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ARE GENERALIZED RESISTANCE RESOURCES (GRRs) ASSOCIATED WITH FEAR OF MOVEMENT LEVEL?

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SUMMARY

The generalized resistance resources (GRR) are defined as any characteristic of a person, primary group, subculture or society that is able to facilitate effective tension management. The attainment of a strength sense of coherence is dependent on the presence of GRR. A strong SOC is associated with good health condition. In this context, investigation whether sense of coherence is associated with fear of movement seems essential. The purpose of the study was to identife the role of sense of coherence in management of kinesiophobia (fear of movement) level. 115 participants with diagnosis of cardiovascular diseases in age of 40 - 84 years were examined. In this study sociometric techniques were used - Polish versions of the questionnaires: Sense of Coherence Scale (SOC-29), Kinesiophobia Causes Scale (KCS), and Baecke Habitual Physical Activity (HPA). Mean values obtained in SOC-29 were as follows: male: 132,59 ± 27,61 vs female: 120,76 ± 16,27; p=0,046. Overall KCS score was 45,88 ± 13,23 in case of males and 48,05 ± 15,61 in case of female (p=0,315). Correlations between SOC and its components with biological domain (-0,32<r<-0,57, p<0,05), psychological domain (-0,30<r<-0,68, p<0,05) and overall KCS score (-0,31<r<-0,66, p<0,05) were found. Summarize, its conclude that strong sense of coherence is associated with low kinesiophobia level.

Key words: sense of coherence, SOC, SOC-29, kinesiophobia, fear of movement, cardiac patients.

INTRODUCTION

The Sense of Coherence is a theoretical formulation that provides a central explanation for the role of stress in human functioning. The salutogenic model theorized by Aaron Antonovsky looks at how health is restored, maintained, and promoted. This concept consists of a coping ability termed "coping resources" and is based on the following assumptions. First of all, in the face of stressors and the resultant strain, SOC tries to cope by mobilizing generalized resistance resources. Next, the success or failure of this coping affects health, with successful coping producing positive effects on health. Finally, the success or failure of coping depends on the richness of coping resources and the strength of SOC [1-5].

The attainment of a full strength SOC is dependent on the presence of generalized resistance resources, at least during the developmental process. These generalized resources are defined as any characteristic of a person, primary group, subculture or society that is able to facilitate effective tension management. Generalized resistance resources include any physical (genetic strength, immunologic features), cognitive and emotional (ego identity, knowledge-intelligence, self-esteem, cultural capital, traditions) and valuative-attitudinal (coping strategies) features that maintain good health [1,2,6]. Generalized resource deficits will cause the coping mechanisms to fail whenever the sense of coherence is not robust to weather the current situation. This causes illness and possibly even death. However, if the sense of coherence is high, a stressor will not necessarily be harmful. But it is the balance between generalized resource deficits and resources that determines whether a factor will be pathogenic, neutral, or salutary [1-3, 7].

A strong SOC is associated with good health, especially mental health and quality of life [8,9]. Properly physical activity level is perceived as a factor that allow maintain good health. In this context, investigation whether sense of coherence is associated with fear of movement seems essential.

PURPOSE OF THE STUDY

Identifying the role of sense of coherence in management of kinesiophobia (fear of movement) level. The study had following hypotheses:

1. There are gender differences on SOC and kinesiophobia level, where males score higher than females across groups.
2. SOC is negatively associated with kinesiophobia level (higher SOC lower fear of movement)

MATERIAL AND METHODS

Participants

115 participants were examined in age of 40 - 84 years: 50 females (mean age = 63,46, SD = 11,19)

and 65 males (mean age = 64,65; SD = 10,59). Patients with confirmed diagnosis of cardiovascular diseases such as myocardial infarction, ischaemic heart disease, coronary artery disease and atherosclerosis, undergoing cardiac treatment in Upper Silesia Medical Centre them. prof. Leszek Giec in Katowice.

Methods

In this study sociometric techniques were used - Polish versions of the questionnaires: Sense of Coherence Scale (SOC-29) [1,10], Kinesiophobia Causes Scale (KCS) [11] and Habitual Physical Activity [12] supplemented by demographic survey. Informed consent, and questionnaires were voluntarily completed by patients. The survey process took approximately 30 minutes. Instruments were administered anonymously and all questionnaires were maintained in a protected location.

Measures

Sense of Coherence Scale (SOC-29) scale was developed by Antonovsky's and has three components: Comprehensibility, Manageability and Meaningfulness. The respondents are requested to mark their response to each item on a 7-point. Examples of the start and end points of the items are from: ‘‘very seldom or never’’ to ‘‘very often’’ and from ‘‘never happened’’ to ‘‘always happened’’. The scores range from 13 to 91 points and higher score indicates stronger SOC [1,10].

Kinesiophobia Causes Scale (KCS) is used to diagnose and identify the causes of motor passivity. The questionnaire consist of 20 closed questions, assessed in a range from 0 to 100 – a higher score indicating a higher fear of movement. Kinesiophobia factors are grouped into two domains. The biological domain (BD) is an average of values of: morphological parameters, an individual need for stimulation, energetic resources, the power of biological drives. The psychological domain (PD) is an average of values of: self-acceptance, self-assessment of motor predispositions, the state of mind and susceptibility to social influence. The total score of kinesiophobia (KCS) is an average value of BD and PD [11].

Habitual Physical Activity questionanire (HPA) Baecke’s questionnaire includes 16 questions comprehending three HPA scores from the past 12 months: 1) occupational physical activities score (8 questions); 2) physical exercises in leisure (PEL) score (4 questions); 3) leisure physical activity. Sum of three components create overall physical activity score. Higher score reflects higher physical activity level [12].

Demographic survey contained data about gender, age and education level.

Statistical analysis

All statistical analyses were conducted by using STATISTICA (StatSoft) software, version 10.0. Descriptive statistics were performed for quantitative (continuous) variables by calculating mean and standard deviations of mean. Comparison were performed using t-student test. Pearson's correlation coefficient was calculated to investigate relationship between analysed variables. The significance level was set at a P value of less than 0,05.

RESULTS

Descriptive statistics obtained in SOC-29 scale and KCS scale are presented in Table 1 and Table 2, respectively. Overall physical activity level obtained in Baecke questionnaire were 4,04 ± 0,96 in females and 4,01 ± 1,07 in males, with no significant differences between groups (p>0,05).

Table 1. SOC-29: descriptive statistics and level of differences

Components of SOC	**males**		**females**		**P value**
	Mean	SD	Mean	SD	
comprehensibility	46,41	11,25	42,97	7,76	0,022
manageability	42,29	9,05	38,50	6,88	0,014
meaningfulness	43,90	11,19	39,29	8,07	0,012
SOC-29	132,59	27,61	120,76	16,27	**0,046***

Table 2. KCS: descriptive statistics and level of differences

Domains and causes of kinesiophobia	**males**		**females**		**P value**
	Mean	SD	Mean	SD	
morphologic parameters	27,04	12,04	29,78	28,37	0,789
individual need for stimulation	49,66	16,31	46,57	19,9	0,353
energetic resources	44,77	23,85	48,65	27,42	0,511
power of biological drives	44,90	24,86	42,28	20,87	0,752
Biological Domain [BD]	41,59	14,22	41,82	15,87	0,802
self-acceptance	32,60	20,07	42,16	27,37	**0,009***
self-assessment of motor predispositions	49,74	24,14	55,88	19,03	**0,022***
state of mind	56,12	20,75	53,68	26,92	0,549
susceptibility to social influence	62,24	27,06	65,44	23,04	0,712
Psychological Domain [PD]	50,18	15,48	54,29	16,83	0,262
Total score of Kinesiophobia [KCS]	45,88	13,23	48,05	15,61	0,315

Notes: *differences statistically significant

Table 3. Correlations between sense of coherence and kinesiophobia

Variables	gender	BD	PD	KCS
comprehensibility	W M	0,19 **-0,33***	0,08 -0,23	0,14 **-0,31***
manageability	W M	-0,28 **-0,49****	-0,34 **-0,39****	-0,32 **-0,49****
meaningfulness	W M	**-0,57**** **-0,32***	**-0,68**** **-0,30***	**-0,66**** **-0,35***
SOC-29	W M	-0,31 **-0,43***	**-0,44**** **-0,34***	**-0,40*** **-0,43***

Notes: *p<0,05; **p<0,01. W: women; M: men; BD: biological domain; PD: psychological domain; KCS: overall kinesiophobia score

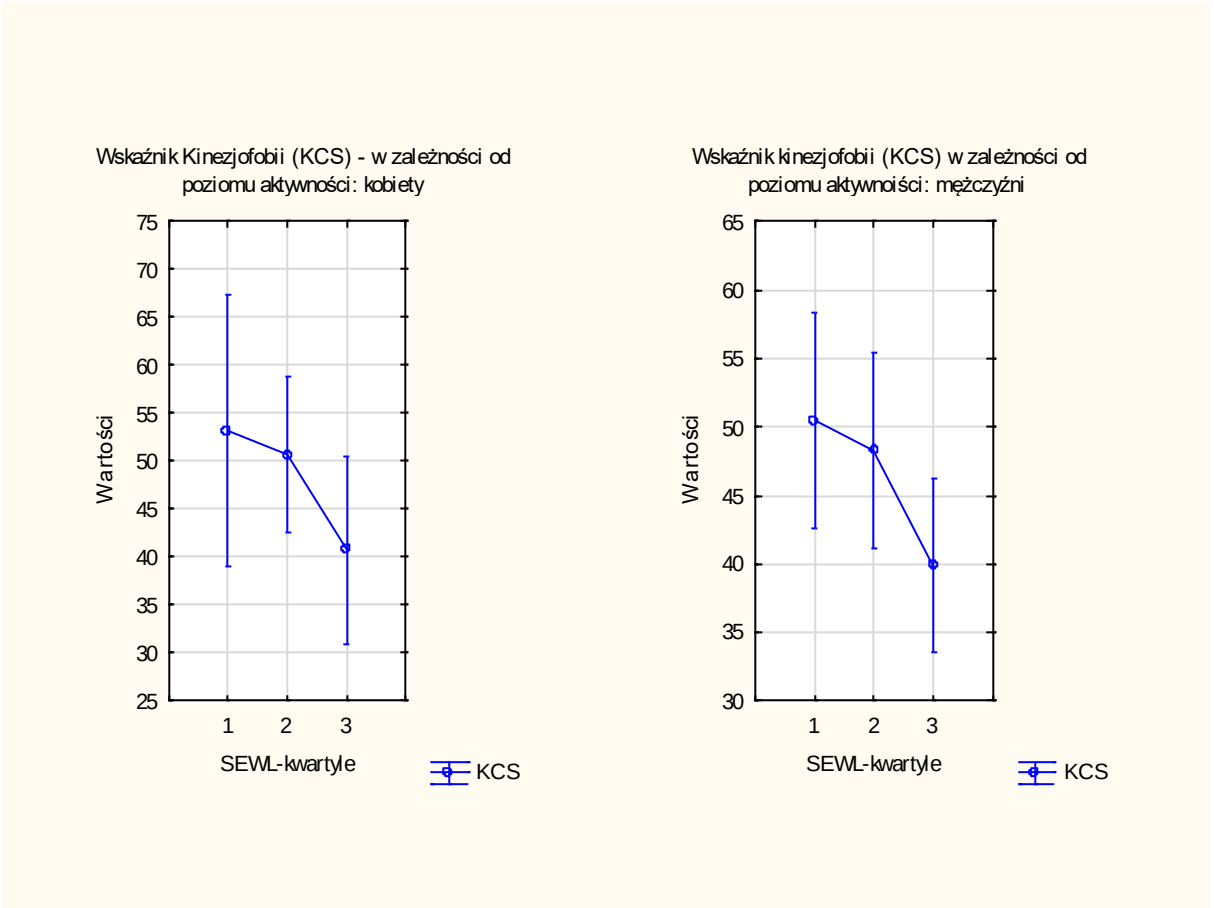

Figure 1. Differences in physical activity due to kinesiophobia

DISCUSSION

Physical activity is known to have a positive effect on health and contributes to developing and maintaining a high quality of life [13,14]. Persons with a strong SOC engage in adaptive health behaviours more often than those with a weak SOC [1,2,15].

The notion Generalized Resistance Resources comprises the characteristics of a person, a group, or a community that facilitate the individual's abilities to cope effectively with stressors and contribute to the development of the individual's level of SOC. As proposed by Antonovsky the GRRs refer to "phenomena that provide one with sets of life experiences characterized by consistency, participation in shaping outcomes and an underload-overload balance". This resources may include the following factors (I) material resources (e.g., money), (II) knowledge and intelligence (e.g., knowing the real world and acquiring skills), (III) ego identity (e.g., integrated but flexible self), (IV) coping strategies; (V) social support, (VI) commitment and cohesion with one's cultural roots, (VII) cultural stability, (VIII) ritualistic activities, (IX) religion and philosophy (e.g., stable set of answers to life's perplexities), (X) preventive health orientation, (XI) genetic and constitutional GRRS, and (XII) individuals' state of mind [2,16]. Antonovsky merged the concept of the GRRs with his earlier concept of the 'stressors' and combined them into one concept - generalized Resistance Resources—Resistance Deficits (GRR-RDs). Individuals who is higher on the continuum tends to have consistent, balanced life experiences and high participation in decision making [1-3].

The main purpose of this study was to examine the relationship of generalized resistance resources of sense of coherence with fear of movement. Based on previous studies it was hypothesized that high sense of coherence level will be negatively associated with low level of kinesiophobia. Results of the study presented in this paper indicate to decrease of overall SOC score and moderate intensification of overall kinesiophobia score. Statistically significant higher values in overall SOC were found in males – compared to females. This result was in line with previous studies that reported stronger SOC among men than women [8]. However, differences in SOC components were no demonstrated. In case of KCS scale, gender differences were only noted in two factors: self-assessment of motor predispositions and self-acceptance. Larger intensification of kinesiophobia in psychological domain in both groups - compared to the biological domain, emphasize the importance of psychological sphere.

The second main finding was that the SOC scale was negatively associated with kinesiophobia level. Moderate to strong correlations were noted. Among womens, correlations were weaker than in men. In both groups comprehensibility was no associated with fear of movement. To author best knowledge this is forst study explored this topic. Comparison of results with other studies is unavalaible at this moment.

Permanent and serious health problems, similarly like other life changes that require adaptation, may reduce sense of coherence. Formed a Global Life Orientation is characterised by stability. This means that reduced SOC, return to the constant level, when the cause of change dissapear or will be removed [17]. This creates the necessity to further study in this area.

CONCLUSIONS

1. Sense of coherence level was decreased in both groups
2. Cardiac patients characterized by moderate intensification of kinesiophobia phenomenon
3. Statistically significant higher values in overall SOC were found in males – compared to females. Gender differences in kinesiophobia and kinesiophobia domains were no found
4. Relationship: higher sense of coherence, lower fear of movement was revealed among females, as well as, among males
5. Identification and early diagnosis of the causes kinesiophobia is very important, both in primary and secondary prevention of cardiovascular diseases.

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