

HEALTH BEHAVIORS AND LIFE SATISFACTION OF HEALTH SPA PATIENTS

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ABSTRACT

Background: Determining the relationship between health behaviors and life satisfaction in patients who use health spas as an accurate measure of well-being (subjective well-being reflecting health condition) can be the basis for implementing preventive activities, setting trends for behavior modification, and monitoring changes in health-promoting practices.

Aim of the study: To determine an empirical verification of the relationship between health behaviors and life satisfaction.

Material and methods: The study included 123 women and men aged 32–80 years – all of whom were health spa patients. The Health Behavior Inventory (HBI) by Juczyński, and the Polish adaptation of the Satisfaction With Life Scale (SWLS) by Diener, Emmons, Larsen, and Griffin were used to measure health behavior and life satisfaction, respectively.

Results: There was a significant positive correlation between health behavior indicators and the level of life satisfaction in patients, as well as an increase in the practice of health behaviors with age. Gender appears to differentiate the frequency of the performance of health behaviors in the subjects. A higher overall rate of health behaviors was observed in females compared with males. For instance, females attached greater importance to healthy eating habits compared with males. However, a higher level of life satisfaction is associated with more intensified preventive behaviors in males.

Conclusions: A health education program should take into account both the age and gender of health spa patients. It should also aim to not only develop health awareness, but also to include psychological factors, such as a sense of life satisfaction, which can strengthen patients' beliefs in the importance of health-promoting activities.

KEYWORDS: health behaviors, life satisfaction, health spa, health psychology, health education, health and diseases correlates

BACKGROUND

Health education within a health spa context is an important part of a country's health policy – a tool to reduce disease risk and prevent premature mortality. Its advantage is its low costs and relatively high efficiency [1–5].

Lectures on health education fundamentally alter the purpose of staying in a health spa. It is therefore not limited to treatment and rehabilitation, but is also supplemented with new content, initiating the process of lifestyle reconstruction and the practice of pro-health behaviors [6].

Health behaviors play a key role in maintaining and strengthening an individual's health and are important factors in shaping well-being. Many diseases that currently constitute the greatest threats to life and health (including cancer and cardiovascular disease) are ones for which the occurrence is significantly contributed to by a patient's life choices [7–10].

The prevalence of health behaviors and life satisfaction in health spa patients as an accurate measure of well-being (subjective well-being reflecting health condition) can be the basis for programming preventive

activities, setting trends for behavior modification, and monitoring changes in health-promoting practices [7].

Health behaviors

For the purpose of this study, the definition of Gochman's health behaviors [11] was adopted. He believes that health behaviors are subjective and dependent on psychological variables. According to the author, health behavior includes "such personal attributes as convictions, expectations, motives, insights, and other cognitive elements, personality characteristics, including emotional states and traits, patterns of explicit behaviors, actions and habits that are associated with maintaining, recovering, and improving health" [7]. It is a broad approach, consistent with modern knowledge, and has been examined by health psychology experts.

In the realm of health-oriented human activity, one can distinguish between habitual health behaviors and purposeful health activities. Health habits are related to everyday hygiene, nutrition, physical activity, and leisure. They are the result of socialization processes and cultural influences. They include promotional and prophylactic activities to both strengthen and protect health (i.e. preventing diseases and contributing to their early detection). On the other hand, intentional health activities are initiated in specific situations. They include human behavior in a situation of developmental change (e.g. preparation for the birth of a child, aging, or illness). They consist of seeking help and acting as an ill person and as a patient [7,12].

Making changes in health behaviors depends on many factors. Contemporary theoretical approaches propose different explanations of the mechanisms responsible for changes in health behaviors [8,9,13]. Particularly noteworthy is Schwarzer's processual approach to health activities [14]. The author, referring to the socio-cognitive theory of personality, assumes that the acquisition and consolidation of health activities takes place in two phases: 1) motivational, in which the individual formulates an intention, 2) an action phase, aiming to fulfill a plan and consolidate new behaviors. Changes in health behaviors in the motivational phase depend on the individual's sense of self-efficacy. In the volitional phase, an important predictor of change is the goal, along with its related gratification [7,12].

The results of numerous empirical studies on health practices show that individuals who prefer healthy lifestyles are more extroverted, optimistic, have a greater sense of value, and attribute less importance to leaving their health to chance. Women, in contrast to men, are more likely to undertake health-promoting activities. There is also a tendency towards a greater degree of engaging in health behaviors in those with ill health, the elderly, and those residing in urban environments [7,15,16].

Life satisfaction

Well-being is an important element of health. In turn, an important component of subjective well-being

is life satisfaction – a sense of fulfillment relating to one's own achievements and living conditions – which promotes being active and coping with difficult situations. Life satisfaction is the result of comparing one's own life situation with one's own set standards. If the result of the comparison is satisfactory, the individual experiences satisfaction. Life satisfaction may be related to a broadly understood life goal, the fulfillment or the process of realization of which gives rise to satisfaction. It is a conscious, cognitive process of a holistic assessment of life. It involves the evaluation of life as a holistic and comprehensive project spread over time [17–19].

A relationship between life satisfaction and some personality traits was found. For instance, life satisfaction positively correlates with self-esteem and negatively correlates with the level of neuroticism and emotionality. Lower levels of life satisfaction also manifested in people who were physically ill. However, researchers note the lack of a relationship between life satisfaction and the degree of social approval. There were no statistically significant differences between genders and their environments [7,17,20].

Ambiguous research results regarding the relationship between life satisfaction and health behaviors was one of the reasons this subject was chosen [21,22].

AIM OF THE STUDY

The aim of the study is to examine health behaviors and life satisfaction, and to determine the relationship between these variables in health spa patients.

The following hypotheses were formulated:

- H1. There is a relationship between the patient's adoption of health behaviors and their sense of life satisfaction. It was predicted that individuals with a higher health behavior indicator experienced greater life satisfaction.
- H2. With age, the practice of health behaviors increases and life satisfaction decreases.
- H3. There are differences in the extent of adopting health behaviors between males and females. The assumption was that female patients would undertake health-promoting activities to a greater extent than male patients.

MATERIAL AND METHODS

Subject characteristics

The study focused on 123 people, ranging in age from 32.00–80.33 (59.54 ± 9.92) and included 63 women (60.60 ± 8.90) and 60 men (58.75 ± 10.79). These were all *Samodzielny Publiczny Zakład Opieki Zdrowotnej* (SPZOZ) patients of the Health Spa of the Ministry of the Interior in Krynica-Zdrój undergoing spa treatment or rehabilitation [1,2].

The vast majority of subjects (76%) resided in urban areas (mainly from medium-sized populations, i.e.

100-200,000). The remaining 24% lived in rural areas. Almost half of the subjects (47%) had completed higher education, 37% mid-school, 9% vocational and 7% primary school. 59% of the subjects were retired disability pensioners, while 41% were employed in a variety of vocations. Most subjects were married (72%), with 13% widowed, and 12% divorced. In 68% of subjects, monthly income per family member exceeded PLN 1,500. In 19% PLN was up to 1,000 and in 13% PLN was between 1,000 and 1,500. The subjective assessment of each individual's health (on a scale of 1-5) showed that 52.9% rated their health as satisfactory (3 points), 30.1% as good (4 points), and 1.6% as very good (5 points). Only 14.6% rated their health as unsatisfactory (2 points) and 0.8% as bad (1 point).

Research methodology and research tools

The research was carried out during 2016 and 2017 and was conducted on an individual basis. The Health Behavior Inventory (HBI), created by Juczyński, and the Polish Adaptation of the Satisfaction With Life Scale (SWLS), created by Diener, Emmons, Larsen, and Griffin, were used.

The Health Behavior Inventory contains 24 descriptors of health-related behaviors. Using a five-point scale, the subject measures how often they perform activities conducive to good health (from 1 – almost never to 5 – almost always). The numerical values were totaled to obtain an indicator of the intensity of an individual's practice of health behaviors. Its value ranged between 24-120 points. The higher the overall index, the greater the intensity of health behaviors reported. HBI allows calculation of results in four subscales related to four categories of health behaviors:

1. Healthy eating habits – considers the quality of food consumed (e.g. including whole wheat bread, vegetables and fruits, avoiding the consumption of salt, animal fats, sugar, and food with additives)
2. Preventive behaviors – refers to compliance with health recommendations, such as regular visits to doctors and obtaining information about health and illness
3. Positive psychological attitude – considers the presence of strong emotions, stress, tension, and depressive events
4. Health practices – includes daily habits like smoking, sleeping, recreation, and physical activity

For each scale (containing 6 statements), the subject received 6-30 points. Interpretation also included an indicator of the average number of points in a given category (i.e. the sum of points divided by 6).

The psychometric tool has satisfactory accuracy and reliability. The Cronbach α index for the whole test is 0.88, and for the subscales, it is within the range of 0.6-0.65 [7].

The Satisfaction With Life Scale (SWLS), created by Diener, Emmons, Larsen, and Griffin, contains 5 statements: 1) In many ways my life is close to ideal. 2) The

conditions of my life are perfect. 3) I am happy with my life. 4) In my life, I have achieved the most important things that I wanted. 5) If I could live my life again, I would not want to change anything.

On the basis of a 7-grade scale, the subject assesses the extent to which each statement relates to their current life and gives points based on the extent to which they agree with each statement (from 1 – I completely disagree to 7 – I completely agree). The result of the measurements is a general indicator of a sense of life satisfaction, ranging from 5-35 points. The higher its value, the greater the sense of life satisfaction.

The Polish adaptation of SWLS is characterized by psychometric properties: reliability and accuracy. The Cronbach α internal consistency ratio is 0.8 [7].

Statistical analysis was performed using the Statistica 12.0 PL program. Significance of differences between groups was verified using the Mann-Whitney U test. To determine the relationship between variables, Spearman's rank correlation was performed. For analysis, an admissible type I error $\alpha=0.05$; $p \leq 0.05$ was considered statistically significant.

RESULTS

Tab. I presents the results collected using the Health Behavior Inventory (HBI) and the Satisfaction With Life Scale (SWLS).

The general rate of health behaviors in the subjects was 88.10 ± 12.33 and was higher than that observed in the standard group of 30-50-year-olds (81.82 ± 14.16) and patients undergoing dialysis (83.45 ± 14.76) [7]. This shows a greater intensity of health behaviors reported in health spa patients, which is typical for ill and elderly people [23,24].

In the HBI subscales, the highest scores were obtained in the category of positive psychological attitude (3.77 ± 0.62) and the lowest scores in the health practices subscale (3.55 ± 0.60). However, these results are higher than those of the standardization group (3.52 ± 0.66 ; 3.32 ± 0.85). In their health behaviors, subjects focus most on avoiding stressful and depressing situations, and least on observing normal everyday habits like smoking, sleeping, recreation, and physical activity.

The overall rate of life satisfaction in health spa patients is 23.15 ± 5.54 , which is higher than the standardized group of 20-55-year-olds (20.37 ± 5.32).

In order to verify Hypothesis 1 (the relationship between the intensity of health behaviors of health spa patients and their sense of life satisfaction), Spearman's rank correlation analysis was carried out (tab. 2).

A significant positive correlation was found between the general indicators of health behaviors and the results from the Satisfaction With Life Scale (SWLS) ($r_s=0.401$; $p \leq 0.01$). Health spa patients with higher rates of health behaviors showed a greater sense of life satisfaction. This trend applies to all HBI subscales, with the overall SWLS score most strongly correlat-

Table 1. Research results collected using the Health Behavior Inventory (HBI) and the Satisfaction With Life Scale (SWLS)

		M	SD	Z	p
Women (n = 63)	Health behaviors–general indicator	90.49	10.88		
	Proper eating habits	3.87	0.66		
	Preventive behaviors	3.77	0.68		
	Positive mental attitude	3.85	0.55		
	Health practices	3.59	0.49		
	Life satisfaction	22.73	5.70		
Men (n = 60)	Health behaviors–general indicator	85.58	13.32		
	Proper eating habits	3.43	0.71		
	Preventive behaviors	3.61	0.67		
	Positive mental attitude	3.68	0.67		
	Health practices	3.51	0.69		
	Life satisfaction	23.58	5.38		
Total (n = 123)	Health behaviors–general indicator	88.10	12.33	1.914	0.056
	Proper eating habits	3.65	0.72	3.359***	0.001
	Preventive behaviors	3.69	0.68	1.595	0.111
	Positive mental attitude	3.77	0.62	1.222	0.222
	Health practices	3.55	0.60	0.495	0.620
	Life satisfaction	23.15	5.54	-0.596	0.551

n – sample size; M – arithmetic mean; SD – standard deviation; Z – value of Mann-Whitney U test statistic; p – level of significance
 *** p ≤ 0.001

Table 2. Health behaviors and life satisfaction

	Life satisfaction					
	Total (n = 123)		Women (n = 63)		Men (n = 60)	
	r_s	p	r_s	p	r_s	p
Health behaviors–general indicator	0.401***	0.000	0.420***	0.001	0.432***	0.001
Proper eating habits	0.197*	0.029	0.246	0.052	0.220	0.091
Preventive behaviors	0.278**	0.002	0.195	0.125	0.419***	0.001
Positive mental attitude	0.450***	0.000	0.481***	0.000	0.454***	0.000
Health practices	0.294***	0.001	0.273*	0.031	0.348**	0.006

n – sample size; r_s – Spearman’s rank correlation coefficient; p – level of significance
 * p ≤ 0.05; ** p ≤ 0.01; *** p ≤ 0.001

ing with a positive mental attitude (r_s = 0.450; p ≤ 001) and health practices (r = 0.294; p ≤ 001). Individuals who are most satisfied with their lives are those with a positive attitude and a higher rate of habitual health behaviors concerning smoking, sleep, recreation, and physical activity.

Hypothesis 2, which measured the dependence between the variables studied (i.e. intensity of health behaviors and the level of life satisfaction) and the age of health spa patients is reflected in tab. 3I. The correlation coefficient r_s = 0.204; p ≤ 0.05 indicates that the frequency of health behaviors increases with age. This applies mainly to health-promoting practices (r_s = 0.318; p ≤ 0.001) and preventive behaviors (r_s = 0.258; p ≤ 0.01). With age, patients attached greater importance to everyday habits like sleep, recreation, and physical activity. They also limited smoking, controlled their body weight, followed health recommendations and had more

frequent regular medical appointments, and acquired medical information from various sources.

However, no significant negative correlation between age and life satisfaction was found and therefore, it may be concluded that age is not a predictor of life satisfaction. On the other hand, research showed that the patient’s sense of satisfaction positively correlated with their subjective assessment of health (r_s = 0,324; p ≤ 0.001). The higher the subjective assessment of their health, the greater their life satisfaction.

Interesting data are provided by the comparison of the female group with the male group (verification of Hypothesis 3). The analysis of data collected using the Inventory of Health Behaviors (HBI) (tab. 1), indicates women obtained a higher HBI (90.49 ± 10.88) compared with men (85.58 ± 13.32). The value of the Mann-Whitney U test, although statistically insignificant (Z = 1.914; p = 0.056), seems noteworthy. There

Table 3. Health behaviors and life satisfaction of health spa patients

	Life satisfaction					
	Total (n = 123)		Women (n = 63)		Men (n = 60)	
	r_s	p	r_s	p	r_s	p
Health behaviors-general indicator	0.204*	0.023	0.025	0.844	0.355**	0.005
Proper eating habits	0.039	0.672	-0.177	0.166	0.231	0.075
Preventive behaviors	0.258**	0.004	0.149	0.243	0.378**	0.003
Positive mental attitude	0.067	0.461	-0.057	0.660	0.165	0.208
Health practices	0.318***	0.000	0.219	0.085	0.377**	0.003
Life satisfaction	0.099	0.275	-0.013	0.921	0.228	0.080

n – sample size; r_s – Spearman's rank correlation coefficient; p – level of significance
* $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

is a tendency toward greater health-oriented activity in women. The results indicate a significant difference in the range of healthy eating habits ($Z = 3.359$; $p \leq 0.001$). Females achieved a higher result (3.87 ± 0.66) than males (3.43 ± 0.71). Male representatives paid less attention to the type of food consumed.

The increase in health behaviors with age (tab. 3) applies mainly to males ($r_s = 355$; $p \leq 0.01$). With age the frequency of preventive behaviors ($r_s = 378$; $p \leq 0.01$) and health practices ($r = 377$; $p \leq 0.01$) in males increases.

In males, an interesting relationship not found in women was also observed between the level of life satisfaction and the intensity of preventive behaviors (tab. 2). Spearman's rank correlation coefficient $r_s = 0.419$ was significant at $p \leq 0.001$. Patients with a greater sense of life satisfaction followed health recommendations more often, attended regular medical appointments, and searched for information related to health and illness.

In summary, Hypothesis 3, regarding the differences in the prevalence of health behaviors between males and females, has been positively verified.

DISCUSSION

The results in HBI subscales correspond with studies by Zadworna-Cieślak and Ogińska-Bulik [23] conducted in an elderly population. The subjects, both those who were healthy and those with ill health, according to the Health Behavior Inventory, obtained the highest scores in the positive psychological attitude subscale. This dimension positively correlated with mental optimism which is a feature recognized by the authors as being conducive to "healthy/positive aging."

Our results, confirming Hypothesis 1, concur with those from the study by Młynarska. The author showed that an important predictor of health behaviors in people over 65 is their level of life satisfaction. It was observed that the higher the life satisfaction ratio of SWLS, the higher the level of health behaviors of the HBI declared by subjects [22].

Similarly, Grant et al. [25] conducted research among students aged 17–30 from 21 European and Asian coun-

tries and found a positive two-way relationship between life satisfaction and health behaviors such as physical exercise, not smoking, use of sun protection, increased fruit intake, and limited fat intake.

The observed relationships between higher levels of health behaviors and health spa patients' ages are consistent with previous research in this area [7,15,26].

The research results are confirmation of the conclusions formulated by the authors of the Satisfaction With Life Scale test: In general, age and gender have no relationship with the SWLS index, but a sense of life satisfaction has a significant correlation with physical health [7,17].

Timoszyk-Tomczak and Bugajska [27], who researched individuals in late adulthood, came to similar conclusions. They found no connection between life satisfaction and age. The comparative analysis carried out among 60-, 70-, and 80-year-olds, both men and women, did not reveal any significant differences between the groups.

The differences in the prevalence of health behaviors of women and men was indicated by Zadworna-Cieślak and Ogińska-Bulik. They stated that gender is associated with the intensity of the practice of health behaviors in the elderly population. Females obtained higher results in the Health Behavior Inventory compared with men, especially relating to eating habits and preventive behaviors [23].

Arendt et al. [28] examined males aged between 40 and 82 years and found they achieved a lower overall HBI rate compared to the standardized group. The highest results were found in the scale of positive mental attitudes, and the lowest in eating habits.

Szkup et al. [24] found that the results from tests carried out on patients who qualified for cardiovascular surgery showed that healthy eating habits in the female group were greater than in the male group.

Thus, it may be concluded that men, regardless of their age and health, look after their health less than women. This may be related to socially-functioning gender stereotypes requiring women to be more health-oriented, while riskier behaviors are attributed to men. Due to the lower average life expectancy in males, it

seems advisable to carry out preventive interventions adapted to gender, by intensifying health awareness in men [23,29].

When examining health behaviors of health spa patients and their satisfaction with life as an accurate measure of well-being (subjective well-being reflecting health), it should be noted with optimism that health spa patients have a greater frequency of health behaviors and a higher level of satisfaction with life in comparison to the control groups. Particularly noteworthy is the positive correlation between the variables studied. Health spa patients with higher rates of health behaviors have a greater sense of life satisfaction.

Something positive to note is also the increasing frequency of health behaviors with age, mainly health practices and preventive behaviors, which require a lot of effort on the part of patients (mental change, regularity, persistence, self-discipline, etc.). They are some of the most desirable effects of health education playing a key role in maintaining and strengthening individuals' health.

The research presented here has some limitations. The selection of the respondents was not random, but purposeful. The data collection involved self-reported techniques which may be subjective and based on the measurement of stated behaviors, rather than direct observations. The statistical analyses carried out do not explicitly verify the conclusion that cause and effect relationships exist. Nevertheless, this research may be

a useful contribution to the study of behavioral determinants of health and illness.

CONCLUSIONS

This study shows that life satisfaction is not related to age, but to health-oriented activity and additionally to the subjective assessment of health. Therefore, sources of satisfaction in older people's lives can be both health-promoting activities and a positive assessment of their health condition.

However, differences between men and women regarding the frequency of health behaviors require attention and in-depth reflection. The lower overall rate of health behaviors and lower scores with respect to healthy eating habits in male patients are worrying in the context of the lower average lifespans of men.

Our research results can be used to design health education programs in health spas. A health education program should aim to not only develop health awareness, but also to develop positive psychological factors, such as a sense of life satisfaction, which may strengthen patients' beliefs in pro-health activities. Program content should take into account both the age and sex of patients, emphasize the importance of health practices and preventive behavior in younger patients, and motivate male patients to intensify their practice of healthy behaviors, with particular emphasis on the principles of proper nutrition.

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