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Exploring the Neurodiversity of Lithuanian College Students and Its link to Learning Difficulties and Supporting Measures

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Abstract: *Enhancing the inclusion of neurodiverse students in higher education institutions represents a significant and evolving challenge for educators. Recognizing learning difficulties and equipping teachers with the knowledge and skills to effectively work with and communicate with neuro-diverse students are crucial steps toward achieving social inclusion. Aim – to explore the neurodiversity of Lithuanian college students and its link to learning difficulties and supporting measures. Two developmental adult disorders were presented to illustrate the expression of neurodiversity including attention deficit hyperactivity disorder (ADHD), and autism spectrum disorder (ASD). A cross-sectional survey included 512 students from Kauno Kolegija Higher Education Institution. The survey assessed 39 attributes related to students' learning difficulties and supporting measures. The nine scales, consisting of 39 items, demonstrated good internal consistency, with a Cronbach's alpha coefficient of 0.76. Due to the unequal and smaller sample sizes of attention deficit hyperactivity and autism spectrum disorders having students, non-parametric statistics (Kruskal-Wallis) were used. Spearman's correlation coefficient (R^2) was used for correlation analysis. Results. Nearly a quarter of the students associate their neurodiversity with ADHD, with 22.3 % suspecting they have the condition and 2 % noted that this is confirmed. 4.7% of students consider themselves to be on the autism spectrum disorder (ASD), with 0.6% having a confirmed diagnosis. Statistically significant differences were identified in the relationship between ADHD and attention difficulties at home, college, sensory sensitivity and specific learning difficulties ($p \leq 0.05$). ADHD and ASS suspected of having students tend to have lower grade point average (GPAs). Students who suspect or confirm having ADHD express a higher preference for organizational tools compared to those without ADHD, with a significant difference ($p \leq 0.05$). Preferences for explanations and illustrations are higher among those suspecting ADHD ($p \leq 0.05$). The analysis of expectations from lecturers and organization concerning ASD shows minimal variation among groups ($p \geq 0.05$). Conclusions. Neurodiversity among students is a relevant phenomenon that is associated with learning difficulties that interfere with achieving good learning outcomes. However, the role of the teacher and organization is exclusively relevant for the ADHD student group. For ASD students and neurotypical students, universal approaches are appropriate.*

Keywords: *Neurodiversity; attention deficit hyperactivity disorder (ADHD); autism spectrum disorders (ASD); higher education institution; students; learning difficulties; supporting measures.*

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1. Introduction

The inclusion of underrepresented groups in higher education is a priority on both international and national policy agendas worldwide. As governments increasingly hold higher education institutions (HEIs) accountable for ensuring access and promoting equity (Veidemane et.al., 2021), universities and colleges are adapting to accommodate students' diverse backgrounds and learning needs. This transformation is linked to a broader democratisation of education and a commitment to reducing exclusion barriers for historically marginalised groups.

Among the most pressing challenges is the rising presence of students with neurodiverse conditions, those with autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), dyslexia, and other cognitive variations, whose numbers are progressing into higher education (HE) internationally (Al-Wardat et.al., 2024; Dreyer, 2021; Fernández-Batanero, 2022).

Neurodiversity is a paradigm that recognises and values these variations as integral to human diversity, moving beyond deficit-based approaches to emphasise the strengths and contributions of neurodivergent individuals (Walker & Reaymaker., 2021; Clouder et al., 2020). This framework aligns closely with the Social Model of Disability (Clouder et al, 2020), which emphasises that societal structures, rather than individual impairments, are the primary sources of barriers to inclusion.

Such approaches are calling for systemic changes in HE to guarantee accessibility, inclusion, and respect for diverse ways of learning and interaction. The implementation of inclusive policy and integration of neurodiverse students into higher education presents a shared challenge for educators and institutional leaders and highlights the urgent need for a tailored support system as neurodivergent students are at higher risk of withdrawal and poor academic outcomes (Al-Wardat et al., 2024; Hamilton & Petty, 2023; Shaw, 2023; Clouder et al., 2020; LaCount et. al., 2018; McGee, 2012; Chevallier et. al., 2012).

Practices like the Universal Design for Learning (UDL), compassionate pedagogy, and digital interventions offer promising solutions, however, their implementation often lacks coherence and consistency (Hamilton & Petty, 2023; Dreyer, 2021).

In Lithuania, the inclusive policy in higher education has opened the way for marginalised groups, including neurodiverse students. Certain efforts and institutional strategies to support neurodiverse students have been introduced into HE institutions, yet comprehensive analysis and scientific discussions on the current state of these efforts remain scarce.

This article aims to explore the neurodiversity of Lithuanian college students and its link to learning difficulties and supporting measures.

2. Problem

Neurodiversity and learning difficulties are not always easily identifiable, resulting in delayed support, assistance, and intervention (Cerezo et. al., 2020; Al-Qadri et. al., 2021). Many neurodivergent students in HI remain uncounted (Hamilton & Petty, 2023) as due to the stigma associated with disability disclosure a significant number choose not to disclose their conditions, thus, complicating the provision of necessary accommodations (Hassard et al., 2024; Syharat, et. al., 2023; Dwyer, 2022). Despite advances at the macro level, it is still essential to examine the micro-level challenges faced by neurodiverse students in HE settings.

This study seeks to investigate the experiences of neurodiverse Lithuanian college students to understand the learning difficulties they face and identify effective supporting measures to enhance inclusivity.

Specifically, this study is sought to answer the following research questions:

1. What is the expression of neurodiversity among Lithuanian college students?
2. What are the learning difficulties faced by neurodiverse students at Lithuanian college?
3. What support measures are needed to meet the needs of neurodiverse students?

By exploring these questions, the research aims to contribute to both local and international debates on inclusive education in higher education, emphasising the support for the diverse needs of

neurodivergent students.

3. Theoretical aspects

As the idea of inclusive higher education becomes an integral part of many young democratic countries, the rapidly growing population of neurodivergent students in educational institutions is more and more visible. In this time, higher education has become open to groups of students that had not historically participated, leading to its democratisation, increased social inclusion, and the breakdown of barriers to a previously elitist system (Pearson et. al., 2019). Even young democratic countries like Lithuania are rapidly moving forward in developing the ideas of inclusive higher education. During the last few decades, the changes in practices, perceptions, and attitudes around accessibility and inclusive practice in higher education have changed dramatically. As universities and colleges become more inclusive, more and more neurodivergent people with various challenges of psychosocial health decide to seek higher education every year. Even though many areas of social life have become significantly more inclusive for people with mental illness, and intellectual and psychosocial disabilities, it is still challenging to operationalise accessibility systematically in institutions. Often, the strategies implemented in higher education institutions are implemented at the local institutional level and not at the state level. To be truly inclusive requires a whole institution approach, with voices, perspectives, and stakeholder buy-in sought from across the institution (Lister et. al., 2022). The study environments of both universities and colleges providing higher education are not always compatible with the needs and challenges of neurodiverse students. In order to minimise as much as possible, the challenges students are experiencing related to their psychosocial disabilities, it becomes extremely important to understand what difficulties students face during the study process. Many surveys and studies related to the learning challenges and difficulties of neurodivergent students with psychosocial health problems revealed that the key factor that allows these students to successfully achieve academic goals is appropriate institutional support from accessibility coordinators, which includes both adaptation to the physical environment and ensuring respectful social relations with other members of the academic community - teachers, administrative staff and other students (Hillier et. al., 2018; Scott & Sedgewick, 2021). Though the challenges faced by neurodivergent students, e.g. students with autism, ADHD, dyslexia, or other learning differences are often similar to those of students without these disabilities, however, the complexity and specificity of some challenges differ significantly. If the psycho-emotional state is the essential aspect of the general functional state of the body, which directly affects health, working capacity, intellectual processes, and the quality of human life (Semigina et. al., 2020) then effective stress management might be much more difficult for neurodivergent students due to their comorbidity and complexity of psychosocial disability. Also, the level of stress experienced can be significantly higher due to what is known as masking culture and self-silencing culture (Syharat et al., 2023). Also, the lack of social skills can lead to various communicative tensions and difficult situations when communicating with teachers and other students.

In recent years, the increasing attention to the inclusion of neurodiverse students has led to various systemic changes in higher education institutions. Efforts to reduce various barriers and challenges include both widely known strategies such as universal design and less described as individual assessment accommodations. However, despite all the changes that have already taken place in this area, the implementation of the goals of inclusive higher education requires constant rethinking (Nieminen, 2022). Although for a long time, the learning challenges experienced by students with psychosocial disabilities were named learning difficulties and learning disabilities, it was gradually proposed to move to a less negative term - learning differences. This is mostly related to the fact that the concept of learning differences refers to different ways of learning, different learning rates, the ability to maintain attention, memorisation, and the use of motivational techniques related to learning. Learning differences also means focusing more, not on a person's cognitive disabilities and limitations, but on individual student's motivational mechanisms and

bio-psycho-social and cultural barriers and strengths, talents, etc. Although the term 'learning disability/disorder' in itself does not have a negative meaning, it does not include the advantages and strengths that every learner has. For example, it has been proven that people with dyslexia often have better spatial thinking, creativity, imagination, symbolic and abstract thinking abilities, etc. (Manzoli, 2016). Therefore, another particularly important change in this area is related to the traditional teaching methods initially criticised by neuroscientists at the beginning of the 21st century and the proposal of a new paradigm of twice exceptionality (Assouline et al., 2009; Assouline et al., 2009; Willard-Holt et al., 2013). The authors of this paradigm draw attention to the fact that at the same time, a student can be talented, especially gifted, and at the same time he or she could be a learner experiencing complex learning challenges. These students often have special academic abilities, but at the same time, they may need assistance in areas such as interpreting and participating in social situations, communicating with teachers, self-regulation of emotions, planning time and activities, etc. Therefore, in this context, an approach based on respect for neurodiversity becomes especially important, as it allows us to see not only the weakest aspects of the students' learning process but also their strengths.

When assessing the learning challenges experienced by students, it is always appropriate to pay attention to the wider social and cultural context of the individual, e.g. try to find out what are the possible sources of the anxiety and distress experienced, which hinder the achievement of the set academic goals. It is also important to realise that when dealing with neurodiverse individuals, it is necessary to avoid any generalisation, because neurodiverse students have different characteristics, and even two students with the same diagnosis, e.g. ADHD, may face very different learning challenges that also depend on various social characteristics, e.g. gender, age, socioeconomic status, comorbidity, chronic diseases, etc. Likewise, they may require very different learning environments, social relations, communication, and learning methods.

4. Materials and Methods

4.1. Study Design, Ethical Consideration.

A cross-sectional online survey was conducted following the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines. The participants in this study were undergraduate students from Kauno Kolegija Higher Education Institution (Kauno Kolegija HEI). Initially, the survey asked students if they were interested in participating. Those who answered "no" were automatically excluded from further involvement in the study. This research was approved by the Institutional Review Board (IRB) at Kauno Kolegija HEI (Protocol No. 13-14, dated 29 January 2024).

4.2. Inclusion and Exclusion Criteria

The inclusion criteria included full-time undergraduate students at Kauno Kolegija HEI, aged 18 and older. The exclusion criteria comprised postgraduate students and part-time students.

4.3. Sample Size

The survey was conducted among students at Kauno Kolegija HEI, one of the largest higher education institutions in Lithuania. During the survey period from January to March 2024, there were 4,449 students enrolled at Kauno Kolegija HEI. The goal was to survey at least 384 students, with the sample size determined using the Paniotto sampling formula, which provides a statistical margin of error of 5%. Ultimately, 512 students participated in the survey, exceeding the initial target. The participants represented all four academic departments of Kauno Kolegija HEI:

- Faculty of Medicine: 43.2% (n=221).
- Faculty of Arts and Education: 29.9% (n=153).
- Faculty of Business: 17.4% (n=89).
- Faculty of Technology: 9.6% (n=49).

The participants in the study included students from various academic years, resulting in a diverse representation. Among them, 38.1% (n=195) were in their first year, 30.5% (n=156) were in their second year, and 26% (n=133) were in their third year. Only nursing and midwifery programs last 3.5 years, which accounts for a lower number of students in the fourth year (5.5%; n=28).

In terms of gender distribution, the survey revealed that 84.8% of participants identified as female (n=434), 12.1% as male (n=62), and 3.1% (n=16) chose not to disclose their gender.

4.4. Development of the questionnaire and the psychometric quality of the questionnaire

A comprehensive literature search on neurodiversity highlighted the challenges of standardising an objective evaluation method. No surveys were identified that targeted the same population or purpose as this study. A diverse group of experienced educators, public health scientists, psychologists, special educators, occupational therapists, physiotherapists, and clinicians from Kauno Kolegija Higher Education Institution (HEI) participated in this research.

Using a quantitative approach, the study assessed students' learning difficulties across 40 attributes, employing a 5-point Likert scale, where 5 indicated the highest level of agreement and 1 the lowest. The focus was specifically on two disorders that represent neurodiversity: Attention Deficit Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD).

The survey questions were developed following an extensive literature review and numerous discussions among the research team, along with consultations with experienced neuroscientists and psychologists to ensure content validity. The questionnaire underwent review by ten external neuroscientists and psychologists who were not involved in the study, assessing the clarity of the questions and estimating completion time. The finalised questionnaire, written in Lithuanian, was uploaded to the online platform “Limesurvey” http://apklausos.kaunokolegija.lt/index.php/113639?token=pazurpcIAr826Ge&lang=ltkey.

Before accessing the survey, participants were informed about the study’s objectives, the estimated time required for completion (approximately 15 minutes), and assured that their responses would remain completely anonymous. A pilot test with ten participants was conducted to evaluate the clarity and logical flow of the survey, and feedback from this test was incorporated into the final version of the questionnaire.

The reliability of the questionnaire was validated using Cronbach's alpha. The nine scales, consisting of 39 items, demonstrated good internal consistency, with a Cronbach's alpha coefficient of 0.76. It indicates a satisfactory level of internal consistency among the items in the scale.

Table 1. Psychometric quality of the questionnaire

Scales	Items	N	Cronca ch Alpha
Learning difficulties			
Attention difficulties at home	1) I find it difficult to concentrate and start doing study assignments at home. 2) I am easily distracted by any extra stimulus while doing study assignments at home. 3) It is difficult for me to finish a task that I have started. 4) I make a lot of careless mistakes in my homework assignments.	4	0.75
Attention difficulties at college	1) I am quickly distracted by any extraneous sound or sight during classes. 2) It is difficult for me to stay focused while listening to the teacher's lectures (without showing slides or other visual material). 3) I find it difficult to concentrate and start completing study assignments during learning classes. 4) It is difficult for me to stay focused when working in a group. 5) It is difficult for me to maintain focus during practical/laboratory work. 6) It is	7	0.782

	difficult for me to follow the instructions in practical tasks. 7) It is difficult for me to keep focus on slides with a lot of information (diagrams, text).		
Time management difficulties	1) I run out of time to complete independent work tasks. 2) I am running out of time to prepare for exams. 3) It is difficult for me to start and finish self-study tasks on time.	3	0.785
Lack of self-regulation, extraneous work	1) During classes, I like to snack and chew gum. 2) During classes, I listen to music using headphones. 3) I tend to interrupt the teacher when he/she is speaking. 4) I tend to jump in when other students are talking and interrupt them.	4	0.782
Sensory sensitivity	1) I am annoyed by various sounds in the environment. 2) Extremely bright light annoys me and prevents me from concentrating. 3) I don't like it and it annoys me to work in a group with other group members. 4) It annoys me to sit or stand next to another student.	4	0.669
Specific learning difficulties	1) I make grammatical mistakes when I write. 2) I have difficulty with calculation tasks. 3) It is difficult for me to formulate a thought and express it verbally. 4) I struggle to understand the main idea of the text while reading. 5) It is difficult for me to verbally describe the objects, phenomena, and their sequences.	5	0.712
Expectation from lecturers and organisation			
Illustrating, highlighting information	1) Lecturers could provide more visual material (photos, pictures, videos, etc.) during lectures. 2) During lectures, teachers could illustrate with practical examples. 3) During lectures, teachers could emphasise the most important information more (repeat orally, mark, etc.).	3	0.808
Explanation, consultation from lecturers	1) Teachers should provide deadlines for tasks in the calendar (in Moodle or another virtual teaching-learning environment). 2) I would like the teachers to provide clearer and more precise instructions regarding the completion of the assignments. 3) During the lectures, the lecturers could speak more slowly. 4) Teachers could spend more time explaining new information. 5) I would like to receive more feedback from teachers (on assignments etc.).	5	0.752
Organisational tools	1) I feel that I would benefit from the advice of a specialist (psychologist). 2) I would like to organise meetings with other students in order to solve the challenges that arise during studies (self-help groups). 3) I would benefit from being able to relax from the stress and noise in dedicated college facilities (relaxation rooms). 4) The college could host more seminars for students on effective learning and memory training techniques.	4	0.786
In total		**39**	**0.758**

The scale measuring "Time management difficulties" exhibited strong reliability, with a Cronbach's Alpha of 0.785. This indicates a clear and consistent measurement of the constructs

involved. The highest reliability was found in the "Illustrating and highlighting information" scale, which had a Cronbach's Alpha of 0.808. This result underscores the importance of visual aids and practical examples for students. The "Organisational tools" scale also showed good reliability with a score of 0.786.

The "Attention difficulties at college" scale, which consists of seven items, received a Cronbach's Alpha of 0.782. This highlights the challenges students face in maintaining focus during lectures and practical work. Other scales, such as "Specific learning difficulties" (0.712) and "Sensory sensitivity" (0.669), exhibited comparatively lower reliability but still fell within an acceptable range. This suggests that refining the items could enhance their consistency.

The scales for "Lack of self-regulation, extraneous work" (0.782) and "Explanation and consultation from lecturers" (0.752) both demonstrated solid reliability, further supporting their relevance in addressing students' needs. Overall, the questionnaire is a reliable tool for assessing various learning difficulties and expectations. However, minor adjustments could further optimise the scales with lower alpha values.

The psychometric quality analysis of the questionnaire indicates good overall reliability, with a total Cronbach's Alpha of 0.758 across all scales, demonstrating internal consistency (see Table 1).

4.5. Data analysis

Statistical analysis of the data was conducted using SPSS 21 (Statistical Package for the Social Sciences). The normality of the data distribution was assessed using Skewness and Kurtosis (Table 2).

Table 2. The normality of the data distribution by using Skewness and Kurtosis

Scales	Statistic	Results
Learning difficulties		
Attention difficulties at home	Skewness	0.309
	Kurtosis	-0.204
Attention difficulties at college	Skewness	0.098
	Kurtosis	0.166
Time management difficulties	Skewness	0.244
	Kurtosis	-0.594
Lack of self-regulation, extraneous work	Skewness	1.508
	Kurtosis	2.685
Sensory sensitivity	Skewness	0.365
	Kurtosis	0.029
Specific learning disabilities	Skewness	0.374
	Kurtosis	0.335
Expectation from lecturers and organisation		
Illustrating, highlighting information	Skewness	-1.095
	Kurtosis	1.459
Explanation, consultation from lecturers	Skewness	-0.279
	Kurtosis	-0.133
Organisational tools	Skewness	-0.007
	Kurtosis	-0.352

The normality testing using Skewness and Kurtosis indicated that the distribution was normal, with coefficients ranging from -1 to +1 on seven out of nine scales. To compare means between groups for these seven scales, the ANOVA test was applied. However, due to the unequal and smaller sample sizes for attention deficit hyperactivity disorder and autism spectrum disorder, non-parametric statistics, specifically the Kruskal-Wallis test, were employed. A statistically significant relationship was determined when the p-value was ≤ 0.05. For correlation analysis, Spearman's correlation coefficient (R^2) was used, which assesses both the strength and direction of the relationship between the scales.

5. Results of research

Attention Deficit Hyperactivity Disorder (ADHD) is the most common neurodiversity-related condition among the participants. Nearly a quarter of the students associate their neurodiversity with ADHD, with 22.3% suspecting they have the condition and 2% having a confirmed diagnosis. Additionally, 4.7% of students identify as being on the autism spectrum disorder (ASD), with 0.6% having a confirmed diagnosis. (Figure 1).

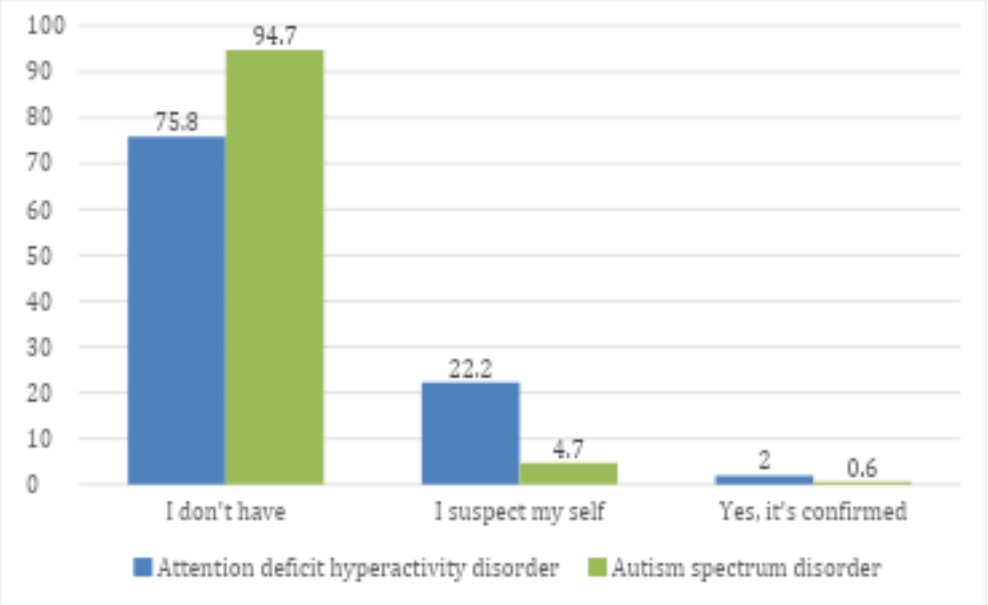

Figure 1. Expression of ADHD and ASD among students

Statistically significant differences were found in four out of six areas regarding the impact of ADHD on learning difficulties. Using the Kruskal-Wallis test, we observed specific differences in learning difficulties among students with suspected ADHD, confirmed ADHD, and those without ADHD ($p \leq 0.05$).

Table 3. Link between students' learning difficulties and attention deficit hyperactivity disorder (N=512)

Scales	ADHD	n	Mean	Std. Deviation	Sig.
Attention difficulties at home	I don't have	388	2.68	0.81	p≤**0.05**
	I suspect myself	114	3.04	0.86	
	Yes, this is confirmed	10	3.08	0.67	
Attention difficulties at college	I don't have	388	2.72	0.69	p≤**0.05**
	I suspect myself	114	3.06	0.67	
	Yes, this is confirmed	10	3.0	0.74	

Time management difficulties	I don't have	388	2.81	0.96	p≤**0.05**
	I suspect myself	114	3.11	1.01	
	Yes, this is confirmed	10	3.13	0.88	
Lack of self-regulation, extraneous work	I don't have	388	1.52	0.60	p ≥ 0.05
	I suspect myself	114	1.60	0.65	
	Yes, this is confirmed	10	2.33	1.34	
Sensory sensitivity	I don't have	388	2.30	0.77	p≤**0.05**
	I suspect myself	114	2.53	0.78	
	Yes, this is confirmed	10	2.68	2.68	
Specific learning disabilities	I don't have	388	2.42	0.69	p≤**0.05**
	I suspect myself	114	2.74	0.78	
	Yes, this is confirmed	10	2.92	0.72	

Statistically significant differences were found in the relationship between attention deficit hyperactivity disorder (ADHD) and students' learning difficulties, as shown in Table 3. These differences were evident in the context of attention difficulties at home and in college, as well as in sensory sensitivity and specific learning difficulties ($p \leq 0.05$).

Students who either self-suspect or have been diagnosed with ADHD exhibit higher rates of attention difficulties at home and in college. They also struggle more with time management, sensory sensitivity, and specific learning disabilities compared to those without ADHD ($p \leq 0.05$). The Kruskal-Wallis test reveals these statistically significant differences between self-suspected ADHD and non-ADHD groups. This non-parametric test indicates that the self-suspected ADHD group significantly differs from the non-ADHD group regarding attention problems at home ($H = 17.275$; $p = 0.000$) and at college ($H = 21.461$; $p = 0.000$). Additionally, the self-suspected ADHD group shows greater challenges with time management ($H = 8.082$; $p = 0.022$), sensory sensitivity ($H = 9.407$; $p = 0.006$), and specific learning disabilities ($H = 17.143$; $p = 0.000$) compared to those without ADHD.

Table 4. Link between students' learning difficulties and autism spectrum disorder (N=512)

Scales	ASD	n	Mean	Std. Deviation	Sig.
Attention difficulties at home	I don't have	485	2.75	0.83	p≤**0.05**
	I suspect myself	24	3.17	0.87	
	Yes, this is confirmed	3	3.17	0.52	
Attention difficulties at college	I don't have	485	2.78	0.69	p≤**0,05**
	I suspect myself	24	3.26	0.71	
	Yes, this is confirmed	3	3.05	0.95	
Time management difficulties	I don't have	485	2.87	0.98	p ≥ 0,05
	I suspect myself	24	3.18	0.98	
	Yes, this is confirmed	3	2.89	0.19	
Lack of self-regulation, extraneous work	I don't have	485	1.54	0.63	p ≥ 0,05
	I suspect myself	24	1.80	0.79	
	Yes, this is confirmed	3	1.83	1.04	

Sensory sensitivity	I don't have	485	2.32	0.77	p≤**0.05**
	I suspect myself	24	3.02	0.57	
	Yes, this is confirmed	3	3.33	0.80	
Specific learning disabilities	I don't have	485	2.47	0.70	p≤**0.05**
	I suspect myself	24	2.96	0.95	
	Yes, this is confirmed	3	3.33	0.81	

The results revealed a significant association between autism spectrum disorders (ASD) and learning difficulties, as shown in Table 4. Statistically significant differences were found in the relationship between ASD and various challenges, including attention difficulties at home and in college, sensory sensitivity, and specific learning disabilities ($p \leq 0.05$).

Using the Kruskal-Wallis test for comparisons, we identified specific group differences in learning difficulties among students with ASD. Students who suspect they have ASD exhibited significantly higher levels of attention difficulties both at home ($H = 6.174$; $p = 0.046$) and in college ($H = 8.003$; $p = 0.018$) compared to those without ADHD symptoms.

Pairwise comparisons indicated that students who suspect they have ASD showed significantly heightened sensory sensitivity compared to their peers without ASD ($H = 24.293$; $p = 0.000$). Additionally, sensory sensitivity was also higher in students who were confirmed to have ASD when compared to those who denied having it ($H = 24.293$; $p = 0.040$).

Furthermore, students with Autism Spectrum Disorder (ASD) experience specific learning disabilities at a higher rate than their peers without ASD ($H = 11.385$; $p = 0.005$). Students confirmed to have ASD are also more likely to face specific learning disabilities compared to those without ASD ($H = 11.385$; $p = 0.05$).

Table 7. Neurodiversity and grade point average (GPA) for the last semester (N =512)

Groups	**Grade point**	**ADHD**		**ASD**	
		N	**Percent**	**N**	**Percent**
I don't have	from 5 to 6	1	0.3	1	0.2
	from 6 to 7	10	2.6	14	2.9
	from 7 to 8	61	15.7	84	17.3
	from 8 to 9	170	43.8	213	43.9
	from 9 to 10	146	37.6	173	35.7
I suspect myself	from 5 to 6	2	1.8	2	8.3
	from 6 to 7	4	3.5	1	4.2
	from 7 to 8	22	19.3	2	8.3
	from 8 to 9	55	48.2	13	54.2
	from 9 to 10	31	27,2	6	25
Yes, it's confirmed	from 6 to 7	2	20	1	33.3
	from 7 to 8	4	40	1	33.3

	from 8 to 9	2	20	1	33.3
	from 9 to 10	2	20	-	-

The total numbers across all groups indicate a higher representation in the "I Don't Have ADHD/ASD" category, particularly among students with higher grade point averages (GPAs). This trend reflects stronger academic performance overall. The largest percentage of students from all categories is found within the grade point range of 8 to 9, showing impressive performance for both ADHD (43.8%) and ASD (43.9%) in the "I Don't Have" category.

Conversely, students who self-suspect have a higher percentage in the lower grade point ranges compared to the other groups. Specifically, the Self-Suspected group shows greater variability in percentages across these lower grades, with notable representation in the 5 to 6 range for ASD (8.3%).

The "Yes, it's confirmed" group has a smaller sample size but displays significantly higher percentages in the lower grade point ranges. Notably, for ADHD, there is a 20% representation in both the 6 to 7 and 9 to 10 grade ranges. This confirmed group illustrates a concerning trend, as over 60% of these students fall into the lower end of the grade scale (specifically in the 6 to 7 and 7 to 8 ranges), indicating potential academic challenges in academic performance (Table 7).

Table 8. Correlation of neurodiversity and grade point average (GPA) for the last semester

Neurodiversity	Correlation	GPA
Attention deficit hyperactivity disorder	Correlation Coefficient	-0.148**
	Sig. (2-tailed)	0.001
	N	512
Autism spectrum disorder	Correlation Coefficient	-0.118**
	Sig. (2-tailed)	0.007
	N	512

** Correlation is significant at the 0.01 level (2-tailed).

The Spearman correlation reveals a statistically significant negative relationship between the GPA of the last semester and attention deficit hyperactivity disorder (ADHD), with an R-value of -0.148 ($p = 0.001$). This finding indicates that students with ADHD tend to have lower average final semester scores compared to their peers without ADHD. Additionally, there is a moderate negative correlation between autism spectrum disorder (ASD) and students' final semester performance, with an R-value of -0.118 ($p = 0.007$). Based on the results of this study, we can infer that students with ADHD and ASD generally demonstrate lower academic achievements (see Table 8).

Table 9. Expectation from lecturers and organisation related with attention deficit hyperactivity disorder (N =512)

Scales	ADHD	n	Mean	Std. Deviation	Sig.
Illustration, highlighting	I don't have	388	4.21	0.77	$p \geq 0.05$
	I suspect myself	114	4.27	0.69	
	Yes, this is confirmed	10	4.17	0.59	
Explanation, information	I don't have	388	3.73	0.71	**$p \leq 0.05$**
	I suspect myself	114	3.90	0.71	
	Yes, this is confirmed	10	3.70	0.76	
Organisation tool	I don't have	388	2.96	0.94	**$p \leq 0.05$**

I suspect myself	114	3.32	0.89
Yes, this is confirmed	10	3.58	0.79

The analysis of expectations from lecturers and organisations regarding ADHD reveals important insights. Students who suspect or confirm they have ADHD express a stronger preference for organisational tools, with mean scores of 3.32 and 3.58, respectively, compared to those without ADHD, who have a mean score of 2.96. This difference is statistically significant ($p \leq 0.05$).
Students who suspect they have ADHD tend to prefer explanations and illustrations more than others ($p \leq 0.05$). This suggests that clear communication and structured support are appreciated by all students, regardless of their ADHD status.

Using Kruskal-Wallis test comparisons, we observed specific differences in expectations from lecturers and organisations among students with ADHD. Those who suspect they have ADHD report higher expectations for explanations and information from lecturers compared to students without ADHD ($H = 7.269$; $p = 0.024$). Furthermore, students with confirmed ADHD, whether or not they have ADHD, are more likely to seek help from organisations such as psychological support, training groups, and relaxation environments ($H = 16.347$; $p = 0.000$).

Table 10. Expectation from lecturers and organisation related with autism spectrum disorder (N =512)

Scales	ASD	n	Mean	Std. Deviation	Sig.
Illustration, highlighting	I don't have	485	4.23	0.75	$p \geq 0.05$
	I suspect myself	24	4.15	0.85	
	Yes, this is confirmed	3	3.78	0.69	
Explanation, information	I don't have	485	3.76	0.72	$p \geq 0.05$
	I suspect myself	24	3.90	0.78	
	Yes, this is confirmed	3	3.93	0.31	
Organisation tool	I don't have	485	3.04	0.95	$p \geq 0.05$
	I suspect myself	24	3.29	0.68	
	Yes, this is confirmed	3	3.0	0.43	

The analysis of expectations from lecturers and organisations regarding students with Autism Spectrum Disorder (ASD) reveals minimal variation among the different groups. All groups attach high importance to the use of illustrations and highlighting, although students with confirmed ASD have a slightly lower mean score (3.78) compared to those without ASD (4.23). However, this difference is not statistically significant ($p \geq 0.05$). Preferences for explanations and information are generally consistent across groups, with students suspecting or confirming ASD showing slightly higher mean scores of 3.90 and 3.93, respectively. In terms of organisational tools, these are generally given lower priority, with mean scores showing only minor variation across groups, and no significant differences were found ($p \geq 0.05$). This suggests that expectations are broadly consistent regardless of whether or not a student has ASD (see Table 10).

6. Discussion

The findings of this study contribute to the discussion on the implementation of inclusive higher education policies, the concept of neurodiversity, and its impact on academic practice. The integration of neurodiverse students in Lithuanian HEIs reflects global trends of democratisation of education and inclusion of historically marginalised groups (Veidemane et al., 2021).

Despite the efforts and progress made to promote inclusion, there are still significant gaps that prevent a full understanding of the needs of neurodiverse students and the development of effective ways to address them.

According to the study results the most common form of neurodiversity among students is ADHD, with almost a quarter of respondents reporting its symptoms, and 4.7% reporting an autism spectrum disorder (ASD).

The study identifies specific factors that contribute to LDs providing nuanced insights into the multifaceted nature of neurodiverse experiences. These factors—such as attentional difficulties, sensory sensitivities, impulsiveness, and time management challenges—illustrate the complex interplay between neurodiversity and academic functioning (Mallory & Keehn, 2021; Wathelet et al., 2020). Previous research supports these dimensions, underscoring how deficits in executive functioning and sensory processing differences can significantly impact academic performance and social interaction among neurodiverse individuals (Kenworthy et al., 2014).

The link between neurodiverse conditions and academic outcomes among college students is evident, as those with ADHD and ASD typically exhibit lower final semester scores (Clouder et. al., 2020). This trend parallels findings from longitudinal studies that investigated the long-term educational trajectories of individuals with neurodevelopmental disorders (Helbling, Tomasik & Moser, 2019). Highlighting the importance of early identification and intervention, this study advocates for measures that alleviate academic challenges and promote success among neurodiverse students.

Interestingly, this study also examines the distribution of neurodiverse conditions across academic disciplines, challenging prevailing assumptions about which fields are more accommodating. The findings suggest that neurodiversity is pervasive across various faculties, prompting calls for inclusive educational practices that cater to diverse needs, regardless of discipline (Tampubolon et al., 2023). This is crucial in fostering an environment where all students can thrive.

The results of the study reveal the different needs of students with ADHD and ASD. The responses of students with ASD do not show a statistically significant link with the need for exceptional support measures. Meanwhile, such support measures, such as organisational tools and clear instructions, are particularly in demand for students with ADHD, highlighting the importance of specific solutions in `improving their academic experience. These results underline the important role of educators and institutional leaders in creating inclusive, supportive learning environments, and suggest that principles of UDL and compassionate pedagogy are being integrated into educational environments, but not to the full extent.

In conclusion, higher education is transforming itself to embrace the principles of inclusive policies, ++but their application in practice is fragmented and inconsistent. This echoes the results of previous research, emphasising that approaches such as UDL are promising, but so far lack consistency (Dreyer, 2021).

Despite these results, this study has several limitations to consider. The focus on ADHD and ASD overlooks other mental health issues that may also affect student experiences. Additionally, the reliance on self-reported data may introduce biases related to social desirability and self-awareness. The predominantly female sample reflects broader demographic trends in Lithuania, which could limit the applicability of findings to a more gender-balanced student population. The correlation analysis used in this study offers limited insights into the complex relationships between neurodiversity conditions and LDs. To enhance understanding, we recommend that future studies employ multiple regression models to evaluate how each neurodiversity condition independently contributes to LDs. Lastly, surveying a single higher education institution restricts the generalizability of the results across Lithuania's student population.

7. Conclusions

In conclusion, neurodiversity among students is a relevant phenomenon that is associated with learning difficulties that interfere with achieving good learning outcomes. Students with suspected or confirmed attention deficit hyperactivity disorder (ADHD) have attention difficulties and time management difficulties at home, college, sensory sensitivity, and specific learning difficulties. Also, we identified the relationship between suspected or confirmed autism spectrum disorders (ASD) and attention difficulties at home, college, sensory sensitivity, and specific learning difficulties ($p \leq 0,05$). However, the role of the teacher and organisation is exclusively relevant for the ADHD student group. For ASD students and neurotypical students, universal approaches are appropriate.

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