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PERSONAL DISPOSITIONS FOR THE SENSE OF COHERENCE IN PEOPLE WITH PHYSICAL DISABILITY

ABSTRACT

The process of adaptation in people with physical disability is conditioned by a number of interrelated psychological and social factors, such as e.g.: sense of coherence, self-concept and patterns of psychosocial reactions to disability. This study presents the relationships between the sense of coherence and personal dispositions, such as the self-concept and different patterns of reactions to disability in persons with physical disability. The following measures were used in the study: The Sense of Coherence Questionnaire (SOC-29) by Aaron Antonovsky, The Tennessee Self-Concept Scale by William H. Fitts, The Reactions to Impairment and Disability Inventory (RIDI) by Hanoch Livneh and Richard F. Antonak. Data are presented from 204 people with physical disability, including 86 female (42.16 %) and 118 male (57.84 %) respondents. The study has shown relationships between the majority of analysed variables. Predictors of the *sense of coherence* in respondents with physical disability were two reactions: *adjustment* and *anxiety*. Each reaction marked its predictive power in all components of the sense of coherence and its summed score. *Adjustment* enhanced whereas *anxiety* weakened the sense of coherence. *Adjustment* was most often supported by *moral-ethical self-concept* and *personal self-concept*, whereas *anxiety* by the *social self-concept* and, although to a lesser extent, *physical self-concept*.

KEYWORDS: *Sense of coherence, people with physical disability, self-concept, reactions to disability*

INTRODUCTION

Sense of coherence (SOC) is the core concept and central descriptive category in the salutogenic model introduced by Antonovsky (1995; 2005) to account for the health and illness mechanisms in the context of specific life circumstances of an individual. The sense of coherence consists of three interrelated components: sense of comprehensibility (that is, the degree to which the incoming stimuli are sensed as consistent, understandable and structured), the sense of manageability (perceiving the available resources as sufficient to meet the demands of the environment) and the sense of meaningfulness (the emotional and motivational approach to encountered situations). The sense of meaningfulness is the most significant dimension of the sense of coherence determining the remaining two components (Heszen & Şek, 2007; Ericsson, 2017; Moksnes, 2021). It is interrelated with a person's

quality of coping with difficult situations, it also increases the motivation to overcome the encountered difficulties (Linca-Ćwikła, 2018). A review of research on effective strengthening of the sense of coherence through lifespan has shown that it is possible to enhance SOC through focus on the person and his/her resources, in particular in difficult moments in life (Ericsson, 2017; Moksnes, 2021; Langeland et al., 2022). Previous investigations of the significance of the sense of coherence in the process of social adaptation of people with disabilities have shown that it plays the major role both in the process of adaptation to disability (Nolvi et al., 2020; Dymecka et al., 2020), as well as for the quality of life in this group of individuals (Müller et al., 2014; Langeland et al., 2022). Enhancing the sense of coherence in people sustaining physical disability as a result of multiple sclerosis is possible, among others as a result of interventions in the following areas: change of identity and redefinition after being diagnosed with multiple sclerosis, life goals giving the feeling of consistency before and after the diagnosis, definitions of new, attainable life goals significant for the individual, promoting the sense of self-efficacy, managing disease-related negative emotions, positive, negative and illusory disease-related thinking, effective communication and ability to ask for help, as well as daily household chores (Graziano et al., 2014; Dehnavi et al., 2019). Knowledge on methods of enhancing the sense of coherence in this group is important in the context of activities related to the general rehabilitation activity. Exploratory investigations have pointed to a strong relationship between coherence and lower intensity of disability symptoms, better self-perception and higher life satisfaction (Nolvi et al., 2020), mood impairment and fatigue as significant predictors of the sense of coherence, as well as the quality of life (Dymecka et al., 2022) and life satisfaction (Aondo-Akaa, 2021).

Personal reactions to disability are determined by socio-cultural, biopsychosocial and environmental factors. According to authors of the theory (Livneh, Antonak, 2011), factors influencing psychosocial adaptation of an individual include: sociodemographic factors (age, gender, financial well-being, religion), disability-related factors (type and degree of disabling condition, treatment possibilities), personality factors (self-image, self-esteem, self-reliance, coping with difficult situations, stress management etc.), external environment factors (such as: availability of support, sense of belonging to specific social groups).

Patterns of psychosocial reactions to disability are progress-oriented, subsequent stages come one after another, although one may observe recurring cycles of approximation and withdrawal in struggling with consequences of a non-congenital disability, which are characterized by repeated experiences and behaviours leading to the ultimate constitution of individual's adaptation to disability (Byra & Kirenko, 2016). A special role in the development of reactions to disability is also played by personality traits and stress management techniques (Aondo-Akaa, 2021). The increased level of neuroticism and decreased level of extraversion are conducive to reactions to disability typical of later stages; acceptance is associated with willingness to cooperate and increased trust in the environment, as well as focus of the experienced emotions; non-adaptive reaction patterns are related with increased tendency to deny and decreased tendency to focus on the problem. Susceptibility to stress and depressive mood, as well as more frequently occurring anxiety and willingness to sacrifice are conducive to development of non-adaptive patterns of reactions to disability (Livneh & Wilson, 2003; Livneh, 2012; Livneh & Martz, 2014). Reactions to disability (except for shock) constitute predictors of health behaviour variability in people with physical disability (spinal cord injury). Presentation of health behaviours is related to higher levels of desirable adaptive reaction patterns, and undesirable patterns show a negative relationship with health behaviours (Byra, 2014).

Self-concept is one of more important categories of mental health, well-being, as it is related to life satisfaction and protects an individual against negative social impact. Self-concept is influenced by personal experiences, consequences of one's actions, most often recognised as successes and failures, as well as cognitive values, such as ideals, role models, expectations from the environment (Minev et al., 2018; Bochniarz, 2019). Low self-concept is related, among others, to unfavourable perception of an individual by the environment, if not with social exclusion; poorer sense of well-being, an internalized stigma, or sustaining affective disorders. Low overall self-concept, as well as problematic scores for its particular aspects may have negative influence on relations with others and may be related with non-adaptive coping strategies (Cantwell, Muldoon & Gallagher, 2015; Mitter, Ali & Scior, 2019). High self-concept leads to higher life satisfaction, readiness to take up challenges, ability to overcome

difficulties, perseverance in action. Adequate self-concept involves proper assessment of one's capabilities and it impacts individual's effective functioning and adaptation to the environment (Jastrzębski & Pasiak, 2013, Bochniarz, 2018). Studies have shown significant relationships and interdependencies between self-concept and locus of control and the sense of coherence, where the boost of self-concept has a positive impact on the sense of coherence and the sense of control in people with physical disability (Papadopoulos et al., 2013; Aondo-Akaa 2021), as well as their life quality (Jastrzębski & Pasiak, 2013; Jalayondeja et al. 2016). The presented theoretical analyses have shown that the sense of coherence as well as reactions to disability and self-esteem constitute significant variables impacting the functioning of people with physical disability.

METHOD

Development of personal dispositions in people with physical disability through planning of appropriate interventions enhances the sense of coherence in this group of individuals. Previous exploratory investigations have shown it to be related with higher self-perception or higher life satisfaction (Nolvi et al., 2020, Aondo-Akaa, 2021). Particularly significant in this respect are reaction patterns in people with physical disability (Livneh & Wilson, 2003; Livneh, 2012; Livneh & Martz, 2014; Byra & Kirenko, 2016), and their self-concept (Papadopoulos et al. 2013; Cantwell, Muldoon & Gallagher, 2015; Mitter, Ali & Scior, 2019, Aondo-Akaa, 2021, Alhumaid et al. 2023), therefore they were found to constitute key and personal determinants of the sense of coherence in this group of individuals and they were included in the research model. The basic research problem is brought down to the question: *Are there any relationships between personal dispositions and the sense of coherence in people with physical disability, and if yes, what are they?* The study is aimed to assess relationships between the sense of coherence, self-concept and reaction patterns in people with physical disability. Detailed questions refer, therefore, to determination of the strength and direction of the relationships between the sense of coherence, measured with the Sense of Coherence Scale (SOC-29) by Antonovsky,

and personal dispositions of an individual: level of self-concept and self-perception measured using The Tennessee Self-Concept Scale by Fitts, and also the type of reaction patterns measured with the Reactions to Impairment and Disability Inventory by Livneh and Antonak.

The Sense of Coherence Scale (SOC-29) by Antonovsky adapted to Polish by Koniarek, Dudek and Makowska (1993) consists of 29 items measuring the sense of coherence in the context of its three components: comprehensibility, manageability and meaningfulness, as well as the summed score. The Reactions to Impairment and Disability Inventory – (RIDI) by Livneh and Antonak adapted to Polish by Byra and Kirenko (2016) consists of 60 items measuring reactions in people with permanent mobility impairments due to long-term illness or disability. It distinguishes eight reaction patterns displayed as a result of sustaining permanent health and mobility impairments: shock, anxiety, denial, depression, internalized anger, externalized hostility, acknowledgement and adjustment.

The Tennessee Self Concept Scale (TSCS) by Fitts adapted Polish by J. Kirenko consists of 100 statements based on which respondents assesses their self-concept. Depending on the score, the self-concept is assessed with regard to respondent's identity, self-contentment and behaviour, which provide the central point for the physical self-concept, moral-ethical self-concept, personal self-concept, family and social self-concept. The physical self-concept measures person's view of his or her body, health status, appearance, physical skills and sexuality. The moral-ethical self-concept presents one's attitude to God, the sense of being a good or bad person, satisfaction or dissatisfaction from the professed religion. Self-esteem is the personal self-concept; family self-concept indicates how respondents view themselves in relation to their family, whereas social self-concept indicates how respondent sees themselves in relations with other people (Fitts, 1965).

RESULTS

The sample consisted of 204 people with physical disability, including 86 female (42.16 %) and 118 male (57.84 %) respondents. Age of respondents ranged from 16 to 65, with the mean of 36.22 YOA. The sample consisted of individuals with: upper or lower extremity amputation (44 – 21.57 %), spinal cord injury (41 – 20.10 %), cerebral palsy (41 – 20.10 %), multiple sclerosis (37 – 18.14 %) and with physical disability of different aetiology (41 – 20.10 %), with severe disability confirmed in the largest group of as many as 126 people (61.77 %). Age of onset ranged from disability detected at birth to those occurring at the age of 54, with arithmetic mean of 31.68 years. Majority of respondents were single (92 – 45.10 %), married (79 – 38.72 %), separated or divorced (23 – 11.27 %) and widowed (10 – 4.90 %), living in cities (117 people – 57.35 %), of whom 144 people (70.59 %) assessed their financial situation as good, 43 (21.10 %) very good, and the remaining 17 participants (8.33 %) as poor or unsatisfactory. The study was conducted in the Lublin Province using snowball sampling technique, that is purposeful selection of study subjects for the sample and recruitment of new subjects by respondents who had already took part in the study.

When identifying personal dispositions – understood as predictors – of the sense of coherence in participants with disabilities, a correlation analysis was initiated, beginning with stepwise multiple regression within four dimensions thereof, that is the sense of comprehensibility, manageability and meaningfulness and the summed score, in order to precisely determine which of these predictors from specific groups of variables accounting for reactions to disability and self-concept can account for the level of the dependent variable; additionally, Structural Equation Model technique was used to construct the path dependent models. Considering that distributions of variables significantly departed from the normal distribution, these analyses were performed using the asymptotically distribution free (ADF) method. Nearly all path dependent models showed very good fit indices, that is: χ^2/df below 2, GFI and AGFI above 0.9, and RMSEA 0.8 or below. Where the model was saturated on the other hand, which happens when all correlations between the predictors are significant, only χ^2/df and GFI values were given.

Detailed data are found in tables 2-5 and in diagrams 1-4. Earlier however, a correlation matrix was created using Pearson's r test (Table 1).

Table 1. Correlation matrix

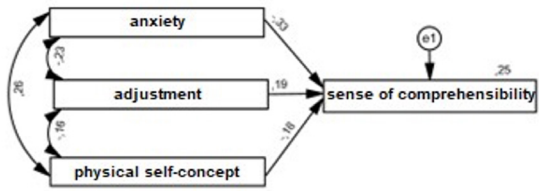
Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. sen. of comprehensibility	-																
2. sen.of manageability	.75	-															
3. sen.of meaningfulness	.67	.79	-														
4.s en. of coherence	.90	.93	.89	-													
5. shock	-.39	-.49	-.43	-.48	-												
6. anxiety	-.42	-.47	-.44	-.49	.81	-											
7. denial	-.20	-.14	-.04	-.14	.41	.48	-										
8. depression	-.37	-.44	-.46	-.46	.82	.76	.35	-									
9. i.anger	-.36	-.42	-.41	-.43	.78	.74	.31	.76	-								
10. hostility	-.35	-.41	-.35	-.41	.79	.72	.31	.68	.70	-							
11. acknowledgement	.02	.05	.15	.08	.20	.12	.41	.15	.11	.14	-						
12. adjustment	-.29	.31	.46	.39	-.26	-.22	.12	-.30	-.24	-.23	.50	-					
13. physical self-concept	-.30	-.23	-.18	-.26	.26	.26	.04	.25	.26	.23	.11	-.16	-				
14. moral-ethical self-concept	.08	.11	.11	.11	.03	-.03	.04	.06	.01	.00	.16	.07	.30	-			
15. personal self-concept	.05	.04	.08	.06	.07	.04	-.06	-.00	.08	.15	.02	-.08	.31	.30	-		
16. family self-concept	.06	.02	.11	.07	.04	-.03	-.10	-.02	-.01	.06	.02	-.06	.33	.33	.35	-	
17. social self-concept	-.08	-.12	-.11	-.11	.15	.10	-.02	.17	.11	.21	.07	-.07	.47	.63	.43	.46	-

Table 2. Results of multiple regression analysis for the dependent variable Sense of comprehensibility (soco) and explanatory variables

N=204	b*	Std.err. with b*	b	Std.err. with b*	t(196)	P
Constant			42.72	9.67	4.42	< 0.000
Anxiety	-.27	.07	-.51	.13	-4.00	< 0.000
Adjustment	.16	.07	.34	.14	2.38	< 0.018
Physical self-concept	-.28	.07	-.50	.13	-3.98	< 0.000

R= .54; R2= .27; F(7.19)=11.62; p< 0.001*

Diagram 1. Path dependent model for predictors of Sense of comprehensibility
 $\chi^2/df=0.00$; $df=.00$ GFI= - (saturated model)



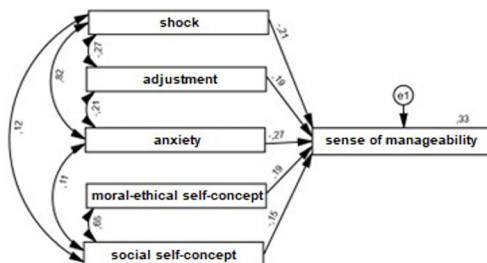
In the regression model accounting for 27% of the variance of the *sense of comprehensibility*, two reactions were found to be statistically significant: *anxiety* and *adjustment*, as well as one self-concept component – *physical self-concept* (Table 2). Sense of comprehensibility is positively influenced by adjustment, that is the ability to verify one’s behaviour under the influence of the changing environment, in consideration of limitations resulting from disability. Anxiety in people with disabilities may, on the other hand, result from, among others, realizing the meaning of physical injuries or disease-related complications and their implications for future life. This may also involve inappropriate attribution of values to one’s body, health status, appearance, physical skill and sexuality. These predictors are also considered in the saturated path dependent model (Diagram 1), and also in this model *anxiety* index is of the strongest predictive significance, which significantly underestimates the dependent variable *sense of comprehensibility*.

Table 3. Results of multiple regression analysis for the dependent variable Sense of manageability (soman) and explanatory variables

N=204	b*	Std.err. with b*	B	Std.err. with b*	t(196)	P
Constant			44.18	8.92	4.95	< 0.000
Shock	-.22	.10	-.45	.20	-2.18	< 0.030
Adjustment	.17	.06	.36	.13	2.84	< 0.005
Anxiety	-.22	.10	-.40	.18	-2.21	< 0.028
Moral-ethical self-concept	.20	.08	.38	.15	2.57	< 0.011
Social self-concept	-.18	.08	-.30	.14	-2.10	< 0.037

R= .58; R2= .31; F(7.19)=13.99; p< .000*

Diagram 2. Path dependent model for predictors of the Sense of manageability $\chi^2/df=1.74$; GFI= .99; AGFI= .93; RMSEA= .06



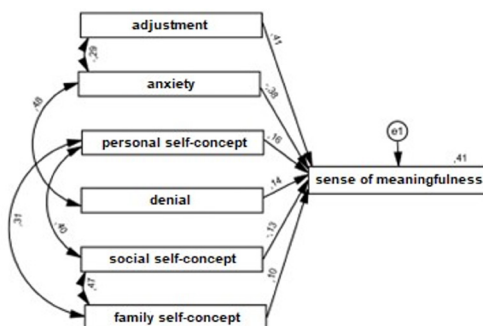
In relation to the dependent variable of the *sense of manageability* however, otherwise referred to as controllability, the developed correlational model looks somewhat different. Among explanatory variables, three indices of reactions to disability and two self-concept indices proved to be statistically significant. The created model accounts for 31% of the variability of the dependent variable, with predominance of inversely proportionate relationships (Table 3). Therefore, use of this disposition is to the largest extent conditioned by the description of the self-concept with respect to moral values, attitude to God, the sense of being a *good* or *bad person* and satisfaction or lack of satisfaction from the professed religion, and to a slightly lesser extent by the informed verification of its functioning in emotional and behavioural acceptance of the disability or disease, together with willingness to live in response to the changing environmental stimuli. The role of a buffer is played by shock appearing as a result of suffering an acute, painful, severe physical injury or some psychological trauma, such as: hurt, mortal danger, strong emotions, where an individual focuses his or her attention only on the suffered loss, and is not able to think about the future. In the presented path dependent model (Diagram 2) on the other hand, besides the *social self-concept* (= .15), all other indices are statistically significant predictors of the dependent variable. The strongest predictive power is displayed by anxiety and shock, whose high intensity may weaken the sense of manageability in the studied subjects. The remaining indices on the other hand, in every case considerably increase the level of the dependent variable.

Table 4. Results of multiple regression analysis for the dependent variable *Sense of meaningfulness (somean)* and explanatory variables

N=204	b*	Std.err. with b*	b	Std.err. with b*	t(195)	P
Constant			15.52	7.13	2.18	< 0.031
Adjustment	.34	.06	.60	.11	5.61	< 0.000
Anxiety	-.32	.09	-.51	.14	-3.50	< 0.001
Personal self-concept	.14	.06	.22	.10	2.20	< 0.029
Denial	.13	.06	.29	.15	2.00	< 0.047
Social self-concept	-.24	.08	-.35	.11	-3.02	< 0.003
Family self-concept	.14	.06	.19	.08	2.27	< 0.025

R= .64; R²= .39; F(8.19)=17.45; p< .000*

Diagram 3. Path dependent model for predictors of the Sense of meaningfulness
 $\chi^2/df=1.03$; $GFI= .99$; $AGFI= .96$; $RMSEA= .01$



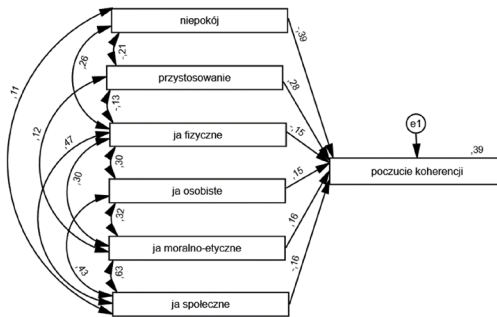
On the other hand, among explanatory variables of statistical significance forming the regression model and accounting for 39% of the variability of the dependent variable *sense of meaningfulness* (Table 4), just as in the case of two former components of coherence, the sense of informed verification of functioning in the dimensions of emotional and behavioural acceptance of the disability or illness. This disposition is also determined by one's self-esteem and its adequacy, as well as assessment of one's personality in separation from one's body and approach to others, as well as reflection of the feelings of the subject as a family member, in relation to mutual fidelity, values and virtues. Whereas, just as with the sense of manageability, reacting with panic, especially upon realizing the significance of physical injuries, complications and events, the extent of their implications for the future life, in particular in relation to the sense of adequate self-esteem shown in social interactions with others, significantly inhibit its development. Path dependent model on the other hand (Diagram 3), supports this set of the *sense of meaningfulness* indices, confirming at the same time the belief about predictive power of the two of them, with the strongest indicator of *adjustment* whose high value significantly enhances the *sense of meaningfulness* displayed by respondents, and with slightly lower negative *anxiety* indicator, significantly weakening the dependent variable.

Table 5. Results of multiple regression analysis for the dependent variable *Sense of coherence (KOHSUM)* and explanatory variables

N=204	b*	Std.err. with b*	b	Std.err. with b*	t(194)	P
Constant			102.51	22.99	4.46	< 0.000
Anxiety	-.24	.10	-1.14	.48	-2.39	< 0.018
Adjustment	.24	.06	1.31	.34	3.90	< 0.000
Physical self-concept	-.16	.07	-.75	.31	-2.42	< 0.017
Personal self-concept	.13	.06	.62	.31	2.00	< 0.046
Moral-ethical self-concept	.16	.07	.81	.37	2.19	< 0.030
Social self-concept	-.18	.08	-.79	.37	-2.15	< 0.033

R= .63; R2= .37; F(9.19)=14.14; p< .000*

Diagram 4. Path dependent model for predictors of *Sense of coherence*
 $\chi^2/df=$. 70; GFI=-; AGFI= 0.97; RMSEA= 0.00



Explanatory variables forming the correlational model of the *sense of coherence*, solely at the statistically significant level, include two indices of reactions to disability: the traditionally positive *adjustment* and negative *anxiety*, as well as four self-concept dimensions. The model accounts for 37% of variability of the dependent variable (Table 5). Therefore, the use of this disposition by participants in the sample is conditioned by their highly informed verification of behaviour in response to the changing environmental stimuli, in particular by emotional and behavioural acceptance of the disability and willingness to live, as well as their personal self-concept, its adequacy and assessment of one’s personality in separation from one’s body and approach to others. Moreover, by their personal self-concept with respect to moral values, attitude to God, the sense of being a *good* or *bad person* and satisfaction or lack of satisfaction

from the professed religion. In opposition to this disposition on the other hand, there stands reacting with panic, e.g. after preliminary survey, diagnosis and realizing the significance of physical injuries, disease-related complications and events, as well as extent of their implications for future life, and inadequate attribution of values to one's body, health status, appearance, physical skill and sexuality, and self-concept in relation to others, that is values of personal success achieved by showing competences meeting the social standards. Therefore, all predictors from the regression model have been taken into account in the path dependent model (Diagram 4), and the strongest predictive power is displayed by the enhancing *adjustment* and inhibiting *anxiety*.

DISCUSSION

Obtained results confirm findings of other researchers on significance of the self-concept and patterns of reactions to disability for the functioning of this group (Cantwell, Muldoon & Gallagher, 2015; Mitter, Ali & Scior, 2019), and indicate the direction and strength of these relationships. Anxiety weakens the sense of coherence in people with physical disability, reducing their sense of *comprehensibility* and *meaningfulness* of the world around them, and the sense of *manageability* in the ongoing response and creation of situations in line with their own values and goals. *Anxiety* upsets individual's perceptive and affective functions to the extent impairing also the executive functions. *Adjustment* of an individual to his or her disability on the other hand, beneficially impacts the sense of coherence and all its components (cf. Pasikowski, 2000; Heszen & Sęk, 2007). People accepting their disability perceive the world around them as more meaningful, comprehensible and they have a more adequate view of their self-reliance and manageability. Reaction patterns such as *anxiety* and *adjustment* may fluctuate depending on, e.g. circumstances, temper or mood of an individual, when his or her self-concept slightly changes. As showed in this study, the summed score for the sense of coherence is also influenced by such components as *personal self-concept* and *ethical-moral self-concept* which are interrelated. This means that self-esteem (*personal self-concept*) is strongly related to the personal system of values, and this on the other hand translates

into enhanced sense of coherence. As much as majority of self-concept components, i.e. *physical self-concept*, *personal*, *ethical-moral* and *social self-concept* are interrelated and they enhance each other, *physical* and *social self-concept* weaken the sense of coherence. Perception of physical self by people with physical disability and its translation into at least freedom in social contacts; assessing and comparing oneself to others; the beauty and success model promoted in every nook and cranny enhances the sense of inferiority in people who in any way depart from the imposed standards, which may translate into their social relationships (cf. Livneh & Wilson, 2003; Jastrzębski & Pasiak, 2013; Livneh & Martz, 2014). The physical self-concept predictor also weakened the *sense of comprehensibility* and *adjustment* of an individual, and enhanced anxiety.

Shock being a strong emotional reaction lowers perception of available resources, innate of an individual and those present in the environment, as sufficient to fulfil the demands he or she encounters in life (cf. Kirenko 2011). Tasks, undertakings, goals for a person reacting with anxiety or shock already at the stage of planning are out of reach due to the fact that the emotional component of behaviour has negative impact of individual's cognitive functions. When one is shocked or anxious, it is difficult for them to perform cognitive restructuring and prove effective at the stage of planning or execution of an activity or task. In the presented correlational model, one may also observe clear intercorrelations between the reactions: *shock* and *anxiety* reinforce each other, whereas *adjustment* exerts a weakening effect on both. *Shock* and *anxiety* also display positive correlation with *social self-concept*, which means that continued presentation of these adaptive responses is related to the negative self-perception in relations with others, and negative assessment of self enhances the feelings of shock and anxiety, translating into reduced perception of availability of resources (cf. Livneh, Antonak 2005).

The sense of meaningfulness that is the emotional and motivational approach to encountered situations is the key dimension of the sense of coherence. The lower the sense of meaningfulness, the lower the comprehensibility and readiness to take up any life activities. The model of the *sense of meaningfulness*, just like in the model of the sense of coherence, included six predictors, four of which were exactly the same, namely: adjustment, anxiety, personal self-concept and social self-concept. Just like in case of the *sense of comprehensibility*

and *manageability*, also in the *sense of meaningfulness* adjustment to disability is a predictor enhancing perception of the surrounding reality as worthy of making the effort and reaching for resources to achieve the assumed goals. People at the stage of *adjustment* to disability not only experience higher *sense of meaningfulness*, but also lower *fear*. What is interesting, *fear* also displayed positive correlation with *denial*, and denial was a predictor enhancing the *sense of meaningfulness* in the sample. This means that denial strongly associated with fear is not always a pathological mechanism. At initial stages of reactions to disability, fear may be so high that a natural defence mechanism for people faced with their own disability is indeed denial (cf. Groomes & Leahy, 2002). It should be remembered however, that strategies protecting human psyche become effective over time, therefore people with physical disability at early stages of adaptation to disability usually go through the entire process at their own pace and usually head for adjustment. Obtained study results show that both *adjustment* as well as *denial* enhance the experienced sense of meaningfulness. This is most probably determined by numerous variables, such as e.g. personality, onset of disability, life circumstances and availability of resources (cf. Moksnes, 2021). The *sense of coherence* of people with physical disability was significantly influenced by such self-concept dimensions, as: *personal self-concept*, *social self-concept* and *family self-concept* which additionally are interrelated. Insofar as *personal self-concept* and *social self-concept* have already appeared in the discussed models, *family self-concept* occurs only in the *sense of meaningfulness*. One can clearly recognise the role of the need for belonging and the motivating meaning of a family for the functioning of people with physical disability. The *sense of meaningfulness* is also enhanced by self-esteem (*personal self-concept*) and weakened by the *social self-concept* (cf. Dymecka et al., 2022).

While examining the analysed models, it should be concluded that although appearance of predictors of the sense of coherence, such as: *adjustment* and *anxiety* in the models was not astonishing, the enhancing role of *denial*, even stronger than the *family self-concept* in the event of meaningfulness did pose a kind of surprise. It should also be emphasized that *anxiety* had an inhibiting effect on all components of the sense of coherence, however in case of the sense of manageability, shock proved to be the most lowering predictor

and was not found in any other compilation. This shows what influence on individual's executive functions is exerted by a severe emotional response.

In order to increase the sense of coherence in this group, one should work on reducing tension and anxiety, as well as enhancing adjustment. Anxiety was enhanced with self-concept components: *physical self-concept* and *social self-concept*. This means that in working on its reduction, one should focus on building intervention strategies promoting acceptance of the self-concept, in particular of changes in the physical aspect upon sustaining the disability, as well as redefining life goals, analysis of availability of resources and possibilities of their use, as well as learning effective communication with others, including analysing the efficacy of one's own strategies and building new strategies depending on the actual circumstances. *Adjustment* enhancing the sense of coherence, was supported by the *moral-ethical self-concept* and *personal self-concept*, which confirms the need to work with people with physical disability on enhancing their self-esteem, and self-efficacy; on values by which they were guided in their pre-impairment life and potential evaluation, as well as emotional management (cf. Graziano et al., 2014; Ericsson, 2017; Dehnavi et al., 2019; Moksnes, 2021; Langeland et al., 2022). Sense of coherence is an important factor impacting social rehabilitation of people with physical disability, as it is associated with the sense of meaningfulness in these individuals, guiding them to undertake any daily professional or social activities. The optimum solution would be to provide people with physical disability with mobility and social rehabilitation, as well as psychotherapy and psychoeducation, including work on enhancing the sense of coherence, adjustment and the self-concept.

LIMITATIONS

Presented study results have revealed the complexity of the relationships between the sense of coherence and its personal dispositions. However, the results and theoretical conclusions should be treated with great caution due to certain study limitations. The sample included individuals from an extensive and highly diversified population – people with physical disability. The participants differed not only in terms of specificity of their functioning,

but also in terms of onset of disability. The study failed to investigate larger subgroups within a group with one type of physical injury. The sample included individuals with lower or upper extremity amputation, spinal cord injury, cerebral palsy, multiple sclerosis and disabilities of other aetiology. Within one specific type of disability, there are people with varied concepts of functioning when it comes to mobility and coping with challenges of daily life. Duration of disability in the sample ranged from onset at birth to turning 54 years old, which means that the group was highly diversified also in terms of the moment of sustaining a disability, and this further translates to the process of adjustment to disability and their manner of functioning. In order to verify the obtained results, the conducted study would have to be repeated using the proposed model and in different age groups, among people with different types of disability.

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