

SCHOOL CLIMATE AND INTERNALISED PROBLEMS IN ADOLESCENTS WITH LEARNING DISABILITIES

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Received: 10.10.2024.

Accepted: 11.12.2024.

Original research article

UDK: 37.062:159.913-053.6-056.36

doi: 10.31299/hrri.60.2.3

Abstract: *Adolescents with learning disabilities (LD) tend to experience more internalised problems than their typically developing (TD) peers. There is a lack of research that provides insight into the perception of the school climate and its connection with internalised problems in adolescents with LD.*

The aims of this research study were to analyse the existence of internalised problems, the perception of the school climate, and the connection between the school climate and internalised problems in adolescents with LD and their TD peers.

A total of 208 adolescents, aged 12 to 15 years, participated in the research, of which 104 of them had LD. Internalised problems in adolescents were assessed using the Depression Anxiety Stress Scales (DASS-21), while the effect of school climate was evaluated with the Croatian School Climate Survey for Students (HUŠK-U). The research was conducted during the COVID-19 pandemic.

The results show that 20.2% of adolescents with LD and 13.5% of TD adolescents reported experiencing severe to extremely severe symptoms of depression, while 37.5% of adolescents with LD and 31.8% of TD adolescents reported experiencing severe to extremely severe symptoms of anxiety. Symptoms related to similar levels of stress were present in 19.1% of adolescents with LD and 6.7% of TD adolescents. There were no significant differences between adolescents with LD and TD peers in symptoms of depression and anxiety, while adolescents with LD showed significantly more symptoms of stress. Both groups of respondents perceived a moderately positive school climate, but adolescents with LD reported significantly lower levels of interest among teachers in their academic success, significantly lower safety at school, and significantly less pride shown by their parents. Finally, this study demonstrated a significant positive correlation between school climate and internalised problems in both groups of students.

The results indicate the need to implement mental health programmes in schools and to inform teachers, parents, and peers about the challenges faced by adolescents with LD.

Keywords: *learning disabilities, school climate, internalised problems, depression, anxiety, stress*

INTRODUCTION

Learning disabilities (LD) refer to several disorders that affect the collection, organisation, retention, understanding, and use of verbal or non-verbal information, not due to intellectual disabilities, sensory difficulties, socioeconomic factors, cultural differences, or inadequate teaching (Learning Disabilities Association of Canada 2015). When defining LD, the difficulties involved in acquiring and using oral speech, as well as writing, reading, and mathematical skills are most often highlighted. However, LD may also include difficulties associated with organisa-

tional skills, social perception, social interaction, and managing perspectives, reasoning, and motor skills (Yılmaz et al., 2018).

Previous research warns that children and adolescents with LD are at greater risk for developing internalised behavioural problems than their peers without LD (Alesi et al., 2014; Al-Yagon 2012; Brunelle et al., 2020, Donolato et al., 2022; Francis et al., 2019; Gallegos et al., 2012; Ghislanzoni et al. 2020; Wilmot et al., 2023). Lebedina Manzoni (2007) lists the characteristics of people who have internalised problems: they manifest more negative emotions and express tension, fears, shyness,

feelings of dislike, inferiority, reticence, sadness, and depression, as well as exhibit inappropriate ways of reacting and a high level of behavioural inhibition. Internalised problems in the general population increase during early adolescence and remain stable during late adolescence (Yeung Thompson & Leadbeater, 2013). The prevalence of internalised problems during adolescence is among the highest, comprising 10 to 20 % of the population (Salavera et al., 2019).

This research aims to investigate the differences in the presence of internalised problems in adolescents with LD and their TD peers in Croatia. Unlike previous research, the present study was conducted during the COVID-19 pandemic from November 2021 to April 2022 in the city of Zagreb (the capital of Croatia), which was hit by two strong earthquakes in 2020 that caused extensive damage to homes and public buildings. Under these exceptional living conditions and considering the sensitive and risky developmental phase of adolescence, it is possible to expect a higher incidence of mental health problems among adolescents (Ajduković & Kožljan, 2022). By comparing the intensity of internalised problems of adolescents before COVID-19 and during the fourth wave in December 2021, Ajduković and Kožljan (2022) highlighted a trend of increasing internalised problems, especially the statistically significant increase in anxiety among secondary school students. The results of the national survey on the impact of the COVID-19 pandemic on the education system in the Republic of Croatia (Jokić & Ristić Dedić, 2021) also warned of an increased presence of anxiety, depression, phobias and fears, peer violence in the virtual environment, and outbursts of anger among students during the spring of 2021 compared to the pre-pandemic period, according to the assessment of pedagogues and psychologists in primary and secondary schools.

Before the pandemic, Gallegos et al. (2012) investigated the presence of internalised problems in children with LD, based on the participation of 130 students with LD and 130 students with typical development (TD). They found that students with LD were at higher risk of exhibit-

ing symptoms of anxiety (22.3% to 11.5%) and depression (32% to 18%). Adolescents with LD also experienced high levels of stress associated with the school environment, making the school a risk factor for the development of depression (Bender et al., 1999). Students with LD often face problems that make their peers consider them as being “different” and, consequently, the target of exclusion, teasing, and physical attacks (Cooley, 2017). Students with LD tend to perceive school as a very stressful environment, which is why they lose motivation for school obligations, suffer from rejection, and are prone to depression and anxiety (Vrkić Dimić et al., 2017).

The results of the research by Schmidt et al. (2014) showed that students with LD are more likely to face difficulties in social interaction, are more tense and inhibited in social contact situations, and have higher levels of anxiety than their TD peers. Estell et al. (2008) stated that students with LD are less popular, have lower social status in the classroom, and are less likely to be mentioned as best friends by their peers, ultimately leading to depression and anxiety (Panicker & Chelliah, 2016). In adolescents with LD, Al-Yagon (2012) found a higher level of negative moods and loneliness, reduced involvement in social networks, and an increased presence of externalised and internalised behavioural problems. Žic Ralić and Šifner (2015) assumed that chronic rejection of children with special education needs (SEN) by their peers can lead to internalised and externalised problems.

The school climate is described as an environment for learning created through interactions and connections between the people, the physical environment, and the psychological atmosphere (Perkins 2006). The relatively permanent quality of the school environment tends to affect the behaviour of all participants in that environment (Baranović et al., 2006). According to Thapa et al. (2013), there are five dimensions of the school climate: Safety, Relationships, Teaching and Learning, Institutional Environment, and the School Improvement Process. Within a sustainable, positive school climate, people are engaged, respect each other, contribute equally to the school’s per-

formance, as well as care for the physical environment present at school (Cohen et al. 2009). A positive school climate can be achieved when students feel comfortable, as well as when they are valued, accepted, and safe in the school environment in which they establish sincere interactions (Đurić et al., 2012). Positive relationships with teachers and peers, positive perceptions of safety at school, and positive perceptions of connectedness with school are associated with an increase in adolescent psychosocial well-being and prosocial behaviour, as well as a decrease in the prevalence of mental health problems and risky behaviour (Aldridge and McChesney, 2018).

Research has also revealed that a more positive school climate is associated with fewer internalised problems (Kuperminc et al., 2001; Leadbeater et al., 2015). The results of the research study conducted by Kuperminc et al. (2001) showed that students who perceive school as an ordered place with equal opportunities for all, where one can develop positive interpersonal relationships, are more likely to develop fewer internalised and externalised behavioural problems. Conversely, the negative perception of the school climate is associated with increased emotional and behavioural problems among students. Furthermore, the same authors found that the relationship between students and teachers and the fairness in implementing school rules represent dimensions of the school climate that contribute to the experience of the school climate as being positive or negative.

Leadbeater et al. (2015) found that children with a more positive perception of the school climate reported lower levels of internalised problems and a lower presence of externalised problems and peer violence. Suldo et al. (2012) found that the student's perception of the school climate is significantly related to their satisfaction with life and the occurrence of internalised and externalised problems, emphasising the connection between the perceived school context and the psychological functioning of adolescents. The higher level of internalised and externalised problems is related to the perception of unequal access to

school resources, lack of order and discipline, and the poor appearance of the school building.

Based on a systematic literature review, Hunt et al. (2023) highlighted that students with disabilities report more negative perceptions of school climate compared to TD peers. Students with disabilities often report being bullied and victimised, feeling unsafe at school, and receiving limited peer support (Hunt et al., 2023). A less positive perception of the school climate among students with disabilities compared to TD peers was also found in the study by Hoffmann et al. (2021), where students with disabilities reported higher rates of disruptive behaviour in class and lower rates of physical and psychological safety than TD students. In a review study, Wilmot et al. (2023) determined that children with LD may be vulnerable to low levels of "school connectedness", a concept that describes perceptions of being supported, understood, and treated fairly at school (by peers and by teachers). They also found that school connectedness may be a particularly salient protective factor for the socio-emotional well-being of children with LD. Accordingly, Chiappedi and Baschenis (2016) found that children with LD who believed that their teacher understood and supported their LD reported significantly lower levels of anxiety.

Overall, there is a noticeable lack of research on the connection between the school climate and internalised problems observed among adolescents with LD: the present study aims to fill this gap.

Research aim and hypotheses

The research aims were to examine the existence of internalised problems, the perception of the school climate, and the connection between the school climate and internalised problems in adolescents with LD and their TD peers.

For this purpose, the following hypotheses were defined:

H1: Adolescents with LD will self-assess more internalised problems, i.e., higher levels of depression, anxiety, and stress compared to their TD peers.

H2: Adolescents with LD will perceive the school climate more negatively compared to their TD peers.

H3: There will be a positive correlation between the perception of the school climate and the presence of internalised problems, i.e., depression, anxiety, and stress in adolescents with LD and their TD peers.

METHODS

Participants

The research was conducted on a sample of 208 participants, including male and female students of the seventh and eighth grades of 28 elementary schools in the City of Zagreb, the capital of Croatia. The participants were divided into two groups - adolescents with LD (N = 104) and TD adolescents (N = 104). In each group, there were 57 males (54.8%) and 47 female participants (45.2%), aged between 12 and 15 years. Around 40.4% of the participants were in the seventh grade, while 59.6% of the participants were in the eighth grade. Within the group of students with LD, 11 participants (10.6%) had reading disabilities, 2 participants (1.9%) had writing disabilities, 3 participants (2.9%) had LD related to mathematics, 67 participants (64.4%) had mixed LD, and 21 participants (20.2%) had non-area-specific LD. In addition to their LD diagnoses, 40.4 % of the participants had certain additional difficulties - ADHD (N = 14; 13.5%), visual impairment (N = 1; 1%), speech and language disorder (N = 13; 12.5%), epilepsy (N = 2; 1.9%), hearing impairment (N = 2; 1.9%), emotional and behavioural disorder (N = 7; 6.7%), tics (N = 1; 1%), chronic disease (N = 2; 1.9%), and separation anxiety (N = 1; 1%).

Measurement tools

For the purpose of this research, the following measurement tools were used: *the Depression Anxiety Stress Scales* (DASS-21; Lovibond & Lovibond 1995) and the *Croatian School Climate Survey for Students* (HUŠK-U; Velki et al., 2014).

Sociodemographic questions were added before the statements.

The Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond 1995) is a shorter version of the original DASS questionnaire. It consists of 21 items (7 items for each category) that assess the level of depression, anxiety, and stress. Respondents were asked to rate the answers on a Likert scale from 0 (which indicates *does not apply to me at all*) to 3 (which indicates *applies to me quite often*). A higher score on each subscale indicates higher levels of depression, anxiety, and stress. Based on the Cronbach alpha value in this study ($\alpha = 0.94$), it can be concluded that the internal reliability of the overall scale is excellent. Furthermore, the Cronbach alpha on the depression subscale is 0.88, on the anxiety subscale is 0.85, and on the stress subscale is 0.86.

The Croatian School Climate Survey for Students (HUŠK-U; Velki et al., 2014) is intended to measure the general quality of the school environment for learning and the psychological atmosphere in school, primarily in elementary school students of higher grades. It consists of 15 statements related to aspects of feeling safe and belonging to the school, teacher-student interactions learning atmosphere, parental connection to the school, and involvement in school life. Levels of agreement with the statements were estimated based on a Likert scale from 1 (which indicates *strongly agree*) to 5 (which indicates *strongly disagree*). An overall result was calculated based on the sum of responses, whereby a higher result indicates a student's perception of a more negative school climate. In the present study, the survey used shows excellent internal reliability ($\alpha = 0.92$).

Implementation of the research study

After receiving approval from the Ethics Committee of the University of Zagreb - Faculty of Education and Rehabilitation Sciences and the Ministry of Science and Education for the implementation of the research study, several elementary schools in the City of Zagreb were contacted. Professional associates from 28 schools that

agreed to participate in the research were contacted: these associates identified students in the seventh and eighth grades who were diagnosed with LD, as well as their age- and gender-matched TD counterparts. The associates informed students and parents about the research in writing. Students who agreed and had the consent of their parents/guardians to participate in the study were requested to gather in small groups in a quiet room in the school, where they had 20 minutes to complete the surveys. The research was conducted in elementary schools between November 2021 and April 2022, during the COVID-19 pandemic, in circumstances that ensured the complete physical, emotional, and general psychological safety of the participants.

Data processing methods

The collected data were quantitatively processed using the statistical programme SPSS (ver. Xx, IBM). Since the Kolmogorov-Smirnov test found that the obtained results showed significant

deviations from the normal distribution on both measuring instruments, non-parametric statistical methods were used. Descriptive data analysis was performed during data processing. The Mann-Whitney U test was selected to determine the differences between adolescents with LD and their TD peers in their self-assessment of internalised problems and their perception of the school climate. Spearman's rank correlation coefficient was used to determine the correlation between variables.

RESULTS

Descriptive statistics

Descriptive values (Table 1) showed that participants from both groups reported on average, a low level of internalised problems. Students with LD reported on average, a moderate level of stress, while the TD group reported low levels of stress. On average, participants from both groups had a moderately positive perception of the school climate.

Table 1. Descriptive values on the DASS-21 and the HUŠK-U.

	LD					TD				
	C	Q	Min	Max	R	C	Q	Min	Max	R
DASS-21	0.81	0.54	0	3	3	0.71	0.37	0	2.81	2.81
Depression	0.57	0.57	0	3	3	0.57	0.47	0	3	3
Anxiety	0.86	0.57	0	3	3	0.71	0.49	0	2.57	2.57
Stress	1	0.65	0	3	3	0.71	0.48	0	2.86	2.86
HUŠK-U	2.07	0.6	1	4.73	3.73	1.97	0.39	1.07	4.33	3.27

Note: C, median; Q, semi-interquartile scattering; Min, minimum value; Max, maximum value; R, result range.

According to Lovibond and Lovibond's categorisation (1995), the percentage of adolescents who do not have symptoms of internalised problems and those who have mild to extremely severe symptoms was determined (Table 2). Severe to extremely severe depressive symptoms occur

in 20.2% of adolescents with LD and 13.5% of TD adolescents. Severe to extremely severe anxiety symptoms occur in 37.5% of adolescents with LD and 31.8% of TD adolescents. Severe to extremely severe stress symptoms occur in 19.1% of adolescents with LD and 6.7% of TD adolescents.

Table 2. Presence of internalised problems in adolescents with LD and TD adolescents, according to the Lovibond and Lovibond categorisation (1995).

DASS-21 subscales	Adolescents	No symptoms (normal values)	Mild symptoms	Moderate	Severe symptoms	Extremely severe symptoms
Depression	LD	50.9 %	9.6 %	19.2 %	7.7 %	12.5 %
	TD	51.9 %	15.4 %	19.2 %	5.8 %	7.7 %
Anxiety	LD	34.6 %	10.6 %	17.3 %	8.7 %	28.8 %
	TD	35.5 %	12.5 %	20.2 %	8.7 %	23.1 %
Stress	LD	37.5 %	23.1 %	20.2 %	15.3 %	3.8 %
	TD	51.9 %	25.9 %	15.4 %	4.8 %	1.9 %

Differences in internalised problems between adolescents with LD and their TD peers

The implementation of the Mann-Whitney U test showed that, on the overall DASS-21 and the sub-scales of depression and anxiety, adolescents with LD are not statistically significant different from their TD peers (Table 3). On the other hand, there was a statistically significant difference between adolescents with LD and their TD peers in stress-related symptoms. Adolescents with LD reported experiencing more stress symptoms than their peers. Examining the differences on the individual DASS-21 items showed significantly worse results for adolescents with LD on the items ‘I found it hard to wind down’ (U = 4325.50, p < 0.05) and ‘I found myself getting agitated’ (U = 4131.50, p < 0.05). Adolescents with LD were more likely to find it hard to wind down and notice that they are agitated than their TD peers.

Table 3. Differences in self-assessment of internalised problems between adolescents with LD and their TD peers.

	Participants	M _{rank}	Mann-Whitney U	Asymp. Sig. (2-tailed)
Overall DASS-21	TD	97.52	4682.50	0.094
	LD	111.48		
Depression	TD	101.47	5093.00	0.466
	LD	107.53		
Anxiety	TD	99.52	4890.50	0.232
	LD	109.48		
Stress	TD	92.69	4179.50	0.005
	LD	116.31		

Note: M_{rank} average rank

Differences in perception of the school climate between adolescents with LD and their TD peers

The implementation of the Mann-Whitney U test showed that, in the overall HUŠK-U, there was no significant difference in the perception of the school climate of adolescents with LD and their TD peers (Table 4). When the differences in the perception of the school climate on the individual HUŠK-U items were examined, statistically significant differences were observed on the items ‘My teachers care about me being successful in school’ (U = 4597.00, p < 0.05), ‘I feel safe in school’ (U = 4543.00, p < 0.05), and ‘My parents are proud of me’ (U = 4329.50, p < 0.05): adolescents with LD were significantly less likely to experience feeling that their teachers cared about them being successful in school, their parents were proud of them, and they felt safe in school.

Table 4. Overview of the differences in perception of the school climate between the two groups of students.

	Participants	M _{rank}	Mann-Whitney U	Asymp. Sig. (2-tailed)
HUŠK-U	TD	101.46	5091.50	0.466
	LD	107.54		

Note: M_{rank} average rank

Relationship between the perception of the school climate and the presence of internalised problems in adolescents with LD and their TD peers

As shown in Table 5, the results reveal that there is a statistically significant moderate positive correlation between the results on the percep-

tion of the school climate and the results on the internalised problems in adolescents with LD and their TD peer. A more negative perception of the school climate is associated with a higher level of internalised problems.

A statistically significant moderate positive correlation was found between the perception of school climate and depression in both groups of adolescents. A more negative perception of the school climate was associated with a higher level of depression.

Anxiety and stress were also found to have a statistically significant low positive correlation with the school climate in both groups. A more negative perception of the school climate was associated with higher levels of anxiety and stress.

Table 5. *Correlation between the perception of the school climate and the presence of internalised problems in both groups of students.*

Variables	LD	TD
	HUŠK-U	HUŠK-U
Overall DASS-21	0.320**	0.372**
Depression	0.363**	0.403**
Anxiety	0.258**	0.277**
Stress	0.284**	0.280**

** $p < 0.01$

DISCUSSION

This research study aimed to analyse the existence of internalised problems, the perception of the school climate, and the connection between the school climate and the existence of internalised problems in adolescents with LD and their TD peers. The research was conducted during the COVID-19 pandemic.

Descriptive values show that most adolescents in both groups of participants did not have symptoms of depression, while slightly more than 35 % did not have any anxiety symptoms. Regarding stress, adolescents with LD reported experiencing moderate stress, while their TD peers reported low levels of stress. However, both groups of adolescents reported an increase in symptoms of depression and anxiety during COVID-19 pandemic compared to the results of research conducted before the COVID-19 pandemic (Ajduković &

Kožljan, 2022; Gallegos et al., 2012; Novak & Bašić 2008, Salavera et al., 2019).

More specifically, the present study found that 20.2% of adolescents with LD and 13.5% of TD adolescents experienced severe to extremely severe symptoms of depression, while 37.5% of adolescents with LD and 31.8% of TD adolescents experienced severe to extremely severe symptoms of anxiety. Severe to extremely severe symptoms of stress experience 19.1% of adolescents with LD and 6.7% of TD adolescents. Since DASS-21 is not a diagnostic questionnaire, we cannot confirm whether the participants have depression, anxiety, or stress, even though they reported high scores on some subscales. However, we can say that they are at risk of developing anxiety, depression, and stress.

Similar to the results of the present research, a study by Gallegos et al. (2012) indicated a higher percentage of adolescents at risk for developing depression (32% of students with LD and 18% of TD students) and a lower percentage of students at risk for developing anxiety (22.3% of students with LD and 11.5% of TD students).

The presence of internalised problems in Croatian adolescents during the COVID-19 pandemic is discussed by Ajduković and Kožljan (2022), who found growing trends of internalised problems compared to the results in Croatia before the pandemic. Using the DASS-21 to collect data in December 2021, in the sample of first grade secondary school students, the authors found severe and extremely severe symptoms of depression in 20.6% of them, severe and extremely severe symptoms of anxiety in 33.0% of students, and high levels of stress in 25.4% of students. Compared to the results before the pandemic and the earthquakes in Zagreb, they found significantly higher levels of anxiety among students. Their results are consistent with the results of international research related to COVID-19, indicating elevated levels of anxiety, depression, and stress among young people (Ajduković & Kožljan, 2022).

Based on the descriptive data analysis in the present study, it can be observed that the severe and extremely severe symptoms of depression,

anxiety, and stress, identified in both groups of adolescents, pose a serious mental health risk and require timely intervention.

The first objective examined in the present study was related to identifying the differences in self-assessments of internalised problems between adolescents with LD and their TD peers. Although the results show an increase in the presence of internalised problems, depression, anxiety, and stress in adolescents with LD compared to their TD peers, we observed a statistically significant difference only with respect to stress, where adolescents with LD experienced higher levels of stress. Contrary to previous research, this study did not establish a significant difference in the intensity of internalised problems, as well as in the expression of depressive and anxiety symptoms between adolescents with LD and their TD peers. Such results are inconsistent with numerous studies, including systematic reviews or meta-analyses based on data collected before the COVID-19 pandemic (Alesi et al., 2014; Brunelle et al., 2020; Donolato et al., 2022; Francis et al., 2019; Wilmot, 2023), where significantly higher levels of anxiety and depression were reported in children with LD compared to their TD peers. This inconsistency in the results can be explained by the increase in the presence of symptoms of anxiety and depression among TD children in Zagreb after the earthquakes and during the COVID-19 pandemic, as evidenced by the results of Ajduković and Kožljan (2022). The recent World Health Organization report (2024) warns that 14% of adolescents across the globe experience a mental disorder, while depression, anxiety, and behavioural disorders are among the leading causes of illness and disability among adolescents. Therefore, further research into the internalised problems of adolescents is required in order to answer questions on whether the high levels of anxiety and depression in both groups of adolescents are temporary, or whether they were prompted by the extraordinary life circumstances caused by the COVID-19 pandemic and the earthquakes, as well as whether this anxiety will decrease over time, or whether it is a case of permanently elevated anxiety and depression in both groups of adolescents.

On the stress subscale, adolescents with LD reported experiencing significantly higher levels of stress than their TD peers. In addition, analysing the differences on individual DASS-21 items, it was determined that adolescents with LD found it significantly harder to wind down and felt agitated significantly more often than their TD peers. These individual items are included in the stress subscale and contributed to the differences observed in the stress levels. Significantly higher levels of stress observed in the present study among adolescents with LD in comparison to their TD peers can be explained by the nature and extent of challenges faced by these adolescents in school, family, and peer environments, which clearly exceed their capacity. This result can be supported by the findings of Panicker and Chelliah (2016), who showed that 75% of students with LD had low levels of resilience, indicating that they had inadequate coping skills and lower levels of inner resources to fall back on in stressful situations. The high levels of stress in adolescents with LD can also be explained by the findings of Martin-Ruiz et al. (2024) regarding the negative impact of LD on personal resources, i.e., weaker self-esteem and social competence in adolescents with LD compared to TD peers. Boyes et al. (2020) indicated that internalised problems in children with LD are related to self-esteem, bullying, victimisation, emotion regulation, social skills, and peer problems. Additionally, low self-confidence, a sense of failure, and inferiority associated with LD (Lufi et al., 2004) can potentially lead to higher levels of stress.

High stress levels, especially in the context of reduced opportunities for relaxation and increased agitation, as reported by adolescents with LD in the present study, could relate to their difficulties in emotional regulation (Boyes et al., 2020; Kopelman-Rubin et al., 2020). Kopelman-Rubin et al. (2020) found that emotional regulation had a significant effect on the degree of psychosocial difficulties observed among students with LD: the better the students' ability to regulate their emotions, the lower their degree of psychosocial difficulties. These results can also be associated with difficulties related to executive functions

and lower self-confidence of students with LD (Meltzer & Krishnan 2007). Executive functions are interpreted as supervisory and self-regulatory functions that, in addition to cognitive activities and open behaviour, organise and direct the individual's emotional reactions (Gioia et al. 2002). Coordination and integration of complex processes of executive functions are often challenging for many students with LD, who often have difficulties demonstrating their overall knowledge (Meltzer & Krishnan 2007). Children with difficulties in executive functioning are often called lazy, unmotivated, or irresponsible, and are thus at risk of emotional trauma (Denckla 2007). Therefore, there is a possibility that students with LD will eventually experience increased overload, anxiety, and frustration.

Based on the literature review, Stein et al. (2024) found that the increased level of stress in adolescents with LD can be explained by societal pressures of academic success, challenges in acquiring academic skills, family expectations, challenges in peer interaction, as well as stigma associated with having a disability. The increased levels of stress related to challenges in peer interaction can be linked to findings of previous research according to which students with LD have more difficulties in social interaction, are more tense and inhibited in social contact (Schmidth et al., 2014), are less popular, have lower social status in the classroom (Estell et al., 2008; Wilmut et al., 2023), and more often experience a lack of belonging (Rose et al., 2015).

The increased stress levels may also result from insufficient educational support provided to students with LD in schools. Children and adolescents with LD are included in regular class where many teachers do not appreciate the suggestions provided for adapting to the needs of these students, such as extending the time provided for completing exams, fewer questions, or checking that they have read the question correctly, and this results in further exposure to stressful situations. Numerous research studies conducted in Croatia point out that teachers do not feel competent enough to work with students with SEN (Domović, et al., 2017; Kranjčec Mlinarić et al., 2016) and

therefore, lack the knowledge and skills required to provide support in this area (Batarelo Kokić et al., 2009). A survey on the quality of inclusive education (Žic Ralić et al. 2020) showed that teachers positively assess inclusive education in Croatia, but note many weaknesses, such as lack of resources, especially support from experts for SEN students in school.

The reason for higher stress levels among adolescents with LD may also be hidden in the COVID-19 pandemic during which the present research was conducted. The consequences of the pandemic, especially the measures of physical isolation and fear of infection, endangered psychological needs and increased the threat to the mental health of adolescents (Ajduković & Kožljan, 2022).

Given that statistically significant differences were found between adolescents with LD and their TD peers only in their levels of stress, the first hypothesis (H1) is partially accepted.

The second question concerned the identification of differences in the perception of the school climate. The results of the present study show no significant differences between adolescents with LD and their TD peers. These results are consistent with the results of Schwab et al. (2018) showing that students with SEN have a similar perception of the inclusive climate in their schools as students without disabilities. The results are also consistent with Benassi et al. (2022) who also found no differences in the assessment of school well-being between students with LD and their TD peers. The findings of the present study, that adolescents with LD perceive the school climate as moderately positive similar to their TD peers, is encouraging and may indicate that adolescents with LD have an equally positive experiences at school as their TD peers. This finding can be an indicator of the good quality of inclusive education. In addition, it is also possible that adolescents with LD are less critical in assessing the school climate. This assumption is supported by the results of Benassi et al. (2022) who highlighted that, although children with LD rate their well-being at school equally as their TD peers, their mothers rate their general well-being at school as significantly lower than

mothers of TD peers. Mothers of children with LD tend to report inadequacies in the learning process and a weaker relationship with the teacher compared to mothers of TD peers. Therefore, in future research, it is important to include parent and teacher assessments of the school climate, in addition to student assessments.

Some of the schools that participated in the present study have an educational rehabilitator (expert for providing support to SEN students, their teachers, and parents) as part of their professional team. It is possible that the presence of an educational rehabilitator in schools contributed to this moderately positive climate. Through supporting students with SEN, consulting teachers and parents, cooperating with other experts in the school, sensitising the environment, and working to reduce prejudice and discrimination, educational rehabilitators play an important role in creating an inclusive school climate that respects and supports differences among students and enables them to achieve their potential (Kudek Mirošević & Granić, 2014). The role of the educational rehabilitator in achieving a positive and inclusive school climate needs to be explored in future research.

However, these results are not consistent with Hoffmann et al. (2021) and Hunt et al. (2023) who found that students with disabilities experience the school climate less positively than their TD peers. Similar results were also obtained in the research by Zurbriggen et al. (2021), who, when examining the school climate, found that students with SEN (80% of participants had LD) felt less integrated into their class than TD students.

Although adolescents with LD and their TD peers perceived the school climate in the same manner, the analysis of individual items showed that adolescents with LD have a significantly more negative perception of teachers' concern for their success, the feeling of safety at school, and their parents' pride in them. The lack of interest of teachers in the school success of students with LD could be a possible consequence of their incompetence for inclusive education (Domović et al., 2017; Kranjčec Mlinarić et al., 2016). The experience of greater insecurity of adolescents with LD

at school is consistent with the findings of previous research (Hoffmann et al., 2021; Hunt et al., 2023) suggesting that students with disabilities feel significantly less physically and psychologically safe at school compared to their TD peers. This is a worrying result that points to the need to pay more attention to the appreciation of students with LD by teachers and their peers. The finding that adolescents with LD perceive their parents to be significantly less proud of them is consistent with numerous studies cited by Schmidt et al. (2014) on the association between increased family conflicts and school success, as well as continuous tension, misunderstanding of the challenges faced by children with LD, and insufficient family support. In contrast, the results of qualitative research by Fernández-Alcántara et al. (2017) showed that parents of children with LD are proud of them and the effort invested by them in their education. The findings of the present study point to the need to educate parents/teachers of children with LD about the challenges they face at school and in peer relationships in order to better understand their children/students and provide them with the necessary support, set achievable goals, as well as encourage and motivate them to persevere. Since the results obtained show the opposite of what was predicted, the second hypothesis (H2) on significant differences in the perception of school climate is rejected.

The final question addressed the correlation between the perception of the school climate and the presence of internalised problems. The results show a statistically significant moderate positive correlation in both groups of students. Students who reported facing a more negative school climate experienced more symptoms of internalised problems. In addition, a significant moderate connection between school climate and depression was found, while anxiety and stress were significantly, but weakly, related to school climate. The results of the present study are consistent with the results of several studies that have found a significant association between school climate and the presence of internalised problems (Kuperminc et al., 2001; Leadbeater et al. 2015; Liu & Lu 2012; Suldo et al. 2012), as well as with mental health

problems (Aldridge and McChesney, 2018) in TD students. The results are also consistent with Benassi et al. (2022) who reported a significant correlation of school well-being with internalised problems among children with LD and TD children. Furthermore, the results of Kopelman-Rubin et al. (2020) showed that if students with LD had a better ability to regulate emotions, their sense of school belonging was higher, which was in turn linked to fewer psychosocial difficulties. Given the results obtained, the third hypothesis (H3) is accepted.

Finally, the data obtained can help expand the knowledge and understanding of internalised problems experienced by adolescents with LD and help create scientifically-based prevention and intervention programmes for adolescents with LD and their TD peers. To achieve the best possible forecast and outcomes and to avoid stigmatisation of students who are at risk or have already developed internalised problems, it is necessary to include all students in mental health prevention programmes. This will strengthen the protective factors, including the positive school climate, and increase students' social and emotional competences, as well as their resilience. Educating and sensitising teachers, parents, and peers about the challenges faced by adolescents with LD, as well as about the support they need, can have a positive effect on reducing internalised problems and improving the school climate. In this case, a timely response and a transdisciplinary approach in providing support are key.

Several limitations of this research must be considered: the method of selection of participants, the method of self-assessment, territorial constraint, and the time of conducting the research. The present study examined the differences between students with LD and TD students who attend the seventh and eighth grades of elementary schools. Therefore, there was no possibility of selecting participants other than non-probabilistic, appropriate sampling. Furthermore, given that this research involved the self-assessment of participants, there is a possibility that they provided socially desirable responses. In addition to the above, it should be emphasised that only students

at elementary schools in the City of Zagreb participated in the research, so it is impossible to apply these results to students from other parts of Croatia. Another limitation is the period of time when this research was conducted, i.e., the COVID-19 pandemic. In addition to the unfavourable epidemiological situation in elementary schools, which reduced student response to participation in the research, there is a possibility that, due to the COVID-19 pandemic and two strong earthquakes in 2020, there was an increased level of stress in elementary school students.

Accordingly, the recommendations for future research refer to conducting similar research in schools across Croatia to obtain national data, as well as international research into whether there was an increase in internalised problems among adolescents after the COVID-19 pandemic. In addition, international results regarding the school climate as assessed by LD children are needed. It is also important to examine the perception of teachers and parents of both groups of students about the experience of the school climate and the presence of internalised problems in adolescents. It would be helpful to see whether the perceptions of teachers and parents differ from those of the adolescents. Since the research results provided insight into the existence of internalised problems among students, it is necessary to design and implement prevention programmes at the school level, as well as to support and monitor students who have already developed symptoms of depression, anxiety, and stress in the long term.

CONCLUSION

This is the first research study on internalised problems of adolescents with LD in the school environment in Croatia. The strong presence of internalised problems in adolescents with LD and their TD peers was established and explained by the extraordinary life circumstances caused by the COVID-19 pandemic and the earthquakes in Zagreb (Ajduković & Kožljan, 2022). Adolescents with LD and their TD peers were found to have equal levels of internalised problems, depression, and anxiety. This result is not consistent with the findings of previous research and should be

verified through further research. However, adolescents with LD experience significantly more stress, especially related to a reduced ability to relax and increased levels of agitation. The finding is consistent with numerous studies that provide insight into the challenges faced by adolescents with LD (e.g. Boyes et al., 2020; Kopelman-Rubin et al., 2020; Martin-Ruiz et al., 2024; Panicker and Chelliah, 2016; Schmidh et al., 2014; Stein et al., 2024), which may contribute to an increased level of stress in relation to their TD peers.

Adolescents with LD assessed the school climate as moderately positive, similar to their TD peers. The obtained results support earlier findings (Benassi et al., 2022; Schwab et al., 2018). However, adolescents with LD rate their teachers' concern for their academic success as significantly lower than their TD peers. In addition, they feel less safe at school and feel that their parents are not proud of them. These findings are supported by the results of previous research on the insufficient competence of teachers to work in inclusive

education systems (e.g., Kranjčec Mlinarić et al., 2016), the lower sense of security experienced by children with LD at school (Hoffmann et al., 2021; Hunt et al., 2023), and the weaker relationship between children with LD and their parents (Schmidt et al., 2014). A moderate positive correlation of internalised problems and school climate was found in both groups of adolescents, which is consistent with earlier findings (e.g. Benassi et al., 2022).

The results of the present study emphasise the need to implement preventative/interventional mental health programmes in schools aimed at developing the social and emotional competencies of adolescents and contributing to a better school climate. Likewise, it is necessary to better inform teachers, parents, and peers about the challenges faced by adolescents with LD in their daily functioning in order to improve their understanding on how they can contribute to alleviating stress in adolescents with LD.

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