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Overview Of Physical Activity in Patients with Coronary Heart Disease at Hospital X Jakarta

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ABSTRACT

Background Coronary heart disease (CHD) is one of the leading causes of death in Indonesia. Low physical activity is a significant risk factor contributing to the incidence of CHD. Structured physical activity tailored to the patient's health condition has been proven to help prevent complications and accelerate the recovery process. Therefore, monitoring the level of physical activity in CHD patients is important as part of treatment and prevention efforts. This study aims to determine the physical activity profile of CAD patients undergoing treatment at Hospital X in Jakarta. Method This study uses a descriptive design with a quantitative approach and a cross-sectional design. The sample size was 76 participants selected using purposive sampling. Data were collected using the GPAQ (Global Physical Activity Questionnaire) adapted from the WHO. Results Most respondents were aged ≥ 60 years (46.1%) and more than half had a high school education (53.9%). Based on physical activity levels, the majority of respondents were in the light category (52.6%), followed by the moderate category (39.5%), and only a small proportion engaged in heavy activity (7.9%). Conclusion Patients with CHD at Hospital X in Jakarta generally have low levels of physical activity. Dominant characteristics include advanced age, male gender, secondary education, and unemployed status.

Keywords: coronary heart disease; physical activity; GPAQ

INTRODUCTION

The heart is the central organ of the cardiovascular system, and impairment of its function can trigger various heart and vascular diseases (Hasanah et al., 2021). Its primary role is to pump oxygen-rich blood (O_2) and nutrients to all parts of the body, while returning carbon dioxide (CO_2)-laden blood to the lungs for elimination. Given its position as the center of the cardiovascular system, optimal cardiac performance plays a vital role in maintaining physiological balance and is essential for human survival (Tsuroyya et al., 2025). According to the World Health Organization (WHO), coronary heart disease (CHD) is an acute or chronic condition caused by reduced blood supply to the myocardium (Mahmuda et al., 2021). The American Heart Association (AHA) defines CHD as the accumulation of plaque in the coronary arteries, which can lead to heart attacks (Tsao et al., 2023). This plaque buildup, known as atherosclerosis, consists of fat,

cholesterol, and other substances deposited along arterial walls, obstructing blood flow (Meidayanti, 2021). Globally, cardiovascular diseases are the leading cause of death. In 2019, an estimated 17.9 million people died from CHD (Marichi Putri et al., 2023). In Indonesia, CHD remains a major contributor to mortality. Ministry of Health data referencing the Institute for Health Metrics and Evaluation (IHME) recorded 651,481 CHD-related deaths in 2019 (Wardiyana & Herawati, 2023). DKI Jakarta ranks fourth among Indonesian provinces with the highest CHD prevalence (1.9%) (Erdania et al., 2023). Previous studies (Rondonuwu et al., 2021; Merbawani, 2022; Lestari et al., 2023) consistently report that CHD patients tend to engage in low-intensity physical activity, with more than half classified in the light activity category. Low physical activity increases CHD risk.

A study conducted by Rondonuwu et al. (2021) found that more than half of patients with coronary heart disease engaged in light physical activity (56.25%) out of 48 respondents. This study employed a cross-sectional design to examine the relationship between physical activity and coronary heart disease at Puskesmas Tuminting, emphasizing that physical activity is a risk factor for CHD. Similarly, Merbawani (2022) reported that nearly half of respondents engaged in light-intensity physical activity (49.0%). The majority of patients in this study were aged 50 years and predominantly female. This research was a descriptive study with a retrospective approach, highlighting the role of physical activity in preventing CHD complications. Another study by Lestari et al. (2023), involving 186 respondents, showed that more than half of the patients engaged in light physical activity (54.3%). In this study, most patients were male, with an average age of 60 years, and the focus was on the comfort of physical activity among CHD patients. From these studies, it can be concluded that patients with coronary heart disease tend to have low or light levels of physical activity. Low physical activity may increase the risk of developing coronary heart disease.

A preliminary study at RS X Jakarta on July 7, 2025, involving informal interviews with five outpatients and discussions with two healthcare workers revealed that of the five eligible CHD patients, only one regularly engaged in walking (four times a week, ~20 minutes per session), while the rest reported predominantly sedentary behavior. Medical records showed a total CHD patient population of 324 (179 males, 127 females). RS X currently lacks an active, structured cardiac rehabilitation program, and physical activity education is still general, delivered verbally during routine consultations. This study aims

to provide an overview of physical activity levels among patients with coronary heart disease at Hospital X Jakarta."

MATERIALS AND METHODS

This study employed a quantitative descriptive design with 76 respondents selected using Slovin's formula. The instrument used was the Indonesian version of the World Health Organization's *Global Physical Activity Questionnaire* (GPAQ), which has been validated and proven reliable. The questionnaire covered three domains of physical activity (work, travel, and recreation) as well as sitting duration, and included respondents' demographic data. Univariate analysis was conducted to describe physical activity levels based on *Metabolic Equivalent Task* (MET) scores and respondents' characteristics.

RESULTS

This research was conducted at Hospital X and the results are as follows: Table 1 The majority of respondents were aged ≥ 60 years, totaling 35 individuals (46.1%), indicating that the elderly group dominated the study population. In terms of gender, most respondents were male, with 48 individuals (63.2%), outnumbering females. Regarding education, the majority of respondents had completed senior high school, with 41 individuals (53.9%). For employment status, nearly half of the respondents were unemployed, totaling 37 individuals (48.7%), followed by those employed (27 individuals, 35.5%) and retired (12 individuals, 15.8%).

Table 1: Frequency Distribution of Respondents

Respondent Characteristics	Frequency (f)	Percentage (%)
Age		
30 years	5	6.6
31–49 years	13	17.1
50–59 years	23	30.3
≥ 60 years	35	46.1
Gender		
Female	28	36.8
Male	48	63.2
Education		
Elementary School	11	14.5
Junior High School	12	15.8
Senior High School	41	53.9
Diploma (D3)	10	13.2
Bachelor's Degree (S1)	2	2.6
Occupation		

Respondent Characteristics	Frequency (f)	Percentage (%)
Employed	27	35.5
Unemployed	37	48.7
Retired	12	15.8
Total	76	100.0

Table 2 The majority of patients with coronary heart disease engaged in light physical activity, with 40 respondents (52.6%). Moderate physical activity was reported by 30 respondents (39.5%), while only a small portion, 6 respondents (7.9%), performed vigorous physical activity. The mean physical activity score was 1.55 with a standard deviation of 0.641.Most coronary heart disease patients exhibit low levels of physical activity, which highlights the need for targeted interventions to increase activity intensity and improve cardiovascular health outcomes.

Table 2: Physical Activity of Coronary Heart Disease Patients

Physical Activity Level	Frequency (f)	Percentage (%)	Mean	Standard Deviation
Light	40	52.6		
Moderate	30	39.5		
Vigorous	6	7.9	1.55	0.641
Total	76	100.0		

DISCUSSION

Several studies have shown that the demographic characteristics of patients with coronary heart disease (CHD) play an important role in physical activity patterns and health outcomes. Research by Rondonuwu et al. (2021) revealed that the elderly group (≥ 60 years) dominates the CHD patient population, which aligns with the current finding that most respondents were aged ≥ 60 years. Merbawani (2022) also reported that age is a significant factor influencing physical activity intensity in CHD patients, with most patients around 50 years old. Regarding gender, Lestari et al. (2023) found a predominance of male patients, consistent with this study's result where 63.2% of respondents were male. Educational attainment also plays a role, as Rahmawati et al. (2020) found that the majority of CHD patients had completed senior high school education, which is associated with increased disease management awareness but does not necessarily lead to higher physical activity. Furthermore, employment status is influential, as reported by Sari et al. (2021), where nearly half of CHD patients were unemployed or retired, which may affect their lifestyle and physical activity habits. These combined findings highlight the importance of considering demographic factors such as

age, gender, education, and employment status when designing interventions to improve physical activity and health outcomes in patients with coronary heart disease.

Several studies consistently report that patients with coronary heart disease (CHD) predominantly engage in low levels of physical activity, primarily light intensity. Rondonuwu et al. (2021) found that over half of CHD patients (56.25%) performed light physical activity, emphasizing the prevalence of sedentary lifestyles in this population. Similarly, Merbawani (2022) reported that nearly half of respondents (49.0%) engaged in light-intensity physical activity, highlighting a pattern of insufficient activity among CHD patients. Lestari et al. (2023) also observed that more than half of their study participants (54.3%) performed light physical activity, with moderate and vigorous activities being less common. These findings align with the current study, where 52.6% of respondents reported light physical activity, 39.5% moderate, and only 7.9% vigorous activity, with a mean physical activity score of 1.55 (SD = 0.641). This consistent trend across studies underscores that most CHD patients maintain low physical activity levels, which elevates their risk for adverse cardiovascular outcomes and highlights the critical need for targeted interventions to promote increased activity intensity and improve overall cardiovascular health. Another study by Putri and Santoso (2020) showed that CHD patients who engaged in light physical activity had a higher risk of complications compared to those who regularly performed moderate to vigorous activity. Additionally, the study by Amalia et al. (2019) indicated that a structured physical education program could significantly increase the physical activity intensity of CHD patients. Meanwhile, research by Wijaya et al. (2021) emphasized that family and environmental support play a crucial role in motivating patients to stay physically active. Lastly, a study by Handayani and Prasetyo (2022) highlighted the importance of integrated cardiac rehabilitation to promote increased physical activity and reduce the risk of premature death among CHD patients.

Supporting these findings, Smith et al. (2023) demonstrated that personalized exercise interventions effectively improve cardiovascular outcomes and physical activity adherence in CHD patients. Johnson and Lee (2022) found that digital health tools and remote monitoring could enhance physical activity levels by providing real-time feedback and motivation. A randomized controlled trial by Garcia et al. (2024) reported significant improvements in exercise capacity and quality of life among CHD patients following a 12-week home-based cardiac rehabilitation program. Furthermore, Nguyen et al. (2023)

emphasized the role of socio-economic factors and health literacy in shaping physical activity behaviors, suggesting tailored interventions to address these determinants for better patient engagement.

Recent studies, such as Brown et al. (2024), confirm the effectiveness of wearable technology in improving physical activity adherence among patients with coronary heart disease (CHD). Kim et al. (2023) observed increased physical activity levels through telehealth-based cardiac rehabilitation during the COVID-19 pandemic. Wilson et al. (2023) reviewed socioeconomic disparities and their impact on physical activity engagement in CHD patients globally, highlighting the importance of approaches that consider patients' socioeconomic contexts.

CONCLUSIONS

The majority of coronary heart disease patients primarily engage in light physical activity (52.6%), with fewer participating in moderate (39.5%) and vigorous (7.9%) activities. The average physical activity level is low, as reflected by a mean score of 1.55 (SD = 0.641). These findings emphasize the importance of developing targeted interventions aimed at increasing the intensity of physical activity to enhance cardiovascular health and reduce complications in this patient population.

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