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Health activity in the context of the sense of coherence and self-esteem of participants of specialised training

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Abstract

What can be observed is a growing awareness of personal care about one's own health and increased physical activity. It influenced by numerous external and internal factors, analysed by researchers of Exercise Psychology. Self-esteem and sense of coherence are some of the most significant factors.

Aim: Our study comprised 41 participants of specialised health training 2015–16: diagnosing chosen psychological determinants of participation in this type of activity. Health behaviours of the participants were analysed in the context of the psychological variable of the sense of coherence and sel-esteem.

*Methods***:** health training, questionnaires**:** IZZ, SOC-29, SES, Survey

*Results***:** Training participants more frequently declared taking up diverse health behaviours. Comparing the group of training participants with non-training persons we found statistically

significant differences in the general level of intensification of health behaviours (t-Student 3,06***) and in sub-scales: Active relaxation in the open (2,69*) and Improvement of fitness by sport (4,23**). The persons with higher self-esteem declared using a significantly higher number of diverse health behaviours (0,62***). The training participants with higher sense of meaningfulness and sense of comprehensibility significantly more frequently declared taking up health activity (r=0,32*).

Keywords: health activity, sense of coherence, self-esteem, health training, exercise psychology

Introduction

Human daily activities and behaviours are affected by a number of factors. The biopsychosocial model of human functioning shows the importance of each of the domains included in it. Psychological factors, particularly the motivational ones, based on the process of seeing oneself and one's possibilities to act, play a crucial role for personal engagement in specific activities. *Individual activity* based on self-control is closely associated with the regulatory nature of cognitive and personal traits of an individual. This also relates to health-related behaviours, which remain under the modifying influence of psychological factors, such as self-belief, including *self-esteem and the sense of coherence* [1,2]. Developed in individual life, they are subject to modification based on knowledge and new social experiences. Support in this regard is offered by education at every stage of life and a wide access to relevant expertise. There is a growing awareness in society about the importance of personal contribution to one's health, development of healthy habits and health-promoting lifestyle [3,4,2], and improvement of one's quality of life, although this awareness still seems to be insufficient.

Global statistics show that although the level of physical activity is diverse, it is also too low (regardless of age) [5]. For example, in the USA, only one out of three people aged 67–74 is physically active, and only one out of four, at the age of 75 or older [6]. According to a Polish study from 2008, as many as 55% of Polish population reported no physical activity. Data from 2013 indicate a further growth by 4% [7]. Furthermore, the forecast for 2030 predicts the proportion of inactive population among adults to grow up to 63% [8,9]. There is, therefore, a strong need for intensifying efforts towards the improvement of knowledge and health, successful ageing and better quality of life of that group of society.

Self-esteem (evaluation of oneself in different degrees of generalisation) is indicated to be one of the cognitive and personal conditions of physical activity. The so-called global self-

esteem is a relatively constant disposition understood as a conscious attitude (whether positive or negative) towards the self. This is a manner in which individuals think of themselves, the attitude they have towards themselves, consequently impacting on their general mood, emotions and approach to the tasks they face. Self-esteem is subject to development and modification in the course of both individual and daily social experiences [10].

The level of self-esteem is manifested by individual's daily functioning. It plays a vital role by contributing to the accomplishment of the individual's significant aims. Global self-esteem affects partial evaluations and emotions related to self-judgement, particularly the specific assessment of one's fitness. Self-esteem may perform the function of a motive used for self-enhancement – a pursuit of a favourable self-image, defending and retaining a good opinion of oneself [11], or self-verification, self-knowledge and self-repair [12]. Individuals of high self-esteem are more extroverted than those with low self-esteem, and more action-oriented and prone to challenges [13]. They are marked with internal locus of control and a stronger belief in their self-efficacy [10]. High self-esteem is conducive to health and resistance; low self-esteem – even with positive experiences – is more often concomitant with high disease incidence and lower resistance [14,15]. In the event of failure or other stressful situation, people with high self-esteem have more resources at their disposal to help them overcome the difficulties. People with low self-esteem, on the other hand, are exposed to higher emotional costs. In face of trouble, they tend to fall into depression, react inadequately, and experience somatic or psychological distress.

Goal-oriented-functioning of an individual is very much affected by how they perceive themselves; people with strong self-esteem are more engaged in a specific activity and achieve more measurable effects [13,16]. Individuals with high self-esteem are characterised by internal locus of control of events, which also fosters the accomplishment of goals [17]. High self-esteem increases a subjective likelihood of success, which encourages higher 'investments' in the means leading to a given objective, and these make the achievement of that objective more likely, while further boosting self-esteem. Individuals with high self-esteem are less likely to withdraw from pursuing their objective when confronted with a risk or difficulty, and even tend to increase their efforts in such a case [18] (see herein regularity, attendance). One of our study goals is to observe whether the level of self-esteem promotes participation in a specialised health training.

A particular role in taking care of one's health and daily health activity is played by **the sense of coherence**. It is a generalised, long lasting way of seeing the world and one's life in it, a kind of life orientation that *develops in the course of individual life*. It is one of generalised resistance resources necessary for effective copying with stress and staying healthy [19]. It expresses itself by meaningfulness estimated by emotional relation to stimuli encountered by an individual. A belief that it is worthwhile to engage in or struggle for something. Resources help cope with stress, facilitate the development and activation of appropriate strategies of action. A higher sense of coherence is associated with a better ability to deal with stress. The stronger the sense of coherence, the more likely it is for an individual to be in a good mood and health [20], and to consider new situations as challenges.

Consistence and cohesiveness of life experiences, as well as the lack of any particularly turbulent and unexpected life events, foster the sense of comprehensibility and predictability. Not unlike self-image, it is conditioned by personal experience collected over the lifespan [21]. The sense of coherence consists of three components: perceiving external and internal stimuli as well understood (*sense of comprehensibility*); treating life experiences and events as a sort of challenge that an individual can overcome either on their own or with the assistance of others as they realise to have adequate resources to be effectively utilised (*sense of manageability*); and the conviction that engaging one's efforts in the process of coping with a situation is meaningful – a factor that motivates the individual to act while taking account of the processes of perceiving the world, other people and one's own capabilities, as well as one's emotional attitude toward them (*sense of meaningfulness*). A high sense of coherence in all the dimensions diagnosed allows to presume that the individual has a stable model of world perception. Effective dealing with an issue depends on the sense of coherence as a whole. Social environment and sociohistorical conditions have a bearing on the development of the sense of coherence, as they determine the extent of available resources in terms of resistance, emotion and cognition, and provide prototypical experience models. Persons characterised by a strong sense of coherence in highly stressful situations trigger various resistance, cognitive and emotional resources to protect themselves against the harmful impacts of stressors. Individuals who are less neurotic, more extrovert and agreeable present a significantly higher sense of coherence, have more trust in themselves, and are more confident, cheerful and better adapted to tough requirements of life [19,21]. In his proposed conception of disease and health, Antonovsky accepts an individual responsibility for one's own health, which is manifested in the lifestyle and health behaviours. Strong/High sense of self-coherence is concurrent with an

active subjective approach to one's health, internal attribution of causes of health and health-promoting activities [19].

Self-esteem and the sense of coherence are elements of self-concept that perform a significant function for goal-oriented functioning. Studies in the field of Psychology of Exercise confirm the impact of psychological conditions on taking up exercise and other physical activity [22]. Appropriate physical training, taken regardless of participants' age, may induce specific adaptive changes in the mind and body[23]. It may also help combat lifestyle diseases [24]. A feedback effect is observed alongside the impact of psychological conditions on the level of physical exercise. It consists of changes in the psychophysical functioning in regular exercisers: in physical, motor, cognitive, emotional and social spheres. The outcomes observed include improvement of mood, lover levels of anxiety and stress, satisfaction with one's activity [7,22].

Favourable developments were observed in patients at different ages, suffering from a variety of different conditions, including cardiac problems, post-traumatic stress, Alzheimer's disease, fibromyalgia, and even cancer. Elderly people were found to show improvement in verbal memory and recollection of facts [25]. Individuals who take exercise were characterised by less frequent absence from work due to sickness and higher awareness of health promoting activities [26]. Women were observed to exhibit higher levels of self-acceptance. Exercisers became betters leaders, who were also more effective, consistent and showed more initiative [27]). Adults and people in late adulthood are more prone to disease and injuries, their general fitness becoming lower. By taking actions that prevent or reduce age-related health problems, they receive a chance to experience a better quality of life [2].

One of many forms of support, active care and improvement of health and fitness is participation in health training. Health promoting activity involving participation in specialised training is a kind of self-investment. Training is assumed to help participants return to a better fitness and mood by improving the condition of their bodies and spirits. Invitation to participate in health training is directed to an ever increasing number of people who complain, for instance, about many backbone problems. These often occur as a side effect of a sedentary lifestyle, long lasting work in unhealthy conditions or changes that come with the body ageing process [2].

The aim of our study is to assess possible relationships between self-esteem, level of the sense of coherence and life promoting activity in the form of a health training.

One of the aims of this study was to observe if and how psychological structures support regular physical activity.

In this context, several study questions were posed:

Are individuals regularly participating in health trainings characterised by higher self-esteem than non-participants?

Are individuals regularly participating in health trainings characterised by higher sense of coherence than non-participants?

Do these individuals activate more health-promoting behaviours with higher levels of self-esteem and sense of coherence?

Material and methods

Subjects

The study involved 41 participants of a specialised health training 2015–16 (aged 35–72) and 40 individuals (control group of the same age) who did not engage in any physical activity.

One of our research aims was to assess the relation between selected psychological conditions and regular participation in training and health-related behaviours.

Methods:

1. **The Rosenberg Self-Esteem Scale (SES)** [10]

The SES Questionnaire enables diagnosing global self-esteem. Self-esteem – a synonym for a conscious attitude towards the self and emotions connected with the self and cognitive judgements of the self. It is like a subjective evaluation based on perception and self-esteem. Rosenberg treats self-esteem as a feature or disposition relatively stable in time. As a global assessment, however, it can undergo changes in a shorter or longer perspective [10].

The scale consists of 10 statements subjects respond to in order to express their opinions. Responses are provided on a scale of 1–4 points (1 – *I definitely agree*, 2 – *I agree*, 3 – *I disagree*, 4 – *I definitely disagree*).

2. **Self-assessment questionnaire (MSEI)**

Scale of self-esteem understood as evaluative component of the self rates global self-esteem and its particular aspects: Global self-esteem, Competences, Being loved, Popularity,

Leadership abilities, Self-control, Moral self-acceptance, Physical attractiveness, Vitality, Identity integration, Defensive enhancement of self-assessment.

A high score on the global self-esteem scale proves the subjects to have a high opinion of themselves, are getting on well, are confident and optimistic about their future, and think of themselves as an important and significant person.

The scale consists of 116 statements subjects respond to in order to express their opinions. Responses are provided on a scale of 1–5 points.

3. **Sense of coherence scale – SOC-29** [20]

Antonovsky's Orientation to Life Questionnaire to measure the sense of coherence defined as "generalised emotional and cognitive way of looking at the world that allows a human to perceive and receive the surrounding phenomena as comprehensible, manageable and meaningful. A high sense of coherence causes an individual to have a better capability of dealing with stressors" [19]. The questionnaire consists of three components: sense of comprehensibility, sense of manageability, and sense of meaningfulness.

4. **IZZ -** questionnaire IZZ of pro-health behaviours by [1],

which comprises several groups of behaviours promoting health: taking advantage of the methods of non-conventional medicine, medical behaviours, active relaxation in the open, dietary behaviours, abstaining from smoking and other stimulants, and sports. The examined persons fill in a seven levels scale on which they answer the question about the degree to which they engage in any of these activities.

5. **Health training -** was planned for women aged 35–70 years. The inclusion criteria were the lack of absolute contraindications to physical exercise, such as: permanent injuries, pathological body posture disorders that hinder correct body positioning during exercise, diagnosed cardiovascular and respiratory diseases that require ambulatory and pharmacological treatment, or post-surgery conditions. On enrolment, the participating women presented medical certificates confirming the lack of contraindications to participate in the health training. The main goal of the training: improving physical fitness and mood, the spinal condition, resilience, and efficiency of exercise; improving balance; increasing the range of mobility in joints; and changing body composition in favour of active tissue.

Results

Level of self-esteem based on Rosenberg's Self-Esteem Scale (SES) in groups was found to be mean to high (Table 1.)

Table. 1. SES: mean values for training participants and non-participants

	M	SD	Minimum	Maximum	Range
Training participants (n=41)					
SES	32.00	3.64	25.00	40.00	10-40
Non-participants (n=40)					
SES	29.93	4.13	19.00	39.00	10-40

We found statistically significant differences in the self-esteem level between participants and non-participants (t=2.31; p=0.02). Training participants demonstrated a higher level of self-assessment than in non-participants.

The level of self-esteem based on the MSEI scale also showed mean to high values (Table 2).

Table 2. General and specific self-esteem in MSEI

MSEI	M	SD	Minimum	Maximum	Range
Global self-esteem	33.67	6.22	18.00	44.00	10-50
Competences	33.68	5.10	24.00	44.00	10-50
Being loved	39.00	5.75	23.00	48.00	10-50
Popularity	34.76	4.13	22.00	42.00	10-50
Leadership	32.70	5.03	22.00	43.00	10-50
Self-control	32.65	5.34	21.00	43.00	10-50
Moral self-concept	41.97	4.14	30.00	48.00	10-50
Physical activity	32.35	5.36	18.00	40.00	10-50
Vitality	34.03	7.08	19.00	49.00	10-50
Identity integration	34.56	5.38	23.00	46.00	10-50
Defensive strengthening of self-esteem	54.97	7.14	42.00	70.00	16-80

No control group results were obtained for that scale. Training participants' scores fell within the mean to high range, with the highest levels in the following sub-scales: moral self-acceptance, popularity, being loved and identity integration. Training participants viewed themselves as self-satisfied, open and positively perceived by others, active, and conscious of themselves and their objectives.

Participants' sense of coherence (SOC-29)

Mean scores for general sense of coherence and the sense of comprehensibility, sense of manageability and sense of meaningfulness sub-scales obtained by the training participants assumed average to high values. Analysis by Student's *t*-test revealed statistical differences between the groups in terms of general sense of coherence and sense of comprehensibility. Individuals who perceived themselves as more coherent also found external situations more comprehensible; they held more resources to achieve their objectives, which were also more meaningful for them. Training participants scored significantly higher on the above mentioned scales than non-participants.

Table 3. Comparison of the sense of coherence for the general score and particular sub-groups (SOC-29) between the training participant and non-participant groups: difference analysis

	Training participants n=41		Non-participants n=40		Student's *t*-test	
SOC-29	**M**	**SD**	**M**	**SD**	**t**	**p**
General sense of coherence	137.14	16.58	127.90	22.83	2.11	0.04*
comprehensibility	48.12	8.75	40.65	10.12	3.58	0.00*
manageability	49.43	5.55	47.33	7.66	1.43	0.16
meaningfulness	39.60	5.71	39.93	7.96	-0.22	0.83

*p<0.05; ***p<0.001

Statistically significant differences in the general sense of coherence and sense of clarity (*t*=3.58; *p*=0.000).

Participants' health behaviour (IZZ)

Table 4. Comparison of health behaviours (IZZ) between the training participant and non-participant groups: difference analysis

	Training participants n=41		Non-participants n=40		Student's *t*-test	
	M	**SD**	**M**	**SD**	**t**	**p**
IZZ	121.49	22.59	106.50	21.42	3.06	0.00*
PMN	12.41	5.84	10.33	5.38	1.67	0.10
ZM	15.93	4.24	16.05	4.19	-0.13	0.90
AWWP	26.32	6.80	22.30	6.65	2.69	0.01*
ZŻ	21.10	6.61	19.15	6.52	1.33	0.19
NU	15.07	6.60	13.58	7.00	0.99	0.32
UKFPS	11.95	4.61	7.53	4.81	4.23	0.00*

*p<0.05; ***p<0.001

Note: *IZZ* – Pro-health behaviours; *PMN* – Practices of non-conventional medicine; *ZM* – Medical behaviours; *AWWP* – Active relaxation in the open; *ZŻ* – Nutrition behaviours; *NU* – Abstaining from the use of stimulants; *UKFPS* – Improving physical fitness through sports.

The training participants reported a higher frequency of diverse health promoting activities than did non-participants. These comprised mainly: active relaxation, nutrition behaviours, and various sports. Individuals from the non-participant group used medical assistance more often than did the training participants. Statistically significant differences were observed in the sub-scales of Active relaxation in the open and Improving physical fitness through sports. Training participants reported to have engaged in more health behaviours in those areas.

Table 5. Correlations between global self-esteem (SES) and Health behaviour scores

Training group (n=41)

	PMN	ZM	AWWP	ZŻ	NU	UKFPS	IZZ
SES	0.36*	0.47**	0.39*	0.49**	0.32	0.25	0.62*

*p<0.05; **p<0.01; ***p<0.001

We found a high correlation between self-assessment and the general intensity of health behaviours (r=0.62; p<0.001); and a positive correlation between self-assessment and several sub-scales, namely, Practices of non-conventional medicine (r=0.36; p=0.04), Medical behaviours (r=0.47; p<0.01), Active relaxation in the open (r=0.39; p=0.02), and Nutrition behaviours (r=0.49; p<0.01). No significant correlations were found in the non-participant group.

Furthermore, we noted positive correlations between results in the sub-scale of Vitality MSEI and the general index of health behaviours (r=0.40; p=0.02) as well as the sub-scales of Active relaxation in the open (r=0.047; p=0.001) and Improving physical fitness through sports (r=0.60; p<0.001). No statistically significant correlations were found for the other MSEI sub-scales.

Health behaviour and sense of coherence scores showed that: group of participants – sense of meaningfulness and general intensity of health behaviours (r=0.32; p=0.04); group of non-participants – sense of clarity and strengthening physical fitness (r=0.31; p=0.04); negative

correlation between the sense of meaningfulness and practices of non-conventional medicine (r= -0.34; p=0.03); training group (n=39).

Sense of coherence and self-esteem (MSEI) questionnaire results:

Table 6. Correlations between general and particular self-esteem levels and the sense of coherence

	General sense of coherence	Comprehensibility	Manageability	Meaningfulness
OS	0.50**	0.36*	0.50*	0.41*
F	0.58*	0.38*	0.59*	0.54*
BK	0.47**	0.26	0.50**	0.49*
T	0.36**	0.26	0.42*	0.26
BM	0.53*	0.48**	0.41*	0.41*
5	0.24	0.31	0.13	0.11
SM	0.37*	0.20	0.32	0.46**
AF	0.55*	0.37*	0.57*	0.48**
W	0.21	0.10	0.31	0.14
IT	0.63*	0.65*	0.45**	0.41*
OWS	0.12	0.21	-0.02	0.06

*p<0.05; **p<0.01; ***p<0.001

A significant positive correlation was found between the general sense of coherence and all the MSEI sub-classes, except Self-control, Vitality and Defensive strengthening of self-esteem. The sense of comprehensibility positively correlated with Global self-esteem, Competences, Leadership, Physical attractiveness and Identity integrity. The sense of manageability positively correlates with all the sub-classes, except Self-control, Moral self-acceptance and Defensive strengthening of self-esteem. The sense of meaningfulness

positively correlates with all the MSEI sub-classes, except for Popularity, Self-control, Vitality and Defensive strengthening of self-esteem.

Discussion

Self-esteem plays an important role for individual's mental health. High and medium self-esteem scores obtained by our subjects suggest that they perform better in daily life: they are more active and satisfied, and have a positive approach to the world around and other people. They perceive themselves as more vital, active, and full of energy, which they can generate themselves through their activity; they are also satisfied with their physicality (scores in the Vitality sub-scale of the MSEI test). This is consistent with the BMI and bodily self-measurement results in the training participant group [2] as well as other studies in that area showing that high self-esteem is undoubtedly correlated with improved mental condition: satisfaction, optimism, and activity [22,28]. The assessment of training participants' self-esteem shows medium and high levels, which are significantly higher than in non-participants. As the self-esteem level was measured at the beginning of the training, it may be assumed that exercise is taken by individuals of higher self-esteem. Indeed, social experiences, profits from regular exercise have a positive impact on self-perception [22,2,29]. Self-esteem is also significantly correlated with positive orientation towards muscle-building activities; significant gender-specific differences are observed in this regard ($p<0.001$), although women tend to be less often guided by that kind of motivation [30]. Our training was attended mostly by women (96%), many of whom declared to want to improve their external appearance, apart from fitness and health improvements. The study by Pańczyk showed that women are less eager to engage in regular physical activity. A change in that tendency is being observed, with more physical activity noted among women [2]. Self-esteem levels should be diagnosed at the end of the annual training period to see whether self-esteem is boosted even further.

The sense of coherence scores, which demonstrated higher comprehensibility and meaningfulness of personal activity (including health-oriented activity), corroborate the above statement. Those individuals showed to be consciously and more regularly engaged in other behaviours aimed to improve health, as confirmed by results of the health behaviour questionnaire, thus improving their resilience, health and daily functioning. This finding is supported by results of prior research into similar aspects [26,25,22]. Individuals who do not take up physical activity are considerable less engaged in performing specific health promoting behaviours, are less satisfied with their health status, and seek medical assistance more often.

The scores obtained confirm the relevance of self-esteem and the sense of coherence as elements of self-belief affecting individuals' goal-oriented activity, including in the area of health and health promoting behaviours. Participation in training also becomes an opportunity to establish social contacts, and socialise with other people. Training participants have more positive interpersonal relations, and are more satisfied with their lives [27,2].

Conclusion

The scores obtained confirm the important impact that the level of self-esteem and sense of coherence have, as elements of self-belief, on individuals' goal-oriented activity, also in the area of health and health promoting behaviours.

It is justified to assume that individuals who join similar trainings have specific needs, but also specific personality traits, such as: they more resourceful, determined, and conscious of the goals they want to achieve. The study group, however, is not numerous and diverse enough to warrant any definite conclusions.

Analyzing the finding about the level of self-esteem, comprehensibility and meaningfulness in the training participants as a component of the sense of coherence, it is worth considering if and how those components can be affected in other (non-active) people. How to reach them, how to 'get across' to their cognitive representations to affect their motivation and activity, to make them take the effort of physical activity for the benefit of their own health? Clearly, one of possible ways is to effectively raise their awareness and show them the importance of taking responsibility for their lives. It is also about showing them their personal resources that must be activated and explaining why such actions are meaningful. Specific EXAMPLES of significant people who are important for various social groups may also prove a useful tool.

Increasing personal awareness and responsibility for health is additionally essential because a whole range of health behaviours support physical therapeutic and fitness enhancement activities, while improving the possibilities of daily functioning and quality of life.

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