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ORIGINAL ARTICLE

The relationship between diet and weight training with ideal body shape among members of Katamso Fitness Centre, Medan City

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ABSTRACT

Katamso Fitness Centre is a gym surrounded by individuals aiming for an ideal and healthy physique. Members typically join to address less-than-ideal body weight and seek weight training to achieve their desired body shape—transforming from thin to muscular, or from overweight to lean, while also burning calories for overall health and fitness. This study employed a Chi-Square statistical test using SPSS for Windows, with a significance level of α=0.05. This analysis aimed to examine the relationship between independent and dependent variables. The research findings from 86 respondents indicate that the majority, 57 (66.3%), had a more ideal body shape. For diet patterns, the majority, 66 (76.7%), reported "sufficient." Regarding weight training, most respondents, 54 (62.8%), engaged in a "moderate" level.The relationship between diet patterns and ideal body shape among Katamso Fitness Centre members in Medan City showed a P-value of α>0.05, leading to the acceptance of Ha as significant. Conversely, the relationship between weight training and ideal body shape among members of the fitness center in Medan City showed a P-value of α<0.05, also leading to the acceptance of Ha as significant.

Keyword: body shape, fitness member, diet, weight training

Introduction

An ideal body, proportional to height and neither obese nor underweight, is a universal aspiration for both men and women. This ideal can be measured using the Body Mass Index (BMI), which categorizes individuals as underweight, normal, overweight, or obese based on the ratio of height to weight.[1] Achieving an ideal body is crucial for health, significantly reducing the risk of chronic diseases like diabetes, hypertension, and heart disease, as individuals with above-normal weight face higher risks.[2,3] While some research suggests no significant link between BMI and cardiovascular endurance[4], the general consensus emphasizes the importance of maintaining a healthy weight to prevent various health issues.[5,6] For fitness enthusiasts, understanding proper eating patterns is key. This often involves 6 meals a day for overweight individuals—three main meals and three snacks—with specific timings and calorie distribution.[7,8] Weight training, performed 4-5 times weekly, is also recommended: light weights and high repetitions with cardio for weight loss, and heavy weights with fewer repetitions and less cardio for weight gain, always with correct form.[7]

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Eating disorders are frequently observed in overweight adults[9], mirroring national statistics where a significant portion of the population is overweight or obese.[10] Research shows a significant positive impact of a combined weight training and dietary approach (e.g., super set method with a controlled diet) on reducing weight and fat percentage, and increasing muscle strength.[11] Ultimately, achieving and maintaining good health requires a holistic approach, encompassing not only exercise but also proper eating habits, sleep, and overall health-conscious behavior.[12] This integrated approach is exemplified at Katamso Fitness Centre in Medan, North Sumatra. Here, members like Dhani, who was obese due to poor eating habits and inactivity, successfully lost significant weight (130 kg to 110 kg in 3 months) through isolation exercises and a balanced diet. Conversely, Anas, who was underweight due to genetics and poor nutrition, gained weight (50 kg to 55 kg in 1 month) by incorporating compound weight training and increased nutritional intake. Katamso Fitness Centre aims to encourage community engagement in exercise without disrupting daily routines, demonstrating how structured fitness programs can help individuals achieve their ideal body and improve their health.

Method

This study employed a quantitative survey research technique. This descriptive survey research aims to investigate the relationship between eating patterns and physical activity among fitness members at Katamso Fitness Centre in Medan. The study utilizes a total sampling method, encompassing all 86 active male and female members who are actively working towards an ideal body shape through diet and weight training. Primary data on ideal body shape, eating patterns, and weight training will be collected directly from respondents via questionnaires and anthropometric measurements (BMI), including weight and height. Secondary data, such as the number of active members, will be obtained from the fitness center's owner. The research instruments employed are questionnaires (using a list of questions for respondents to answer) and interviews (direct conversations between the researcher and respondents) to gather comprehensive information on the defined independent and dependent variables.

Results

Univariate analysis testing is used to understand the data distribution a researcher gets after a study, aiming to examine respondent characteristics such as gender, age, Body Mass Index (BMI), body shape satisfaction, eating patterns, and weight training. The results of this analysis are then presented.

Table 1. Characteristics of the respondents

Variables	f	%
Gender		
Male	31	36
Female	55	63
Age		
20-25	37	43
26-36	49	56
Occupation		
Employed	52	60
Unemployed	34	39
Total	86	100

Based on Table 1, it can be explained that the majority of respondents are aged 20-25 years, totaling 37 respondents (43%), while the minority are aged 26-36 years, with 49 respondents (56%). In this study, males dominated the gender distribution with 55 respondents (63%), while females accounted for 31 respondents (36%). Regarding employment status, the study was dominated by working respondents, with 52 (60%), and non-working respondents making up 34 (39%). Finally, based on BMI, the study predominantly showed 57 respondents (66.3%) in the majority category.

This section presents the findings from the univariate analysis conducted on 86 respondents from Katamso Fitness Centre, Medan City. Table 1, which summarizes the respondent characteristics, indicates that the majority of participants (43%, n=37) were aged 20-25 years, while those aged 26-36 years constituted a slightly larger group (56%, n=49). Gender distribution was predominantly male, accounting for 63% (n=55) of the respondents, compared to 36% (n=31) female participants. In terms of employment status, the majority (60%, n=52) were employed, with 39% (n=34) reported as not working. Furthermore, the analysis of Body

Mass Index (BMI) revealed that 66.3% (n=57) of respondents fell into the higher BMI category. Regarding specific variables related to health behaviors and perceptions, the data revealed interesting distributions. For eating patterns, a substantial majority of respondents (76.7%, n=66) reported a "sufficient" pattern, while "good" and "excessive" patterns were reported by 15.1% (n=13) and 8.1% (n=7) respectively. In terms of weight training, "moderate" intensity was the most common (62.8%, n=54), followed by "heavy" (16.3%, n=14) and "light" (8.1%, n=7) training. Finally, the self-assessment of ideal body shape indicated that most respondents (66.3%, n=57) perceived their body shape as "excessive" (i.e., larger than their ideal), whereas 32.6% (n=28) considered it "normal," and a small minority (1.2%, n=1) viewed it as "deficient" (i.e., smaller than their ideal).

Table 2. Univariate analysis

Interval Score	f	%
Eating Pattern		
Good	13	15.1
Sufficient	66	76.7
Excessive	7	8.1
Weight Training		
Heavy	14	16.3
Moderate	54	62.8
Light	7	8.1
Body Shape		
Excessive	57	66.3
Normal	28	32.6
Deficient	1	1.2

Table 3. Bivariate analysis

Variables	Insufficient		Sufficient		Excessive		p-value
	f	%	f	%	f	%	
Eat pattern							
Excessive	0	0.0	5	38.5	8	61.5	0.919
Normal	1	1.5	20	33.0	45	68.2	
Deficient	0	0.0	3	42.9	4	57.1	
Weight Training							
Heavy	0	0.0	5	35.7	9	64.3	0.891
Moderate	1	1.9	16	29.6	37	68.5	
Light	0	1.0	7	38.9	11	61.1	

The bivariate analysis performed using SPSS software revealed findings regarding the association between eating patterns and ideal body shape, as well as between weight training and ideal body shape.

Regarding eating patterns, among respondents with a "sufficient" eating pattern (n=66), the majority (68.2%, n=45) perceived their body shape as "excessive." Conversely, for those with a "good" eating pattern (n=13), a higher proportion (61.5%, n=8) also reported an "excessive" ideal body shape, while 38.5% (n=5) reported a "normal" body shape. Furthermore, among 66 respondents with "sufficient" eating patterns, 45 (68.2%) experienced an "excessive" ideal body shape, followed by 20 respondents (30.3%) with a "normal" ideal body shape, and 1 respondent (1.5%) with a "deficient" body shape. For the 7 respondents with a "deficient" eating pattern, 4 individuals (57.1%) reported an "excessive" body shape, and 3 individuals (42.9%) reported a "normal" body shape. The results of the Chi-square test (Table 3) showed a P-value of 0.919, indicating no statistically significant association between eating patterns and ideal body shape.

In the context of weight training, among 14 respondents engaging in "light" weight training, 9 (64.3%) reported an "excessive" body shape, and 5 (35.7%) reported a "normal" body shape. For the 54 respondents with "moderate" weight training, 37 (68.5%) had an "excessive" body shape, 16 (29.6%) had a "normal" body shape, and 1 (1.9%) had a "deficient" body shape. Lastly, among the 18 respondents with "heavy" weight training, 11 (61.1%) perceived an "excessive" body shape, while 7 (38.9%) perceived a "normal" body shape. Consistent with the findings on eating patterns, the analysis also showed that among the 54

respondents engaging in "moderate" weight training, 37 (68.5%) experienced an "excessive" ideal body shape, followed by 16 respondents (29.6%) who reported a "normal" ideal body shape.

Discussion

The research findings indicate that while there appears to be a strong influence of eating patterns on ideal body shape, this relationship is not statistically significant. This outcome suggests that many respondents still maintain less-than-optimal eating habits, which hinders their progress in achieving an ideal body shape despite their participation in the fitness center. Among the 86 respondents, four individuals (57.1%) with an "excessive" body shape still exhibited poor eating habits, possibly due to an inability to control unhealthy eating behaviors before entering the fitness center. This contrasts with previous research highlighting the significant impact of eating patterns on health, especially for individuals aiming to lose or gain weight. For instance, a prior study found that among individuals with a satisfied body image, 92.3% (n=24) had normal eating habits, while 7.7% (n=2) had abnormal eating habits. Conversely, in the dissatisfied body image category, 63.2% (n=12) of respondents had normal eating habits, but a higher proportion of 36.8% (n=7) exhibited abnormal eating habits. These findings suggest that individuals with body image dissatisfaction may be more prone to abnormal eating behaviors.

According to nutritionists, adopting healthy and nutritious eating patterns is crucial for overall health and preventing various diseases. To achieve these goals, it is essential to understand how to implement appropriate eating patterns based on expert recommendations. Maintaining nutrient intake through healthy eating is paramount. However, to maximize the benefits from consumed nutrients, eating patterns must be applied correctly and, importantly, tailored to individual health conditions.[13–15]

An ideal body is defined as a body that is relatively proportional to height, generally meaning neither overweight nor underweight. This ideal proportion can be calculated using the Body Mass Index (BMI), a standard assessment score based on the comparison of height and weight, categorizing individuals as normal, underweight, overweight, or obese (Lisa, 2019). Consistent with the findings, the analysis of 86 respondents regarding the relationship between eating patterns and ideal body shape showed that 61.5% of respondents with "good" eating patterns had an ideal body shape, 7.0% with "deficient" eating patterns had an ideal body shape, and 30.3% with "sufficient" eating patterns also had an ideal body shape. The Fisher's exact test yielded a P-value of 0.919. Since this P-value is > 0.05, the alternative hypothesis (Ha) is accepted, indicating that there is no statistically significant relationship between eating patterns and ideal body shape in this study.

The research findings indicate that while there is an influence of weight training on ideal body shape, this relationship is not statistically significant. From 86 respondents, 11 individuals (61.1%) who engaged in heavy weight training still experienced an "excessive" body shape. This outcome suggests that insufficient intensity and duration of weight training might prevent respondents from achieving their desired body shape. This contrasts with previous research, such as the study on the effect of weight training on weight loss among members of FYM Performance Lab fitness, which showed a statistically significant relationship between weight training and ideal body shape. Ideal body shape is assessed through measurements that determine if body components conform to normal or ideal standards. The most frequently used measurement is the ratio between body weight (kg) and the square of height (m), known as the Body Mass Index (BMI). A physically healthy and ideal body can also be evaluated based on external appearance. Achieving a healthy life with an ideal body weight is a common aspiration. However, in reality, not everyone possesses an ideal body weight, and to attain it, various efforts are necessary, including adopting diverse exercise regimens. Fitness training, as noted by Azwar (2004), can be utilized for muscle building, weight reduction, and maintaining an ideal body weight. One method to increase muscle size is through weight training. Furthermore, the objectives of weight training include enhancing fitness, muscle strength, speed, muscle toning, rehabilitation, and both weight gain and loss. Consistent and well-programmed weight training can yield highly beneficial effects on the body. It can result in an ideal and athletic physique, well-defined abdominal muscles, a broad chest, and strong arm muscles, contributing to a more masculine appearance in men. Consistent with the findings presented in section 4.4, among 86 respondents, the assessment of the relationship between weight training and ideal body shape revealed that 35.7% of respondents with "light" weight training had an ideal body shape, 29.6% with "moderate" weight training had an ideal body shape, and 38.9% with "heavy" weight training also had an ideal body shape. Based on the Fisher's exact test, a P-value of 0.891 was obtained. Since the P-value > 0.05, the null hypothesis (Ho) is accepted, indicating that there is no significant relationship between weight training and ideal body shape in this study.

Conclusion

Based on the research findings and discussion, it is concluded that among 86 respondents, the frequency distribution of eating patterns showed the majority had a "sufficient" pattern (76.7%, n=66), followed by "good" (15.1%, n=13) and "deficient" (8.1%, n=7) patterns. For weight training, "moderate" intensity was most common (62.8%, n=54), with "light" (16.3%, n=14) and "heavy" (20.9%, n=18) training being less frequent. Regarding ideal body shape, the majority of respondents (66.3%, n=57) perceived their body shape as "excessive," while 32.6% (n=28) considered it "normal," and a minority (1.2%, n=1) as "deficient." Furthermore, the bivariate analysis indicated that while a relationship was observed between eating patterns and ideal body shape among Katamso Fitness Centre members, this relationship was not statistically significant (P-value > 0.05, leading to the acceptance of the null hypothesis). Similarly, the relationship between weight training and ideal body shape among fitness center members was also found to be not statistically significant (P-value > 0.05.

References

1. Zierle-Ghosh A, Jan A. Physiology, Body Mass Index. Treasure Island (FL): StatPearls Publishing; 2023.
2. Anderson E, Durstine JL. Physical activity, exercise, and chronic diseases: A brief review. Sport Med Heal Sci [Internet]. 2019 Dec;1(1):3–10. Available from: https://linkinghub.elsevier.com/retrieve/pii/S266633761930006X
3. Ghodeshwar GK, Dube A, Khobragade D. Impact of Lifestyle Modifications on Cardiovascular Health: A Narrative Review. Cureus [Internet]. 2023 Jul 28;15(7). Available from: https://www.cureus.com/articles/172900-impact-of-lifestyle-modifications-on-cardiovascular-health-a-narrative-review
4. Budi A, Bangun EYA, Delfian T. Body mass index (BMI) and cardiovascular endurance among medical students. Malahayati Int J Nurs Heal Sci [Internet]. 2024 Nov 30;7(9):1086–92. Available from: https://ejurnal.malahayati.ac.id/index.php/minh/article/view/647
5. Lavie CJ, Laddu D, Arena R, Ortega FB, Alpert MA, Kushner RF. Healthy Weight and Obesity Prevention. J Am Coll Cardiol [Internet]. 2018 Sep;72(13):1506–31. Available from: https://linkinghub.elsevier.com/retrieve/pii/S073510971836933X
6. Wolf AM, Woodworth KA. Obesity Prevention: Recommended Strategies and Challenges. Am J Med [Internet]. 2009 Apr;122(4):I-CO4. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0002934309000254
7. Dewi MS. Profil VO2 Max, IMT dan Persentase Lemak Tubuh Sebelum Members Menentukan Program Latihan Fat Loss dan Body Shaping di Fitness Center GOR UNY. Universitas Negeri Yogyakarta; 2018.
8. Swapna N, Dr. Hanumanthayya Pujari. Impact of Nutrition in Fitness Development and Performance Enhancement for Athletes. Int J Adv Res Sci Commun Technol. 2023 Oct 26;521–5.
9. Dikshit R, Karia S, Shah N, Sonavane S, DeSousa A. A study on binge eating behavior in urban adolescents. Asian J Psychiatr [Internet]. 2020 Apr;50:101998. Available from: https://linkinghub.elsevier.com/retrieve/pii/S1876201820301064
10. Kementerian Kesehatan Republik Indonesia. Riset Kesehatan Dasar 2018 (2018 Basic Health Research). Jakarta; 2018.
11. Bellicha A, van Baak MA, Battista F, Beaulieu K, Blundell JE, Busetto L, et al. Effect of exercise training on weight loss, body composition changes, and weight maintenance in adults with overweight or obesity: An overview of 12 systematic reviews and 149 studies. Obes Rev [Internet]. 2021 Jul 6;22(S4). Available from: https://onlinelibrary.wiley.com/doi/10.1111/obr.13256
12. Hung ST, Cheng YC, Wu CC, Su CH. Examining Physical Wellness as the Fundamental Element for Achieving Holistic Well-Being in Older Persons: Review of Literature and Practical Application in Daily Life. J Multidiscip Healthc [Internet]. 2023 Jul;16:1889–904. Available from: https://www.dovepress.com/examining-physical-wellness-as-the-fundamental-element-for-achieving-h-peer-reviewed-fulltext-article-JMDH
13. Neuhouser ML. The importance of healthy dietary patterns in chronic disease prevention. Nutr Res [Internet]. 2019 Oct;70:3–6. Available from: https://linkinghub.elsevier.com/retrieve/pii/S0271531718302227
14. Singh C, Arti, Yadav N, Rao K, Bharti, Bansal N, et al. Nutrition Role in Maintaining Health and Preventing Disease. Curr Nutr Food Sci [Internet]. 2024 Oct;20(8):966–72. Available from: https://www.eurekaselect.com/220012/article
15. Buttriss J, Hickson M, Whelan K, Williams C. Navigating the complexity of applying nutrition evidence to individualised care: Summary of an Academy of Nutrition Sciences Position Paper. Nutr Diet [Internet]. 2024 Apr 19;81(2):128–32. Available from: https://onlinelibrary.wiley.com/doi/10.1111/1747-0080.12867