients were employees. This result agreement with **Taylor etal, (2014)** who assessed in United State Cardiovascular Health Status by Occupational Group accounting for about more than half of all U.S. adults, the working population is an important demographic group to evaluate with regard to cardiovascular health status. Regarding working hours, the present study revealed that half of the working clients were working 6 hours daily this results agreements with **Sadie et al.,(2016)** in the studys to examine the presence of a dose– response relationship between work hours and incident cardiovascular disease , Which showed that half of the participants working 36 hours in the week?

Regarding marital status ,the finding of the present study showed that more than two third of clients were married and less than one third were widowed .This result agreement with the study by **Machenbach et al., (2008**) to assess Biosocioeconomic inequalities in health in 22european countries reported that eight percent of these interviewed reported their marital status as married and one fifth were widowed.

In relation to residential area the present study showed that the majority ofthe clients were from urban area while few of them from rural area. This result agreement with the study done in North England to socioeconomic status and cardiovascular disease by **Clark et al., (2009)** mentioned that among the majority of participants the place of life were urban and few of participants were in rural locations.

Regarding to smoking sessions, two third of cardiac stent clients was active smoker in preprogram, less than half of smoking clients quiet smoking in post program. This result agreement with study by **Mary etal., (2016)**on risk factors among post percutaneous coronary intervention patients which showed that smoking remained high less than half among study group; smoking rates among post- PCI patients and cardiac patients generally ranged from eight to fifteen percent. Also this result agreement with study by **Doll et al., (2009)** on mortality in relation to smoking: 50 years observations on male British doctors indicating that for cardiac patients ,it was also very important to stop smoking. A study showed that if one third of cardiac patients stop cigarette smoking,it resulted in a thirteen percent reduction in cardiovascular mortality.

The present study showed that more than two third of the study group was smoking and one third suffered from passive smoking in preprogram compare with less than half of them in post program. This result coincide with study by **Bonita,(2009**) in New Zeland on passive smoking as well as active smoking increase the risk of acute stroke ,showed that passive smoking significantly increased the risk of stroke and high blood pressure in men and women .

In current study, clients who quitted smoking due to the risk of recurrent cardiac stent and chest pain and after the program & followed up and booklet contain method to quiting smoking gradually.

According to physical exercise practicing the present study showed that more than two third from clients under study were practicing physical exercise in post program with highly statistical significance between pre &post program. This result agreement with **Stephanieetal., (2016)**study lifestyle changed after cardiac revascularization which showed that half of study group have exercises practice. Also this result agreements with study published by **Blaire et al.,(2009)**in American journal for cardiology the study reported a significant beneficial effect of an exercise program. Also **Schnohr et al., (2010)** reported that mortality risk reduction for an increased level of physical activity was obtained from a meta analysis on the effect of exercise –based revalidation .

The American Heart Association (2010) According to the National Center for Health Statistics, life expectancy could increase byalmost seven years if all forms of major CVD (cardiovascular disease) were eliminated. Improvements in morbidity and quality of life would also be substantial. In order to achieve these goals, healthcare providersmust focus on reducing CVD risk factors such as overweight and obesity, poor dietary habits and physical inactivity by helping individuals begin and maintain dietary and physical activity changes.

Regarding to fat in diet the present study showed that more than half of study sample were using fat in diet in preprogram mean while less than quarter in post program**.**

This result agreement with study conducted by **Kimiagar et al., (2009)**in Iran on food consumption revealed that the contribution of saturated fatty acids to dietary energy exceeded the recommendation limits.

The same ,**Brunneret al. (2007**). Indicated that changes in dietary pattern lead to impressive changes of the health status. there was a decrease of thirteen serum cholesterol when people changed from the consumption of butter to vegetable oil margarine from whole –fat milk to low-fat milk and from boiled to filtered coffee.

.Besides, there was a decrease in blood pressure as a result of sodium intake reduction and an increase in fruit and vegetables consumption, which thus contribution to more than half declined in coronary heart disease mortality in men and two third declined in women. On the light of the

previous result the nutritional pattern of cardiovascular disease improved after implementation nursing intervention program due to acquired knowledge and healthy nutritional practices that helped in modifying their nutritional pattern.

In relation to caffeine consumption /day the present study showed thatabout half of the clients under the study drank tea in preprogram compared with one quarter of the study sample post program.

David Kiefer, (2017) Drinking large amounts of black tea, or more than four or five cups a day, might cause health problems. That was mostly because of caffeine-related side effects. Side effects of black tea (most often in high amounts) might include: Anxiety and difficulty sleeping, faster breathing, headache, increased urination ,irregular heartbeat, nausea and vomiting, nervousness and restlessness, ringing in the ears, tremors . Black tea or black tea supplements might interfere with other medicines and supplements are taking. Some medicines could cause caffeine to stay in body longer than usual.

American Heart association (2014) managing stress was a good idea for overall health and researches were currently studying whether managing stress was effective for heart disease. A few studies had examined how well treatment or therapies worked in reducing the effects of stress on cardiovascular disease .studies using psychosocial therapies involving both psychological and social aspects were promising in the prevention of second heart attacks.

This result was attributed to acquired knowledge and methods for stress management through educational booklet and demonstration.

In relation to sleep hours /day the present study showed that two third of clients were sleeping less than six hours /day and decreased to half post program.

This finding of this study was in agreement with**WenruWange**tal**., (2016)** who followed the study group at home and found that more than two third of clients was sleeping hours less than six hours

Also **Redline et al.,(2010)** who reported that poor sleep has been linked with high blood pressure ,atherosclerosis, heart failure, heart attack and stroke, diabetes and obesity also. This finding of this study agreement with **Redline et al.,(2010)** who told that poor sleep had been linked with high blood pressure, atherosclerosis, heart failure, heart attack and stroke, diabetes and obesity. Also **Leinum et al.,(2009)** added that poor sleep increase level of C-reactive protein and other substances that reflected active inflammation . It also reviewed up the body sympathetic nervous system,which is activated by fright or stress.
This result was attributed to chest pain (angina)and difficult in sleeping that disturbed sleeping.

In relation to obesity lead to heart disease showed that quarter of the client agreement with that compared to more than two third after program**.** In relation to total knowledge score among study sample the present study showed that two third of clients had correct knowledge about obesity after program implementation. This result went in the same way with result conducted by **Olga Kadda,et al., (2012)** Nursing education in cardiac rehabilitation could improve health outcomes and reduced the risk of a new cardiac event. A health educational program organized by nurses for patients after a cardiac event or surgery improves patients' knowledge of their illness and awareness of behavioral changes to prevent a new event or readmission to hospital. This result was attributed to acquisition more knowledge during implementation the program both from educational booklet &open

6. Discussion

According to the research hypothesis: implementation a nursing intervention program at home for clients with cardiac stent would improve their knowledge, attitude and practices.

In relation to total knowledge score among study sample the present study showed that more than half of clients had correct knowledge about cardiac stent post program**.**

This result went in the same way with result conducted by **Maryetal,(2016)** Cardiac rehabilitation (CR) wsa the main format of patient education after PCI. The benefits of CR to this particular cardiac group had been well established both by retrospective analysis and randomization. Although the number of patients attending CR after PCI had increased, a large proportion of patients having had a PCI did not intend to attend CR and did not favor CR as the source of education after PCI. Not surprisingly, therefore, having had a PCI has been shown to be a predictor of nonattendance at CR, in addition to being a predictor of poor adherence to lifestyle change post procedure. Attendance at CR among post-PCI patients had been shown to be low, internationally ranging from Almost one third to fourthy percent and less than that among other cardiac patient groups: more than quarter attendance for post-PCI patients versus near half for post-MI patients versus two third for post coronary artery bypass grafting patients.Also this result agreement with study conducted by **Sameh et al.,(2013)** reported that the total knowledge score found to be satisfactory by most of the participant .

7. Conclusion

On the light of the results and answers on research hypothesis the study was concluded that:

The study sample age ranged (40-60) years with mean age (53.2±7.0years). All clients after cardiac sten. As regarding total clients knowledge more than quarter from clients had correct knowledge regarding cardiac stent after nursing intervention with highly statistical significance differences between pre& post nursing intervention .Regarding total score lifestyle practices of cardiac stent clients . Most of clients were changing lifestyle after nursing intervention with a highly statistical significance differences between pre& post nursing intervention .As regarding health problem pre& post nursing intervention show highly statistical significance differences.

8. Recommendation

The findings of this study suggested the following recommendations:

1) Building up a national strategy for home care for enhancement knowledge and help in change life style for cardiac stent clients to prevent recurrence cardiac stent.
2) Continuity of nursing intervention to raise the health awareness and knowledge of family about risk factors for cardiac stent and encourage them to adopt a healthy dieter behavior ,promote physical exercise and smoking session.
3) Raising community awareness through educational campaigns by home care nurse to prevent recurrence of cardiac stent.
4) Providing cardiac outpatient clinics in governmental hospital with rehabilitation centers to follow –up lifestyle promoting for cardiac stent clients .

References

[1] World health organization (WHO)(2014) world health statisticswww.who.int/gho/public ations/world_health_statistics/20 14/e/
[2] American heart association (2014): CAD risk factors ,available at http ://www.CAD.org/what is risk factors.
[3] Balarajan ,R.(2009):Ethnic differences in mortality from ischemic heart disease and vascular disease in England and Males.Br medJ„ 302-560
[4] Miller, S., Alpert, P., and Cross, C.,(2010): Overweight and obesity in nurses ,advanced practice nurses, and nurse educators .Jam Ac Nurse Bract.20(5): 259-65.
[5] Christensen, L.R.; Grönvall(2011). "Challenges and Opportunities for Collaborative Technologies for Home Care Work". Proceedings of the 12th European Conference onComputer Supported Cooperative Work, 24–28 September 2011, Aarhus, Denmark. Retrieved 24 July 2011
[6] Ahmed Magdy, MD, Ahmed Shawky, MD; Ahmed Mohanad, MD; Sameh Shaheen(2017) Egypt: coronary and structural heart interventions from 2010 to 2015 ,Eurointervention journal,2016 journal citation report@sclence edition (claivate analysis,2017).
[7] Marvaki ,C.,Argyriou, G., Karkouli ,G.,Kossivas,P.,andPilatis,N.(2 010): The Role of Education on Behavioral Changes to Modifiable Risks Factors after Myocardial Infarction .Health Science Journal ;1(3):108.
[8] Blair,SU., LaMonte, MJ., and Nichaman,MZ.(2009):The Evolution of Physical Activity Recommendation :How much is enough?Am J clinNutr :79:91
[9] Bonita, (2009): passive smoking as well as active smoking increase the risk of acute stroke. New Zeland Polikandrioti ,M., and Ntokou
[10] ,M., (2011): Needs of Hospitalized Patients .Health Science Journal ;5(1):15-22.
[11] Christensen, L.R.; Grönvall E. (2011). "Challenges and Opportunities for Collaborative Technologies for Home Care Work". Proceedings of the 12th European Conference on Computer Supported Cooperative Work, 24–28 September 2011, Aarhus, Denmark. Retrieved 24 July 201
[12] Leinum,CJ., Dopp, JM.,Morgan ,BJ.(2009): Sleep disordered breathing and obesity: Pathophysiology,complications, and treatment .NutrClinPract.2009 Dec;24(6):675-687
[13] Olga Kadda, Christina Marvaki, Demosthenes(2012):Theroleof nursing education after a cardiacevent.E-ISSN: 1791- 809XHealth Science Journal ©
[14] Redline ,S.,Yenokyan ,G.,Gottlieb DJ.(2010):Obstructive sleep apnea hypoapnea and incidenc stroke:The sleep heart healthy study
[15] .Am JRespirCrit Care Med.2010 Jul15;182(2):269-277.
[16] Sameh,S.,Anders,J.,andMartin,S.(2 013):What is killing? People's knowledge about coronary heart disease ,attitude towards prevention and maintain risk reduction barriers in Ismalia ,Egypt (Descriptive Cross section study)
[17] Tyus,NC., Freeman RJ., and Gibbons ,MC.,(2008): Development of A Replicable Process for Translating Science Into Practice Health Education Message .J Natl Med Assoc; 98(9):1505-9.
[18] Anand, SS. Islam, S. Rosengren, A. FranzosingMG.,Steyn, K., YusuFali, AH. and Yusuf, S.(2008): Risk factors for myocardial infarction in women and men :insights from the interheart study. Eur. Heart J pp.29,932-940.
[19] Hillberg, T., (2008): Physical Activity in the Prevention of Cardiovascular Disease: Epidemiology and Mechanisms . Hemostats Ologie .28(1)9-15.
[20] Rigotti,NA., Pipe ,AL., Benowitz,NL., Arteaga ,C., Garza, D., and Tonstad S., (2010): Efficacy and Safety of Varenicline for Smoking Cessation in patient with Cardiovascular Disease :a Randomized trial Circulation ;121:221-229
[21] Cole ,K.(2007): Animal-Assisted Therapy In Patient Hospitalized With Heart Failure AmericanJournal of Critical Care, 16(6),575-585.
[22] Bcckie, Th., and Beck Stead, J., (2010): Cardiac rehabilitation attendance in A Gender —tailored randomized clinical trial. J Cardiopulm Rehabilitation Prev. M. 30(3):147-156.
[23] WHO and ARE-Ministry of Health & Population (2011-2012): Egypt National STEP wise Survey of Non Communicable Diseases Risk Factors 2011-2012.
[24] Mary T. Nolan, MSc; Gabrielle McKee, PhD(2016) Is Knowledge Level of Coronary Heart Disease and Risk Factors Among PostPercutaneous Coronary Intervention Patients Adequate? Journal of Cardiovascular NursingVol. 31, No. 3, pp E1YE9 x Copyright B 2016 Wolters Kluwer Health, Inc. All rights reserved.
[25] Taylor M. Shockey, MPH1; Aaron L. Sussell, PhD1; Erika C. Odom, PhD(2014)Cardiovascular Health Status by Occupational Group,Center for Chronic Disease Prevention and Health Promotion, CDC. http://www.cdc.gov/dhdsp/ pubs/docs/HSC_Manual.pdf
[26] Sadie H. Conway, PhD, Lisa A. Pompeii, PhD, Robert E.(2016)Dose—Response Relation Between Work Hours and Cardiovascular Disease RiskJOEM Volume 58, Number 3, March 2016Copyright American College of Occupational and Environmental Medicine
[27] Machenbach,JP,Stirbu,I and AJR. (2008):

socioeconomic inequalities in health in 22european Countries.NngIJMed;358:2468-2481
[28] David Kiefer, MD (2017) Black Tea: WebMD, LLC. All rights reserved.WebMD does not provide medical advice, diagnosis or treatment.
[29] Brunner,I. White ,M. Thorogood ,A. Bristow,D.,Curle and Marmot ,M(2007): Can dietary interventions change diet and cardiovascular risk factors
[30] Ameta —analysis of 4 randomized controlled trials .AmJ.Publ.Hlth:87:1415-122.
[31] Wenru Wang, Ying Jiang, Hong- Gu(2016):A randomised controlled trial on the effectiveness of a home-based self-management programme for community-dwelling patientswith myocardial infarctionEuropean Journal of Cardiovascular Nursing, 15(6) 398 —408
[32] kimiagar,SM.,Ghaffarpour,M.,Hous hiar-Rad,A.,Hormozdyari,H.,andZellipou r,L.(2009):food consumption pattern in Islamic republic of Iran and its relation t coronary heart disease .East Mediater Health J,4(3):pp539-47.
[33] The American Heart Association(2010)Interventions to Promote Physical Activity and Dietary Lifestyle Changes for Cardiovascular Risk Factor Reduction in AdultsCirculation is available at http://circ.ahajournals.org.
[34] clark,AM.,Meules,M.,Luo,W.,Dunca n,AS.,andWielgosz,A (2009):socioeconomic status and cardiovascular Disease :Risk and Implication for care .Nat Rev cardio;6:712-722.
[35] Schnohr,P.,Scarling,H.,Jensen,JS.(2010):Changes in Leisure-Time Physical Activity and Risk of Death: An observation Study of 7,000 men and women .Am J Epidemiol;158:639-644
[36] Stephanie L. Cobb M, Debra J. Brown, PhD(2016) Effective interventions for lifestyle change after myocardial infarction or coronary artery revascularization Journal of the American Academy of Nurse Practitioners 31–39 ª Journal compilation ª 2016 American Academy of Nurse Practitioners18 (8), 1075-1083.
[37] Doll,R.,Peto,R.,Boreham,J.,andSuth erland,I.(2009):Mortality in Relation to Smoking :50 years Observations on Male British Doctors .BMJ.328:1519.
[38] Steptoe,A.,andKivimaki,M.(2012):S trss and Cardiovascular Disease Nat Rev Cardiol;9:360-370.