

ORIGINAL ARTICLE

## *Anxiety level and self-esteem in youth with cerebral palsy*

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### BACKGROUND

The aim of the research was to compare youth with cerebral palsy (CP) and healthy individuals in terms of self-esteem and anxiety level, and to evaluate the relation between self-esteem and anxiety in both study groups.

### PARTICIPANTS AND PROCEDURE

The study included 30 individuals with CP and 30 healthy individuals, aged 16 to 22 years. The anxiety level was assessed using the State-Trait Anxiety Inventory, while self-esteem was assessed using Rosenberg's Self-Esteem Scale (SES) and the Coopersmith Self-Esteem Inventory (CSEI).

### RESULTS

No significant differences between youth with CP and healthy teenagers were observed in terms of anxiety level as a state or trait, global self-esteem and all the indicators of self-efficacy: family, friends, college, personal and the overall indicator of the sense of self-efficacy.

State anxiety correlates with nearly all indicators of self-esteem in youth with CP, except for the sense of self-esteem in the family, although the control group also lacked that correlation. As far as trait anxiety is concerned, the values of correlations are higher and the relation seems to be more likely in the group with CP.

### CONCLUSIONS

Youth with CP function like their healthy peers in terms of the anxiety level and self-esteem. The correlation between state anxiety and the dimensions of self-esteem in youth with CP suggests that their self-esteem is lower and more dependent on situational factors, especially anxiety-related ones, and the low level of trait anxiety suggested high self-esteem of an individual.

### KEY WORDS

disability; self-esteem; emotions

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## BACKGROUND

Cerebral palsy (CP) is not a progressive dysfunction of the developing central nervous system (CNS), especially the upper motor neurons, which occurred during pregnancy, birth or in the perinatal period. It is not a nosological unit due to its diverse etiology (Rosenbaum et al., 2007; Krageloh-Mann & Cans, 2009). Nevertheless, one common feature in CP diagnoses is motor disorders, which distort the appearance and limit everyday functioning to a variable extent. Individuals with CP exhibit varying degrees of cognitive performance, from deep retardation to fully fluent functioning of cognitive processes (Krageloh-Mann & Cans, 2009).

Therefore, disability is present in the life of a child with CP from the very beginning and interacts with the developmental process in all its aspects. The research presented in this paper includes an analysis of emotional functioning and the impact of physical disability on the development of self-esteem in young people struggling with dysfunctions caused by CP.

The development of emotional processes, including the anxiety level and the development of a disabled child's personality, is conditioned by multiple factors from the very beginning of its life. One of the first factors is the quality of attachment and the way the child is taken care of. The first year of life is characterized by rapid changes in psychosomatic and motor development, differentiation of feelings, emergence of a bond between a child and the caretaker, and the beginning of interactions with other people (Sadowska, Gruna-Ożarowska, & Skorczyńska, 2007). A factor which impedes the development of good interactions between a mother and a child can be the child's disability (Obuchowska, 1990). The research conducted by Bejster and Sadowska (2013) revealed that the level of interaction between a mother and a child is significantly lower in the group of children with CP than in the group of healthy individuals, which is a risk factor in the development of a sense of safety, increased level of anxiety and self-esteem.

Cerebral palsy symptoms, i.e. motor, perception and cognitive development disorders of different intensity and location, can have a significant influence on the development of the self-image and its evaluative aspect, which is self-esteem (Janssen, Voorman, Becher, Dallmeijer, & Schuengel, 2010; Russo et al., 2008). The disabled, including individuals with CP, undergo the same developmental processes as healthy people. However, these processes are distorted by more or less visible disability, which may result in disorders or dysfunctions in the development of personal or social life, and personality (Russo et al., 2008; Jemta, Fugl-Meyer, Oberg, & Dahl, 2009; Bejster & Sadowska, 2013).

Self-esteem of an individual is created by the so-called social mirror of a man. It comprises other people, their expectations, and assessments, which determine our convictions about ourselves. The way disabled persons are treated by the social environment determines their convictions about themselves and affects their correct functioning significantly (Tezcan & Simsek, 2013; Shields, Loy, Murdoch, Taylor, & Dodd, 2007; Miyahara & Piek, 2006). An important element of self-assessment is appearance, which is a key element for individuals with motor disabilities. Accepting one's own body and integrating it with the self-concept is a condition of positive adaptation to the life with disability. If one's self-esteem is in jeopardy, an individual activates his defensive mechanisms. To accept himself, a disabled individual has to accommodate not only his appearance, but also disability and the resulting functional limitations. If he accepts his deficiencies and limitations, then he is able to build a positive self-image (Tezcan & Simsek, 2013; Byra, 2012). The way an individual perceives himself determines his sense of authorship. A person with a tendency to exaggerate the consequences of his deficiency often puts obstacles in his way, which impede his interpersonal relations, and make it impossible for him to take up studies or a job. Such behavior can lead to learned helplessness (Byra, 2012).

In the process of building one's own self-esteem, an individual compares himself with his image of the ideal 'self', which is strongly influenced by the social environment, where the model of a man of merit is determined. While developing a positive self-image, the disabled often remain under the influence of social judgments and convictions, which frequently stem from stereotypes. A positive or negative self-concept depends on the possibility to satisfy one's needs. If a disabled person finds satisfying his intellectual needs most important, his impaired motor abilities will only be an obstacle; however, if he considers physical fitness and the ability to move around independently to be his priority, then failing to fulfill this need may deteriorate his sense of self-efficacy. In the process of adaptation to life, there is a necessity to change the hierarchy of values, and hence change the way of thinking about oneself as a man of merit (Jemta et al., 2009; Byra, 2012).

Formerly published study results have not provided an unequivocal answer to the question whether self-esteem and such other areas of functioning as the sense of quality of life, the sense of authorship and the level of self-acceptance differ between healthy youth and physically disabled individuals. Some publications have indicated a significantly lower sense of self-efficacy in the clinical groups (Russo et al., 2008), while others have suggested a lack of significant differences, or the presence of differences only in the case of some dimensions of the studied variables (King, Shultz, Steel, Gilpin, & Cathers, 1993;

Manuel, Balkrishnan, Camacho, Smith, & Koman, 2003; Shields, Murdoch, Loy, Dodd, & Taylor, 2006; Miyahara & Piek, 2006). There are also papers which imply that the level of self-efficacy of the physically disabled is higher than that of healthy individuals (Byra & Mazur, 2005). In such cases the disabled recognize their own value, trust themselves and present a more positive attitude to themselves than the fully fit individuals.

Russo et al. (2008) studied self-esteem, the self-concept and the quality of life of children and adolescents aged 3-16 years, suffering from hemiparesis, compared to a healthy youth. The control group assessed themselves better in terms of physical, sport and school competencies than the clinical group. The quality of life turned out to be better in the group of healthy individuals, too.

Manuel et al. (2003) observed average and high levels of self-esteem in the group with CP. Nevertheless, 30% of the respondents obtained results below the cut-off point for low self-esteem. A gender effect was observed – girls demonstrated lower self-esteem. Apart from that, the subjective perception of limitations resulting from disability also affected the results.

Another study was conducted on a study group which included not only youth aged 14-18 years with CP but also with other kinds of motor disability, i.e. spina bifida, cleft lip, with at least average intelligence, residing in a center for people with motor disabilities; in that study self-esteem, self-acceptance and self-efficacy were assessed (King et al., 1993). No significant differences were observed in the global self-esteem between clinical groups and the corresponding control group of healthy individuals. However, differences were observed in the case of certain dimensions of the self-concept: sport, school and social competencies. Respondents from the clinical group assessed their potential in romantic relationships as lower, too (see Czaplą & Otrębski, 2014).

The conducted meta-analyses revealed that some adolescents with CP had lower self-esteem than their peers. This concerned primarily girls, who felt worse in terms of social acceptance, physical appearance, sport and school competencies. However, it cannot be generalized that children and youth with CP have lower self-esteem. It depends on gender and area of life or functioning (Shields et al., 2006).

The conducted research included not only youth, but also children with CP (Dickinson et al., 2007; Parkes et al. 2008). Dickinson et al. (2007) conducted a very broad research project on the quality of life of 743 children with motor disability (CP) aged 8-12 years, residing in six European countries. Children with CP assessed their quality of life in a similar way to those from the general population, except for the school competencies.

The aim of the present study was to determine the anxiety level and the quality of self-esteem in youth

with cerebral palsy, in comparison to fully-fit adolescents. It was assumed that the adolescence period is a significant stage for personality development, and physical disability, which is characteristic of CP, can facilitate the formation of unfavorable features and affect the quality of personality functioning. The second aim was to investigate the correlation between the anxiety level in youth with CP and their self-esteem. The studies conducted so far have not taken into account the variable of anxiety as one which may be important for the level of self-esteem in the CP group.

## PARTICIPANTS AND PROCEDURE

### PARTICIPANTS

The study group included 60 individuals, divided into two 30-person groups: the criterion group, formed by youth with CP, and the control group, which comprised healthy fully-fit adolescents aged 16-22 years (the average age in the criterion group was 20.30 years, in the control group 19.90 years; the difference was not statistically significant). The criterion group included 15 girls and 15 boys, and the control group 17 girls and 13 boys. The respondents attended high schools and colleges. The selection for the criterion group required an individual search for students with CP, in various schools and colleges in the Lublin province, Podlasie and Mazowieckie in Poland.

Physical disability meant monoplegia in 7 cases, paraplegia in 12 cases, hemiparesis in 11 cases. The CP participants could walk without walking aids, were not limited in their ability to move about in the community, and were independent. The nonprobability sampling for the control group consisted of choosing a healthy student from the same school, meeting the inclusion criteria, including the intellectual level. All individuals were characterized by average intelligence (IQ in the criterion group  $M = 98.40$ , in the control group  $IQ M = 101.20$ , the difference was not statistically significant). The individuals were assigned to the control group also based on the socio-economic level and the structure of their families and their parents' education. These indicators were evaluated on the basis of a structured interview with the participants. It included questions on subjective assessment of the situation of the family, family structure and number of years of education of parents. All participants lived in complete families. In the criterion group 26% of parents had higher education, 57% secondary education and 7% vocational education, and in the control group 30% of parents had higher education, 60% secondary education and 10% vocational education; the difference was not significant. In the criterion group, 30% of families had a good financial situation, 63% of families had an av-

erage financial situation, and 7% had a poor financial situation. In the control group 26% of families had a good financial situation, 66% of families had an average financial situation, and 8% had a poor financial situation. The difference between groups was not significant.

## PROCEDURE

The study was conducted individually. The dependent variable of the anxiety level was assessed using the State-Trait Anxiety Inventory by Spielberg, the Polish adaptation by Spielberger, Strelau, Tysarczyk and Wrześniowski (Sosnowski et al., 2011). The basis for the construction of this scale is a division of anxiety into a state, i.e. a temporary and situation-dependent emotional state of an individual, and a trait, i.e. a relatively constant personality characteristic. The Inventory consists therefore of two scales: X-1 to assess state anxiety, and X-2 to assess trait anxiety. Each scale consists of 20 statements. Respondents have to mark on a 4-point scale the extent to which they agree with the statements. Self-esteem was assessed using Rosenberg's Self-Esteem Scale (SES) (Dzwonkowska, Lachowicz-Tabaczek, & Łaguna, 2008) and the Coopersmith Self-Esteem Inventory (CSEI) (Kuczyński, 2005). Rosenberg's SES is a popular tool to assess self-esteem. It consists of 10 statements, assessed by respondents on a 4-point scale in terms of how they agree with each item. The result obtained in the scale is the self-esteem indicator. The Cooper-smith CSEI is a multidimensional tool, used to assess self-efficacy of children, adolescents and adults. The author defines self-efficacy as the assessment of one's own meaning, competence and success. The inventory consists of statements, and the respondents – as in the case of previously described tools – are asked to refer to them and assess how they agree with them

on a 4-point scale. Coopersmith Self-Esteem Inventory measures self-efficacy on four dimensions: the overall self-efficacy indicator, social self, family self, and college (professional) self.

## RESULTS

Normal distribution of the empirical results obtained using the aforementioned research tools was confirmed with the Shapiro-Wilk test (for  $N < 100$ ). The obtained descriptive statistics and the investigated significance of differences between the study groups are presented in Table 1.

The results presented in Table 1 indicate a lack of significant differences between the group of adolescents with CP and their healthy peers in terms of the intensity of state anxiety, as a trait, global self-esteem and all indicators of self-efficacy: family, social, college, personal and the overall self-efficacy indicator.

The next analytic step was to assess the correlation between state anxiety and as a trait, and self-efficacy and self-esteem indicators in both study groups. The results of simple correlations in both groups are presented in Table 2.

As can be concluded from Table 2, state anxiety correlated with nearly all self-esteem indicators in youth with CP, except for family self-efficacy; however, there is no such correlation in the control group. As far as trait anxiety is concerned, the values of correlation coefficients are higher and the relations seems to be more probable in the group with CP.

## DISCUSSION

The aim of the research was to determine the anxiety level and the quality of self-esteem in youth with CP, in comparison to fully-fit adolescents, and the kind of

Table 1

*Descriptive statistics and analysis of significance of differences between the group of youth with cerebral palsy (CP) and healthy individuals, in terms of anxiety level and self-esteem indicators (the names of tools used to measure indicators are provided in parentheses)*

Variable	Group with CP <i>M (SD)</i>	Control group <i>M (SD)</i>	<i>t</i>	<i>p</i>
State anxiety (STAI)	34.08 (8.14)	33.76 (8.06)	0.14	.892 n.s.
Trait anxiety (STAI)	41.16 (9.54)	37.44 (6.29)	1.63	.110 n.s.
Global self-esteem (SES)	30.16 (4.69)	29.64 (4.32)	0.41	.685 n.s.
Family self-efficacy (CSEI)	12.88 (2.81)	12.65 (3.23)	0.03	.995 n.s.
Social self-efficacy (CSEI)	13.80 (3.71)	14.08 (2.43)	-0.32	.754 n.s.
College self-efficacy (CSEI)	11.48 (4.93)	12.12 (3.89)	-0.51	.613 n.s.
Overall self-efficacy (CSEI)	50.44 (12.42)	51.28 (10.42)	-0.26	.797 n.s.

*Note.* n.s. – not significant

Table 2

*Indicators of correlation between anxiety level as a state and as a trait, and indicators of self-esteem in the groups of youth with cerebral palsy (CP) and healthy individuals*

	State anxiety		Trait anxiety	
	Group with CP	Control group	Group with CP	Control group
Global self-esteem (SES)	-.42*	-.18	-.59**	-.34
Family self-efficacy (CSEI)	-.28	-.10	-.31	-.28
Social self-efficacy (CSEI)	-.41*	-.18	-.57**	-.46*
College self-efficacy (CSEI)	-.42*	-.08	-.65**	-.43*
Overall self-efficacy (CSEI)	-.47*	-.16	-.66**	-.44*

*Note.* \* $p < .05$ ; \*\* $p < .01$

relation between the studied variables. In the light of diverse research results published so far, in order to join the discussion on this significant (both theoretically and practically) matter, a study was conducted on adolescents with CP, aged 16-22 years, characterized by such a level of cognitive functions and such physical limitations which allowed them to learn and acquire socially diverse life experience.

The obtained results indicate unequivocally that the studied adolescents with CP do not differ from their peers either in terms of the level of trait and state anxiety, or in any of the self-esteem and self-efficacy indicators. This means that despite the presence of numerous factors which could affect children with CP in the earlier stages of their development (difficulties with establishing a correct bond caused by disability or a mother's overprotectiveness), which are commonly described as risk factors impeding the development of the emotional area and jeopardizing the correct formation of self-efficacy, the studied youth demonstrated similar features of the investigated functions as their healthy peers. These results are consistent with those obtained in the previously published studies (King et al., 1993; Manuel et al., 2003; Shields et al., 2006). The respondents are independent, present correct cognitive resources, study, and thanks to this have uninterrupted contact with their peers based on partnership. Their physical disability is just a limitation, and not a barrier in their functioning as adults. They used their assets and did not ascribe great significance to motor limitations in the process of preparation for adult life. It allowed them to develop adequate self-efficacy in many aspects of self-esteem, similarly to healthy individuals (Bjornson, Belza, Kartin, Logsdon, & McLaughlin, 2008; Manuel et al., 2003). Their emotional state, measured in this research project by means of the anxiety level, was similar to that of their peers. Nonetheless, one more issue should be taken into consideration when interpreting the aforementioned results. On the basis of the studies on self-description and self-esteem of youth with CP, it could be con-

cluded that respondents from the clinical group tend to activate their defensive mechanisms, which distorts the image of the well-developed sense of self-efficacy and makes it a bit untrue (Parkes et al., 2008).

The second part of the analyses reveals that state anxiety correlates with many self-esteem indicators in youth with CP, except for family self-efficacy; however, there is no such correlation in the control group. Correlations between trait anxiety and self-esteem and self-efficacy indicators occur in both groups, but they are higher in the clinical group and the relation seems to be more probable in the group with CP. Byra (2006) demonstrated that the disabled are characterized by a lower level of integration of various self-esteem dimensions. It could mean their self-esteem is less stable and more susceptible to situational factors. These results are congruent with the results obtained in this study, as it was demonstrated that various self-esteem dimensions correlate negatively and significantly at the average level with state anxiety. It suggests that the higher the state anxiety is, the lower is the self-esteem. On this basis it could be envisaged that youth with CP experience deterioration of their self-efficacy and competence in social, college and personal circumstances, when they feel worry or even anxiety. In this context the healthy individuals turned out to be more stable, and their self-esteem was not dependent on state anxiety.

Trait anxiety turned out to be negatively correlated with self-esteem indicators in both study groups. The correlations were statistically insignificant only in the case of the global self-esteem and family self-efficacy. However, in the group of youth with CP, the correlation indicators and the level of their probability were higher. The correlation of the overall and college self-efficacy was high, while the correlations of other self-esteem indicators were moderate. Therefore, the lower the trait anxiety is, the higher is the level of self-efficacy. This result seems to be theoretically justifiable. Trait anxiety can develop from the early childhood due to difficult experiences caused by unsatisfied basic needs of independence, health,

diverse activities, and acquiring positive social experiences. The lack of a sense of safety can result in the development of low self-esteem, although in the analyzed study the relation was the opposite in most cases. The lack of tensions and anxiety in childhood allowed them to develop a conviction about the positive self-efficacy of an individual.

The results are important for the perception of life perspectives of subjects with CP. Positive self-esteem is a predictor of higher cognitive and social activity of young people (Goltz & Brown, 2014), so it can be expected that the subjects with CP in the future will undertake activities in different spheres of life and thus perpetuate the sense of their own effectiveness.

## CONCLUSIONS

The research results lead us to the main conclusion: the neurodevelopmental disorder that is cerebral palsy, resulting in motor dysfunctions and the consequent limitations, should not be associated with psychopathology (Kelleman, Zeltzer, Ellenberg, Dash, & Rigler, 1980). The general pattern of emotional-personality functioning of youth with CP characterized by normal development and intellectual activity to acquire the skills at school turns out to be completely normal in psychological terms.

The correlation between state anxiety and self-esteem dimensions of youth with CP suggests that their sense of self-efficacy is less stable and more dependent on situational factors, especially anxiety-related, and the low level of trait anxiety allows them to develop a conviction about themselves as men of merit.

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