

# Determinants of life satisfaction in martial arts practitioners and team-sports players

## Authors' Contribution:

- A Study Design
- B Data Collection
- C Statistical Analysis
- D Manuscript Preparation
- E Funds Collection

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## Abstract

### Background and Study Aim:

Life satisfaction is an overall assessment of satisfaction with one's own achievements and living conditions. It encourages activity and better coping with difficulties and obstacles. According to Juczyński, life satisfaction is the result of comparing one's own situation with personal standards. When analyzing life satisfaction, one should consider the importance of physical activity and sport as dominant factors. The aim of the study is to identify determinants of life satisfaction in karate practitioners and team sports players. We accept the hypothesis that the type of practiced sport differentiates and significantly affects the levels of athletes' life satisfaction.

### Material and Methods:

The study involved 110 team sports players and 90 martial arts practitioners. The sample selection was purposive, and accounted for respondents' high sporting level. The Polish adaptation of the Satisfaction With Life Scale (SWLS) was used to assess the life satisfaction of surveyed athletes.

### Results:

The obtained results indicate that both groups of athletes are characterized by higher levels of life satisfaction in relation to the general adult Polish population. In the analysis of life satisfaction determinants only two were found to be statistically significant: health behaviors and marital status. Other factors such as age, education, financial situation, gender, and type of sport do not determine life satisfaction.

### Conclusions:

It is worthwhile to promote physical activity and other health behaviors, as they can contribute significantly to better life satisfaction. Practicing sports may be a key determinant of a high level of life satisfaction.

### Keywords:

health practices • living conditions • proper dietary habits • prophylactic behaviors • positive mental attitude

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**Martial arts** – a general term for sports versions of combat techniques, derived from traditional martial arts adapted for sports competition.

**Team sport** – any sport in which players cooperate to achieve a common goal. Some team sports are played between opposing teams in which players work together directly and simultaneously to attain a goal. The objective of a sports game is usually to facilitate the movement of the ball, according to specific rules, in order to score points.

**Life satisfaction** – an overall assessment of satisfaction with one's own achievements and living conditions. It encourages activity and better coping with difficulties and obstacles.

**Physical activity** – noun exercise and general movement that a person carries out as part of their day [30].

**Athlete** – noun 1. someone who has the abilities necessary for participating in physical exercise, especially in competitive games and races 2. a competitor in track or field events [30].

**Player** – noun someone taking part in a sport or game [30].

**Dan (dan'ı)** – a term used to denote one's technical level or grade [31].

**Kyū** – the series of grades that precede *dan* ranks. *Ikkyū* is the grade immediately below *shodan* [31].

**Kyū (kyu)** – is a Japanese term used in modern martial arts (in judo from 6 to 1 *kyu*: which is the highest) as well as in tea ceremony, flower arranging.

**Kata** – prescribed patterns or sequences of techniques [31].

## INTRODUCTION

Satisfaction with life is an overall assessment of satisfaction with one's own achievements and living conditions [1]. It encourages activity and better coping with difficulties and obstacles [2]. According to Juczyński [3], satisfaction with life is the outcome of comparing one's own situation with personal standards. If the result of the comparison is satisfactory, it produces a feeling of satisfaction. In turn, Jaracz [4] considers life satisfaction a criterion of quality of life and defines it as a conscious judgement and outcome of the assessment and valuation of particular life spheres and of life as a whole. Sirgy [5] indicates that the level of general life satisfaction depends on a person's satisfaction with various spheres of life such as health, work, family, friends, and financial situation. In the literature, the concept of life satisfaction is sometimes used interchangeably with the definition of happiness, as the meaning of both concepts is very similar [6, 7]. The notion of satisfaction in psychology is associated with other concepts such as sense of psychological well-being, satisfaction with life, or quality of life [8]. It appears that quality of life is a broader term covering the process of satisfying biological, psychological, spiritual, social, political, cultural, economic and ecological needs of individuals, families, and communities [9].

In considering life satisfaction, attention should be paid to the importance of physical activity and sport as its major determinants. Regular physical activity prevents disease, improves health, and reduces the risk of chronic medical conditions [10]. Ivantchev and Stoyanova [11] nor that the effect of practicing sport is the development of athletes' sense of satisfaction with their health as their actual health conditions (both physical and mental) improve with regular physical

exercise and, consequently, lead to increased satisfaction with life. Sporting activity also reduces stress and increases the feeling of happiness and self-esteem, which is the result of better mental and social well-being [10, 12]. In addressing the subject of life satisfaction of athletes, attention should be paid to the differences in personality traits that predispose athletes to choose individual or team sports. Ghaderi and Ghasemi [13] showed that team sports players are more extrovert than athletes practicing individual sports. The authors of the present paper are interested in these two different groups of athletes.

The aim of the study is to identify the determinants of life satisfaction in karate competitors and team sports players.

We accept the hypothesis that the type of practiced sport differentiates and significantly affects the levels of athletes' life satisfaction.

## MATERIAL AND METHODS

### Participants

The study involved 110 players of team sports games and 90 martial arts practitioners. The sample selection was purposive, and accounted for the athletes' experience level. All competitors had high sporting achievements. The group of sports team players consisted of players from three top-tier Polish divisions of handball, football, volleyball, and basketball, i.e. *Ekstraklasa*, *I league*, and *II league*. The martial arts group comprised 90 *kyokushin* and *shotokan* karate competitors, most of whom were *dan*-ranked from 1 to 7.

The majority of respondents were men: team players 68.18%, martial arts practitioners 74.4%

**Table 1.** Gender and marital status investigated of the athletes surveyed: martial arts (n = 90) and team sports (n = 110).

Variable	Sport type	Detailed characteristics	N	%
Gender	martial arts	women	23	25.56
		Men	67	74.44
	team sports	Women	35	31.82
		Men	75	68.18
Marital status	martial arts	Single	47	52.22
		Married	43	47.78
	team sports	Single	89	80.91
		Married	21	19.09

and single: team players 80.91%, martial arts practitioners 52.22% (Table 1). The average age of karate practitioners was 34.67 years, and of team sport players 23.84 years (Table 2).

### Procedure

All respondents were informed about the purpose and course of the study and consented to take part in it. A Paper-and-Pen Interview (PAPI) questionnaire was used as a survey method.

The Inventory of Health Behaviors (IHB) was used to evaluate respondents' health behaviors. It consists of 24 statements describing different types of health behaviors which, depending on their frequency, should be assigned a value on a five-point scale. Based on the collected data, an index of overall intensity of health behaviors was calculated as well as indices for four individual categories of health behaviors: proper dietary habits (PDH), prophylactic behaviors (PB), positive mental attitude (PMA), and health practices (HP).

The Polish adaptation of the Satisfaction With Life Scale (SWLS) [3] developed by Diener et al. [1] was used to determine the level of respondents' life satisfaction. It is a 5-item scale designed to measure global cognitive judgments of one's life satisfaction, using a 7-point scale that ranges from 7 (strongly agree) to 1 (strongly disagree). By summing up the total score of all the statements, an overall life satisfaction index was obtained. The SWLS scores can range from 5 to 35 points. The higher the score, the higher the level of life satisfaction. In accordance with the above procedure, the obtained results then were converted into sten scores, i.e. the overall life satisfaction and health behaviors between 1-4 sten scores were interpreted as low, 5-6 sten scores as medium, and 7-10 sten scores as high.

### Statistical analysis

The collected data were statistically analyzed using the Statistica 12 software package. Basic statistics were calculated and single multivariate linear regression analysis was used. The non-parametric

**Table 2.** Studied variables in different groups of athletes depending on sport type.

Variable	Sport type	$\bar{x}$	SD	Me	Q	Z	p
Age	martial arts	34.67	14.69	32.50	13.00	1.73	<0.001
	team sports	23.84	5.83	22.00	3.50		
Education	martial arts	2.35	0.67	2.00	0.50	2.45	<0.05
	team sports	2.13	0.54	2.00	0.00		
Financial situation	martial arts	1.82	0.64	2.00	0.50	0.75	$\geq 0.05$
	team sports	1.74	0.64	2.00	0.50		
SWLS	martial arts	23.06	5.33	24.00	3.50	-0.29	$\geq 0.05$
	team sports	23.42	4.55	24.00	3.00		
IHB	martial arts	83.82	12.74	83.50	8.50	0.12	$\geq 0.05$
	team sports	83.35	11.85	84.50	7.50		
PDH	martial arts	3.48	0.72	3.50	0.50	0.63	$\geq 0.05$
	team sports	3.41	0.67	3.50	0.41		
PB	martial arts	3.40	0.69	3.50	0.41	0.22	$\geq 0.05$
	team sports	3.37	0.62	3.50	0.5		
PMA	martial arts	3.70	0.62	3.66	0.41	0.23	$\geq 0.05$
	team sports	3.68	0.63	3.66	0.41		
HP	martial arts	3.37	0.60	3.50	0.41	-0.36	$\geq 0.05$
	team sports	3.41	0.57	3.50	0.41		

arithmetic mean, **SD** standard deviation, **Me** median, **Q** quartile deviation, **Z** Mann-Whitney *U* test for  $n > 20$ , **p** probability value (statistical significant at  $p \leq 0.05$  in bold).

Mann-Whitney U test was used to assess the significance of differences between the variables, and the correlations between the variables were calculated using Spearman's rank correlation coefficient. Effects for which the probability was lower than the level of statistical significance of  $p < 0.05$  were assumed as significant.

## RESULTS

Age is a significant factor which differentiates between studied athletes ( $p < 0.001$ ). The significant difference is a reflection of the specificity of different career development patterns in both groups of competitive sports. A statistically significant difference can also be noted in the case of athletes' education. In the group of martial arts competitors a slightly higher average level of the education variable was found (Table 2).

The studied athletes achieved an average life satisfaction score of 23.24 pts. Most of the athletes achieved a high level of life satisfaction (51.92%), followed by a medium level (33.54%), and a low level (14.55%). There was no statistically significant difference between the martial arts competitors and team sports players. Gender was not a differentiating factor between the two groups either.

The type of practiced sport is not a factor differentiating the respondents in terms of their health behaviors. The mean value of the overall health behavior index was 83.58 pts. Also in the case of particular categories of health behaviors, i.e. proper dietary habits, positive mental attitude, and health practices, the surveyed athletes obtained slightly higher average values of their health behavior indices in relation to the adult Polish population. A slightly lower index value was found only for prophylactic behaviors. Most of the respondents (47.78%) are characterized by an average level of health behaviors, a high level was found in 35.71%, and a low level in 16.52% of respondents.

The overall Satisfaction With Life Scale score was positively, albeit weakly, correlated with respondents' age, level of education, and financial situation ( $r_s = 0.159-0.186$ ). Health behaviors were also correlated with the SWLS score ( $r_s = 0.376$ ). The strongest correlation was found for positive mental attitude ( $r_s = 0.371$ ), and the lowest for prophylactic behaviors ( $r_s = 0.228$ ).

In order to select the best predictor of life satisfaction from among such variables as type of sport, age, gender, marital status, education, financial situation, or health behaviors (Figure 1), a single multivariate linear regression

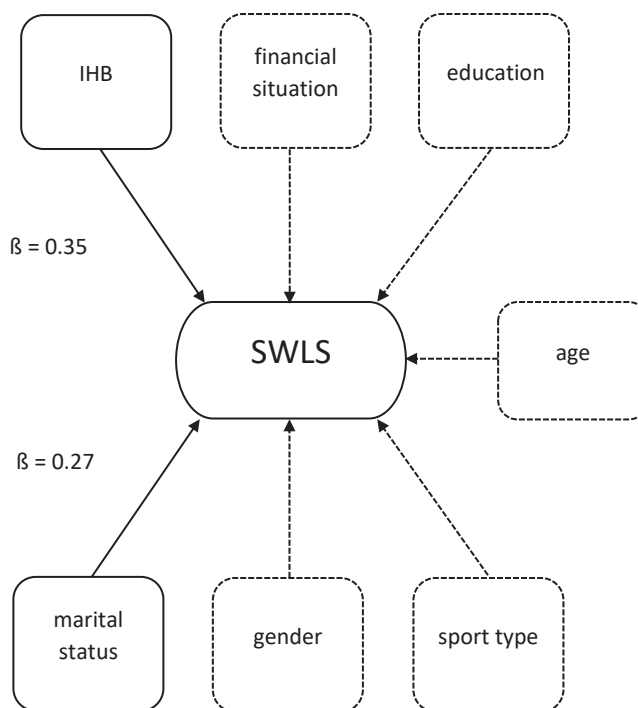


Figure 1. Research model with the dependent variable of overall Satisfaction With Life Scale.

analysis was carried out. The assumed model proved to be statistically significant. The coefficient of determination explained 22% of the dependent variable, i.e. overall Inventory of Health Behaviors ( $R^2 = 0.229$ ;  $df = 9$ ;  $F = 6.288$ ;  $p = 0.000$ ). However, of the many predictors of life satisfaction, only two proved to be statistically significant: respondents' health behaviors ( $B = 0.141$ ;  $\beta = 0.352$ ;  $t = 5.249$ ;  $p = 0.000$ ) and marital status ( $B = -1.418$ ;  $\beta = -0.270$ ;  $t = -3.088$ ;  $p = 0.002$ ). Practicing pro-healthy behaviors and being in a relationship are significant determinants of life satisfaction.

## DISCUSSION

People seek life satisfaction in various activity areas, including sports. Sporting activities have a great influence on the mental and physical sense of satisfaction, enable comprehensive development, shape personality, healthy lifestyle habits, develop the will to fight, perseverance, and - at the same time - teach respect for other people [14]. Sport has a large social impact, but its effects on the individual are also due to one's choice of a particular discipline. Some athletes consider sport to be the meaning of their life and thus their satisfaction with life depends on the course of their own career [15]. Despite the fact that it is team games which enjoy great popularity (they give satisfaction from interpersonal relationships and cooperation), a study by Clearing House [16] showed that martial arts are among the 10 most popular sports in 26 European countries, while Shahar [17] found that the reason why martial arts appeal to millions of people in the West is their unique synthesis of military, therapeutic, and religious goals. Martial arts provide millions of practitioners with the great opportunity to maintain mental health and balance [18-20].

The present study attempted to identify the determinants of life satisfaction of athletes of individual and team sports. The study results indicate that athletes from both groups feature a higher level of life satisfaction than the adult Polish population. The studied athletes achieved an average life satisfaction score of 23.24 pts. (the average value of this index in the group of adult Poles was 20.37 pts.). The mean value of the overall health behavior index was 83.58 pts. (the average value of this index in the group of adult Poles was 81.82 pts.).

It was also found that type of sport does not differentiate the respondents' life satisfaction levels, and both groups of the studied athletes presented an equally high level of life satisfaction. Similar results were obtained by Wojdat et al. [21], who demonstrated higher levels of life satisfaction among Brazilian jiu-jitsu (BJJ) competitors than in non-training controls. Female BJJ practitioners were found to be more satisfied with their life, and display a higher level of optimism than women in the control group. An analogous correlation was found in comparison with male groups. This is comparable with the outcome of studies on hatha yoga practitioners, who along with the increase in training experience, were shown to have a greater life satisfaction, inner peace, personal freedom, personal success and a sense of security [22]. Lewandowska et al. [23] showed that both individual sports athletes and team sports athletes achieve greater life satisfaction and happiness levels without statistically significant differences between the two groups. According to Ivantchev and Stoyanova [11], athletes' life satisfaction is also dependent on their successes and good relationships with other athletes. It is also possible that the lack of differences in life satisfaction between the two groups of athletes in the present study is attributable to the athletes' equally high sport mastery levels, i.e. the same extent of training experience.

The assumed study model (Figure 1) and its subsequent revision indicate statistical significance only for two variables: health behaviors and marital status. Other factors such as age, education, financial situation, gender and type of sport are not significant life satisfaction determinants. Similar results obtained by Argyle [24] show that marital status has a significant impact on the sense of happiness. Married couples are more likely to declare higher life satisfaction than divorced and separated couples. He also stated that education affects life satisfaction indirectly through one's professional position and income. The income itself remains weakly correlated with life satisfaction. The results of a study by Adamczyk and Segrin [25] on the group of Poles aged 20-30 years is also consistent with our results. They found that people living alone display lower life satisfaction than those living in a relationship. Therefore, loneliness can be detrimental to life satisfaction due to isolation and less social support from other people. In Wojdat et al. [21] age, education, financial status, gender and type of sport did not affect respondents' life satisfaction either.

Healthy behaviors are behavior patterns which, in the light of modern knowledge, produce certain health effects. Conner and Norman [26] define them as any activities aimed at preventing or detecting disease in order to improve health and well-being. Both positive and negative behaviors build up everyone's lifestyle. A healthy lifestyle, i.e. one in which health-enhancing behaviors predominate, is an essential condition for maintaining health potential, i.e. an indispensable resource for achieving sports success. In the present study health behaviors proved to be a significant determinant of life satisfaction, probably because the key component of a healthy lifestyle are behaviors associated with maintaining the physical fitness of the body, which in the case of high-performance athletes is a pattern of their daily functioning. A significant relationship between health behaviors and life satisfaction was indicated in a study of young adults [27, 28]. Kosiba et al. [29] demonstrated that practicing professional sport affects the level of life satisfaction, which increases with the length of training experience, as well as after a completed sports career; however, they did not find any relationship between life satisfaction and health behaviors.

Considering the differences between team and individual sports, what can be noted about martial arts is that they can be successfully practiced throughout life. Proof of this is provided by many martial arts masters of advanced age who often display above-average physical fitness and combat skills. To overcome oneself is a statement describing the aspirations of martial arts adepts to

achieve mastery in relation to their individual abilities. An extensive system of sports competition enables lifelong participation in martial arts, even with a significant reduction in the risk of injury (e.g. kata practice). Increasing one's skills and abilities confirmed by degrees (kyu and dan grades) is also specific to martial arts. Overcoming one's own weaknesses, striving for perfection, and emphasizing the "ways of life" ('do') are special characteristics of martial arts, which may facilitate the fulfilment of higher-level needs, self-realization and, consequently, the sense of life satisfaction.

## CONCLUSIONS

Promotion of physical activity and other health promoting behaviors is particularly worthwhile as they can significantly help to achieve higher life satisfaction.

Statistically, the type of sport practiced is irrelevant in terms of its relationship with life satisfaction. Certainly, the question of which discipline (an individual or a team sport) brings greater benefits in terms of psychosocial wellbeing, including life satisfaction, requires further research and more in-depth analysis. However, it is worth noting that sports and martial arts have considerable potential for satisfying experiences, as they are distinguished by their forms of individual competition, i.e. rivalry with oneself providing an opportunity to overcome one's own limitations in an individually controlled way (martial arts offer a wide range of different goals and challenges for everyone).

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