

2018

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Recommended Citation

Sikorska I, Gerc K. Athletes with disability in the light of positive psychology. *Balt J Health Phys Act.* 2018; 10: 64-76. doi: 10.29359/BJHPA.10.1.07

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Authors' Contribution:

- A** Study Design
- B** Data Collection
- C** Statistical Analysis
- D** Data Interpretation
- E** Manuscript Preparation
- F** Literature Search
- G** Funds Collection

Athletes with disability in the light of positive psychology

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abstract

Background: The purpose of the study was to describe selected aspects of good life in Polish paralympic athletes in the light of positive psychology. Good life category was investigated in such dimensions as satisfaction with life, resilience, personal values and courage.

Material/Methods: The project involved a study group of 30 disabled athletes ($M = 26.5$ years of age) practising skiing, cycling, swimming, fencing, basketball, and a control group consisting of 30 healthy young adults ($M = 25.9$ years of age) doing sport as leisure. Questionnaires testing the selected aspects of good life and wellbeing were used.

Results: A statistically relevant difference between the two groups can be identified with regard to resilience, concerning the structured style factor ($t = 2.31$, $df = 58$, $p < 0.05$) and with regard to courage in the level of the endurance factor ($t = 2.19$, $df = 58$, $p < 0.05$). Disabled athletes choose the following as highly assessed values: being useful to others ($z = 2.74$, $p = 0.001$), courage and firmness ($z = 2.26$, $p < 0.05$).

Conclusions: Disabled athletes demonstrated a significantly higher level of structured style in resilience and of endurance in courage. Adventure, making new friends and better self-esteem were identified as the most frequent effects of their involvement in sport

Key words: paralympic sports, resilience, positive psychology, well-being.

article details

Article statistics: **Word count:** 4,353; **Tables:** 2; **Figures:** 2; **References:** 47

Received: March 2017; **Accepted:** January 2018; **Published:** March 2018

Full-text PDF: <http://www.balticsportscience.com>

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Indexation: Celdes, Clarivate Analytics Emerging Sources Citation Index (ESCI), CNKI Scholar (China National Knowledge Infrastructure), CNPIEC, De Gruyter - IBR (International Bibliography of Reviews of Scholarly Literature in the Humanities and Social Sciences), De Gruyter - IBZ (International Bibliography of Periodical Literature in the Humanities and Social Sciences), DOAJ, EBSCO - Central & Eastern European Academic Source, EBSCO - SPORTDiscus, EBSCO Discovery Service, Google Scholar, Index Copernicus, J-Gate, Naviga (Softweco, Primo Central (ExLibris), ProQuest - Family Health, ProQuest - Health & Medical Complete, ProQuest - Illustrata: Health Sciences, ProQuest - Nursing & Allied Health Source, Summon (Serials Solutions/ProQuest, TDOne (TDNet), Ulrich's Periodicals Directory/ulrichsweb, WorldCat (OCLC)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of interests: Authors have declared that no competing interest exists.

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INTRODUCTION

Positive psychology, which investigates the concepts of the strength of character and individual strengths and virtues, furnishes an optimistic outlook on human capabilities. The focus of positive psychology is not merely on a disorder's absence but on subjective well-being as a condition for happiness. This line of research lays particular emphasis on the concept of good life. The latter is often described with the notions of the quality of life, well-being, flourishing, life well-lived or positive mental health [1, 2, 3, 4]. Good life can be considered from a hedonistic perspective (as happiness and pleasure) or its eudemonistic counterpart (living life values) or following the Sheldon model [1] which integrates the two. Good life is also examined from subjective (individual life satisfaction) and objective angles (quality attributes rated with external norms) [5]. Additionally, life can be investigated from individual and social perspectives, the focus of which is on personal well-being and the well-being of a community, respectively [6].

Positive mental health [7] is defined as subjective well-being. Although researchers usually aim to investigate objective criteria to provide objective measurement tools, individual thoughts and feelings also prove important in the study of well-being. Seligman and Diener emphasise that the main function of subjective well-being is that it enables individuals to take care of themselves, which proves to be the exact opposite of learned helplessness [8, 9]. One of the virtues that particularly correlate with resilience is courage, the term being defined as emotional strength and the will to persevere. Courage encompasses four different strengths, namely 1) perseverance, or the ability to achieve one's goals, 2) bravery, or resistance to anxiety or difficulties, 3) honesty, or being authentic and genuine, 4) vitality, or the ability to feel excitement and vigour [10].

Physical disability carries a number of emotional implications resulting from damage to an individual's body. Psychologists of rehabilitation emphasise the importance of the transition period between disease and disability. They suggest that the period directly following treatment, when a person involved in it is neither a patient (not any more) nor someone meeting all the criteria for disability (not yet), should be called a moratorium. This period is characterised by increased anxiety about the prospect of continuing one's life and adapting to disability [11, 12]. The challenges involved in the process of adaptation include three crises described by Wolfensberger [13]. First, persons with disabilities experience the novelty crisis, which emerges when their plans and expectations about their future lives collapse. The second crisis affects their personal values. This manifests itself with a conflict between their refusal to accept their own disability and their striving to maintain a positive image of themselves. The last challenge that follows, namely the reality crisis, emerges as a response to the existing social and economic conditions in which persons with disabilities have to function.

Resilient reintegration, namely the acceptance of the limitations brought about by disability and further development that results from it, is regarded as a form of reintegration that is most conducive to adaptation after losing one's fitness. It is regarded as a sign of both resilience and

the ability to cope with crises that persons with disabilities have to face in their lives [14, 15]. The analysis of disability adaptation models must necessarily consider when and how disability appears in an individual's life. Two different situations can be considered:

1. Firstly, disability can be described as something inborn or as a consequence of a congenital defect or disease. Individuals who acquired their disability in early childhood have little sense of fitness loss and are accustomed to their limitations. As they gain in self-awareness, they also begin to notice that they are different from other people. This progresses only gradually and can be compared to stress that is administered in small and regular doses or the process of reconciling with one's life.
2. Secondly, disability can be described as loss of health and fitness as a result of an accident, illness or medical error. Acquired disability often entails the necessity to change one's life and reorganise previous developmental achievements. This often requires that an individual goes through the process of mourning over fitness loss or adjusts to his or her new life. Permanent health loss in adolescence or adulthood can be treated as a sphere of developmental loss [11].

The analysis of disability acquired as a result of an accident explores whether the process of adaptation after an accident progresses in the same fashion as adaptation after other critical events. The process entails two necessities: a) critical experience, confrontation with an accident; b) confrontation with permanent disability (as is the case of spinal cord or brain injuries). For the latter, it is not only permanent fitness loss but also the complete change of an individual's life in all its existing aspects that poses a threat to development [15]. This distinction is based in the assumption that traumatic injury entails physical, mental, social and cognitive consequences.

The forms of adjusting to disability acquired as a result of an accident can be described with the Richardson model [14]. In his description of adaptation effects after a trauma, Richardson distinguishes four different reintegration forms: a) dysfunctional reintegration, which often leads to isolation and depression, b) reintegration with loss, or coming to terms with limitations while continuing previous activities in a modified form, c) reintegration as a return to previous homeostasis, d) resilient reintegration, or coming to terms with limitations and further development. The latter form is regarded as a manifestation of both resilience and positive coping skills which are necessary for disabled persons to deal with crises that are inherent in their lives.

Numerous studies demonstrate a correlation between physical fitness and motor activity, and, on the one hand, growing self-esteem and self-agency and the improvement in the perception of oneself and one's physical capabilities, and, on the other hand, a decrease in one's anxiety, stress and depression levels [16, 15, 17]. Physical ability correlates positively with mental health, self-esteem and well-being. Since team sports increase one's resilience, they are particularly believed to reduce the risk of the incidence of depression. Participation in sports enhances resilience and facilitates the process of adaptation to one's disability [11, 12]. As regards the process whereby disabled persons redefine their own identity, we may

assume that they do so, as it were, by regaining their resilience assets. This assumption allows us to draw upon the existing models of external and internal assets in the resilience developing process [18].

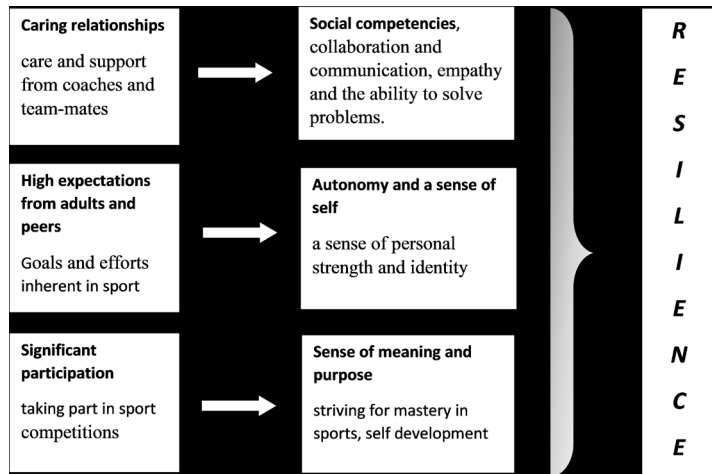


Fig. 1. Influence of external assets to internal assets in developing resilience
 Source [18], elaborated by authors

The first external asset includes supportive and caring relationships with one's own environment. When doing sport with other people, persons with disabilities may face interest, care and support from their coaches and teammates, which in turn may help them to develop the following interpersonal skills: collaboration and communication, empathy and the ability to solve problems. The bond that thus develops stimulates one's interpersonal skills (Fig. 1).

Goals and efforts to achieve them are inherent in sports. Coaches that demand a lot and teammates that expect just as much from the team set a standard that disabled athletes will aspire to. The fact that people from their direct sporting environment show belief in their strengths and capabilities becomes a motivating factor conducive to coping with their fatigue or self-doubt. Requirements instil in them a sense of personal strength and identity and a sense of agency and self-awareness.

Last but not least, they also instil in them a sense of belonging, and a sense of participation in major events raises their optimism levels and makes them perceive their lives as coherent and meaningful. By taking part in sports competitions and by meeting other athletes both home and abroad, they confirm their value in the eyes of other people, which facilitates the process of their social affiliation and participation in society.

As regards self-discipline, which is inherent in anyone's striving for mastery in sports, we may safely argue that it shapes their character: it develops their endurance, helps them overcome their weaknesses and becomes a way to develop themselves [11, 19].

The background of the presented study is positive psychology concentrated on subjective well-being as a condition for happiness and good life. The research project aimed to answer the following questions: What are the motives for doing sport and effects of practicing sports in disabled athletes? Do young adult athletes with disabilities differ from disabled young people not practicing sports in terms of resilience, courage, life satisfaction and values they uphold? Do young adult athletes with disability differ in these fields from young and healthy adults, practising sports as leisure? The research design was focused on the above-mentioned questions.

MATERIAL AND METHODS

PARTICIPANTS

The sample involved three groups of young adults. The first group comprised athletes with disabilities, 30 participants in total, including 21 men and 9 women ($M = 26.5$ years of age). 77% of participants had been disabled for more than 10 years. As regards their type of disability, 40% of participants had spinal cord damage, 30% had paralyse and pareses, 27% had limb deficiency and 3% partially lost their eyesight. 80% of the respondents practised sports at a competitive level and took part in competitions (national and international). Their sports included: skiing (10 people), cycling (9 people), swimming and fencing (4 people), basketball (3 people) and other sports, including rugby (5 people). Several respondents practised more than one discipline.

The second group consisted of 30 people, young adults with disabilities ($M = 27.5$ years of age), 19 men and 12 women. The main disability in this group was motor impairment: 48% of the participants had spinal cord damage, 49% had paralyse and pareses and 3% partially lost their eyesight.

The third group consisted of 30 people, healthy young adults ($M = 25.9$ years of age), 21 men and 9 women, 90% of whom practised sports as leisure.

MEASURE

The measurement tools included: The You and Your Life Questionnaire by Jelonkiewicz, Kühn-Dymecka and Zwoliński [20], the Polish adaptation of the Resilience Scale for Adults by Friberg et al. (RSA) [21], the Satisfaction with Life Scale (SWLS) by Diener, Emmons, Larson, Griffin, Polish adaptation by Juczyński [22], Personal Values List (LWO) by Juczyński [23] and Courage Scale (M-O) by Sikorska [24].

The Polish adaptation of the Resilience Scale for Adults (RSA) by Friberg et al. [21] was used to study **resilience**. The You and Your Life Questionnaire consists of twenty items and covers four factors, such as self-perception, the perception of one's future, personal strength and structured style. The original RSA also considers two additional factors: social skills and family consistence. The narrow understanding of resilience, more as an ego-trait when facing stress than an environmental trait, has been taken as the selection criterion in the Polish adaptation. A respondent answers on a five-point scale ranging from utterly positive (with expressions such

as “never” and “unclear” that give one point). Item are, for example, *My future is very promising* or *I make new friends very easily*. The whole questionnaire exhibits good internal consistency ($\alpha = 0.77$) and selected factors exhibits 0.81-0.66 Cronbach alpha.

Life satisfaction was measured in Satisfaction With Life Scale (SWLS, by Diener, Emmons, Larson, Griffin, 1985, Polish adaptation by Juczyński, 2001), which is a measurement tool consisting of five items describing present personal wellbeing. A respondent chooses an answer from seven possibilities, where 1 means “I do not agree at all” and 7 “I fully agree”. Items are, for example, *My life conditions are perfect* or *I am satisfied with my life*. SWLS is broadly used in research on the quality and satisfaction with life. The test reliability is 0.81 Cronbach alpha. A positive correlation between satisfaction with life and self-esteem (0.56; RSES by Rosenberg, 1989) and between satisfaction with life and self-efficacy (0.38; GSES by Juczyński, Schwarzer, Jerusalem, 2001) has been found.

The Personal **Values** List includes two sub-scales, one of which refers to the symbols of happiness (LWO S) (e.g. a large circle of friends, good economic conditions) and the other refers to values (LWO W) (e.g. love, wisdom). A respondent ranks five items selected out of ten according to the level of their importance, ranging from the most important (five points) to the least important (one point). Examples: *What does in your opinion decide about personal happiness: good health, successful family life, popularity...* Reliability in 2 weeks’ test-retest measure was 0.78 and 0.76 for chosen parts of LWO, and 0.72 and 0.62 after 6 weeks, which confirms the acceptable test stability.

The **Courage** Scale (M-O) in its pilot version consisted of sixteen statements comprising four sub-scales such as endurance, authenticity, optimism and courage. Example statements are *I perceive a faced adversity as challenge* or *I am full of physical energy*. A study involving 105 people (both healthy and disabled) was used to calculate the reliability of the scale, and Cronbach’s alpha for the test amounted to 0.77. Possible answers on a point-five scale ranged from “completely agree” (5 points) to “completely disagree” (1 point). The tool’s preliminary statistical analyses demonstrated that the scale required further improvements.

Personal data was gathered by using questions connected with age, sex and education, kind and duration of disability (among disabled persons), motivation for doing sports and outcomes of doing sports (among athletes).

The project was carried out in the winter of 2013 and winter of 2017. Disabled athletes were asked to complete tests and questionnaires during their sport training camps, and disabled persons and healthy young adults during individual meetings.

Statistical analysis was conducted in the following way. Kolmogorow-Smirnow test with Lilliefors correction was used to control the normality of distributions of the variables. Student’s test was applied to estimate the significance of differences when outcomes’ properties were nearing to normal distribution. In case of other distributions, U Mann-Whitney test was used (nonparametric analyses).

RESULTS

The results connected with the first research question *What are the motives for doing sport and effects of practicing sports in disabled athletes?* will be presented in the first step. When analysing motives and effects of doing sports in disabled athletes, the following results have been obtained. The most frequent reason why disabled persons began doing sports was their desire to keep fit and continue their previous and healthy lifestyle (43%), followed by encouragement from their disabled colleagues (40%), information available at treatment centres and encouragement from parents or teachers (13%) as well as information in the media (10%). Several respondents provided more than just one reason. The effects of doing sport, from respondents' subjective point of view, included an opportunity to make new friends (90%), growing self-confidence (90%), an opportunity to do something adventurous (90%), a form of rehabilitation (80%), social recognition (33%). Several respondents mentioned more than just one effect (Fig. 2)

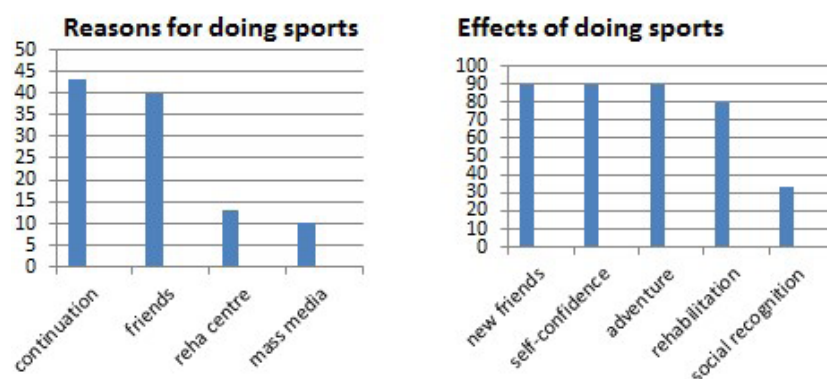


Fig. 2. Motives for and outcomes of doing sport
Source: Prepared by authors

The results connected with the second research question: *Do young adult athletes with disabilities differ from disabled young people not practicing sports in terms of resilience, courage, life satisfaction, and values they uphold?* and with the third question: *Do young adult athletes with disability differ in these fields from young and healthy adults, practising sports as leisure?* will be presented in the second step.

When analysing differences between young adult athletes with disabilities and disabled people not practicing sports, the significant difference in resilience has to be mentioned ($t = 5.43$; $df = 59$; $p < 0.0001$), which means higher resilience traits in disabled athletes. The next significant difference in this variable has been observed in comparison between disabled persons and healthy adults ($t = -4.26$; $df = 59$; $p < 0.001$). This outcome points out higher resilience in healthy adults (Table 2). Disabled athletes and healthy young adults do not differ in terms of their resilience levels. Moreover, the difference between disabled persons not practicing sports and healthy young adults has been not observed.

Table 1. Descriptive statistics for the tested variables in three groups

Variable - method/ group	<i>n</i>	<i>Mean</i>	<i>Min</i>	<i>Max</i>	<i>SD</i>
RSA - disabled athletes	30	76.93333	59.00	98.00	8.25011
RSA disabled	31	61.25806	32.00	84.00	13.57932
RSA healthy adults	30	73.66667	57.00	90.00	8.54737
M-O disabled athletes	30	64.30000	53.00	74.00	6.17643
M-O disabled	31	54.90323	41.00	74.00	7.28631
M-O healthy adults	30	62.43333	52.00	74.00	5.86447
SLWS - disabled athletes	30	23.10000	14.00	30.00	4.26978
SWLS disabled	30	24.00000	10.00	35.00	5.69936
SWLS healthy adults	31	14.32258	7.00	30.00	5.33783
LWO S disabled athletes	30	15.20000	15.00	18.00	0.76112
LWO S disabled	31	14.83871	10.00	15.00	0.89803
LWO S healthy adults	29	14.86207	11.00	15.00	0.74278
LWO W disabled athletes	30	15.00000	10.00	19.00	1.70193
LWO W disabled	31	14.83871	10.00	15.00	0.89803
LWO W healthy adults	29	15.00	15.00	15.00	0.00000

RSA – Resilience Scale for Adults; M-O – Courage Scale; SWLS – Satisfaction With Life Scale; LWO – The Personal Values List, W – value, S – happiness. Source: Prepared by authors

Table 2. Differences between disabled athletes, disabled persons and healthy adults in the context of the Resilience Scale for Adults (RSA) and in results of the Courage Scale (M-O)

Comparison between groups	RSA			M-O		
	<i>t</i>	<i>df</i>	<i>p</i>	<i>t</i>	<i>df</i>	<i>p</i>
Disabled athletes (1) vs disabled persons (2)	5.43	59	0.000001	5.43	59	0.000001
Disabled athletes (1) vs healthy adults (2)	1.51	58	0.14	1.20	58	0.235
Disabled persons (1) vs healthy adults (2)	-4.26	59	0.0001	-4.44	59	0.000040

Source: Prepared by authors

The next important outcome was the statistically significant difference in courage between disabled athletes and other disabled persons ($t = 5.43$; $df = 59$; $p < 0.0001$) and between disabled persons and healthy adults ($t = -4.44$; $df = 59$; $p < 0.0001$). The outcomes point out the highest courage level in disabled athletes, then healthy persons. In both cases, the lower courage level in disabled persons not practicing sport has been observed (Table 2). The difference in terms of courage between disabled athletes and healthy young adults has been not observed.

The groups involved in the study do not differ in terms of their life satisfaction levels. The mean in both groups gives an average result (in the standard ten scale: disabled athletes $M = 23.1$, disabled persons not practicing sports $M = 24$, and young adults $M = 14.42$).

With regard to personal values, athletes attached a significantly higher importance to the symbol of happiness useful to others ($z = 2.74$; $p < 0.05$) and the symbol of value courage and firmness ($z = 2.26$; $p < 0.05$). Disabled athletes attach more importance to such values as being useful to others, which may demonstrate that they recognise the importance of social interaction in the process of adaptation to disability. The necessity to overcome one's disability-

-related external and internal limitations may have helped them recognise such values as courage and firmness. No differences were observed between disabled athletes and other disabled persons and between disabled persons not practicing sports and healthy young adults.

DISCUSSION

The results achieved by disabled athletes demonstrate that they have a number of personal resilience qualities. Many researchers [25, 26, 27, 28] have emphasized a high level of resilience in disabled athletes. Striving to achieve one's goals, regardless of obstacles, is undoubtedly one of them. The qualities of a resilient person include an ability to regain equilibrium after a critical event they have experienced and an ability to grow and develop as a person [29, 30]. The study group demonstrates a high level of the following resilience qualities: life satisfaction, optimism, endurance and social focus. Sport psychologists and coaches often described a portrait of resilient Paralympic athletes with similar character qualities [31, 32].

Competitive sports entail the necessity to discipline and control oneself and to keep one's rhythm of life in order, which manifests itself through the results that illustrate a higher level of structured style and endurance in disabled athletes. Sports as a factor that organises the lives of people involved in the study may have influenced areas such as making plans, overcoming one's own limitations, courage and endurance.

The factor that explains the significant similarity among the three study groups with regard to their life satisfaction is that they are in their early adulthood, that is, a period in their development that brings natural optimism and hope for a better future. The fact that disabled persons were also happy with their lives demonstrates that they coped well in the process of adaptation to disability. Moreover, sports as a stimulating factor conducive to happiness were present in both study groups. They also had a regulating effect and acted as a diary (competition and training camp dates) for disabled athletes.

A similar level of satisfaction with life in disabled persons, non-athletes, can be explained in the light of concepts by Rogers [33] and by Piaget [34]. Their common assumption is connected with an inborn human tendency to growth and development and the meaning of self-realization. Every observable effect of one's influence on the environment causes self-efficacy in each person and is a form of gratification as well. In their self-determination theory, Ryan and Deci concentrate on selected aspects of motivation [35, 36]. The authors point out three natural psychological needs as regulators and motivators. Those needs important for disabled people are as follows: need to be competent, need to be connected with others, need to be autonomous. Fulfilling the needs leads to satisfaction with life in everyone.

The quality of life is defined individually both in objective and subjective aspects. The first one refers to social economic and demographic issues. The second one is connected with individual beliefs, values, perception of self and future, and satisfaction with one's life [37]. The subjective quality of life bases on success in romantic appeal or in marriage, on an effective professional development and on a satisfying social network [38]. Doing social comparisons in the mentioned fields is crucial, especially for people with dysfunctions, because disability could be a factor for their social exclusion or marginalization.

International research on satisfaction with life in disabled people in three countries pointed out the highest level of this factor in Norway, high in Germany and the lowest in Poland [39]. Selected analysed agents of satisfaction, which influenced the results were architectural barriers and difficulties with employment. Satisfaction with life in Polish disabled students has been explored in research by Skalska [40]. The outcomes pointed out the significant meaning of social support from teachers and colleagues. Hence, sport activity could be treated as an important, but not the only factor, related to social inclusion, reintegration and experience of the high quality of life in disabled people.

The results achieved by disabled athletes should also be interpreted in the light of positive psychology, which lays particular emphasis on individual resources, strengths and values conducive to development. Of particular relevance in this context is Barbara Fredrickson's concept of positive emotions and their broadening effect. Fredrickson claims that resilient persons demonstrate a positive attitude and experience more positive emotions in comparison to their less resilient peers [41]. Consequently, such emotions as enthusiasm and optimism enhance their health assets and are conducive to overcoming obstacles. We should mention that respondents also demonstrate a high level of individual assets described by positive psychology, such as courage and endurance. Such assets help individuals, both healthy and disabled, to develop and actualise themselves. Positive psychology propounds that every person has the ability to strive for and achieve a sense of life satisfaction and happiness [5].

When considering the role of sport in the life of disabled athletes, the promotive/therapeutic role of adventure education must be mentioned [34]. Both forms are based on the belief that challenge, adventure and moderate stress have a reinforcing effect on individuals [42, 43, 44]. Many similarities exist between the two forms of strength and virtue promotion. Sport considered as both adventure and education meets the following criteria: a) exposure to challenge, b) coping with stress, c) self-transcendence, overcoming one's limitations, and d) creating an opportunity to achieve success and reinforce one's self-esteem.

According to Ryan and Deci's concept of self-determination [35, 36], the following competences and attitudes ought to be strengthened in order to promote individual well-being: self-efficacy, sense of belonging, sense of mastery, cooperation. It seems that practicing sports by disabled persons (especially those with motor impairments) could be a stimulus for shaping the attitudes mentioned above. Moreover, with regard to the flow concept, optimal personal development based on inner motivation is possible in conditions of challenges and demands adequate to one's abilities [45]. In case of challenges exceeding one's possibilities, anxiety could appear, and in the opposite situation - boredom.

The meaning of sport for people with motor disability could also be explained with regard to the transgression concept by Koziński [46]. In his opinion, all human actions crossing one's previous borders and limits play a great role in the process of self-acceptance. Transgression is described as a developmental step. The activity connected with transgression enables a human being to satisfy the hubristic need, meaning striving for self-affirmation.

CONCLUSIONS

When considering the chosen aspects of good life in Polish Paralympic athletes, the following conclusions can be made:

1. Disabled athletes share many qualities with resilient persons. The resilient qualities make it easier for an athlete to overcome challenges. Disabled athletes who share these qualities primarily define themselves as athletes, and only secondarily as disabled persons.
2. Disabled athletes do not differ from other disabled people and healthy adults in terms of their life satisfaction levels, i.e. in their ability to live a good life despite motor impairment and many objective daily obstacles.
3. The concept of good life in disabled athletes is reflected in their life satisfaction, sense of agency, courage and esteem for social values.
4. Methodological conclusions from the research are connected with a recommendation for a bigger sample in a future study and a more precise research design regarding such control variables as the kind and the duration of disability.

It seems that for persons that must adapt to disability and, therefore, redefine their own identity, sport may become a factor conducive to overcoming their mental crisis [14, 15, 47]. Sporting activities that could make life meaningful again, new social experiences and new emotions may act as factors that develop and enhance resilience.

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Cite this article as:

Sikorska I, Gerc K. Athletes with disability in the light of positive psychology. *Balt J Health Phys Act.* 2018;10(1):64-76.
doi: 10.29359/BJHPA.10.1.07