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Intervention Through Sport: Positive Youth Development in Adolescents with Autism Spectrum Disorders and Practicing Muay Thai. Research in the Parent-Child Dyad¹

INTERWENCJA POPRZEZ SPORT: POZYTYWNY ROZWÓJ NASTOLATKÓW
Z ZABURZENIAMI ZE SPEKTRUM AUTYZMU, A TRENUJĄCYMI TAJSKI BOKS.
BADANIA W DIADZIE RODZIC-DZIECKO

Summary

This article discusses the positive development of youth diagnosed with autism spectrum disorders through sports. The concept of positive youth development focuses on strengthening the natural potential of adolescents and preparing them for the challenges of adulthood. The article presents a report from a quantitative study conducted in a group of 72 people, including 36 adolescents diagnosed with autism spectrum disorders and 36 of their parents. The relationship between positive youth development and life satisfaction and the level of interpersonal competencies of adolescents was analyzed. The results indicate that positive development of youth diagnosed with autism spectrum disorders correlates with life satisfaction and selected interpersonal competencies. The discussion of the results presents practical recommendations for strengthening the potential of adolescents with autism spectrum disorders.

Keywords: positive youth development; therapy; sport; autism spectrum disorders; Muay Thai

Streszczenie

Artykuł omawia pozytywny rozwój młodzieży z diagnozą zaburzeń ze spektrum autyzmu poprzez sport. Koncepcja pozytywnego rozwoju skupia się na wzmacnianiu naturalnego potencjału nasto-

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latków i przygotowaniu ich do wyzwań dorosłości. W artykule zaprezentowano raport z badania ilościowego przeprowadzonego w grupie 72 osób, w tym 36 nastolatków z diagnozą zaburzeń ze spektrum autyzmu i 36 ich rodziców. Analizowano zależności między pozytywnym rozwojem młodzieży a satysfakcją z życia i poziomem kompetencji interpersonalnych nastolatków. Wyniki wskazują, że pozytywny rozwój młodzieży z diagnozą zaburzeń ze spektrum autyzmu koreluje z satysfakcją z życia oraz wybranymi kompetencjami interpersonalnymi. W dyskusji wyników przedstawiono rekomendacje praktyczne dotyczące wzmacniania potencjału nastolatków z zaburzeniami ze spektrum autyzmu.

Słowa kluczowe: pozytywny rozwój młodzieży; terapia; sport; zaburzenia ze spektrum autyzmu; tajski boks

1. Autism spectrum disorders

Autism spectrum disorders (ASDs) have been studied since the early 20th century, yet many questions remain. Changes in diagnostic classifications, such as the shift from ICD-10 to ICD-11, reflect ongoing developments. Swiss psychiatrist Eugen Bleuler first introduced ASDs to psychological literature in 1911, describing individuals who avoided social contact and lived in internal worlds. Similar observations were made by Russian psychiatrist Grunya Sukhareva in 1925. In 1943, Austrian-American psychiatrist Leo Kanner identified autism as a social and emotional disorder, studying 11 children with traits like stubbornness, communication challenges, routine behavior, and hypersensitivity, but also good memory and intellectual potential. Simultaneously, Hans Asperger analyzed four young patients with limited social contact but notable scientific and mathematical talents.²

Today, the diagnosis and understanding of autism spectrum disorders are based on mental health classifications such as the DSM-5 and ICD-10 and ICD-11.³

The DSM-V classification distinguishes four key diagnostic criteria:

- persistent, clinically significant abnormalities in social communication and interactions with the environment,

2 E. Furgał, *Neuroróżnorodni. Jak zmieniło się myślenie o autyzmie*, "Znak," 2019, nr 766; M. Drzazga-Lech, M. Kleczek, M. Ir, *Różne sposoby definiowania autyzmu. Przegląd stanowisk*, "Acta Universitatis Lodziensis. Folia Sociologica," 2021, nr 79, pp. 49-62, <https://doi.org/10.18778/0208-600X.79.03>; M. Omyła-Rudzka (red.), *Spółeczny obraz autyzmu*, Warszawa 2018 (Komunikat z Badań Centrum Badania Opinii Społecznej, nr 44/2018); L. Kanner, *Autistic Disturbances of Affective Contact*, "Nervous Child," 2 (1943), no. 3, pp. 217-250; E. Pisula, *Autyzm u dzieci. Diagnoza, klasyfikacja, etiologia*, Warszawa 2001; M. Młynarska, *Autyzm w ujęciu psycholingwistycznym: terapia dyskursywna a teoria umysłu*, Wrocław 2008; S. Silberman, *Neuroplemiona. Dziedzictwo autyzmu i przyszłość neuroróżnorodności*, tłum. B.M. Kotarski, Białystok 2017; E.M. Ali, F.E.Z. Al-Adwan, Y.M. Al-Naimat, *Autism Spectrum Disorder (ASD); Symptoms, Causes, Diagnosis, Intervention, and Counseling Needs of the Families in Jordan*, "Modern Applied Science," 13 (2019), no. 5, pp. 48-56, <https://doi.org/10.5539/mas.v13n5p48>.

3 T. Grandin, R. Panek, *Mózg autystyczny*, tłum. K. Mazurek, Kraków, 2016.

- visible deficits in the development of verbal and nonverbal communication,
- lack of social reciprocity, and
- inability to develop and maintain peer relationships.⁴

Autism spectrum disorder is defined as a lifelong neurodevelopmental disorder characterized by difficulties with communication and social interaction, as well as restricted, stereotyped patterns of behavior, activities, and interests.⁵ Importantly, the latest international classification of diseases has abandoned separate categories of disorders (e.g., Asperger's syndrome) in favor of a unified autism spectrum.⁶

In the therapy of children with autism spectrum disorders, the involvement of parents and siblings in developmental programs and therapeutic activities conducted with peers is crucial.⁷ Various types of sports training can be an effective therapeutic tool supporting the psychomotor development of a child. Exercises help develop physical fitness, allow children to discover their own abilities, and establish contact and cooperation with others. They are also helpful in building self-confidence and a sense of security in relationships with the environment.⁸

2. Development of children with autism spectrum disorder in the context of positive youth development theory

The key goals of therapy for children with autism spectrum disorders should be to develop social and communication skills and to shape correct behavioral patterns.⁹ In this

4 American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*, 5th ed., Washington, DC 2013.

5 K. Yates, A. Le Couteur, *Diagnosing Autism*, "Paediatrics and Child Health," 19 (2009), issue 2, p. 86, <https://doi.org/10.1016/j.paed.2008.10.010>.

6 World Health Organization, *International Classification of Diseases, 11th Revision (ICD-11)*, Geneva 2019.

7 K. Szeler, *Wybrane metody terapii osób dotkniętych autyzmem w świetle literatury*, "Paedagogia Christiana," 20 (2007), nr 2, pp. 113-127.

8 A. Gąsienica-Szostak, *Muzykoterapia w rehabilitacji i profilaktyce*, Warszawa 2003; M. Wieczorek, A. Sadziak, *Aktywność fizyczna dzieci ze spektrum autyzmu*, "Journal of Education, Health and Sport," 7 (2017), nr 2, pp. 222-238.

9 M. Barłóg, M. Stradowska, *Moc wyobraźni w autyzmie. Bajkoterapia jako droga wspierania rozwoju dzieci z zaburzeniami ze spektrum autyzmu*, w: *Przekraczanie granic. Triumf wyobraźni*, red. B. Kuklińska, M. Gudowska, A. Gudowski, Lublin 2018, pp. 101-116; E. Baum, *Terapia zajęciowa*, Warszawa 2008; R. Biernat, *Metody i techniki terapeutycznego oddziaływania i wspomagania dzieci z zaburzeniami i deficytami rozwojowymi w wieku przedszkolnym i wczesnoszkolnym*, "Społeczeństwo. Edukacja. Język," 2 (2014), pp. 7-28; L. Bobkiewicz-Lewartowska, *Autyzm dziecięcy. Zagadnienia diagnozy i terapii*, Kraków 2000; E. Bogdanowicz, G. Durlow, *Rytmika w terapii dziecka*, w: *Muzyka w środowisku społecznym*, red. J. Uchyla-Zroski, Katowice 2012, pp. 428-433; U. Frith, *Autyzm. Wyjaśnienie tajemnicy*, tłum. M. Hernik, G. Krajewski, Gdańsk 2008; A. Garncarz, A. Rybka, *Terapia i edukacja osób z autyzmem i niepełnosprawnością intelektualną. Próba*

context, the concept of positive youth development seems to be particularly helpful, as it focuses on strengthening children's strengths and developing their potential, rather than limiting itself to reducing deficits.¹⁰

Initially, the concept of positive development was mainly used in preventive activities aimed at young people at risk of social exclusion. Currently, it covers wider groups of adolescents, and according to the authors of this article, it can also be effective in working with adolescents with autism spectrum disorders. It is based on promoting positive forms of spending free time and transmitting appropriate patterns, which allows for the elimination of negative attitudes. Changing behavior is not done through moralizing or commands like "Be nice," but by arousing interests and passions that give meaning to the child's actions and encourage them to adopt positive attitudes. Often, it is sports that become such a passion, and the coach plays the role of a mentor who models appropriate behaviors.¹¹

The concept of positive development is based on developing five key areas of functioning, which are indicators of effective adaptation to the challenges of adulthood:¹²

- competence (including cognitive and social),
- confidence (positive attitude toward oneself),
- connection (relations with their social environment),
- character (sociomoral development), and
- caring (caring attitudes towards other people).

integracji zagadnień, "Sztuka Leczenia," 2012, nr 3-4, pp. 47-68.

- 10 M. Barlóg, *The Theory of Positive Youth Development – Polish Adaptation of the PYD-SF and PYD-VSF Questionnaires*, "Kwartalnik Naukowy Fides Et Ratio," 53 (2023), no. 1, pp. 77-84, <https://doi.org/10.34766/fer.53i1.1146>; R.M. Lerner, *Nature, Nurture, and Dynamic Interactionism*, "Human Development," 21 (1978), pp. 1-20, <https://doi.org/10.1159/000271572>; R.M. Lerner et al., *Positive Youth Development, Participation in Community Youth Development Programs, and Community Contributions of Fifth-Grade Adolescents: Findings From the First Wave Of the 4-H Study of Positive Youth Development*, "Journal of Early Adolescence," 25 (2005), no. 1, pp. 17-71, <https://doi.org/10.1177/0272431604272461>; R.M. Lerner et al., *Positive Youth Development: Processes, Programs, and Problematics*, "Journal of Youth Development," 6 (2011), no. 3, pp. 41-64, <https://doi.org/10.5195/jyd.2011.174>; R.M. Lerner et al., *Resilience and Positive Youth Development: A Relational Developmental Systems Model*, in: *Handbook of Resilience in Children*, eds. S. Goldstein, R. Brooks, Boston, MA 2013, pp. 293-308, https://doi.org/10.1007/978-1-4614-3661-4_17; R.M. Lerner, P.A. Chase, *Enhancing Theory and Methodology in the International Study of Positive Youth Development: A Commentary*, "Child & Youth Care Forum," 48 (2019), no. 2, pp. 269-277, <https://doi.org/10.1007/s10566-018-9485-7>.
- 11 M. Barlóg, *The Theory of Positive Youth Development*, pp. 77-84.
- 12 Ibidem, pp. 77-84; E.P. Bowers et al., *The Five Cs Model of Positive Youth Development: A Longitudinal Analysis of Confirmatory Factor Structure and Measurement Invariance*, "Journal of Youth and Adolescence," 39 (2010), no. 7, pp. 720-735, <https://doi.org/10.1007/s10964-010-9530-9>; R.M. Lerner et al., *Positive Youth Development, Participation in Community Youth Development Programs, and Community Contributions of Fifth-Grade Adolescents*, pp. 17-71; K. Ostaszewski, *Zachowania ryzykowne młodzieży w perspektywie mechanizmów resilience*, Warszawa 2014.

The development of these indicators is associated with the improvement of the functioning of teenagers belonging to various groups at risk of exclusion.¹³ In the context of this work, the links between indicators of positive development and the level of life satisfaction and interpersonal competencies in adolescents diagnosed with autism spectrum disorders who train Thai boxing are of particular interest.

3. Research methodology

3.1. Research purpose

This study aims to assess the intensity of positive youth development in adolescents who train Muay Thai (Thai boxing) and are diagnosed with autism spectrum disorders. The research goal is to examine the relationship between indicators of positive development adolescents' level of interpersonal competencies and life satisfaction.

Additionally, taking into account the role of family as an important context for the positive development of a child, this study aims to learn about parents' opinions regarding their children's level of interpersonal competencies. The research project was planned using a parent-child dyad model.

The main research question is: What are the predictors of the level of positive youth development and life satisfaction in adolescents who train in Muay Thai and are diagnosed with autism spectrum disorder?

The following hypotheses were formulated in the study:

- H1 Interpersonal competency and life satisfaction are predictors of positive development in adolescents diagnosed with autism spectrum disorders.
- H2 Positive development indicators and interpersonal competency are predictors of the level of life satisfaction in adolescents diagnosed with autism spectrum disorders.
- H3 There is a relationship between the level of positive development in adolescents diagnosed with autism spectrum disorders and their life satisfaction.

13 C.M.S. Ma, D.L.T. Shek, *Objective Outcome Evaluation of a Positive Youth Development Program: The Project P.A.T.H.S. in Hong Kong*, "Research on Social Work Practice," 29 (2019), no. 1, pp. 49-60, <http://dx.doi.org/10.1177/1049731517711246>; R.D. Taylor et al., *Promoting Positive Youth Development Through School-Based Social and Emotional Learning Interventions: A Meta-Analysis of Follow-Up Effects*, "Child Development," 88 (2017), issue 4, pp. 1156-1171, <https://doi.org/10.1111/cdev.12864>; S.M. Worker et al., *Promoting Positive Youth Development Through Teenagers-as-Teachers Programs*, "Journal of Adolescent Research," 34 (2019), issue 1, pp. 30-54, <https://doi.org/10.1177/0743558418764089>.

- H4 There is a relationship between the level of positive development in adolescents diagnosed with autism spectrum disorders and their interpersonal competencies (assessed by both children and their parents).

3.2. Research tools

The study analyzed three variables:

The level of positive youth development, which was measured using the PYD-VSF-PL questionnaire by G. John Geldhof et al.¹⁴ in the Polish version by Mateusz Barłóg;¹⁵ it allows for the measurement of five indicators of positive youth development, which are also indicators of effective adaptation to the challenges of adulthood. The tool consists of 17 statements, to which respondents provide answers on a scale of 1-5. The questionnaire allows for determining the overall result of positive youth development and five key indicators: competence (life competence), confidence (positive attitude towards oneself), connection (a sense of connection with the closest environment), character (the state of moral development), and caring (attitudes towards other people, ability to care for others). The tool is characterized by a high level of reliability ($\alpha = .91$).

The level of interpersonal competencies, which was measured using the ICQ-R questionnaire by Duane Buhrmester, Mitchell T. Wittenberg, Harry T. Reis, and Wyn-dol Furman, in the Polish version by Waldemar Klinkosz, Justyna Iskra, and Magdalena Dawidowicz.¹⁶ The questionnaire consists of 40 statements, to which respondents reply on a scale of 1-5. The tool allows researchers to determine the level of competence intensity in five areas: initiating relationships; asserting influence; self-disclosure; providing emotional support; conflict resolution.

The level of life satisfaction, which was measured by the Satisfaction with Life Scale (SWLS) questionnaire by Ed Diener et al.¹⁷ in the Polish version prepared by Konrad S. Jankowski.¹⁸ It is a 5-item tool designed to measure the global assessment of satisfaction with one's own life. Responders reply to 5 statements on a scale of 1-7. The Polish version of the tool has good psychometric properties ($\alpha = .86$).

14 G.J. Geldhof et al., *The Creation and Validation of Short and Very Short Measures of PYD*, "Journal of Research on Adolescence," 24 (2014), pp. 163-176, <https://doi.org/10.1111/jora.12039>.

15 M. Barłóg, *The Theory of Positive Youth Development*, pp. 77-84.

16 W. Klinkosz, J. Iskra, M. Dawidowicz, *Kwestionariusz kompetencji interpersonalnych (ICQ-R): D. Buhrmester, W. Furman, M.T. Wittenberg i H.T. Reis: Podręcznik*, Gdańsk 2017.

17 E. Diener et al., *The Satisfaction with Life Scale*, "Journal of Personality Assessment," 49 (1985), pp. 71-75, https://doi.org/10.1207/s15327752jpa4901_13.

18 K.S. Jankowski, *Is the Shift in Chronotype Associated with an Alteration in Well-Being?*, "Biological Rhythm Research," 46 (2015), pp. 237-248, <https://doi.org/10.1080/09291016.2014.985000>.

3.3. Research sample

The study involved 72 people, including 36 adolescent boys (mean age $x = 15.28$; $Sd = 2.75$) and 36 parents (19 mothers and 17 fathers, mean age $x = 50.28$; $Sd = 6.34$). The adolescents in the study had been diagnosed with autism spectrum disorders and had been participating in Muay Thai training for at least three months. They completed the entire set of questionnaires, and their parents completed the ICQ-R interpersonal competency questionnaire (referring to the assessment of their child's competencies).

4. Results

Table 1 contains descriptive statistics, including mean results for individual variables and standard deviation. The mean results indicate that the interpersonal competencies of adolescents are at an average level compared to the population of adolescents in Poland.¹⁹

Hypotheses 1 and 2 were verified by stepwise regression analysis. The results indicate that predictors of positive youth development in adolescents diagnosed with autism spectrum disorders are life satisfaction and the level of interpersonal competency in the area of emotional support for others. These variables explain 42% of the variance

Table 1. Descriptive statistics for the studied variables: mean and standard deviation

Participant	Variable	X	Sd
Adolescent	Positive development	66.94	9.24
	Life satisfaction	24.69	5.39
	Initiating relationships	30.17	4.37
	Asserting influence	28.94	2.63
	Self-disclosure	27.19	3.77
	Providing emotional support	28.97	3.17
	Conflict resolution	27.92	2.31
	ICQ-R – overall result	143.19	9.06
Parent	Initiating relationships	28.94	3.48
	Asserting influence	29.06	2.69
	Self-disclosure	27.19	2.36
	Providing emotional support	29.33	2.27
	Conflict resolution	29.19	2.94
	ICQ-R – overall result	143.72	3.48

19 W. Klinkosz, J. Iskra, M. Dawidowicz, *Kwestionariusz kompetencji interpersonalnych (ICQ-R)*.

Table 2. Predictors of the level of positive youth development in adolescents diagnosed with autism spectrum disorders

Predictors	<i>B</i>	<i>R</i>	<i>R</i> ²	<i>F</i>	<i>p</i>
Life satisfaction	0.841	.649	.422	12.032	<.001
Providing emotional support	0.962				

Table 3. Predictor of life satisfaction level in adolescents diagnosed with autism spectrum disorders

Predictor	<i>B</i>	<i>R</i>	<i>R</i> ²	<i>F</i>	<i>p</i>
Confidence	1.640	.831	.690	75.760	<.001

Table 4. Analysis of correlations between individual indicators of positive youth development and the level of life satisfaction

	Life satisfaction	
	<i>r</i>	<i>p</i>
Positive development – overall result	.565**	<.001
Connection	.509**	.002
Character	.147	.394
Competence	.341*	.040
Caring	.258**	.130
Confidence	.831**	<.001

* statistical significance at a level less than or equal to .05

** statistical significance at a level less than or equal to .01

in the level of adaptation to the challenges of adulthood. In turn, life satisfaction is explained by the indicator of adaptation to adulthood, which is a positive attitude toward oneself, and this explains 69% of the variance in the level of satisfaction of adolescents diagnosed with autism spectrum disorders.

To verify the third hypothesis, a Pearson correlation test was conducted. Analysis of the results indicates a statistically significant relationship between the general indicator of positive youth development and life satisfaction. In addition, life satisfaction is associated with three indicators of positive development: connection with the environment, level of life competencies, and a positive attitude toward oneself. The correlations are positive. Details are presented in Table 4.

To verify the fourth hypothesis, a Pearson correlation test was also performed. The results indicate that there is a relationship between the level of connection with the immediate environment and the general level of interpersonal competencies. The state of moral development correlates with the ability to provide emotional support and conflict

Table 5. Analysis of correlations between individual indicators of positive youth development and the level of interpersonal competencies assessed by the child

Interpersonal competencies – assessment of a teenager						
	Initiating relationships	Asserting influence	Self-disclosure	Providing emotional support	Conflict resolution	ICQ-R – overall result
Connection	.327*	.240	.254	.144	.110	.349*
Character	-.100	-.020	-.068	.611**	.430**	.241
Competence	.050	-.082	.114	.030	.380*	.155
Caring	.210	.108	.209	.395*	.140	.393*
Confidence	.520**	.050	.211	.204	.288	.490**
Positive development – overall result	.250	.020	.170	.440**	.420*	.470**

* statistical significance at a level less than or equal to .05

** statistical significance at a level less than or equal to .01

Table 6. Analysis of the correlation between individual indicators of positive youth development and the level of interpersonal competencies assessed by their parent

Interpersonal competencies – assessment of a parent						
	Initiating relationships	Asserting influence	Self-disclosure	Providing emotional support	Conflict resolution	ICQ-R – overall result
Connection	.080	.144	.164	-.130	-.280	-.010
Character	.134	-.050	-.020	-.050	.165	.090
Competence	.090	-.030	-.040	.040	.170	.090
Caring	.320	-.090	.217	-.123	.050	.180
Confidence	.440**	.180	.130	-.280	.136	.291
Positive development – overall	.310	.030	.110	-.150	.120	.190

* statistical significance at a level less than or equal to .05

** statistical significance at a level less than or equal to .01

resolution. The sense of life competency is related to conflict resolution, and attitudes toward others are related to the ability to provide emotional support and the general level of interpersonal competencies, which is also related to a positive attitude towards

others. The general level of positive youth development is related to the general level of interpersonal competencies and to the subscales of emotional support and conflict resolution. A child's positive attitude toward themselves has a connection with their ability to initiate relationships (competency to initiate relationships as assessed by the parent). Detailed results are presented in Tables 5 and 6.

Correlations between the level of the child's interpersonal competencies, as assessed by the child and their parent, were also analyzed. Detailed results are presented in Table 7.

Table 7. Analysis of the correlation between the level of a child's interpersonal competencies assessed by the child and his or her parent

		Interpersonal competencies – assessment of a parent					
		Inicjowanie relacji	Asertywne oddziaływanie	Ujawnianie siebie	Emocjonalne wspieranie	Rozwiązywanie konfliktów	ICQ-R – skala ogólna
Interper. competen. – assessment of a teenager	Initiating relationships	.480**	.140	.200	–.160	–.030	.290
	Asserting influence	.130	.340*	.200	–.040	–.070	.210
	Self-disclosure	.340*	.260	.570**	.006	–.280	.340*
	Providing emotional support	.160	.050	.170	–.150	–.020	.100
	Conflict resolution	.290	–.040	.190	.260	.540**	.490**
	ICQ-R – overall result	.540**	.280	.490**	–.070	–.020	.500**

* statistical significance at a level less than or equal to .05

** statistical significance at a level less than or equal to .01

5. Discussion

The conducted research allowed for the verification of the hypotheses. Life satisfaction and the level of interpersonal competencies in the area of emotional support skills are predictors of the overall level of positive youth development. However, adolescents diagnosed with autism spectrum disorders' level of life satisfaction is explained, in almost 70%, by their level of positive attitude toward themselves. Increasing the level of life satisfaction in adolescents with autism spectrum disorders should, therefore, be associated with strengthening internal resources, mainly self-confidence. The observed result corresponds to research reports indicating that men achieve higher results in indicators of

positive youth development focused on the sense of competence and confidence, and women in the areas of connection with others.²⁰ However, strengthening a positive attitude toward oneself should be linked to the development of interpersonal competencies, especially in the emotional area. Autism spectrum disorders are associated with a low level of interpersonal competencies, so their development in preventive programs is crucial for building readiness for developmental challenges. It seems that the level of interpersonal competencies may be extremely important for the self-image and personality of adolescents with autism spectrum disorder, and improving emotional competencies may help overcome a negative self-image in areas related to the diagnosis.²¹

This indicates the importance of the concept of positive youth development, the idea of which is to focus on children's strengths and potential and pay less attention to negative aspects and deficits.²² Focusing on the child's potential, regardless of the child's diagnosis or experiences, allows for building a positive attitude toward oneself, which ultimately translates into a higher level of life satisfaction. The implementation of preventive programs based on the idea of positive development should, therefore, be addressed not only to young people, but also to adults working with adolescents diagnosed with autism spectrum disorders: parents, trainers, and teachers.

Both the overall level of positive development and three of the five indicators are positively associated with the level of life satisfaction in adolescents diagnosed with autism spectrum disorder. A high level of connection with the environment, sense of competency, and self-confidence is associated with higher life satisfaction. This indicates the need to strengthen the described indicators of adaptation to adulthood because they ultimately serve to increase life satisfaction. At the same time, higher life satisfaction translates

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- 20 D. Gomez-Baya, M. Reis, M. Gaspar de Matos, *Positive Youth Development, Thriving and Social Engagement: An Analysis of Gender Differences in Spanish Youth*, "Scandinavian Journal of Psychology," 60 (2019), no. 6, pp. 559-568, <https://doi.org/10.1111/sjop.12577>; D. Gomez-Baya, T. Santos, M. Gaspar de Matos, *Developmental Assets and Positive Youth Development: An Examination of Gender Differences in Spain*, "Applied Developmental Science," 26 (2021), no. 3, pp. 516-531, <https://doi.org/10.1080/10888691.2021.1906676>; N. Wium et al., *Gender and Positive Youth Development*, "Zeitschrift für Psychologie," 227 (2019), no. 2, pp. 134-138, <https://doi.org/10.1027/2151-2604/a000365>.
 - 21 M. Barłóg, M. Stradomska, *Moc wyobraźni w autyzmie*, pp. 101-116; S. Baron-Cohen et al., *Psychological Markers in the Detection of Autism in Infancy in a Large Population*, "The British Journal of Psychiatry," 168 (1996), no. 2, pp. 158-163, <https://doi.org/10.1192/bjp.168.2.158>; L.A. Pervin, *Psychologia osobowości*, tłum. M. Orski, Gdańsk 2002.
 - 22 M. Barłóg, *The Theory of Positive Youth Development*, pp. 77-84; P.L. Benson et al., *Positive Youth Development: Theory, Research and Applications*, in: *Handbook of Child Psychology*, vol. 1: *Theoretical Models of Human Development*, eds. R.M. Lerner, W. Damon, Hoboken, NJ 2006, pp. 894-941; G.J. Geldhof et al., *The Creation and Validation of Short and Very Short Measures of PYD*, pp. 163-176; R.M. Lerner et al., *Positive Youth Development, Participation in Community Youth Development Programs, and Community Contributions of Fifth-Grade Adolescents*, pp. 17-71; K. Ostaszewski, *Zachowania ryzykowne młodzieży w perspektywie mechanizmów resilience*.

into stronger connections with the environment, building relationships, and a sense of personal competency.²³ It is worth noting that well-conducted Muay Thai training can help strengthen these indicators of positive youth development because sports training provides good examples of preventive activities in the PYD concept.²⁴ An individual's development takes place through their own activity in the immediate and distant social environment.²⁵ The described social environment may be created by the trainer and peers. Strengthening connections with the environment or social relationships is particularly important in the group of children with autism spectrum disorders because a lower level of social competencies is characteristic compared to children without the diagnosis.²⁶

Interestingly, selected indicators of positive youth development are related to the general level of interpersonal competencies in adolescents with autism spectrum disorders, as well as their emotional support and conflict resolution skills. Parents perceive this issue differently; a correlation has been observed between the child's positive attitude toward themselves and their ability to initiate relationships with others. When working with a child with autism spectrum disorders, the child's perspective may be different from the assessment of their caregivers. However, ultimately, both the responses of children and their parents demonstrate that strengthening indicators of adaptation to adulthood²⁷ promotes the development of social competencies, which, in the case of a diagnosis of autism spectrum disorder, may be at a lower-than-average level.²⁸

Analysis of correlations between the child's assessment of interpersonal competencies and their parent's, indicates that high competencies assessed by the child are positively

23 M. Barłóg, *The Theory of Positive Youth Development*, pp. 77-84.

24 N.L. Holt, *Positive Youth Development Through Sport*, London-New York 2016; N.L. Holt, C.J. Deal, K. Pankow, *Positive Youth Development Through Sport*, in: *Handbook of Sport Psychology*, eds. G. Tenenbaum, R.C. Eklund, N. Boiangin, 4th ed., New York 2020, pp. 429-446; N.J. Newman et al., *Advancing Positive Youth Development-Focused Coach Education: Contextual Factors of Youth Sport and Youth Sport Leader Perceptions*, "Managing Sport and Leisure," 26 (2020), issue 4, pp. 326-340, <http://dx.doi.org/10.1080/23750472.2020.1766760>; V. Povilaitis, K.A. Tamminen, *Delivering Positive Youth Development at a Residential Summer Sport Camp*, "Journal of Adolescent Research," 33 (2018), issue 4, pp. 470-495, <https://doi.org/10.1177/0743558417702478>.

25 A.V. Ettekal, J.L. Mahoney, *Ecological Systems Theory*, in: *The SAGE Encyclopedia of Out-of-School Learning*, ed. K. Peppler, Thousand Oaks, CA 2017, pp. 239-241.

26 American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-5; ICD-10 Międzynarodowa klasyfikacja chorób. Klasyfikacja zaburzeń psychicznych i zaburzeń zachowania w ICD 10*, Kraków 2000; World Health Organization, *International Classification of Diseases, 11th Revision (ICD-11)*.

27 M. Barłóg, *The Theory of Positive Youth Development*, pp. 77-84; G.J. Geldhof et al., *The Creation and Validation of Short and Very Short Measures of PYD*, pp. 163-176; R.M. Lerner et al., *Positive Youth Development, Participation in Community Youth Development Programs, and Community Contributions of Fifth-Grade Adolescents*, pp. 17-71.

28 M. Barłóg, M. Stradomska, *Moc wyobraźni w autyzmie*, pp. 101-116; S. Baron-Cohen et al., *Psychological Markers in the Detection of Autism in Infancy in a Large Population*, pp. 158-163.

related to the parent's assessment of the child's competencies. Even though the adolescents surveyed are in a period of rebellion and may perceive reality differently than their parents,²⁹ ultimately, the level of interpersonal competencies assessed by the child and their parent seems consistent.

The described conclusions constitute important advice for people working with adolescents diagnosed with autism spectrum disorders. Conducting training based on the idea of positive youth development largely takes into account socialization and social aspects,³⁰ therefore, it seems to be a good idea when working with children diagnosed with autism spectrum disorder. The concept of sports training, therefore, seems to be a good solution. It should be remembered that training itself is not sufficient, an important role of trainers, apart from imparting knowledge, is to build relationships and model appropriate social attitudes.³¹

It is, therefore, important to implement preventive programs based on the idea of positive development addressed to young people with autism spectrum disorders, as well as to their parents, teachers, and trainers. Focusing on the child's strengths and potential may enable building a positive attitude toward oneself, which translates into greater life satisfaction. Social activities, such as Muay Thai training, help develop social competencies, strengthen connections with the environment, and teach group cooperation. It is important that these training sessions are conducted by trainers aware of the PYD concept. Trainers should emphasize not only the technical aspects of training but also on building relationships and modeling positive social attitudes. Designing programs for adolescents diagnosed with autism spectrum disorders should be individualized, taking into account the diversity of young people's needs and the specific characteristics of their family and peer environments.

Despite several conclusions drawn from the study, important limitations should be noted. The study was conducted with a small sample of 36 children and 36 parents. However, it is worth emphasizing that taking into account the parent-child dyad is particularly important in the context of research on children diagnosed with autism spectrum disorders because, in the event of a diagnosis, family relationships or the entire family system may change.³² There is also little research linking positive youth development with preventive activities in adolescents with autism spectrum disorders. This research

29 A. Oleszkowicz, *Bunt młodzieńczy. Uwarunkowania, formy, skutki*, Warszawa 2006; L. Bakiera, *Czy dorastanie musi być trudne?*, Warszawa 2013; E. Gurba, *Nieporozumienia z dorastającymi dziećmi*, Kraków 2013.

30 P.L. Benson et al., *Positive Youth Development*, pp. 894-941.

31 M. Barłóg, *The Theory of Positive Youth Development*, pp. 77-84; P.L. Benson et al., *Positive Youth Development*, pp. 894-941.

32 H. Liberska, M. Matuszewska, *Model rodziny z dzieckiem niepełnosprawnym*, w: *Rodzina z dzieckiem niepełnosprawnym: możliwości i ograniczenia rozwoju*, red. H. Liberska, Warszawa 2011, pp. 41-66.

should also be treated as a pilot study; in the future, it is worth conducting longitudinal research analyzing the change in the level of competencies over several months of training and including a control group in the analysis, although the reference to the norms for the questionnaire measuring the level of interpersonal competencies indicates that the adolescents studied do not differ in the level of these competencies from other Polish adolescents.³³ In summary, the study makes an innovative contribution to the field of positive youth development research by combining theory with specific sports activities and by considering the parent-child dyad in the context of adolescents with autism spectrum disorders, which may contribute to a better understanding and support of the development of this group.

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