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## **Effectiveness of educational program toward patients knowledge about risk factors of coronary heart disease at AL-Najaf center for cardiac surgery and trans theory**

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**Abstract---**Introduction: Coronary illness can regularly be without indication yet individuals with CHD have an expanded danger of angina (chest torment or uneasiness), cardiovascular failure, cardiovascular breakdown, and heart arrhythmias. Angina and respiratory failures are brought about by decreased or hindered blood stream to the heart. Methods: The current study used a quasi-experimental study design consist of two assessments (Pre-program, and exams after program) for study and also control group. The study done during the period from (23rd September 2019 to 4th July 2021) by applying an educational program on patient's knowledge regarding risk factors of coronary heart disease at (NCCS&TCT)Al-Najaf Al-Ashraf city. A purposive, non-probability sample was selected for the patient who was reviewed for the Najaf Center for Cardiac Surgery and Interventional Catheterization. The sample consists of 74 patients who attend the periodic treatment schedule at the Najaf Center for Cardiac Surgery and Catheter Intervention. The data was collected through the use of the questionnaire and data analysis by SPSS version 25. Results: The study showed that the A majority of patients participating in the program were males, about 70.8%. The average age of the participating patients ranges between (young adults and old adults). The highest percentage of the participants was married, The majority of the study participants had no smoker 70 %. The majority of the study participation low knowledge about risk factors of coronary heart disease before education program. The program had a clear effective after its application in improving patients' knowledge toward the risk factors for coronary heart disease, and this is what we saw in the results after applying the program and testing them later. After

education the frequency of good knowledge was much increased to 91.7% in study group while still unchanged in controls, with highly significant difference between both groups. Conclusions: This study concluded that the majority of the study participation low knowledge about risk factors of coronary heart disease before education program

**Keywords**---evaluation, intervention program, knowledge, risk factors, coronary heart disease.

## Introduction

Coronary illness (CHD), otherwise called coronary corridor infection (CAD), is brought about by development of plaque in conduits that give oxygenated blood to heart. Plaque, a mix of (cholesterol, fat, and calcium stores), can develop in the corridors over numerous years. After some time, this plaque can cause the limiting and solidifying of the coronary courses, a condition named atherosclerosis. Coronary illness can regularly be without indication yet individuals with CHD have an expanded danger of angina (chest torment or uneasiness), cardiovascular failure, cardiovascular breakdown, and heart arrhythmias. Angina and respiratory failures are brought about by decreased or hindered blood stream to the heart. Stable angina will regularly strengthen with actual effort and die down with rest however a coronary episode can cause heart muscle demise and requires crisis attention.( National Heart Lung and Blood Institute.,2011) A muscle from a heart that siphons blood around the body through a progression of lines. These lines are named supply routes. The half of the heart left gets new, blood with oxygen from the lungs and afterward siphons it out an enormous vein considered the aorta that branches into more modest supply routes that go to all pieces of the body. The different pieces of the body then, at that point, remove the oxygen from the blood and the now old, oxygen-helpless blood is gotten back to the right half of the heart through pipes called veins. The right half of the heart siphons this lifeless blood to the lungs where it gets more oxygen and the cycle starts again.( Devereaux, et al., 2011) Coronary illness (CHD), likewise called coronary corridor infection, is to the chief source of decease in the US for all kinds of people. CHD happens when within the coronary veins. A veins gives your muscle of a heart oxygenated blood. The elements that make up a plaque are: ("fat, calcium, cholesterol, and different substances found in the blood"). Concluded the lengthy run, commemoration coagulates and restrictions the conduits, lessening blood stream to your heart muscle. In the end, a space of plaque can burst, making a blood coagulation structure on the outer layer of the plaque. If the coagulation turns out to be sufficiently enormous, it can generally or totally obstruct the progression of O<sub>2</sub>-rich high blood for a piece a heart muscle took care of by the course. This can prompt angina or a respiratory failure. Angina is chest agony or inconvenience that happens when insufficient oxygenated blood is streaming to a space of your muscle of the heart. CHD might sensation alike strain and crushing of the chest.a aggravation likewise can happen in your (buttreass, neck, spindle, chin, or spinal). A episode happens when blood stream to a space of your heart muscle is totally impeded. This forestalls oxygen-rich blood from arriving at that space of heart muscle, making it bite the dust. Without speedy treatment, a coronary episode can prompt major

issues or death. (Jarour, et al., 2012) A normal 58 million passings generally from all causes in 2005, cardiovascular disease (CVD) addressed 30%. This degree is identical to that due to compelling ailments, healthy deficiencies, and maternal and perinatal circumstances joined. Perceive that a significant extent of these passings (46%) were of individuals under 70 years old, in the more useful time of life; also, 79% of the infection trouble credited to cardiovascular illness is in this age bunch. (Prevention of Cardiovascular Disease., 2007) In spite of the fact that CVD as of now puts a significant monetary weight on low-and center pay nations, the assets accessible for its administration in these nations are restricted due to contending wellbeing needs. It is, all things considered, fundamental to perceive that the change to bring down degrees of irresistible illnesses and more elevated levels of non-communicable infections is now under way; inability to act presently will bring about huge expansions in avoidable CVD, setting genuine tensions on the public economies (10–12). In this specific circumstance, focus on the restricted assets on the people who are probably going to benefit. (Skodova et al., 2008).

## Methods

The current study used a quasi-experimental study design consist of two assessments (Pre-program, and exams after program) for study and also control group. The study done during the period from (23rd September 2019 to 4th July 2021) by applying an educational program on patient's knowledge regarding risk factors of coronary heart disease at (NCCS&TCT) Al-Najaf Al-Ashraf city. A purposive, non-probability sample was selected for the patient who was reviewed for the Najaf Center for Cardiac Surgery and Interventional Catheterization. The sample consists of 74 patients who attend the periodic treatment schedule at the Najaf Center for Cardiac Surgery and Catheter Intervention, who have previously been diagnosed with coronary artery disease, and who are subject to continuous treatment and follow-up by the medical and nursing staff in the center. 10 of these patients were selected to assess the patient's needs for this program. And select 10 other patients to work for a pilot study. While 50 patients receiving treatment in the treatment in Najaf were assigned to satisfy the heart and catheter intervention participating in a sample of the experiment sample from 2 divisions: the control involving of 24 participants (control class) and the experimental involving of 24 participants (experimental class) also and 4 samples were excluded. The rest of the patients, as follows, two of individuals refused to engage in the program, and two did not finish it. Then the final study sample and completed all the steps of the educational program was 24 samples of an experimental group and 24 samples of a control group and the completion of the participation process. Statistical analysis: Data of study participants in both groups were transferred into computerized database form using Microsoft Excel software version 2019, then "managed and analyzed using the statistical package for social sciences (SPSS) version 26, IBM. Descriptive statistics of variables presented as mean, standard deviation, frequencies and percentages. Qualitative variables were compared between both groups using chi square test for independence, as an alternative, Fisher's exact test was applied when chi square test" was inapplicable. Correct responses of study participants before and after education program regarding their knowledge presented as frequencies and compared using chi square test and Fisher's exact test when they are applicable

## Results

Table 1. Summary and Comparison of knowledge scores of the studied groups before and after education of total, mean and mean difference of knowledge scores before and after education

| Variable                          |                  | Study group |      | Control |       | Effect size | P. value* between group |
|-----------------------------------|------------------|-------------|------|---------|-------|-------------|-------------------------|
|                                   |                  | Mean        | SE   | Mean    | SE    |             |                         |
| Total knowledge score (out of 21) | Before education | 6.50        | 0.94 | 7.33    | 1.10  |             | 0.563                   |
|                                   | After education  | 17.79       | 0.49 | 7.58    | 1.11  | 2.61 large  | 0.001                   |
| Mean difference                   |                  | 11.29       | 2.17 | 0.25    | 0.01  |             | 0.001                   |
| Percentage change                 |                  | 173%        | 38%  | 3.4%    | 0.91% |             | 0.001                   |
| P. value* within group            |                  | 0.001       |      | 0.161   |       |             |                         |
| Mean knowledge score (out of 1)   | Before education | 0.31        | 0.04 | 0.35    | 0.05  |             | 0.563                   |
|                                   | After education  | 0.85        | 0.02 | 0.36    | 0.05  | 2.11 large  | 0.001                   |
| Mean difference                   |                  | 0.54        | 0.08 | 0.01    | 0.002 |             | 0.001                   |
| Percentage change                 |                  | 174%        | 39%  | 2.9%    | 0.72% |             | 0.001                   |
| P. value* within group            |                  | 0.001       |      | 0.161   |       |             |                         |

Comparison of knowledge scores of the studied groups before and after education revealed that the mean total score (out of 21 point) was significantly increased after education program, from 6.5 to 17.79 in the study group with a mean difference of 11.29 and percentage change of 173%, (P. value, 0.001). No significant change in control group, but slight change with small mean difference of only 0.25 point out of 21 and percentage change of only 3.4%, (P. value > 0.05), the effect of education program was clearly observed in study group where the effect size was large, (effect size = 2.61). Similarly, the mean knowledge score (out of 1) was significantly increased after education in study group from 0.31 to 0.85 with a mean difference of 0.54 and percentage change of 174%, (P. value = 0.001) with large effect size of 2.11 compared with the control group, where the average difference is just 0.01 and percentage change was 2.9%, (P. value > 0.05, not significant).

Table 2: Comparison of Level of knowledge before education studied groups

| Knowledge                   | Study group |       | Control |       |
|-----------------------------|-------------|-------|---------|-------|
|                             | No.         | %     | No.     | %     |
| Poor                        | 16          | 66.7  | 15      | 62.5  |
| Fair                        | 6           | 25.0  | 5       | 20.8  |
| Good                        | 2           | 8.3   | 4       | 16.7  |
| Total                       | 24          | 100.0 | 24      | 100.0 |
| Fisher's exact test = 0.824 |             |       |         |       |
| P. value* = 0.828           |             |       |         |       |

Level of knowledge before education in both studied groups were not significantly different where among the study group, 16 participants (66.7%) had poor knowledge, 6 (25%) had fair and only 2 (8.3%) had good knowledge, among controls, 15 participants (62.5%) had poor, 5 (20.8%) fair and 4 (16.7%) had good knowledge, the difference between both clusters was not substantial ( $P>0.05$ ).

Table 3: Comparison of Level of knowledge after education in both studied groups

| Knowledge                   | Study group |       | Control |       |
|-----------------------------|-------------|-------|---------|-------|
|                             | No.         | %     | No.     | %     |
| Poor                        | 0           | 0.0   | 13      | 54.2  |
| Fair                        | 2           | 8.3   | 7       | 29.2  |
| Good                        | 22          | 91.7  | 4       | 16.7  |
| Total                       | 24          | 100.0 | 24      | 100.0 |
| Fisher's exact test = 30.76 |             |       |         |       |
| P. value* = 0.001           |             |       |         |       |

After education the frequency of good knowledge was much increased to 91.7% in study group while still unchanged in controls, with highly significant difference between both groups.

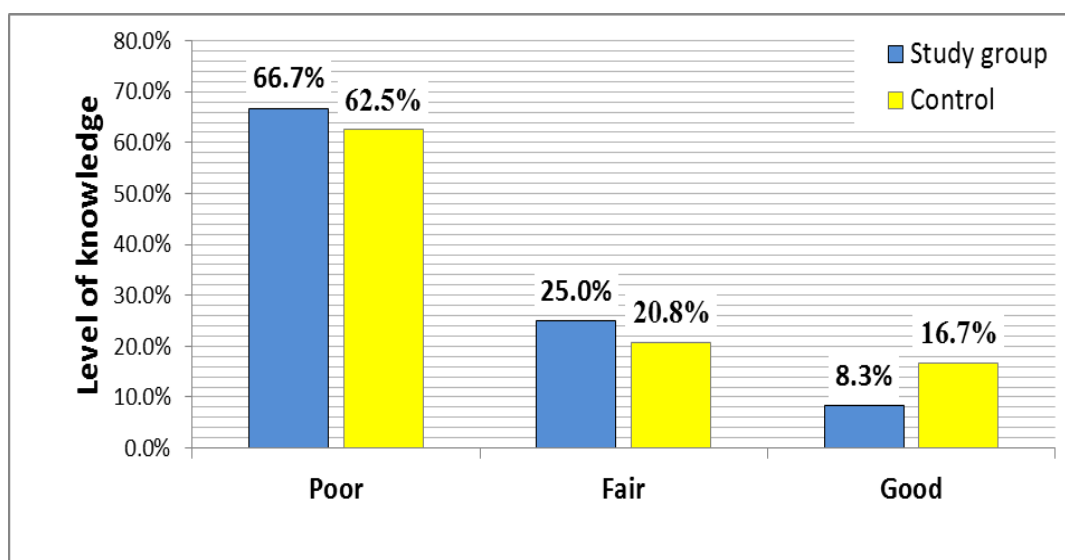


Figure 1. Bar-Chart compare the proportions of study participants at each level of knowledge before education program

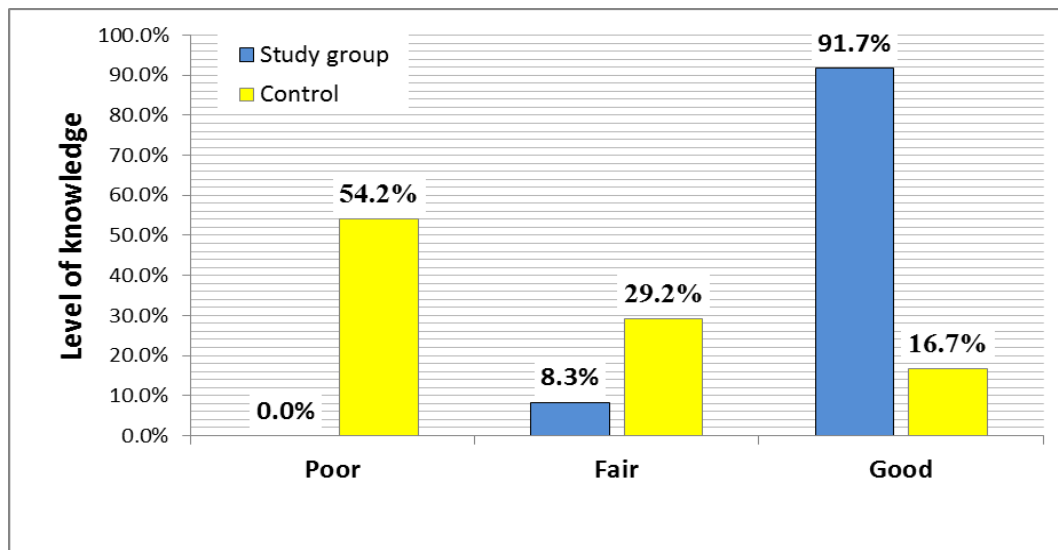


Figure 2 Bar-Chart compare the proportions of study participants at each level of knowledge after education program

## Discussion

Total of Gender dominance of males in study group and controls where males represented 70.8% and 62.5%, respectively, with a male to female ratio of 2.42 to one in the study group and 1.67 in the control group, no statistically significant difference was found between both groups in gender distribution, (Table 4.1). This finding usually, the incidence of coronary heart disease in men is higher than women, especially when the age is early for men, unlike women, it is at a later age, which result in death in this disease about 23 % in male and 34% in female. The reason for men's injuries more than women may be due to the lack of symptoms in women or their appearance later than men, or the reason may lie in the no getting of health care services due to the delay in diagnosis. This is due to public campaigns to introduce the dangers of these diseases and the interest of women in them, unlike men who are less interested in this direction, and the reason for this is due to their preoccupation with work and living. (Mosca, et al., 2011) (Mosca, et al., 2013) (Shaw, et al., 2009) supported this finding in them. Concerning Age distribution of the studied group shows that in the study group, young adult represented 20.8%, middle age adults represented 41.7%, old age adult were 37.5% while none at geriatric age. In control group the corresponding proportions of these age groups were 12.5%, 50%, 37.5% in this table (4.1.2.) (Jousilahti, et al., 2009) supported this finding in their educational intervention from The smallest age group among the elderly is between the ages of 25 and 49, and the smallest age group among the elderly is between the ages of 60 and 64. The absolute difference in CHD risk, on the other hand, was larger in the older age group. The risk of coronary heart disease increases with age, regardless of gender, if it is male or female, and the reason for this lies in the increase in the level of cholesterol in the blood with age, and when a rise in blood cholesterol causes a second risk factor, which is high blood pressure, which makes age develop two other factors in coronary heart disease. Regarding study sample Out of the 24 patients in the study group, 8.3% were single, 87.5% married while only

one patient was separated and none were widowed or divorced. In control group, 12.5% were single, 62.5% married and 6 were separated and none was widowed or divorced, no significant difference in marital status was found between both groups. This is in contrast to our apparent results that the marital status has a reverse role in coronary heart disease, meaning that if a person is married, his exposure to the danger reasons for CHD increases according to A results this research, (Schultz, et al., 2017) coronary heart disease risk factors increase when you are unmarried or separated and the reason lies in your lack of interest in yourself and you are more likely to smoke and not adhere to the treatments prescribed to you. Presentation of psychological diseases of depression and stress, and these factors may lead to coronary heart disease. In the study group, post graduated patients represented 12.5% , graduated (20.8%), diploma (16.7%), high school (20.8%), middle school(8.3%), primary school (20.8%) and none was illiterate. In control group, post graduated patients represented 12.5%, graduated (12.5%), diploma (16.7%), high school (25%), middle school (8.3%), primary school (16.7%) and (8.3%) were illiterates. However, no statistically significant difference was found in the level of education between both groups. Level of knowledge before education in both studied groups were no significantly different where among the study group, 16 participant (66.7%) had poor knowledge, 6 (25%) had fair and only 2 (8.3%) had good knowledge, among controls, 15 participants (62.5%) had poor, 5 (20.8%) fair and 4 (16.7%) had good knowledge, the difference between both clusters was not substantial ( $P>0.05$ ), This agrees with the researcher, who found that it is one of the results that match those results that appeared in this research (Anand, et al., 2008).After education the frequency of good knowledge was much increased to 91.7% in study group while still unchanged in controls, with highly significant difference between both groups. Another researcher (Huxley, et al., 2010) implemented an educational program for patients toward the danger reasons for CHD, and found the total of patients who had knowledge toward the danger reasons for CHD, after applying A program, it rose to about 90.1%.

## Conclusions

This study concluded that the majority of the study participants had no smoker 70 %. 10. And the majority of the study participation low knowledge about risk factors of coronary heart disease before education program.

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