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Physical Activity on Erectile Dysfunction: Screening and Counseling in Kendalkerep Community Health Center Area

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Introduction. Erectile dysfunction negatively impacts self-esteem, quality of life, and interpersonal relationships. Studies have shown significant improvements in sexual function in men and women who undergo regular moderate-intensity physical exercise interventions. However, public awareness of the importance of physical activity in sexual health remains low. This study aims to evaluate the relationship between physical activity level and erectile function among community members in the Kendalkerep Primary Health Care area.

Methods. This is an observational analytic study with a cross-sectional design involving 50 adult men who participated in screening and educational activities, selected using incidental sampling. Physical activity levels were categorized as low, moderate, and high, while erectile function was assessed using the International Index of Erectile Function-5 (IIEF-5). Descriptive and bivariate analyses were performed using Spearman correlation tests.

Result. The results demonstrated a strong positive correlation between physical activity level and IIEF-5 score ($\rho = 0.702$; $p < 0.001$), as well as a significant negative correlation between physical activity level and erectile dysfunction severity ($\rho = -0.643$; $p < 0.001$). Body mass index and blood pressure were also significantly associated with erectile function, whereas age showed no significant correlation.

Conclusion. Higher levels of physical activity are associated with better erectile function. Physical activity may serve as an effective non-pharmacological strategy for the prevention of erectile dysfunction at the community level.

Keywords: BMI, erectile dysfunction, IIEF-5, physical activity, screening

Introduction

Erectile dysfunction (ED) is defined as the persistent or recurrent inability to achieve or maintain a satisfactory erection in at least 50% of sexual intercourse attempts. Although not life-threatening, erectile dysfunction negatively impacts self-esteem, quality of life, and interpersonal relationships. This condition reportedly affects approximately one-third of the male population, with prevalence increasing with age. An estimated 152 million men worldwide currently experience erectile dysfunction, and this number is projected to increase to nearly 322 million cases by 2025 [1-2].

In Indonesia, this public health challenge is heavily mirrored by regional data. A localized epidemiological study utilizing the International Index of Erectile Function (IIEF-5) found that approximately 35.6% of relatively healthy Indonesian men experience erectile dysfunction. Reflecting global trends, the data shows a sharp age-related trajectory, with the prevalence rate jumping from a low 6.5% among men in their 20s to as high as 88.0% for individuals aged 60 and older. Furthermore, the condition is highly correlated with the regional rise of chronic comorbid conditions, with local clinical data establishing significant independent associations between erectile dysfunction and underlying health conditions such as hypertension, heart disease, and diabetes [3].

Currently, the International Index of Erectile Function-5 (IIEF-5) is widely used as a standardized instrument to measure the degree of erectile dysfunction in patient evaluation and management [4]. In most studies, the onset and progression of erectile dysfunction in men become

more pronounced and tend to increase with age. It is often associated with various comorbid conditions, such as neurological disorders, hypertension, diabetes mellitus, atherosclerosis, ischemic heart disease, smoking, excessive alcohol consumption, obesity, depression, hyperdyslipidemia, poor diet, and metabolic syndrome [5].

Individuals who engage in regular physical activity have reported improved overall quality of life, including improvements in psychological aspects, reduced depressive symptoms, obesity management, and improvements in other risk factors that collectively contribute to improved sexual function. Numerous supporting studies have shown significant improvements in sexual function in both men and women who undergo regular moderate-intensity physical exercise interventions [5]. However, public awareness of the importance of physical activity in sexual health remains low, while early screening for ED and education about healthy lifestyles, including physical activity, have the potential to increase case detection and motivate healthy behavior change. Public health strategies that combine ED screening with education about physical activity can strengthen primary and secondary prevention of erectile dysfunction at the community level.

This study aims to evaluate the relationship between physical activity and erectile dysfunction in the community at the Kendalkerep Community Health Center.

Materials and Methods

This is observational analytic research with a cross-sectional design on male participants in Kendalkerep Primary Health Care in 2021. Study subjects were adult men who attended and participated in counseling and screening activities regarding physical activity and erectile dysfunction. The sampling technique used was incidental sampling, encompassing all respondents present during the activity. This study has obtained ethical approval from the Health Research Ethics Committee in Saiful Anwar General Hospital. Inclusion criteria included men aged ≥18 years who participated in the erectile dysfunction and physical activity screening activities, and willingly to complete the questionnaire in the Indonesian version and sign the informed consent. Exclusion criteria included respondents with acute illness, having physical disabilities, or not completing the questionnaire.

Data collected through direct measurement and structured questionnaires. Physical activity categorized into low, moderate, and high based on the respondents' daily activity levels. Erectile function was assessed using the International Index of Erectile Function-5 (IIEF-5) with scores ranging from 5 to 25, where scores were classified into normal, mild, and mild-to-moderate erectile dysfunction. Body Mass Index (BMI) was calculated based on body weight (kg) divided by the square of height (m^2) and classified into underweight, normal, overweight, and obese. Blood pressure was divided into two categories: normal and stage I hypertension. Data analysis was performed using SPSS ver 27. Descriptive analysis was used to describe respondent characteristics, while bivariate analysis was conducted using the Spearman correlation test to assess the relationship between physical activity levels and IIEF-5 scores and erectile dysfunction severity, as well as the relationship of supporting variables such as age, BMI, and blood pressure with erectile function. Statistical tests were performed with a 95% confidence level (α=0,05).

Result

In this study, 50 respondents who met the eligibility criteria were included in the analysis. The characteristics of the study subjects are presented in Table 1. Most respondents were in the 45–54 years age group (44%), followed by the 35–44 years age group (40%), while respondents aged <35 years constituted the smallest group (6%). Based on Body Mass Index (BMI) categories, the majority of respondents had normal body weight (56%), although there were proportions of respondents with overweight (22%) and obesity (12%).

The distribution of physical activity levels showed that the majority of respondents were high physical activity 30 individuals in total (60%), and the moderate category totaling 14 individuals (28%). Erectile function assessment results indicated that mostly had normal IIEF-5 scores (74%), while 20% experienced mild erectile dysfunction and 6% experienced mild-to-moderate erectile dysfunction. On blood pressure, 43 individuals (86%) had normal blood pressure, and the remaining showed stage I hypertension. The population characteristics in this screening activity were dominated by middle-aged adult men with normal nutritional status who were physically active. Bivariate analysis (Figure 1) showed a significant relationship between physical activity

Table 1. Subject characteristics

Variables	Category	Frequency (n)	Percentage (%)
Age (years)	< 35	3	6,0
	35–44	20	40,0
	45–54	22	44,0
	≥ 55	5	10,0
BMI	underweight	5	10,0
	normal	28	56,0
	overweight	11	22,0
	obese	6	12,0
Physical activity	low	6	12,0
	moderate	14	28,0
	high	30	60,0
Blood pressure	normal	43	86,0
	stage I hypertension	7	14,0
IIEF-5 Score	≤ 16	3	6,0
	17–21	10	20,0
	22–25	37	74,0
ED Degrees	normal	37	74,0
	mild	10	20,0
	mild to moderate	3	6,0

			Age	BMI	Physical Activity	IIEF-5	Erectile Function (DE)	Blood Pressure
Spearman's rho	Age	Correlation Coefficient	1.000	-.097	.106	-.260	.198	.360
		Sig. (2-tailed)	.	.502	.464	.068	.168	.010
		N	50	50	50	50	50	50
	BMI	Correlation Coefficient	-.097	1.000	-.852	-.641	.597	.358
		Sig. (2-tailed)	.502	.	.000	.000	.000	.011
		N	50	50	50	50	50	50
	Physical Activity	Correlation Coefficient	.106	-.852	1.000	.702	-.643	-.321
		Sig. (2-tailed)	.464	.000	.	.000	.000	.023
		N	50	50	50	50	50	50
	IIEF-5	Correlation Coefficient	-.260	-.641	.702	1.000	-.780	-.499
		Sig. (2-tailed)	.068	.000	.000	.	.000	.000
		N	50	50	50	50	50	50
	Erectile Function (DE)	Correlation Coefficient	.198	.597	-.643	-.780	1.000	.600
		Sig. (2-tailed)	.168	.000	.000	.000	.	.000
		N	50	50	50	50	50	50
	Blood Pressure	Correlation Coefficient	.360	.358	-.321	-.499	.600	1.000
		Sig. (2-tailed)	.010	.011	.023	.000	.000	.
		N	50	50	50	50	50	50

Figure 1. Bivariate analysis showing a significant relationship between physical activity levels and erectile function

levels and erectile function. Physical activity level had a strong positive correlation with IIEF-5 score ($p = 0,702$; $p < 0.001$), indicating that higher physical activity corresponds to better erectile function. Conversely, physical activity had a significant negative correlation with erectile

dysfunction severity (p = −0,643; p < 0,001), indicating that increased physical activity is associated with milder dysfunction severity. Analysis of confounding variables showed varied results. Body Mass Index (BMI) had a significant negative correlation with IIEF-5 score (p = −0,641; p < 0,001), showing that increased BMI is associated with decreased erectile function. Blood pressure also had a moderate negative correlation with IIEF-5 score (p = −0,499; p < 0,001), meaning higher blood pressure is associated with worse erectile function. Meanwhile, age did not show a significant relationship with IIEF-5 score (p = −0,260; p = 0,068) in this study population.

Discussion

The bivariate analysis results in this study demonstrated a significant relationship between physical activity levels and erectile function, assessed using the International Index of Erectile Function-5 (IIEF-5). The correlation indicates that higher physical activity levels correspond to better erectile function scores and milder degrees of erectile dysfunction. These findings reinforce the hypothesis that physical activity plays a crucial role in maintaining and improving sexual function in adult men. This aligns with various previous studies reporting the protective effect of physical activity against erectile dysfunction, particularly concerning vascular impairments. Several systematic reviews have concluded that physical activity serves as an effective non-pharmacological intervention for preventing and ameliorating erectile dysfunction [2]. Findings from Chen (2024) also showed a positive correlation between physical activity levels and improved IIEF scores in patients with erectile dysfunction who were not receiving phosphodiesterase-5 inhibitor (PDE5i) therapy or undergoing radical prostatectomy [4].

The positive effect of physical activity on sexual function is not only related to controlling classic cardiovascular risk factors, such as body weight and cholesterol levels, but also involves various other biological mechanisms. Physical activity enhances the systemic bioavailability of nitric oxide (NO) derived from the endothelium, improves insulin sensitivity—a key stimulator of vascular NO release—reduces serum proinflammatory cytokine levels, and increases testosterone levels, all of which collectively contribute to improved erectile function [6]. Furthermore, this study found a negative association between BMI and erectile function, as well as a positive association between higher BMI categories and the severity of erectile dysfunction. This is consistent with other studies indicating that obesity significantly increases the risk of erectile dysfunction compared to normal weight [7-8].

The analysis also revealed that higher blood pressure is associated with poorer erectile function. Physiologically, chronic hypertension can damage blood vessel walls and impair blood flow to penile tissue, making it a common comorbid factor in patients with erectile dysfunction. Erectile dysfunction is reported to occur nearly twice as frequently in hypertensive patients compared to normotensive individuals [9-10]. Conversely, age did not show a significant correlation with IIEF-5 scores in this sample (p = 0.068), although other studies report age as a risk factor due to declining vascular function. This discrepancy may be influenced by the sample characteristics, which had a relatively limited age range or distribution [6,11]. Nevertheless, the findings emphasize that physical activity is a vital lifestyle factor for erectile health, suggesting that interventions promoting physical activity should be integral to community-level prevention and health promotion strategies.

This study provides a strong community presentation with a validated screening tool (IIEF-5). The tracking variables like BMI and blood pressure also allowed us to observe how these physiological factors interact with sexual health in a local population. However, this study is constrained by a cross-sectional design that prevents us from establishing direct causality, and a very small sample size of 50 men that limits broader generalization. Furthermore, the incidental sampling introduced selection bias, while a heavily concentrated age distribution between 35 and 54 years likely explains why age did not significantly correlate with erectile function in our sample.

Conclusion

Based on the results of this study, it can be concluded that the level of physical activity has a significant relationship with erectile function in adult men in the area of Kendalkerep Primary Health Care. Higher levels of physical activity are associated with better erectile function scores and milder severity of erectile dysfunction. Additionally, body mass index and blood pressure serve as factors associated with declined erectile function, while age did not show a significant relationship in this study. Physical activity is a crucial lifestyle factor in maintaining erectile health and has the potential to be a prevention strategy for erectile dysfunction at the community level.

Conflict of Interest

The authors define no conflict of interest.

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