

THE SENSE OF LIFE SATISFACTION VERSUS DIETARY CHOICES OF YOUNG WOMEN DOING FITNESS FOR RECREATIONAL PURPOSES

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ABSTRACT

Background: The health potential of a person can be improved thanks to recreational physical activity and rational diet. The sense of life satisfaction is also one of significant health resources.

Objective: The aim of the study was to analyze the relations between the level of life satisfaction and the frequency of consuming selected products in the group of young women who engage in fitness for recreational purposes.

Material and Methods: The study involved 200 young women (20-30 years old) who regularly do recreational physical activity in fitness clubs in Małopolska. An original questionnaire was used to measure the frequency of consumption of food products, with the following scale: several times a day, once a day, several times a week, once a week, several times a month, and more rarely / never. The Satisfaction With Life Scale (SWLS) by Diener et al., adapted into Polish by Juczyński, was used to measure life satisfaction. The results were analyzed with the use of U Mann-Whitney test and Spearman's rank correlation coefficients in a statistical package PQStat ver. 1.6.

Results: Statistical analysis showed that along with higher life satisfaction, women significantly less often consumed: white bread ($p<0.05$) and whole milk ($p<0.05$), and significantly more often: wholemeal bread ($p<0.05$), whole-grain rice and pasta ($p<0.001$), legumes ($p<0.05$), fermented milk products ($p<0.05$), fish ($p<0.05$), seafood ($p<0.01$), beef ($p<0.01$) and vegetable juices ($p<0.001$). The comparison of the mean frequency of consumption of certain foods depending on the level of life satisfaction (low vs. high according to the SWLS) showed that women who displayed high life satisfaction significantly more often consumed wholemeal bread ($p<0.01$), whole-grain rice and pasta ($p<0.001$), curd cheese with reduced fat content ($p<0.05$), seafood ($p<0.05$), beef ($p<0.001$) and vegetable juices ($p<0.05$), and significantly less often, sweets and confectionery ($p<0.05$) than did women displaying low life satisfaction.

Conclusions: The study proved the predictive role of life satisfaction in the development of eating habits of young, physically active women, indicating more rational dietary choices of women with higher levels of this individual quality.

Key words: life satisfaction, women, fitness, nutrition

STRESZCZENIE

Wprowadzenie: Poprawie potencjału zdrowotnego człowieka sprzyja rekreacyjna aktywność fizyczna i racjonalny sposób żywienia. Jednym z istotnych zasobów zdrowotnych jest także poczucie satysfakcji z życia.

Cel pracy: Celem badań była analiza zależności między poziomem satysfakcji z życia a częstością konsumpcji produktów spożywczych w grupie młodych kobiet rekreacyjnie uprawiających fitness.

Material i metody: Badania przeprowadzono w grupie 200 młodych kobiet (20-30 lat), regularnie podejmujących rekreacyjną aktywność fizyczną w klubach fitness w Małopolsce. Zastosowano autorski kwestionariusz częstości konsumpcji produktów spożywczych, z uwzględnieniem skali: kilka razy dziennie, raz dziennie, kilka razy w tygodniu, raz w tygodniu, kilka razy w miesiącu i rzadziej/nigdy. Do pomiaru zadowolenia z życia wykorzystano Skalę Satysfakcji z Życia (SWLS) Dienera i wsp. w adaptacji Juczyńskiego. Analizę wyników przeprowadzono z zastosowaniem testu U Manna-Whitneya i współczynników korelacji rangowych Spearmana w pakiecie statystycznym PQStat ver. 1.6.

Wyniki: Analiza statystyczna wykazała, że kobiety wraz ze wzrostem poziomu satysfakcji z życia istotnie rzadziej spożywały: pieczywo jasne ($p<0,05$) i mleko tłuste ($p<0,05$), a istotnie częściej: pieczywo razowe ($p<0,05$), ryż i makaron razowy ($p<0,001$), nasiona strączkowe ($p<0,05$), mleczne przetwory fermentowane ($p<0,05$), ryby ($p<0,05$), owoce morza ($p<0,01$), mięso wołowe ($p<0,01$) i soki warzywne ($p<0,001$). Porównanie średniej częstości konsumpcji produktów spożywczych w zależności od poziomu satysfakcji z życia (niski vs wysoki w skali SWLS) dowiodło, że kobiety o wysokiej satysfakcji z życia istotnie częściej spożywały pieczywo razowe ($p<0,01$), ryż i makaron razowy ($p<0,001$), sery twarogowe o obniżonej zawartości tłuszczu ($p<0,05$), owoce morza ($p<0,05$), mięso wołowe ($p<0,001$) i soki warzywne ($p<0,05$), a istotnie rzadziej słodczyce i wyroby cukiernicze ($p<0,05$) niż kobiety o niskiej satysfakcji z życia.

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Wnioski: Wykazano predykcijną rolę poczucia satysfakcji z życia dla kształtowania się sposobu żywienia młodych aktywnych fizycznie kobiet, ze wskazaniem na bardziej racjonalne wybory żywieniowe kobiet o wyższym nasileniu tej cechy indywidualnej.

Słowa kluczowe: *satysfakcja z życia, kobiety, fitness, żywienie*

INTRODUCTION

Current dietary recommendations, including those by the Harvard School of Public Health and the National Food and Nutrition Institute in Warsaw, also involve regular recreational physical activity, which together with rational dietary choices is a crucial element of healthy lifestyle, promoting health and the prevention of chronic diseases [10, 14].

Varied and balanced diet, rich in products with high nutritional density, including whole-grain cereal products, fruit and vegetables, milk products with reduced fat content, fish, vegetable oils and nuts, combined with limited consumption of animal fats, red meat, highly processed cereal products and sweet and salty snacks, helps maintain and improve health [12]. However, many studies show quantitative and qualitative diet mistakes in different population groups, including women displaying different forms of physical activity [1, 2, 3, 4, 7, 8, 9, 20].

Health-related behaviors, including nutrition, are determined by a broad spectrum of socio-economic, cultural and personality factors [11, 15]. Individual differences which contribute to a person's health culture are among others: health locus of control and the sense of general self-efficacy, dispositional optimism and life satisfaction. Previous studies have demonstrated relations between the sense of efficacy and dietary habits of young women who do fitness for recreation [9]. In this context, the current study was aimed at investigating the predictive role of the sense of life satisfaction with regard to dietary choices of young women who do recreational physical activity. Life satisfaction, as a subjective measure of well-being, is defined as general, individual, cognitive evaluation of the quality of life [11]. Satisfaction with life is an inherently subjective concept, as it directly refers to individual evaluation of one's resources and limitations, being reflected in positive approach to one's own life situation. The sense of life satisfaction, treated as a measure of quality of life, is one of psychosocial health resources of a person [5, 21].

Assuming that the combination of active lifestyle and rational diet is the key health-determining factor, and that personality traits play an important role in their development, the author attempted to investigate dietary choices of women who engage in recreational physical activity depending on the level of satisfaction with life. The aim of the study was to analyze the relations between the sense of life satisfaction and the

frequency of consuming selected products in the group of young women who engage in fitness for recreational purposes.

MATERIAL AND METHODS

The study involved 200 young women aged 20-30 (23.5 ± 3.6) in Małopolskie Voivodeship. The women were single (56%) and married (46%), most of them had higher education (57%), fewer had secondary (35%) or vocational education (8%), and they came from urban (55%) and rural (45%) environments. They had been doing recreational physical activity regularly, for at least one year, exercising in fitness clubs several times a week (48%), once a week (35%) or several times a month (17%), most often to feel better (38%), to achieve better physical condition (32%) and shape (30%). The vast majority of them (85%) had normal BMI, and 15% were underweight.

An original questionnaire was used to measure the frequency of consumption of certain foods, with the following scale: several times a day (6), once a day (5), several times a week (4), once a week (3), several times a month (2), and more rarely / never (1). Cronbach alfa coefficient of the questionnaire was 0.78. The following ranges were used to interpret the values of frequency of food products consumption: several times a day (6.00-5.50), once a day (5.49-4.50), several times a week (4.49-3.50), once a week (3.49-2.50), several times a month (2.49-1.50), and more rarely / never (1.49-1.00). Life satisfaction was measured using the Satisfaction With Life Scale (SWLS) by Ed. Diener, R.A. Emmons, R.J. Larson and S. Griffin, adapted into Polish by Z. Juczyński [11]. The studied women were grouped according to the level of life satisfaction on the basis of the median of raw scores, which was 21. The values below the median were regarded as low ($n=100$), and those above the median, as high ($n=100$) level of satisfaction with life. In the study group, the women's mean SWLS score was 20.96 ± 5.36 .

The results were analyzed using the statistical package PQStat ver. 1.6. The frequency of consuming certain products was compared with the level of life satisfaction using U Mann-Whitney test, and the relations between the level of satisfaction and the frequency of consuming certain products were analyzed by estimating Spearman rank correlation coefficients. Test probability of $p < 0.05$ was regarded as significant, while the values of $p < 0.01$ and $p < 0.001$, as highly significant.

RESULTS

Out of the included cereal products, the respondents most often ate white and wholemeal bread, and least often, whole-grain rice and pasta. On average, they ate fruit and vegetables several times a week. Out of milk products, they most often used milk with reduced fat content, fruit and natural milk products and curd cheese with reduced fat content, and the least often, whole milk and curd cheese. As for other protein products, they most often chose eggs and poultry, and least often, seafood. The women ate butter more often than olive oil (on average several times a week vs. once a week), and nuts – several times a month on average. They consumed sweets more often than fast

food (several times a week vs. several times a month). Out of non-alcoholic beverages, they most often chose mineral water, and least often, vegetable juices and sweet fizzy drinks. Regarding alcoholic beverages, they more often drank wine than vodka (once a week vs. several times a month) (Table 1).

Statistical analysis showed that increasing sense of life satisfaction of women was associated with decreasing frequency of consumption of white bread ($p<0.05$) and whole milk ($p<0.05$), and increasing consumption of wholemeal bread ($p<0.05$), whole-grain rice and pasta ($p<0.001$), legumes ($p<0.05$), fermented milk products ($p<0.05$), fish ($p<0.05$), seafood ($p<0.01$), beef ($p<0.01$) and vegetable juices ($p<0.001$) (Table 1).

Table 1. Frequency of food products consumption depending on the level of life satisfaction and correlation coefficients between the variables in the group of young women who do fitness for recreation purposes

Items	Total			Level of life satisfaction (SWLS)						<i>p</i>	R
				Low			High				
	X	SD	Me	X	SD	Me	X	SD	Me		
White bread	4.25	1.35	4	4.38	1.39	5	4.12	1.30	4	0.120	-0.146*
White rice/pasta	2.80	1.13	3	2.80	1.12	3	2.80	1.15	2.5	0.923	-0.047
Wholemeal bread	3.66	1.28	4	3.40	1.21	4	3.92	1.30	4	0.002	0.152*
Whole-grain rice/pasta	1.53	0.92	1	1.28	0.64	1	1.78	1.09	1	0.000	0.304***
Vegetables	3.90	1.00	4	3.86	0.94	4	3.94	1.05	4	0.493	0.055
Legumes	2.34	1.03	2	2.20	0.96	2	2.48	1.09	2	0.088	0.158*
Fruit	4.44	1.08	4	4.34	1.15	4	4.54	1.01	5	0.240	0.084
Semi-skimmed milk	3.30	1.79	4	3.14	1.82	4	3.46	1.75	4	0.238	0.055
Whole milk	2.37	1.56	2	2.48	1.56	2	2.26	1.55	2	0.319	-0.149*
Natural fermented milk products	3.09	1.44	3	2.86	1.38	3	3.32	1.47	3.5	0.050	0.165*
Fruit fermented milk products	3.20	1.45	4	3.04	1.46	3	3.36	1.43	4	0.123	0.165*
Semi-skimmed curd cheese	2.77	1.38	3	2.54	1.37	2	3.00	1.36	3	0.015	0.085
Whole curd cheese	1.93	1.28	1	1.90	1.21	1	1.96	1.35	1	0.881	-0.101
Fish	2.59	1.05	2	2.44	0.92	2	2.74	1.15	3	0.096	0.162*
Seafood	1.16	0.53	1	1.08	0.34	1	1.24	0.65	1	0.010	0.228**
Eggs	3.59	1.04	4	3.62	0.94	4	3.56	1.14	4	0.753	0.013
Poultry	3.49	1.01	4	3.44	1.01	4	3.54	1.01	4	0.334	0.117
Pork	2.63	1.10	3	2.52	1.07	3	2.74	1.12	3	0.177	0.102
Beef	2.03	1.12	2	1.74	0.92	1.5	2.32	1.23	2	0.000	0.197**
Butter	4.02	1.70	5	3.92	1.75	5	4.12	1.65	5	0.488	-0.007
Olive oil	2.60	1.24	2	2.52	1.29	2	2.68	1.20	3	0.253	0.037
Nuts	2.47	1.16	2	2.34	0.96	2	2.60	1.33	2	0.489	-0.012
Sweets	3.64	1.33	4	3.90	1.23	4	3.38	1.39	3	0.009	-0.015
Fast Food	1.88	1.04	2	1.90	1.01	2	1.86	1.08	2	0.535	0.056
Fruit juices	3.47	1.41	4	3.44	1.31	4	3.50	1.51	3	0.897	0.127
Vegetable juices	2.15	1.37	2	1.90	1.19	1	2.40	1.49	2	0.020	0.240***
Sweet drinks	2.21	1.57	2	2.06	1.48	1.5	2.36	1.65	1.5	0.039	0.119
Mineral water	4.98	1.41	6	4.88	1.42	5.5	5.08	1.40	6	0.256	0.052
Wine, beer	2.30	1.04	2	2.28	1.08	2	2.32	0.99	2	0.592	0.105
Vodka	1.54	0.74	1	1.58	0.78	1	1.50	0.70	1	0.440	0.007

X - arithmetic mean, SD - standard deviation, Me - median, *p* - statistical significance of U Mann-Whitney test, R - Spearman rank correlation coefficients (between the frequency of consumption and the level of life satisfaction), R significance levels: * ($p<0.05$), ** ($p<0.01$), *** ($p<0.001$)

The comparison of the mean frequency of consumption of food products depending on the level of life satisfaction (low vs. high SWLS level) proved that women with high satisfaction significantly more often consumed wholemeal bread ($p < 0.01$), whole-grain rice and pasta ($p < 0.001$), low fat curd cheese ($p < 0.05$), seafood ($p < 0.05$), beef ($p < 0.001$) and vegetable juices ($p < 0.05$), and they significantly less often ate sweets and confectionery ($p < 0.05$) than did women with lower life satisfaction (Table 1).

DISCUSSION

The present study demonstrated the relations between the sense of life satisfaction and the frequency of consuming certain products; however, it showed the limited extent of rational dietary choices among young women who regularly exercise in fitness clubs in Małopolskie Voivodeship. With reference to American and Polish recommendations concerning a healthy diet [10, 14], the study showed low consumption of wholemeal cereal products, vegetables, legumes, fruit, milk products and fish, olive oil and nuts, as well as relatively high consumption of sweets and confectionery. Some choices, however, were positive, i.e. comparable consumption of white and wholemeal bread. Other positive tendencies were e.g. more frequent consumption of low fat than whole milk and curd cheese, or poultry than pork. Besides, the women more often drank mineral water than sweet fizzy drinks, and wine than vodka. In other groups of women doing fitness for recreational purposes, quantitative and qualitative diet mistakes have also been found, which reduced the nutritional value and health benefits of meals [7, 8, 9, 16]. The low consumption of whole-grain cereal products, legumes, fruit and vegetables and milk products demonstrated in the presented original study corresponded to the deficiency of carbohydrates, fiber, vitamin B2, potassium and calcium observed in a previous study on female students who did fitness for recreational purposes [8]. Diet mistakes connected with energy, fat, water and fiber deficiency as well as protein and sodium excess have also been demonstrated in a group of women aged 19-47 from the region of Lublin who regularly participated in fitness activities [16]. Non-balanced meals, including the excess of saturated fatty acids and cholesterol, and deficit of some minerals (Ca, Fe, Mg, Zn) and vitamins (B1, B2, B6), indicative of insufficient consumption of milk products, whole-grain cereal products or fruit and vegetables, has also been observed in women from Dolnośląskie Voivodeship with low physical activity [2, 3, 4]. Diet mistakes which lower the nutritional value of diet have also been described for young women who do different sports disciplines [1, 6, 13, 20].

The analysis of individual determinants of diet among young women who do fitness for recreation purposes

showed that higher levels of life satisfaction promoted more rational choices in that regard, thus corresponding with the current nutrition recommendations. Higher levels of the sense of life satisfaction promoted more frequent consumption of whole-grain low glycemic cereal products and legumes, which determined higher supply of dietary fiber and B vitamins. The recommendation of daily consumption of milk products with reduced fat content, including fermented products, was more often observed by women with higher life satisfaction, which promoted higher supply of protein and calcium and probiotic bacteria, accompanied by lower levels of atherogenic saturated fatty acids. Higher satisfaction levels were associated with lower consumption of whole milk, containing high amounts of saturated fatty acids. Seafood and saltwater fish were also more often eaten by women with higher satisfaction, which enhanced the health value of their diet due to the cardioprotective role of *omega-3* fatty acids [12]. Further, the level of life satisfaction was connected with choices concerning beef, which was more often consumed by women displaying high levels of satisfaction. It also affected the frequency of eating sweets and confectionery. These products, with high energy density and low nutritional density, rich in trans isomers of unsaturated fatty acids, which are at the top of the American and Swiss pyramid, were significantly more rarely chosen by women highly satisfied with life than by those with low levels of life satisfaction. Highly satisfied women drank vegetable juices more often, too. Thus, the identified relations showed that high levels of life satisfaction promoted more rational dietary choices. The obtained results, pointing out more rational dietary choices of women with higher levels of life satisfaction, can be explained by the characteristics of this personality dimension and correspond to the results of other studies. The relation between life satisfaction and certain health determinants, including dietary ones, has also been confirmed by studies carried out in Chile [17, 18, 19]. The high sense of satisfaction with life, connected with well-being, is an important health resource of a person, promoting health-related activities, including more rational eating habits.

CONCLUSIONS

1. The demonstrated low frequency of consuming whole-grain cereal products, vegetables, legumes, fruit, milk products and fish, combined with relatively high consumption of sweets and confectionery, reduced the nutritional value of meals of young women engaging in fitness for recreation purposes.
2. The beneficial decisions of young physically active women concerning dietary choices included more frequent consumption of products with reduced content of saturated fatty acids (skimmed vs. whole

milk and curd cheese, poultry vs. pork) and simple sugars (mineral water vs. sweet fizzy drinks).

- The study proved the predictive role of life satisfaction in the development of eating habits of young, physically active women, indicating more rational dietary choices among women with higher levels of this individual quality.

Conflict of interest

The author declares no conflict of interest.

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