Protocol Record: KTU-ACIN-9286

Investigation of the Effect of Green Walking on Body Mass Index, Blood Lipids, Disease Perception, and Quality of Life in Patients with Myocardial Infarction

Document date: 17.03.2021 **Numbered:** 24237859-273

INFORMED CONSENT FORM

Title of the Study: Investigation of the Effect of Green Walking on Body Mass Index, Blood Lipids, Disease Perception, and Quality of Life in Patients with Myocardial Infarction

PLEASE READ CAREFULLY!!!

You have been invited to participate in this study. Before you agree to take part in this study, you need to understand the purpose of the study and make your decision freely after this information. Please read this information prepared especially for you carefully and ask for clear answers to your questions.

WHAT IS THE PURPOSE OF THE STUDY?

The study will be conducted to examine the effect of green walking on anthropometric measurements, blood lipids, disease perception and quality of life of patients with myocardial infarction.

WHAT ARE THE CONDITIONS FOR PARTICIPATION?
In order to participate in this study, you must be a patient who has had a myocardial infarction and has been followed up at the Cardiology Polyclinic of Gümüşhane State Hospital and Gümüşhane Kelkit State Hospital.

WHAT KIND OF APPLICATION WILL BE DONE?

You will be asked to answer the questionnaire questions at the beginning and end of the study. After being informed about green walking and myocardial infarction, you will be taken on a 50- minute green walking three times a week for three months. Your vital signs will be measured by the researcher before and after each green walking.

WHAT IS THE NUMBER OF PARTICIPANTS?

The number of volunteer patients to take part in the study is 60.

HOW LONG IS THE STUDY?

The duration of this study is five months.

WHAT IS THE TOTAL DURATION OF THE VOLUNTEER'S PARTICIPATION IN THIS STUDY?
The time you are expected to take part in this study is 150 minutes per week for three months.

WHAT IS THE POSSIBLE BENEFIT EXPECTED BY PARTICIPATING IN THE STUDY?

With this study, you will participate in a green walk and make a healthy lifestyle change with green walk after myocardial infarction. Your quality of life will improve as a result of healthy lifestyle change.

IS THERE ANY INSTITUTION SUPPORTING THE STUDY?

There is no institution supporting the study.

WILL I RECEIVE ANY PAYMENT FOR PARTICIPATING IN THE STUDY?

No payment will be made to you for taking part in this study.

WHAT SHOULD I DO IF I REFUSE TO PARTICIPATE IN THE STUDY OR LEAVE THE STUDY?

Taking part in this research is entirely voluntary. You can refuse to take part in the study or withdraw from the study at any stage. The results of the study will be used for scientific purposes; if you withdraw from the study or are removed by the researcher, the data about you will not be used for scientific purposes.

WILL CONFIDENTIALITY BE ENSURED REGARDING INFORMATION ABOUT NON-PARTICIPATION?

All your medical and identifying information will be kept confidential and your identifying information will not be disclosed even if the study is published, but study monitors, pollsters, ethics committees and authorities may access your medical information when necessary. You can also access your own medical information at any time (In case the treatment is confidential, the volunteer should be informed that they can access their own medical information only after the analysis of the data).

CONSENT TO PARTICIPATE IN THE STUDY:

I have read and orally listened to the 1-page text above, which shows the information that should be given to the volunteer before starting the study. I have asked the investigator all the questions that come to my mind, I have understood in detail all the explanations given to me in writing and orally. I have been given enough time to decide whether I want to participate in the study. Under these conditions, I authorize the researcher to review, transfer and process my medical information and I accept the invitation to participate in this study voluntarily and without any coercion or pressure. I understand that by signing this form I will not lose any rights granted to me by local law.

I have been given a signed and dated copy of this form.

VOLUNTEER'S SIGNATURE NAME & SURNAME

ADDRESS

TEL. & FAX

HISTORY

SIGNATURE OF AN AUTHORIZED RESEARCHER IN THE RESEARCH TEAM NAME & SURNAME HISTORY

WITNESS SIGNATURE WHERE NECESSARY NAME & SURNAME DUTY HISTORY

2. Materials and Methods

2.1. Type of research

The study aimed to experimentally investigate the effect of green walking on body mass index, blood lipids, disease perception, and quality of life in patients with MI.

2.2. Setting and Time of the Study

The data were collected in the Cardiology Outpatient Clinic of X State Hospital and Y State Hospital between February and June 2022.

2.3. Population and Sample of the Study

The study population consisted of patients who were receiving outpatient care at the Cardiology Outpatient Clinic of X State Hospital and Y State Hospital and had experienced a myocardial infarction (MI) at least three months ago. To determine the appropriate sample size, a power analysis was conducted using the G*Power 3.1.9.6 program based on a previous study (23) involving MI patients. The power analysis resulted in a sample size of 34 patients in total, with 17 patients allocated to each group. This sample size was determined to achieve 80% power, an effect size of 0.87, and a margin of error of 5%. However, considering that increasing the sample size would decrease the standard error and increase the study power (24), each group was increased by 75%. As a result, a total of 60 patients, with 30 patients in each group, were included in the study.

For practical reasons (geographical location, working conditions, and limited availability of myocardial infarction (MI) patients), a total of 30 MI patients who were being treated as outpatients at the Cardiology Outpatient Clinic of Y State Hospital and had experienced MI at least three months prior were assigned to the experimental group. Another 30 MI patients who were being followed up as outpatients at the Cardiology Outpatient Clinic of X State Hospital and had also experienced MI at least three months before were assigned to the control group using criterion sampling. Criterion sampling involves selecting individuals

based on predetermined criteria or qualifications for the study's objectives (25). It is important to note that in this study, the assignment of patients into groups was not done through randomization or matching. However, statistical analyses of the descriptive and disease-related information of the patients indicated no significant differences between the groups (Table 1). This outcome confirms that the descriptive and disease-related characteristics of the groups were similar, thereby achieving an equal and homogeneous distribution in the study. The CONSORT flow diagram outlining the progression of the study is presented in Figure 1.

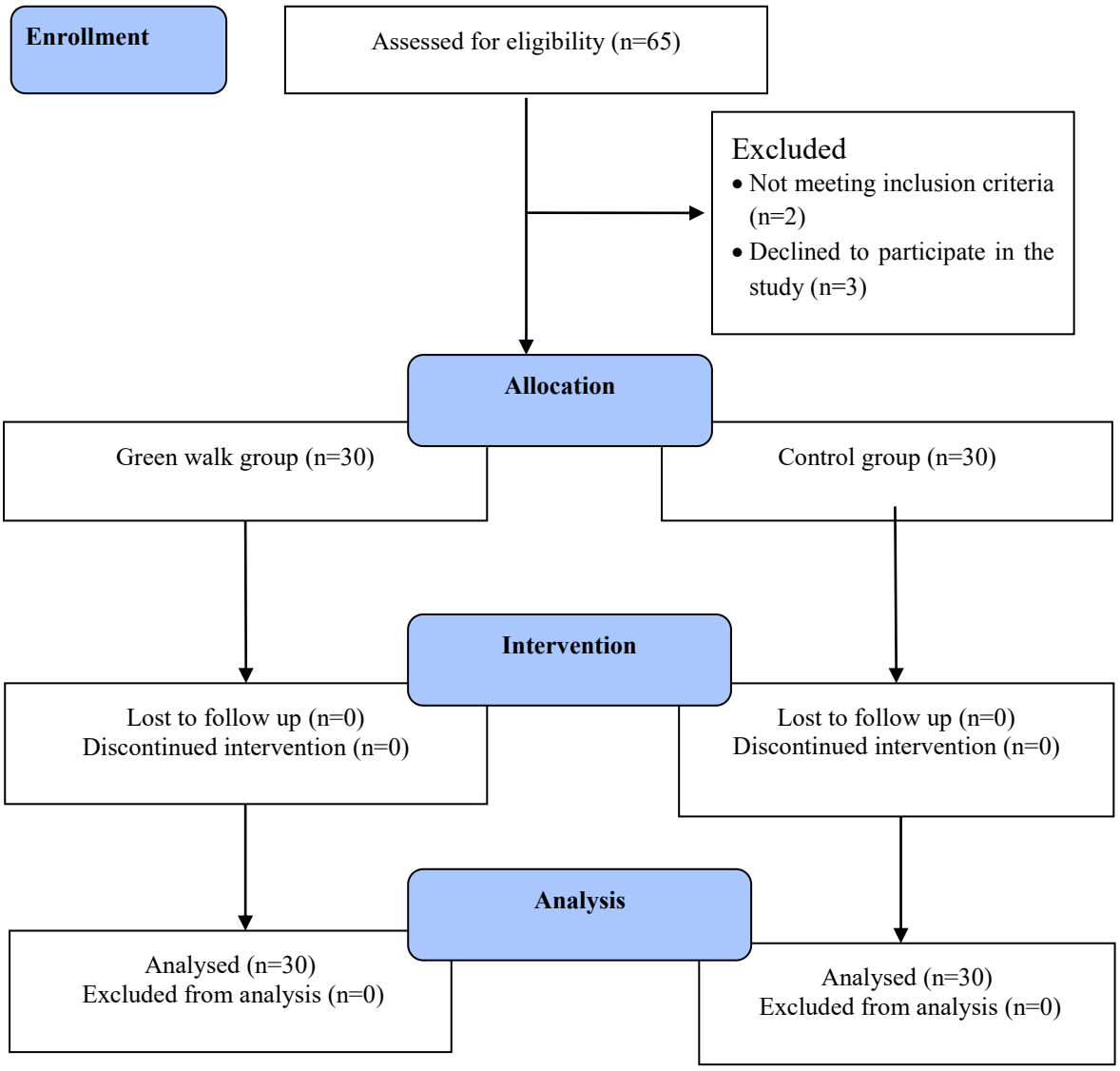

Figure 1. CONSORT flow diagram of the research

2.4 . Research questions

Research Question 1: What is the impact of green walking on the body mass index (BMI) of patients with MI?

Research Question 2: How does green walking influence blood lipid levels (triglycerides, LDL, total cholesterol, and HDL) in patients with MI?

Research Question 3: What is the effect of green walking on the perception of the disease in patients with MI?

Research Question 4: How does green walking affect the quality of life of patients with MI?

2.5. Inclusion Criteria

Inclusion criteria were being 18 years of age or older, being able to communicate verbally, being literate, having had MI at least three months ago (26-28), being followed up as an outpatient with the diagnosis of MI in the cardiology outpatient clinic of X state hospital and Y state hospital, achieving the six-minute walk test (6MWT) (29), having no obstacle to walking (musculoskeletal problems, joint problems, fracture, neuropathy, chronic severe pain, limb loss), and volunteering to participate in the study.

2.6. Exclusion Criteria

Exclusion criteria were having blood pressure above 140/90 mmHg or below 90/60 mmHg, having active chest pain, dyspnea, bradycardia, or tachycardia, a psychiatric diagnosis, visual, hearing, and cognitive impairment, a balance problem, using a walker while walking, having Parkinson's disease, dementia, or cancer, having undergone any surgery that would prevent walking, and refusing to participate in the study.

2.7. Data Collection Tools

The data were collected using the "Structured Patient Information Form", the "Blood Lipids and BMI Monitoring Form", the "Brief Illness Perception Questionnaire (Brief IPQ)", and the "Myocardial Infarction Dimensional Assessment Scale (MIDAS)". As an intervention, MI patients were made to walk for 50 minutes three days a week for three months.

2.7.1. The Structured Patient Information Form: Developed by the researcher after reviewing the literature (30, 31), the form consisted of two parts. The first part included six questions to determine the sociodemographic characteristics of the patients (gender, age, education level, marital status, employment status, and occupation), and the second part included a total of 10 questions, including four questions to determine the characteristics related to the disease (when MI occurred, presence of MI risk factors, etc.).

2.7.2. The Blood Lipids and BMI Monitoring Form: This form was developed by the researcher in line with the literature (33-35). It included blood lipids, height (cm), and weight

(kg) measurements of the patients. BMI was calculated by dividing body weight by the square meter of height (BMI=kg/m^2) (5). The blood lipid measurement results of the patients (1^{st}-week measurement; 6^{th}-week interim measurement; 12^{th}-week measurement) were obtained from the patient file by the researcher during Cardiology Outpatient Clinic visits.

2.7.3. The Brief Illness Perception Questionnaire (Brief IPQ): This scale was developed by Broadbent et al. in 2006 (35). The nine-item section of the scale defines the emotional and cognitive aspects of illness perception. Each item in the scale consists of open-ended questions and is scored between 0 and 10. In the last item, the individual is asked to indicate three factors that he/she thinks are the cause of his/her illness. These items include consequences, timeline, personal control, treatment control, identity, illness concern, coherency, and emotional response, respectively. The highest and lowest scores are 80 and 0. On the scale, the positive reaction consists of the score given to three sub-dimensions (3rd, 4^{th}, and 7th) with a score between 0-10, and the negative reaction consists of the score given to five sub-dimensions (1st, 2nd, 5th, 6th, and 8th). Sub-dimension (1st, 2nd, 5th, 6th, and 8th) items are reverse scored. High scores indicate a negative perception of illness. As the score increases, the likelihood of being affected by the disease increases (36). In this study, the Cronbach's alpha value was found to be 0.83.

2.7.4. The Myocardial Infarction Dimensional Assessment Scale (MIDAS): The Turkish validity and reliability of the MIDAS, devised by David Thompson et al. in 2002, were examined by Uysal et al. (2008), and the Cronbach alpha value of the scale was calculated as 0.83 (37). The scale includes 35 items and seven sub-dimensions, including physical activity, insecurity, emotional reaction, dependency, diet, concerns over medication, and side effects. The scoring of the scale is between 0 and 100. A high score on the scale indicates poor health status (37). In this study, the Cronbach alpha value of MIDAS was determined to be 0.93.

2.8. Data Collection

2.8.1. Green Walk Group

Patients who were admitted to the Cardiology Outpatient Clinic of Y State Hospital and passed the 6MWT conducted by the cardiology physician were eligible for participation in the green walk group. Following the physician's examination at the Cardiology Outpatient Clinic, the researcher conducted face-to-face interviews with the patients in a private room. During these interviews, the patients were administered the Structured Patient Information Form, Blood Lipids and BMI Monitoring Form, the Brief IPQ, and the MIDAS, and the

collected data were recorded on the respective forms. Then, the researcher provided detailed information to the patients about green walking. For the randomized MI patients, two groups were formed, and they engaged in a 50-minute green walking three days a week for 12 weeks, under the guidance of the researcher. The green walk group's walks were scheduled differently for the two subgroups. The first subgroup had their 50-minute walk on Monday, Wednesday, and Saturday, while the second subgroup had their walks on Tuesday, Thursday, and Sunday. This arrangement ensured a standardized time interval between green walks for both groups. Additionally, a follow-up Blood Lipids and BMI Monitoring Form was administered to the patients during their visit to the Cardiology Polyclinic in the middle of the study (6th week). At the end of the 12-week period, the patients in the green walk group underwent a posttest evaluation.

2.8.2. Control Group: Patients who were admitted to the Cardiology Outpatient Clinic of X State Hospital and passed the 6MWT conducted by the cardiology physician were enrolled in the control group. Upon their visit to the outpatient clinic, the patients in this group underwent a face-to-face interview, during which they were administered the "Structured Patient Information Form," the "Blood Lipids and BMI Monitoring Form," the "Brief-IPQ," and the "MIDAS" as pretests. The information and data collected from these interviews were recorded on the respective forms. The patients in the control group continued with their routine daily activities. No specific intervention or additional measures were implemented by the investigator in this group. Furthermore, a follow-up "Blood Lipids and BMI Monitoring Form" was administered to the patients during their visit to the Cardiology Outpatient Clinic in the middle of the study (6th week). At the end of the 12-week period, the patients in the control group underwent a posttest.

2.9. Ethical Considerations

Permission was obtained from the Z University Faculty of Medicine Scientific Research Ethics Committee (dated March 17, 2021, and numbered 24237859-273). Institutional permission was obtained from the Gümüşhane Provincial Health Directorate for X State Hospital (dated November 30, 2021, and numbered E-51020271-044) and Y State Hospital (dated February 19.02.2021 and numbered E-51020271-044). Written and verbal consent was obtained from participants.

2.10. Data Analysis

The analysis of the research data was performed with the IBM SPSS 26 package program. The fact that the skewness and kurtosis coefficients of the values obtained from the

measurements are within the range of ±1.5 is considered evidence for the presence of a normal distribution (10). If there is at least one measurement in each variable whose skewness and kurtosis coefficients are not in the range of ±1.5 for repeated measurements, it is appropriate to use non-parametric tests during analyses, and if there is none, it is appropriate to use parametric tests. Chi-square, Friedman test, Independent Groups t-test, Mann-Whitney U test, Wilcoxon test, Fisher Exact test, ANOVA test, Fisher Freeman Halton test, Greenhouse-Geisser test, Bonferroni test, and Dependent Groups t-test were used in the evaluation of the data. When the measurement values and scale scores were analyzed according to repeated measurements, the dependent groups' t-test was used as a parametric test and the Wilcoxon test as a non-parametric test in binary measurements; the repeated measures ANOVA test was used as a parametric test, and the Friedman test as a non-parametric test in triple measurements. For the results, $p<0.05$ was used as the significance level, and the results were within the 95% confidence interval.

3. Results

Table 1. Descriptive and disease information of patients with myocardial infarction (n=60)

Descriptive Information		Green Walk Group (n=30)	Control Group (n=30)	Statistical Analysis	
		n (%)*	n (%)*	χ^2	p
Gender	Female	18 (60.0)	14 (46.7)	1.07[a]	0.301
	Male	12 (40.0)	16 (53.3)		
Education level	Literate	10 (33.3)	6 (20.0)	1.60[b]	0.462
	Primary school/Secondary school	17 (56.7)	19 (63.3)		
	High school/Bachelor's degree/ Post-graduate degree	3 (10.0)	5 (16.7)		
Occupation	Housewife	18 (60.0)	13 (43.3)	3.96[a]	0.138
	Retired	12 (40.0)	14 (46.7)		
	Tradesmen	0 (0.0)	3 (10.0)		
Marital status	Married	23 (76.7)	22 (73.3)	0.09[a]	0.766
	Single	7 (23.3)	8 (26.7)		
	Spouse and children	10 (33.3)	10 (33.3)		
	Extended family	7 (23.3)	8 (26.7)		
Employment status	Yes	0 (0.0)	8 (26.7)	-	**0.005**[c]
	No	30 (100.0)	22 (73.3)		
				t	**p**
Age	x̄±SD	60.23±8.22	57.73±10.42	1.03[d]	0.306
	Med (Min-Max)	60 (44-72)	58 (36-77)		
Elapsed time since MI	1-4 years	15 (50.0)	17 (56.7)	0.27[a]	0.605
	5-14 years	15 (50.0)	13 (43.3)		
Diabetes	Yes	21 (70.0)	16 (53.3)	1.76[a]	0.184
	No	9 (30.0)	14 (46.7)		
Hypertension	Yes	21 (70.0)	18 (60.0)	0.66[a]	0.417
	No	9 (30.0)	12 (40.0)		
Smoking	Yes	6 (20.0)	9 (30.0)	0.80[a]	0.371
	No	24 (80.0)	21 (70.0)		

[a]Chi-Square Test $p<0.05$; [b]Fisher Freeman Halton Test $p<0.05$; [c]Fisher Exact Test $p<0.05$; [d]B Independent Groups t-Test $p<0.05$; x̄: Arithmetic mean; SD: Standard deviation; Med: Median; Min: Minimum; Max: Maximum; SSI: Social Security Institution; ACS: Acute Coronary Syndrome; NSTEMI: Non-ST Segment Elevation Myocardial Infarction; STEMI: ST Segment Elevation Myocardial Infarction; MI: Myocardial Infarction; *Column percentage was taken.

As a result of the statistical analyses on whether the descriptive and disease information differed between the green walking and control groups, it was determined that the information except for the employment status did not differ between the groups ($p>0.05$) (Table 1).

Table 2. Intragroup and intergroup analyses of the time-dependent changes in weight and body mass index of the green walking and control groups (n=60)

			Green Walk Group (n=30)			Control Group (n=30)			Statistical Analysis[e]	
	Measurement (kg)		x̄± SD			x̄± SD			t	p
Weight	1. Pretest		82.10±12.06			80.63±11.40			0.484[c]	0.630
	2. Interim measurement (6. week)		80.13±12.18			82.13±11.17			-0.663[c]	0.510
	3. Posttest		78.30±12.07			83.37±10.99			-1.700[c]	0.094
	Statistical Analysis[d]	sd	1.27			1.22				
		F	192.50			66.66				
		p	**0.000[a]**			**0.000[a]**				
		Significant Difference[b]	1-2	1-3	2-3	1-2	1-3	2-3		
		p	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
BMI	1. Pretest		28.42±4.07			28.45±5.59			-0.028[c]	0.978
	2. Interim measurement (6. week)		27.74±4.06			28.98±5.57			-0.987[c]	0.328
	3. Posttest		27.10±4.02			29.43±5.57			-1.856[c]	0.069
	Statistical Analysis[d]	sd	1.26			1.22				
		F	175.76			72.89				
		p	**0.000[a]**			**0.000[a]**				
		Significant Difference[b]	1-2	1-3	2-3	1-2	1-3	2-3		
		p	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		

BMI: Body mass index; x̄: Arithmetic mean; SD: Standard deviation; [a]Greenhouse-Geisser; [b]Bonferroni test was used for multiple comparisons; Significance level p<0.001; [c]Independent groups t-test; p<0.05; [d]Statistical analysis: Intragroup analysis; [e]Statistical analysis: Intergroup analysis.

Table 2 shows that the weight ($F_{walking}$=192.50, $F_{control}$=66.66, p<0.001) and BMI ($F_{walking}$ =175.76, $F_{control}$=72.89, p<0.001) levels of MI patients in the green walking and control groups differed significantly. According to the Bonferroni test result in the multiple comparison tests performed to determine from which group the difference originated, the weight and BMI levels of MI patients who had green walking decreased significantly from pretest to posttest, while the weight and BMI levels of the control group increased significantly from pretest to posttest (Table 2).

Table 3. Intragroup and intergroup statistical results of time-dependent changes in blood lipid levels in green walking and control group patients (n=60)

			Green Walk Group (n=30)			Control Group (n=30)			Statistical Analysis[g]	
	Measurement		**x̄± SD**			**x̄± SD**			**t**	**p**
HDL	1. Pretest		40.83±5.78			43.30±5.32			-1.719[g]	0.091
	2. Interim measurement (6th week)		51.93±5.88			39.33±4.47			9.342[g]	**0.000**
	3. Posttest		64.93±3.32			34.93±3.67			33.215[g]	**0.000**
	Statistical Analysis[f]	**sd**	2			1.33				
		F	477.27			127.85				
		p	**0.000[a]**			**0.000[b]**				
		Significant Difference[c]	1-2	1-3	2-3	1-2	1-3	2-3		
		p	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
			Median[d] (25.-75. Percentile)			**Median[d] (25.-75. Percentile)**				
LDL	1. Pretest		151.50 (143.75-156.50)			126.50 (101.25-138.25)			189.000[h]	**0.000**
	2. Interim measurement (6th week)		110.50 (93.25-127.25)			158 (147.50-179.25)			22.500[h]	**0.000**
	3. Posttest		64 (58.50-67)			200 (174-222)			0.000[h]	**0.000**
	Statistical Analysis[f]	**sd**	2			2				
		χ^2	60.00			60.00				
		p	**0.000**			**0.000**				
		Significant Difference[e]	1-2	1-3	2-3	1-2	1-3	2-3		
		p	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**		
			x̄± SD			**Median[d] (25.-75. Percentile)**		**x̄±SD**		
Triglyceride	1. Pretest		208.10±28.85			149 (127.75-172.75)		168.70±62.10	3.152[g]	**0.003**
	2. Interim measurement (6th week)		152.90±23.16			188 (174.25-196)		204.07±56.70	-4.576[g]	**0.000**
	3. Posttest		110.80±19.80			242.50 (228.75-261.25)		259.03±50.79	-14.894[g]	**0.000**
	Statistical Analysis[f]	**sd**	1.60			**sd**	2			
		F	301.47			**χ^2**	60.00			
		p	**0.000[b]**			**p**	**0.000**			
		Significant Difference[c]	1-2	1-3	2-3	**Significant Difference[e]**	1-2 **(p=0.000)**			
		p	**0.000**	**0.000**	**0.000**		1-3 **(p=0.000)**			
							2-3 **(p=0.000)**			
Total Choles-			**x̄± SD**			**Median (25.-75. Percentile)**		**x̄±SD**		

1. Pretest			263.93±20.98		228.50 (215.50-236.50)	236.43±34.30	3.746[g]	**0.000**
2. Interim measurement (6th week)			220.63±12.95		266.50 (255.75-282.75)	274.77±30.98	-8.831[g]	**0.000**
3. Posttest			158.87±24.63		291 (283-303.50)	301.70±32.28	-19.266[g]	**0.000**
Statistical Analysis[f]	**sd**		1.41		**sd**	2		
	F		215.61		**χ^2**	60.00		
	p		**0.000**[b]		**p**	**0.000**		
	Significant Difference[c]	1-2	1-3	2-3	**Significant Difference[e]**	1-2 **(p=0.000)**		
	p	**0.000**	**0.000**	**0.000**		1-3 **(p=0.000)**		
						2-3 **(p=0.000)**		

[a]Sphericity was assumed; [b]Greenhouse-Geisser; [c]Bonferroni test was used for multiple comparisons; [d]Friedman test was used because LDL values for the green walk and control groups and triglyceride and total cholesterol values for the control group did not show normal distribution; [e]Wilcoxon test was used to determine which groups differed. Therefore, Bonferroni correction was made, and p-value was taken as 0.05/3=0.017 when Wilcoxon test was performed since there were 3 pairwise comparisons; [f]Statistical analysis: Intragroup comparisons; [g]Statistical analysis: Independent groups t-test was used in intergroup analysis; [h]Mann-Whitney U test was used in intergroup analysis; x̄: Arithmetic mean; SD: Standard deviation.

Table 3 shows that ($F_{walking}$=477.27, $F_{control}$=127.85, p<0.001), LDL ($\chi^2_{walking}$=60.00, $\chi^2_{kontrol}$=60.00, p<0.001), triglyceride ($F_{walking}$=301.47, $\chi^2_{control}$=60.00, p<0.001) and total cholesterol ($F_{walking}$=215.61, $\chi^2_{control}$=60.00, p<0.001) levels of MI patients with and without green walking differed significantly according to the walking process.

The study employed Bonferroni and Wilcoxon tests to further investigate the origin of the differences between groups. These tests were conducted after performing repeated measures of ANOVA and Friedman tests. The results revealed significant changes in lipid levels between the green walk group and the control group. There was a significant decrease in LDL, triglyceride, and total cholesterol levels from pretest to posttest and a significant increase in HDL levels during the same period in the green walking, group while there was a significant increase in LDL, triglyceride, and total cholesterol levels and a significant decrease in HDL levels from pretest to posttest in the control group (Table 3).

Table 4. Intragroup and intergroup comparison of pretest and posttest disease perception levels of green walking and control group patients (n=60)

			Green Walk Group (n=30	Control Group (n=30)	Statistical Analysis[d]	
Positive response	**Measurement**		**x̄± SD**	**x̄± SD**	**t**	**p**
	1. Pretest		18.73±2.84	16.33±3.85	2.746	**0.008**[b]
	2. Posttest		25.50±1.72	11.30±3.14	21.722	**0.000**[b]
	Statistical Analysis[c]	**t**	-17.41	18.71		
		p	**0.000**[a]	**0.000**[a]		
Negative response Tenki	1. Pretest		37.23±4.77	31.37±5.93	4.221	**0.000**[b]
	2. Posttest		26.43±4.77	38.50±4.35	-10.237	**0.000**[b]
	Statistical Analysis[c]	**t**	26.66	-17.82		
		p	**0.000**[a]	**0.000**[a]		

[a]Dependent groups t-test; Significance level: p<0.001; [b]Independent groups t-test; Significance level: p<0.05; [c]Statistical analysis: Intragroup analysis; [d]Statistical analysis: Intergroup analysis; x̄: Arithmetic mean; SD: Standard deviation

Table 4 presents that the positive ($t_{walking}$=-17.41, $t_{control}$=18.71, p<0.001) and negative ($t_{walking}$=26.66, $t_{control}$=-17.82, p<0.001) reaction levels of the green walking, and control group MI patients differed significantly. Positive reaction levels of MI patients who did green walking increased significantly and negative reaction levels decreased significantly in the posttest compared to the pretest, while positive reaction levels of the control group decreased significantly, and negative reaction levels increased significantly in the posttest compared to the pretest (Table 4).

Table 5. Intragroup and intergroup statistical results of the pretest and posttest quality of life levels of the green walking and control group patients (n=60)

			Green Walk Group (n=30	Control Group (n=30)	Statistical Analysis[b]	
Insecurity	**Measurement**		**x̄± SD**	**x̄± SD**	**t**	**p**
	1. Pretest		77.22±13.02	50.09±11.12	8.679[b]	**0.000**
	2. Posttest		32.31±6.58	78.52±9.17	-22.421[b]	**0.000**
	Statistical Analysis[a]	**t**	22.28	-37.33		
		p	**0.000**	**0.000**		
Emotional reaction	1. Pretest		72.08±15.29	50.62±17.24	5.101[b]	**0.000**
	2. Posttest		36.67±10.21	79.37±12.73	-14.332[b]	**0.000**
	Statistical Analysis[a]	**t**	11.05	-16.08		
		p	**0.000**	**0.000**		
Dependency	1. Pretest		76.94±11.72	46.11±15.74	8.605[b]	**0.000**
	2. Posttest		52.50±10.30	58.06±11.88	-1.935[b]	0.058
	Statistical Analysis[a]	**t**	8.25	-5.68		
		p	**0.000**	**0.000**		
Concerns over medication	1. Pretest		48.75±24.64	40.00±15.88	1.635[b]	0.108
	2. Posttest		55.83±13.82	67.08±13.73	-3.163[b]	**0.002**
	Statistical Analysis[a]	**t**	-1.52	-10.34		
		p	0.140	**0.000**		
Concerns over side effects	1. Pretest		40.83±16.39	47.08±14.56	-1.561[b]	0.124
	2. Posttest		58.75±12.78	70.00±10.17	-3.773[b]	**0.000**
	Statistical Analysis[a]	**t**	-5.90	-8.53		
		p	**0.000**	**0.000**		
Physical activity			**Median* (25.-75. Percentile)**	**x̄±SD**	**x̄±SD**	
	1. Pretest		72.92 (62.50-77.08)	69.44±10.30	49.37±9.74	7.754[b]	**0.000**
	2. Posttest		33.33 (31.25-35.42)	32.71±4.99	76.94±7.13	-27.838[b]	**0.000**
	Statistical Analysis[a]	**Z**	-4.79	**t**	-30.35		
		p	**0.000***	**p**	**0.000**		
Diet			**Median* (25.-75. Percentile)**	**Median* (25.-75. Percentile)**	**U**	**p**
	1. Pretest		41.67 (33.33-50.00)	33.33 (25.00-41.67)	334.500[c]	0.080
	2. Posttest		83.33 (75.00-91.67)	16.67 (14.58-33.33)	15.500[c]	**0.000**
	Statistical Analysis[a]	**Z**	-4.78	-3.35		
		p	**0.000***	**0.001***		

***Wilcoxon test was used because the values of "physical activity" for the green walking and "diet" for the green walk group and the control group did not show normal distribution; [a]Statistical analysis: Intragroup analysis; [b]Statistical analysis: Independent samples t-test was used for intergroup analysis; Significance level: $p<0.05$; [c]Statistical analysis: Mann-Whitney U test was used for intragroup analysis; Significance level: $p<0.001$; x̄: Arithmetic mean; SD: Standard deviation.

Table 5 shows that the levels of insecurity ($t_{walking}$=22.28, $t_{control}$=-37.33, p<0.001), emotional response ($t_{walking}$ =11.05, $t_{control}$=-16.08, p<0.001), addiction ($t_{walking}$=8.25, $t_{control}$=-5.68, p<0.001), drug side effects ($t_{walking}$ =-5.90, $t_{control}$=-8.53, p<0.001), physical activity ($Z_{walking}$=-4.79, $t_{control}$=-30. 35, p<0.001) and diet ($Z_{walking}$=-4.78, $p_{walking}$ <0.001; $Z_{control}$=-3.35, $p_{control}$<0.01) levels differed in both green walking and control groups, but the level of concern about medication differed significantly only in the control group ($t_{control}$=-10.34, p<0.001). The levels of insecurity, emotional reaction, dependency, concerns over drug side effects and physical activity of MI patients in the green walk group decreased significantly in the posttest compared to the pretest, while the levels of concerns over side effects and diet increased significantly in the posttest. The levels of insecurity, emotional reaction, dependency, concerns about medication, drug side effects, and physical activity of the control group increased significantly in the posttest compared to the pretest, while the levels of diet decreased significantly (Table 5).

4. Conclusion and Recommendations

The study results revealed that green walking yielded positive outcomes in terms of reducing BMI and weight, lowering LDL, triglyceride, and total cholesterol levels, increasing HDL levels, enhancing quality of life, and fostering a favorable perception of disease among patients with myocardial infarction (MI). To further enrich the existing literature, it is recommended to conduct experimental studies of extended duration with larger sample sizes to explore the effects of green walking on HDL, LDL, triglyceride, total cholesterol values, weight, and BMI.