INTERRELATIONS BETWEEN FITNESS TRAINING, DIETARY ADHERENCE, AND PSYCHOLOGICAL FACTORS IN PHYSICALLY ACTIVE INDIVIDUALS

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Abstract: The purpose of this study is to evaluate the relationship between the frequency of fitness training, adherence to a dietary regimen, and the level of internal satisfaction derived from it. The analysis was conducted on 45 respondents (Likert scale 1–3) and supplemented with categorical data (gender, age group, marital status, children, training frequency, and duration of diet adherence). The questionnaire scale demonstrated good internal consistency (Cronbach's $\alpha = 0.74$).
Mean values per item indicate a high self-rated activity for *Training* (M = 2.76), *Physical Health* (M = 2.69), and *Willpower* (M = 2.67), while satisfaction with the *Dietary Regimen* was comparatively lower (M = 2.24). Correlational analysis revealed a positive association between training activity and dietary adherence. Gender comparisons showed no significant effect sizes, while the ANOVA on training frequency demonstrated a small-to-moderate effect on satisfaction with dietary adherence ($\eta^2 \approx 0.14$).
The conclusion is that higher training activity is associated with longer and more satisfying adherence to a dietary regimen, with internal motivation and willpower contributing substantially to this effect.
Keywords: body mass index; dietary regimen; fitness; motivation; satisfaction.

1. INTRODUCTION

The role of physical activity and healthy nutrition in maintaining human health and wellbeing is of paramount importance in modern society. The contemporary lifestyle, characterized by sedentary work and high psychological stress, necessitates purposeful engagement in fitness activities and adherence to an adequate nutritional regimen. Numerous studies confirm that regular exercise and a balanced diet lead to improvements in *Physical Health*, *Psychological Health*, and *Social Contacts*, which in turn enhance overall *Life Satisfaction* and *Subjective Wellbeing* (Georgieva, 2023; Deci & Ryan, 2000).
From a behavioral and motivational perspective, *Internal Motivation* and *Willpower* are central determinants of persistence in maintaining a fitness routine and dietary discipline. According to Self-Determination Theory (Deci & Ryan, 1985), intrinsic motivation — the inner drive for self-improvement, enjoyment, and self-realization — is a stronger predictor of long-term adherence than external incentives. Furthermore, *Self-Efficacy* and *Perceived Control* play mediating roles in shaping the individual's behavior toward training and nutrition (Bandura, 1997).
Fitness training as a structured form of physical activity combines physical, psychological, and social components. It contributes to improved muscle tone, cardiorespiratory endurance, body composition, and mood regulation through the release of endorphins. In parallel, adherence to a dietary regimen ensures adequate energy supply and optimal physiological functioning. The interaction between these two factors—training and diet—is therefore crucial for achieving and maintaining a healthy lifestyle.
However, despite the well-known benefits, many individuals find it challenging to sustain regular exercise and dietary adherence. Previous research points to the influence of personal and situational variables such as gender, age, family commitments, social environment, and time constraints (Dishman et al., 1985; Sallis & Owen, 1999). Hence, exploring the relationship between fitness training, nutritional adherence, and psychological factors among physically active adults represents an important direction for applied research in health education and behavioral sciences.

Aim of the Study

The main aim of this study is to examine the relationship between *fitness training frequency*, *adherence to a dietary regimen*, and *psychological factors* such as *Internal Motivation*, *Willpower*, and *Satisfaction*. The focus is on identifying how these variables interact and influence each other in the context of maintaining a healthy and active lifestyle.

Research Objectives

To achieve this aim, the study sets out the following specific objectives:

- To assess the average levels of self-reported *Physical Health*, *Psychological Health*, *Social Contacts*, *Internal Motivation*, and *Willpower* among physically active individuals.
- To analyze the correlations between *Training Frequency*, *Dietary Adherence*, and *Overall Satisfaction*.

- To determine whether there are gender or age-related differences in *Training Activity* and *Dietary Adherence*.
- To examine how the *duration of adherence* to a dietary regimen is associated with *motivation* and *subjective satisfaction*.
- To identify possible predictive relationships between the studied psychological variables (*Internal Motivation*, *Willpower*) and behavioral outcomes (*Training Frequency*, *Dietary Adherence*).

Participants

The study included 45 respondents (n = 45), men and women aged between 19 and 45 years, all of whom reported engaging in regular fitness training. Participation was voluntary and anonymous. Respondents were selected through a convenience sampling method among active gym members and university students involved in sports and recreation activities.

Measures and Instruments

A structured questionnaire was designed specifically for the purposes of this study. It consisted of two sections:
Sociodemographic profile, including gender, age group, marital status, and presence of children.
Self-assessment scale (Likert scale 1–3) measuring the following constructs:

- *Training Frequency*
- *Adherence to Dietary Regimen*
- *Physical Health*
- *Psychological Health*
- *Social Contacts*
- *Internal Motivation*
- *Willpower*
- *Satisfaction with Training and Diet*

Each variable was evaluated using a 3-point scale (1 = low, 2 = moderate, 3 = high). The scale demonstrated good internal consistency (Cronbach's $\alpha = 0.74$), indicating reliability of the items.

Procedure

The data were collected during the spring semester through online and paper questionnaires. Respondents were informed of the study's purpose and consented to the anonymous use of their responses for academic analysis. Data processing was conducted using SPSS (v. 26.0). Descriptive statistics (mean, standard deviation), Pearson correlation, t-tests, and ANOVA were applied to explore the relationships between variables and possible group differences.

Ethical Considerations

The study followed the ethical guidelines for research involving human participants. All respondents participated voluntarily and were informed of their right to withdraw at any time. No identifying information was collected.

Descriptive Statistics

The analysis of descriptive data reveals that the respondents demonstrate high self-evaluation in terms of *Training Activity*, *Physical Health*, and *Willpower*, while the reported satisfaction with *Dietary Regimen* is relatively lower.

Table 1. Mean values by indicators (n = 45)

№	Indicator	Mean Value (M)
1	Physical Health	2.69
2	Psychological Health	2.53
3	Social Contacts	2.53
4	Personal Sports Improvement	2.51
5	External Motivation	2.33
6	Internal Motivation	2.58
7	Willpower	2.67
8	Individual Physical Development	2.51
9	Training Activity	2.76

№	Indicator	Mean Value (M)
10	Dietary Regimen	2.24
11	Coach's Attitude	2.62

Source: Author research

Interpretation of Mean Values

The mean values show that the highest-rated indicators are Training Activity (M = 2.76), Physical Health (M = 2.69), and Willpower (M = 2.67). This reflects a high level of engagement, discipline, and a positive self-perception of physical fitness among the participants.

On the other hand, Dietary Regimen (M = 2.24) and External Motivation (M = 2.33) received the lowest ratings. This may be interpreted as lower persistence and satisfaction in maintaining nutritional discipline, as well as an indication that participants' motivation is primarily driven by internal factors (personal goals, health objectives) rather than external incentives (social pressure, aesthetic expectations).

A similar trend is reported in the studies of Deci and Ryan (2000), who argue that internal motivation plays a leading role in sustaining long-term health-related behaviors. The high scores for Willpower and Internal Motivation in the present study confirm that psychological factors are crucial for consistent adherence to both training and dietary routines.

The elevated values for Willpower and Internal Motivation further demonstrate that individuals engaged in fitness activities possess clearly defined personal goals and self-control abilities that support the maintenance of a regular regimen.

Comparative and Correlational Analyses

Gender Comparison (Welch's t-test). Table 2 presents the results of independent samples t-tests, which examine the effect of gender on the main indicators.

Table 2. Gender differences in main indicators (Welch's t-test)

Indicator	Mean – Men	Mean – Women	t	df	Significance (p)
Training Activity	2.77	2.72	0.34	35	> 0.05
Dietary Regimen	2.35	2.11	1.08	32	> 0.05
Physical Health	2.73	2.61	0.44	35	> 0.05
Psychological Health	2.54	2.61	0.41	35	> 0.05
Internal Motivation	2.58	2.56	0.10	37	> 0.05
Willpower	2.73	2.56	0.94	36	> 0.05

Source: Author research

No statistically significant differences between genders were identified for any of the examined indicators. This absence of substantial variation supports the contemporary trend in scientific literature suggesting that the motivational and behavioral mechanisms associated with maintaining a healthy lifestyle are universal and not directly dependent on gender (Burke et al., 2021).

Nevertheless, slight tendencies can be observed: men reported marginally higher self-evaluations of their *Training Activity* and *Willpower*, while women indicated better *Psychological Wellbeing*. These differences may be explained by distinct cognitive attitudes and self-support strategies, rather than by actual behavioral discrepancies.

Differences by Training Frequency (ANOVA)

The results of the one-way analysis of variance (ANOVA) are presented in Table 3. A positive tendency was found between *Training Frequency* and *Satisfaction with Dietary Regimen* ($\eta^2 = 0.14$), indicating a small-to-moderate effect size.

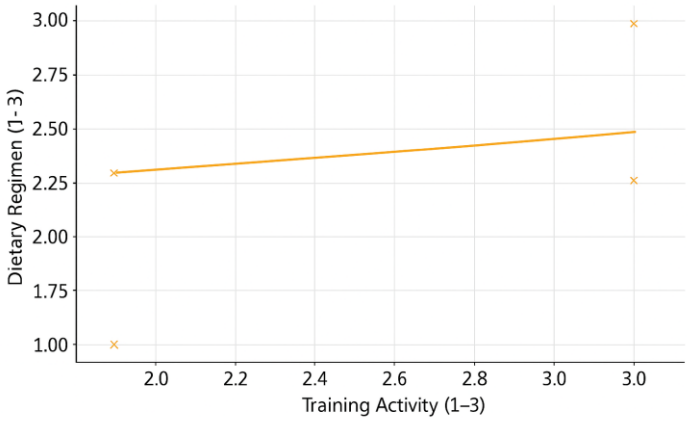
Table 3. Differences by training frequency (ANOVA)

Indicator	Group "up to 2 times per week"	Group "3–4 times per week"	Group "over 5 times per week"	η^2
Dietary Regimen	1.33	2.24	2.38	0.14
Willpower	2.22	2.63	2.83	0.11
Internal Motivation	2.33	2.50	2.75	0.06
Training Activity	2.33	2.71	2.91	0.04

Source: Author research

The results demonstrate a clear tendency — higher training frequency is associated with greater satisfaction with the dietary regimen and higher scores in *Willpower* and *Internal Motivation*.
This relationship can be interpreted as a reflection of the habit formation effect: regular training enhances self-control and strengthens the sense of competence, which in turn stabilizes nutritional behavior and adherence to dietary goals.

Figure 1. Relationship between Training Activity and Dietary Regimen (correlational dependence)



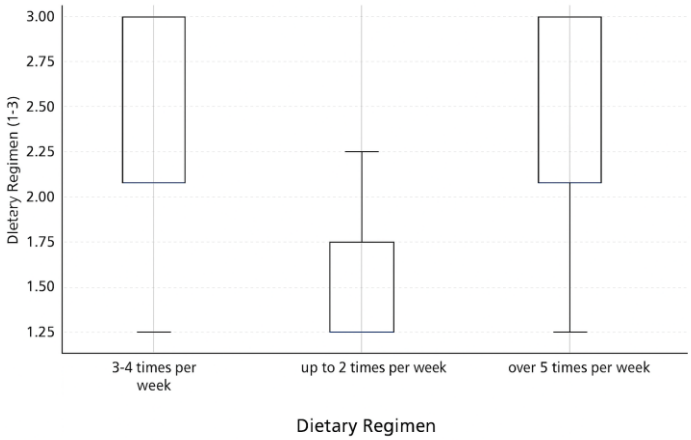
Source: Author research

This relationship corresponds to the findings described by Hall & Guo (2022), according to which regular physical activity has a direct impact on self-regulation of eating behavior and on the subjective sense of control over food choices.

Relationship between Gender and Satisfaction with Dietary Regimen (χ^2 and Cramer's V)

In the analysis of the relationship between gender and satisfaction with the dietary regimen, no statistically significant association was identified ($\chi^2(2) = 1.94$, $p = 0.380$).
The calculated Cramer's V = 0.21 indicates a weak effect size, suggesting that gender does not substantially influence the way participants evaluate their dietary adherence or satisfaction.

Figure 2. *Proportion of "Excellent" Ratings for Dietary Regimen by Gender*



Source: Author research

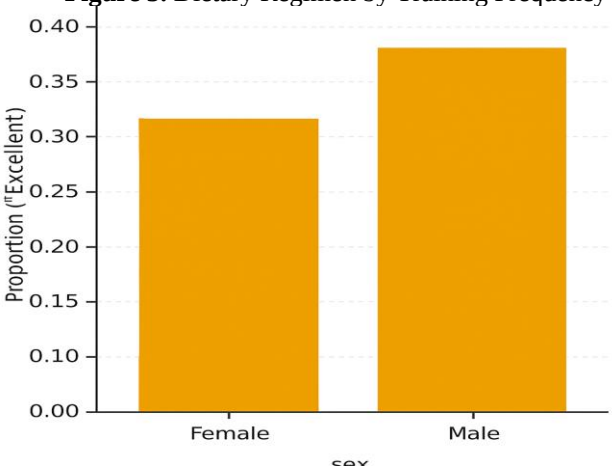
Although the differences are not statistically significant, the visual analysis indicates a slightly higher proportion of "Excellent" ratings among men, which may be interpreted as a sign of greater confidence and consistency in adhering to their dietary regimen.

Correlation Analysis (Pearson)

The correlation analysis revealed the following relationships between the main indicators:

- Training Activity ↔ Dietary Regimen – $r = 0.21$ (weak positive correlation)
- Willpower ↔ Intrinsic Motivation – $r = 0.69$ (strong positive correlation)
- Dietary Regimen ↔ Willpower – $r = 0.26$ (moderate positive correlation)
- Training Activity ↔ Intrinsic Motivation – $r = 0.25$ (weak positive correlation)

Figure 3. Dietary Regimen by Training Frequency



Source: Author research

Multiple Linear Regression

These results confirm that intrinsic motivation and willpower are mutually reinforcing factors that support consistent adherence to a dietary regimen. This relationship aligns with the Self-Determination Theory (Deci & Ryan, 2000), which posits that autonomous motivation is essential for the development of lasting health behaviors.

The following regression model was examined:

Dietary Regimen ~ Training Activity + Intrinsic Motivation + Willpower

The model explains approximately 10% of the variance in *Dietary Regimen* ($R^2 = 0.10$). Positive coefficients for *Training Activity* ($\beta \approx 0.30$) and *Willpower* ($\beta \approx 0.32$) indicate that these two factors exert the strongest influence on

dietary consistency. *Intrinsic Motivation* (β ≈ –0.07) shows a weak and neutral contribution, likely due to its high collinearity with *Willpower* (*r = 0.69*).
These findings confirm that *Willpower* functions as a mediator between *Intrinsic Motivation* and actual behavioral adherence to dietary regulation (Teixeira et al., 2012).

2. DISCUSSION

The results of the present study confirm the significant role of regular physical activity, willpower, and intrinsic motivation in building and maintaining a healthy lifestyle. The high mean scores for *Training Activity*, *Physical Health*, and *Willpower* indicate that participants have well-established habits associated with regularity, self-control, and conscious commitment. This is consistent with the Self-Determination Theory (Deci & Ryan, 2000), which suggests that autonomous motivation and a sense of competence are fundamental to sustainable behavior.
The observed positive relationship between *Training Activity* and *Satisfaction with Dietary Regimen* (*r = 0.21; η^2 = 0.14*) confirms that regular training not only improves physical condition but also supports self-regulation of eating behavior. According to Hall et al. (2022) and Hall & Guo (2022), physical activity contributes to better caloric control and stabilization of energy levels, facilitating adherence to a dietary plan.
The strong correlation between *Willpower* and *Intrinsic Motivation* (*r = 0.69*) underscores the importance of psychological factors in sustaining healthy behavior. Participants with higher willpower demonstrate greater adherence to dietary routines even when motivation fluctuates, highlighting the significance of self-control and internal discipline. This finding is in line with Teixeira et al. (2012), who propose that self-regulation mediates the link between motivation and behavior, ensuring behavioral persistence over time.
The absence of statistically significant gender differences regarding *Dietary Regimen* and *Training Activity* suggests that motivational and volitional mechanisms operate universally, independent of biological sex. This may be explained by shifting social norms, where the pursuit of an active and healthy lifestyle is perceived as a shared value rather than a gender-specific behavior (Burke et al., 2021).
Nevertheless, the slight tendency of men to report higher satisfaction with their dietary regimen may reflect differences in self-assessment or social desirability, rather than actual behavioral disparities.
The multiple linear regression results indicate that *Training Activity* and *Willpower* contribute most strongly to the sustainability of the dietary regimen (β ≈ 0.30 and β ≈ 0.32, respectively). This finding supports the notion that willpower represents the practical manifestation of motivation — while motivation is a psychological readiness, willpower is the operational mechanism through which behavior is enacted. This is consistent with behavioral change models asserting that intention alone is insufficient for long-term change unless supported by stable self-regulation and habitual behavior (Ajzen, 1991; Rhodes & de Bruijn, 2013).
Although *Intrinsic Motivation* is closely related to *Willpower*, it does not emerge as a direct predictor of adherence to the dietary regimen in the regression model (β ≈ –0.07). This may be due to the high collinearity between the two constructs or the fact that intrinsic motivation exerts an indirect influence — through emotional satisfaction and perceived meaning, rather than immediate behavioral outcomes.
From a practical standpoint, the results highlight the need for an integrated approach among trainers, nutritionists, and psychologists, emphasizing not only physical activity and diet but also the development of *willpower* and *self-control* as psychological resources. Programs that aim to enhance intrinsic motivation through autonomous goal setting and positive feedback can lead to more sustainable results (Georgieva, 2022).
Therefore, the effective management of a healthy lifestyle requires a synergy between physiological and psychological factors. Training activity establishes the physical structure of the habit, willpower ensures its stability, and intrinsic motivation provides meaning and satisfaction within the process.

3. CONCLUSION

The present study confirms that regular training activity and well-developed willpower are key predictors of sustainable adherence to a dietary regimen, while intrinsic motivation acts as a psychological catalyst for this process.
The lack of significant gender differences suggests that motivational and behavioral mechanisms underlying healthy behavior are universal and based on personal, rather than biological, characteristics.
The findings emphasize the importance of psychological factors — *willpower, self-control, and intrinsic motivation* — as determinants of the persistence of healthy habits. From a practical perspective, health-oriented programs should integrate training, nutritional, and psychological components, emphasizing consistency, goal orientation, and self-reflection among participants.

In conclusion, the path toward lasting physical and psychological well-being lies not solely in exercise and diet, but in the conscious integration of body, mind, and personal motivation. This harmony between physiological, emotional, and cognitive dimensions forms the comprehensive concept of a healthy lifestyle in the modern context.

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