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The moderating role of perseverance and determination in action in the context of self-efficacy and life satisfaction of sportspeople with mobility impairment

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Abstract

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Keywords

mobility impairment, sport, life satisfaction, self-efficacy

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Article

The moderating role of perseverance and determination in action in the context of self-efficacy and life satisfaction of sportspeople with mobility impairment

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Keywords: mobility impairment, sport, life satisfaction, self-efficacy.

1. Introduction

According to the current understanding of the World Health Organization, disability can be defined in three categories: impairments – implying problems with the body and its functioning or structure; activity limitations – making it difficult to perform daily activities, such as walking; and participation restrictions – limiting active participation in social life, e.g. discrimination related to means of transport [1]. Factors directly influencing

the process of accepting disability and its acquisition include innateness (e.g. genetic defects or damage caused by teratogens on the mother's body) or acquisition in the course of life (e.g. as a result of a traffic accident) [2]. From the perspective of the ICF classification [2], the variety of contextual factors are just as important as the type of disability itself. They are divided into two subgroups: environmental and personal with individual (e.g. home, family, friends) and social (law, attitudes, organizations) sub-levels.

Disability is described within three basic models: medical, social and functional. Each of them emphasizes various aspects of this phenomenon, and consequently, they differ greatly on many issues. They define disability differently, look for its causes elsewhere, provide different criteria for disability and present different views on the type and scope of assistance that should be provided to people with disabilities. The biopsychosocial model, whose assumptions were adopted in the reported studies, is an attempt to reconcile two extreme approaches: medical and social. It is the basis of the commonly known definition of disability [1] formulated by the World Health Organization which emphasizes that this phenomenon is a dynamic interaction of both personal and social factors. The essence of such an understanding of disability is to emphasize the importance of environmental factors and personal resources, in addition to damage to the organism. Disability is, therefore, not only an attribute of a person or society, but it is also a result of the relationship between the person (their health condition and resources) and the environment in which they live (the facilities or barriers that exist in it) [1].

Mobility impairment is not included in a homogeneous conceptual category – it includes a number of possible causes that trigger a state of long-term limitation of the proper functioning of the limbs, the osteoarticular system and others. They can be present since the earliest stages of a child's life and be associated with limb deformities, early injuries, disorders of the nervous system, or be associated with accidents or diseases. Loss of fitness, depending on the moment of life in which an individual experiences it, and the characteristics of the type and disability level itself, may cause various forms of adaptation, favoring the reconciliation with the loss and require various support from the external environment [3]. Sport is one of the measures of dealing with loss of fitness. Physical activity is important not only in connection with its biological and medical gains, but above all because of the psychological and social importance it plays in people's lives, especially in the lives of people with disabilities. According to the latest literature review [4], with the narrative synthesis, positive connotations of sports practice persist in various spheres in all age groups (from children, through adults, to veterans and professional sportspeople).

As reported by Koper and Tasiemski [5], rehabilitation activities offered to physically disabled people should be comprehensive and professional, and they should entirely support a person with a disability in solving problems that they must struggle with. Therefore, rehabilitation should include activities that will take into account not only dysfunctions existing at the physical level, but also other aspects of their lives: mental, spiritual and social. Therefore, the aim of rehabilitation, apart from ensuring the development of the damaged sphere and compensating for the damage, should enable a disabled person to take up activity and participate in all areas of life and fulfill various social roles. Achieving these goals requires the preparation of customized, attractive and comprehensive rehabilitation offers. Therefore, it is necessary to constantly search for such rehabilitation solutions and interventions that will meet these requirements.

Jan Piasecki, describing the philosophical context of sport for people with disabilities, wrote: "Every disabled person who takes up the fight against their disability is a sports-person par excellence" [6]. Taking up physical activity is tantamount to undertaking the fight against the limitations of a disabled body. A sportsperson with a disability undertakes a special fight because, as Piasecki [6] writes, their involvement in physical activity is, in a way, an expression of rebellion against fate. In this sense, sport is an attempt to give meaning to life and a way to "reclaim" person's own body. A sportsperson with a disability is no longer an object to the influence of other people but becomes a subject

because he or she is able to regain control of the body and through it to influence the world around them.

Due to the progressive process of professionalization of sport, there are now clear definitions implying professional, recreational and rehabilitation sport, although it is still possible to “move” from one category to another, especially in the case of sport for people diagnosed with motor disability, where it has three main functions – compensating, adaptive and integrating [7]. Adapted physical activity is a contemporary concept that combines various forms of undertaking physical activity by people with disabilities. One of the components of adapted physical activity is adapted sport – “a sport that is modified or designed to meet the individual special needs of people with disabilities” [5].

Despite many analogies between the sport of disabled and non-disabled people, as well as the ever-closer cooperation of Paralympic environments with organizations dealing with the sport of non-disabled people, the sport of disabled people is characterized by some noticeable specificity. Koper and Tasiemski [5] note, for example, the fact that the enormous training effort of a disabled person may, due to objective limitations, enable the achievement of similar results to those noted in the case of other sportspeople – sportspeople with disabilities must repeatedly overcome themselves and the limitations resulting from the dysfunctions of their organisms [5]. In addition, the sport of disabled people is also associated with the need for establishing sports regulations, taking into account – according to the revealed dysfunctions – the players’ functional abilities as well as the use of specialized sports equipment.

Various psychological conditions, especially self-efficacy, life satisfaction, mental resilience and positive orientation have an impact on how individuals engage in sport and what benefits they derive from it [8–14]. More surprisingly, in the context of disability, some people report a higher-than-average level of life satisfaction, a phenomenon called the disability paradox [15]. The term was formulated by Albrecht and Devlieger in 1999, and it is partially explained by the balance framework formulated by the above-mentioned, which is based on the balance between the body, mind and spirit [16].

The impact of sports activity on the functioning of disabled people is also described in the context of the empowerment concept. Linking sports activities of people with disabilities to this concept suggests that practicing sports by people with disabilities helps to strengthen resources and develop skills that are important for coping with difficult life circumstances. The resources of the individual that may be damaged as a result of disability are especially important. Therefore, referring to the concept of empowerment, it is emphasized that practicing sport can positively affect the sense of self-efficacy and self-confidence, as a result of which self-esteem about one's own body and trust in it also increase. Personality disorders and mood disorders common in people with disabilities are decreasing. There are changes towards the internal locus of control, as well as an increase in activity and social acceptance. Kissow [17] notes that the process of empowerment through sports activities understood in this way may translate into the functioning of a disabled person in other aspects of everyday life, increasing their readiness to engage in interactions with the world around them.

The aim of this article was to conduct a systematic comparison of two groups of sportspeople – with and without disability, in the context of life satisfaction and self-efficacy. Additionally, the aim of the study was to verify the existence and nature of the moderating influence of mental resilience and positive orientation on the psychological characteristics of the mentioned groups.

In analyses, the following hypotheses were tested:

- H.1.** Athletes with disability and without it will have similar scores on the SWLS scale.
- H.2.** Athletes with disability will have lower scores than athletes without disability on the GSES scale.
- H.3.1.** Resiliency is a moderator for the scale of life satisfaction scores.
- H.3.2.** Resiliency is a moderator for the self-efficacy scores.

2. Material and methods

2.1. Study design

For the purpose of this study the following operationalization of variables was conducted:

- independent variable: diagnosis of physical disability,
- dependent variable: self-efficacy (GSES score), life satisfaction (SWLS score),
- moderators (primarily): resiliency (SPP-25 score), positive orientation (Scale-P score),
- moderators (secondarily): "Perseverance and determination in action" score.

This study is consisted with Declaration of Helsinki. All participants declared informed consent to participate in the study.

2.2. Participants

A group of Polish athletes (both with and without physical disability) ($n = 64$) took part in this study. They were recruited from sport teams across Poland and invited to take part in this survey via Facebook fan pages of teams and via official e-mail addresses of clubs. As participants with disability are a considerably small group – to ensure all athletes had the same chance to take part in the survey, all registered clubs were contacted. After exclusion of answers without complete data and answers from athletes who did not train a professional sport, the total number of answers taken into account during statistical analyses decreased to 58 (athletes with disability ($n = 27$), athletes without disability ($n = 31$)). Participants with disability practiced the following disciplines: sitting volleyball, para swimming, wheelchair basketball, para athletics, wheelchair rugby, para table tennis. Participants without disability practiced athletics, swimming, dance. Detailed information can be found in Tables 1–3.

Table 1. Group characteristics

	Female	Male	Min age	Max age	Mean	SD
BZ	19	12	19	77	24.81	11.55
NR	10	17	20	50	33.56	9.3

BZ – without physical disability, NR – with physical disability.

Source: own study

Table 2. Time of the onset of disability

	Frequency	%
Pregnancy time	9	33.3
Up to 1 year after pregnancy	5	18.5
Up to 15 year of life	2	7.4
Adulthood	11	40.7
All	27	100

Source: own study

Table 3. Cause of disability

	Frequency	%
Amputation	4	14.8
Disease	5	18.5
Cerebral Palsy	4	14.8
Hypoxia	2	7.4
Myelomeningocele	1	3.7
Core injury	1	3.7
Ischiadic nerve injury	1	3.7
Congenital defect	2	7.4
Accident	7	25.9

Source: own study

2.3. Procedure

The study was conducted in an on-line setting via the survio.com.pl platform. The whole procedure consisted of an electronic invitation, title site – an information about the study and informed consent. In the main part of the protocol, participants were asked to fill in personal information and questionnaires: SWLS, SPP-25, Scale P, GSES. The last site reminded participants to save their answers and thanked them for their participation. There was no change in the order of the survey parts.

Due to the on-line character of the study and the aim to recruit as even number of athletes possible (from both groups), the authors decided to divide the process of collecting data into two separate survio protocols. The survey itself differed only in terms of the presence of questions regarding disability in the personal part.

2.4. Primary model

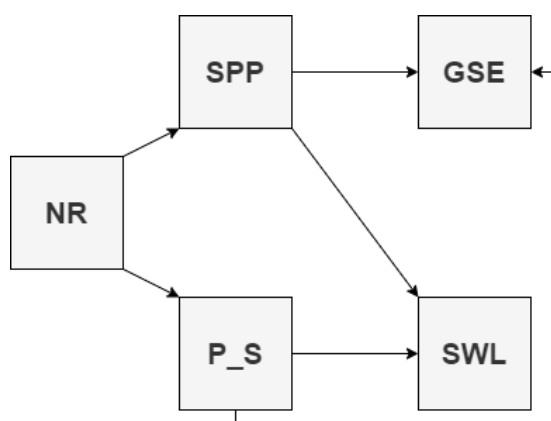


Figure 1. Primary model

NR – physical disability variable; SPP – resilience variable (SPP-25 score); GSE – self-efficacy variable (GSES score); SWL – life satisfaction variable (SWLS score); P_S – positive orientation variable (Scale P score)

Source: own study

2.5. Statistical analysis

The analysis was conducted using JASP 0.16.1.0 and IBM SPSS Statistics 26.0.0.1. programs, and the following tests were used: Shapiro-Wilk test, Levene’s test, U-Mann Whitney test and the modelling form JASP package.

3. Results

Table 4. Descriptive statistics

	N	Min	Max	Mean	SD
SWLSCALOSC	58	10	33	22.00	5.607
SPPCAŁ	58	35	99	72.71	12.945
SPP_PERSEVERANCE_AND_DETERMINATION	58	4	20	14.05	3.159
SPP_OPENNESS	58	6	20	15.74	2.899
SPP_COMPETENCES	58	3	20	14.38	3.774
SPP_TOLERANCE	58	7	20	15.34	2.606
SPP_OPTIMISTIC_ATTITUDE	58	4	20	13.19	3.711
P_SUM	58	14	38	29.60	5.357
GSES_SUM	58	15	40	30.36	5.314

SWSLCŁOSC – sum of the life satisfaction (SWLS) score, SPPCAŁ – sum of resilience variable (SPP-25), SPP_... – sum of subcategories of the SPP-25 questionnaire, P_SUM – sum of the positive orientation variable (Scale P score), GSES_SUM – self-efficacy variable (GSES score).

Source: own study

As shown in Table 4, minimal and maximal results vary, and (besides minimal score from SWLS scale, which indicates the second sten score) they represent the first and the tenth sten scores. Mean scores are situated on the sixth sten (SWLS, SPP-25), between the fifth and the sixth sten (Scale P) and on the seventh sten (GSES).

Table 5. A & B. The normality of distribution tests

		A. WITHOUT DIVISION INTO GROUPS					
		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistics	df	<i>p</i>	Statistics	df	<i>p</i>
SWLSCALOSC		0.122	58	0.030	0.965	58	0.088
SPPCAŁ		0.083	58	0.200	0.971	58	0.176
P_SUM		0.150	58	0.002	0.931	58	0.003
GSES_SUM		0.089	58	0.200	0.974	58	0.259
		B. WITH DIVISION INTO GROUPS (WITH AND WITHOUT DISABILITY)					
		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistics	df	<i>p</i>	Statistics	df	<i>p</i>
SWLSCALOSC	Yes	0.164	27	0.061	0.946	27	0.167
	No	0.120	31	0.200	0.955	31	0.216
SPPCAŁ	Yes	0.107	27	0.200	0.978	27	0.805
	No	0.151	31	0.070	0.940	31	0.083
P_SUM	Yes	0.126	27	0.200	0.983	27	0.930
	No	0.174	31	0.017	0.898	31	0.007
GSES_SUM	Yes	0.175	27	0.034	0.939	27	0.112
	No	0.130	31	0.198	0.942	31	0.092

SWLSCALOSC – sum of the life satisfaction (SWLS) score, SPPCAŁ – sum of resilience variable (SPP-25), P_SUM – sum of the positive orientation variable (Scale P score), GSES_SUM – self-efficacy variable (GSES score).

Source: own study

Based on statistical tests, most variables had normal distribution – apart from the positive orientation variable, which had a distribution close to normal. After additional analyses (tests with division into groups with and without disability), it turned out that the positive orientation variable distribution was not normal only in groups of athletes without physical disability. In order to exclude unreliable analysis and in order to localize eventual outliers (over toleration threshold), box plots were generated. No outliers were found in this study; therefore, further analysis was carried out with all subjects in division into two groups – variables with normal distribution (with ANOVA and moderation model analysis) and without normal distribution (with the U-Mann Whitney test).

The Levene test was used to evaluate the homogeneity of variance of all variables (apart from the positive orientation variable), and its results allowed conducting ANOVA analysis to verify the following hypothesis:

- H.1.** Athletes with disability and without it will have similar scores on the SWLS scale.
- H.2.** Athletes with disability will have lower scores than athletes without disability on the GSES scale.

ANOVA results did not show statistically significant differences between groups – SWLS ($F(1,56) = 0.428, p = 0.516$), GSES ($F(1,56) = 1.649, p = 0.204$), SPP-25 ($F(1,56) = 0.058, p = 0.811$). Nonparametric analysis for positive orientation variable also did not show statistically significant differences – Scale P ($U(N_{without\ disability} = 31, N_{with\ disability} = 27) = 468.500, z = 0.782, p = 0.435$). Due to the lack of statistically significant differences and non-normal distribution, the Scale P results and the positive orientation variable were excluded from the final model.

The statistical analysis of variables allowed confirming hypothesis H.1 and rejecting hypothesis H.2. Afterwards, hypotheses H.3.1 and H.3.2 (assuming that resilience will be a moderator for SWLS and GSES scores) were verified – analysis of moderation and parameter estimates was carried out (Table 6).

Table 6. A–D. Analysis of moderation and parameter estimates

A. Direct effects							95% Confidence Interval			
			Estimate	Std. Error	z-value	p	Lower	Upper		
NR	→	GSES	0.388	0.146	2.648	0.008*	0.101	0.675		
NR	→	SWLS	0.209	0.215	0.973	0.331	-0.212	0.630		
B. Indirect effects							95% Confidence Interval			
			Estimate	Std. Error	z-value	p	Lower	Upper		
NR	→	SPP	→	GSES	-0.052	0.212	-0.244	0.807	-0.466	0.363
NR	→	SPP	→	SWLS	-0.036	0.147	-0.244	0.807	-0.324	0.252
C. Total effects							95% Confidence Interval			
			Estimate	Std. Error	z-value	p	Lower	Upper		
NR	→	GSES	0.336	0.257	1.307	0.191	-0.168	0.840		
NR	→	SWLS	0.173	0.260	0.666	0.506	-0.337	0.683		
D. R-Squared		R ²								
GSES		0.685								
SWLS		0.323								
SPP		0.001								

Source: own study

The effect of the disability variable turned out to be statistically significant on SPP-25 results ($p = 0.008$). As resilience interpreter as a global was not a statistically significant moderator for SWLS and GSES score, separate subscales of SPP-25 were used to determine the role of resilience on athletes. analysis is displayed in Table 7 (parts A–D).

Table 7. A–D. Additional exploratory statistical analysis

A. Direct effects							95% Confidence Interval	
			Estimate	Std. Error	z-value	p	Lower	Upper
NR	→	GSES	0.488	0.167	2.925	0.003*	0.161	0.815
NR	→	SWLS	0.210	0.245	0.859	0.390	-0.269	0.690

B. Indirect effects								95% Confidence Interval		
				Estimate	Std. Error	z-value	<i>p</i>	Lower	Upper	
NR	→	SPP_WID	→	GSES	-0.248	0.110	-2.262	0.024*	-0.463	-0.033
NR	→	SPP_OT	→	GSES	-0.005	0.022	-0.206	0.837	-0.048	0.039
NR	→	SPP_KO	→	GSES	0.056	0.068	0.818	0.413	-0.078	0.189
NR	→	SPP_TO	→	GSES	0.050	0.093	0.532	0.595	-0.133	0.232
NR	→	SPP_OPT	→	GSES	-0.004	0.033	-0.134	0.894	-0.070	0.061
NR	→	SPP_WID	→	SWLS	-0.087	0.122	-0.713	0.476	-0.325	0.152
NR	→	SPP_OT	→	SWLS	0.023	0.042	0.547	0.585	-0.059	0.104
NR	→	SPP_KO	→	SWLS	-0.034	0.051	-0.664	0.507	-0.135	0.067
NR	→	SPP_TO	→	SWLS	0.066	0.124	0.530	0.596	-0.178	0.309
NR	→	SPP_OPT	→	SWLS	-0.005	0.036	-0.133	0.894	-0.075	0.066

C. Total effects								95% Confidence Interval		
				Estimate	Std. Error	z-value	<i>p</i>	Lower	Upper	
NR	→			GSES	0.336	0.257	1.307	0.191	-0.168	0.840
NR	→			SWLS	0.173	0.260	0.666	0.506	-0.337	0.683

D. R-Squared	
	R ²
GSES	0.714
SWLS	0.385
SPP_WID	0.163
SPP_OT	0.012
SPP_KO	0.013
SPP_TO	0.005
SPP_OPT	3.118×10 ⁻⁴

Source: own study

As a subscale of SPP-25 “Perseverance and determination in action” was statistically significant (*p* = 0.024), one more exploratory analysis was carried out – only for this subscale of SPP-25 and variables of life satisfaction and self-efficacy. The results are displayed in Table 8 (parts A–D).

Table 8. A–D. Analysis for this subscale of SPP-25 and variables of life satisfaction and self-efficacy

A. Direct effects								95% Confidence Interval	
				Estimate	Std. Error	z-value	<i>p</i>	Lower	Upper
NR	→	GSES		-0.899	0.214	-4.211	0.025*	-1.317	-0.481
NR	→	SWLS		-0.536	0.259	-2.071	0.038*	-1.042	-0.029

B. Indirect effects								95% Confidence Interval		
				Estimate	Std. Error	z-value	<i>p</i>	Lower	Upper	
NR	→	SPP_WID	→	GSES	0.563	0.188	2.990	0.003*	0.194	0.932
NR	→	SPP_WID	→	SWLS	0.363	0.150	2.415	0.016*	0.068	0.657

C. Total effects							95% Confidence Interval	
			Estimate	Std. Error	z-value	<i>p</i>	Lower	Upper
NR	→	GSES	-0.336	0.257	-1.307	0.191	-0.840	0.168
NR	→	SWLS	-0.173	0.260	-0.666	0.506	-0.683	0.337

D. R-Squared	
	R ²
GSES	0.440
SWLS	0.178
SPP_WID	0.163

Source: own study

Modelling based on subscales turned out to be the most adequate one, as it allowed discovering more in-depth relations between variables.

“Perseverance and determination in action” was a statistically significant moderator for both SWLS ($p = 0.016$), and GSES ($p = 0.003$) scores in relation to physical disability. Having taken into consideration group abundance, strength of the effect and statistical significance, it is possible to make attempts to generalize findings of this study into the general population of athletes.

4. Discussion

In this study, a conscious decision was taken to depart from the pathological approach to physical disability in the context of professional sport. The rationale behind this decision stems from earlier studies conducted in the 20th and 21st centuries – disabled sportspeople turned out to be as satisfied with their lives (in statistically averaged results) as sportspeople without disabilities [e.g. 18] and mentally highly resilient [e.g. 19, 20]. The change of discourse from the second half of the 20th century, when sportspeople with disabilities declared worse indicators of psychological well-being than the able-bodied fellow sportspeople seems to be a less and less replicated result in contrast to groups of people with motor disabilities (especially acquired) who do not practice at least qualified sports and more often report, among other things, less life satisfaction compared to people without disabilities [14]. The paradox of disability [15], combined with the change in the social discourse of perceiving sport of people with disabilities as less athletically valuable [21], probably leads to blurring the differences between groups with and without disabilities. Contrary to some research by, for example, Priestley [22], currently sportspeople may feel less dependent on external influences and help and thus feel the possibility of self-determination and influence on their own fate.

In the reported own research, the averaged results do not show statistically significant differences between the groups, which confirms the probable improvement of mental condition of sportspeople. The statistically significant factor of moderation of the RS 25 subscale – Perseverance and determination in action on a statistically relatively small group shows that the demonstrated dependence is strong and can also be seen in larger samples. In addition, it allows for more complete understanding of the complex issue of the psychological state of sportspeople (both able-bodied and those with disabilities). Additionally, it is worth emphasizing that the motor disability or lack of it, moderated by persistence and determination, had a statistically significant influence both on the sense of self-efficacy and life satisfaction. There are no differences in the assessment of life satisfaction, and the sense of effectiveness might be related to several factors:

- increasing medical and rehabilitation possibilities to compensate for the lack of full mobility;
- increasing sportspeople’s chances to participate in local, national and international competitions;

- increasing the number and variety of specializations of professionals working with sportspeople (from rehabilitators to sports psychologists);
- greater social support (both in terms of material and media aspects, e.g. in the form of disability normalization campaigns and emphasizing the resources and agency of people with disabilities);
- growing media coverage and popularity of the paralympic sport;
- local opportunities for activating people through sport, which increase the percentage of professional sportspeople;
- effective reintegration of life spheres.

Considering the complexity of the disability issues, it is important to confirm that there are no differences between the groups in terms of life satisfaction.

This result is consistent with the results of other researchers. Sports activity becomes an important source of satisfaction and happiness for sportspeople [23]. Studies that explored the level of life satisfaction in physically active people with disabilities indicate that these people are as satisfied with life as people with disabilities who do not play sports [24] or are significantly more satisfied [25].

Interestingly, our own study did not confirm statistically significant differences in the subjective assessment of self-efficacy (in the ANOVA analysis). This might be explained by the fact that both sportspeople with and without disabilities receive a similar number of opportunities to prove their own effectiveness to themselves, and they experience similar failures, e.g. at the time of a loss or injury, which may lead them to reach similar final judgments about their own effectiveness despite potentially different starting points (e.g. before undertaking physical activity and before being disabled) in these assessments (cf. the principle of equifinality). This is particularly important in the emerging neurobiological context of describing the theory of self-efficacy, where the four main components of the theory as understood by Bandura [26] are complementary to the four neurotransmitters involved in the sports experience – dopamine (which is released both in the reward system, and is reactive to failure), serotonin (which is released, among others, during modeling the experience of models), oxytocin (which in this context is released at the time of receiving praise from significant people and/or the model), cortisol (which is released in highly stressful situations, e.g. during a match at the meeting point of the result in professional sport) [27]. These neurobiological attempts that explain the mechanisms behind self-efficacy are particularly important in the context of dopamine, which not only motivates people to engage in sports behavior per se, but, as suggested by the latest research [28], in the context of sports performance, it is moderated by previous experience with the sport. Therefore, professional sportspeople (both with and without disability) may experience its effects to a greater extent than those who spontaneously undertake a new sport activity. This may have a secondary impact on the lack of differences between subjective assessments of self-efficacy between the analyzed groups (at the level of a simple analysis that does not include moderators). The above considerations confirm the complexity of the analyzed psychological characteristics. The fact that the moderation analysis turned out to be statistically significant may suggest that the analyzed variables require additional factors to fully understand their dependence.

In the context of own research, the variable of positive orientation turned out not to have a normal distribution (in the subgroup of sportspeople without disabilities), and as a result of non-parametric analyses, it turned out not to be significantly different in the analyzed groups, which may result, among other things, from group selection. However, in the context of the correlation of this construct with pro-health behaviors, especially in the context of chronic health problems [29], it would be worth reusing this variable in moderation analyses of next studies in this area.

The above premises reflect possible reasons for the statistical tendencies indicated in the analysis – to a similar global perception of one's own psychological state and show possible directions of work with sportspeople. It is important, however, to remember that disabled sportspeople constitute only a narrow subgroup of the population of people with

physical disabilities, and their achievements, although often spectacular, should not lead to global conclusions about all people with disabilities and unequivocally uphold the stereotype of supercrip [30] – a sportsperson who, despite considerable adversities and health problems, always copes with challenges. Generalizing the improvement in the psychological condition of all people with disabilities would be inappropriate due to the lack of balance – in the sports arena there are sportspeople both adapted to the "new self" and people still struggling with the process of reconciliation and adaptation to the new situation (especially in the context of people with physical disability acquired as a result of illness or accident).

In the context of own research, it is also important to consider to what extent (despite the full sten scores distribution on the scales – from the lowest to the highest) people who decide to practice sports as professionally as possible are initially more determined and persistent than people who do not put so much effort, more often perceive stressful situations as a challenge that must be faced and have greater social resources to help them cope with disability.

Statistical analysis confirmed the assumed lack of differences between athletes with and without disabilities regarding the life satisfaction variable.

It did not confirm that athletes with disabilities had higher scores in the self-efficacy variable (in GSES questionnaire) than regular athletes.

The most important aspect of this study was the demonstration of the moderational aspect of SPP-25 subscale – “Perseverance and determination in action” – for both groups and its relation with life satisfaction and self-efficacy. It is important to note that physical disability or lack of it moderated by perseverance and determination influences both life satisfaction and self-efficacy in a statistically significant way.

Based on conducted statistical analysis, in relations to the initially presented model (Fig. 1), we propose a mathematically revised model of confirmed interactions and relations between variables (Fig. 2).

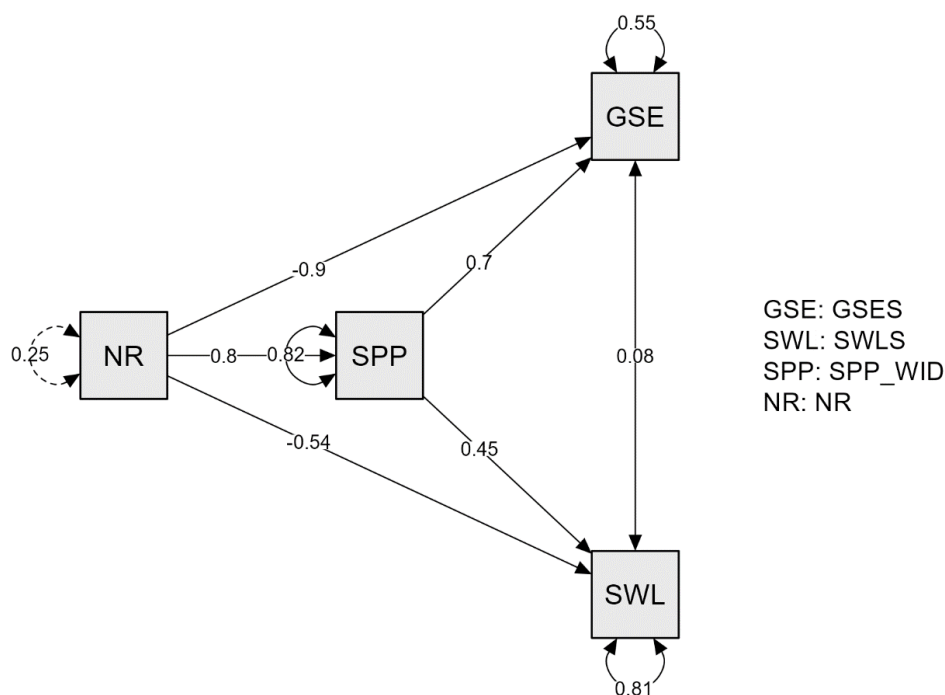


Figure 2. Revised model

NR – physical disability variable; SPP – resilience – the subscale “Perseverance and determination in action”; GSE – self-efficacy variable (GSES score); SWL – life satisfaction variable (SWLS score)

Source: own study

Limitations

The results of this study have some limitations:

- lack of full possibility to verify the optimal conditions for completing the survey by participants of the on-line procedure;
- the omission of digitally excluded people from the potential sample;
- lack of possibility to verify the diagnosis of a physical disability or the declared training of a sports discipline;
- lack of full randomness in the sample selection;
- a small sample size;
- the use of closed questions in most of the scales;
- lack of information about possible work with a sports psychologist;
- lack of information on the relationship between the player/s and coach/es.

5. Conclusions

This study aimed to visualize and underline the complexity of sports psychology issues in terms of the psychological state of disabled athletes (with both acquired and congenital disability) and to compare those athletes with regular ones. The described study aimed to characterize this topic on the basis of salutopsychological theory and to show the complexity of the matter and internal dependence of mental health components. Moreover, this study aimed to underline the uniqueness of paralympic athletes.

Taking into account goals and assumptions of sports psychologists' work (with athletes with and without disabilities), it is worth promoting perseverance and determination in action among this group patients/clients. It may not only have a direct effect on mobilization towards work and its effectiveness in recovering, but also may have an impact on the subjective sense of competence, which indirectly and secondarily supports individuals' general well-being. Moreover, even athletes without a diagnosis of disability periodically experience limitations of full mobility due to diversity of injuries; therefore, they also may experience a positive impact of strengthening perseverance and determination in action while recovering.

In our opinion this study has both theoretical and practical value and may be beneficial for sport psychologists in planning the support for people with disabilities.

Important in context of "disability paradox" is the lack of differences between groups – it is possible that most of this study participants positively integrated and evaluated their spheres of life.

Concluding, although the understanding of dynamics of psychological characteristics of disabled athletes and regular athletes was broadened by this study, it is still crucial to further deepen the knowledge and operationalize variables describing athletes' dimensions of psychological well-being and mental health.

In the scientific context, it would be beneficial to broaden the analysis – engage greater number of disciplines and participants themselves. Additionally, it may be beneficial to compare athletes with acquired and congenital disability – among themselves and not in relation to athletes without disabilities. Not to mention that it would be beneficial to broaden the understanding of disability sports psychology with adding the variables of the location of health control and pro-health behaviors among athletes.

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