**Impact of an Eight-Week Walking Program on Health-Related Fitness and Body Image Perception Among Premenopausal Teachers in Mombasa County, Kenya**

# ABSTRACT

This study examined the relationship between Health-Related Fitness (HRF) and perceived body image and assessed the effects of an 8-week walk programme on these factors. The quasi-experimental research targeted 50 premenopausal female teachers aged 30–45 in Mvita Sub-county, Mombasa, using purposive sampling. Participants were divided into an experimental group (n=23) that underwent the walking programme and a control group (n=26) that did not. HRF tests included the 20-metre bleep test (cardiovascular endurance), one-minute sit-up test (abdominal muscle strength endurance), sit-and-reach test (low back flexibility), modified push-up test (upper body strength), and BMI calculation. Data were analyzed using SPSS Version 22, with One-Way ANOVA testing hypotheses at a 5% significance level. Findings indicated significant improvements in HRF components for the experimental group, including abdominal endurance (F(1,48) = 56.72, P<0.001), upper body strength-endurance (F(1,48) = 55.86, P<0.001), cardiovascular endurance (F(1,48) = 39.96, P<0.001), low back flexibility (F(1,48) = 37.75, P<0.001), and BMI (F(1,48) = 29.05, P<0.001). Additionally, the programme positively influenced body image perception. Participants reported increased body weight awareness (P=0.044), desire for a perfect body (P=0.003), improved self-representation (P=0.002), adherence to exercise routines (P<0.001), enhanced physical attractiveness (P=0.009), and concern for body weight maintenance (P=0.003). The study recommends adopting walking programmes for premenopausal female teachers to improve HRF and body image. Future research should explore strategies for integrating walking into daily routines to sustain these benefits.

**Key Words:** *Body Mass Index, Cardiovascular Endurance, Exercise Adherence, Health-Related Fitness, Physical Fitness, Strength Endurance*

**1.0 INTRODUCTION**

Physical fitness is a multifaceted concept comprising various independent components influenced by physiological and biological factors. These components include cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition, all of which contribute to daily functioning, recreational activities, and injury prevention (Bukhala, 2017). Additional attributes related to athletic performance include coordination, balance, speed, agility, power, and reaction time (Iyakrus & Ramadhan, 2021).

Cardiovascular endurance refers to the efficient functioning of the heart, lungs, and blood vessels, ensuring optimal oxygen and energy supply to the body. Muscular strength is defined as the maximal force a muscle or muscle group can exert in a single contraction, whereas muscular endurance is the ability of muscles to sustain repeated contractions without excessive fatigue. Flexibility denotes the range of motion of a joint or group of joints (Wilmerding & Krasnow, 2017). Body composition, which includes bone, muscle, fat, organs, water, and connective tissues, is critical for overall health. However, excessive fat accumulation has been identified as a major contributor to lifestyle-related non-communicable diseases (Braun, 2022). Individual fitness goals dictate the emphasis on particular components (Corbin & Masurier, 2014).

This study specifically focuses on Health-Related Fitness (HRF) components, including cardiovascular endurance, abdominal muscular endurance, low back flexibility, upper-body strength-endurance, and body composition. Cardiovascular endurance determines the ability of the heart and lungs to supply energy efficiently and remove metabolic waste during daily activities (Limbu, 2014; Cheng, Chiu & Su, 2019). Abdominal muscular endurance plays a significant role in digestive health, pelvic stability, posture, and respiration. Low back flexibility is essential for functional movement, while upper-body strength-endurance supports posture and enables daily tasks such as lifting and cooking without undue fatigue (Wilmerding & Krasnow, 2017). Body composition, particularly body fat percentage, is a primary risk factor for non-communicable diseases. Body Mass Index (BMI) is commonly used as an accessible and cost-effective screening tool for assessing body fat and weight trends (Sommer et al., 2023).

Body image is an individual's perception, beliefs, emotions, and attitudes regarding their physical appearance (Brazier, 2017). This perception varies across cultures, with some societies idealizing slender bodies while others prefer fuller figures (Waldman et al., 2013). Socio-cultural factors significantly influence body image perceptions among men and women. While some cultures value a lean physique, others associate larger body sizes with health and prosperity, a perception commonly found in African societies, including Kenya. This cultural preference may explain the prevalence of overweight individuals, particularly among women. Studies on African American women have shown that social interactions impact body image satisfaction, with overweight individuals often experiencing fluctuating self-perception based on societal feedback (Baturka, et al, 2000).

Research on menopausal women in Croatia and Lithuania highlights the impact of socio-cultural pressures on body dissatisfaction (Esnaola, et al, 2010). Westernization, urbanization, and mass media have further influenced changing beauty standards, promoting an idealized body image that can contribute to eating disorders and negative self-perception (Bessenoff & Snow, 2006). Body dissatisfaction is linked to age, gender, marital status, and BMI (Luo, et al, 2005). Studies in Kenya indicate that body image ideals are evolving, with dissatisfaction increasing across gender lines (Arasa, 2017).

Beyond the influence of HRF on physical health, menopause introduces additional concerns for women. Between the ages of 40 and 55, women experience symptoms such as hot flashes, night sweats, reduced bone density, and increased fat accumulation (Sternfeld & Dugan, 2011). Engaging in moderate physical activity during perimenopause can alleviate these symptoms (Kim, et al 2014). Research on physical activity levels among female professionals in Turkey found that healthcare workers maintained better fitness levels than primary school teachers, whose activity levels declined with age (Atan, et al 2012). Similar findings emerged from a Brazilian study, where female teachers aged 31 to 42 demonstrated lower physical activity levels compared to their male counterparts (Brito, et al 2012). The interplay between body image dissatisfaction, gender, declining physical activity, and socio-cultural influences underscores the complexity of maintaining HRF (Westfall, 2015).

The 2018 Physical Activity Guidelines Advisory Committee of the U.S. Department of Health and Human Services emphasized walking as a popular and effective aerobic exercise for maintaining BMI and enhancing HRF. Exercise intensity, measured in Metabolic Equivalents of Task (METs), determines whether physical activity is classified as light, moderate, or vigorous. Walking at low intensity expends less than 3.0 METs, moderate intensity ranges from 3.0 to 6.0 METs, and high intensity exceeds 6 METs. Regular walking is linked to improved HRF and positive body image perception (Rabbitt, 2020). Incorporating structured walking programs with appropriate intensity, frequency, and duration can enhance fitness and self-perception among working populations (Bai et al., 2022).

Kenya’s coastal region, particularly Mombasa, has a diverse population with rich cultural traditions. The city’s warm, humid climate, with annual temperatures ranging from 24 to 30 degrees Celsius (75 to 86 degrees Fahrenheit), differentiates it from other parts of Kenya (Kenya Meteorological Department, 2020). Cultural factors, particularly Swahili traditions, influence women’s physical activity levels and body image. This study focused on premenopausal female teachers in coastal Kenya, who constitute a significant portion of the professional workforce. Understanding the interplay between HRF, body image, and cultural influences is crucial for promoting overall well-being and encouraging healthier lifestyle choices among women in this region.

**1.1 Research Problem**

Several studies have examined the relationships between body image, health, and psychological well-being (Kim et al., 2014), as well as the impact of physical activity on health-related fitness among premenopausal and menopausal women (Ransdell et al., 2004). Additionally, research has explored physical activity levels among teachers and healthcare professionals (Westfall, 2015). These studies highlight the need for further research incorporating targeted interventions to address health and body image concerns.

Despite the established negative effects of poor health-related fitness and body image dissatisfaction on teachers’ well-being and performance, no study has specifically applied a health-related fitness physical activity intervention for enhancing physical fitness and perceived body image among premenopausal teachers in Mvita, Kenya. Furthermore, the physical activity levels and body image perceptions of Kenyan premenopausal teachers remain unexplored. Given the significance of these issues, this study aims to examine the association between health-related fitness and body image in this population. Moreover, no research has assessed the impact of a structured walking program on the health-related fitness and body image of Kenyan women. If effective, such a program could support the promotion of an active lifestyle and improved body perception among women. Mombasa was selected for this study due to its 22 public primary schools, pedestrian-friendly infrastructure, and conducive environment for walking. Given the region’s high humidity and temperatures, walking was deemed a more suitable activity than higher-intensity exercises like running or cycling. This study investigates the effects of an eight-week walking program with conditioning sessions on the health-related fitness and perceived body image of premenopausal primary school teachers in Mvita, Mombasa County.

1.2 Purpose of the Study

The study examined the impact of an eight-week walk program with conditioning sessions on fitness and body image in premenopausal teachers.

**1.3 Research Objective**

This study was guided by the following objective to: Establish the effects of an eight-week walk programme on the Health-Related Fitness components of cardiovascular endurance, abdominal muscular endurance, low back flexibility, upper body strength-endurance and Body Mass Index of 30 to 45year old premenopausal female primary school teachers in the Mvita, Mombasa County, establish the effects of an eight-week walk programme on the Perceived Body Image of 30 to 45year old premenopausal female primary school teachers in the Mvita, Mombasa County and to determine the relationship between Health-Related Fitness and Perceived Body Image of 30 to 45year old premenopausal female primary school teachers subsequent to an eight-week walk programme.

**1.4 Research Hypothesis**

This study was guided by the following Research Hypothesis.

**H01**: There is no significant effect of the eight-week walk programme on Health-Related Fitness components of cardiovascular endurance, abdominal muscular endurance, low back flexibility, upper body strength-endurance and Body Mass Index of 30 to 45year old premenopausal female primary school teachers in Mvita, Mombasa County.

**H02**: There is no significant effect of the eight-week walk programme on perceived Body Image of 30 to 45year old premenopausal female primary school teachers in Mvita, Mombasa County.

**H03**: There is no significant relationship between Health-Related Fitness and Perceived Body Image of 30 to 45 year old premenopausal female primary school teachers subsequent to an eight-week walk programme.

**1.5 Justification of the Study**

The study's findings may help premenopausal teachers recognize the benefits of walking for their health-related fitness, well-being, and body image perception. Additionally, it could contribute to developing a Kenya-specific fitness training program for premenopausal women and serve as a foundation for further research on its effectiveness. The study may also encourage the Ministries of Education, Sports, and Health to address female teachers' health and performance concerns. Furthermore, the findings could support future research, interventions, and policy initiatives aimed at promoting health-related fitness and body image across diverse populations.

**2.0 LITERATURE REVIEW**

***Impact of Structured Walking Programs on Health-Related Fitness and Body Image Perception Among Women: A Review of Empirical Evidence***

***Walking***

Walking is a rhythmic, continuous activity involving major muscle groups, particularly the legs, and is classified as aerobic when sustained for at least 15 minutes (Millstein, 2013). It enhances cardiovascular health by increasing oxygen intake during physical exertion (Hadders-Algra, 2018). Brisk walking, a moderate-intensity exercise, strengthens muscles and promotes overall well-being (Johnson, 2020). Recognized as a safe and effective form of exercise for individuals of all ages and abilities, walking helps reduce the risk of non-communicable diseases (Alnasyan et al 2018; C3Collaborating for Health, 2012).

Variations in walking intensity enhance its benefits. Brisk walking increases heart rate and muscle engagement, while power walking incorporates longer strides and arm movements (Pavlović, et al 2021). Nordic walking, which uses poles, engages the upper body, while treadmill walking provides a controlled environment. Hiking, though more physically demanding, offers exposure to nature, and walking meditation fosters mindfulness. Meanwhile, race walking is a structured competitive sport requiring specific techniques (Cazzola, et al 2016). Research highlights walking’s health benefits. Liang et al. (2017) found that a 16-week supervised walking program reduced depression and improved self-esteem in menopausal Chinese women, though BMI remained unchanged. Similarly, Yang and Kim (2022) observed improved health behaviors, reduced stress, and smaller waist circumferences in middle-aged Korean women following a walking-based health program. Although BMI outcomes were inconclusive, the study supported walking’s effectiveness in promoting overall health.

Physical inactivity and sedentary lifestyles have become a significant public health issue, contributing to various health complications, including cardiovascular diseases, metabolic disorders, diabetes, cancer, and musculoskeletal conditions. The lack of physical fitness, particularly Health-Related Fitness (HRF), has profound implications on overall well-being. HRF focuses on maintaining optimal health and functionality by emphasizing cardiovascular endurance, muscular endurance, flexibility, muscular strength, and body composition. These components are essential for reducing health risks and ensuring an active, fatigue-free lifestyle.

Physical fitness is a multifaceted concept, encompassing both Health-Related and Skill/Performance-Related fitness. While the latter focuses on enhancing agility, coordination, speed, power, reaction time, and balance for superior physical performance, HRF prioritizes efficiency in daily activities and long-term health benefits. The effectiveness of HRF components is directly influenced by the regularity and intensity of physical activity. This study examined the impact of an eight-week walking program, including warm-up, conditioning, and cool-down phases, on various HRF components. The study focused on cardiovascular endurance through walking, abdominal muscular endurance, trunk flexibility, upper-body strength-endurance, and body composition assessed through Body Mass Index (BMI). Findings from this research contribute to understanding how structured physical activity can enhance health and overall fitness levels.

*Cardiovascular Endurance and Walking*

Cardiovascular endurance, also known as aerobic or cardiorespiratory endurance, refers to the body's ability to efficiently deliver oxygen to tissues for sustained activity while minimizing fatigue. Studies indicate that cardiovascular endurance declines with age (American College of Sports Medicine, 2018). Walking has been shown to enhance heart efficiency in oxygen transport, improve fat metabolism, and increase mitochondrial density, ultimately boosting endurance (Teychenne & Miller, 2017). Research suggests that brisk walking for 30 minutes, five days a week, significantly enhances aerobic fitness and may help prevent cardiovascular disease (Murtagh, et al 2010). The American Heart Association (2023) recommends at least 150 minutes of moderate activity weekly, equating to a 20-minute daily walk for heart health. Analysis of data from 29,742 participants in the 2015 National Health Interview Survey revealed that reduced walking activity correlates with an increased risk of cardiovascular disease (Omuro et al., 2019). While laboratory-based Vo2Max tests are the gold standard for assessing cardiovascular fitness, they are often impractical due to cost and logistical challenges (Letnes et al., 2019). As a result, field tests such as distance-based walking or running tests and the 20-meter shuttle run have been developed as reliable alternatives (Tomkinson & Olds, 2008).

***Abdominal Muscular Endurance and Walking***

Muscular endurance refers to the ability of muscles to sustain force against sub-maximal resistance over time without excessive fatigue. It is often measured by the number of repetitions performed at a percentage of an individual's maximum strength. In Health-Related Fitness, muscular endurance is linked to key functions such as maintaining good posture, enhancing aerobic capacity, supporting daily functional activities, and improving sports performance. The abdominal muscles, particularly the rectus abdominis, transverse abdominis, and obliques, are crucial for stabilizing the body and protecting internal organs. They play a significant role in posture, spinal alignment, and core stability. Strong abdominal muscles also contribute to regulating intra-abdominal pressure and supporting the lumbar spine, reducing compressive forces. Studies suggest that abdominal endurance is vital for overall health and movement efficiency. For example, walking has been shown to improve abdominal muscle tone and reduce abdominal fat, though its effect on muscular endurance specifically remains underexplored. To measure abdominal endurance, methods like Electromyography (EMG) are considered gold standards, though they are costly and cumbersome. More practical alternatives, such as the sit-up test, are commonly used due to their low cost, safety, and proven reliability. These methods offer valuable insights into abdominal endurance and overall fitness.

***Low Back Flexibility and Walking***

Flexibility refers to the range of motion (ROM) achievable at a joint or group of joints through voluntary muscle action, as defined by the American College of Sports Medicine (ACSM, 2017). Flexibility is joint-specific, with concerns over the low back region due to the unique structure of the lumbar spine, which supports the upper body and allows various trunk movements, such as flexion and rotation (Pate et al., 2012). The muscles of the core, including the abdominals and lower back, work together to stabilize the spine during bending and lifting (Polat et al., 2022). Tightness in the hamstrings, particularly the attachment to the ischial tuberosity, is speculated to cause pelvic tilt and potentially reduce lumbar lordosis, contributing to low back pain (Nourbakhsh & Arab, 2002). However, studies have shown mixed results on the relationship between hamstring flexibility and low back pain (LBP) (Johnson & Thomas, 2010; Jandre-Reis & Macedo, 2015). Physical activity, especially walking, has been linked to improved flexibility and reduced stiffness in the lumbar spine (Shao et al., 2022), helping to reduce pain and enhance circulation. Exercise programs incorporating strength, flexibility, and walking are beneficial for managing persistent LBP (Verburnt et al., 2010). The Sit-and-Reach test, a simple and reliable measure, is widely used to assess low back flexibility (Wells & Dhillon, 1952).

***Upper-Body Strength-Endurance and Walking***

The upper body, comprising the arms, shoulders, chest, back, and neck, requires both strength and endurance for optimal performance. Resistance training improves these muscular functions, with strength-endurance exercises benefiting from adjustments in resistance and repetitions. Research shows that resistance training combats age-related muscle decline, enhances strength, power, and neuromuscular coordination in older adults, leading to better daily function and improved well-being. Upper body strength is vital for everyday activities, with strength training also improving body image, particularly for women with lower upper body strength. Studies indicate that strength and endurance training enhance balance, walking speed, and strength in older adults. However, there is a lack of standardized tests for upper body strength endurance. The push-up, pull-up, and parallel dip tests are commonly used to assess this, but each targets different muscles. This study explores the impact of a structured eight-week walk program on upper body strength endurance.

*Body Mass Index and Walking*

Body composition, which includes all tissues and materials such as muscle, fat, bone, and water, gained significant attention in the early 20th century due to advancements in its understanding and evaluation. It is particularly relevant in health and fitness, where professionals often focus on the percentage of body fat. Research shows that classifying health based solely on total body weight without considering fat content can lead to inaccurate results. For instance, early standards mistakenly categorized muscular individuals as overweight or obese. Modern methods, like hydrostatic weighing, offer a more accurate assessment of fat content, thus improving obesity and fitness classifications. The World Health Organization (2022) reported alarming statistics, with over one billion obese individuals worldwide, including adults, adolescents, and children. Obesity is linked to numerous physical and mental health issues such as diabetes, hypertension, and depression. Various methods for measuring body fat have been proposed, including skinfold measurements, Dual Energy X-Ray Absorptiometry (DEXA), and Bioelectrical Impedance Analysis (BIA). While more advanced methods like DEXA and hydrostatic weighing provide accurate results, they are expensive and require specialized personnel. Less costly alternatives, like skinfold callipers, are more accessible but prone to human error. The Body Mass Index (BMI), despite its limitations in measuring fat content, remains a useful screening tool for identifying potential health risks. Studies have shown that physical activity, such as walking, can help reduce body fat and lower BMI, particularly in postmenopausal women. Despite its flaws, BMI continues to play a critical role in public health policy and individual health assessments.

***Body image***

Body image, which encompasses an individual's perception of their body shape and size, is influenced by cultural ideals and personal experiences. A positive body image is linked to self-esteem and exercise habits, while negative body image can lead to disorders like Body Dissatisfaction Disorder (BDD), where individuals obsess over perceived physical flaws. Women's body shape and size are affected by factors like aging, childbirth, and lifestyle, with those in middle age experiencing notable changes. Body image dissatisfaction is prevalent among women, influenced by factors such as media portrayals, societal pressures, and cultural views on body size. Studies show that physical activity, including walking, improves body image, self-esteem, and overall well-being. For instance, a study on woodland walking revealed significant increases in body appreciation. Similarly, exercises like aerobics and strength training have shown positive effects on women’s body image, reducing concerns over fat and improving fitness.

*Physical Activity Levels among Teachers*

A 2018 World Health Organization survey revealed that 12% of males and 24% of females in Kenya aged 18 and above are physically inactive, leading to overweight conditions. A 2009 study in Brazil by Brito et al. found that 42.9% of female public school teachers were physically inactive compared to 53% of male teachers, with 19.5% of female teachers aged 31-42 showing inadequate physical activity. Atan et al. (2012) compared physical activity levels between female teachers and healthcare professionals, finding the latter more active, though teachers’ activity increased with age. Shah (2012) highlighted that teachers’ physical appearance impacts students’ learning environment, emphasizing their role as role models.

***Developing the Exercise Programme***

The eight-week walking program was designed using the overload principle, incorporating the FITT (frequency, intensity, time, and type) framework to enhance endurance, strength, and muscle size. This principle gradually adjusts FITT variables above the individual's current level, fostering progress toward fitness goals. The program, with three weekly walking sessions, progressively increased in intensity and duration, aiming to improve health-related fitness components like cardiovascular endurance and general health. The study aimed to evaluate the effects of this walking program on premenopausal women teachers in Mvita, Mombasa, focusing on cardiovascular fitness, flexibility, strength, body image, and body mass index.

**3.0 RESEARCH METHODOLOGY**

The study utilized a quasi-experimental design involving both an experimental and a control group, as explained by Eliopoulos et al. (2004). In this design, the experimental group received a treatment, while the control group did not, allowing for comparison between the two groups to assess the impact of the intervention. Participants engaged in an eight-week walking program that included warm-up, conditioning, and cool-down sessions to evaluate its effects on health-related fitness and perceived body image. The research was conducted in Mvita sub-county, Mombasa County, Kenya, chosen for its urban setting, pedestrian-friendly infrastructure, and scenic walking routes, making it ideal for the walking program. Mvita is home to 26 public primary schools, providing a sufficient sample pool for the study. The target population consisted of premenopausal female teachers aged 30 to 45 years working in public primary schools in Mvita, Mombasa. Teachers are a significant professional group in Kenya, with over 350,000 primary school teachers nationwide. The study focused on this group due to their potential to benefit from an intervention that could enhance both health-related fitness and body image perceptions, with approximately 146 female teachers in Mvita Sub-county identified as the study’s target population.

The study utilized a purposive sampling technique to select Mvita Sub-county and premenopausal female teachers after initial screening during recruitment. This judgmental approach allowed the researcher to selectively choose participants based on specific criteria (Sharma, 2017). To assign participants to experimental or control groups, simple random sampling was used. The sample size was determined using G Power 3.1 software, with a t-test statistical reference for two dependent means. A significance power of 0.95, error probability of 0.05, and an effect size of 0.5 yielded a sample size of 50, accounting for a 10% non-response rate.

The study utilized various research instruments to assess participants' health-related fitness and body image. The Premenopausal Screening Questionnaire was used to confirm participants' premenopausal status by asking about menstruation, contraceptive use, and symptoms such as hot flushes and breast sensitivity. The Perceived Body Image Questionnaire measured body image awareness and the influence of social-cultural factors, using 54 items rated on a five-point Likert scale. Health-related fitness was evaluated through a series of physical tests, including the 20-Metre Shuttle Run Test, which assessed cardiovascular endurance, the One-Minute Sit-Up Test for abdominal endurance, the Sit-and-Reach Test for flexibility, and the Modified Push-Up Test to gauge upper body strength. Participants also completed an Eight-Week Walk Programme, designed to enhance cardiovascular endurance, body composition, and muscular endurance. The program progressed from low to moderate intensity, including warm-ups, walks, and conditioning exercises targeting abdominal endurance, flexibility, and upper-body strength. Sessions were held three times a week, with durations increasing from 20 to 50 minutes by the eighth week. Each session concluded with a cool-down period. Detailed protocols for each test and program session were provided in the appendices.

Data collection began by determining participants' menopausal status using a screening questionnaire. After obtaining consent, participants were randomly assigned to either the experimental or control group. Data collection took place at each participant's school, starting with a body image questionnaire. Pre-tests for Health-Related Fitness (HRF) were conducted before an eight-week walking program, and the same assessments were repeated at the end of the program. Participants in the experimental group followed a structured walk program with warm-up, walking, conditioning exercises, and cool-down. Heart rate was monitored at regular intervals using the carotid pulse, with participants trained to ensure they stayed within their target heart rate zone. The control group maintained their usual activities, with no intervention. Post-tests were conducted for both groups, and all data was recorded. Results were presented in tables, detailing the HRF and body image outcomes.

Data collected in this study was analyzed using SPSS Version 22, with results presented through tables and percentages. Descriptive statistics, including mean and standard deviation, were employed to assess differences between pre-tests and post-tests, and to examine relationships among key variables. Inferential statistics were analyzed using one-way ANOVA to test the research objectives at a 5% significance level. Ethical and logistical approvals were obtained from Kenyatta University's Graduate School, Ethics Review Committee, and NACOSTI. Permission was granted by the County Director of Education for the participation of female teachers in Mvita, Mombasa. Participants consented to the study, and confidentiality was ensured throughout.

**4.0 RESULTS AND DISCUSSION**

This study aimed to evaluate the impact of an Eight-Week Walk Programme on the health-related fitness and perceived body image of pre-menopausal teachers aged 30 to 45 in public primary schools in Mvita, Mombasa County. Out of 25 participants, 23 completed the program. The study is divided into five sections: demographic characteristics, results of health-related fitness components from pre- and post-tests, the effects of the walk program on fitness components, the effects on perceived body image, and the relationship between fitness and body image. Findings showed significant changes in health-related fitness and body image, rejecting initial hypotheses that no effects would occur.

4.1 Health-Related Fitness Components: Pre- and Post-Tests Ratings

The study assessed Health-Related Fitness components through pre- and post-tests in both experimental and control groups before and after an Eight-Week Walk programme. The aim was to evaluate changes in cardiovascular endurance among participants. Initially, 91.3% of the experimental group were rated as very poor, and 8.7% as poor in cardiovascular endurance. After the programme, 78.3% of the experimental group were rated very poor, 17.4% poor, and 4.3% average, showing an improvement in cardiovascular endurance. In contrast, the control group showed no change, with 100% of participants rated very poor in both pre- and post-tests. These results suggest that the Eight-Week Walk programme had a positive effect on cardiovascular endurance in the experimental group, while the control group exhibited no improvement.

Table 1 **Pre-and Post-Test Ratings: Cardiovascular Endurance**

|  |  |  |
| --- | --- | --- |
| Rating | Pre-test scores | Post-test scores |
| Experimental  | Control  | Experimental  | Control  |
| n | % | n | % | N | % | N | % |
| Excellent | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Very good | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Good | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Average | 0 | 0% | 0 | 0% | 1 | 4.3% | 0 | 0% |
| Poor | 2 | 8.7% | 0 | 0% | 4 | 17.4% | 0 | 0% |
| Very poor | 21 | 91.3% | 26 | 100% | 18 | 78.3% | 26 | 100% |

**4.2 ANOVA**

Table 2 shows that at the pre-test stage, 91.3% of the experimental group was rated very poor, and 8.7% was rated poor for cardiovascular endurance. After the Eight-Week Walk treatment, post-test results indicated improvement, with 78.3% rated very poor, 17.4% rated poor, and 4.3% rated average. In contrast, the control group remained at 100% very poor ratings for both tests, showing no improvement. An ANOVA (Table 3) confirmed significant differences between pre-test and post-test scores (F(1,47) = 39.96, p < 0.001), leading to the rejection of the null hypothesis regarding the programme's effectiveness.

**Table 2 ANOVA: Pre-and Post-Test Ratings: Cardiovascular Endurance**

|  |  |  |
| --- | --- | --- |
| Rating | Pre-test scores | Post-test scores |
| Experimental  | Control  | Experimental  | Control  |
| n | % | n | % | N | % | N | % |
| Excellent | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Very good | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Good | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| Average | 0 | 0% | 0 | 0% | 1 | 4.3% | 0 | 0% |
| Poor | 2 | 8.7% | 0 | 0% | 4 | 17.4% | 0 | 0% |
| Very poor | 21 | 91.3% | 26 | 100% | 18 | 78.3% | 26 | 100% |

**Table 3** ANOVA: Means and Standard Deviations: Cardiovascular Endurance

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Component  | Group  | N | Mean Diff(Post-Pre) | Std. Deviation | ANOVA |
| Sum of Squares | df | Mean Square | F | Sig. |
| Cardiovascular endurance  | Experimental  | 23 | .6870 | .63124 | 12.545 | 1, 47 | 12.545 | 39.955 | < 0.001 |
| Control | 26 | -.3269 | .48954 |

**Source: (Author, 2023)**

**4.3 Pre and Post-Test Ratings: Body Mass Index (BMI)**

The pre-test results revealed that 39.1% (9) of the experimental group were classified as obese, while another 39.1% (9) were overweight, with 21.7% (5) falling within the normal BMI range. After completing the Eight-Week Walk program, the post-test results showed an improvement, with 34.8% (10) categorized as obese, 30.4% (10) as overweight, and 30.4% (7) within the normal range. These changes indicated a positive shift in BMI for the experimental group. In contrast, the control group showed minimal changes in BMI between pre- and post-test measurements. ANOVA analysis further assessed the significance of these differences.

**Table 4 Pre and Post-Test Ratings: Body Mass Index**

|  |  |  |
| --- | --- | --- |
|  | BMI PRE-TEST | BMI POST-TEST |
|  | Exp. | % | Cont. | % | Exp. | % | Cont. | % |
| >18.5 Underweight  | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0% |
| 18.5-24.9 normal | 5 | 21.7% | 3 | 11.5% | 7 | 30.4% | 3 | 11.5% |
| 25.0-29.9 overweight | 9 | 39.1% | 14 | 53.8% | 8 | 34.8% | 13 | 50.0% |
| >30 obese | 9 | 39.1% | 9 | 34.6% | 8 | 34.8% | 10 | 38.5% |
| Total  | 23 | 100.0% | 26 | 100.0% | 23 | 100% | 26 | 100% |

**4.4 Perceived Body Image**

The study aimed to assess the participants' Perceived Body Image using a 54-item questionnaire, with responses rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The responses were categorized to reflect varying levels of agreement. The 54 statements were grouped into four categories: Body Image Consciousness, Individual Factors, Social-Cultural Influences, and Handling of Body Image Perceptions, based on the Akusala and Arasa Models. Results showed significant changes in body image consciousness between the pre- and post-test for the experimental group compared to the control group. For instance, the experimental group demonstrated improvements in monitoring body weight, reducing waist size, adhering to an exercise regime, and addressing physical appearance concerns, with mean scores increasing from pre-test to post-test. In contrast, the control group showed little to no change. Key findings included increased concern for body weight and physical attractiveness in the experimental group, while the control group maintained consistent levels of body image consciousness throughout the eight-week period.

Table 5 Body Image Consciousness

|  |  |  |  |
| --- | --- | --- | --- |
| Body Image Consciousness among Study Respondents |  | PRE-TEST | POST-TEST |
| N | Mean | SD | Mean | SD |
| I consciously monitor my body weight. | Exp | 23 | 3.22 | 1.126 | 3.48 | 1.039 |
| Cont | 26 | 2.46 | 1.140 | 2.54 | 1.174 |
| I accept and appreciate my natural body shape | Exp | 23 | 4.09 | .949 | 4.09 | .949 |
| Cont | 26 | 4.31 | .679 | 4.12 | .909 |
| I want a perfect body. | Exp | 23 | 3.39 | 1.196 | 3.39 | 1.196 |
| Cont | 26 | 3.81 | 1.327 | 3.81 | 1.327 |
| I feel like my body does not represent me. | Exp | 23 | 2.22 | 1.313 | 2.22 | 1.313 |
| Cont | 26 | 2.15 | 1.461 | 2.15 | 1.461 |
| I want to reduce the size of my waist. | Exp | 23 | 4.04 | 1.065 | **4.13** | .968 |
| Cont | 26 | 3.54 | 1.555 | 3.54 | 1.555 |
| I follow exercise regimes to the letter to maintain my figure | Exp | 23 | 1.91 | .515 | **3.17** | 1.072 |
| Cont | 26 | 2.42 | 2.120 | 2.50 | 2.140 |
| I am determined not to allow age to mess my physical appearances | Exp | 23 | 4.09 | .596 | **4.22** | .518 |
| Cont | 26 | 4.27 | .874 | 4.27 | .874 |
| I am very concerned about what others think of my body weight. | Exp | 23 | 2.87 | 1.140 | 2.96 | 1.147 |
| Cont | 26 | 2.58 | 1.301 | 2.50 | 1.273 |
| I am physically attractive. | Exp | 23 | 3.26 | 1.176 | **3.65** | 1.027 |
| Cont | 26 | 3.96 | 1.113 | 4.08 | 1.093 |
| I experience emotional distress on account of my body | Exp | 23 | 2.52 | 1.344 | 2.57 | 1.376 |
| Cont | 26 | 1.85 | .613 | 1.85 | .613 |
| I am concerned about my body weight all the time | Exp | 23 | 2.83 | 1.072 | **3.65** | .935 |
| Cont | 26 | 2.77 | 1.306 | 2.77 | 1.306 |
| I feel uncomfortable and awkward in my body | Exp | 23 | 2.09 | 1.240 | 2.00 | 1.044 |
| Cont | 26 | 2.12 | 1.177 | 2.12 | 1.177 |
| I often feel proud because of my looks | Exp | 23 | 3.39 | 1.196 | **3.52** | 1.123 |
| Cont | 26 | 3.81 | 1.297 | 3.81 | 1.297 |
| I often feel that people ignore me because of my looks | Exp | 23 | 2.04 | .928 | 1.87 | .815 |
| Cont | 26 | 1.96 | .916 | 1.96 | .916 |
| I feel that my body does not measure up to image of an ideal body depicted by the social media | Exp | 23 | 3.09 | 1.203 | 3.00 | 1.243 |
| Cont | 26 | 2.85 | 1.317 | 2.85 | 1.317 |
| I accept and appreciate body differences | Exp | 23 | 4.04 | .475 | 4.26 | .449 |
| Cont | 26 | 4.12 | .816 | 4.12 | .816 |
| I feel comfortable around persons with different looks | Exp | 23 | 3.70 | .926 | 3.83 | .984 |
| Cont | 26 | 3.77 | .992 | 3.77 | .992 |

4.5 Individual Factors Affecting Body Image

The study examined individual factors affecting body image, with participants responding to statements on various body image-related issues. The experimental group showed a slight increase in self-esteem, with pre-test means of 1.83 and 1.87 at post-test, while the control group remained stable at 1.73. Anxiety related to body image remained unchanged for the control group at 1.88, but the experimental group had a slight increase in mean scores from 2.57 to 2.61. Feelings of shame and insecurity also saw minimal change in the experimental group, with pre-test means of 2.26 and post-test means of 2.30. The experimental group reported a slight increase in perceptions of aging reducing attractiveness, with pre-test means of 3.0 and post-test means of 3.17. Participants in the experimental group also reported higher satisfaction with their bodies post-test, with a mean increase from 3.22 to 3.57, compared to the control group's slight rise from 2.69 to 3.08.

Table 6 Individual Factors Affecting Body Image

|  |  |  |
| --- | --- | --- |
|  | Pre-test | Post-test |
| Individual factors affecting Body Image among respondents | Group | N | Mean | SD | Mean | SD |
| I make friends easily across individuals with varied body images. | Exp | 23 | 3.48 | .994 | 3.48 | .994 |
| Cont | 25 | 3.48 | 1.388 | 3.48 | 1.388 |
| My looks cause me to have low self-esteem | Exp | 23 | 1.83 | 1.337 | 1.87 | 1.325 |
| Cont | 26 | 1.73 | .919 | 1.73 | .919 |
| Overall I am satisfied with life. | Exp | 23 | 3.30 | 1.259 | 3.30 | 1.259 |
| Cont | 26 | 3.58 | 1.172 | 3.58 | 1.172 |
| I feel comfortable and confident in my body. | Exp | 23 | 3.48 | 1.163 | 3.48 | 1.163 |
| Cont | 26 | 3.92 | 1.197 | 3.92 | 1.197 |
| My body image causes me a lot of anxiety | Exp | 23 | 2.57 | 1.376 | 2.61 | 1.340 |
| Cont | 26 | 1.88 | .909 | 1.88 | .909 |
| I believe that there is something wrong with my body. | Exp | 23 | 2.00 | .953 | 2.00 | .953 |
| Cont | 26 | 1.69 | 1.050 | 1.69 | 1.050 |
| I am a keen follower of beauty pageants on television | Exp | 23 | 2.35 | 1.112 | 2.35 | 1.112 |
| Cont | 26 | 2.04 | 1.371 | 2.04 | 1.371 |
| My body has made me feel ashamed, insecure and anxious | Exp | 23 | 2.26 | 1.214 | 2.30 | 1.259 |
| Cont | 26 | 2.04 | 1.371 | 2.04 | 1.371 |
| I have constant negative thoughts about my body | Exp | 23 | 2.30 | 1.222 | 2.35 | 1.191 |
| Cont | 26 | 1.77 | .815 | 1.77 | .815 |
| Body shape, size and image are everything to me | Exp | 23 | 3.26 | 1.176 | 3.39 | 1.196 |
| Cont | 26 | 3.31 | 1.644 | 3.31 | 1.644 |
| I believe that growing older makes one less physically attractive | Exp | 23 | 3.00 | 1.243 | **3.17** | 1.403 |
| Cont | 26 | 3.12 | 1.505 | 3.08 | 1.521 |
| I care very much what my friends and peers think about my body weight | Exp | 23 | 3.09 | 1.203 | 2.96 | 1.261 |
| Cont | 26 | 2.54 | 1.421 | 2.54 | 1.421 |
| A nice body will be attractive to the opposite sex | Exp | 23 | 4.09 | 1.041 | **4.26** | 1.010 |
| Cont | 26 | 3.92 | 1.383 | 3.92 | 1.383 |
| I am always concerned about my shape, size and image. | Exp | 23 | 3.17 | 1.154 | **3.57** | 1.037 |
| Cont | 26 | 3.08 | 1.412 | 3.08 | 1.412 |
| I am dissatisfied with my body | Exp | 23 | 3.22 | 1.347 | **3.57** | 1.037 |
| Cont | 26 | 2.69 | 1.258 | 3.08 | 1.412 |
| I am ashamed of my body | Exp | 23 | 1.30 | .703 | **1.78** | .998 |
| Cont | 26 | 2.08 | 1.294 | 2.15 | 1.347 |

**4.6 Effects of the Eight-Week Walk Program on Perceived Body Image**

The study examined the effects of an eight-week walking program on participants' perceived body image. Paired t-tests were conducted to compare pre-test and post-test results, revealing significant changes in various aspects of body image. The findings indicated that the program positively influenced participants' body image consciousness. Notably, there was a significant improvement in participants' awareness of their body weight (t(48) = 2.066, p = .044) and their desire for a perfect body (t(48) = 3.150, p = .003). Additionally, participants felt their bodies more accurately represented themselves after the program (t(48) = 3.263, p = .002) and were more committed to following exercise routines to maintain a good figure (t(48) = 4.280, p < .001). The program also increased participants' feelings of physical attractiveness (t(48) = 2.720, p = .009) and heightened their concern about body weight (t(48) = 3.150, p = .003). These results suggest that the eight-week walking program effectively enhanced body image perceptions and self-monitoring behaviors among participants.

Table 7 Significance of Differences in Body Image Consciousness

|  |  |
| --- | --- |
| Paired Samples Test |  |
| Body Image Consciousness among Study Respondents | Paired Differences | T | Df | Sig. (2-tailed) |
| Mean | Std. D. |
|
| I consciously monitor my body weight | -.163 | .553 | -2.066 | 48 | .044\* |
| I accept and appreciate my natural body shape | .102 | .743 | .962 | 48 | .341 |
| I want a perfect body. | -.388 | .862 | -3.150 | 48 | .003\* |
| I feel like my body does not represent me. | -.265 | .569 | -3.263 | 48 | .002\* |
| I want to reduce the size of my waist. | -.041 | .286 | -1.000 | 48 | .322 |
|  I follow exercise regimes to the letter to maintain my figure | -.633 | 1.035 | -4.280 | 48 | < 0.001\* |
| I am determined not to allow age to mess my physical appearances | -.061 | .317 | -1.353 | 48 | .182 |
| I am very concerned about what others think of my body weight. | .000 | .408 | .000 | 48 | 1.000 |
| I am physically attractive. | -.245 | .630 | -2.720 | 48 | .009\* |
| I experience emotional distress on account of my body | -.020 | .249 | -.573 | 48 | .569 |
| I am concerned about my body weight all the time | -.388 | .862 | -3.150 | 48 | .003\* |
| I feel uncomfortable and awkward in my body | .041 | .498 | .573 | 48 | .569 |
| I often feel proud because of my looks | -.061 | .475 | -.903 | 48 | .371 |
| I often feel that people ignore me because of my looks | .082 | .344 | 1.662 | 48 | .103 |
| I feel that my body does not measure up to image of an ideal body depicted by the social media | .041 | .200 | 1.429 | 48 | .159 |
| I accept and appreciate body differences | -.102 | .421 | -1.698 | 48 | .096 |
| I feel comfortable around persons with different looks | -.061 | .556 | -.771 | 48 | .444 |

**4.7 Relationship Between Health-Related Fitness and Perceived Body Image of Premenopausal Female Primary School Teachers**

The study investigated the impact of participation in Health-Related Fitness Components on individuals' perceived body image. A paired t-test was conducted on pre-test and post-test data, with the results shown in Table 8. While differences in post-test and pre-test means were observed between the control and experimental groups, only cardiovascular endurance and lower back flexibility were significantly related to body image. The experimental group showed a significant positive correlation between cardiovascular endurance and body image (r=.78, p<.001), as well as a positive relationship between lower back flexibility and body image (r=.453, p=.001).

**Table.8 Relationship Between Health-Related Fitness and Perceived Body Image of Premenopausal Female Primary School Teachers**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Component of fitness | Group | N | R | Df | Sig. |
| Cardiovascular endurance  | Experimental | 23 | .784 | 47 | .000 |
| Control | 26 | .243 | 47 | .056 |
| Low Back Flexibility  | Experimental | 23 | .453 | 47 | .001 |
| Control | 26 | .157 | 47 | .287 |
| Abdominal Strength  | Experimental | 23 | .246 | 47 | .092 |
| Control | 26 | .187 | 47 | .202 |
| Upper Body Strength  | Experimental | 23 | .246 | 47 | .098 |
| Control | 26 | .223 | 47 | .128 |

**5.0 CONCLUSIONS**

This study involved 23 premenopausal teachers, aged 30 to 45 years, from Mvita Sub-county, who participated in an eight-week walking program. Their health-related fitness components, including cardiovascular endurance, abdominal muscular endurance, low back flexibility, upper body strength-endurance, and body mass index (BMI), were evaluated before and after the program. The results showed significant improvements in cardiovascular endurance, abdominal muscular endurance, upper body strength-endurance, and BMI, though low back flexibility did not show notable changes.

The second objective of the study focused on the perceived body image of the participants. The majority of respondents expressed satisfaction with their body image, desiring a perfect body, particularly aiming to reduce waist size. They were determined not to let age affect their physical appearance and generally felt attractive, proud, and accepting of body differences. However, many participants were neutral about closely monitoring their body weight or being concerned with others' perceptions of their body weight. Most rejected the idea that emotional distress or discomfort about their bodies existed. As a result, the null hypotheses regarding the effects of the walking program on health-related fitness components and body image, as well as the relationship between fitness and body image, were rejected, and the alternate hypotheses were accepted.

The Eight-Week Walk Programme significantly enhanced participants' health-related fitness, including cardiovascular endurance, abdominal and upper body strength, and Body Mass Index (BMI). Additionally, the study revealed that perceived body image is primarily shaped by individual factors rather than social media ideals, challenging previous beliefs that media influenced body ideals. For premenopausal teachers, body image perceptions were more influenced by personal factors than external influences like media.

**6.0 RECOMMENDATIONS**

The study recommends the promotion of walking as a simple and effective way to improve Health-Related Fitness (HRF) components, especially among populations similar to the study sample. It suggests that governing bodies, like the Teachers Service Commission, should reinforce walking programs to enhance health. Additionally, incorporating simple exercises, such as walking, into daily routines is encouraged. For further research, exploring methods to integrate walking into teachers' and professionals' lives and studying how to improve the self-image of premenopausal women is recommended.

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