DOI: https://doi.org/10.54937/ssf.2025.24.1.11-22

Voľnočasové aktivity a depresia u žiakov v 5. ročníku základnej školy

Leisure Activities and Depression of 5th Graders of the Elementary School

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Abstract

Depression is one of the most widespread diseases in the world. Studies mapping the prevalence of depression in children report a high percentage of children with depressive symptoms. It is important to investigate what the level of depression in children is related to, thanks to which we can come up with more effective prevention and intervention. The study analyzed the relationships between the level of depression in children and their school performance and leisure activities. The ensemble consisted of 102 pupils, of which 43 were boys and 59 were girls aged between 10 and 12. The monitored variables were depression (measured by the CDI Self-Assessment Depression Scale for Children), school performance (measured by the Czech language grade and math grade), leisure activities (number and type of clubs, preferences for how to spend free time). The results showed that lower school performance is correlated with the scale of bad mood, lack of performance and overall, with a higher level of depression. No connection was found between the level of depression and the number or type of interest groups. On the contrary, the sports, outdoor and relational way of spending free time (outside of organized interest groups) is related to a lower level of depression (some of its subscales) compared to the passive way of spending free time, which is related to a higher degree of feelings of ineffectiveness and anhedonia. The results indicate that the level of depression in children is related to the preferred way of spending free time rather than participation in organized interest groups.

Keywords: Depression. School performance. Leisure activities.

Introduction

Depression in children is a complex and multifaceted issue that has garnered significant attention in recent years due to its profound impact on various aspects of a child's life. While traditionally perceived as a severe mood disorder characterized by persistent sadness, loss of interest in activities,

and irritability lasting for two or more weeks (APA, 2018), modern research has expanded our understanding of depression as a continuum. This continuum ranges from overall well-being to severe psychiatric disorders, prompting a shift in terminology towards "depressivity" or "sadness" to emphasize its spectrum nature (Coid et al., 2021; Kneer et al., 2019; Wahid, 2021).

The prevalence of depressive symptoms in children is notable, with estimates suggesting that 1% to 2% of children and 3% to 8% of adolescents experience depression (Kessler et al., 2012) and still increasing. Early identification and intervention are crucial, as early recognition of depression significantly enhances treatment outcomes (Weinberger et al., 2018). Understanding the factors related to depression in children is essential for developing effective prevention and intervention strategies. Our study focuses on the relationship between depression, school performance, and leisure activities in fifth-grade students.

School performance is a multifaceted construct. It can be viewed through the lens of meeting academic requirements, which manifests in positive assessments of a student's performance, or more broadly as the cooperative achievement of educational goals between teachers and students (Průcha, J., Walterová, E., & Mareš, J., 2009). Typically, school performance is measured using grades in various subjects. Studies have demonstrated a correlation between higher levels of depressive symptoms and lower academic achievement. For instance, Fráňová, Lukavský, and Preiss (2006) found a significant relationship between depressive symptoms and school performance among students aged 9 to 11, with the strongest association observed in the inefficiency subscale. Similarly, Kollerová (2011) reported a link between lower school performance, as indicated by grades in Czech language, mathematics, and average grade point, and depressive symptoms in Prague pupils of the same age group.

The relationship between depressive symptoms and participation in extracurricular activities is less clear. While some studies indicate a negative correlation between depression levels and participation in extracurricular activities (Sanders et al., 2000; Mason et al., 2009), others do not find a significant connection (Darling, 2005; Melman et al., 2007). Ryan et al. (2017) noted that children engaged in two or more sports activities exhibited less severe depressive symptoms compared to those involved in no or only one sport, whereas the number of leisure activities and hobbies did not significantly predict depressive symptoms.

In light of these mixed findings, our study aims to elucidate the connections between school performance, participation in leisure activities, and depressive symptoms in fifth-grade students. By examining these relationships, we hope to contribute to the development of targeted strategies for improving the well-being and academic success of children.

Method

Objectives

The aim of this study is to analyze the connections between the leisure activities of 5th graders and their level of depression. The following research question derived from the formulation of the objective of the study:

RQ1: Is there a connection between the level of depression in children and the number of interest groups, the type of interest groups or the preference for how to spend free time?

The second goal is to verify the connection between grades in the Czech language and mathematics and the level of depression in children. Based on the current state of knowledge, we formulate the following hypotheses for the verification part:

H1: The level of depression is positively correlated with grades in Czech language and mathematics.

Tools

In order to meet the research objectives, the Children's Depression Inventory was administered, supplemented with six additional items inquiring about grades in mathematics and the Czech language, what clubs they attend and what they like to do in their free time.

Children's Depression Inventory

The Children's Depression Inventory (CDI) is a widely utilized screening instrument designed to evaluate the presence and severity of depressive symptoms in children aged 7 to 17 years. Developed by Professor Maria Kovacs in 1977, the CDI is modeled after Beck's Depression Inventory, ensuring its robust theoretical foundation. This self-report questionnaire comprises 27 items, which are systematically divided into five subscales: Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia, and Negative Self-Esteem.

Each item on the CDI is rated on a three-point scale, with responses ranging from 0 to 2 (0 indicating the absence of symptoms, 1 indicating mild symptoms, and 2 indicating severe symptoms). Children are instructed to select the response that most accurately reflects their feelings over the preceding two weeks. The cumulative score, derived by summing the values of all responses, spans from 0 to 54. Higher total scores indicate a greater likelihood of depressive symptoms, whereas lower scores suggest minimal or no depressive symptoms (Cvrčková, 2016).

The CDI's detailed subscales allow for a nuanced understanding of the child's depressive symptomatology. Negative Mood assesses feelings of sadness and irritability, Interpersonal Problems gauges difficulties in relationships,

Ineffectiveness measures perceived incompetence, Anhedonia evaluates the inability to experience pleasure, and Negative Self-Esteem reflects self-critical attitudes.

Procedure and research sample

The respondents were chosen by the random sampling method, while the teachers of the 5th grade of the elementary school were approached with a request to mediate the research. Data collection took place from April to June 2022 via the click4survey.cz questionnaire platform, on which pupils anonymously filled out a scale measuring depression and additional questions.

The research group consisted of 102 pupils from 11 classes, 43 boys and 59 girls aged 10 to 12 (m=10.87 +- 0.52).

Data processing

Depression score and scores for individual subscales were calculated. Data were calculated using IBM SPSS Statistics 22.0.

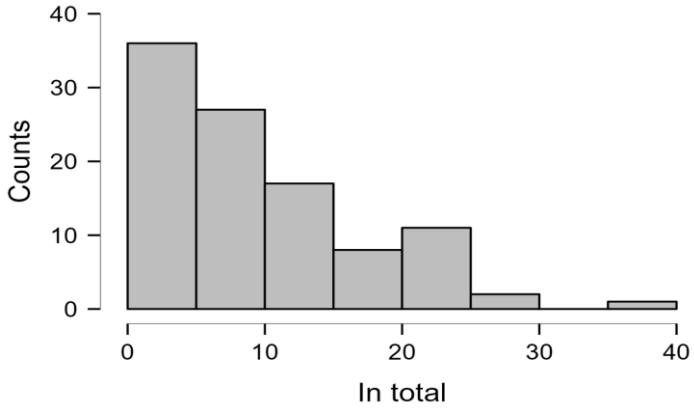
The results

Depression Scale

The overall score "In total" in our group ranged from *min* = 0, *max* = 38, while *the mean* = 10.15, *sd* = 8.11, *median* = 8. Due to the non-fulfillment of the normality conditions according to the Shapiro-Wilk normality test, we will continue to work with non-parametric statistical methods.

The results show an approximately **exponential distribution** with a peak at 0: most children do not suffer from any depressive symptoms or show only a minimal amount, with increasing number of points/symptoms the number of respondents decreases more and more significantly (see Figure 1).

Figure 1: Number of children and number of points/symptoms of depression



Hypothesis verification

H1: The level of depression is positively correlated with grades in Czech language and mathematics.

Spearman correlation coefficient was used to verify the hypothesis. The results presented in Table 1 show that the grade in mathematics is correlated with the subscale bad mood ($r = 0.267$; $p < 0.01$), lack of performance ($r = 0.365$; $p < 0.01$) and with overall depression ($r = 0.225$; $p < 0.05$). The Czech language grade is correlated with the subscale bad mood ($r = 0.213$; $p < 0.05$), lack of performance ($r = 0.436$; $p < 0.01$), reduced self-esteem ($r = 0.220$; $p < 0.05$) and with overall depression ($r = 0.286$; $p < 0.01$). In other words, the higher the level of bad mood, lack of performance, general depression, the worse the grades in mathematics. And the higher the level of bad mood, lack of performance, reduced self-esteem, the worse the grades in the Czech language.

Table 1: CDI and grades: Spearman correlation (N=102)

Scales	Math grade	Grade from Czech language
A_bad mood	0.267**	0.213*
B_interpersonal problems	0.148	0.166
C_inefficiency	0.365**	0.436**
D_anhedonia	0.084	0.178
E_ reduced self assessment	0.104	0.220*
In total	0.225*	0.286**

RQ1: Is there a connection between the level of depression in children and the number of interest groups, the type of interest groups or the preference for the way of spending free time?

Pupils attend an average of 1.88 interest groups (SD = 1.41). It was necessary to divide the number of different interest groups that the students mentioned into several categories. We decided on two different splits. We divided the interest groups according to the methods of cooperation of the participants into collective and individual. Among the collective ones, we sorted answers such as football, handball, scout, etc., with individual interests we marked groups such as ceramics or gymnastics. The second division of interest groups was based on focus into sports (e.g. judo, dance), artistic (e.g. playing a musical instrument, drawing, singing) and educational (e.g. research club, reading club, English conversation).

Spearman correlation coefficient was used to find answers to the second research question. The results (see Table 2) show that there is no statistically significant relationship between the degree of depression and the number or type of interest groups.

Table 2: Depression scale and the type of interest groups: Spearman correlation (N=102)

Scales	Number	Collective	Individual	Sports	Artistic	Educational
A_bad mood	-0.005	0.018	-0.039	-0.024	-0.064	0.105
B_interpers.problems	-0.118	0.064	-0.087	-0.119	-0.112	0.018
C_inefficiency	0.002	-0.066	-0.024	0.021	-0.010	-0.006
D_anhedonia	-0.071	0.050	-0.082	-0.071	-0.081	0.027
E_reduced self-ass.	-0.118	0.016	-0.110	-0.128	-0.137	0.062
In total	-0.069	-0.024	-0.081	-0.072	-0.093	0.052

Next, we processed respondents' answers to the question "What do you like to do in your free time?" We first counted how many ways of spending free time the children wrote (m = 1.60; SD = 0.96). Then we divided their answers into five categories according to the way they spend their free time: passive (e.g. PC or mobile games, watching series), sports (riding a scooter, bike, football), going out (going out), relationships (being with friends) and others (here we included various answers such as making, cleaning, sleeping).

The relationship between the level of depression in children and the preference for the way of spending free time is shown in Table No. 3. The passive way of spending time is correlated with inefficiency ($r = 0.205$; $p < 0.05$) and anhedonia ($r = 0.228$; $p < 0.05$). Sports way of spending free time is negatively correlated with bad mood ($r = -0.228$; $p < 0.05$), interpersonal problems ($r = -0.45$; $p < 0.05$) and general depression ($r = -0.231$; $p < 0.05$). The outdoor way of spending time is negatively correlated with bad mood ($r = -0.207$; $p < 0.05$), on the contrary, other ways of spending free time are positively correlated with bad mood ($r = 0.237$; $p < 0.05$). Spending your free time with others is negatively correlated with underperformance ($r = - 0.221$; $p < 0.05$).

Simplifying the results, we can interpret the results in such a way that the sports, outdoor and relational way of spending free time is related to a lower level of depression (some of its subscales) compared to the passive way of spending free time, which is related to a higher level of feelings of ineffectiveness and anhedonia.

Table 3: Depression scale and the the preferred way of spending free time: Spearman correlation (N=102)

Scales	Number	Passive	Sports	Out	Other	Relation ships
A_bad mood	-0.073	0.065	-0.228*	-0.207*	0.237*	-0.090
B_interpersonal problems	-0.167	0.104	-0.245*	-0.129	0.047	-0.156
C_inefficiency	-0.093	0.205*	-0.151	-0.188	0.122	-0.221*
D_anhedonia	-0.044	0.228*	-0.194	-0.105	0.138	-0.159
E_reduced self-assessment	-0.065	0.143	-0.157	-0.068	0.077	-0.092
In total	-0.095	0.187	-0.231*	-0.167	0.160	-0.171

Discussion

Our research confirms the expected correlation between poorer school performance and higher levels of depression in preadolescent children, aligning with findings from similar studies on child populations. Specifically, we found a statistically significant relationship between lower grades in Czech language and mathematics and elevated depression levels, as measured by the CDI (Fráňová, Lukavský, & Preiss, 2006; Kollerová, 2011). This is consistent with existing literature, suggesting that children with higher depression levels experience more negative emotions such as sadness, hopelessness, fear, guilt, and social isolation, which detract from their energy and motivation to engage in meaningful activities. These emotional challenges, coupled with difficulties in forming and maintaining friendships and interacting with teachers, likely result in reduced support and poorer academic performance. Additionally, depression-related issues with concentration, memory, and motivation further impede learning, contributing to lower grades. However, our study cannot rule out the possibility that poorer academic performance may also contribute to higher levels of depression.

We also explored whether there is a connection between the level of depression and the number or type of extracurricular activities children engage in, as well as their preferences for spending free time. The current scientific literature on this topic presents mixed findings. Some studies indicate a clear relationship between lower depression levels and increased participation in extracurricular activities (Sanders et al., 2000; Mason et al., 2009), while others do not find such a connection (Darling, 2005; Melman et al., 2007). Our results show no significant relationship between the level of depression in fifth graders and the number or type of organized interest groups. However, we found that the ways children prefer to spend their free time are related to depression levels. Specifically, engaging in sports, outdoor activities, and relational activities is associated with lower levels of depression, particularly in some subscales.

The positive effects of physical activity on mental health are well-documented. For instance, Dale et al. (2019) found that physical activity positively affects children's and youth's mental health, reducing depression symptoms and improving self-concept and self-esteem. Conversely, passive leisure activities are associated with higher feelings of inefficacy and anhedonia. Notably, passive screen time, such as watching television or using a computer or mobile device, is linked to mood disorders and anxiety, whereas active screen time is not (Kim et al., 2020; Thorisdottir et al., 2019).

Our findings raise several questions and potential explanations. For example, to what extent do fifth graders choose their organized activities independently? It is plausible that parents' preferences, financial capabilities, and other factors significantly influence the number and type of activities children engage in. Moreover, the passive ways children spend their free time, such as gaming or watching videos, may also be influenced by parental habits and preferences. The quality of time spent in these activities might also be significant. For instance, there might be a difference in psychological impact between children engaging voluntarily in activities versus those participating in structured programs. Additionally, the amount of time spent on extracurricular activities could play a crucial role. Our study did not examine the frequency or duration of participation in these activities, which could be an essential factor in understanding their impact on depression.

Further research is needed to address these questions. Future studies should consider investigating the voluntariness of participation in activities, the amount of time spent, and the underlying motivations and enjoyment levels associated with these activities. Understanding these nuances could provide deeper insights into how various aspects of free time and extracurricular engagement impact children's mental health. Ultimately, these insights could inform more effective interventions and support strategies for improving the well-being and academic performance of children.

Limitations of the study

This study has several limitations. The sample size of 102 pupils, obtained through occasional sampling, limits the representativeness and generalizability of the findings. The assessment of depression was based solely on self-report measures, which could be complemented by data from other sources for a more comprehensive understanding. Potential bias in content analysis may have occurred as the categorization of responses (type of free time activity) was conducted by a single assessor. Furthermore, the individual variability in students' experiences with depression is considerable. The relationship between depression and school performance may be influenced by factors such as the severity and duration of depression, the presence of comorbid conditions, and the availability and utilization of support systems that was not monitored.

Ethical dimension

The research protocol was approved by the UHK Ethics Committee on March 30, 2022, under registration number 5/2022, with the protocol signed by the committee chairman, Prof. PhDr. Marek Franěk, CSc., Ph.D. Participation in the study was voluntary, with written consent obtained from the legal guardians of the respondents. The data collected were anonymized to ensure that responses could not be traced back to individual participants.

Conclusion

In recent years, there has been a growing public interest in mental health and an increasing awareness of mental disorders, particularly among children and adolescents. Given the severity of depression in this population, research on prevention and intervention strategies is crucial. Untreated depression often becomes chronic (Rey, Bella-Awusah, & Liu, 2015), making it essential to identify indicators of increasing depression in children. Our study aimed to explore associations with higher levels of depression, confirming a relationship between depression and school performance. Identifying and addressing poor academic performance is important not only from a pedagogical perspective but also from a psychological standpoint.

We also found correlations between depression levels and preferred leisure activities. Understanding how children spend their free time and the effects of these activities can provide valuable insights for parents, teachers, and other professionals. The findings suggest that specific types of leisure activities may be linked to lower levels of depression, highlighting the importance of promoting healthy and engaging activities for children. We recommend that parents, teachers, and other professionals focus on encouraging children to participate in active and relational leisure activities. By fostering environments that promote physical activity and meaningful social interactions, we can potentially mitigate the risk of depression and enhance overall well-being.

Future research should continue to explore the nuances of how various leisure activities affect children's mental health, including the voluntariness of participation, the amount of time spent, and the individual motivations behind these activities. A deeper understanding of these factors will enable the development of targeted prevention and intervention strategies that can more effectively support the mental health and academic performance of children.

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