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Original Research Article

Quality of life evaluation among patients with coronary heart disease at secondary hospital, Yogyakarta

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ABSTRACT

Background: Coronary heart disease (CHD) is a progressive disease that continues to increase every year in Indonesia so it becomes a problem and a threat to the community. CHD has several factors that affect the quality of life, both in terms of physical, social, psychological, and environmental. The purpose of this research is to illustrate domain WHOQOL-BREFF and SAQ-7 to the quality of life of CHD which is undergoing outpatient at one of Secondary Hospital in Yogyakarta, Indonesia.

Methods: This observational study was involving all patients with CHD who came to the Cardiology Outpatient Department during 4 months study period. There were 90 patients who met with eligibility criteria and willing to participate in the study. The SAQ-7 and WHOQOL-BREFF were used to measure the quality of life among the participants.

Results: Generally, all the participants in this study considered in the high quality of life even they had been diagnosed with CHD. Among all the participants, surprisingly 97% participants by WHOQOL-BREF and 91% participants by SAQ-7 reported in the high score of quality of life. The most supported factor for their quality of life defined by WHOQOL-BREF was the Psychological domain with r=0.870 and the Treatment Satisfaction with r=0.830 defined by SAQ-7

Conclusions: The highest supportive factor for patient's quality of life with carrying CHD were the psychological domain and their treatment satisfaction.

Keywords: Coronary heart disease, Quality of life, WHOQOL-BREF, SAQ-7

INTRODUCTION

The intensity of coronary heart disease in the world is increasing, especially in Indonesia so that it can have an impact on the quality of life of patients. Coronary Heart Disease (CHD) is a disease characterized by symptoms of discomfort in the form of pain in the chest, chest feels heavy, and feels tight when doing activities caused by the buildup of fat plaque. To prevent the occurrence of attacks

again, pharmacological and non-pharmacological therapies can be used which are expected to improve the quality of life of CHD patients when they are on the move.²

Changes in lifestyle in CHD patients can cause quite high of anxiety and depression which allow complications and worsening.³ This has an impact on changes in the quality of life of CHD patients such as having limitations when doing activities, changing the patterns of diet, work, and treatment processes.⁴

According to the World Health Organization Quality of Life (WHOQOL), quality of life is the individual's perception of the position in life with the cultural context and the value of each individual related to the goals, expectations, and standards set by a person.⁵ To find out the physical ability and optimal health status in CHD patients, good quality of life is needed. Measured quality of life can provide benefits in the management of comprehensive and quality therapy for CHD patients.⁶

This study used two questionnaires, namely WHOQOL-BREF and SAQ-7. WHOQOL-BREF is a questionnaire that measures the quality of life in general and covers four domains, namely physical, psychological, social, and environmental relationships consisting of 26 questions and translated into Indonesian5. Whereas, SAQ-7 is a special questionnaire to measure the quality of life of CHD patients in which 7 questions covering five clinical domains, namely physical limitations, the stability of angina, frequency of angina, satisfaction with treatment, and perception of disease.⁷

A lot of research has been done on the quality of life of CHD patients in Indonesia, but it has not been clearly illustrated and there are still few studies describing the quality of life using two questionnaires as well as specifically analyzing the quality of life of CHD patients in the WHOQOL-BREF domain and SAQ-7 domain. Therefore, this study was conducted to find out how the picture and relationship of quality of life in CHD patients at Secondary Hospital in Yogyakarta, so that it can be used as a consideration in taking further treatment steps and making the quality of life of CHD patients improve.

METHODS

This research was performed as a descriptive study with a cross-sectional design. The study was conducted at Secondary Hospital in Yogyakarta for the period October 2017- February 2018 due to the limited time and budget given by institutional sponsor. This study used purposive sampling with the inclusion criteria to all the CHD patients who visited the Cardiology Outpatient Department Hospital and were willing to fulfil all the question from the questionnaires. This study used 2 instruments for data collection. The instruments included were WHOOOL-BREF and SAO-7 questionnaires. The collected data were analyzed using Pearson's correlation statistical analysis test to find relationships with four WHOQOL-BREF domains and 5 SAQ-7 domains. This study was approved by The Ethics Committee of the Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta.

RESULTS

Quality of life evaluation

The results showed that based on WHOQOL-BREF, most respondents had a high quality of life as many as 87

respondents (97%) and as many as 3 respondents (3%) had a low quality of life.

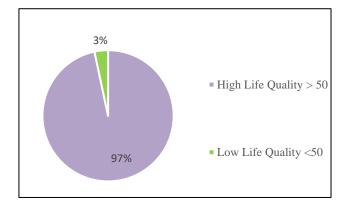


Figure 1: Quality of life of CHD patients based on WHOQOL-BREF.

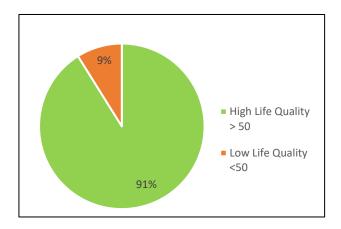


Figure 2: Quality of life of CHD patients based on SAQ.

While the results of research based on SAQ-7 found that most respondents had a high quality of life of 82 respondents (91%) and as many as 8 respondents (9%) had a low quality of life.

This is in line with the previous study conducted by Kim that most respondents have a high quality of life. 8 This condition can be attributed to good physical function, good respondent satisfaction in accepting good body conditions, and conditions.

In the previous research in 2011 conducted by Rochmayanti stated that a high quality of life is influenced by age, income, and depression. However, there are still a few respondents who have a low quality of life. Low quality of life can be caused by physical limitations when doing activities, having a poor assessment of their health and having perceptions that are not in line with what is expected related to CHD.

This can occur due to lack of information and support from the family, environment, and health workers regarding the prognosis of CHD.⁸

Analysis of domain relations with the quality of life of CHD patients

This study found that based on WHOQOL-BREF, most respondents had a high quality of life as many as 87 respondents (97%) and as many as 3 respondents (3%) had

a low quality of life. While the results of research based on SAQ-7 found that most respondents had a high quality of life of 82 respondents (91%) and as many as 8 respondents (9%) had a low quality of life.

Table 1: Correlation of physical health to quality of life in patients with CHD in Yogyakarta Hospital.

Physical health	Quality of l Low	ife	Total	Total		
	Amount	%	High Amount	%	Amount	%
Not good	0	0	0	0	0	0
Good enough	2	2	11	12	13	14
Good	1	1	74	83	75	84
Very good	0	0	2	2	2	2
Total	3	3	87	97	90	100

Correlation coefficient (r) = 0.696; Determination coefficient (r²) = 0.484; Significance (p) = 0.000

Table 2: Psychological relationship to quality of life in patients with CHD in Yogyakarta Hospital.

	Quality of l	ife	Total			
Psychological	Low	Low		High		
	Amount	%	Amount	%	Amount	%
Not good	0	0	0	0	0	0
Good enough	3	3	7	8	10	11
Good	0	0	37	41	37	41
Very good	0	0	43	48	43	48
Total	3	3	87	97	90	100

Correlation coefficient (r) = 0.870; Determination coefficient (r^2) = 0.756; Significance (p) = 0.000.

Table 3: Social relations on quality of life in patients with CHD in Yogyakarta Hospital.

Social relations	Quality of l	Quality of life					
	Low	Low		High		Total	
	Amount	%	Amount	%	Amount	%	
Not good	0	0	0	0	0	0	
Good enough	1	1	0	0	1	1	
Good	2	2	61	68	63	70	
Very good	0	0	26	29	26	29	
Total	3	3	87	97	90	100	

Correlation coefficient (r) = 0.730; Determination coefficient (r²) = 0.533; Significance (p) = 0.000

Table 4: Environmental relationship to quality of life in patients with CHD in Yogyakarta Hospital.

	Quality of l	life	Total	– Total		
Environment	Low		High		Total	
	Amount	%	Amount	%	Amount	%
Not good	0	0	0	0	0	0
Good enough	0	0	1	1	1	1
Good	3	3	44	49	47	52
Very good	0	0	42	47	42	47
Total	3	0	87	97	90	100

Correlation coefficient (r) = 0.799; Determination coefficient (r^2) = 0.638; Significance (p) = 0.000

WHOQOL-BREF

Physical Health

Table 1 shows the value of p=0.000 which means that Ho is rejected and H1 is accepted so that there is a physical

health effect on the quality of life of CHD patients with the closeness of the relationship has a correlation level r=0.694, while r2=0.484. This shows that 48.4% of physical factors affect the quality of life of CHD.

Psychological

Table 2 shows the value of p=0.000, which means that Ho is rejected and H1 is accepted so that there is a psychological influence on the quality of life of CHD patients with the closeness of the relationship has a level of correlation r=0.870, while r2=0.756. This shows that 75.6% psychologically affects the quality of life of CHD.

Social Relations

Table 3 shows the value of p=0.000, which means that Ho is rejected and H1 is accepted so that there is an influence of social relations on the quality of life of CHD patients with the closeness of the relationship has a correlation level r=0.730, while r=0.533. This shows that 53.3% of social relations affect the quality of life of CHD.

Table 5: Correlation between physical limitations on quality of life in patients with CHD in Yogyakarta Hospital.

Physical limitations	Quality of li	Total				
J	Amount	%	High Amount	%	Amount	%
Very heavy	0	0	0	0	0	0
Heavy	2	2	6	7	8	9
Medium	5	5	34	38	39	43
Light	2	2	41	46	43	48
Total	9	9	81	91	90	100

Correlation coefficient (r) = 0.362; Determination coefficient (r²) = 0.131; Significance (p) = 0.000

Table 6: Correlation between angina stability and quality of life in patients with CHD in Jogja Hospital.

Angina stability	Quality of li	Quality of life Low High				Total		
-,	Amount	%	Amount	%	Amount	%		
Not good	3	4	1	1	4	5		
Good enough	1	1	2	2	3	3		
Good	3	3	5	6	8	9		
Very good	1	1	74	82	75	83		
Total	8	9	82	91	90	100		

Correlation coefficient (r) = 0.757; Determination coefficient (r²) = 0.573; Significance (p) = 0.000

Table 7: Correlation of the frequency of angina to quality of life in patients with CHD in Yogyakarta Hospital.

	Quality of lif	ie	Total			
Angina frequency	Low				High	
	Amount	%	Amount	%	Amount	%
Very often	4	5	0	0	4	5
Often	2	2	1	1	3	3
Rare	0	0	2	2	2	2
Very rarely	2	2	79	88	81	90
Total	8	9	82	91	90	100

Correlation coefficient (r) = 0.806; Determination coefficient (r²) = 0.650; Significance (p) = 0.000

Table 8: Correlation between treatment satisfaction and quality of life in patients with CHD in Yogyakarta Hospital.

	Quality of I	Quality of life Total					
Treatment satisfaction	Low	Low		High		Total Total	
	Amount	%	Amount	%	Amount	%	
Very dissatisfied	1	1	0	0	1	1	
Not satisfied	5	6	4	5	9	11	
Satisfied	2	2	13	14	15	16	
Very satisfied	0	0	65	72	65	72	
Total	8	9	82	91	90	100	

Correlation coefficient (r) = 0.830; Determination coefficient (r²) = 0.689; Significance (p) = 0.000

Table 9: Correlation of perceptions on diseases of quality of life in patients with CHD in Yogyakarta Hospital.

	Quality of 1	life	Total	Total		
Perception of disease	Low		High		Total	
	Amount	%	Amount	%	Amount	%
Very bad	1	1	2	2	3	3
Bad	4	5	20	19	24	24
Good	3	3	43	48	46	51
Very good	0	0	17	22	17	22
Total	8	9	82	91	90	100

Correlation coefficient (r) = 0.634; Determination coefficient (r2) = 0.402; Significance (p) = 0.000

Environment

Table 4 shows the value of p=0.000 which means that Ho is rejected and H1 is accepted so that there is an environmental influence on the quality of life of CHD patients with the closeness of the relationship has a level of correlation r=0.799, while r2=0.638. This shows that 63.8% of environmental factors affect the quality of life of CHD.

SAQ

Physical limitations

Table 5 shows the value of p=0.000 which means that Ho is rejected and H1 is accepted so that there is an effect of physical limitations on the quality of life of CHD patients with the closeness of the relationship has a correlation level r=0.362, while r2=0.131. This shows that 13.1% of physical limitations affect the quality of life of CHD.

Angina stability

Table 6 shows p=0.000 which means that Ho is rejected and H1 is accepted so that there is an effect of angina stability on the quality of life of CHD patients with the closeness of the relationship has a correlation level r=0.757, while r2=0.573. This shows that 57.3% of the stability of angina affects the quality of life of CHD.

Angina frequency

Table 7 shows the value of p=0.000, which means that Ho is rejected and H1 is accepted so that there is an effect of the frequency of angina on the quality of life of CHD patients with the closeness of the relationship has a correlation level r=0.806, while r2=0.650. This shows that 65% of the frequency of angina affects the quality of life of CHD.

Treatment satisfaction

Table 8 shows the value of p=0.000 which means that Ho is rejected and H1 is accepted so that there is an effect of treatment satisfaction on the quality of life of CHD patients with the closeness of the relationship has a level of correlation r=0.830, while r=0.689. This shows that

68.9% of treatment satisfaction affects the quality of life of CHD.

Perception of disease

Table 9 shows the value of p=0.000 which means that Ho is rejected and H1 is accepted so that there is an influence of perception on the disease on the quality of life of CHD patients with the closeness of the relationship has a level of correlation r=0.634, while r=0.402. This shows that 68.9% of perceptions of the disease affect the quality of life of CHD.

DISCUSSION

A total of 90 respondents met the inclusion criteria in this study. The majority respondents with CHD were 68% male. The highest number of patients with CHD was in age range 61-70 years old, as many as 38% respondents. Theoretically presented by some experts that in the higher age, the risk of developing CHD is increasing. This is comparable to the research conducted by Nuraeni, et al where most CHD patients were over 45 years of age (91%). At the age of more than 45 years, people are at high risk for plaque formation, especially for those who have a positive family history of coronary artery disease. 11

Regarding gender concern according to CHD prevalence, male morbidity is more than women who have not experienced of menopause period. Female was influenced by estrogen which can protect them from CHD.¹² This study was found that 48% respondents had CHD during 1-5 years. This percentage is in accordance with the previous study which stated that the length of CHD experienced by the average of 3 years. In relation with the disease duration, patients who experience CHD in a longer time will have better self-efficacy.¹³

This study found that based on WHOQOL-BREF, most respondents had a high quality of life as many as 87 respondents (97%) and as many as 3 respondents (3%) had a low quality of life. While the results of research based on SAQ-7 found that most respondents had a high quality of life of 82 respondents (91%) and as many as 8 respondents (9%) had a low quality of life. A Study performed by Bagheri, et al mentioned that most respondents have a high quality of life due to their good physical function, good

respondent satisfaction in accepting good body conditions, and conditions.¹⁴

Previous study stated that a high quality of life is influenced by age, income, and depression. However, there are still a few patients who have a chronic diseases especially CHD by also having a high quality of life.9 Low quality of life can be caused by physical limitations when doing activities, having a poor assessment of their health, and having perceptions that are not in line with what is expected related to CHD. This condition can occur due to the lack of information and support from the family, environment, and health workers regarding the prognosis of CHD.8 The environmental domain is a feature of the place where patients live in and their roles in life. The environmental domain can be seen from three aspects such as patient's access to health services, living conditions and financial status.¹⁵ Residential environment and comfort in getting good health services are needed by CHD patients so that the quality of life of CHD patients improves.

The physical health domain from WHOQOL-BREF, which includes mobility and activity shows that the quality of life is very influential so that it can describe the difficulty level of patients in carrying out their own body in daily activities. The improved physical function is referring to the patients who are still working, getting married, doing good activities, and undergoing rehabilitation, can produce a high quality of life in CHD patients. ¹⁶ This study revealed that CHD patients with physical problems was affecting 48.4% of their quality of life.

The psychological domain has a strong impact to the patients due to the lifelong medication or medical treatment to reduce their clinical problem such as chest pain, pallor, and shortness of breath while undergoing physical activity which has a psychological impact, as many as 75,6% impacted to the CHD patient's quality of life. A study conducted by Zamani et al. in 2016 which states that increased physical activity has an influence on the psychological domain such as "always trying to think positively" so they can reach the higher level of self-confidence in optimizing their body abilities.¹⁷

The support provided by spouses, children, and friends could also influence their social domain.¹⁸ In the study conducted by Moser et al. in 2007 stated that lack of social relations can accelerate the risk of heart failure.¹⁹ Previous study also reported that the well maintained of social relation among the elderly patients could give them a benefit in keeping their good quality of life.⁹ This study reported that 53.3% of patient's quality of life was impacted by social relations domain.

The environmental domain is a feature of the place where patients live in and their roles in life. The environmental domain can be seen from three aspects such as patient's access to health services, living conditions and financial status.¹⁵ Residential environment and comfort in getting good health services are needed by CHD patients as its

63.8% implication to the quality of life improvement among the CHD patients.

Based on the SAQ questionnaire, the higher the quality of life, the lower physical limitations because physical activity is one of the factors that can trigger chest pain. Physical limitations can also be affected by the amount of vessels blockage experienced by patients, if the frequency of blockages that occur is greater, the physical limitations will be higher and the quality of life will be lower. Nevertheless, this study reported only 13.1% of this domain could affect respondent's quality of life. A study found that the eagerness degree in each person is related to their physical ability and according to the requirement for gaining the good health. 22

Stable angina can be influenced by respondent compliance in treatment and respondent's awareness to maintain and reduce activities or activities that can trigger symptoms.²³ Arnold et al stated that angina frequency domains have consistency in supporting the continuation of relevant clinical therapies to reduce angina and improve quality of life.⁷ In accordance with this study findings that the stability and frequency of angina could impact the patient's quality of life as many as 57.3% and 65% respectively.

This study found that the quality of life among the CHD patients was dominantly affected by patient's satisfaction regarding the treatment received and perception about their disease. Low treatment satisfaction can be influenced by boredom in consuming drugs.²⁴ Bad perceptions can occur due to the lack of information or support from patient's family, environment, and health workers related to the prognosis of CHD.²⁵

CONCLUSION

Based on the results of the study, it can be concluded that the majority of CHD patients at Secondary Hospital in Yogyakarta have a high quality of life in average both defined by the four WHOQOL-BREFF domains (97%) and five SAQ domains (91%). The highest supportive factor for their quality of life with carrying CHD on their body was the psychological domain and their treatment satisfaction.

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Institutional Ethics Committee

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