Odintsova M.A., Sorokova M.G. Coping Strategies and Coping Styles of Adolescents with Congenital and Acquired Disabilities (Cerebral Palsy, Oncology or Rheumatic Diseases Diagnosis)
Clinical Psychology and Special Education 2021, vol. 10, no. 2, pp. 95–123.

Coping Strategies and Coping Styles of Adolescents with Congenital and Acquired Disabilities (Cerebral Palsy, Oncology or Rheumatic Diseases Diagnosis)

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The study aims to compare adolescents coping strategies and coping styles depending on their gender and health status. Sample was subdivided into 3 groups: 1) healthy, 2) adolescents with cerebral palsy (congenital disability), 3) adolescents with oncology and rheumatic diseases (acquired disability). The sample size is 244 adolescents from 13 to 18 years old. 86 healthy subjects (37 boys and 24 girls, M=15.03+1.39 y.o.), 61 with oncology of the brain and spinal cord (46 boys and 40 girls, M=14.96+1.52 v.o.), 46 with rheumatic diseases (17 boys and 29 girls, M=14.70+1.50 v.o.), and 51 with cerebral palsy (28 boys and 23 girls, M=15.30+1.17 y.o.). The R. Carver' COPE questionnaire, adapted by Ye.I. Rasskazova, T.O. Gordeveva, Ye.N. Osin was used. It is found that adolescents with acquired disabilities use coping strategies similar to healthy peers, in contrast to adolescents with cerebral palsy, whose coping strategies are diverse. Adolescents in two clinical groups are more likely seeking support in religion than healthy ones, which reduces the stress impact by disability. Cognitively oriented coping styles is higher among healthy sample, emotionally oriented ones among adolescents with acquired disabilities, and dysfunctional ones among adolescents with cerebral palsy. Different trends in the intensity of coping strategies in clinical and healthy groups depending on gender are revealed.

Keywords: coping strategies, coping styles, adolescents, oncology, rheumatic diseases, disability, cerebral palsy.

For citation: Odintsova M.A., Sorokova M.G. Coping Strategies and Coping Styles of Adolescents with Congenital and Acquired Disabilities (Cerebral Palsy, Oncology or Rheumatic Diseases Diagnosis). *Klinicheskaia i spetsial'naia psikhologiia=Clinical Psychology and Special Education*, 2021. Vol. 10, no. 2, pp. 95–123. DOI: 10.17759/cpse.2021100207

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Introduction

Congenital and acquired disabilities create difficulties in adaptation of adolescents undergoing global physical and psychological changes related to a given age. In the case of acquired diseases, this is the difficulty of adaptation to the new role of a person with disabilities, in the case of congenital diseases — insufficient emotional and personal maturity, which hinders successful adaptation [10; 16]. This is superimposed on the stresses of interpersonal relationships, in educational, daily activities [12]. Coping strategies, which are most actively developing in this age period, help to cope with such a variety of stresses. The effectiveness of overcoming the disease depends on how successfully adolescents with disabilities cope with everyday stresses [13]. The coping problem has a long history and is widely described in the scientific literature (L.I. Antsyferova, S.K. Nartova-Bochaver, R. Lazarus, S. Folkman, C. Carver) in theoretical and empirical terms and different contexts. Research of coping strategies of groups of adolescents with moderate and severe disorders of motor functions; oncology; rheumatic diseases, in comparison with their healthy peers, demonstrate either no differences [20] or insignificant differences [28] and dependence of coping strategies on the severity of disorders [1].

Under the conditions of the disease, copings of acquired diseases have been studied: diabetes mellitus [15]; asthma, atypical dermatitis, oncology [13; 20; 21]; rheumatic diseases [7; 26], etc. In congenital — diseases of the optic tract [18]; craniofacial anomalies [19]; infantile cerebral palsy [1; 11]. It has been known that in congenital diseases, the strategies aimed at emotional support, control in the expression of negative emotions are chosen [18]; in acquired diseases – the strategies focused on emotional processing [9]; avoidance, acceptance of responsibility, self-control; distraction [13]; active problem solving [21]. Such a variety of coping strategies requires systematization. One of the ways is the disease control model, which includes the following:

- 1) primary control or active coping, aimed at changing the situation itself (problem solving, emotion regulation);
- 2) secondary control (positive thinking, cognitive processing, acceptance) aimed at changing the attitude towards the situation;
 - 3) passive coping that does not require effort (avoidance, denial) [10; 12].

Another way of systematization is the dispositional coping model that includes different ways of coping with stress which in their turn are arranged into three coping styles: 1) problem solving style (instrumental support use, active coping, inhibition, suppression of competing actions, planning); 2) emotionally oriented style (positive rethinking, religious coping, humor, emotional support use, acceptance); 3) dysfunctional style (mental escape, concentration on emotions, denial, behavioral escape, use of psychoactive substances) [8].

The thing that combines these models is the ability to manage stress for successful adaptation. At the same time, the following is recognized: 1) in controlled situations, but with a high level of stress, coping skills increase [17]; in the uncontrolled — adolescents

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can show flexibility following the change of the situation itself, which becomes a kind of "immunization" against other forms of stress [13]; 2) one way of stress coping cannot become the key to successful adaptation in conditions of disability [13]; 3) there are no "good" or "bad" coping strategies, the variety can be effective in case of active personality, aimed at distraction, release of emotional stress, and mobilization [12]; 4) experience in coping with stress is stable in time and depends on prior skills [19, 25]. As we can see, in coping strategies styles on adolescents with disabilities, on the one hand, there is an attempt to systematize them depending on the control over a stressful situation, on the other hand, the advantage of the diversity of the styles is recognized; at the same time both the situational variability of coping strategies and their relative constancy in time is proved. In addition, modern research, as a rule, focuses on one/two diseases leading to disability [9: 11: 15: 18], or the clinical samples are of mixed nature (e.g., adolescents with motor disorders of different origin are included in included in the group of musculoskeletal disorders) [2]. Sometimes the comparison groups are determined based on a chronic disease without considering its type [10, 12]; due to the small number of clinical groups. gender is not always considered [1; 2; 26]. Often, the coping strategies of adolescents in clinical groups are assessed based on their parents' ideas [11] and not on the opinions of the adolescents themselves.

These studies make a significant contribution to the general picture of coping behavior of adolescents, simultaneously contributing to the continuation of work in this direction to find both the general and specific in coping strategies and coping styles of healthy adolescents and the ones with different types of disabilities.

The goal of the study: to provide a comparative analysis of coping strategies and coping styles depending on the group and gender (healthy, adolescents with cerebral palsy (congenital disability), adolescents with oncology, and rheumatic diseases (acquired disability). We assumed that the adolescents with acquired disabilities used in their repertoire the coping strategies and coping styles similar to their healthy peers and will differ from the adolescents with congenital disease (cerebral palsy). Depending on the group (clinical, healthy), female and male adolescents will differ in the choice of certain coping strategies and coping styles.

Organization of Research

The study was conducted from 2016 to 2020 in Moscow; it was arranged individually in clinical groups, and classroom-based in healthy groups. The adolescents with oncology and rheumatic diseases were recruited from two hospitals with the permission of the attending physician to continue their studies at state treasury educational institution "Teaching Technologies" School". Of the adolescents with oncology who received radiation therapy, 70% underwent brain surgery, were accompanied by a family member. The adolescents with rheumatic diseases received combined antirheumatic and rehabilitation therapy and stayed in the hospital without their parents. The adolescents with cerebral palsy were recruited based on a resource school (a former boarding school for children with cerebral palsy) from small self-contained classrooms. They had an adapted educational program with code 6.1. with the obligatory inclusion of correctional and developmental courses. Parents of all the adolescents provided written consent for their children to participate in the study.

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Sample. The study involved 270 adolescents from 12 to 18 years old. To balance the samples by gender and age, we removed the data of 5 girls of 12 and 13 years old from the group of adolescents with rheumatic diseases. The data of 21 adolescents were excluded from the healthy group (five 12-year-olds, thirteen 18-year-old boys, three reported on having a disease (asthma, allergies)). The final sample consisted of 244 adolescents. The groups were balanced by gender (χ^2 =0,329, p=0,848) and age (ANOVA, F=1,703, p=0,167). The data are presented in Table 1.

Table 1

Distribution of adolescents into groups taking into account gender and age

Group	N	Age	Gender						
			Male (n)	%	Female (n)	%			
Healthy	86	14,96+1,52	46	53,5	40	46,5			
Adolescents with congenital disability									
Cerebral palsy	51	15,3+1,17	28	54,9	23	45,1			
Adolescents with acquired disability									
Oncology	61	15,03+1,39	37	60,7	24	39,3			
Rheumatic disorder	46	14,65+1,45	17	37,0	29	63,0			
Total in the group of adolescents with acquired disability									
	107	14,86+1,41	54	50,5	53	49,5			
Total sample	244	14,99+1,41	128	52,5	116	47,5			

Methodology. The adolescents were asked to answer how they behave and what they usually do when facing stressful situations. The COPE questionnaire (C. Carver, adapted by Ye.I. Rasskazova, T.O. Gordeeva, Ye.N. Osin) consisting of 15 coping strategies included in three coping styles (cognitively oriented, emotionally oriented, dysfunctional) was applied. The questionnaire is widely used in different countries. One of the recent studies in the USA demonstrated moderate internal consistency of COPE (Cronbach's α >0,60) in a teenage sample [24].

In our case, checking the internal consistency of fifteen subscales with coping styles showed the following: such subscales as searching for instrumental support, active coping, restraint, suppression of competitive activity, and planning are in good agreement with the cognitively oriented style (Cronbach's α =0,898); such subscales as mental escape, concentration on emotions, denial, behavioral escape, and sedatives use — with

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dysfunctional (α =0,867). An acceptable inconsistency of subscales was found out: searching for emotional support, positive reformulation, acceptance, recourse to religion, humor correlated with an emotionally oriented style (α =0,784), which indicates the correspondence of our data with the author's intention.

Data processing. The following statistical processing methods were used in the study: Student's t-test for two independent samples: two-ways ANOVA for comparing adolescents depending on their group affiliation (healthy, with congenital disability (CP), acquired disability) and gender; χ^2 test for comparing groups of adolescents by qualitative characteristics.

Results

Previously, we compared the coping strategies of two groups of adolescents (with oncology and rheumatic diseases) using Student's t-test. Checking the normal distribution of each of the two groups according to the Kolmogorov–Smirnov criterion confirms the normal distribution for all copings (p>0,05), except for the "sedatives use" for both groups (p=0,000). The distribution of coping "behavioral care" for adolescents with rheumatic diseases is on the boarder of statistical significance (p=0,047). Statistical analysis confirmed that adolescents with oncology and rheumatic diseases in three coping styles do not differ in mean values, and for the last two — in variances: cognitively oriented (t=1,36, p=0,177; F=6,79, p=0,010), emotionally oriented (t=0,315, p=0,753; F=0,099, p=0,754), dysfunctional (t=-0,410; p=0,683; F=0,004, p=0,951).

Further two-ways ANOVA was structured considering three groups: healthy, with congenital, and acquired disability and gender. The analysis results and descriptive statistics are presented in Table 2.

Significant differences, depending on the group, were found in the following coping strategies:

- 1) containment, suppression of competing activities, searching for instrumental support (cognitively oriented coping style);
 - 2) recourse to religion (emotionally oriented coping style);
- 3) mental escape, concentration on emotions, denial, behavioral escape, sedatives use (dysfunctional coping style) (Fig. 1). No differences were found between the groups in active coping strategies, planning, searching for emotional support, acceptance, positive reformulation, and humor (Table 2).

Adolescents with cerebral palsy score significantly higher on all coping strategies in contrast to the other two groups. Healthy adolescents and adolescents with acquired disabilities prefer coping strategies included in the cognitively oriented and emotionally oriented styles and less often use strategies related to the dysfunctional style. At the same time, both clinical groups gain higher scores and do not differ in the recourse to religion strategy (p=0,487), which distinguishes them from their healthy peers (p=0,000).

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 $\label{eq:Table 2} Table \ \ 2$ The intensity of coping strategies depending on group and gender

			O 1	0 0	•		
		Average values±standard deviation			F-statistics and p-values		
		Group o	of adolescents				
Coping strategies and coping styles	Gender	Healthy M (n=46) F (n=40)	Cerebral palsy M (n=28) F (n=23)	Acquired disability M (n=54) F (n=53)	Group	Gender	Group* Gender
Active coping	M	11,6±2,9	11,9±3,2	12,8±3,0	F=0,32	F=0,77	F=1,96
	F	12,3±2,7	11,6±3,3	11,8±2,9	p=0,574	p=0,465	p=0,143
Inhibition	M	9,7±2,6	11,6±2,8	10,0±2,2	F=9,01	F=0,09	F=0,49
	F	10,2±1,9	11,6±3,1	9,8±2,4	p=0,000	p=0,763	p=0,615
Suppression of	M	9,5±3,1	12,5±3,7	10,9±3,1	F=10,40	F=0,02	F=1,76
competing activities	F	10,5±3,4	12,6±3,4	10,1±3,1	p=0,000	p=0,878	p=0,175
Dlanning	M	9,1±2,4	8,7±2,3	9,2±2,3	F=2,15	F=0,01	F=1,96
Planning	F	9,7±2,0	8,4±2,1	9,0±2,3	p=0,119	p=0,998	p=0,370
Searching for	M	10,6±2,8	12,2±2,7	10,4±2,7	F=9,55	F=0,17	F=1,66 p=0,193
instrumental support	F	11,6±3,3	12,2±3,2	9,8±2,7	p=0,000	p=0,683	
Cognitively oriented style	M	10,1±2,2	11,4±2,6	10,7±2,1	F=3,57 p=0,03	F=0,00	F=2,20
	F	10,9±2,0	11,3±2,7	10,1±2,0		p=0,959	p=0,115
Searching for	M	9,6±2,8	9,8±2,5	10,5±2,7	F=1,46 p=0,235	F=6,37	F=5,47
emotional support	F	12,2±3,2	10,3±2,2	10,4±3,0		p=0,012	p=0,005
Positive reformulating	M	11,7±2,6	12,7±2,7	12,2±2,8	F=0,35 p=0,705	F=0,02	F=3,16
	F	13,±2,3	11,5±3,5	11,9±3,1		p=0,880	p=0,044
Acceptance	M	10,4±2,9	11,5±3,9	11,4±3,2	F=0,89 p=0,411	F=0,03	F=0,58
	F	11,1±2,7	11,2±2,7	11,3±3,5		p=0,859	p=0,574
Recourse to religion	M	7,7±2,9	10,0±2,6	9,9±4,1	F=12,41 p=0,000	F=0,31	F=0,84
	F	7,3±3,4	10,6±2,4	8,9±3,9		p=0,581	p=0,431
Humour	M	9,5±3,6	12,6±2,8	10,7±3,6	F=0,00 p=0,972	F=7,95	F=3,28
	F	11,0±3,4	12,2±2,3	9,6±4,1		p=0,000	p=0,039
Emotionally oriented style	M	9,8±1,9	11,3±2,0	10,9±1,9	F=3,16	F=0,27	F=4,22
	F	10,9±2,0	11,1±2,2	10,4±2,1	p=0,044	p=0,601	p=0,016
Mental escape	M	8,3±2,6	12,5±3,7	8,7±2,8	F=24,22	F=2,61	F=1,93
	F	9,9±2,6	12,1±3,5	9,5±2,8	p=0,000	p=0,108	p=0,147
Concentration on emotions	M	8,6±3,2	11,6±2,4	9,1±2,8	F=7,69	F=16,22	F=5,60
	F	11,8±2,8	11,6±2,9	10,4±2,6	p=0,000	p=0,000	p=0,004

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Denial	M	8,8±2,8	10,9±2,3	8,5±2,9	F=13,99	F=0,51	F=0,04
	F	9,1±2,3	10,9±3,0	8,5±2,8	p=0,000	p=0,809	p=0,958
Behavioural escape	M	7,3±2,2	11,1±2,9	7,4±2,8	F=31,88	F=0,17	F=0,22
	F	7,8±2,9	10,9±3,3	7,6±2,7	p=0,000	p=0,679	p=0,801
Sedatives use	M	5,2±2,1	9,8±2,1	4,4±1,1	F=127,5	F=0,19	F=0,59
	F	4,8±1,6	9,6±3,0	4,6±2,3	p=0,000	p=0,662	p=0,557
Dysfunctional style	M	7,64±1,6	11,2±2,4	7,6±2,3	F=62,56	F=3,66	F=1,79
	F	8,7±1,5	11,0±2,6	8,1±1,4	p=0,000	p=0,057	p=0,169

Note. Gender: M — male; F — female. Significant values are in bold.

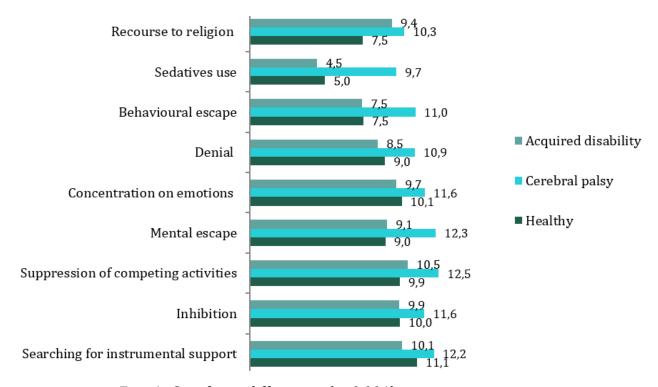


Fig. 1. Significant differences (p=0,001) in coping strategies depending on the group (average value)

Significant differences were found between the groups in the three coping styles (Table 1). Adolescents with cerebral palsy scored higher in cognitively oriented (p=0,03) and dysfunctional (p=0,000) styles, in contrast to two other groups. In terms of emotionally oriented style, the differences between the groups are at the level of tendencies (p=0,044). To clarify the obtained data on the coping styles, we identified the coping strategies dominating the highest average value, included in a particular style for each adolescent, and coded them: 1 — cognitively oriented, 2 — emotionally oriented, 3 — dysfunctional. Adolescents who scored the same score of the two styles were excluded from the sample. Among them, there were two healthy, three with cerebral palsy and six with acquired disabilities. The same number of scores for all three styles at once was not found. The use of χ^2 criterion helped to clarify the differences between the groups in coping styles

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(χ^2 =40,3, p=0,000). More than half (57,1%) of healthy, more than a third (38,3%) of adolescents with cerebral palsy and acquired disabilities (38,6%) use the cognitively oriented style to overcome stress. The emotionally oriented style is used by almost half (49,5%) of adolescents with acquired disabilities, 39,3% of healthy adolescents, and 23,4% of adolescents with cerebral palsy. The dysfunctional style is rarely used by healthy adolescents (3,6%) and adolescents with acquired disabilities (11,9%), but quite often by adolescents with cerebral palsy (38,3%) (See Fig. 2).

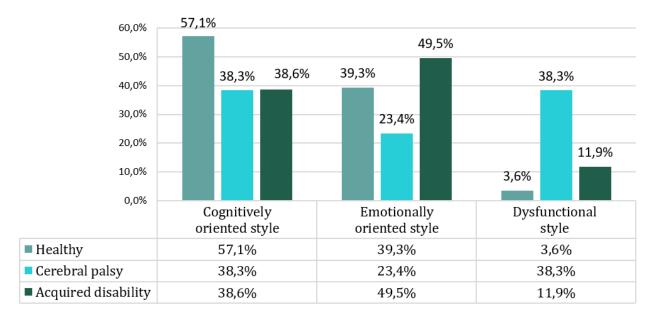


Fig. 2. Percentage relation of intensity of coping styles depending on the group (healthy, cerebral palsy, with acquired disability) (χ^2 =40,3 at p=0,000)

The gender effect, regardless the group, was found out for coping strategies: searching for emotional support (p=0.012), humor (p=0.000), concentration on emotions (p=0.000) (Table 2, Fig. 3).

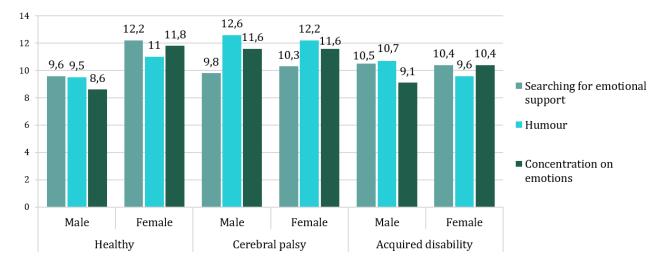


Fig. 3. Relevant differences in coping strategies depending on gender (average value)

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When interpreting the results of the joint influence of two factors — group and gender, the following was found. Healthy girls and girls with cerebral palsy are more likely to searching for emotional support than boys. In the group of adolescents with acquired disabilities, the average is practically the same. For the "positive reformulation" strategy, higher results are also the characteristic of the healthy girls, while for the remaining two groups of adolescents with disabilities, the results are higher for boys. The "humor" strategy, and the emotionally oriented coping style in general, demonstrate the same tendencies, but here the higher indices in adolescents with cerebral palsy of both genders are noteworthy. The average indicators of healthy girls and the girls with acquired disabilities prevail over the indicators of boys based on the "concentration on emotions" strategy, while in the cerebral palsy group, they are the same for both genders (Table 2).

Discussion

Based on the results obtained when comparing coping strategies and coping styles of adolescents with oncology and rheumatic diseases, we combined these groups into one: adolescents with acquired disabilities. We obtained similar data earlier in the study of the resilience of these adolescents [4], which leads to another research question: what role does the experience of healthy functioning play in the choice of coping strategies before the acquisition of disability? Of course, longitudinal studies are required to answer this question, but the existing ones confirm that the previous experience of coping with stress is relatively stable over time [19; 25] and depends on the acquired skills [25]. These groups are also united by the criterion of poor controllability of these diseases: insufficient knowledge of the causes and mechanisms of the onset of pathology, inconsistency of information about the specificity of the course of diseases, unpredictability of the course of diseases and prognosis, the complexity and multidimensionality of therapy [4]. In comparison to this, coping strategies of adolescents with cerebral palsy from very birth are formed in the conditions of the disease, and, as a rule, in an overprotective [1; 6; 22] or deficient medical and social environment [5], that influence coping skills.

The analysis of coping strategies built considering the three groups (healthy, with congenital disabilities, acquired disabilities) showed the following. Adolescents with cerebral palsy stand out against the background of other groups with high indicators in nine coping strategies: three included into a cognitively oriented style, one — into an emotionally oriented style, and five making up the content of a dysfunctional style. Perhaps, the use of a wide range of strategies is associated with a greater vulnerability of people with cerebral palsy to stress, a more complicated course of puberty [14], that on the one hand requires the activation of all types of strategies, on the other hand, makes it challenging to find the most useful ones [27].

Religious coping is mainly pronounced in adolescents of two clinical groups and acts as a protective factor, mitigates the effects of stress, and helps to rethink the situation positively [27]. Our research has shown that most of healthy adolescents used the cognitively oriented coping style, which is considered to be most effective when stress can be controlled. Half of the adolescents with acquired medical conditions preferred an emotionally oriented style to adapt to stressful situations they considered uncontrollable. This is confirmed by studies [9; 29], which also show the dominant role of the emotionally

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oriented style over the others and emphasize their adaptive usefulness in conditions of poorly controlled diseases. Adolescents with cerebral palsy use all coping styles built into a single resource system but differ significantly from two other groups where the dysfunctional style dominates. The dysfunctional strategies inhibit an adequate response to stressful situations and make it difficult to use resources. However, in combination with the strategies included in the cognitively oriented style, they allow to approach stress from different positions and develop comprehensive responses due to the interchangeability of strategies included in different coping styles.

We identified tendencies towards differences in coping strategies and coping styles between boys and girls with cerebral palsy and found out only one difference in the adolescents with acquired disabilities: girls in this group more often concentrate on emotions than boys. The differences by gender in healthy adolescents (searching for emotional support, humor, concentration on emotions) correlate to the studies that report the correspondence of these strategies to the traditional female role [23]. Perhaps, the reason for the absence of significant differences in coping by gender in the group of adolescents with cerebral palsy is associated with the so-called "age and gender deviations" (mixing of male and female identifications), which was established in the study by Ye.N. Dmitrieva and T.Ye. Levitskaya [3].

Minimally pronounced gender differences of adolescents with acquired disabilities can be explained by the influence of the disease. In conditions of uncontrolled disease, both boys and girls use an emotionally oriented coping style that helps them to adapt to the situation.

Conclusion

Adolescence is a turning point in the development of coping strategies for coping with multiple stresses. It is essential to consider in what conditions this development occurs: in conditions of disability or health; ability or disability to control the disease, whether there is any experience of healthy functioning, whether the choice of coping strategies and coping styles differs among adolescents of a different gender. Our research has shown the following results.

- 1. Adolescents with oncological and rheumatic disabling diseases (poorly controlled) do not differ in coping styles, which unites them into one group: adolescents with acquired disabilities. Their repertoire of strategies is similar to that of their healthy peers. This may be due to the experience of healthy functioning prior to the disability. However, this conclusion needs further verification. Adolescents with cerebral palsy have a wide range of coping strategies, which indicates the ability to approach stress from different angles but makes it difficult to choose the optimal ones.
- 2. Recourse to religion unites adolescents of clinical groups and at the same time distinguishes from healthy peers, which in conditions of disability becomes an essential resource for stress coping.
- 3. The cognitively oriented coping style is more often used by healthy adolescents who are confident in their ability to influence a stressful situation. Adolescents with

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acquired (poorly controlled) disabilities prefer an emotionally oriented style aimed at adapting to stress. In both groups, dysfunctional coping style is rarely used, which testifies to relatively successful stress coping by adolescents. The dominant coping styles in adolescents with cerebral palsy are cognitively oriented and dysfunctional. In case of active personality, such a combination is useful, but it inhibits adequate coping with stress in case of passive personality. Such a situation is of concern because this group is significantly more likely to use the dysfunctional coping style than the two other groups.

4. There were different trends in the intensity of coping strategies in clinical groups depending on gender. Girls with cerebral palsy are more likely to search for emotional support than boys. Concentration on emotions prevails in girls with acquired disabilities, while humor — in boys of this group. Healthy girls have more pronounced strategies for searching for emotional support, humor, and concentration on emotions than boys.

The results obtained in our study can become the basis for psychological and pedagogical support of adolescents in conditions of congenital and acquired disabilities for the development of effective strategies of coping with stress.

The limitations of this study are: a small number of groups, which did not allow analyzing coping strategies of teenagers of different ages. We have studied coping strategies of adolescents in coping with everyday stress, which is very important because they are a resource for effective coping with the disease [13]. However, in subsequent studies, it is worth specifying stressful situations to analyze coping styles in adolescents, depending on the specific situation. We cannot argue that the experience of healthy functioning before acquiring a disability influences the choice of coping strategies and styles. This requires longitudinal research. We did not consider the duration of the disease from the moment the child was diagnosed, which may also be a perspective for further research. The issues of mixing male and female coping strategies in conditions of disability and the use of diagnostic methods that confirm our results are also of interest for future research. However, our study has its strengths. Considering the heterogeneity of coping strategies indicated in the scientific literature, concretization of them made it possible to discover nuances in the coping behavior of healthy adolescents and adolescents with congenital and acquired disabilities, adolescents of different genders.

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Получена: 24.01.2021 Received: 24.01.2021

Принята в печать: 07.06.2021 Accepted: 07.06.2021