

Sukhonos O. S. The level of school anxiety and the specificity of its manifestations in children with down syndrome. *Journal of Education, Health and Sport*. 2023;47(1): 95-108. eISSN 2391-8306. DOI <http://dx.doi.org/10.12775/JEHS.2023.47.01.009>
<https://apcz.umk.pl/JEHS/article/view/46338>
<https://zenodo.org/record/8377636>

The journal has had 40 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of 17.07.2023 No. 32318. Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical Culture Sciences (Field of Medical sciences and health sciences); Health Sciences (Field of Medical Sciences and Health Sciences). Punkty Ministerialne z 2019 - aktualny rok 40 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 17.07.2023 Lp. 32318. Posiada Unikatowy Identyfikator Czasopisma: 201159. Przepisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu).

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Received: 29.07.2023. Revised: 21.08.2023. Accepted: 28.08.2023. Published: 29.08.2023.

THE LEVEL OF SCHOOL ANXIETY AND THE SPECIFICITY OF ITS MANIFESTATIONS IN CHILDREN WITH DOWN SYNDROME

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Abstract

Children with Down syndrome studying in general schools together with children without this pathology often face an increased risk of maladjustment in the school environment. Due to the inadequacy of general education programs for children with developmental disabilities and the low level of awareness of school teachers and, especially, neurotypical school-age children about effective strategies for interacting with children with Down syndrome, the latter have an increased risk of developing school anxiety.

The aim of the study was to determine the level of school anxiety depending on the ability to verbal communication in children with Down syndrome.

Materials and methods: The research was carried out on the basis of the National Medical Center of ZOR, 97 children with Down's syndrome were thoroughly examined. The patients were divided into two groups according to the criterion of the ability to verbal communication: group 1 (G1) included 77 children capable of verbal communication, group 2 (G2) - 20 children who do not speak.

Results of the study. As a result of the research, the level of school anxiety in its various aspects was established, depending on the ability to verbal communication in children

with Down syndrome. Children with Down syndrome who are able to communicate were found to have significantly higher anxiety scores on almost all subscales than children with Down syndrome who are not able to communicate verbally.

In children with Down syndrome who are incapable of verbal communication, a pathological decrease in anxiety in its various aspects is much more often noted, which may indicate a lack of understanding of social situations as a result of the lack of sufficient experience of being in a team (due to the inability to verbally produce the quality and quantity of communicative practices in such children suffer significantly). Children with Down syndrome who are able to talk have shown pathological reductions in school anxiety only in rare cases.

Key words: Down syndrome; parent-child relations; parenting/psychology; psychocorrection; children psychiatry.

Relevance. High school anxiety in its various manifestations is one of the most common psychiatric pathologies among school-aged children [1]. Factors associated with school anxiety are high demands placed on students by the education system, unfriendly and even meticulous attitude of teachers, misunderstandings with classmates, overestimated expectations of parents regarding the child's success at school, as well as the presence of comorbid mental illnesses in child [2- 4].

Children with Down syndrome, studying in general schools together with children without this pathology, often face an increased risk of maladjustment in the school environment. Due to the inadequacy of general education programs for children with developmental disabilities and the low level of awareness of school teachers and, especially, neurotypical school-age children regarding effective strategies for interacting with children with Down syndrome, the latter have an increased risk of developing school anxiety [5-7]. The presence of certain manifestations of school anxiety can even more hinder the adaptation of children with Down syndrome in the school environment [8, 9].

That is why, in order to ensure the highest possible adaptation of children with Down syndrome in the school environment, there is a need to identify and timely and adequately correct the manifestation of school anxiety depending on their characteristics [10].

The purpose of the study was to determine the level of school anxiety depending on the ability to verbal communication in children with Down syndrome.

Contingents and methods: The research was carried out on the basis of the National Medical Center of ZOR, 97 children with Down's syndrome were thoroughly examined. All

patients participating in the study met the inclusion criteria. The patients' parents gave informed consent for the study. The presence of Down syndrome in children was verified genetically. At the first stage of the study, patients were divided into two groups according to the criterion of verbal communication ability: group 1 (G1) included 77 children capable of verbal communication, group 2 (G2) - 20 children who do not speak. The level of school anxiety was determined using the Phillips School Anxiety Test. Significance of differences between groups was calculated using the Mann-Whitney test.

All statistical calculations were performed using the STATISTICA 10.0 program.

Research results

A study of school anxiety in children with Down syndrome who are capable (G1) and incapable (G2) of verbal communication was conducted. High anxiety was diagnosed in children who had more than 75% of disagreements with the keys to the test, increased - in children who had from 50% to 74% of disagreements, normal - in children who had from 15 to 50% of discrepancies; the detection of 0 to 14% of discrepancies was interpreted as a low level of the ability to feel anxiety. As a result of the statistical processing of the data obtained during the research, the following results were revealed.

General anxiety at school in G1 was high in 9.1% of students (7 children), increased in 26% of students (20 children), normal in 58.4% of students (45 children), and reduced in 6.5% (5 children). The average indicator of general school anxiety was equal to 50.8 ± 20.9 .

In G2, there were no students with a high level of general anxiety at school; 15% (3 children) with an increased level of school anxiety, 65% (13 children) with a normal level of school anxiety and 20% of schoolchildren (4 children) with a pathologically low level of anxiety were found. At the same time, the average indicator of general anxiety at school was 35.7 ± 18.5 .

The data obtained in G1 and G2 as a result of the analysis of general indicators of school anxiety in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 1.

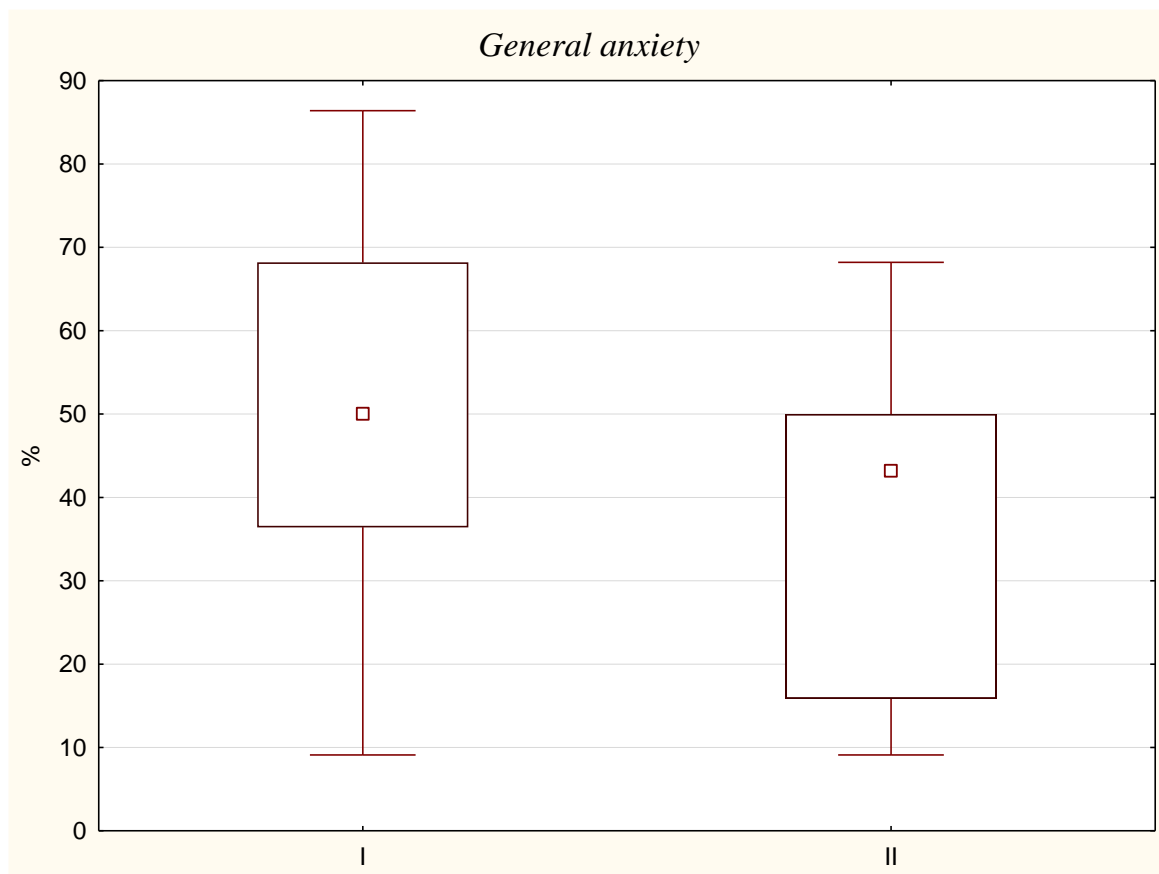


Fig. 1

Experiencing social stress in G1 was elevated in 42.9% of students (33 children), normal in 49.4% of students (38 children), and decreased in 7.8% (6 children); a high level of anxiety according to this indicator was not found among G1 children. The average rate of experiencing social stress was 42.5 ± 16.7 .

In G2, there were no students with a high level of experiencing social stress at school; the presence of 20% (4 children) with an increased level of experiencing social stress, 70% (14 children) with a normal level of experiencing social stress and 10% of schoolchildren (2 children) with a pathologically reduced level of it was established. At the same time, the average indicator of experiencing social stress was 38.2 ± 19.7 .

The data obtained in G1 and G2 as a result of the analysis of experiencing social stress at school in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 2.

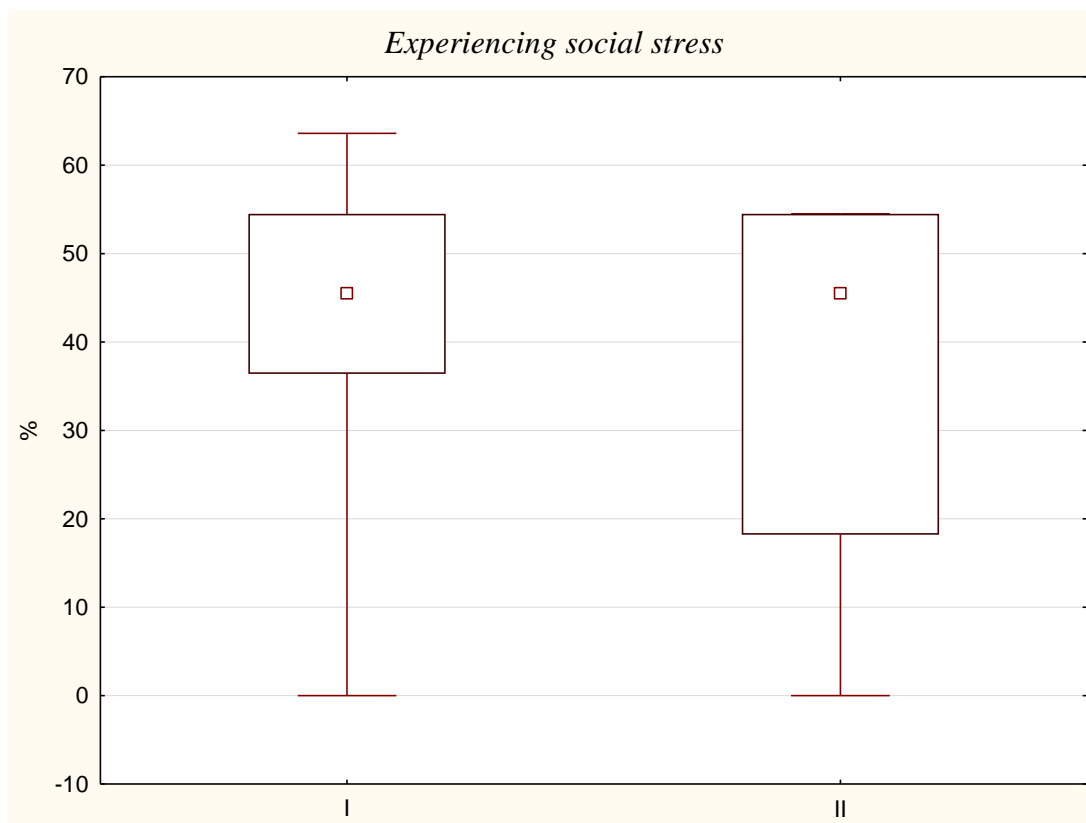


Fig. 2

Frustration of the need to achieve success in G1 turned out to be increased in 22.1% of students (17 children), normal - in 71.4% of students (55 children), and reduced - in 6.5% (5 children); a high level of anxiety according to this indicator was not found among G1 children. The average indicator of frustration of the need to achieve success was equal to 43.3 ± 19.9 .

In G2, there were no students with a high level of frustration of the need to succeed; the presence of 5% (1 child) with a high level of frustration of the need to succeed, 75% (15 children) with a normal level of it and 20% (4 children) with a pathologically reduced level of it was found. At the same time, the average indicator of frustration of the need to achieve success was 30.0 ± 19.9 .

The data obtained in G1 and G2 as a result of the analysis of frustration of the need to achieve success in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 3.

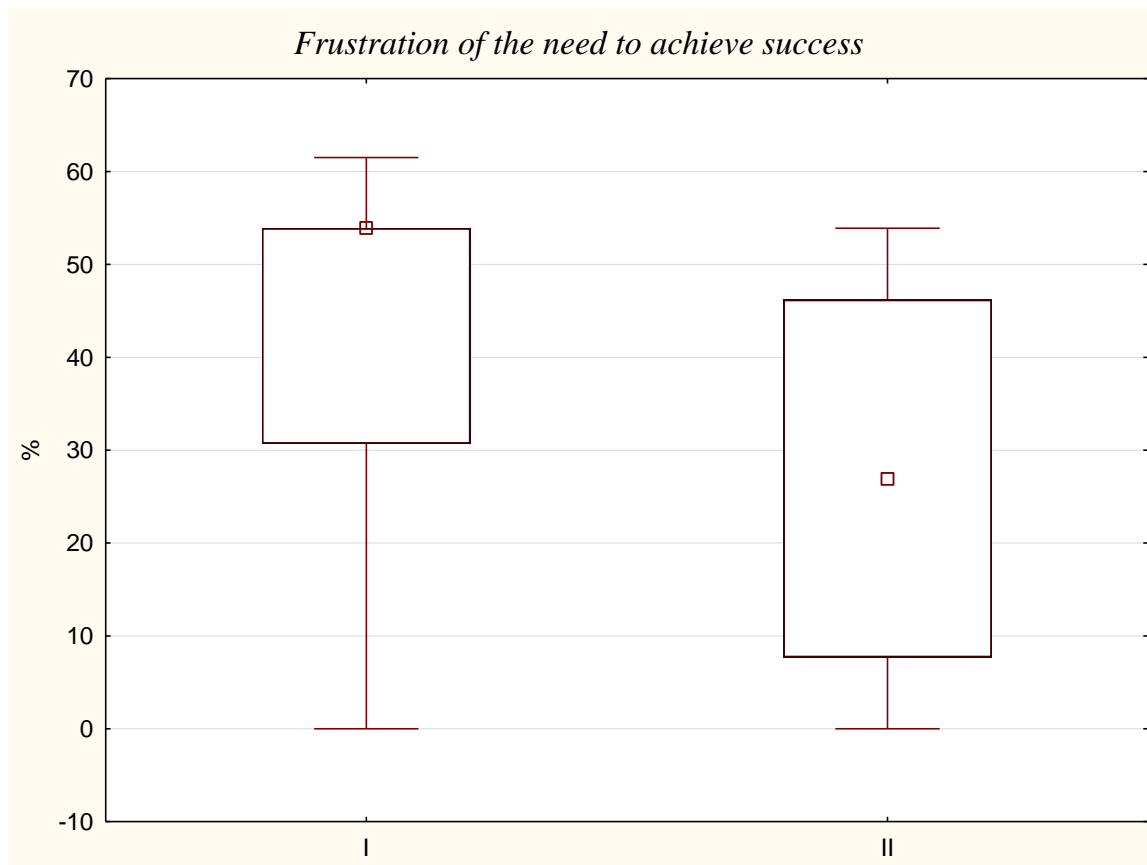


Fig. 3

The fear of self-expression in G1 was high in 7.8% of students (6 children), increased in 39% of students (30 children), normal in 46.8% of students (36 children), and decreased in 6.5% (5 children). The average rate of fear of self-expression was 47.2 ± 22.5 .

In G2, 5% (1 child) with a high level of fear of self-expression, 10% (2 children) with an increased level of fear of self-expression, 80% (16 children) with a normal level of it and 5% (1 child) with pathologically reduced level of it was found. At the same time, the average rate of fear of self-expression was 34.2 ± 24.5 .

The data obtained in G1 and G2 as a result of the analysis of fear of self-expression in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 4.



Fig. 4

The fear of the knowledge test situation in G1 was high in 5.2% of students (4 children), increased in 54.5% of students (42 children), normal in 40.3% of students (31 children); there were no students with pathologically reduced fear of knowledge testing situations. The average indicator of general fear of knowledge testing was equal to 52.6 ± 20.4 .

In G2, 5% (1 child) with a high level of knowledge test fear, 5% (1 child) with an increased level of knowledge test fear, 55% (11 children) with a normal level of it and 35% (7 children) with a pathologically reduced level of it was found. At the same time, the average fear of the knowledge test situation was 22.5 ± 23.7 .

The data obtained in G1 and G2 as a result of the analysis of fear of the knowledge test situation in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 5.

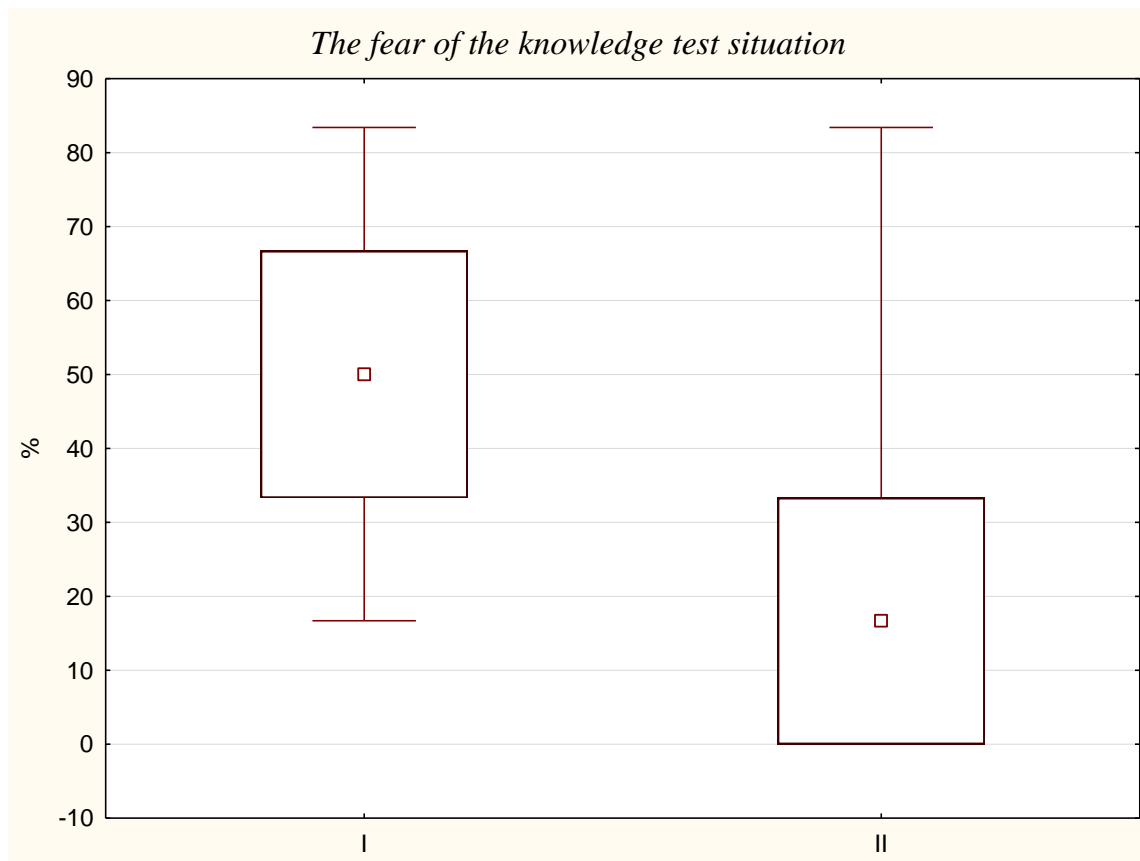


Fig. 5

The fear of non-compliance with the expectations of the environment in G1 was high in 6.5% of students (5 children), increased in 46.8% of students (36 children), normal in 41.6% of students (32 children), and decreased in 5.2% (4 children). The average indicator of fear of non-compliance with the expectations of the environment was equal to 50.1 ± 19.4 .

In G2, there were no students with a high level of fear of non-compliance with the expectations of the environment; the presence of 15% (3 children) with an increased level of it, 65% (13 children) with a normal level of it, and 20% of schoolchildren (4 children) with a pathologically low level of it was established. At the same time, the average indicator of fear of non-compliance with the expectations of the environment was 30.0 ± 22.9 .

The data obtained in G1 and G2 as a result of the analysis of fear of non-compliance with the expectations of the environment in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 6.

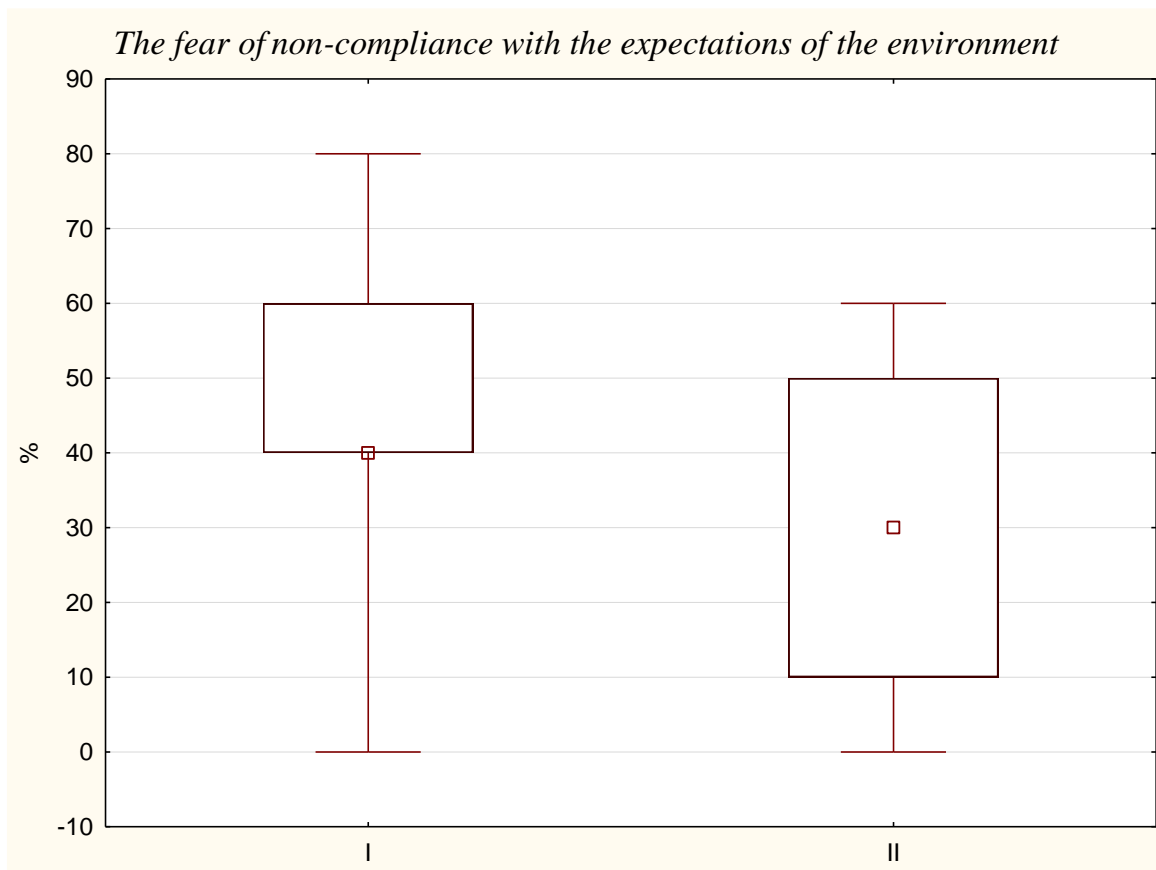


Fig. 6

Low physiological resistance to stress in G1 was high in 3.9% of students (3 children), increased in 26% of students (20 children), normal in 66.2% of students (51 children), and low in 3.9 % (3 children). The average indicator of low physiological resistance to stress was 44.9 ± 26.6 .

In G2, there were no schoolchildren with a high level of low physiological resistance; the presence of 5% (1 person) with an increased level of low physiological resistance, 65% (13 children) with a normal level of it and 30% (6 children) with a pathologically reduced level of it was established. At the same time, the average indicator of low physiological resistance was 30.0 ± 21.0 .

The data obtained in G1 and G2 as a result of the analysis of low physiological resistance in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 7.

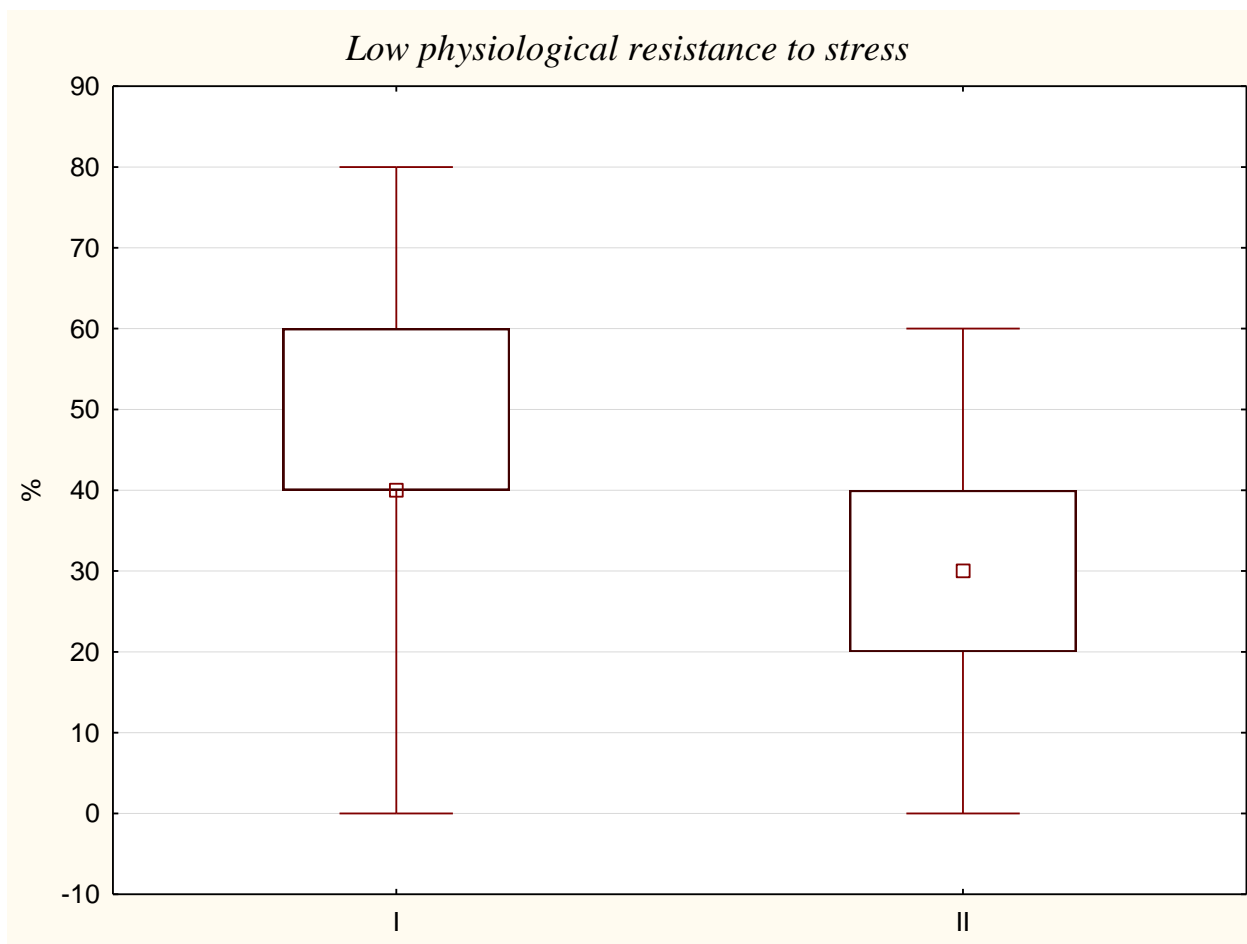


Fig. 7

Problems and fears in relations with teachers in G1 turned out to be increased in 14.3% of students (11 children), normal - in 79.2% of students (61 children), and reduced - in 6.5% (5 children); a high level of anxiety according to this indicator was not found among G1 children. The average indicator of problems and fears in relations with teachers was equal to 36.5 ± 23.0 .

In G2, there were no children with a high level of problems and fears in relations with teachers; the presence of 5% (1 person) with an increased level of problems and fears in relations with teachers, 60% (12 children) with a normal level of it and 35% (7 children) with a pathologically reduced level of it was established. At the same time, the average indicator of problems and fears in relations with teachers was 30.0 ± 20.4 .

The data obtained in G1 and G2 as a result of the analysis of problems and fears in relations with teachers in children with Down syndrome depending on the ability to verbal communication are shown in Fig. 8.

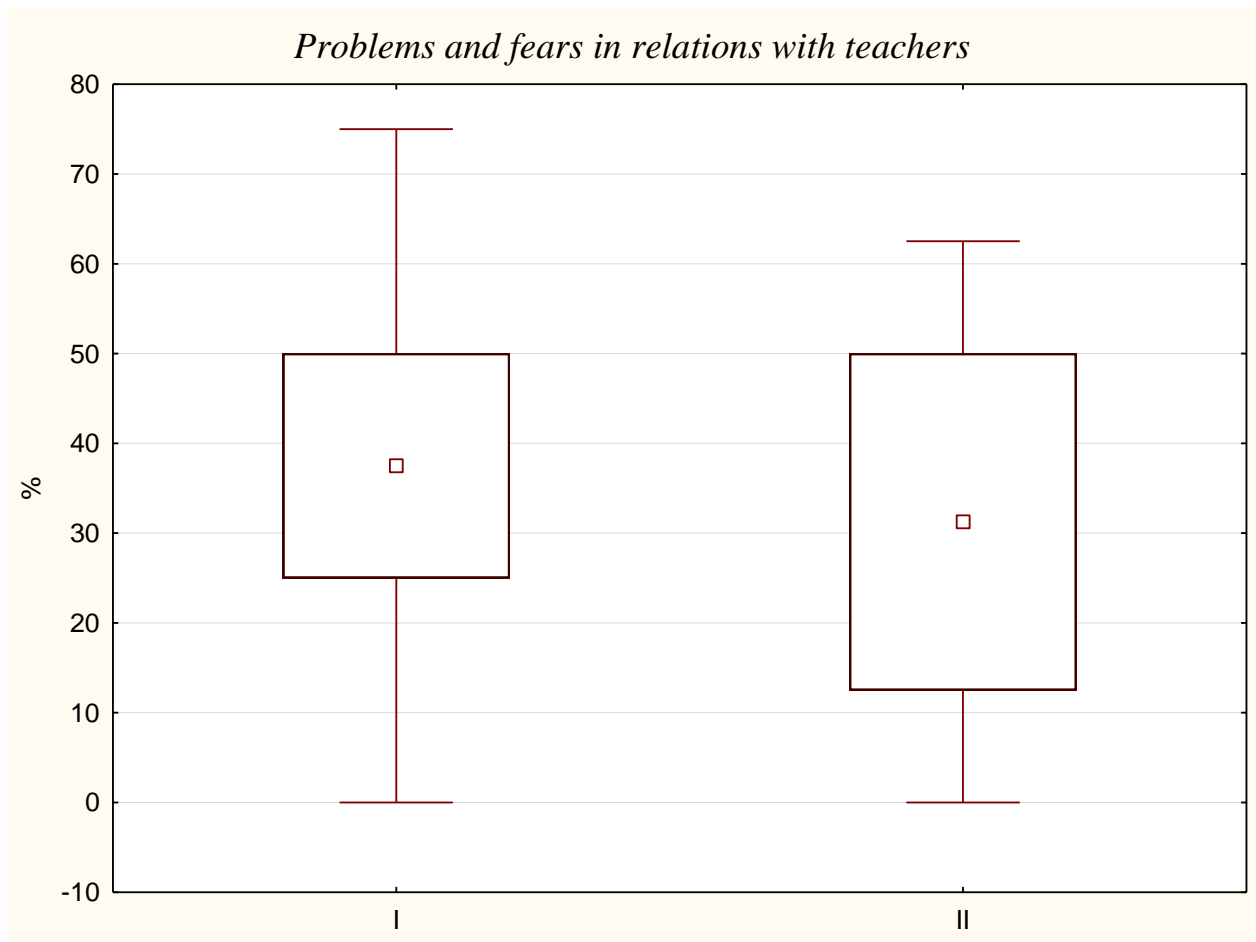


Fig. 8

The average indicators of all subscales according to the Phillips method of diagnosing school anxiety for both groups and the statistical difference between the results of G1 and G2 are shown in Table 1.

Table 1

The average indicators of anxiety in G1 and G2

subscale	G1	G2	P
General anxiety at school	50,8±20,9	35,7±18,5	<0,01
Experiencing social stress	42,5±16,7	38,2±19,7	0,51
Frustration in the need to succeed	43,3±19,9	30,0±19,9	<0,01
Fear of self-expression	47,2±22,5	34,2±24,5	0,03
Fear of knowledge testing	52,6±20,4	22,5±23,7	<0,01
Fear of non-compliance with the expectations of the environment	50,1±19,4	30,0±22,9	<0,01
Low physiological resistance to stress	44,9±26,6	30,0±21,0	0,03
Problems and fears in relations with teachers	36,5±23,0	30,0±20,4	0,3

Note: the obtained results were considered reliable at $p < 0.05$.

Distribution of indicators of school anxiety by degree of severity according to the Phillips method of diagnosing school anxiety for the results of G1 and G2 are shown in Table 2.

Table 2

Distribution of indicators of school anxiety by degree of severity

Subscale name	G1				G2			
	high	increases	normal	low	high	increased	normal	low
General anxiety at school	9,1	26	58,4	6,5	–	15	65	20
Experiencing social stress	–	42,9	49,4	7,8	–	20	70	10
Frustration in the need to succeed	–	22,1	71,4	6,5	–	5	75	20
Fear of self-expression	7,8	39	46,8	6,5	5	10	80	5
Fear of knowledge testing	5,2	54,5	40,3	–	5	5	55	35
Fear of non-compliance with the expectations of the environment	6,5	46,8	41,6	5,2	–	15	65	20
Low physiological resistance to stress	3,9	26	66,2	3,9	–	5	65	30
Problems and fears in relations with teachers	–	14,3	79,2	6,5	–	5	60	35

Conclusions:

1. As a result of the research, the level of school anxiety in its various aspects was established, depending on the ability to verbal communication in children with Down syndrome. Children with Down syndrome who are able to speak were found to have significantly higher anxiety scores on almost all subscales than children with Down syndrome who are not able to communicate verbally.

2. In children with Down syndrome who are incapable of verbal communication, a pathological decrease in anxiety in its various aspects is much more often noted, which may indicate a lack of understanding of social situations as a result of the lack of sufficient experience of being in a team (due to the inability to verbally produce the quality and quantity of communicative practice in such children suffers significantly). Children with Down syndrome who are able to speak have shown pathological reductions in school anxiety only in isolated cases.

3. A high level of school anxiety was rare in both groups of children with Down syndrome, but its increased level was significantly more common in children who are able to speak; such results are obviously caused by a stronger psycho-emotional load at school due to

the fact that the same requirements are often placed on such children and conditions identical to those of completely healthy children are created, while children who are not capable of verbal communication are usually treated more leniently.

4. The highest levels of school anxiety in children with Down syndrome were registered on the following subscales: fear of self-expression, fear of knowledge testing situations, Fear of non-compliance with the expectations of the environment. The lowest levels of school anxiety corresponded to the subscales of problems and fears in relations with teachers and frustration of the need to achieve success.

Author Contributions

Conceptualization, O. S. Sukhonos; methodology, O. S. Sukhonos; formal analysis, O. S. Sukhonos; investigation, O. S. Sukhonos; resources, O. S. Sukhonos; data curation, O. S. Sukhonos; writing—original draft preparation, O. S. Sukhonos; writing—review and editing, O. S. Sukhonos; supervision, O. S. Sukhonos; project administration O. S. Sukhonos; funding acquisition, O. S. Sukhonos. All authors have read and agreed to the published version of the manuscript.

Funding

This study received no external funding.

Institutional Review Board Statement

This case report did not require IRB approval, and the patient provided verbal and written consent for publication of this report.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

Acknowledgments

The authors would like to thank Kurilo V. O, (Department of Psychiatry, Psychotherapy, General and Medical Psychology, Narcology and Sexology, Zaporizhzhia State Medical and Pharmaceutical University) for his technical assistance.

Conflicts of Interest

The author declare no conflict of interest.

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