Caring: Indonesian Journal of Nursing Science
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Illness Perception and Self-Care in Coronary Heart Disease Patients: A Cross-Sectional Study

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ARTICLE INFO
Article history:
Received 1th August 2023
Revised 22th November 2023
Accepted 22th December 2023
Available online
https://talenta.usu.ac.id/IJNS

E-ISSN: 2685-7162

How to cite: Mailani, F., Nadiya, N., Nurikhsani, R.M. (2023). Illness perception and self-care in coronary heart disease patients: a cross-sectional study. *Caring: Indonesian Journal of Nursing Science*, 5(2), 118-124.

https://doi.org/10.32734/ijns.v5i2.13338

ABSTRACT
Relapse and rehospitalization are common occurrences in patients with coronary heart disease (CHD), and these can be mitigated through effective self-care practices. Positive illness perceptions play a crucial role in promoting good self-care. This study aimed to investigate the connection between illness perception and self-care among patients with coronary heart disease at the Cardiac Polyclinic of RSUP Dr. M. Djamil Padang. Conducted from June to July 2023, this quantitative research utilized a cross-sectional approach and involved 242 patients from the cardiac polyclinic at Dr. M. Djamil Padang, using purposive sampling. The instruments used were the Self-Care Coronary Heart Disease Inventory (SC-CHDI) and the Brief Illness Perception Questionnaire (B-IPQ). The mean values for illness perception and self-care were 52.27 (SD=9.76) and 62.31 (SD=11.35), respectively. Data analysis used the Spearman Rank correlation test, yielding a p-value of 0.014 (r=0.157). The findings revealed a positive correlation, indicating a relationship between illness perception and self-care in patients with coronary heart disease. This implies that a more optimistic perception of the disease is associated with improved self-care among CHD patients. It is advisable for individuals with coronary heart disease to enhance their perception by engaging in informational support activities, thereby fostering optimism, and ultimately improving self-care behavior.

Keywords: Coronary heart disease, Illness perception, Self-care

1. Introduction

Heart disease has been one of the leading causes of death worldwide for the past 20 years and continues to increase. One specific type is coronary heart disease (CHD), which had 6.7 million cases in 2019, with a death rate reaching 1.8 million in 2020 (WHO, 2021). West Sumatra is the ninth province with the highest number of coronary heart disease patients in Indonesia (Ministry of Health, 2021). Meanwhile, according to Riskesdas Indonesia in 2018, 1.5% of Indonesia's population suffers from coronary heart disease, resulting in a death toll of 245,343 people in 2020.

Coronary Heart Disease is caused by a partial or complete buildup of plaque in the lining of the coronary arteries, leading to blood flow blockage and a reduction in the supply of oxygen to the heart muscle (Shah et al., 2020). Symptoms include chest pain, heaviness, pressure, heartburn, nausea, vomiting, cold sweat, and a burning sensation around the chest (Ministry of Health, 2022). CHD is influenced by two types of factors: those that can be changed and those that cannot. Unchangeable risk factors include age, sex, and family history (Nurhijriah et al., 2022). Changeable factors encompass high levels of fat and cholesterol in the body, lack of exercise, excessive alcohol consumption, and smoking behavior (Hanifah et al., 2021).

Individuals with CHD are strongly encouraged to engage in self-care practices to prevent the recurrence of symptoms, rehospitalization, and achieve a higher level of health (Riegel et al., 2017). Self-care involves a series of activities and health promotion efforts undertaken by individuals or families to maintain health and prevent disease (Rokayah et al., 2021). For chronic diseases, self-care is crucial for maintaining both physical

and emotional stability, encompassing three main components: self-maintenance, self-management, and self-confidence (Dickson et al., 2016). The level of self-care varies among individuals, and one influencing factor is the perception of the disease (Hidayat, 2009)

The perception of disease, or illness perception, refers to the patient's beliefs about the disease, shaping their understanding of symptoms, medical conditions, and responses to health threats, ultimately influencing health outcomes (Chilcot et al., 2020). Positive perceptions of the disease can reduce symptom recurrence in CHD patients, making the evaluation of disease perceptions crucial for individuals with chronic conditions such as CHD (Kaur et al., 2023). A significant finding in the study was that most CHD patients exhibited a low perception of the disease, contributing to increased incidences of anxiety, depression, and poor medication adherence (Sya & Rahadi, 2019).

Self-care in chronic illnesses plays a crucial role in maintaining both physical and emotional stability, comprising three main components: self-care maintenance, self-care management, and self-care confidence. Self-care maintenance aims to enhance well-being, health, and stability in both physical and emotional aspects. Self-care monitoring involves the vigilant observation of significant changes in the body. Self-care confidence reflects the self-assurance in executing the first two components (Dickson et al., 2016). Research has demonstrated the impact of self-care on reducing the incidence of rehospitalization in coronary heart patients. A study revealed that 28 out of 46 CHD patients surveyed experienced a second rehospitalization event (Anggraeni, 2016). Conversely, Fiqriyah Hudiyawati's research (2023) highlighted a negative perception among coronary heart disease patients due to insufficient knowledge, affecting their self-management skills negatively. Given the existing gap in research on the correlation between disease perception and self-care in CHD patients, researchers aim to explore this relationship at the Cardiology Clinic of RSUP. Dr. M. Djamil Padang.

2. Methods

This quantitative correlational research adopts a cross-sectional approach and was conducted from June to July 2023 at the Cardiac Polyclinic of RSUP Dr. M. Djamil Padang. The population in this study consisted of patients with coronary heart disease undergoing outpatient care, totaling 490 patients. Sampling for this study utilized a purposive sampling technique with a sample size of 242 patients. The calculation of the sample size in this research was performed using the Slovin formula.

The sampling technique used in this research was non-random, utilizing a purposive sampling method with the following inclusion criteria: outpatients at the Cardiac Polyclinic of RSUP Dr. M. Djamil Padang diagnosed with coronary heart disease (including atherosclerotic heart disease, unstable angina, angina pectoris, chronic ischemic heart disease, and atherosclerotic cardiovascular diseases). The study included CHD patients aged over 18 years who were willing to participate as respondents, possessed full consciousness, and had the ability to read and write. Conversely, the exclusion criteria in this study encompassed CHD patients with coexisting conditions such as stroke, kidney disease requiring hemodialysis, cancer, hyperthyroidism, and chronic obstructive pulmonary disease (COPD). Additionally, CHD patients who had been diagnosed within the last six months were excluded. Sample collection involved approaching CHD patients while waiting for their consultation in the cardiac clinic waiting room. Four enumerators assisted the researcher in the data collection process.

The instrument used to measure disease perception is the Brief Illness Perception Questionnaire (B-IPQ), developed by Broadbent et al. (2006). It comprises nine question items corresponding to each dimension of disease perception, with items 1-8 rated on a ratio scale of 0-10. The total score ranges from 0 to 80, with a median of 40. Interpretation suggests that a score of 0-40 indicates a negative perception of the disease, while scores of 41-80 reflect a positive perception. Question 9 assesses the Causal Representation dimension through open-ended questions, asking patients to name the three most important causal factors in their disease. Self-care was measured using the Self Care of Coronary Heart Disease Inventory (SC-CHDI) instrument developed by Dickson et al. (2016). It consists of 22 questions divided into three components: self-maintenance (10 questions), self-management (6 questions), and self-confidence (6 questions). The Likert scale was employed in this instrument, with distinct interpretations for each dimension. Data were collected from respondents through guided interviews using a provided questionnaire. The researcher was aided by six enumerators who received specific directions before conducting the interviews. The instrument used in this research underwent a back-translation process at the university language institute.

Researchers adhere to ethical principles when conducting research, including respecting human dignity, ensuring the privacy and confidentiality of research subjects, promoting fairness and openness, and analyzing the benefits and losses incurred. This research has undergone an ethical review by the RSUP Health Research Ethics Committee, Dr. M. Djamil Padang, with the number LB.02.02/5.7/301/2023. Univariate analysis was

conducted using frequency distribution tables, and bivariate analysis employed the Spearman rank correlation test.

3. Results

Table 1 showed that 59.1% fall within the age range of 51-70 years. Additionally, more than half of the respondents (66.1%) are male, 42.1% have a high school education, 26% work as self-employed individuals, the majority are married (89.3%), and 43.8% have been diagnosed with CHD for 2-5 years.

Table 1 Characteristics of respondents (n=242)

Characteristics	f	(%)
Age		
18 – 30 years	6	2,5
31 – 50 years	71	29,3
51 – 70 years	143	59,1
> 70 years	22	9,1
Gender		
Man	160	66,1
Woman	82	33,9
Education		
No school	4	1,7
Elementary School	31	12,8
Junior High School	47	19,4
Senior High School	102	42,1
College/University	58	24
Work		
Does not work	45	18,6
Farmer	26	10,7
Employees/civil servant	34	14
Housewife	43	17,8
Retired	31	12,8
Self-employed	63	26
Marriage Status		
Not married yet	10	4,1
Divorce	16	6,6
Married	216	89.3
Diagnostic Time		
Six months – 1 year	89	36,8
2-5 years	106	43,8
6-10 years	35	14.5
> 10 years	12	5

The perception of illness was assessed using the Brief Illness Perception Questionnaire (B-IPQ). The analysis of disease perceptions yielded an average score of >40, indicating a favorable perception of the disease. The dimension with the highest average score is personal control, while the lowest is identity. In the causal representation dimension, respondents attributed the causes of CHD to various factors, with percentages as follows: food (43.3%), fatigue (26%), smoking (24.3%), other diseases (19.42%), emotions and thoughts (18.8%), genetics (17.35%), lifestyle (16.52%), other factors (14.8%), lack of exercise and movement (13.63%), and age (5.37%). Descriptive statistics based on the dimensions of disease perception are presented in Table 2.

Table 2 Mean of illness perception (n=242)

Dimensions	Means	Min	Max	SD
Illness Perception	52,56	32	78	9.58
Consequence	6,76	1	10	2.37
Acute timeline	6.55	0	10	2,27
personal controls	7,31	0	10	2.05
Treatment control	6,45	1	10	2.48

Table 2 Continued

Dimensions	Means	Min	Max	SD
Identity	6.04	0	10	2,6
Cyclical timeline	6,42	1	10	2.09
Illness coherence	6,33	0	10	2,21
Emotional responses	6,27	0	10	2.35

Table 3 indicates that the respondent's self-care level is approaching a score of 88, suggesting a good/moderate level of self-care. The component with the highest average is self-maintenance, while the lowest is self-management.

Table 3 Mean of self-care (n=242)

Dimensions	Means	Min	Max	SD
Self-care	62,31	32	88	11.35
Self-maintenance	28,76	16	40	5,3
Self-management	15.75	8	24	4.02
Self-confidence	17.79	8	24	3.91

Table 4 shows that there is a significant relationship between the perception of disease and self-care in CHD patients, with a p-value of 0.014 (r = 0.157). The correlation strength is weak, indicating a positive correlation direction. This positive correlation suggests that a more positive perception of the disease is associated with a better level of self-care. The perception of the disease contributes 1.3% to self-care.

Table 4 Spearman rank correlation (n=242)

Variable	r	R square	p(Values)
Disease Perception - Self-care	0.157	0.013	0.014

4. Discussion

This study aimed to investigate the connection between illness perception and self-care among patients with coronary heart disease at the Cardiac Polyclinic of RSUP Dr. M. Djamil Padang. The research results reveal that the average perception of disease in CHD patients at the heart polyclinic at Dr. M. Djamil Hospital, Padang, is 52.56 (SD=9.58), indicating a favorable perception of the disease. This finding is consistent with a study by Achmad et al. (2023), which reported that the majority of CHD patients studied (56% of 50 respondents) had an average total disease perception score of 44.8, signifying a positive disease perception. The dimension with the highest score is the personal control dimension, with an average score of 7.31 (SD=2.05). Respondents expressed confidence in their ability to control their disease by adhering to medication and following the advice of doctors and nurses, believing it would prevent their condition from worsening. They also acknowledged that their symptoms could reappear if they deviated from prescribed medication or took it belatedly. This aligns with the concept of personal control, as defined by Leventhal, which refers to individual beliefs about their capacity to manage themselves and adhere to treatment programs as a means of controlling their disease (Leventhal et al., 2016).

The dimension with the lowest score is identity, which pertains to how patients perceive their disease based on symptoms. This study assesses the occurrence of CHD symptoms in respondents over the last month, yielding an average score of 6.04 (SD=2.6). The results indicate that respondents did not experience a high frequency of disease symptoms during this period. According to Sya & Rahadi (2019), medication adherence significantly influences this outcome. Proper and consistent adherence to the treatment program, along with following the advice of doctors or nurses, can lead to a decrease in symptoms (Sya & Rahadi, 2019). The causal representation dimension, the final aspect of disease perception with a unique assessment method, identified ten factors contributing to CHD. These factors were grouped based on similarity, with the most prevalent being dietary choices (43.3%). Respondents reported consuming coconut milk, fried foods, offal, junk food, and items high in sugar, while insufficiently incorporating fruits and vegetables into their diet. Yanti and Fitri (2020) also highlighted that the consumption of foods rich in saturated fats can elevate cholesterol levels in the blood, potentially leading to the blockage of heart arteries.

This study reveals that the average self-care score is 62.31 (SD = 11.35), classifying it as a moderate/good level of self-care. Consistent with the findings of Huriani et al. (2023), the studied coronary heart disease patients exhibited a moderate level of self-care. This is attributed to the respondents' high awareness of self-maintenance but a need for improvement in self-management. The study shows that the highest mean self-care

component is self-maintenance, with an average score of 28.76 (SD=5.3), while the component with the lowest score is self-management, with an average of 15.75 (SD=4.02). A contributing factor to the relatively high effort in self-care is the level of education (Prihatiningsih, 2018). The majority of respondents in this study had a high school education, accounting for 41.5%, followed by academy/college, with a percentage of 23.6%. A higher level of education is associated with better self-care behavior, aligning with Gomes' research that indicates self-care skills in heart disease patients are influenced by the educational program they have undergone (Gomes et al., 2021).

The type of work also influences the implementation of self-care. This research indicates that most respondents are self-employed (26%) and engage in minimal physical activity. Light-intensity activities are highly recommended to activate muscle working mechanisms and reduce pressure (Yulendasari & Pradisca, 2020). The self-confidence component in this study has a mean score of 17.79 (SD=3.91). Respondents' express confidence in maintaining freedom from heart attack symptoms, adhering to treatment suggestions, recognizing changes in health, assessing heart attack symptoms, undertaking actions to alleviate symptoms, and evaluating the efficacy of prescribed medications. This self-confidence demonstrates the patient's understanding of their condition and strong family support. Consistent with research by Rahmadani et al. (2019), a positive correlation was found between family support and self-care behavior. Higher levels of family social support are associated with an elevated level of self-care.

Based on the results of the study, a relationship was observed between the perception of disease and self-care in CHD patients at the cardiac polyclinic at RSUP Dr. M. Djamil Padang. These findings are consistent with research by Kim et al. (2020), which indicates that better self-care adherence in myocardial infarction patients is influenced by these results. Additionally, Sri et al. (2021) demonstrated a correlation between the perception of disease and self-care in patients with diabetes mellitus, with a p-value of 0.000 and a correlation coefficient (r) of 0.447. This implies that a more positive perception of the disease corresponds to a higher value of self-care in type 2 diabetes mellitus patients, indicating a moderate relationship strength. Similar findings were reported in the research by Larsen et al. (2017), suggesting that self-management contributes to the perception of disease. Therefore, increasing knowledge and understanding of health status and treatment behavior are essential.

This research demonstrates a positive correlation between disease perception and self-care. In other words, the more positive a CHD patient's perception of their disease, the better their level of self-care. This supports the theory proposed by Hidayat, asserting that perception of disease is one of the factors influencing self-care, and the two can mutually influence each other (Hidayat, 2009). A positive disease perception indicates that a patient can control and comprehend their illness well, contributing to increased self-care (Sri et al., 2021). Adequate self-care and a high disease perception suggest that a patient possesses sufficient knowledge about their disease (Fitriyan et al., 2019). This study also identified factors related to the perception of disease that respondents deemed most influential in coronary heart events. The most cited factor was dietary habits, with a percentage of 43.3%. This finding aligns with research by Husnah & Ramadan (2022), highlighting those dietary choices, such as the consumption of foods high in saturated fat and junk food, can impact heart health. Therefore, maintaining a heart-healthy diet is crucial to prevent the worsening of heart conditions.

4. Conclusion

The research results also indicate a positive relationship between disease perception and the level of self-care in CHD patients. It was observed that the more positive a patient's perception of their illness, the better the level of self-care they undertake. These findings align with the theory proposed by Hidayat, suggesting that the perception of illness is one factor influencing self-care. Overall, the level of self-care for CHD patients at the RSUP heart clinic, Dr. M. Djamil Padang, was classified as fair/reasonable, with a mean score of 62.31 (SD = 11.35). Self-maintenance received the highest score, indicating that respondents are highly aware of self-care. However, self-management, reflecting respondents' ability to manage themselves, had a relatively lower score, suggesting room for improvement.

Education and type of work also play essential roles in self-care, with higher levels of education and work types that support physical activity associated with better self-care levels. Respondents' self-confidence in carrying out self-care also plays a role, indicating that understanding health conditions and family support positively impact the level of self-care.

In conclusion, efforts to enhance self-care in CHD patients should consider aspects of disease perception and factors such as education level, type of work, and family support. Integrating targeted health education and social support programs can be practical steps to improve patients' understanding and ability to manage their coronary heart disease.

Acknowledgment

The researchers would like to express gratitude to all the participants who volunteered for the research data collection. Additionally, we extend our thanks to the hospital for their support and facilitation during the data collection process.

References

Achmad, BF, Setiyarini, S., Sutono, S., Rasyid, F., Fitriawan, AS, & Kafil, RF (2023). Association between Illness Perception and Anxiety Undergoing Percutaneous Coronary Intervention in Patients with Acute Coronary Syndrome: A Pilot Study. Open Access Macedonian Journal of Medical Sciences, 11(G), 6–11. https://doi.org/10.3889/oamjms.2023.9745

Anggraeni, DA (2016). Factors Associated with Rehospitalization of Coronary Heart Disease Patients in the Heart Room of RSU Dr. H. Abdul Moeloek Lampung Province. Journal of Health, 7(3), 345. https://doi.org/10.26630/jk.v7i3.214

Ardianti, R., Erwin, E., & Lestari, W. (2022). Self-Management of Coronary Heart Disease Patients After Cardiac Catheterization. Journal of Nurses Indonesia, 13(1), 1–7. https://doi.org/10.31258/jni.13.1.1-7

Chilcot, J., Lee, E., Tylee, A., Brown, J., Weinman, J., Hotopf, M., & Palacios, J.E. (2020). Distinct distress symptom trajectories over 3 years are associated with baseline illness perceptions in individuals with coronary heart disease. Annals of Behavioral Medicine, 54(5), 374–379. https://doi.org/10.1093/abm/kaz054

Dickson, VV, Lee, CS, Yehle, KS, Mola, A., Faulkner, KM, Riegel, B., & Lee, CS (2016). Psychometric Testing of the Self-Care of Coronary Heart Disease Inventory. https://doi.org/10.1002/nur.21755

Fiqriyah, IK, & Hudiyawati, D. (2023). Relationship Between Knowledge Level And Illness Perception In Coronary Heart Disease Patients. 4(2), 189–197.

Fitriyan, I., Djamaludin, D., & Chrisanto, EY (2019). The Relationship between Knowledge and Self Care with the Quality of Life of Heart Failure Patients in the Work Area of the Kemiling Inpatient Health Center in Bandar Lampung City. Concepts and Communication, null(23), 301–316.

Gomes, L., Liébana-Presa, C., Araújo, B., Marques, F., & Fernández-Martínez, E. (2021). Heart disease, now what? Improving the quality of life through education. International Journal of Environmental Research and Public Health, 18(6), 1–10. https://doi.org/10.3390/ijerph18063077

Hanifah, W., Oktavia, WS, & Nisa, H. (2021). Lifestyle Factors and Coronary Heart Disease: A Systematic Review on Adults in Indonesia. Nutrition and Food Research (The Journal of Nutrition and Food Research), 44(1), 45–58. https://doi.org/10.22435/pgm.v44i1.4187

Hidayat, AA (2009). Introduction to Basic Human Needs (Nursing Concept Application and Process). Salemba Medika, 2013.

Huriani, E., & Nasution, SD (nd). Self Care and Quality of Life for Coronary Heart Disease (CHD) Patients. 7(1), 41–50.

Husnah, & Ramadhan, MH (2022). Coronary heart disease patient diet. Syiah Kuala Medical Journal, 22(4), 376–379. https://doi.org/10.24815/jks.v22i4.26694

Kaur, S., Singh, D., Ahmed, FB, Binti, A., Ahmad, Y., Abdullah, KL, Abidin, IZ, & Suhaimi, A. Bin. (2023). Changes in Perception of Illness during Cardiac Rehabilitation Program among Patients with Acute Coronary Syndrome : A Longitudinal Study. 1–12.

Ministry of Health. (2021). Recognize the Signs and Symptoms of Coronary Heart Disease (CHD). August 30. https://p2ptm.kemkes.go.id/infographic/kenali-tanda-dan-symptoms-disease-jantung-koroner-pjk

Ministry of Health. (2022). Know the Risk Factors for Coronary Heart Disease. January 13. https://promkes.kemkes.go.id/mengenal-Factor-Risiko--Jatung-Koroner

Kim, SH, Hwang, SY, Shin, J., & Lim, Y. (2020). Self-care and related factors associated with left ventricular systolic function in patients under follow-up after myocardial infarction. https://doi.org/10.1177/1474515120923201

Larsen, MH, Krogstad, AL, & Wahl, AK (2017). Alexithymia, illness perception and self-management competency in psoriasis. Acta Dermato-Venereologica, 97(8), 934–940. https://doi.org/10.2340/00015555-2707

Leventhal, H., Phillips, LA, & Burns, E. (2016). The Common-Sense Model of Self-Regulation (CSM): a dynamic framework for understanding illness self-management. Journal of Behavioral Medicine, 39(6), 935–946. https://doi.org/10.1007/s10865-016-9782-2

Maya Rokayah, Chrisyen Dimanik, Marina, S. (2021). Dependency care in heart failure patients during hospitalization. Journal, Sept.

Nurhijriah, S., Patimah, S., Yusuf, RA, Epidemiology, P., Society, FK, Indonesia, UM, Nutrition, P., Society,

FK, & Indonesia, UM (2022). Specialization in Nutrition, Faculty of Public Health, Indonesian Muslim University. 3(1), 1922–1927.

Prihatiningsih, D. (2018). Relationship between knowledge and self-care in heart failure patients: literature review Correlation Between Knowledge and Self Care on Heart Failure Patients

Prihatiningsih, D., & Sudyasih, T. (2018). Self-Care in Heart Failure Patients. Journal of Indonesian Nursing Education, 4(2). https://doi.org/10.17509/jpki.v4i2.13443

Rahmadani, W., Rasni, H., & Nur, KRM (2019). The Relationship between Family Social Support and Self-Care Behavior in Type 2 Diabetes Mellitus Clients in the Work Area of the Kaliwates Health Center, Jember. Health Library, 7(2), 120. https://doi.org/10.19184/pk.v7i2.19124

Riegel, B., Moser, DK, Buck, HG, Vaughan-Dickson, V., B. Dunbar, S., Lee, CS, Lennie, TA, Lindenfeld, JA, Mitchell, JE, Treat-Jacobson, DJ, & Webber, DE (2017). Self-care for the prevention and management of cardiovascular disease and stroke: A scientific statement for healthcare professionals from the American heart association. Journal of the American Heart Association, 6(9), 1–27. https://doi.org/10.1161/JAHA.117.006997

Shah, SJ, Borlaug, BA, Kitzman, DW, McCulloch, AD, Blaxall, BC, Agarwal, R., Chirinos, JA, Collins, S., Deo, RC, Gladwin, MT, Granzier, H., Hummel, S.L. , Kass, DA, Redfield, MM, Sam, F., Wang, TJ, Desvigne-Nickens, P., & Adhikari, BB (2020). Research Priorities for Heart Failure with Preserved Ejection Fraction: National Heart, Lung, and Blood Institute Working Group Summary. Circulation, 1001–1026. https://doi.org/10.1161/CIRCULATIONAHA.119.041886

Sri, A., Banowo, M., Hema, D., & Lenggogeni, a PS (2021). Correlation of Illness Perception and Self-Care of Type 2 Diabetes Mellitus Patients at Padang City Health Center. Journal of Voice Health Research Forikes, 12(4), 516–520. file:///D:/Thesis/Yellow Pumpkin Flour/1481-5633-1-PB.pdf

Sya, T., & Rahadi, S. (2019). The Impact of Illness Perception on Adherence in Coronary Heart Patient : The Mediating Role of Heart-Focused Anxiety and Depression The Impact of Illness Perception on Adherence in Coronary Heart Patient : The Mediating Role of Heart-Focused Anxiety and . 229(Iciap 2018), 475–484.

WHO. (2021). Cardiovascular diseases (CVDs). June 11. https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)

Yanti, ND, & Fitri, Y. (2020). Physical Analysis of Blood Lipid Profiles in Patients with Coronary Heart Disease. (Analysis of carbohydrates , fat intake , and physical activities to lipid profile blood in a patient with coronary heart disease) According to data from the World Health Organization. 2020(November), 179–186.

Yulendasari, R., & Pradisca, RA (2020). Relationship Between Physical Activity and Family History with Coronary Heart Events at the Banjarsari Public Health Center in Metro City in 2020. 1, 1–7.