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Uvodnik

DR. TINA VRŠNIK PERŠE
gostujoča urednica

Posebna številka *Revije za elementarno izobraževanje* nagovarja tematiko zdravega življenjskega sloga v povezavi s trajnostnim razvojem in vseživljenjskim učenjem. Nastala je v povezavi z vsebinami, ki jih razvijamo v okviru projekta *Zdrav življenjski slog za trajnostni razvoj in vseživljenjsko učenje* na Pedagoški fakulteti Univerze v Mariboru *(Projekt je del nacionalnega Načrta za okrevanje in odpornost (NOO) in je sofinanciran iz sredstev Mehanizma za okrevanje in odpornost Evropske unije).* V ospredju je prizadevanje za celostni pristop k razumevanju obravnavanih dejavnikov ter odnosov med njimi, kar prispeva k dobrobiti posameznikov in družbe kot celote.

Zdrav življenjski slog je v zadnjih letih predmet razprav na presečišču znanosti, politike in vsakdanjega življenja. Izbrana tema presega posamezna strokovna področja in nakazuje premik v razumevanju zdravega življenjskega sloga in dobrega počutja oz. dobrobiti posameznikov kot kompleksnega in dinamičnega procesa, ki presega zgolj telesni in gibalni vidik, ter človeka obravnava celostno. Vključuje razmisleke o telesnem, duševnem in socialnem ravnovesju, o kulturnih in prostorskih vidikih bivanja, o pomenu ustvarjalnosti in pripadnosti, pa tudi o tem, kako posameznik vzpostavlja odnos do sebe, do drugih in do okolja. Prav zaradi svoje kompleksnosti je tema pomembna tako z vidika znanstvenega raziskovanja kot tudi z vidika iskanja odgovorov na praktične, sistemske in dolgoročne izzive.

V prispevkih avtorji osvetljujejo različne vidike zdravega življenjskega sloga in dobrega počutja na osnovi analiz telesnih, duševnih, socialnih in okoljskih dejavnikov. Ukvarjajo se z vprašanji, ki se nanašajo na različna življenjska obdobja (od predšolskega obdobja preko obdobja šolanja do študija in profesionalnega razvoja), kontekste in strokovna izhodišča. Obravnavajo vsebine, povezane z gibalno dejavnostjo, prehranskimi navadami, rabo digitalnih tehnologij, naravo, umetnostjo, čustvenimi odzivi, občutkom varnosti ter dobrobitjo otrok in odraslih.

Avtorji **Loudová Stralczynská, Lipnicka** in **Chytrý** obravnavajo stališča vzgojiteljev iz Češke in Slovaške o merilih za vključevanje dvoletnikov v vrtec. V ospredje postavljajo napetosti med institucionalnimi pričakovanji in razvojnimi

značilnostmi otrok ter opozarjajo na pomen otroku prilagojenih, razvojno ustreznih praks za podporo njihovega dobrega počutja in dobrobiti.

Vključevanje otrok v vrtec z vidika staršev raziskujeta **Pölzl-Stefanec** in **Gutmann**. Na osnovi koncepta občutka koherence prepoznavata vire stresa in podpore v procesu uvajanja otrok v vrtec ter poudarjata pomen sodelovanja med vrtcem in družino kot temelja za otrokovo dobro počutje in trajnostno vključevanje v institucionalno okolje.

Kobler obravnava pomen naravnega okolja, zlasti gozda, za razvoj odpornosti in dobrega počutja predšolskih otrok v sodobnem, pogosto stresnem svetu. Gozd predstavi kot prostor izkušenj, ki pozitivno vplivajo na čustveno stabilnost, telesno zdravje in socialno povezanost otrok ter oblikujejo trajnostno naravnanost že v zgodnjem otroštvu.

Vlogo umetnosti v predšolski vzgoji avtorici **Štirn Janota** in **Dýrfjörð** primerjata med Slovenijo in Islandijo. Umetnost umeščata v središče vzgojno-izobraževalnega procesa kot dejavnik ustvarjalnosti, refleksije in skupnosti, ki krepi čustveno dobrobit in gradi temelje trajnostnega sobivanja. Pri tem ugotavljata potrebe tako študentov kot vzgojiteljev po izobraževalnih programih, ki povezujejo področja zdravja, dobrega počutja in umetnosti.

Avtorici **Komzáková** in **Koželuhová** posvetita posebno pozornost vlogi prehodnih predmetov in postopkov (ritualov), ki jih osnovnošolski učitelji uporabljajo za podporo čustveni dobrobiti učencev. Osvetljujeta pomen varnega, odzivnega učnega okolja in pozornosti do čustvenih potreb otrok ob prehodu v obvezno izobraževanje oz. v zgodnjem šolskem obdobju.

Prav tako na ravni zgodnjega osnovnošolskega obdobja **Jančič Hegediš** obravnava poučevanje družboslovnih vsebin zunaj učilnice. Poudarja pomen izkustvenega učenja na prostem, ki spodbuja aktivno vlogo učencev, krepi radovednost ter prispeva k oblikovanju trajnostne naravnanosti in občutka dobrobiti kot telesnega in prostorskega doživljanja učenja.

Znotraj iste starostne skupine otrok avtorja **Fošnarič** in **Dolenc** raziskujeta povsem drugačen vidik – vpliv digitalne tehnologije na vsakdanje navade otrok v povezavi z gibanjem, prehrano, spanjem in duševnim zdravjem. Problematizirata potrebo po uravnoteženem pristopu in medsektorskem sodelovanju pri oblikovanju okolja, ki podpira zdrav življenjski slog otrok v digitaliziranem vsakdanu.

Matejek in **Kukovica** preučujeta razlike v telesni sestavi in življenjskih navadah med bodočimi učitelji z normalno ter s prekomerno telesno težo in debelostjo. Na podlagi

kombinacije anketnih vprašalnikov in meritev telesne sestave raziskujeta preplet zaznanih in objektivnih vidikov življenjskega sloga študentske populacije.
Ugotavljata, da bi bilo smiselno oblikovati ciljno usmerjene programe za promocijo zdravega življenjskega sloga na univerzah, zlasti za bodoče učitelje, ki imajo pomemben vpliv na oblikovanje zdravih navad učencev.
Na isti ciljni skupini kot v prejšnjem prispevku **Prskalo** in **Planinšec** obravnavata razmerje med gibalno dejavnostjo, sedečim načinom življenja in akademsko uspešnostjo študentov. Prispevek spodbuja razmislek o ravnotežju med učenjem, gibanjem in počitkom ter poziva k celostnemu razumevanju zdravja in uspešnosti v visokošolskem okolju.
Prav tako se na isto ciljno skupino osredinjata **Vršnik Perše** in **Grafenauer Ekart**, ki analizirata povezanost med študentsko dobrobitjo ter dejavniki, kot so socialno in duševno ravnovesje, telesna vadba, prehranske navade in vsakodnevne rutine. Članek se umešča v širši okvir razmisleka o celostnem pristopu k zdravemu življenjskemu slogu mladih in izpostavlja potrebo po trajnostnih podpornih okoljih, ki spodbujajo psihološko, telesno in socialno dobrobit študentov.
Za razvoj zavedanja o zdravem življenjskem slogu predstavljajo ključni dejavnik strokovni delavci v vzgoji in izobraževanju. **Poche Kargerová, Göbelová, Šimlová** in **Seberová** prikažejo metodo WANDA kot strukturiran pristop k skupinski refleksiji za pedagoške delavce. Izpostavljajo pomen strokovne podpore, kolegialnega učenja in skrbi za dobrobit zaposlenih kot temelj trajnostne in kakovostne vzgojno-izobraževalne prakse.
Čeprav so prispevki metodološko in vsebinsko raznoliki, jih povezujejo osrednje iztočnice – zdravje, dobrobit in trajnost. Gre za pojme, ki jih ni mogoče obravnavati posamično, temveč jih je treba razumeti kot prepletene, medsebojno odvisne in umeščene v širši družbeni ter kulturni kontekst. Znanstveni članki ponujajo dragocen prispevek k razumevanju kompleksnih odnosov in te postavljajo v kontekst vseživljenjskosti.
Prispevki tujih avtorjev predstavljajo pomembno dodano vrednost pri raziskovanju vsebin o zdravem življenjskem slogu v povezavi s trajnostnim razvojem in vseživljenjskim učenjem, saj prinašajo poglede z različnih družbenih in kulturnih vidikov. Verjamemo, da bo tematska številka spodbudila razmislek o povezavah med raziskovanjem, vsakdanjo prakso in sistemskim oblikovanjem pogojev, usmerjenih v vseživljenjsko razvijanje kakovostnega, varnega in zdravega življenja.

Editors' Introduction

This special issue of the *Journal of Elementary Education* addresses the topic of healthy lifestyles in the context of sustainable development and lifelong learning. It is based on content developed as part of the *Healthy Lifestyle for Sustainable Development and Lifelong Learning* project, implemented by the Faculty of Education, University of Maribor *(The project is part of the national Recovery and Resilience Plan (NOO) and is co-financed by the European Union's Recovery and Resilience Facility).* The focus is on striving for a holistic approach to understanding the factors under consideration and the relationships between them, contributing to the well-being of individuals and society.

In recent years, a healthy lifestyle has become a topic of discussion at the interface between science, policy, and everyday life. The chosen topic goes beyond individual disciplines and signals a shift in understanding healthy lifestyles and well-being as complex and dynamic processes that go beyond physical and motor aspects, holistically treating the individual. It encompasses reflections on physical, mental, and social balance, cultural and environmental aspects of life, the importance of creativity and belonging, and how an individual establishes relationships with the self, others, and their surroundings. Precisely because of its complexity, the topic is relevant from the scientific research perspective and in its quest for answers to practical, systemic, and long-term challenges.

The papers in this issue highlight various aspects of a healthy lifestyle and well-being by analysing physical, mental, social, and environmental factors. The authors address issues related to a range of life stages (from early childhood through school years, and higher education to professional development), contexts, and professional foundations. They examine topics related to physical activity, dietary habits, the use of digital technology, nature, art, emotional responses, the sense of safety, and the well-being of both children and adults.

The authors **Loudová Stralczynská**, **Lipnicka**, and **Chytrý** examine preschool teachers' views from the Czech Republic and Slovakia on the criteria for admitting

two-year-olds to kindergarten. They highlight the tension between institutional expectations and children's developmental characteristics and emphasise the importance of child-centred, developmentally appropriate practices that promote children's well-being.

Pölzl-Stefanec and **Gutmann** analyse the inclusion of children in kindergarten from the parents' perspective. Using the concept of sense of coherence, they identify both stressors and sources of support in the process of introducing children to preschool and emphasise the importance of cooperation between preschool institutions and families as a basis for the child's well-being and sustainable integration into institutional settings.

Kobler discusses the importance of the natural environment, especially the forest, for developing resilience and well-being in preschool children in today's often stressful world. She presents the forest as an experiential space that positively impacts children's emotional stability, physical health, and social connectedness, shaping sustainable attitudes in early childhood.

The role of art in preschool education is compared by the authors **Štirn Janota** and **Dýrfjörð**, using examples from Slovenia and Iceland. They place art at the centre of the educational process as a factor in creativity, reflection and community that strengthens emotional well-being and lays the foundation for sustainable coexistence. They also recognise that both students and educators need educational programs that integrate health, well-being, and art.

Authors **Komzáková** and **Koželuhová** pay particular attention to the role of transitional objects and rituals used by primary school teachers to support students' emotional well-being. Their contribution highlights the importance of a safe, engaging learning environment, along with attention to children's emotional needs during the transition to compulsory education and in the early school years.

Also at the level of early primary education, **Jančič Hegediš** examines the teaching of social studies outside the classroom. She emphasises the importance of experiential outdoor learning that promotes active student participation, stimulates curiosity, and contributes to forming a sustainable mindset and a sense of well-being as a physical and environmental learning experience.

Fošnarič and **Dolenc** explore a different aspect in the same age group: the influence of digital technology on children's daily habits related to physical activity, nutrition, sleep, and mental health. They emphasise the need for a balanced approach and cross-sectoral cooperation in creating an environment that supports a healthy lifestyle for children in a digitised everyday world.

Matejek and **Kukovica** examine differences in body composition and lifestyle habits between normal-weight and overweight or obese trainee teachers. Using a combination of questionnaires and body composition measurements, they investigate the interplay between perceived and objective aspects of lifestyle among university students. They conclude that it would be helpful to develop targeted programs to promote a healthy lifestyle at universities, particularly for future teachers, who play a key role in shaping healthy habits among school students.

Prskalo and **Planinšec**, working with the same target group, analyse the relationship between physical activity, sedentary behaviour, and academic success among students. Their paper encourages reflection on the balance between learning, movement, and rest, and calls for a holistic understanding of health and success in the university environment.

Also with the same target group, **Vršnik Perše** and **Grafenauer Ekart** analyse the relationship between student well-being and factors such as social and mental balance, physical activity, dietary habits, and daily routines. The paper fits into a broader framework of reflection on a holistic approach to a healthy lifestyle among youth. It emphasises the need for sustainable supportive environments that promote psychological, physical, and social well-being among students.

Educational professionals are a key factor in raising awareness of a healthy lifestyle. **Poche Kargerová**, **Göbelová**, **Šimlová** and S**eberová** present the WANDA method as a structured approach to group reflection for educators. The paper highlights the importance of professional support, collegial learning, and concern for staff well-being as the foundation of sustainable and high-quality educational practice.

Despite the methodological and content diversity of these contributions, they share a common ground. Health, well-being, and sustainability are not concepts to be addressed in isolation but must be understood as interwoven, interdependent, and embedded in a broader social and cultural context. The scientific papers in this issue make a valuable contribution to understanding complex relationships by placing them within the broader framework of lifelong learning.

The international contributions provide an additional scientific contribution to the topic of healthy lifestyle in relation to sustainable development and lifelong learning, offering insights from diverse societal perspectives. We believe this thematic issue will stimulate reflection on the links between research, everyday practice, and systemic design of conditions aimed at a lifelong development of quality, safe, and healthy lives.

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TEACHERS' OPINIONS ON KINDERGARTEN ADMISSION STANDARDS: RISKS TO TODDLER WELL-BEING?

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Abstract/Izvleček The aim of this paper is to present the opinions of teachers on the standards for admitting toddlers to kindergartens in the Czech Republic and Slovakia, and to discuss these standards in relation to the risks to children's well-being. Opinions were obtained through a quantitative survey among teachers from the Czech Republic (n=574) and Slovakia (n=593) in 2023. Results showed that most teachers do not support the admission of children under three to kindergartens. They conditionally support admission based on self-care skills, hygiene habits, and socio-emotional independence, which do not match typical toddler development, posing pressure on the child and family.

Mnenja učiteljev o merilih za sprejem v vrtec: Tveganje za dobrobit malčkov?

Namen tega prispevka je predstaviti mnenja vzgojiteljev o merilih za sprejem malčkov v vrtce na Češkem in Slovaškem ter razpravljati o teh merilih v povezavi z nevarnostmi za dobrobit otrok. Kvantitativna raziskava med vzgojitelji iz Češke (n=574) in Slovaške (n=593) leta 2023 je pokazala, da večina vzgojiteljev ne podpira sprejema otrok, mlajših od treh let, v vrtce. Sprejem podpirajo pogojno, glede na otrokove samostojne veščine, higienske navade ter socialno in čustveno neodvisnost. Pričakovanje izpolnjevanja teh meril je redko in predstavlja pritisk na otroka in družino, kar je škodljivo za dobrobit otroka ob začetku predšolske vzgoje.

Keywords:
pre-school Teachers, Admission Standards, Toddlers, Kindergarten, Child Well-Being.

Ključne besede:
vzgojitelji v vrtcih, merila za sprejem, malčki, vrtec, dobrobit otrok.

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Introduction

Over the past two decades, the enrolment of children under three in early childhood education (ECE) has risen across Europe (OECD, 2024), driven by economic pressures on families, policy efforts to boost parental workforce participation (European Council, 2022), and evidence highlighting the developmental benefits of high-quality ECE (Barnett, 2008; European Commission, 2025; McClelland et al., 2006; OECD, 2025; Schweinhart and Weikart, 1997). While all European countries mandate pre-school curricula and most provide national guidelines for children under three, admission standards remain decentralized. Instead of uniform regulations, decisions are left to kindergarten heads or founders, leading to varying expectations of children's readiness (European Commission, 2023; Gill et al., 2006). This flexibility allows institutions to adapt to local conditions but may also impose developmentally misaligned demands on young children.

Research on kindergarten readiness has primarily focused on North America, where ECE emphasizes responsive caregiving and inclusive pedagogy, typically assessing expectations for children aged 5 to 7 (Baucom et al., 2023; Fan et al., 2023; Gill et al., 2006; Robinson and Diamond, 2014; Skinner, 2018; Urbina-Garcia and Kyriacou, 2018). Comparative empirical data on admission standards and developmental expectations for toddlers remain scarce.

A responsive ECE model should address children's and parents' needs, ensuring that preschool conditions adapt to developmental and family contexts. Prioritizing children's well-being is essential, as high-quality ECE programs significantly enhance social-emotional development and stress regulation (Laevers, F., and Declercq, 2018; Li-Grining et al., 2021; Sandseter and Seland, 2016; Van Laere and Boudry, 2019). Understanding teachers' views on kindergarten readiness and admission standards provides insight into the ongoing shift towards practices aligned with European recommendations for high-quality ECE (European Council, 2019).

Kindergarten standards and readiness

Bronfenbrenner's Ecological Model of Development (1994) provides a framework for understanding kindergarten readiness through environmental influences on child development. Kindergarten readiness is an important predictor of children's successful transition to formal education (Duncan and Magnuson, 2013; Sharma et al., 2022). Readiness is primarily indicated by academic competences, self-regulation, and attentional control (Blair and Raver, 2015).

Assessing and monitoring readiness is essential because of its profound and lasting impact on overall child development (Fitzpatrick, 2020). Even prior to kindergarten entry, disparities among different demographic groups emerge, often leading to long-term developmental consequences (Reardon and Portilla, 2016). Positive *microsystem* interactions, such as family and preschool relationships, foster essential social, emotional, and cognitive skills (Hatcher et al., 2012).

The *mesosystem* highlights the importance of support between home and kindergarten (Fan et al., 2024). Significant challenges persist in fostering family engagement and ensuring effective communication between families and schools (Sheridan et al., 2011). The *exosystem* encompasses broader social systems, such as legal frameworks and community resources, that indirectly influence the transition.

Cultural values within the *macrosystem* and time-related factors in the *chronosystem* further shape readiness (Fan et al., 2024). The broader societal perspective on kindergarten entry is evolving from a narrow focus on the child's individual readiness to a more dynamic, interactional model (Zhang et al., 2023). This model acknowledges the collective influence of children, families, educators, and kindergarten staff in facilitating a successful transition to preschool education (OECD, 2017).

Admission processes and standards for kindergarten entry in selected countries

In the Czech Republic and Slovakia, early childhood education (ECE) follows a split system model (European Commission, 2025). Children under three are usually cared for at home or in separate nursery-type settings, while kindergartens (*mateřské školy*) serve children aged three to six within the formal education system. Admission of two-year-olds is not automatic and depends on the decision of the kindergarten head.

In Czechia, kindergartens prioritize children aged three and older from the catchment area. Children under three may be admitted if they meet developmental expectations outlined in the national curriculum, with decisions based on institutional conditions (MEYS, 2021; 2025). In Slovakia, Act 273/2021 allows the admission of two-year-olds if capacity, staff, and resources permit. Neither country has national kindergarten readiness standards. Admission criteria are determined locally by kindergarten heads and commonly include expectations of social maturity, hygiene routines, and basic self-care (Lipnická et al., 2024). Although no toddler-specific curriculum exists, kindergartens have admitted two-year-olds for over two decades. In Czechia, toddler enrolment peaked at 12.3% in 2017–2019, declining to

8.8% (31,927 children) in 2023/2024 (MEYS, 2024). In Slovakia, the average is 4.8%, with 4.9% (8,859 children) in 2024/2025 (CVTI, 2025).

The aim of this paper is to present the opinions of teachers on the standards for admitting toddlers to kindergartens in the Czech Republic and Slovakia, and to discuss these standards in relation to the risks to children's well-being. The focus is on two-year-old children, since this age group increasingly constitutes a significant portion of preschool entrants in both countries (OECD, 2024).

Research objectives

This study aims to explore teachers' opinions on the admission standards for two-year-old children to kindergartens in the Czech Republic and Slovakia. The research was guided by the following research questions:

RQ1: What are the teachers' opinions on admitting toddlers to kindergarten?

RQ2: What standards do the teachers expect for toddlers to be admitted to kindergarten?

The aim of this study was to perform a descriptive analysis and comparison of respondents' perspectives, along with the developmental and behavioural expectations placed on children. The research sought to investigate the underlying relationships between teachers' stated views on admission standards, and requirements for children and their professional education and training.

Methods

The study surveyed 1,167 kindergarten teachers – 574 from the Czech Republic (via the National Institute of Education, Prague) and 593 from Slovakia (via Matej Bel University, Banská Bystrica).

Respondents

Respondents averaged 22.1 years of teaching experience. Professional practice was defined as the number of years working as a kindergarten teacher, as reported in the demographic section. In Slovakia, 62% were teachers and 38% kindergarten heads, while in the Czech Republic, 47% were teachers and 53% kindergarten heads. Secondary education was completed by 42.5% of Slovak and 50% of Czech teachers. Among university graduates, 26.5% of Slovak and 49.6% of Czech teachers held a bachelor's degree, 69.5% and 48.6% a master's, and 4% and 1.8% a doctorate.

Professionally, 81.5% of Slovak and 87% of Czech teachers had experience with two-year-olds, while 97% and 94.4% reported experience with this age group in either a family or professional context.

Instrument and Procedure

Method of data acquisition

The study used a custom online questionnaire administered via SURVIO in spring 2023. It comprised twenty-eight closed-ended and one open-ended item. The first five addressed demographics (role, experience, qualifications, familiarity with two-year-olds). Seven items used yes/no responses; seventeen employed a 5-point Likert scale to assess opinions. The final open-ended item invited reflections on the adaptation of two- and three-year-olds to kindergarten.

This paper analyses the section of the questionnaire focused on expected toddler standards, comprising five demographic items, 10 Likert items, five dichotomous items, and one open-ended item. To ensure content validity, we developed these items based on theoretical knowledge of education and care for two-year-olds and consulted with ECE experts to cover key themes. Particular attention was paid to clarity, precision, and factual accuracy during item design. Teachers' views on toddler enrolment were examined in relation to their training, childcare perspectives, and toddler developmental characteristics. For descriptive analysis, Likert (Table 1) and dichotomous items (Table 2) were categorised accordingly.

Reliability was assessed separately for the Czech and Slovak versions using Cronbach's alpha and split-half reliability (corrected by the Spearman-Brown formula). For the Czech version, Cronbach's alpha was 0.67 and split-half reliability 0.79 – acceptable for shorter scales or early-stage tools. In the Slovak version, values were slightly higher: alpha = 0.72 and split-half = 0.87, indicating good internal consistency and supporting overall reliability in both versions.

Table 1

Overview of the thematic focus and wording of the questions in the Likert scales

Question number	Thematic focus	Wording of the question
Question 1	**Part I:** Preparing the respondent to work with toddlers in the study	I had the opportunity to learn the specifics of the development of two-year-old children in the theoretical preparation (in the theoretical part of the study)
Question 2		I had the opportunity to learn the specifics of the development of two-year-old children in practical training - hospitalization and observation

Question 3		I had the opportunity to learn how to plan educational activities for two-year-olds
Question 4		I had the opportunity to implement educational activities for two-year-old children
Question 5	**Part II:** Suitable place of care for toddlers	Two-year-olds should not be admitted to kindergartens, as nursery-type groups or facilities are more suitable for them.
Question 6		Two-year-old children should not be admitted to kindergarten because the mother (parent) can stay on parental leave until the child is 3 years old.
Question 7	**Part III:** Characteristics of the toddler affecting his/her inclusion in kindergarten	The child's ability to concentrate makes it difficult to educate two-year-olds in kindergarten.
Question 8		The ability of the child to communicate makes it difficult to educate him/her in kindergarten.
Question 9		The greater need for sleep makes it more difficult to educate him/her in kindergarten.
Question 10		Frequent alternation of emotions in a child makes it difficult for him/her to learn in kindergarten.

Table 2
Summary of the wording of dichotomous questions focusing on the standards expected of a toddler upon kindergarten entry

Question number	**Thematic focus**	
Question 11	A two-year-old child can be admitted to kindergarten when	no longer wearing diapers
Question 12		does not use a pacifier
Question 13		performs simple self-care tasks with little help (puts on parts of his/her clothes, puts on shoes, washes hands, etc.)
Question 14		can handle separation from mother/parent for at least 4 hours
Question 15		can function in a social group

Data processing methods

Data were analysed in stages: outliers were removed using the inner fences method, and descriptive statistics (mean, median, mode, SD) summarised responses. Given the ordinal nature of Likert data, non-parametric tests were applied—Mann-Whitney U for two-group (CZ/SK) comparisons, and Kruskal-Wallis with post hoc (Dunn's, Nemenyi's) for multiple groups. Spearman's rank correlation assessed relationships, and effect sizes (Cohen's d, η^2) indicated practical significance.

Results

Descriptive statistics of the responses focused on selected items from the questionnaire. It provided us with data-based responses to two research questions.

RQ1: Teachers' opinions on admitting toddlers to kindergarten.

Results are based on ten Likert items rated from 1 (strongly disagree) to 5 (strongly agree).

Table 3

Descriptive analysis for individual Likert scale questions – respondent's preparation for working with toddlers in the study (1-4), appropriate place to provide care for toddlers (5-6), toddler characteristics affecting toddler enrolment in kindergarten (7-10)

	CZ						SK					
Question	**Mean**	**Median**	**Mode**	**SD**	**Max**	**Min**	**Mean**	**Median**	**Mode**	**SD**	**Max**	**Min**
Question 1	2.91	3.00	3.00	1.37	5.00	1.00	3.07	3.00	3.00	1.46	5.00	1.00
Question 2	2.37	2.00	1.00	1.37	5.00	1.00	2.26	2.00	1.00	1.46	5.00	1.00
Question 3	2.23	2.00	1.00	1.27	5.00	1.00	2.25	2.00	1.00	1.42	5.00	1.00
Question 4	2.16	2.00	1.00	1.29	5.00	1.00	2.28	2.00	1.00	1.48	5.00	1.00
Question 5	3.96	4.00	5.00	1.16	5.00	1.00	3.47	4.00	5.00	1.47	5.00	1.00
Question 6	3.64	4.00	5.00	1.22	5.00	1.00	3.15	3.00	5.00	1.49	5.00	1.00
Question 7	4.05	4.00	5.00	1.09	5.00	1.00	3.88	4.00	5.00	1.29	5.00	1.00
Question 8	4.07	4.00	5.00	1.06	5.00	1.00	3.90	4.00	5.00	1.20	5.00	1.00
Question 9	3.86	4.00	5.00	1.14	5.00	1.00	3.45	3.00	5.00	1.35	5.00	1.00
Question 10	3.83	4.00	5.00	1.15	5.00	1.00	3.69	4.00	5.00	1.28	5.00	1.00

Czech and Slovak teachers showed similar agreement on questions 1–10 (Table 3), reporting partial theoretical knowledge of toddler development (meanCZ = 2.91, SD = 1.37; meanSK = 3.07, SD = 1.46). The relatively high standard deviations suggest varied degrees of exposure to this content. Training offered limited opportunities to explore developmental characteristics of two-year-olds through practical sessions or practicum (meanCZ = 2.37, SD = 1.37; meanSK = 2.26, SD = 1.46), again with wide variability. Respondents indicated minimal preparation for planning and implementing educational activities for toddlers. Consequently, attitudes toward toddler admission to kindergartens were largely negative. Most preferred toddlers to attend playgroups or nursery-type settings, citing parental leave policies enabling home care until age three.

Respondents also agreed that developmental traits – short attention spans, weak communication, and emotional instability – complicate kindergarten integration. Moderate agreement was found regarding toddlers' increased sleep needs. Differences between Czech and Slovak responses to questions 1–10 are detailed in Table 4.

Table 4

Differences in opinions of Czech and Slovak respondents – respondent's preparation for working with toddlers in the study (1-4), appropriate place to provide care for toddlers (5-6), toddler characteristics affecting toddler enrolment in kindergarten (7-10)

Questions	CZ	SK	Average CZ	Average SK	U	Z	P	Cohen d	η^2
Question 1	574	593	2.90	3.06	159549.5	-1.849	0.065	0.108	0.003
Question 2	574	593	2.36	2.26	159294.0	1.893	0.058	0.111	0.003
Question 3	574	593	2.23	2.25	166307.5	0.675	0.500	0.041	<.001
Question 4	574	593	2.16	2.28	168002.0	-0.380	0.704	0.022	<.001
Question 5	574	593	3.96	3.46	140541.5	5.151	0.000	0.305	0.023
Question 6	574	593	3.63	3.15	139380.0	5.353	0.000	0.317	0.025
Question 7	574	593	4.05	3.87	161940.5	1.433	0.152	0.084	0.002
Question 8	574	593	4.06	3.90	159615.5	1.837	0.066	0.108	0.003
Question 9	574	593	3.85	3.45	143045.5	4.716	0.000	0.279	0.019
Question 10	574	593	3.82	3.69	162588.5	1.321	0.187	0.077	0.001

Statistically significant differences between Czech and Slovak respondents were identified only for items 5 (meanCZ = 3.96; meanSK = 3.47), 6 (meanCZ = 3.64; meanSK = 3.15), and 9 (meanCZ = 3.86; meanSK = 3.45), with Czech teachers reporting higher agreement. However, the effect sizes were negligible ($d < 0.05$), indicating that nationality had limited practical influence. The Kruskal-Wallis test revealed no significant association between level of education and responses across items 1–10. While seven items showed no statistical differences, the remaining three yielded results that were statistically but not practically significant, likely because of the large sample size (Table 5).

Spearman's correlation analysed the relationship between the length of professional practice and the degree of agreement with questions 1–10. Correlation coefficients (R) were consistently low, with negligible determination coefficients (R^2). No significant relationships emerged for most questions, except for questions 6, 9, and 10 ($p < 0.05$).

However, these results are likely due to the large sample size (N = 1167), since R values ranged from −0.054 to 0.105, indicating minimal practical significance. Overall, professional experience had little to no meaningful impact on response patterns.

Table 5

Analysis of the influence of qualification level on respondents' opinions – respondent's preparation for working with toddlers in the study (1-4), appropriate place to provide care (5-6), toddler characteristics affecting enrolment in kindergarten (7-10)

Question	K-W test	η^2	Cohen's d
Question 1	H (3, N= 1167) =11.71331 p =.0084	.007	.174
Post hoc	M.A. – V.S. (p = 0.034)		
Question 2	H (3, N= 1167) =2.110982 p =.5497	.001	.055
Question 3	H (3, N= 1167) =.7137571 p =.8700	.002	.089
Question 4	H (3, N= 1167) =1.049731 p =.7892	.002	.082
Question 5	H (3, N= 1167) =5.626354 p =.1313	.002	.095
Question 6	H (3, N= 1167) =11.97122 p =.0075	.008	.177
Post hoc	B.A. – V.S. (p = 0.040)		
Question 7	H (3, N= 1167) =10.05430 p =.0181	.006	.156
Post hoc	B.A. – V.S. (p = 0.081)		
Question 8	H (3, N= 1167) =2.307463 p =.5111	.001	.049
Question 9	H (3, N= 1167) =2.567161 p =.4633	.001	.039
Question 10	H (3, N= 1167) =2.423150 p =.4893	.001	.045

The study examined whether experience with two-year-olds in kindergarten influenced responses to questions 1–10 using the Mann-Whitney U test. Statistically significant differences appeared in questions 2, 3, 4, 5, 6, and 9 ($p < 0.001$), but effect sizes were small (Cohen's d: 0.214–0.318; η^2: 0.011–0.025). No significant differences emerged for questions 1, 7, 8, and 10 ($p > 0.05$). Although some results were statistically significant, the differences between teachers with experience of working with two-year-olds (either in kindergarten or in a home setting) and those without such experience were minimal, indicating limited practical relevance.

RQ2: Standards that teachers expect for toddlers to be admitted to kindergarten

Results from the five dichotomous items indicate that most teachers perceive nappy use (80.38%) and difficulty separating from a caregiver for four hours (83.2%) as key barriers (Table 6). It is noteworthy to observe the extent to which teachers are perturbed by minor issues, such as the use of a pacifier, or by a broader range of factors.

Table 6
Descriptive statistics for questions focusing on the standards expected of a toddler upon kindergarten entry

Answers	Question 11 no longer wears diapers	Question 12 does not use a pacifier	Question 13 performs basic self-care with minimal help	Question 14 can separate from parent for at least 4 hours	Question 15 can function in a group of peers
YES	938	724	782	971	672
NO	229	443	385	196	495
Sum	1167	1167	1167	1167	1167
YES	80,38%	62,04%	67,01%	83,20%	57,58%
NO	19,62%	37,96%	32,99%	16,80%	42,42%

The highest percentage of teachers (35.3%) expect children to meet all specified criteria, followed by those requiring four (20.6%), three (19.8%), or two (7.7%). Nearly 17% are unconcerned with four of the five issues. Table 7 explores correlations between teachers' concerns and responses to questions 1–10, revealing significant but weak associations.

Table 7
Correlation between the standards expected of a toddler upon kindergarten entry and responses to survey questions

Questions	N	R	R2	t(N-2)	p
Question 1	1167	-0.051	0,256%	-1.729	0.084
Question 2	1167	-0.063	0,402%	-2.169	0.030
Question 3	1167	-0.099	0,976%	-3.388	<0.001
Question 4	1167	-0.089	0,801%	-3.067	0.002
Question 5	1167	0.166	2,751%	5.740	<0.001
Question 6	1167	0.151	2,287%	5.222	<0.001
Question 7	1167	0.167	2,793%	5.785	<0.001
Question 8	1167	0.158	2,505%	5.471	<0.001
Question 9	1167	0.130	1,682%	4.464	<0.001
Question 10	1167	0.147	2,169%	5.082	<0.001

Teachers do not strictly favour homogeneous groups for toddlers. The data indicate that 30.42% support placing two-year-olds exclusively together, while 57.50% prefer grouping them with two- to three-year-olds. Smaller proportions advocate integration with two- to four-year-olds (7.11%) or two- to six-year-olds (4.97%). Overall, nearly 90% favour placing two-year-olds with same-age peers or slightly older children.

Discussion

The findings of this study offer insights into kindergarten teachers' perspectives on the admission standards for two-year-old children in the Czech Republic and Slovakia. The results underscore discrepancies between institutional expectations and the developmental capacities of toddlers, raising concerns about their well-being and readiness for structured educational settings.

Teachers' reluctance to admit two-year-olds (RQ1) primarily stems from these children's limited self-care abilities, inconsistent emotional regulation, and challenges in group integration. These findings align with prior research (Vašinová and Srbená, 2019) emphasizing the importance of developmentally appropriate expectations in ECE (Melhuish et al., 2015). The well-being of toddlers transitioning to kindergarten is significantly influenced by the quality of care and the availability of adequate support systems. Research indicates that high-quality ECE environments can mitigate stress and foster socio-emotional development, if teachers receive comprehensive training and institutional support (Burchinal et al., 2010; Pianta et al., 2009). This study suggests that many respondents lack adequate professional preparation for working with this age group, which likely contributes to their reluctance to support ECE enrolment. Targeted professional development initiatives focusing on responsive caregiving (Pölzl-Stefanec et al., 2023), attachment-based pedagogical strategies, and gradual transition frameworks could alleviate these concerns (Siraj-Blatchford et al., 2011).

Teachers in both countries articulated high developmental expectations for two-year-olds (RQ2), particularly regarding self-care skills and independence, which frequently exceed normative developmental milestones. This misalignment places undue stress on both children and their families, potentially leading to adverse emotional and behavioural outcomes (Sabol and Pianta, 2012). Czech teachers exhibited slightly stronger opposition compared to their Slovak counterparts, a difference that may reflect variations in national ECE policies and pedagogical traditions (OECD, 2024). Empirical studies have demonstrated that excessively stringent expectations at this developmental stage can negatively impact children's self-confidence and adaptive abilities (Rimm-Kaufman et al., 2000).

Reforming policy to align admission standards with children's developmental needs and well-being is imperative (Thomason and La Paro, 2009). Reducing rigid expectations, incorporating individualised adaptation plans, and enhancing teacher-child ratios would facilitate smoother transitions and minimize stress among young

learners (Lipnická et al., 2024). National frameworks should be grounded in evidence-based best practices, ensuring that kindergartens offer environments that support early learning while safeguarding children's well-being (Dardanou and Gamst-Nergård, 2020; Flöter at al., 2024; OECD, 2017).

Comparative research on ECE policies in Europe could identify best practices for improving the transition experience for toddlers, particularly by examining flexible admission standards and tailored support mechanisms (Urban et al., 2012). Future research should take an interdisciplinary approach, integrating child development, education policy, and social sciences to create admission frameworks aligned with children's developmental capacities (Woodhead, 2006). A paradigm shift is necessary to bridge the gap between institutional expectations and developmental readiness, ensuring that admission standards support both child wellbeing and family needs in a holistic manner (Brooker, 2008).

Limitations

This study is limited by its focus on the Czech Republic and Slovakia, reducing generalizability to contexts with different ECE systems. Reliance on self-reporting may introduce response bias, as teacher perspectives do not capture the views of children, parents, or policymakers. While rigorous statistical methods were applied, the use of mainly closed-ended questions may have limited response depth. The low response rate in Slovakia (3%) may affect representativeness. Structural aspects such as kindergarten capacity and teacher working conditions, though crucial to admission policy, were not directly addressed. Qualitative methods could offer further insight.

Conclusion

This study, conducted among kindergarten teachers in the Czech Republic and Slovakia, used Bronfenbrenner's Ecological Model (1994) to explore perceptions of toddler admission standards. The findings indicate widespread reservations about enrolling two-year-olds, largely due to concerns about their self-sufficiency, emotional regulation, and group readiness.

Current admission criteria-focused on self-care, hygiene, and socio-emotional independence-often exceed typical toddler capabilities. These findings highlight the need to align admission expectations with the developmental capacities of young children. Overly demanding criteria for two-year-olds may limit access and increas

pressure on families. International research stresses that reducing inequalities in ECE requires flexible, inclusive, and child-centred approaches, especially for the youngest children (OECD, 2025). This calls for competent ECE systems that support equity and ensure high-quality practices (Urban et al., 2012).

The analysis highlights inconsistencies in admission procedures stemming from the absence of national frameworks, leading to varied institutional practices, undue pressure on families, and unequal access to ECE. Limited kindergarten capacity and challenging working conditions for teachers further hinder the implementation of inclusive policies. In Bronfenbrenner's model, teachers' expectations (microsystem) are shaped by institutional (exosystem) and societal (macrosystem) factors, revealing a misalignment between policy demands and developmental realities. Addressing these challenges requires more flexible, developmentally appropriate standards, stronger teacher training, and improved school–family communication.

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References

Act 273/2021 on education and training (Education Act). https://static.slov-lex.sk/stat–ic/SK/ZZ/2021/273/20220101.html.

Barnett, W. S. (2008). *Preschool education and its lasting effects: Research and policy implications*. New Brunswick, NJ: Rutgers University.

Baucom, J., Shore, R., and Lambert, R. (2023). Steps Towards Increasing Kindergarten Readiness. HS Dialog: *The Research to Practice Journal for the Early Childhood Field. 26*(2), 94–99. https://d–oi.org/10.55370/hsdialog.v26i2.1653.

Blair, C., and Raver, C. C. (2015). School readiness and self-regulation: A developmental psychobiological approach. *Annual Review of Psychology*, *66*(2015), 711–731. https://doi.org/–10.1146/annurev-psych-010814-015221.

Bronfenbrenner, U. (1994). Ecological models of human development. *Readings on the Development of Children*, *2*(1), 37–43.

Brooker, L. (2008). *Supporting transitions in the early years*. McGraw-Hill Education.

Burchinal, M., Vandergrift, N., Pianta, R., and Mashburn, A. (2010). Threshold analysis of association between child care quality and child outcomes for low-income children in pre-kindergarten programs. *Early Childhood Research Quarterly*, *25*(2), 166–176. https://doi.org/10.1016/j.ecr–esq.2009.10.004.

CVTI. (2025). *Statistical yearbook - kindergartens*. https://www.cvtisr.sk/cvti-sr-vedecka-kniznica/inf–ormacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-materske-skoly.html?page_id=9602.

Dardanou, M., and Gamst-Nergård, E. (2020). The role of the kindergarten in children's well-being and resilience. In Z. Williams-Brown and S. Mander (Eds.), *Childhood Well-being and Resilience: Influences on Educational Outcomes* (pp. 1–11). Routledge. https://doi.org/10.4324/9–780429324635.

Duncan, G. J., and Magnuson, K. (2013). Investing in preschool programs. *Journal of Economic Perspectives*, *27*(2), 109-132. https://doi.org/10.1257/jep.27.2.109.

European Commission. (2023). *Structural indicators for monitoring education and training systems in Europe – 2023: Early childhood education and care. Eurydice report.* European Union.

European Commission. (2025). *Key data on early childhood education and care in Europe – 2025. Eurydice report.* Publications Office of the European Union. https://doi.org/10.2797/66224

European Council. (2019). *Council Recommendation of 22 May 2019 on High-Quality Early Childhood Education and Care Systems* (2019/C 189/02).

European Council. (2022). *Council Recommendation of 8 December 2022 on Early Childhood Education and Care: the Barcelona targets for 2030 (2022/C 484/01).*

Fan, X., D'Amico, L. K., Kilburn, J., Jones, A., Richard, C., Zollars, L., Garrett, S., and Johnston, D. (2023). Perspectives of Parents and Caregivers on Kindergarten Readiness: A Focus on the Impact of a Summer Transition Program. *International Journal of Early Childhood*, *56*(2024), 555–583. https://doi.org/10.1007/s13158-023-00378-7.

Fitzpatrick, C., Boers, E., and Pagani, L. S. (2020). Kindergarten readiness, later health, and social costs. *Pediatrics*, *146*(6), e20200978. https://doi.org/10.1542/peds.2020-0978.

Flöter, M., Barta, M., Geißler, C., Pölzl-Stefanec, E., and Walter-Laager, C. (2024). *Interaktionsqualität in Kinderkrippen*. Frühe Bildung.

Gill, S., Winters, D. L., and Friedman, D. S. (2006). Educators' Views of Pre-Kindergarten and Kindergarten Readiness and Transition Practices. *Contemporary Issues in Early Childhood, 7*, 213–227.

Hatcher, B., Nuner, J., and Paulsel, J. (2012). Kindergarten Readiness and Preschools: Teachers' and Parents' Beliefs within and across Programs. *Early Childhood Research and Practice*, *14*(2), 1-17.

Laevers, F., and Declercq, B. (2018). How well-being and involvement fit into the commitment to children's rights. *European Journal of Education*, *53*(3), 325–335. https://doi.org/10.1111–/ejed.12286.

Li-Grining, C. P., Naqi, Z., Johnson-Davis, K., and Franco, A. M. T. (2021). Immigrant and Refugee Children's Social and Emotional Well-Being During the Transition to Preschool. In S. Tatalović Vorkapić, and J. LoCasale-Crouch (Eds.), *Supporting Children's Well-Being During Early Childhood Transition to School* (pp. 1-20). IGI Global Scientific Publishing. https://doi.–org/10.4018/978-1-7998-4435-8.ch001.

Lipnická, M. (2024). Analysis of the educational conditions of two-year-old children in kindergartens in Slovakia: a study from teachers' perspectives. *Open Access Indonesia Journal of Social Sciences. 7*(3) pp. 1534-1542. https://journalsocialsciences.com/index.php/oaijss/article/view/242.

Lipnická, M., Lynch, Z., and Švidraň Basarabová, B. (2024). *Conditions of upbringing and education of two-year-old children in kindergartens*. Belianum. https://doi.org/10.24040/2024.9788055721743.

McClelland, M. M., Acock, A. C., and Morrison, F. J. (2006). The impact of kindergarten learning-related skills on academic trajectories at the end of elementary school. *Early Childhood Research Quarterly*, *21*(4), 471–490. https://doi.org/10.1016/j.ecresq.2006.09.003.

Melhuish, E., Ereky-Stevens, K., Petrogiannis, K., Ariescu, A., Penderi, E., Rentzou, K., and Leseman, P. (2015). *A review of research on the effects of early childhood education and care upon child development. CARE Report*, European Commission. https://doi.org/10.13140/RG.2.1.2452.1363.

MEYS. (2021). Framework educational programme for pre-school education. Ministry of Education, Youth and Sports.

MEYS. (2024). Education Development Yearbook 2013/14–2023/24. Ministry of Education, Youth and Sports.

MEYS. (2025). Pre-school education. Ministry of Education, Youth and Sports. https://msmt.gov.cz/vzdelavani/predskolni-vzdelavani/nejcastejsi-dotazy-k-predskolnimu-vzdelavani-aktualizace-k.

OECD. (2017). *Starting Strong V: Transitions from Early Childhood Education and Care to Primary Education, Starting Strong*. OECD Publishing. https://doi.org/10.1787/9789264276253-en.

OECD. (2024). *Education at a Glance 2024: OECD Indicators*, OECD Publishing. https://doi.org/–10.1787/c00cad36-en.

OECD. (2025). *Reducing Inequalities by Investing in Early Childhood Education and Care, Starting Strong*. OECD Publishing. https://doi.org/10.1787/b78f8b25-en.

Pianta, R. C., Barnett, W. S., Burchinal, M., and Thornburg, K. R. (2009). The effects of preschool education: What we know, how public policy is or is not aligned with the evidence base, and what we need to know. *Psychological Science in the Public Interest*, *10*(2), 49–88. https://doi.org/–10.1177/1529100610381908.

Pölzl-Stefanec, E., Barta, M., and Walter-Laager, C. (2023). Assurance and Development of Interaction Quality: The Impact of Blended-Learning Professional Development Training Programme. *Early Childhood Education Journal*, *52*(2024), 969–978. https://doi.org/10.1007/s10643-023-01479-7.

Reardon, S. F., and Portilla, X. A. (2016). Recent Trends in Income, Racial, and Ethnic School Readiness Gaps at Kindergarten Entry. *AERA Open*, *2*(3). https://doi.org/10.1177/–2332858416657343.

Rimm-Kaufman, S. E., Pianta, R. C., and Cox, M. J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly*, *15*(2), 147–166. https://doi.–org/10.1016/S0885-2006(00)00049-1.

Robinson, C. D., and Diamond, K. E. (2014). A Quantitative Study of Head Start Children's Strengths, Families' Perspectives, and Teachers' Ratings in the Transition to Kindergarten. *Early Childhood Education Journal, 42*(2), 77–84. https://doi.org/10.1007/s10643-013-0587-4.

Sabol, T. J., and Pianta, R. C. (2012). Recent trends in research on teacher–child relationships. *Attachment & Human Development*, *14*(3), 213–231. https://doi.org/10.1080/146167–34.2012.672262

Sandseter, E. B., and Seland, M. (2016). Children's Experience of Activities and Participation and Their Subjective Well-Being in Norwegian Early Childhood Education and Care Institutions. *Child Indicators Research*, *9*, 913-932. https://doi.org/10.1007/s12187-015-9349-8.

Schweinhart, L. J., and Weikart, D. P. (1997). The High/Scope Preschool Curriculum Comparison study through age 23. *Early Childhood Research Quarterly*, *12*(2), 117–143. https://doi.org/10–.1016/S0885-2006(97)90009-0.

Sharma, A., Flower, K.B., and Wong, C.A. (2022). Incorporating Kindergarten Readiness as a Meaningful Measure in Pediatric Value-Based Care. *JAMA Health Forum, 3*(4), e220616.

Sheridan, S. M., Knoche, L. L., Kupzyk, K. A., Edwards, C. P., and Marvin, C. A. (2011). A randomized trial examining the effects of parent engagement on early language and literacy: The Getting Ready intervention. *Journal of School Psychology*, *49*(3), 361–383. https://doi.org/10.1016/–j.jsp.2011.03.001

Siraj-Blatchford, I., Sylva, K., Muttock, S., Gilden, R., and Bell, D. (2011). *Researching effective pedagogy in the early years*. Department for Education and Skills. https://dera.ioe.ac.uk/id/epr–int/4650/1/RR356.pdf.

Skinner, E. (2018). Children's Developmental Needs During the Transition to Kindergarten: What Can Research on Social-Emotional, Motivational, Cognitive, and Self-Regulatory Development Tell Us?. In: Mashburn, A., LoCasale-Crouch, J., and Pears, K. (eds.) *Kindergarten Transition and Readiness*. Springer, Cham. https://doi.org/10.1007/978-3-319-90200-5_2.

Thomason, C. A., and La Paro, K. M. (2009). Measuring the Quality of Teacher–Child Interactions in Toddler Child Care. *Early Education and Development*. *20*(2). pp. 285-304 https://doi.org/10.1–080/10409280902773351.

Urban, M., Vandenbroeck, M., Peeters, J., Lazzari, A., and Van Laere, K. (2012). Towards competent systems in early childhood education and care: Implications for policy and practice. *European Journal of Education*, *47*(4), 508–526. https://doi.org/10.1111/ejed.12010.

Urbina-Garcia, A., and Kyriacou, C. (2018). Children's Problems During the Preschool Transition: Views of Mexican Teachers. *European Scientific Journal*, *14*(22), 154. https://doi.org/10.190–44/esj.2018.v14n22p154.

Van Laere, K., and Boudry, C. (2019). *Enabling Well-being and Participation of Children and Families Living in Poverty during Transition Periods across Home, Childcare and Kindergarten. Case Study Belgium*. VBJK.

Vašinová, K., and Srbená, A. (2019). Pohled učitelek mateřských škol ve městě Olomouc na zařazování dvouletých dětí do mateřských škol. *Magistr. Reflexe primárního a preprimárního vzdělávání ve výzkumu. 7*(2), 51–83.

Woodhead, M. (2006). *Changing perspectives on early childhood: Theory, research and policy.* UNESCO.

Zhang, J., Wang, X., and Liu, Y. (2023). Effective Educational Measures for Kindergarten School Readiness. *Frontiers in Educational Research*, *6*(4); doi:10.25236/FER.2023.060406.

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PARENTS' PERSPECTIVES ON STRESSORS AND RESOURCES: WELL-BEING AND SOCIAL SUPPORT DURING EARLY CHILDHOOD TRANSITIONS

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Izvleček/Abstract

The transition from familial to institutional early childhood education and care (ECEC) settings is a critical phase for both children and parents. In this study, we examined the stressors and resources affecting parents during nursery and kindergarten settling-in processes. Using Antonovsky's concept of coherence as the theoretical framework, we conducted fifteen qualitative semi-structured interviews with parents and analysed the emotional, organisational, and social challenges they perceived as stressors and resources during the transition phase. The findings showed that a resource-oriented approach can reduce stress and support the emotional and social adjustment of both parents and children.

Pogledi staršev na dejavnike stresa in podpore: dobro počutje in socialna podpora med prehodi v zgodnjem otroštvu

Prehod iz družinske v institucionalno predšolsko vzgojo in varstvo predstavlja ključno fazo tako za otroke kot za starše. V študiji proučujemo stresorje in dejavnike podpore, ki vplivajo na starše med uvajanjem otrok v jasli in vrtec. Kot teoretični okvir za analizo starševskih strategij spoprijemanja s stresom služi Antonovskyjev koncept koherence. Na podlagi 15 kvalitativnih polstrukturiranih intervjujev s starši analiziramo čustvene, organizacijske in družbene izzive, ki so jih starši dojemali kot stresorje in dejavnike podpore v obdobju prehoda. Ugotovitve kažejo, da lahko na dejavnike podpore usmerjen pristop zmanjša stres ter podpira čustveno in socialno prilagajanje tako staršev kot otrok.

Keywords:
transition from home to ECEC setting, nursery and kindergarten settling-in, parental perspective, stressors and resources, sense of coherence.

Ključne besede:
prehod iz domačega okolja v okolje predšolske vzgoje, uvajanje v vrtec, pogled staršev, stresorji, dejavniki podpore, občutek povezanosti.

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Introduction

Supporting early childhood (EC) transitions has been the focus of intensive research for over 30 years (Ahnert et al., 2012; Bensel, 1992; Dunlop and Fabian, 2003). The term 'transitions' refers to fundamental shifts in children's life courses, accompanied by profound changes in their social, emotional, and cognitive contexts. Settling in is a pivotal process during the initial period of adjustment to an unfamiliar environment, such as an early childhood education and care (ECEC) setting (Fabian and Dunlop, 2007).

Based on attachment theory (Bowlby et al., 1992), research on hospitalism (Spitz, 1960), and studies on the settling-in process in nurseries (Bensel, 1992), specific concepts have been developed to support the transition from home to institutional settings (Laewen, 1989; Laewen et al., 2007; Winner and Erndt-Doll, 2009). A carefully designed settling-in process is crucially important for promoting children's health and well-being by reducing separation anxiety, fostering emotional stability (Ahnert et al., 2023; Datler et al., 2012; Nystad et al., 2021), and strengthening children's social, emotional, and cognitive skills in the long term (Fabian and Dunlop, 2007).

For parents, the settling-in phase is often characterised by emotional challenges due to uncertainties, concerns, and various stressors (Lam, 2014), including children's separation anxiety (Griebel and Niesel, 2002), the need to establish relationships with early childhood education (ECE) professionals, and concerns about children's well-being during their parents' absence (Lam, 2014; Sotiropoulou et al., 2022).

Parents play a pivotal role in orchestrating their children's transition processes, ensuring that their needs are acknowledged in the early childhood institutions (Rimm-Kaufman and Pianta, 2000; Sotiropoulou et al., 2022) and acting as a bridge between the familial environment and the new institutional setting (Gath et al., 2024; Nystad et al., 2021). Research has shown that active parental involvement in the transition process reduces children's anxiety and enhances their adaptability to new environments (Lam, 2014). Effective collaboration with ECEC professionals can also promote the health and well-being of children while benefiting parents by alleviating stressors. Furthermore, successful cooperation between parents or guardians and ECEC professionals strengthens the sense of coherence across different spheres of life for both parents and children (Idan et al., 2019).

Parents' pivotal role in facilitating children's transitions and supporting their settling-in processes has been extensively documented (Purtell et al., 2020; Rimm-Kaufman and Pianta, 2000). Nevertheless, few researchers of such transitions have systematically and actively involved parents in their research (Lam, 2014; Sotiropoulou et al., 2022). Although numerous studies emphasise the importance of parental involvement, the findings are predominantly based on the perspectives of ECE professionals. Direct surveys of parents are rare, and if they do exist, they usually come from older studies or are characterised by small samples (Gath et al., 2024; Lam, 2014; McIntyre et al., 2007; Sotiropoulou et al., 2022; Wildenger & McIntyre, 2011). This is particularly evident regarding the transition from family to nursery or kindergarten, for which parental perspectives have rarely been considered. Studies have confirmed that parents often feel inadequately informed or poorly prepared for their children's settling-in processes (Malsch et al., 2011), require more information and support during this period (Sotiropoulou et al., 2022), and value clear communication, practical guidance, and emotional support from ECEC professionals (Lam, 2014).

To better understand and support parents in this emotionally and organisationally demanding phase, Aaron Antonovsky's (1997) salutogenic model offers a valuable theoretical lens. Rather than focusing on deficits or risks, the salutogenic perspective centres on the identification and mobilisation of individual and contextual resources that promote coping and wellbeing. At the heart of this model lies the concept of the sense of coherence, which encompasses the dimensions of comprehensibility, manageability, and meaningfulness. In the context of early childhood transitions, these dimensions help explain how parents interpret and respond to the challenges of the settling-in process.

In addition to concerns about their children's emotional and social adjustment (Lam, 2014; Sotiropoulou et al., 2022), parents find the logistical challenges and balancing of professional commitments particularly stressful during the settling-in period (Malsch et al., 2011). They may also experience feelings of guilt regarding the premature enrolment of their children in EC institutions. The transition from family to an ECEC setting is recognised as a critical phase for children, parents, and educators alike, characterised by organisational, emotional, and social challenges (Sotiropoulou et al., 2022). Parents, therefore, need to devise strategies to facilitate their children's adjustment to the new educational environment while managing their own complex emotional responses (Lam, 2014).

Aim and Subject of the Research

A few researchers have conducted studies on parental perceptions of transition processes in ECEC settings, predominantly focusing on the challenges and stressors they experience (Lam, 2014; Malsch et al., 2011; Sotiropoulou et al., 2022). In this study, we broadened the research scope by examining both stressors and parental resources to establish a foundation for strengthening collaboration between parents and professionals, thereby facilitating the transition process for all stakeholders.

Research Questions

In the present study, we aimed to answer the following research question: 'What stressors and resources do parents experience during their children's transitions or settling-in periods in an ECEC setting?'

Methodology

The study was grounded in qualitative social research. In September and the first week of October 2024, we conducted semi-structured interviews with parents who supported their children's settling in during their transition from family environments to ECEC institutions or between two ECEC institutions. The study was conducted in Austria. At the time of the interviews, the parents had experienced separation from their children at the institution within the preceding two weeks. All interviews were conducted in German and lasted 19–45 minutes each.

Instrument

In addition to an icebreaker question, a section to collect sociodemographic data, and a concluding question, the semi-structured interview guide included fifteen specific questions divided into two thematic blocks. The first two thematic blocks focused on parents' expectations, concerns, and hopes during their children's settling-in periods in an ECEC setting (nursery or kindergarten), while the second block focused on their perceptions of the support provided by professionals throughout the settling-in process.

Participants

We conducted interviews in German and English to reach a diverse range of parents, collaborating with ECEC professionals and social media to ensure a diverse participant base.

All participants gave written consent to take part in the interviews on a voluntary basis. They were informed that they had the right to withdraw at any time and that all information would be kept confidential in accordance with data protection legislation. We selected parents who volunteered to participate based on a sampling plan (Mothers and fathers, different educational and professional backgrounds, different employment situations, different first languages, parents and children with and without experience of transition, parents with only one child, parents with several children) and included those who, at the time of the interview, supported their children during the settling-in period in nurseries or kindergartens. We noted that at the time of the interviews, two of the participating parents were simultaneously supporting two children through their transitions to an ECEC setting.

Table 1
Sociodemographic Characteristics of Parents and Their Children

Interviewee		N = 15	in percentages
Parent	Mother	12	80
	Father	3	20
Age	36–41 years	7	47
	30–35 years	6	40
	25–29 years	2	13
Educational attainment	Apprenticeship	3	20
	Study	12	80
First language	German	9	60
	Other first language	6	40
Employment	Parental leave	5	33
	Unemployed	3	20
	Part-time work	5	33
	Full-time work	2	13
Children's demographic data		N = 17	in percentages
Transition experience			
	Yes	8	47
	No	9	53
Sex	Female	9	53
	Male	8	47
		8	
Age of the child when entering the facility	12–18 months	6	35
	18–36 months	7	41

	3–4 years	4	24
	Nursery	Kindergarten	
Transition of family	9	4	76
Transition of childminders		2	12
Transition of nursery		2	12

Data Analysis

Subsequently, we transcribed all interviews and coded them using the qualitative content analysis method recommended by Mayring (2021), with the aid of MAXQDA software. For the coding process, we employed a deductive–inductive approach, with no use of AI tools. To ensure intercoder reliability, two researchers coded the data independently, which resulted in 202 coded statements with an observed intercoder agreement rate of 79.8%, indicating a high level of reliability. The coding discrepancies were resolved through targeted discussion, consensus-building, and data consistency through repeated reviews, ensuring intercoder reliability, validity, and traceability of results (Mayring, 2021).

Results

The findings revealed that the process of adjustment to new circumstances is influenced by various parental stressors and resources operating on contextual, emotional, and institutional levels.

Table 2

Frequency of Descriptions of Parents' Stressors and Resources During the Settling-In Period

Stressors		N	Resources		N
Organisational and health challenges (N = 40)	Assignment to a non-preferred institution	3	Social networks as resources during the settling-in period (N = 23)	Peer support and communication	18
	Challenges posed by illnesses during the settling-in period	15		Importance of familiarity for settling-in processes	5
	Challenges in reconciling work and family life	22			

Emotional stressors for parents (N = 36)	Emotional strain surrounding the staff	16	Parental strategies for dealing with resistance (N = 45)	Parental strategies for coping with the pain of separation	19
	Emotional strain surrounding the separation from their children	18		Dealing with children's resistance	26
	Emotional strain due to a guilty conscience	2			
Challenges in cooperation between parents and ECEC professionals (N = 29)	Communication between parents and professionals	18	Important factors influencing the collaboration with ECEC professionals (N = 80)	Binding agreements in advance	14
	How professionals deal with children	8		Relationship building with parents and children	12
	Lack of support from professionals	3		Communication: regular dialogue and transparent information	34
				Flexibility and individual customisation during settling in	20
		N = 105			N = 148

The figure 'N' refers to the number of content-analytical codings according to Mayring, 2021.

Stressors During the Settling-In Process

Parents reported stressors during the settling-in process, including organizational and health issues, emotional strain, work commitments, and collaboration issues between parents and ECEC professionals.

Organisational and Health Challenges

A frequently cited source of stress was parents' concerns about their children being placed in nurseries or kindergartens that were not their first choice of institution. One mother articulated this sentiment, stating, "We ended up with our third choice of kindergarten. It was a cause of concern for many parents that it was not the kindergarten they had initially hoped for" (Mother, A. L. Transition to Kindergarten, 3.10.2024). Although these concerns were mitigated to some extent by positive experiences during the initial adjustment period, they persisted as recurrent themes during the interviews. Other concerns were the parents' unfamiliarity with the staff,

the pedagogical approach, and the institution's facilities prior to the start of the settling-in process.

Another significant source of stress was illness-related disruption during the settling-in process. As one parent explained, "In the second week, we had quite a setback. Things just didn't work anymore because, unfortunately, he [the child] fell ill" (Mother, C. N., Transition to Kindergarten, 18.09.2024). Staff members' illness-related absences were also a source of stress for parents during the settling-in period:

On Monday of the second week, and again on Tuesday, we attempted separation. I was only away for fifteen minutes. Subsequently, the teacher was absent for a single day due to illness, but this was only on Wednesday and Thursday. Thus, full separation occurred on Friday. (Mother, K. B., Transition to Nursery, 17.09.2024)

These disruptions resulted in delays and necessitated readjustment to the settling-in process for all involved. Another mother reflected, "Last week, we had the first separation, and it went well. However, the older child subsequently fell ill. This resulted in a brief period of separation" (Mother, G. B.., Transition to Nursery, 24.09.2024). Such delays caused by infections were a source of profound exasperation for the participants.

Balancing work and family responsibilities strains parents managing multiple children, especially when one parent is on leave. This organizational challenge is particularly challenging. The need to coordinate work schedules with the demands of the settling-in period was another challenge for many parents. One father stated, "We agreed that I would work two afternoons, and my wife would work two afternoons, keeping Fridays flexible" (Father, A. L. Transition to Kindergarten, 3.10.2024). A lack of planning certainty and the occurrence of unforeseen events exacerbated these difficulties. As one parent articulated:

We had to be very flexible because of the uncertainty of our schedule, and unexpected events often disrupted our plans. I could only take three days off, and on the fourth day, he was in kindergarten until 3:00 p.m. He did not sleep that day (Mother, K. R. Transition to Kindergarten, 24.09.2024).

Emotional Stressors for Parents

Parents reported emotional uncertainties as significantly impacting their children's settling-in experience, particularly concerning the adaptation to established educational and care routines. One mother explained, "I am concerned that she will not engage and that the staff may be inclined to suggest her continued home attendance" (Mother, A. B. Transition to Kindergarten, 30.09.2024).

In addition to concerns regarding their children's capacity to assimilate into group dynamics, parents frequently expressed reservations about the timing of their children's enrolment and questioned whether it was premature. One parent articulated this initial ambivalence, stating, "On Monday, I briefly wondered whether it was really a good decision to send him to kindergarten and not wait another year" (Mother, T. F. Transition to Kindergarten, 18.09.2024).

Furthermore, many parents reported being profoundly affected by their children's emotional responses during the initial separation period. One mother recollected, "The first hour in kindergarten was the worst hour for me. My daughter was the only child who sat beside me the whole time, clinging to me" (Mother, A. L. Transition to Kindergarten, 3.10.2024). Furthermore, parents reported distressing emotional outbursts from their children: "She screamed loudly, cried bitterly, and it was just so upsetting because this kind of behaviour never happens at home" (Mother, G. B.., Transition to Nursery, 24.09.2024). Such situations often led to feelings of being overwhelmed and uncertain.

In the interviews with parents, feelings of guilt about placing their children in institutions too early also played a vital role. One mother articulated this, stating, "I feel really bad when I think about leaving my child somewhere when I'm not ready to let them go" (Mother, K. B., Transition to Nursery, 17.09.2024). These internal conflicts were frequently exacerbated by social and/or professional pressure.

Challenges of Cooperation Between Parents and Professionals

Institutional factors also contribute to parental stressors. A significant proportion of the parents reported a lack of information regarding their children's daily schedules and developmental progress. One parent articulated discontent with the quality of communication with the professionals involved, expressing dissatisfaction with the professionals' level of engagement and perceived lack of responsiveness: "Beforehand, we found it somewhat frustrating that neither the management nor the educators seemed to proactively engage with us" (Mother, K. B., Transition to Nursery, 24.09.2024). Changes in staff during the settling-in process were also viewed critically because these made it difficult for children to establish stable relationships. One mother noted, "During the settling-in period, there were new people. On the third day, a new person was present, which was not beneficial for the child." A period of adjustment is required for children to become accustomed to new caregivers, and the parents identified clear and transparent agreements prior to the settling-in process as having great importance. However, one parent criticised the lack of planning reliability:

"We were assured that he would be placed in the same group as his friend. However, during the parents' evening, we found that this was no longer the case" (Mother, C. N., Transition to Kindergarten, 18.09.2024). Such occurrences led to uncertainty, emphasising the significance of reliable information during the settling-in process.
Furthermore, certain parents voiced their discontent regarding the way professionals addressed sensitive situations involving their children. One parent explained, "Occasionally, an excessive amount of drama is generated: 'Oh my God, why did you wet yourself?' I find that a bit shaming and not very diplomatic" (Mother, M. F., Transition to Nursery, 24.09.2024). Such experiences exacerbated feelings of uncertainty among parents, thereby diminishing their trust in the ECEC institution and its staff.
Parents also identified an absence of support and communication from professionals as a stressor: "I would say the communication was simply lacking" (Mother, M. F., Transition to Nursery, 24.09.2024).

Resources for the Settling-In Process

Resources like social networks, resistance strategies, and professional collaboration can help parents and children effectively navigate the transition phase in ECEC settings.

Social Networks as Resources During the Settling-In Period

Exchanges with other parents were perceived by many as reassuring and helpful. The parents significantly emphasised the value of engaging in dialogue with fellow parents to mitigate feelings of uncertainty. One mother commented, "Talking to other parents reassured me, especially when they said their children enjoyed going there" (Mother, K. R. Transition to Kindergarten, 24.09.2024).
The presence of familiar playmates was another important advantage for children. Parents reported that familiar contacts facilitated their children's adaptation to the new environment. One father stated, "Fortunately, one of the children we've known for a very, very long time also moved to that kindergarten …. She [my daughter] already knew someone when she started" (Mother, A. L. Transition to Kindergarten, 3.10.2024).

Parental Coping Strategies

A considerable number of parents reported strategies they employed to counteract the emotional strain of separation. One mother (Mother, M. T. Transition to Nursery, 2.10.2024) described the initial period as "extremely challenging," even though the proceedings had gone smoothly. She also expressed profound concern for the well-being of her children, describing it as a state of serious distress. The desire to remain at home was strong, but as time went on, the situation improved, although she experienced a wide spectrum of emotions during this period. The mother explained that becoming acquainted with the professionals and establishing trust in them over time helped her cope.

In contrast, other parents sought to rationalise their fears. One mother said, "I kept reassuring myself that it was the right decision and a positive step towards the future. If my child is doing well, I'm doing well too" (Father, R. M. Transition to Kindergarten, 3.10.2024).

Regular communication with professionals, along with updates via instant messaging or WhatsApp, also proved beneficial. A parent of a kindergarten child who commuted by bus shared the following: "The bus driver sent me a message saying everything was fine." Such communication served as a source of reassurance for the parents, since, in rural areas, bus drivers who transport children daily to and from the institution are also involved in the settling-in process.

The use of established rituals and the provision of support by professionals tended to alleviate children's resistance, such as crying or protesting, in the morning. One mother stated, "My daughter requires someone to encourage her, saying, 'Let's do this together.' After that, it's fine" (Father, L. K. Transition to Nursery, 27.9.2024). Brief farewells or gestures of acknowledgement at the threshold helped in establishing a structured routine and fostering a sense of security:

When I perceive that she is engaging with the caregivers and has acclimatised, I reopen the door, offer a brief farewell, and she waves at me. This sequence of events has become an established routine over the past few days. (Father, L. K. Transition to Nursery, 27.9.2024).

Important Factors Influencing Collaboration with ECEC Professionals

Close and trusting relationships, based on transparent information, between parents and professionals were perceived as a fundamental resource. One mother reported,

"I felt very well supported by the main caregiver. She explained the steps to me and provided daily feedback" (Mother, A. L. Transition to Kindergarten, 3.10.2024).

Furthermore, many of the parents reported that they found the parents' evenings and written information provided prior to the settling-in process beneficial. One mother praised the programme, stating, "We had a parents' evening where everything was explained, and two weeks before the settling-in process, we received detailed information again" (Mother, T. F. Transition to Kindergarten, 18.09.2024).

The parents particularly appreciated professionals' provision of regular feedback, whether verbal or written. One mother explained, "The teacher kept a notebook in which she recorded her observations daily: 'Today was great' or 'Please note this and that.' I found this to be a commendable practice" (Mother, A. B. Transition to Kindergarten, 30.09.2024). However, parents also expressed dissatisfaction with instances of absent feedback, citing the example of substitute teachers. One parent described the experience of interacting with a substitute teacher who failed to provide any information about the child's day: "A substitute teacher just handed me my child without reporting how the day went" (Mother, A. B. Transition to Kindergarten, 30.09.2024). The parents found such experiences unsettling.

The use of a caring and professional approach by staff was especially valued, as it contributed to building meaningful relationships between all parties involved: "The staff were consistently exemplary in their care and professionalism. This aspect was particularly important because it fostered a sense of security and confidence that my child was in competent hands" (Mother, A. L. Transition to Kindergarten, 3.10.2024).

The parents also perceived flexible settling-in processes as particularly supportive. One mother shared the following:

On the first day, we separated for just an hour, and then we gradually extended the separation time because the teacher said he was coping well. By the fourth day, my child was able to nap, and by the fifth day, the settling-in process was complete. (Mother, C. K. Transition to Nursery, 28.09.2024).

Another family adopted a contrasting approach, characterised by caution and gradual progression:

We initiated the settling-in process in a gradual manner. In the first week, we remained until 11:00 a.m.; in the second week, we separated for an hour. From the third week, she remained until 3:00 p.m. and took a nap there. (Mother, C. K. Transition to Nursery, 28.09.2024).

The family reported that they engaged in brief discussions on the day before each visit, and that these visits were planned at short notice—a system they found to be highly satisfactory.

Discussion

An analysis of parental perspectives revealed a wide range of challenges and supportive factors that played a role during this phase.

The need to balance professional commitments with the demands of the settling-in process was a considerable burden for many parents. Malsch et al. (2011) also identified this as a stressor, since the parents in that study reported logistical challenges in coordinating the settling-in process, adjusting to new schedules, and reconciling these with work obligations.

Parents faced emotional uncertainties during the settling-in phase, including concerns about their children's adaptability, well-being, and the timing of enrolment. The children's emotional responses, including crying or clinging, frequently resulted in feelings of being overwhelmed or parental guilt. Sotiropoulou et al. (2022) reported a similar phenomenon, with parents expressing feelings of guilt about enrolling their children in institutions prematurely, at a too-young age.

Parents often experienced stress due to inadequate communication with professionals, particularly regarding their children's daily schedule and developmental progress. Changes in staff during the settling-in period, and inadequate support in sensitive situations heightened uncertainties and hindered the development of trust. Concerns about the ability of children to thrive in an institutional environment without their parents, as well as the desire for enhanced support from early childhood professionals, have also been reflected in international studies (Lam, 2014; Malsch et al., 2011; Sotiropoulou et al., 2022).

While international research highlights the importance of collaboration between parents and professionals during the kindergarten transition, little attention has been paid to interactions between parents themselves within institutional contexts (McIntyre et al., 2007; Wildenger and McIntyre, 2010; Rimm-Kaufman and Pianta, 2000). Sharing experiences with other parents provides emotional reassurance and normalizes transition challenges. Familiar peer relationships ease children's transition, providing parents with security and continuity.

Parents developed coping strategies for stress, fear management, routine establishment, and confidence enhancement through professional feedback, fostering trust and trust in the process.

Conclusion

Parental transitions are not solely influenced by stressors but also by available resources and individual coping capacities. To reduce stress and provide targeted support for parents, it is essential to identify resources and develop measures that promote coping. This aligns with Aaron Antonovsky's (1997) salutogenic model, which shifts the focus from risk factors and illness to health-promoting conditions. At its core lies the sense of coherence – a global orientation that enables individuals to perceive life as comprehensible, manageable, and meaningful. A keen sense of coherence helps individuals to mobilise internal and external resources in challenging situations, such as the transition into ECEC.

Analysis of the qualitative data revealed that the implementation of targeted measures can transform the numerous stressors experienced by parents into resources. A pivotal resource identified in this study is open and transparent communication with professionals. Regular feedback on children's settling-in processes and clearly articulated information about organisational procedures enhance a sense of predictability and comprehensibility. Flexible settling-in plans, stable professional relationships, trust in the pedagogical team, parental involvement, and prior written information can ease separation for children and provide parents with control and security. Social networks are particularly important for parents. Interacting with other parents and familiar children in an institution provides emotional relief and a sense of belonging. This social support is a valuable resource that not only reduces stress but also strengthens parents' coping abilities.

The sense of coherence, comprising the dimensions of comprehensibility, manageability, and meaningfulness (Idan et al., 2019; Meier Magistretti, 2022), is a useful model for analysing parental experiences during the settling-in period:

Comprehensibility is enhanced through clear information and transparent communication. When parents understand what to expect and why specific procedures are necessary, they can better contextualise the situation.

Manageability arises when parents receive support, whether through flexible planning, empathetic professionals, or social networks. This reassures

parents that they have the resources needed to handle the challenges of the settling-in process.

Meaningfulness is strengthened by recognising the importance of the settling-in period as a developmental step. Parents are likely to view the transition to an ECEC setting as a valuable phase for their children's development when they feel that the children's well-being and the relationship between family and professionals are prioritised.

A robust sense of coherence can facilitate parents' perceptions of the challenges of the settling-in period as manageable and meaningful, thereby ensuring more effective coping mechanisms. Despite the limitation of being a small sample and, moreover, a qualitative study, (Lam, 2014) highlights the significance of a resource-oriented approach for supporting the settling-in phase for both parents and children. Empowering parents during the transition phase can reduce stress and improve well-being, fostering trust in educational institutions and establishing foundations for successful collaboration and partnerships.

References

Ahnert, L., Kappler, G., and Eckstein-Madry, T. (2012). Eingewöhnung in die Krippe: Forschungsmethoden zu Bindung stress und coping [Settling into daycare: research methods on attachment stress and coping]. In S. Viernickel, D. Edelmann, H. Hoffman, and A. König (eds.), *Forschung zur Bildung, Erziehung und Betreuung von Kindern unter drei Jahren [Research on the education, upbringing and care of children under three years of age]* (pp. 74–88). Reinhardt.

Ahnert, L., Eckstein-Madry, T., Datler, W., Deichmann, F., and Piskernik, B. (2023). Stress during transition from home to public childcare. *Applied Developmental Science, 27*(4), 320–335. https://doi.org/10.1080/10888691.2022.2070168

Antonovsky, A. (1997). *Salutogenese: Zur Entmystifizierung der Gesundheit [Salutogenesis: demystifying health]*. dgvt Verlag.

Bensel, J. (1992). Behavior of toddlers during daily leave-taking and separation from their parents. *Ethology and Sociobiology, 13*(4), 229–252. https://doi.org/10.1016/0162-3095(92)90024-X

Bowlby, J., Ainsworth, M., and Bretherton, I. (1992). The origins of attachment theory. *Developmental Psychology, 28*(5), 759–775.

Datler, W., Ereky-Stevens, K., Hover-Reisner, N., and Malmberg, L.E. (2012). Toddlers' transition to out-of-home day care: Settling into a new care environment. *Infant Behavior & Development, 35*(3), 439–451. https://doi.org/10.1016/j.infbeh.2012.02.007

Dunlop, A.W., and Fabian, H. (2003). Editorial. *European Early Childhood Education Research Journal, 11*(Sup1), 2–4. https://doi.org/10.1080/1350293X.2003.12016700

Fabian, H., and Dunlop, A. W. (2007). *Outcomes of good practice in transition processes for children entering primary school.* Bernard van Leer Foundation.

Gath, M. E., Herold, L., Hunkin, E., McNair, L. J., Redder, B., Rutanen, N., and White, E. J. (2024). Infants' emotional and social experiences during and after the transition to early childhood education and care. *Journal of Early Childhood Research, 22*(1), 88–105. https://doi.org/1–0.1177/1476718X231195706

Griebel, W., and Niesel, R. (2002). Co-constructing transition into kindergarten and school by children, parents and teachers. In H. Fabian and A. W. Dunlop (eds.), *Transitions in the early years: Debating continuity and progression for young children in early education* (pp. 64–75). Routledge.

Idan, O., Braun-Lewensohn, O., Lindström, B., and Margalit, M. (2019). Salutogenese: Der Kohärenzsinn in der Kindheit und in der Familie [Salutogenesis: the sense of coherence in childhood and family]. In C. Meier Magistretti, B. Lindström, and M. Eriksson (Eds.), *Salutogenese kennen und verstehen [Know and understand salutogenesis]* (pp. 189–198). Hogrefe.

Laewen, H.J. (1989). Zur ausserfamilialen Tagesbetreuung von Kindern unter drei Jahren: Stand der Forschung und notwendige Konsequenzen [On out-of-family day care for children under three years of age: the state of research and necessary consequences]. *Zeitschrift für Pädagogik, 35*(6), 869–888. https://doi.org/10.25656/01:14540

Laewen, H.J., Andres, B., and Hedervari, E. (2007). Ohne Eltern geht es nicht: Die Eingewöhnung von Kindern in Krippen und Tagespflegestellen [It doesn't work without parents: familiarising children with nurseries and childminders] (4th ed.). Cornelsen Scriptor.

Lam, M. S. (2014). Transition to early childhood education: Parents' use of coping strategies in dealing with children's adjustment difficulties in Hong Kong. *Australasian Journal of Early Childhood, 39*(3), 111–120. https://doi.org/10.1177/183693911403900314

Meier Magistretti, C. (2022): The Sense of Coherence in the Life Course. In: Mittelmark, M. B., Bauer, G., Vaandrager, L., Pelikan, J. M., Sagy, S., Eriksson M., Lindström, B., Meier Magistretti, C. (2022): *The Handbook of Salutogenesis.* (2nd ed.) (pp. 117–123). Springer, New York.

Malsch, A. M., Green, B., and Kothari, B. H. (2011). Understanding parents' perspectives in the transition to kindergarten: What early childhood settings and schools can do for at-risk families. *Best Practices in Mental Health, 7*(1), 47–66.

Mayring, P. (2021). *Qualitative content analysis: A step-by-step guide.* Sage Publications.

Nystad, K., Drugli, M. B., Lydersen, S., Lekhal, R., and Buøen, E. S. (2021). Toddlers' stress during transition to childcare. *European Early Childhood Education Research Journal, 29*(2), 157–182. https://doi.org/10.1080/1350293X.2021.1895269

Purtell, K. M., Valauri, A., Rhoad-Drogalis, A., Jiang, H., Justice, L. M., Lin, T.J., and Logan, J. A. (2020). Understanding policies and practices that support successful transitions to kindergarten. *Early Childhood Research Quarterly, 52,* 5–14. https://doi.org/10.1016/j.ecr–esq.2019.09.003

Rimm-Kaufman, S. E., and Pianta, R. C. (2000). An ecological perspective on the transition to kindergarten. *Journal of Applied Developmental Psychology, 21*(5), 491–511. https://doi.org/10.–1016/S0193-3973(00)00051-4

Sotiropoulou, E., Katsiada, E., and Bercovits, A. (2022). Educators' views on parents' contribution to the transition to nursery of children under the age of 3. *International Journal of Education, 14*(2), 83–95. https://doi.org/10.5296/ije.v14i2.20095

Spitz, R. A. (1960). Discussion of Dr. Bowlby's paper. *The Psychoanalytic Study of the Child, 15*(1), 85–94. https://doi.org/10.1080/00797308.1960.11822569

Winner, A., and Erndt-Doll, E. (2009). Anfang gut? Alles besser! Ein Modell für die Eingewöhnung in Kinderkrippen und anderen Tageseinrichtungen für Kleinkinder [A good start is half the battle! A model for familiarising children with nurseries and other day-care facilities for young children]. Das Netz.

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THE ROLE OF FOREST EXPERIENCES IN ENHANCING CHILD WELL-BEING AND RESILIENCE

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Izvleček/Abstract

Given the alarming prevalence of (mental) health problems in children and young people, exacerbated by the pandemic and environmental fears, the question of how we can strengthen children for an increasingly complex world with all that it entails is more topical than ever. This article therefore addresses the importance of resilience, well-being, and experience of nature for children's development, particularly through time spent in a forest. Experiencing the forest strengthens the immune system, reduces stress, and promotes social and motor skills, and can therefore have a positive influence on children's well-being and the development of resilience.

Vloga izkušenj v gozdu za dobro počutje in odpornost otrok

Zaskrbljujoče težave (duševnega) zdravja otrok in mladih, ki so se še povečale zaradi pandemije in strahov, povezanih z okoljem, vodijo do vprašanja, kako lahko otroke pripravimo na vse zapletenejši svet in posledice – bolj aktualno kot kadar koli prej. V članku zato obravnavamo pomen odpornosti, dobrega počutja in doživljanja narave za razvoj otrok, zlasti s preživljanjem časa v gozdu. Doživljanje gozda namreč krepi imunski sistem, zmanjšuje stres, spodbuja socialne in motorične spretnosti ter lahko tako pozitivno vpliva na dobro počutje otrok in razvoj odpornosti.

Ključne besede:
child well-being, resilience, forest experiences, forest-based education.

Keywords:
dobro počutje otrok, odpornost, izkušnje v gozdu, izobraževanje v gozdu.

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Introduction

How are our children and young people currently doing?

Results from the Children's League Report on the situation of children and adolescents in Austria (2021) show an enormous increase in risk factors for child development, such as poverty, psychosocial problems, lack of care and educational gaps; these were particularly evident during the pandemic (Österreichische Liga für Kinder- und Jugendgesundheit, 2021). Post-pandemic, the psychosocial health of children and adolescents shows worrying trends in 2024: the results of the sixth and seventh rounds of the *COPSY* study conducted by the University Medical Centre in Hamburg-Eppendorf (UKE, Germany) indicate that 22% of young people are affected by mental health problems, and 21% have a reduced quality of life and well-being as a result. Worries about war, economic uncertainty and climate change are a particular burden (Universitätsklinikum Hamburg-Eppendorf, 2024). According to the *DAK Prevention Radar*, one in seven children shows depressive symptoms, and one in three feels lonely. Multiple (psycho-) somatic complaints are on the rise (DAK-Gesundheit, 2024). The *Youth in Germany 2024* trend study shows that 51% of young people are regularly stressed, 36% suffer from chronic exhaustion and 8% have suicidal thoughts. The main concerns are inflation (65%), fear of war (60%) and worries about affordable housing (54%) (Schnetzer et al., 2024).

As a result, the question of how we can strengthen children from an early age to deal with risk situations and multiple stresses is more topical than ever and can be seen as a collective task for educational institutions.

One starting point here is certainly to support children at an early age in developing resilience, or more specifically, individual protective factors. In this context, protective factors are understood as resources that can help children to adapt better to difficult life circumstances, pressures, and stress and to restore the well-being that has been lost in the short term (Wustmann, 2004). Based on the theory of the attachment and exploration system, it can be argued that early childhood well-being is a prerequisite for learning and should therefore be at the centre of elementary education (Ahnert, 2019; Fischer, 2010). Resilience and well-being are closely linked and influence each other (Arnold et al., 2023; Asselmann, 2021). Werner and Smith (2001) postulate that various protective factors can be developed in early childhood that promote long-term mental health and well-being.

In this context, it has been shown that regular time spent in natural environments such as forests has a particularly favourable effect on well-being and the associated health status (Polz-Watzenig, 2020; Schuh and Immich, 2019; Wolfram, 2021).
For this reason, the *WoLeWa* project (Well-being and Learning with and in the Forest - duration 2023-2027, Salzburg University, School of Education), which is the subject of this paper, is dedicated to the health and well-being aspect of Agenda 2030 and investigates whether and how the subjective well-being of children (5-6 years) can be addressed through regular visits to the forest and what benefits this brings for early childhood educators. Among other methods, semi-standardised interviews were used to survey the children's perspectives directly at two measurement points: (A) in the kindergarten classroom, and (B) during a forest day (N= 50). In addition, the professionals were also asked directly about their subjective well-being in the two distinct settings.
This article presents a section of the project and first examines the theoretical basis by analysing the relationship between resilience and well-being. It also clarifies what is meant by well-being in preschool children and how the construct can be methodically researched. In addition, the benefits of regular forest experiences on the human organism are presented on the basis of current studies, and an attempt is made to systematically bring together the three constructs of resilience, well-being and the forest effect. The article ends with an insight into the use of forest experiences in early childhood education in Salzburg and with projections for the future.

Resilience

What do we know from resilience research?
Resilience refers to the ability of people to overcome crises, challenges, or stresses and to emerge stronger from them. It includes characteristics such as emotional stability, adaptability and a positive attitude, which together help to overcome stress and setbacks (Werner, 2005; Werner and Smith, 2001). Resilience can be promoted through personal resources, social support, and targeted training and is multidimensional and multi-layered (Luthar, 2003; Wustmann, 2004). The resilience construct describes the dynamic and reciprocal interaction between the risk factors and protective factors that influence how well people deal with stressful situations.

Risk factors (as presented in Table 1) refer to influences that increase the likelihood of negative effects on development or well-being. Some of them are shown in the following table in three distinct dimensions: individual, within the family and in the immediate environment.

Table 1

Risk factors (Evans et al., 2018; Luthar, 2003; Moore and Woodcock, 2017; Werner and Smith, 2001; Wustmann, 2004)

Risk factors in (early) childhood		
Individual level	**Within family**	**Immediate environment**
• Early childhood trauma • Chronic illnesses or disabilities • Low self-efficacy expectations • Persistent stress or strain • Lack of emotional regulation • Low self-esteem • Negative thinking patterns • Low social support system • Mobbing	• Low socio-economic status, chronic poverty • Chronic family disharmony • Parental separation, divorce • Unemployment of parents • Alcohol and drug abuse by parents • Mental disorders or illness of the parents • Death or loss of close relatives or friends • Criminality of the parents • Parents' low level of education • Absence of one parent • Educational deficits • Migration background • Very young parents • Social isolation • Siblings with disabilities	• Social isolation • Poverty • Discrimination and prejudice • Dangerous or unstable political conditions • Natural disasters and pollution • No access to education and health services • Crime and violence in the neighbourhood • Lack of social support systems • No availability of resources • Media and social media: The influence of media, especially social media, can affect stress levels and self-image

Resilience arises when the negative effects of risk factors can be cushioned by protective factors in the described dynamic process (Werner, 2005). The protective factors across the three dimensions (individual, within the family and in the immediate environment) are presented in Table 2.

Table 2

Protective factors (Evans et al., 2018; Luthar, 2003; Moore and Woodcock, 2017; Werner and Smith, 2001; Wustmann, 2004)

Protective factors in (early) childhood		
Individual level	**Within family**	**Immediate environment**
• Physical health • Positive attachment and relationship experiences • Self- efficacy • Positive self concept • Optimism, • Creativity • Talents, interests, hobbies • Good cognitive skills • Stress management skills • Emotional regulation • Inelligence and problem solving competency • Goal-orientation • Planning competence	• Stable bonds • Supportive relationships • Positive parental behaviour • Democratic parenting style • Good communication • Sibling bonds • Commitments • High educational level of parents • Harmonious parental partnership	• Safe and supportive living conditions • Access to education • Prosocial role models <u>In education system:</u> • Clear, transparent and consistent rules and structure • Appreciative climate • High and appropriate level of performance • Positive reinforcement of performance and willingness to make an effort • Positive peer contacts / friendship relationships • Promotion of basic skills • Cooperation with parents and other social institutions

In this context, it has been shown that the promotion of emotional regulation and support in dealing with anger, fear or frustration strengthens resilience in the long term (Denham et al., 2012). The development of cognitive skills, such as problem-solving strategies and the ability to think flexibly, is another important protective factor. Children who learn to recognise and solve problems at an early age develop more self-confidence and are better able to deal with future challenges (Masten and Cichetti, 2016). Based on these findings, various explicit 'resilience promotion programmes' have therefore been developed, which can readily be implemented in early education practice (Scheithauer et al., 2008). For some time now, there has been a trend within early childhood education towards implicit or everyday integrated support measures in various areas of development, which have proven to be efficient and sustainable in corresponding evaluation results (Noller, 2017). Against this backdrop, the term 'everyday integrated resilience promotion' has recently been used (Kaiser et al., 2018; Masten and Cicchetti, 2016). Everyday integrated resilience promotion aims to strengthen the development of children's

protective factors through everyday interaction and routines and emphasises the importance of relationships, emotional support, and the creation of a supportive environment.

Resilience and well-being

What is the relationship between resilience and well-being?

Resilience and well-being exist in dynamic interplay. Well-being describes a state that is characterised by satisfaction, positive emotions, and a fulfilled life. It can be viewed subjectively (e.g., happiness) and objectively (e.g., health) (Arnold et al., 2023).

Resilient people are better able to deal with stress and experience negative events as less stressful. This protects their well-being from the effects of crises. Resilience helps to reduce mental illnesses such as depression or anxiety disorders, which can severely impair well-being (Asselmann, 2021). A high level of well-being in turn strengthens resilience, since positive emotions and social support create resources that are helpful in challenging times. Psychological and subjective well-being are also discussed as components of resilience (Rönnau-Böse and Fröhlich-Gildhoff, 2015; Schmidt and Schultze-Lutter, 2020; Wieland, 2011). People with a stable sense of well-being often have a more optimistic view of the world, which increases their ability to cope with problems (Arnold et al., 2023). This interaction also exists in reverse: a lack of resilience can reduce well-being, which in turn can impair the ability to deal with new challenges (Gilan et al., 2023).

Child well-being

What areas does children's well-being encompass?

The conceptualisation of (children's) well-being is subject to the social and cultural connotations of the good life (Woopen et al., 2021). Accordingly, the existing research literature lacks a standardized (universally accepted) definition. Social, health, educational, childhood and developmental science approaches to *child well-being* offer a broad field of varying considerations: Child well-being as a component of mental health is postulated by Nentwig-Gesemann and Fröhlich-Gildhoff (2022). Susanne Viernickl (2022) describes the classic three dimensions of physical, mental, and social health in relation to well-being. In principle, the construct of well-being, regardless of how many dimensions are assigned, is a production process in the context of social and spatial arrangements (Viernickl, 2022).

The published Index of Child Well-being in Europe comprises the following seven areas: *Health, subjective well-being, personal relationships, material resources, education, behaviour and risks, housing and environment* (Bradshaw and Richardson, 2009). According to Nentwig-Gesemann and Fröhlich-Gildhoff (2022), *subjective well-being* is characterised by the fact that "people experience themselves, other people, their life situation and opportunities for self-realisation as positive and consequently also rate them positively" (Nentwig-Gesemann and Fröhlich-Gildhoff, 2022, p. 115). International comparative research shows a common endeavour to identify valid and reliable indicators of child well-being.

Initially, children's well-being was predominantly collected in the form of external assessments - observational data obtained both directly in the field and from video recordings - usually from parents or educational professionals (De Schipper et al., 2004; Laevers, 2005; Seland et al., 2015; Viernickel et al., 2018).

Relatively early in the study of children's well-being, researchers called for a shift in and broadening of perspective. In addition to indicators that are determined by adults, children's perceptions of well-being should increasingly be surveyed (Ben-Arieh, 2008).

In the *Children's Worlds*: 2010-2019 study (*N*=100 000), the subjective experience of children was consistently focussed on in 37 countries (Rees et al., 2020). As part of the *Child and Adolescent Health Survey (KiGGS)*, the *KINDL-R* questionnaire was used with the dimensions of *physical well-being, emotional well-being, self-esteem, well-being in the family, well-being in relation to friends, school (day-care centre) well-being* (Ravens-Sieberer et al., 2007). The UNICEF study *Child Well-being in Rich Countries* (UNICEF Office of Research, 2020) included an analysis global and distal indicators, alongside data collected from parents and children approximately eight years of age and older (e. g., their assessment of their relationships with parents and peers) (Bradshaw et al., 2007).

Despite the high level of research interest in *child well-being*, empirical and systematic studies on the well-being of younger children are still rare. One reason for this could be that a suitable repertoire of methods is required for surveying children in this age group (Andresen and Viernickel, 2022; Schelle et al., 2019). However, a new model of *well-being from a child's perspective* by Nentwig-Gesemann and Fröhlich-Gildhoff (2022) offers an empirically well-founded orientation on the topic. In line with the *theoretical reframing* approach, existing empirical data on daycare centre quality, derived

from the perspective of four- to six-year-old children, was given an alternative interpretation (*well-being*). From the data collection "*four dimensions of children's well-being*" were extracted, as shown in Table 3.

Table 3

Well-being dimensions from the perspective of four- to six-year-old children in early education institutions (Nentwig-Gesemann and Fröhlich-Gildhoff, 2022, p.120).

Well-being dimensions from the perspective of four- to six-year-old children in early education institutions	
Personal Well-being	
Engage in challenging, risky, serious and strenuous (self-) educational activities	Immerse yourself in play, relax, move, experience happy moments in the here and now
Social Well-being	
Feeling safe in, resonant relationships with professionals and accepting education	Socialise in peer cultural communities and experience belonging and solidarity there
Space-, time- and object-related Well-being	
Be able to settle into and 'live around' the spaces prepared by adults	Discover new spaces and create your own spaces of children's culture - real or imaginary/imaginative
Organisational Well-being	
Feel secure in the daycare centre organisation with its procedures, rules, role and behavioural expectations	Being able to participate as a group of children in the rules, boundaries, norms, role and behavioural expectations of the daycare organisation

Within these four core areas, there are areas of tension or poles - shown in the two columns next to each other - between which a balance must be found. Consequently, well-being in the centre is a continuous process. Professionals must continuously analyse whether the children feel comfortable in the facility, and these analytically formed dimensions of well-being from the child's perspective can be helpful, because they "mark the cornerstones for determining the well-being of children" (Nentwig-Gesemann and Fröhlich-Gildhoff, 2022, p. 120). According to the authors, these can be used to "determine whether resilience factors are strengthened, and the children's basic needs are adequately met" (Nentwig-Gesemann and Fröhlich-Gildhoff, 2022, p. 121). For the *WoLeWa* project, items were extracted from this existing material, validated by experts and subjected to a pretest procedure with satisfactory reliability values and can therefore be used in the main survey with minor modifications: *Personal well-being* (5 items) $a = .60$; (B) *Social well-being* (4 items) $a = .78$; (C) *Space-, time- and object-related well-being* (5) $a = .79$; (D) *Organizational well-being* (4 items) $a = .73$. In the pretest procedure, an average high level of well-being ($M = 2.7 - 3.5$, scale 1-4) was found among the children surveyed ($N=10$) in the

kindergarten classrooms in the four dimensions. The individual item analysis showed a low level of well-being with regard to self-determination and the availability of space and time for undisturbed play. The data from the main survey will provide more precise information about the well-being of children in kindergarten.

Benefits of forest experiences for well-being and resilience

Can the forest influence well-being and everyday integrated resilience promotion in children?
Numerous studies indicate that experiencing the forest has positive effects on the human organism (Raith et al., 2014; Kühn et al., 2017; Polz-Watzenig, 2020; Schuh and Immich, 2019; Wolfram, 2021). For example, regular time spent in the forest significantly strengthens the immune system, reduces stress, and lowers pulse rate and blood sugar levels (Li et al., 2009). Spending time in forests increases exposure to microbial diversity, which is particularly important for immune regulation at an early age (Li, 2010). The diverse environmental stimuli lead to a balancing of the nervous system. The forest exerts not only a stress-reducing effect, but also a mood-enhancing impact (Annerstedt et al., 2013; Moula et al., 2021; Sonntag-Öström et al., 2011). "This is particularly beneficial for children, as their nervous system is still primarily malleable and capable of learning at a young age" (Arvay, 2019, p. 16). Children who regularly spend time in nature show a more stable emotional well-being. The calming effect of nature helps to reduce anxiety and stress, which is specifically important for preschool children. *Shinrin-yoku* (*forest bathing*) also has a calming effect on children (Hartig et al., 2014; Li, 2010). Self-regulation and prosocial behaviour can also be improved by spending time in the forest (Gebhart, 2023). Shared experiences in the forest strengthen social bonds and promote the ability to develop empathy. Interacting with living creatures and experiencing natural relationships sensitise children to environmental and social issues (Chawla, 2007). Other relevant studies show that physical dexterity is trained in the forest, which has a positive influence on motor development: uneven ground, tree trunks and other natural obstacles encourage them to improve balance and coordination (Fjørtoft, 2001). Spending time in the forest also encourages creativity and problem-solving skills. The diverse impressions and tasks that nature offers train the senses and at the same time stimulate the brain and contribute to the development of extended concentration and attention spans, which have a beneficial effect on task mastery. Research suggests that children are less easily distracted and can concentrate better after forest activities (Fyfe-Johnson et al., 2021; Sando et al., 2021; Scheersoi, 2021;

Taylor and Kuo, 2009). Extended exposure to natural environments is effective: differences are evident, especially for children with special care needs (Miklitz, 2019). In the systematic meta-analysis *Nature and Children's Health* by Fyfe-Johnson et al. (2021), the relationship between contact with nature and children's health was examined in 296 studies showing positive effects on children's physical, cognitive, behavioural and mental health. However, they point out that the heterogeneity of the studies and a moderate to high risk of selection bias may affect the validity of the results. Hunziker et al. (2012) were able to show that the connection between experiencing nature and health is initiated in early childhood. Those who had the opportunity to experience nature as a child can use this as a resource for the rest of their lives (Milojevic et al., 2021; Pensini et al., 2016). At this point, it should also be noted that experience in forests, in nature generally, is essential for promoting environmental awareness and action: Environmental education concepts are based on the assumption that children can only develop an awareness of environmental degradation if they develop an emotional connection to nature. The guiding principle "I am only prepared to protect what I value" illustrates this approach: children who have no experience of nature are unlikely to develop a sensitivity to environmental problems (Pensini et al., 2016).

How can the complexity of the interaction between resilience, well-being and the forest be clearly presented?

The diagram (Figure 1) shows that the four dimensions of subjective well-being can be assigned to the personal and social protective factors of resilience research. The effects of experience the forest, shown by the arrows on the left and right, indicate that both
the dimensions of children's well-being (left column) and (personal and social) resilience factors (right column) can be addressed and positively influenced.

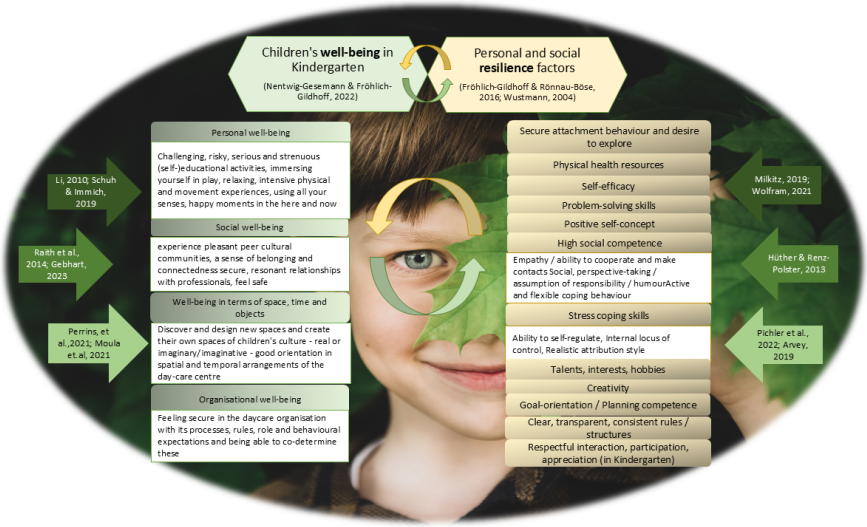

Figure 1

Linking the dimensions of children's well-being with personal and social resilience factors influenced by time spent in the forest (based on Nentwig-Gesemann and Fröhlich Gildhoff, 2022; Fröhlich-Gildhoff and Rönnau-Böse, 2016; Wustmann, 2004)

Conclusions

What are the consequences for early childhood education?

The scientific findings from a remarkable body of evidence clearly indicate that spending time in the forest can make a significant contribution to the holistic development of children. For children up to the age of seven, regular experiences in nature are a valuable opportunity to promote both their physical and mental health as well as their resilience in the long term. Experience of the forest or nature in general have a positive influence on subjective well-being and health (Hartig et al., 2014; Tam 2013; Howell et al., 2011; Mayer et al., 2009).

The positive impact of experiencing forests and nature raises the question of whether alienation from nature has negative psychological and somatic effects, i.e. whether it makes people ill. In the case of children, this is referred to as *nature deficit syndrome*. The term was coined by US author and journalist Richard Louv in his book *Last Child in the Woods* (2005). He uses it to describe the negative effects that a lack of contact with nature can have on the physical, mental, and emotional health of people, especially children. Although *Nature Deficit Syndrome* is not an official medical

diagnosis, it is of immense importance in the discussion about the well-being of people in modern, technological and urbanised societies. It emphasises the need to reintegrate nature more strongly into our everyday lives, and it is also referred to indirectly in other sources (Renz-Polster and Hüther, 2013).

Against this background, it seems particularly important to create opportunities for forest experiences in educational institutions and in everyday family life. In Norway, children now spend between 70% (summer) and 31% (winter) of their kindergarten time in outdoor areas close to nature, and the *forest school approach* has also become established in Denmark, where children spend the majority of their kindergarten time in the forest (Moser and Martinsen, 2010; Williams-Siegfredsen, 2017). In Austria, regular time spent outdoors with children in kindergartens is already a widespread reality. Many institutions have outdoor areas that are close to nature, gardens are visited with the children, and forest days have also become established (Kobler, 2024).

In German-speaking countries, a distinction is made between *classic forest kindergarten* (children spend the entire kindergarten time in the forest, there are protective devices), *integrated forest kindergarten* (children can regularly spend a kindergarten day in the forest approximately once a week and *special forms* (e.g., farm kindergartens) (Bancalari, 2021). Forest kindergarten initiatives are being implemented in all federal states. With regard to the concrete use of forests as an educational space, it can be stated, based on a current internet search, that there are now 79 groups throughout Austria, 64 of which are forest children's groups and 15 nature children's groups (Branco, 2023). The number of these integrated forest kindergartens is thought to be significantly higher, although there are no exact figures for Austria either (Bundesforschungszentrum für Wald, 2021; Waldpädagogik Austria, 2025). During the *WoLeWa* project, we were able to determine that 22.4% of kindergartens in the federal state of Salzburg regularly (approximately once a week) offer children forest experiences across all districts, and a further 28.8% offer nature experiences in outdoor spaces at the same frequency. This amounts to a total of 48.3 % and thus almost half of all institutions. In contrast, the integrated forest kindergartens in Salzburg City amount to 18.4%, and 2.6% of the institutions regularly implement nature days; in total, 21% of children in municipal institutions spend a kindergarten day outdoors once a week. According to the respondents, the accessibility and availability of suitable outdoor areas play a major role.

The fact that the forest is increasingly being integrated into early childhood education practice as an educational space that promotes health and development is

encouraging and is based on the research findings mentioned above. However, it is not yet clear whether, from their own perspective, children feel more, less, or equally comfortable in the forest, compared to their feelings in the group classroom. It is also unclear what effects regular visits to the forest with children have on educators. For this reason, the *WoLeWa* project is dedicated, among other things, to the question of whether the subjective well-being of children and professionals can be addressed through regular forest experiences. The corresponding results are expected in 2026.

References

Ahnert, L. (2019). *Frühe Bindung. Entstehung und Entwicklung* (4th ed.). Reinhardt.

Andresen, S., and Viernickel, S. (2022). Kindliches Wohlbefinden – Child Wellbeing. *Frühe Bildung, 11*(3), 105–106. https://doi.org/10.1026/2191-9186/a000580

Annerstedt, M., Östergren, P. O., Björk, J., Währborg, P., and Grahn, P. (2013). Inducing physiological stress recovery with sounds of nature in a virtual reality forest. *Physiology & Behavior, 118*, 240–250. https://doi.org/10.1016/j.physbeh.2013.05.004

Arnold, M., Schilbach, M., and Rigotti, T. (2023). Paradigmen der psychologischen Resilienzforschung: Eine kleine Inventur und ein Ausblick. *Psychologische Rundschau*, *74*(3), 154–165. https://doi.–org/10.1026/0033-3042/a000627

Arvay, C. G. (2019). *Mit den Bäumen wachsen wir in den Himmel: Autistische Kinder mit der Heilkraft des Waldes fördern* (1st ed.). Goldmann.

Asselmann, E. (2021). Gesundheitsbezogene Resilienz. In R. Haring (ed.), *Gesundheitswissenschaften* (pp. 295–304). Springer Reference Pflege – Therapie – Gesundheit. https://doi.org/10.1007/9–78-3-662-54179-1_26-1

Bancalari, K. (2021): Waldkindergärten in Österreich. Elementare Bildung im Wald. Wien: Bundesforschungszentrum für Wald.

Ben-Arieh, A. (2008). Indicators and indices of children's wellbeing: Towards a more policy-oriented perspective. *European Journal of Education*, *43*(1), 37–50. https://doi.org/10.1111/j.1465-3435.2007.00332.x

Bradshaw, J., Hoelscher, P., and Richardson, D. (2007). An international comparison of child wellbeing: The role of economic resources, parenting, and policies. *Children and Youth Services Review, 29*(2), 150–157. https://doi.org/10.1016/j.childyouth.2006.05.011

Bradshaw, J., and Richardson, D. (2009). An index of child wellbeing in Europe. *Child Indicators Research, 2*, 319–351. https://doi.org/10.1007/s12187-009-9037-7

Branco, A. (2023). *Wald- und Naturkindergruppen in Österreich. Ergebnisse der Internetrecherche.* https://www.waldpaedagogik.at/fileadmin/user_upload/Praesentation_Stakeholdersitzung_Branco.pdf

Bundesforschungszentrum für Wald. (2021). *Waldkindergärten: Bildung und Betreuung in der Natur.* https://www.bfw.gv.at

Chawla, L. (2007). Childhood experiences associated with care for the natural world: A theoretical framework for empirical research. *Children, Youth and Environments, 17*(4), 144–170.

DAK-Gesundheit. (2024). *Präventionsradar 2024: Gesundheit und Wohlbefinden von Kindern und Jugendlichen in Deutschland.* https://www.dak.de/dak/unternehmen/reporte-forschung/praeventionsra–dar-2024_77378

Denham, S. A., Bassett, H. H., and Wyatt, T. (2012). The socialization of emotional competence. In A. A. Vangelisti, and D. Perlman (eds.)**,** *The Cambridge handbook of personal relationships* (pp. 637–651). Cambridge University Press. https://doi.org/10.1017/CBO9780511606632.036

Evans, B. T. R., Murris, R., and Dew, K. (2018). The impact of social support on resilience in the face of stress. *International Journal of Environmental Research and Public Health, 15*(4), Article 789. https://doi.org/10.xxxx/ijerph.2018.789

Fischer, U. (2010). *Bindungs-Explorations-Balance.* Retrieved May 26, 2013, from http://www.inklusion-online.net/index.php/inklusion/article/view/42/49

Fröhlich-Gildhoff, K. and Rönnau-Böse, M. (2016). Resilienz im Kita-Alltag. Herder

Fyfe-Johnson, A. L., Hazlehurst, M. F., Perrins, S. P., Bratman, G. N., Thomas, R., Garrett, K. A., Hafferty, K. R., Cullaz, T. M., Marcuse, E. K., and Tandon, P. S. (2021). Nature and children's health: A systematic review. *Pediatrics*, *148*(4), 72–94. https://doi.org/10.1542/pe–ds.2020-049155

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ART FOR WELL-BEING: INSIGHTS INTO EARLY CHILDHOOD EDUCATION IN SLOVENIA AND ICELAND

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In this article, we explore how arts education promotes well-being in preschool education by comparing the views of Slovenian and Icelandic educators and students. In Slovenia, a structured curriculum approach predominates, while in Iceland creativity, learning in nature and finding solutions in an open learning environment are emphasised. Both approaches promote emotional expression, ethical awareness, and sustainable education. We highlight the challenges in teacher training and emphasise the need for training and inclusion of pedagogical practises in the arts in relation to health and well-being, while also demonstrating the importance of the arts experience for the health and well-being of both educators and preschool students.

Keywords:
cultural and arts education, health, preschool education, well-being, preschool teacher education.

Umetnost za dobro počutje: vpogledi v predšolsko vzgojo v Sloveniji in na Islandiji

V članku preučujemo, kako umetnostna vzgoja spodbuja dobro počutje v predšolskem izobraževanju, pri čemer primerjamo poglede slovenskih in islandskih vzgojiteljev ter študentov. V Sloveniji prevladuje strukturiran kurikularni pristop, medtem ko Islandija poudarja ustvarjalnost, učenje v naravi in iskanje rešitev v odprtem učnem okolju. Oba pristopa podpirata čustveno izražanje, etično ozaveščenost in trajnostno izobraževanje. Izpostavimo izzive v izobraževanju učiteljev in poudarimo potrebo po izobraževanju in vključevanju pedagoških praks s področja umetnosti v povezavi z zdravjem in dobrim počutjem, hkrati pa pokažemo na pomen izkušnje z umetnostjo za zdravje in dobro počutje pri vzgojiteljih in študentih predšolske vzgoje.

Ključne besede:
kulturno-umetnostna vzgoja, zdravje, predšolska vzgoja, dobro počutje, izobraževanje predšolskih učiteljev.

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Introduction

Health and well-being in early childhood education include emotional, social, and cognitive dimensions, extending beyond physical health. Preschools play a key role in fostering holistic well-being, and arts education supports this through self-expression, creativity, and social integration.

A holistic view challenges the traditional mind–body divide (Duncan, 2000; Gorham, 1994). WHO (2021, 2022) frames well-being as emerging from environmental interaction, with illness as ecological imbalance. Arts participation contributes significantly to a fulfilling life, especially in early years.

Global research supports the role of the arts in education. WHO (2019) and Fancourt and Finn (2019) show that the arts enhance creativity, emotional expression, resilience, and healthy lifestyles. UNESCO (2022) highlights the arts' role in mental health and social cohesion during crises. OECD studies (OECD, 2019; Siciliani et al., 2013; Winner et al., 2013) link arts education to critical thinking and social skills, stressing the intrinsic value of the arts. The UNESCO Framework (2024) positions the arts as essential to sustainability, justice, and lifelong learning.

Links between the arts and health policy are increasingly recognised. WHO (2021, 2022) promotes cross-sector well-being strategies, and the UN 2030 Agenda highlights quality education, sustainability, and social justice areas where the arts play a key role.

In this context, the present study examines how arts and well-being are integrated into early childhood education in Slovenia and Iceland. It explores three areas: (1) arts engagement and well-being, (2) policy influence, and (3) teacher education.

The Meaning of Art for Health and Well-being

Art can be seen as a communicative experience, where the creator's inner experiences take form in a creative expression that invites response. This process involves both a personal, often vulnerable engagement with a phenomenon, and an active, emotional—sometimes socially critical—reaction from the viewer or listener. As McCarthy et al. (2004, p. 42) note, "The process of experiencing (is) parallel to the process of creating, since individual experience is immediate and private, and interpretation is an attempt to express this intense inner experience to others."

Art communicates through personal experience, engaging creators and audiences in intense emotional and cognitive processes. Individuals explore their feelings, values and self-identity through creation and interpretation, fostering dialogue and self-

reflection. These processes are essential for health and well-being (Sullivan and McCarthy, 2007).

Art, Imagination and Existential Reflection

Dissanayake (2015) emphasizes that art enables reflection on life, existence, and our relationship with the world. It fosters introspection, helping individuals confront the unknown and situate themselves within a broader context. Art conveys meaningful life experiences through diverse expressive forms.

As a lived experience, art involves perceptual, emotional, and bodily engagement with events performed, depicted, or enacted. Kearney (2021) highlights art's unique blend of distance and proximity, enabling reflection even on trauma. Through images, stories, and expression, art offers a safe emotional space, facilitating the embodied knowledge (Merleau-Ponty, 2006) and catharsis crucial for emotional balance.

Art connects us to our own and others' experiences, nurturing empathy and alternative perspectives. Nussbaum (1997) argues that engaging with art fosters respect for others' inner worlds, which is essential to understanding shared humanity.

Through compassionate imagination, individuals identify relational patterns, overcome stereotypes, and sensitively engage with diverse human experiences. This reflection on prosocial action reminds us of our shared vulnerability and potential for similar fates. Kroflič (2007) describes compassionate imagination as awakening virtue and overcoming personal fears and insecurities. He argues that its value today lies in fostering empathy for marginalised individuals in an increasingly diverse world.

Promoting Social Sensitivity and Inclusion through the Arts

One crucial aspect of art is its role in fostering communication. Art is an authentic way to connect with others and the world, as it enables individuals to express and understand existential truths (Kroflič, 2022). These interactions vary widely in language and form, expanding the communicative space and fostering dialogue across groups. Art encourages social participation, particularly for marginalised communities. Studies show that participatory art practices, such as group projects and public interventions, enhance social capital and connectedness (Putnam, 2000), while artistic engagement fosters social skills and community belonging (Matarasso, 1997, Županić Benić, 2016).

Art can also reflect alienation, reinforcing social divides, yet it promotes dialogue and inclusion. Historically, it has often depicted stereotypes of 'otherness' (Kroflič, 2017), but in recent decades, many works have emphasised respect for cultural and identity differences. Vulnerable groups, including migrants and those from disadvantaged backgrounds, use art to share their experiences and gain recognition. This engagement fosters compassionate responses, acknowledging shared suffering (Nussbaum, 1997). Ultimately, art is a transformative force that helps individuals understand and reshape social realities (Freire, 2000), promoting acceptance and well-being.

The Arts, Beauty, and Personal Fulfilment

The arts stimulate curiosity, wonder and an appreciation for the diverse meanings and experiences associated with beauty. Whether as creators or observers, we are invited to explore holistically, activating our senses, emotions, and intellect in the pursuit of personal fulfilment. Aristotle (2012) describes beauty as a natural source of human enjoyment, enhancing harmony between sense, reason, and emotion.

Public health research supports this view, linking artistic engagement to positive emotions such as joy, curiosity, and contentment—key elements of well-being. As Cameron et al. (2013) observe, arts projects promote learning, self-expression, and empathy, while building self-esteem: "People develop skills and learn about things in new and varied ways through arts projects. Art is a powerful means of communication and self-expression, and participation in art builds self-esteem and empathy" (p. 54).

The Role of the Arts in Preschools

Art plays a vital role in helping preschool children's express emotions, thoughts and beliefs as their verbal and critical thinking skills emerge. Through creative activities, they explore, collaborate, and communicate across artistic forms. Research confirms the value of early arts education, linking it to increased emotional awareness, communication, and meaning making (Hommel and Kaimal, 2024; Kroflič et al., 2010; Malaguzzi, 1998; Wright, 2015). Chapman and O'Gorman (2022) add that art fosters sustainability awareness and global citizenship, while nature-based art builds agency, confidence, and environmental connection (Walshe et al., 2020).

The arts also support prosocial and moral development. Watt and Frydenberg (2024) report fewer behavioural issues and more empathy in preschool art projects.

Case study findings from Kindergarten Vodmat show that art, within an inductive educational model, strengthens social behaviour and reduces internalisation problems (Štirn Janota, 2015; Kroflič and Smrtnik-Virtulič, 2015).

The Slovenian Cultural Enrichment of Young Children project demonstrates how music, movement, storytelling, and visual arts help children form friendships, resolve conflicts and express emotions (Kroflič, 2010; Štirn Janota and Jug, 2010). Artistic expression enhances problem-solving and emotional well-being by helping children interpret and navigate their world.

Art, Creativity, and Well-being in Slovenian and Icelandic Preschool Curricula

The Slovenian Preschool Curriculum (Bahovec et al., 1999) links the arts to health and well-being, highlighting artistic experiences as key to children's balanced development and emotional expression. However, less attention is given to the imaginative, cathartic, and socially inclusive potential of the arts.

The Icelandic National Curriculum Guide (Ministry of Education, Science and Culture, 2012) frames creativity broadly—as central to play, problem-solving, self-expression and environmental awareness—rather than focusing solely on the arts. Supplements on Creativity, Health and Well-being, and Sustainability support a play-based, exploratory approach that nurtures well-being, social competence, and sustainability.

Arts education is significant in Icelandic preschools, fostering creativity and emotional and social development (Bamford, 2009). Yet, inconsistent implementation and limited teacher training present challenges. While art is promoted as a key learning tool, more structured pedagogical support is needed.

Table 1
Comparing the Slovenian and Icelandic Approaches to Arts and Creativity

Aspect	Slovenian Curriculum	Icelandic Curriculum
Main Focus	The arts, visual arts, music, dance, and drama are treated as distinct disciplines essential to children's holistic development and aesthetic education. Each involves specific materials, techniques, and expressive forms. Art is valued both as a developmental tool and as a means of supporting identity, imagination, and emotional growth.	'Creativity and culture' are presented as an interdisciplinary field spanning all learning areas, emphasising expression, cultural appreciation, and innovation. Rather than treating the arts as separate subjects, creativity is embedded across the learning environment as central to child development.

Role in Development	The curriculum highlights that the arts play a vital role in shaping a child's identity and aesthetic sensibility, offering unique modes of learning and expression.	Creativity plays a key role in supporting play-based exploration, social competence, emotional expression, and the development of problem-solving skills.
Well-being Connection	Well-being is closely tied to mental health, and self-expression is a core principle of early childhood education, encompassing physical, emotional, social, and psychological dimensions. The curriculum highlights the need for safe, supportive environments that build self-reliance and positive peer and adult relationships.	Well-being is embedded across the curriculum and closely tied to creativity, play, sustainability, and holistic learning. The preschool environment is expected to promote safety, emotional security and meaningful connections that support children's growth and resilience.
Social Inclusion	Social inclusion is addressed indirectly through principles such as equal opportunity, respect for diversity, multiculturalism, democracy, and pluralism.	Social inclusion is explicitly promoted through collaborative creativity, shared projects, and an emphasis on environmental and social responsibility.

As shown in Table 1, the Slovenian curriculum treats the arts as structured disciplines with intrinsic educational value, whereas the Icelandic curriculum frames creativity as broad, interdisciplinary, and open-ended, emphasising social interaction, sustainability, and play-based learning across domains.

On the Role of Educators

For the arts to support preschool children's holistic development and well-being, educators must first understand and personally experience their significance (Štirn Janota, 2015; Štirn Janota and Štirn, 2022). Only then can they design arts education that enables children to engage in a dialogic artistic experience, observing, interpreting, and responding in ways that integrate emotional, social, and cognitive dimensions.

Artistic expression should offer children a deep sense of fulfilment, fostering self-knowledge and moral awareness. This goes beyond well-being as comfort, linking instead to the idea of a good life (Koopman, 2005). According to Koopman, children should engage in artistic activities that refine perception, stimulate reflection, and expose them to varied forms—allowing full, moment-to-moment participation in receiving, creating, or performing art (p. 91).

Methodology

This study examines how arts engagement relates to well-being and sustainability in early childhood education, drawing on the perspectives of preschool teachers and early education students in Iceland and Slovenia. The study has two aims: to compare how the arts are embedded in each country's national preschool curriculum, and to explore how participants perceive the links between the arts, well-being, and sustainability.

Three research questions guide the study: How are the arts positioned within the national preschool curricula of Slovenia and Iceland? How do preschool teachers and students in both countries perceive the role of the arts in relation to well-being and sustainability?

To what extent do educators and students see a need for further training in this area?

Participants and Sampling

A total of 374 individuals participated in the study, comprising both preschool teachers and early education students from Iceland and Slovenia. This distribution reflects the diversity of experience and educational background across both groups. Table 2 presents the total number of respondents from Iceland and Slovenia, categorised as either teachers or students. The data show the distribution of participants across the four groups, providing context for subsequent analyses.

Table 2
Distribution of Participants by Country and Role

	Slovenia	Iceland	Total
Teachers	30	158	188
Students	106	80	186
Total	136	238	374

Data Collection

A cross-sectional survey was used for data collection, combining both quantitative and qualitative elements. The questionnaire was distributed digitally through university mailing lists, social media platforms (including a Facebook group for Icelandic preschool teachers), and direct communication with educational institutions. The same version of the questionnaire was used in both countries, allowing for consistent comparison. Originally developed in English, the survey was

translated into Icelandic and Slovenian, and a back-translation process was applied to ensure conceptual and linguistic equivalence across all three language versions.

Survey Structure

The questionnaire had two sections. The first assessed participants' attitudes toward the arts and well-being using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Statements covered enjoyment of cultural activities, the role of the arts in understanding society, impact on mood and stress, creative expression as coping with stress, and links to physical activity.

The second section included open-ended questions on the role of the arts and well-being in early childhood curricula. Participants reflected on the arts–health connection, the need for such content in university programmes, and their personal views on the value of the arts.

Data Analysis

Quantitative data were analysed using descriptive statistics to identify patterns in responses across participant groups and national contexts. Qualitative data from the open-ended responses were subjected to thematic analysis (Miles and Huberman, 1994), allowing for the identification of recurring themes and nuanced insights into how the arts are perceived in relation to health, pedagogy, and sustainability.

Ethical Considerations

All procedures in the study adhered to ethical guidelines for educational research. Participants' anonymity and confidentiality were preserved throughout the study, and all data were stored securely.

Results

Engagement with Arts and Cultural Activities

The data show clear differences in participation in artistic and cultural activities between teachers and students in Iceland and Slovenia. Slovenian teachers (49%) reported the highest engagement, reflecting how art is deeply embedded in both their work and personal lives. As one noted, "Art is not an extra but a necessity."

By contrast, only 31% of Icelandic teachers reported strong engagement, though their responses emphasised informal, nature-based approaches.

One explained, "We use nature as our canvas. Children paint with water, build with found materials, and learn through play."

University students in both countries were less engaged. Among Icelandic students, just 17% strongly agreed with the statements, suggesting art is a low priority in their training. "I enjoy art," said one, "but it feels secondary. There's no structured encouragement." Slovenian students showed more uncertainty (36% neutral), owing to time constraints or cultural expectations. As one reflected, "I know art matters, but I don't yet see how it fits into my future profession."

These findings indicate that professional experience supports artistic engagement, while students often lack opportunities or motivation to participate.

Art as a Tool for Emotional Expression and Stress Management

Half the Slovenian teachers (49%) strongly agreed that art supports emotional processing, underscoring its structured role in both self-reflection and pedagogy. As one teacher noted, "Art provides relief from emotional distress for both educators and children. It allows us to express what words sometimes cannot."

Icelandic teachers (35%) also agreed with integrating the arts into their personal and professional well-being. One noted, "I turn to painting when I need to unwind. It helps me reconnect with myself."

Students had a lower agreement rate, with Icelandic students (34%) being the most neutral, indicating that many have not yet developed a conscious connection between art and emotional well-being. One student admitted, "I see art as entertainment rather than a tool for well-being. Maybe, that will change with experience."

Art as a Tool for Coping with Stress

Teachers and students in both countries differed notably in how they viewed art as a means of emotional expression. While most teachers recognised its value in processing emotions, students were less certain.

Slovenian teachers (46%) showed the strongest agreement that art supports stress management, suggesting its role as an established form of self-care. "After a challenging day, I turn to music and drawing, it helps me focus," one shared.

Icelandic teachers (38%) also used art to manage stress, though often in more informal ways. As one explained, "There's an intuitive link between creativity and stress relief, but it's not something we explicitly teach."

Students were less confident. Among Slovenian students, 30% were neutral, reflecting limited experience with art as a coping tool. One noted, "I never considered using art this way. Maybe, I should try." In contrast, 29% of Icelandic students reported higher engagement, linked to the cultural focus on creative expression in early childhood settings.

Need for Additional Training in Art and Well-being

Both teachers and students in Iceland and Slovenia expressed a strong interest in further training related to art and well-being. However, their priorities varied by group and country. Table 3 presents the percentage of participants in each group who agreed (selected 'agree' or 'strongly agree') that they would benefit from additional training in specific areas of arts-based education.

Table 3

Need for Additional Training in Art and Well-being

Training Needed	Icelandic Teachers (%)	Slovenian Teachers (%)	Icelandic Students (%)	Slovenian Students (%)
Using art as a teaching tool	67%	72%	85%	88%
Training in specific art techniques	52%	60%	69%	77%
Movement-based creative training	45%	58%	64%	68%

Overall, students reported the greatest need for training, with 88% of Slovenian students and 85% of Icelandic students indicating a desire to learn more about integrating art into educational practice. As one Slovenian student reflected, "We learn about art but don't learn how to use it effectively in education. That needs to change."

Summary of Main Differences

To synthesise the key findings, Table 4 presents a comparative overview of engagement levels, perceptions of art's role in well-being, and the demand for further training across all respondent groups.

Table 4
Summary of Main Differences in Art Engagement and Perceptions

Category	Icelandic Teachers	Slovenian Teachers	Icelandic Students	Slovenian Students
Engagement with art	Informal use of art, often linked to outdoor play and nature-based experiences; spontaneous and child-led	Formal and structured use of art, typically teacher-led with planned goals and outcomes	Lowest engagement: art is seldom used in daily routines	Moderate engagement; art present but with limited variation
Art as a tool for emotional expression and coping with distress	Moderate agreement (35%); some value art for emotional processing	Highest agreement (49%); art seen as essential for emotional support	High neutrality (34%); uncertainty about using art for coping	Moderate engagement; mixed views on emotional value
Art for coping with stress	38% reported moderate agreement; art is seen as helpful but used inconsistently	46% showed strong agreement; art clearly viewed as beneficial	29% indicated engagement, but not widespread	30% remained neutral; many unsure of the connection
Need for training	Focus on advanced, methodologically oriented training	Interest in structured, curriculum-linked programmes	High demand for basic training and tools (85%)	Strong demand for deeper integration and skills development (88%)

These findings reveal notable differences between teachers and students in both countries regarding their engagement with and understanding of the arts in relation to well-being and education. Teachers, particularly in Slovenia, consistently reported higher levels of involvement and a stronger appreciation of art's benefits. In contrast, students—especially those in Iceland—expressed greater uncertainty and lower levels of engagement. Despite these differences, all groups highlighted the need for additional training. While students called for more foundational guidance, teachers sought more advanced, practice-oriented approaches.

Discussion

Art plays a critical role in early childhood education, supporting well-being, social connection, and ethical development. While Slovenia and Iceland demonstrate different approaches—structured arts education versus informal, nature-based creativity—both highlight the importance of artistic engagement.

The Role of Art in Early Childhood Well-being and Education

This study underscores the vital role of the arts in promoting well-being, resilience, and social connectedness in early childhood education. The findings align with international frameworks (WHO, UNESCO, OECD), illustrating how artistic engagement can support emotional regulation, interpersonal relationships, and stress management in young children.

Importantly, the study reveals clear cross-national differences in how the arts are integrated into early childhood settings, shaped by each country's unique educational traditions, cultural norms, and historical practices. These insights carry significant implications for teacher education and pedagogy, highlighting the importance of culturally responsive approaches when developing and implementing arts-based practices.

Art as a Path to Well-being

Art is essential for self-expression and meaning making (Dissanayake, 2000; McCarthy et al., 2004; Nussbaum, 1997). Our survey respondents acknowledged its role in emotional regulation, self-expression, and social interaction, though students expressed less confidence in these links than experienced teachers did, suggesting that understanding deepens with practice.

Engaging with art fosters self-reflection and emotional exploration (Merleau-Ponty, 2006; Nussbaum, 1997), allowing individuals to confront complexities and explore ethical questions (Kroflič, 2010). Pedagogical approaches vary: Slovenian teachers implement structured, planned artistic activities, whereas Icelandic teachers favour informal, nature-based creativity. These differences prompt discussion on the significance of deep artistic engagement and its integration into teacher education.

Intercultural Approaches to the Arts in Education

Slovenian preschool teachers integrate art as a structured curricular component, while Icelandic teachers adopt a more open-ended, child-led approach, often inspired by outdoor environments. These contrasting methods reflect broader educational philosophies—Slovenia emphasizes structured arts education, while Iceland prioritizes experiential learning (Bamford, 2009). Slovenia's approach aligns with UNESCO's (2024) Framework for Cultural and Arts Education, promoting accessibility and lifelong artistic learning. In contrast, Iceland's process-oriented approach connects with research on embodied creativity, which emphasizes learning

through the body, movement, and sensory engagement as integral to artistic exploration (Vecchi, 2010). Creativity is thus deeply rooted in physical interaction with materials, space, and others. A balanced integration of structured and informal arts engagement could enhance teacher training and deepen both children's and students' involvement.

Slovenia's 2025 curriculum reform maintains art as a distinct domain, emphasizing artistic expression and participation, while incorporating play and the arts to foster well-being, social competence, and emotional expression.

The Arts as a Social and Ethical Practice

Beyond individual well-being, the arts enhance social connection and ethical awareness. Studies indicate that artistic engagement fosters empathy, prosocial behaviours, and a sense of belonging (Matarasso, 1997; Nussbaum, 1997; Putnam, 2000, Županić Benić, 2016). Slovenian teachers who engaged in museum visits, performances and collaborative art projects emphasised these social dimensions.

In Iceland, arts integration occurs through storytelling, movement, and play-based interactions, reinforcing research that links process-oriented art with agency and social cohesion (Walshe et al., 2020). While shaped by different cultural traditions, both the Icelandic and Slovenian contexts emphasise the arts as central to fostering ethical sensibilities, relational awareness, and a sense of community in early childhood education.

Challenges in Teacher Training

Many teachers and students report limited training in arts-based pedagogy, despite acknowledging its benefits. Students, in particular, express uncertainty about the link between the arts and well-being, revealing gaps in teacher education (UNESCO, 2024). Effective engagement requires direct, authentic experiences with the arts—for students, educators, and children alike (Štirn Janota, 2015).

Teacher preparation should integrate both learning about the arts and learning through them, including first-person artistic encounters (Kroflič, 2022; Štirn Janota and Štirn, 2024), and nature-based approaches that emphasise child participation. As Koopman (2005) argues, the value of art lies in active engagement rather than passive evaluation. Holistic, experiential models could better prepare educators for arts-based and cultural pedagogy.

Adapting teacher training to national contexts would further enhance its impact. In Iceland, more structured arts training could raise awareness of its role in well-being.

Slovenia's current reforms offer an opportunity to embed interdisciplinary modules linking art, health, and well-being into teacher education, particularly in early childhood programs.

The Arts, Sustainability and Social Justice

This study contributes to discussions on the role of arts education in sustainability and social justice. UNESCO (2024) emphasises the importance of integrating the arts into sustainability initiatives, recognising their capacity to foster critical thinking on social and environmental issues. Participants in our study associated artistic engagement with emotional resilience, social belonging, and ethical awareness; however, student feedback suggests that teacher education could further emphasise the arts' role in sustainability.

Conclusion

This study reaffirms the essential role of the arts in well-being, meaning making, and social cohesion in preschool education. Strengthening arts education in teacher training is crucial to ensure that future educators recognize its potential for fostering well-being, sustainability, and social justice.

Future research should explore how different pedagogical approaches to the arts, ranging from structured, curriculum-based models to open-ended, exploratory practices, impact children's development. It should also examine whether combining these approaches enhances well-being and participation for both educators and children. While international frameworks emphasize the importance of linking art, mental health, and sustainability holistically, most research has focused on school-aged children, leaving a gap in understanding these connections in early childhood education.

To fully realize the benefits of arts education, it must be embedded from the earliest years. Providing educators with systemic opportunities to engage with the arts and receive training in mental health, social-emotional competences, and pedagogical applications of art is essential. Our findings highlight this as a critical area for development.

References

Aristotle. (2012). *Poetika*. Beletrina.

Bamford, A. (2009). *Arts and cultural education in Iceland*. Iceland Ministry of Education, Science, and Culture.https://www.stjornarradid.is/media/menntamalaraduneytimedia/media/ritogskyrslur/arts_and_culture_anne_bamford.pdf

Bahovec, E. D., Bregar, K. G., Čas, M., Domicelj, M., Saje-Hribar, N., Japelj, B., ... and Kastelic, L. (1999). *Kurikulum za vrtce*. Slovenian Ministry of Education, Science, and Sport.

Cameron, M., Crane, N., Ings, R., and Taylor, K. (2013). Promoting well-being through creativity: How arts and public health can learn from each other. *Perspectives in Public Health*, *133*(1), 52–59.

Carney, S. (2022). *Reimagining our futures together: A new social contract for education*. UNESCO.

Chapman, S. N., and O'Gorman, L. (2022). Transforming learning environments in early childhood contexts through the arts: Responding to the United Nations Sustainable Development Goals. *International Journal of Early Childhood*, *54*(1), 33–50.

Dissanayake, E. (2015). *What is art for?* University of Washington Press.

Duncan, G. (2000). Mind-body dualism and the biopsychosocial model of pain: What did Descartes really say? *Journal of Medicine and Philosophy*, *25*(4), 485–513.

Fancourt, D., and Finn, S. (2019). *What is the evidence on the role of the arts in improving health and well-being? A scoping review*. World Health Organization, Regional Office for Europe.

Freire, P. (2000). *Pedagogy of the oppressed*. Bloomsbury.

Gorham, G. (1994). Mind-body dualism and the Harvey-Descartes controversy. *Journal of the History of Ideas*, *55*(2), 211–234.

Hommel, S., and Kaimal, G. (2024). *Arts-based approaches to promote mental health and well-being: Supporting children and families in conditions of adversity*. Taylor and Francis.

Kearney, R. (2021). *Touch: Recovering our most vital sense*. Columbia University Press.

Koopman, C. (2005). Art as fulfilment: On the justification of education in the arts. *Journal of Philosophy of Education. 39*(1), 85–97.

Kroflič, R. (2007). Vzgojna vrednost estetske izkušnje. *Sodobna pedagogika, 58*(3), 12–30.

Kroflič, R. (2010). Umetnost kot induktivna vzgojna praksa (Vzgoja preko umetnosti v Vrtcu Vodmat). In *Kulturno žlahtenje najmlajših*. Vrtec Vodmat, 24–39.

Kroflič, R. (2017). Pedagoški pomen zgodbe. *Sodobna pedagogika, 68*(1), 10–31.

Kroflič, R. (2022). Vzgoja z umetnostjo in prvoosebna umetniška izkušnja kot ključni sestavini sodobne vzgoje in izobraževanja. In: Kroflič, R., Rutar, S., and Borota, B. (Eds.). *Umetnost v vzgoji v vrtcih in šolah – Projekt SKUM*. Univerza na Primorskem, 19–37.

Kroflič, R., Koren, D. Š., Janota, P. Š., and Došler, A. J. (Eds.). (2010). *Kulturno žlahtenje najmlajših: Razvoj identitete otrok v prostoru in času preko raznovrstnih umetniških dejavnosti*. Vrtec Vodmat.

Kroflic, R., and Smrtnik Vitulic, H. (2015). The effects of the comprehensive inductive educational approach on the social behaviour of preschool children in kindergarten. *CEPS Journal*, *5*(1), 53–69.

Malaguzzi, L. (1998). History, ideas, and basic philosophy (an interview with Lella Gandini). In C. Edwards, L. Gandini, and G. Forman (Eds). *The hundred languages of children* (pp. 27–72). Ablex.

Matarasso, F. (1997). *Use or ornament? The social impact of participation in the arts*. Comedia.

McCarthy, K. F., Ondaatje, E. H., Zakaras, L., and Brooks, A. (2004). *Gifts of the muse: Reframing the debate about the benefits of the arts*. Rand Corporation.

Merlau-Ponty, M. (2006). *Fenomenologija zaznave*. Beletrina.

Miles, M. B., and Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. 2nd ed. Sage.

Ministry of Education, Science and Culture. (2012). *The Icelandic national curriculum guide for preschools, compulsory schools, and upper secondary schools: General section*. Ministry of Education, Science and Culture.

Nussbaum, M. C. (1997). *Cultivating humanity: A classical defense of reform in liberal education*. Harvard University Press.

OECD. (2019). An OECD Learning Framework 2030. *The Future of Education and Labor*, 23–35.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster.

Siciliani, L., Borowitz, M., and Moran, V. (Eds.). (2013). *OECD health policy studies: Waiting time policies in the health sector, what works?* OECD Publishing. https://www.oecd.org/content/dam/oecd–/en/publications/reports/2013/02/waiting-time-policies-in-the-health-sector_g1g1ed26/9789264179080-en.pdf

Štirn Janota, P. (2015). The inductive approach on the path from prosocial to ethical conduct- A case study. *Sodobna Pedagogika*, *66*(1), 46–68.

Štirn Janota P., and Jug, A. (2010). Predšolska vzgoja v dialogu z umetnostjo. In *Kulturno žlahtenje najmlajših*. Vrtec Vodmat, 40–52. https://www.vrtecvodmat.si/fupld/398/kulturnozla–htenjenajmlajsih_zaiten.pdf

Štirn Janota, P., and Štirn, D. (2022). Spodbujanje narativnosti v vzgoji in izobraževanju. In *Umetnost v vzgoji v vrtcih in šolah* (eds. Kroflič, R. et al.), 97–119. https://www.researchgate.ne–t/publication/363511850_Spodbujanje_narativnosti_v_vzgoji_in_izobraze vanju

Sullivan, P., and McCarthy, J. (2007). The relationship between self and activity in the context of artists making art. *Mind, Culture, and Activity*, *14*(4), 235–252.

UNESCO Global Report (2022). *Reshaping Policies for Creativity: Addressing Culture as a Global Public Good.* https://www.un-ilibrary.org/content/books/9789210015240

UNESCO. (2024). *A Framework for Culture and Arts Education.* https://www.unesco.org/sites/default–/files/medias/fichiers/2024/02/WCCAE_UNESCO%20Framework_EN_0.pdf

Vecchi, V. (2010). *Art and creativity in Reggio Emilia: Exploring the role and potential of ateliers in early childhood education*. Routledge.

Walshe, N., Lee, E., and Smith, M. J. (2020). Supporting children's well-being with art in nature: Artist pedagogue perceptions. *Journal of Education for Sustainable Development*, *14*(1), 98–112.

Watt, B. A., and Frydenberg, E. (2024). Early childhood education for sustainability: Outcomes for social and emotional learning. *Australasian Journal of Early Childhood*, 18369391241287939 https://journals.sagepub.com/doi/epub/10.1177/18369391241287939

World Health Organization [WHO]. (2019). *Thirteenth general programme of work, 2019–2023: Promote health, keep the world safe, serve the vulnerable* (No. WHO/PRP/18.1). World Health Organization.

WHO. (2021). *The European health report - Taking stock of the health-related Sustainable Development Goals in the COVID-19 era with a focus on leaving no one behind.* https://apps.who–.int/iris/han–dle/10665/352137

WHO. (2022). *Arts and health: Supporting the mental well-being of forcibly displaced people.* https://cdn.who.int/media/docs/librariesprovider2/country-sites/who_arts-and-health-forcibly-displaced-people-(final).pdf?sfvrsn=2800af42_1&download=true

Winner, E., Goldstein, T. R., and Vincent-Lancrin, S. (2013). *Educational research and innovation art for art's sake? The impact of arts Education.* OECD Publishing. https://www.oecd.org/en/–publications/2013/06/art-for-art-s-sake_g1g21e09.html

Wright, S. (2015). *Children, meaning-making and the arts*. Pearson Australia. https://books.google–.si/books?id=xyriBAAAQBAJ

Županić Benić, M. (2016). Findings of Visual Arts Research in Early Childhood and Primary Education. *Journal of Elementary Education*, *9*(4), 55–64 https://journals.um.si/index.php/edu–cation/article/view/341

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SUPPORT FOR AND DEVELOPMENT OF WELL-BEING THROUGH TRANSITIONAL OBJECTS AND RITUALS IN PRIMARY EDUCATION

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Abstract/Izvleček

Well-being is essential for pupils' academic and personal growth. Since schools are central to children's lives, they must provide a safe environment that supports emotional needs. This study explores how primary school teachers use transitional objects and rituals that help children adapt to school and feel secure. Findings reveal that teachers employ these tools intuitively, often without theoretical grounding. Despite their informal use, these practices positively influence pupils' adaptation and the classroom climate. The study underscores the importance of integrating transitional elements into educational practice and calls for enhanced teacher training focused on emotional well-being and its role in early education.

Keywords:
well-being, primary education, transitional object, transitional ritual; transient object.

Ključne besede:
dobrobit učencev, osnovnošolsko izobraževanje, prehodni objekt, prehodni rituali; nadomestni prehodni objekt.

UDK/UDC:
373.3:159.9-053.5

Podpora in razvijanje dobrobiti učencev skozi prehodni objekt ter rituale v osnovnošolskem izobraževanju

Dobro počutje je ključno za učni in osebnostni razvoj učencev. Ker so šole osrednji del otrokovega vsakdana, morajo zagotavljati varno okolje, ki podpira njihove čustvene potrebe. V študiji prikazujemo, kako osnovnošolski učitelji uporabljajo prehodne predmete in rituale, ki otrokom pomagajo pri prilagajanju na šolo in občutku varnosti. Ugotovitve kažejo, da učitelji te elemente uporabljajo intuitivno, pogosto brez teoretičnega ozadja. Kljub neformalni rabi ti pristopi pozitivno vplivajo na na prilagajanje učencev in na klimo v razredu. Poudarjamo pomen vključevanja prehodnih elementov v pedagoško prakso ter potrebo po izboljšanem usposabljanju učiteljev, osredinjenem na čustveno dobrobit učencev in njeno vlogo v zgodnjem izobraževanju.

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Introduction

Well-being and its definition are changing and therefore it is not easy to define this concept. The current conception is holistic; it encompasses social, emotional, physical, spiritual, and cognitive dimensions of an individual's experience and follows philosophical, ethical, psychological, environmental and economic aspects (Ereaut and Whiting, 2008; McCallum and Price, 2015; Mashford-Scott et al., 2012; Spratt, 2015). Subjective well-being is seen as an individual's perception of well-being and satisfaction of needs. This subjective perception includes self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life and personal growth (Ryff, 1989). The link between educational outcomes and well-being has been the subject of research, and studies show a link between well-being and pupils' educational achievement (Evangelou et al., 2009; Durlak et al., 2011; Shoshani and Slone, 2017).

The well-being of pupils is defined as "a sustainable state of positive mood and attitude, resilience, and satisfaction with self, relationships and experiences at school" (Noble et al., 2008, p. 5). Education aims to equip pupils with competences to gradually take responsibility for their own well-being (Frydenberg et al., 2022; Powdthavee and Vignoles, 2008; Shoshani and Slone, 2017). Well-being is reflected in both the curriculum and educational approaches. Studies emphasize the importance of strengthening peer relationships and children's social-emotional development (Durlak et al., 2011; McCallum and Price, 2015; Norwich et al., 2022). Teaching methods like cooperative learning enhance pupils' subjective well-being (Schultz et al., 1987). Research also shows links between well-being and personal identity (Armstrong et al., 2019; Jackson et al., 2020). The teacher plays a vital role in fostering well-being (Koch, 2018; Samdal et al., 1998). A positive school climate promoting equality, inclusion, and respect significantly impacts well-being (Evangelou et al., 2009; Durlak et al., 2011). Here, we understand well-being as a pathway to living a good life. Schools should ensure pupils feel safe, accepted, and supported, especially during the critical transition from pre-primary to primary school. Creating such environments aligns with theories of human needs that highlight safety and belonging as foundations for well-being and learning (Maslow, 1943; McCallum and Price, 2015).

The need for safety and security is one of the most important feelings we need to experience to be able to regulate our behaviour and understanding of the world. This need is particularly pronounced during early childhood, when a sense of safety and belonging is most crucial. The primary source of safety and security is the primary attachment figure, the caring person. In the earliest years this is usually the mother, but as the child grows, parents, siblings, and extended family become sources of security and safety (Winnicott, 1953; Bowlby, 1969; Fonagy and Target, 2003). Thus, there is a natural, evolutionarily determined attachment bond between the child and the attachment person that is always present; only the quality of the security and sense of safety provided is different (Bowlby, 1969).

As children develop, they increasingly experience separations from their primary caregiver, typically the mother, leading to potential separation anxiety and emotional distress (Mahler et al., 1975). To cope with these experiences, children often adopt strategies that involve forming attachments to specific objects, which serve as symbolic bridges between the presence and absence of the caregiver. Winnicott introduced the concept of the transitional object (TO) to describe an item, such as a blanket or stuffed animal, that provides comfort to the child during times of separation, facilitating the transition from dependence to autonomy (Winnicott, 1953). Bowlby further elaborated on this by discussing the attachment object (AO), emphasizing the role of such objects in providing a sense of security (Bowlby, 1969). Winnicott also described transitional ritual (TR), encompassing behaviours and rituals that offer emotional stability and a sense of continuity, similar in function to transitional objects. He also described the evolution in form and function in alignment with the child's developmental stages and emotional needs (Winnicott, 1991), which has been confirmed by recent studies (David and Norberg, 2022; Chang-Kredl et al., 2024; Stevenson, and Winnicott, 2017; Yamaguchi and Moriguchi, 2020). In her study, Busch (2017) distinguishes between primary transitional objects, unique, irreplaceable items, and secondary transitional objects, which are more socially acceptable objects. A child may also use such an object as a secondary TO a collective transitional object. This is a group of items sharing a common feature that sets them apart from others, serving the same emotional function as a singular object (Busch, 2017) (see Table 1).

Table 1
Overview of key terms related to transitional and attachment objects

Abbreviation	Term	Definition
TO	Transitional object	Unique object linked to emotional security during separation
AO	Attachment object	Broader term referring to any emotionally significant object
TR	Transitional ritual	Repetitive act with regulatory emotional function
RTO	Transient object	Replaceable item used for emotional bridging in specific contexts
CTO	Collective transitional object	An object shared by a group of pupils

Figure 1 illustrates the developmental trajectory of transitional objects and rituals, showing how their form and function evolve in response to the child's emotional and psychological needs (David and Norberg, 2022; Chang-Kredl et al., 2024; Stevenson, and Winnicott, 2017; Yamaguchi and Moriguchi, 2020). A primary TO is typically the first object to which a child becomes attached. For children who develop this attachment relationship, the absence of the object is experienced as the same intense frustration as the frustration at the absence of the mother. The child with an attachment to the object needs to have it constantly in their presence or to touch it at any time (Dozier and Ayers, 2021). From approximately two years of age onwards, this primary TO tends to be replaced by a more socially acceptable object, called the secondary TO (Rudmin, 1991; Koch, 2018), like a stuffed toy. Thanks to the TO, the child can better cope with stress and regulate its emotions and behaviour in its presence (Borenstein, 2019; Mahalski et al., 1985). Over time, TOs become part of the child's self-concept. Parallel to objects, children engage with TR, predictable, emotionally significant behaviours such as bedtime routines, which evolve from physical closeness (e.g., rocking) to symbolic proximity (e.g., bedtime reading). In later developmental stages, some individuals adopt TRO; these are intentionally replaceable objects chosen by the individual to temporarily fulfil a specific emotional or symbolic function. These facilitate connections to emotionally significant but physically absent aspects of the self or others, contributing to self-identity and confidence. Research indicates that children develop attachments to TRO even when they have no attachment bond to the TO. This reflects a natural aspect of the developmental process through which children form emotional bonds with people and objects (Dozier and Ayers, 2021).

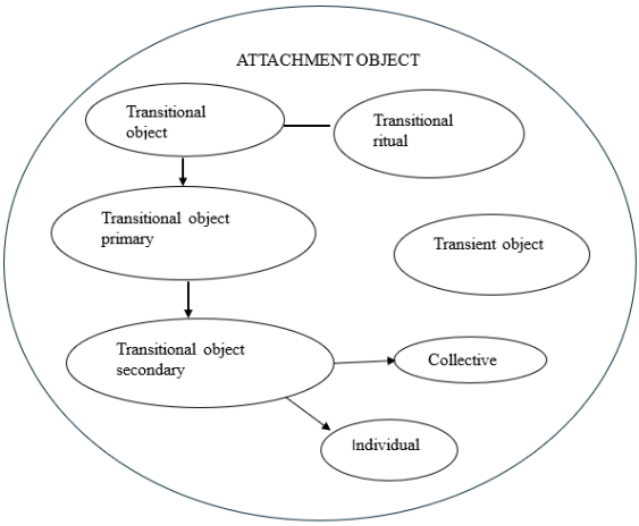

Figure 1
The developmental trajectory of transitional objects and rituals

The interest of researchers in the topic of TO and its importance in human life fluctuates significantly over time, and it is possible to observe in "time waves" from the 1960s (Winnicott, 1953; Bowlby 1969), to the present day. This has also led to an expansion of the notion of the AO into the TO and the RTO (Dozier and Ayers, 2021). Bonding with an AO serves as a crucial strategy for emotional regulation, especially for children exposed to uncertainty within institutional environments. Yet, few contemporary studies provide a systematic analysis of this topic. Ko et al. (2024) examined emotional regulation in university students and found that physical contact with a TO facilitated physiological stress recovery, even though it did not significantly alter their subjective perception of emotional regulation.

Bachar et al. (1997) revealed that TO attachment in childhood correlated with secure attachment styles in adolescence, provided that the object was gradually relinquished in line with developmental needs. In contrast, persistent use in adolescence could indicate emotional distress or relational immaturity. Viberg's (2003) longitudinal study further demonstrated that children using TOs exhibited better language development, independence, and longer breastfeeding duration, reinforcing the perception of TOs as a normative and beneficial developmental aid. Jones (2002) and Fortuna et al. (2014) also showed that TOs help reduce separation anxiety in institutional settings.

In clinical contexts, Mendez (2020) and Scobee (2023) found that TOs mitigate stress and anxiety in children undergoing medical procedures. Borenstein (2019) described how educators practically accommodate these objects in daily routines, recognizing their emotional utility. These empirical findings underscore the role of TOs and RTOs in supporting children's emotional security and adaptive functioning. However, their significance is also well-established in developmental theory. TOs and RTOs are not only tools of emotional self-regulation, but also fundamental mediators of psychological well-being. According to Winnicott (1953), TOs create a "potential space" in which the child can safely navigate the tension between dependency and autonomy. This space fosters emotional continuity and reduces stress, thereby reinforcing a sense of safety. Bowlby's (1969) attachment theory supports this interpretation, suggesting that secure attachment relationships enhance resilience and psychological stability. Children who engage with TOs during stressful transitions (e.g., first school attendance or hospitalization) demonstrate significantly lower anxiety levels and greater adaptive functioning (Jones, 2002; Mendez, 2020; Scobee, 2023). Thus, TOs and RTOs play a key role in establishing the felt sense of security that underpins children's well-being in educational settings.

Methods

This paper presents partial findings from broader research conducted between December 2023 and January 2024. The aim was to explore Czech primary teachers' awareness of transitional and attachment objects and rituals, and how these contribute to pupils' sense of safety and security. The research questions were as follows:

Q1: What are the experiences of teachers in primary education with TO and TR?

Q2: What other resources do teachers use to ensure a safe classroom environment?

A qualitative approach using semi-structured interviews was used. The questions were formulated using existing instruments (Málková, 2023; Třísková, 2021). Interview questions focused on four principal areas: Teachers' experiences with TA and TR; observed use of such objects among pupils; strategies employed to foster emotionally safe classroom environments; teachers' attitudes toward the topic and their perceived personal/professional preparedness. Each interview lasted between 45 and 60 minutes, was conducted at the teacher's workplace, and was recorded using a mobile audio device.

Transcription was performed using automatic speech-to-text software in MS Word, followed by manual corrections. Seven female teachers of 1st to 3rd grade in a Czech city were interviewed using semi-structured interviews and snowball sampling (see Table 2).

Table 2
Characteristics of research sample

Name	Age	Length of practice	Grade
Anna	48	15	3
Beth	25	1	1
Claire	24	3	3
Diana	26	2	1
Eva	62	40	1
Francis	56	32	1
Gina	24	1	3

All participants were informed about the research aims and procedures and gave prior consent. They were assured of confidentiality, anonymity, and the right to withdraw at any time without consequences. No identifying information was linked to transcripts or outputs. The study followed the Code of Ethics of the University of West Bohemia in Pilsen (2024).

The MAXQDA program was used for analysis. Data extracts representing key codes and categories were extracted from the responses. Responses were open coded on an ad hoc basis. Individual codes were then grouped into categories, which were analysed by thematic coding (Miles et al., 2014; Yin, 2018). Categories were then compared and grouped into clusters according to the selected criteria (Table 2) and in relation to the selected research questions.

Table 3
Analytical categories induced in qualitative analysis

Categories	Category Descriptions	Subcodes
Formal education	How respondents obtain information	Undergraduate education; interest of teachers
Non-formal education	How respondents obtain information outside formal education	Self-study; colleagues; participation in online platforms
Cooperation with parents	How parents are involved	Parent as initiator; teacher as initiator

Cooperation with the pupil	How child is involved	Student as initiator; teacher as initiator; incidental findings
Experience	Which and how objects are used in the teacher's practice	The characteristics; the dynamics of the pupil's relationship, the pupil's handling
Use of transitional objects and rituals	How does the teacher use these	Conscious/intuitive; classroom/personal
Opinions of colleagues	How colleagues view the use of these	Positive sharing experience; misunderstanding
Supportive environment	In what material ways do teachers help pupils feel comfortable in the classroom	Toys; personal aids; classroom decoration
Class climate	Didactic techniques used by teachers to help children feel comfortable in the classroom	Relationship with the pupil; activities to develop classroom climate

Results

RQ1: What are the experiences of teachers in primary education with TO and AO and rituals?
All seven respondents reported addressing pupils' emotional needs and working with transitional objects (TOs), mostly through intuitive responses to individual needs. For example, Diana, a first-grade teacher, noted: *"So if I see that a child is, like, addicted to an object or fixated on an object, I definitely work with that.*" The subcode intuitive use appeared in five interviews; conscious use was mentioned by only one teacher. The results showed that teachers lacked theoretical knowledge about TOs and rituals in education. Six had no prior exposure to the concept during their university studies. For instance, Gina said: *"I have not heard it in school, I have not heard it in practice, I have never been told anything about it."* Only Claire was familiar with the term: *"Some teachers at the university mentioned the concept during lectures, but I personally haven't experienced a seminar on this topic (...) that the college taught us how to include these objects or these rituals in teaching."* Claire was the only one to use TOs consciously. The lack of theoretical knowledge may be why the teachers rated themselves as welcoming and allowing children to bring toys from home into the classroom, but at the same time not allowing them to have these toys with them at times when the child's stress level might be increasing. This is summed up by Beth's statement: "*I allow* (having a TO)*, but I don't allow them to use them during class, to keep the students focused."* Paradoxically, the TO is thus not used when it is needed. An exception was Eva, an experienced teacher, who mentioned the positives of the TO for coping with the adaptation period: *"For some of the children, it's a big help right now, they've been getting used to the school environment, to the new class, to the new team, so they've probably managed the transition better*

because of that." Teachers often intuitively respond to pupils' emotional needs, yet lack theoretical background on transitional objects and rituals, limiting their use during critical moments.

The rituals in the classroom subcategory was found in three responses, though without recognition of these as transitional rituals. The use of transitional rituals is also intuitive, with teachers having the experience that these do help children, but this experience is not supported by theoretical knowledge. Eva stated that *"when we have our morning rituals or in some particular subjects, then I really work better in that class."* The teachers had a range of rituals. Typically, it was a Monday welcome circle, or a daily greeting coupled with information about what the day would offer for them. In one case, a ritual for the end of the lesson was mentioned, where there was a summary of what the pupils had learned.

Interest in learning more about TOs as a topic in teacher education appeared in three interviews. Respondents expressed doubts about whether they react correctly to the presence of toys or personal objects, and they also encounter ambivalence on this topic among other colleagues. For all the statements, this is expressed by the opinion of Gina, a novice teacher: "*I would be terribly surprised if the child came with a stuffed toy and I wouldn't really know why he was doing it, and so I would be forbidding him, and actually I wouldn't be familiar at all with the fact that it's somehow related to his mind, with his development and so on, so I might even, like, disturb him."*

RQ2: What other resources do teachers use to ensure a safe classroom environment?

Some teachers use "class mascots" in the classroom; these were referenced in three interviews. This is a character or animal that symbolizes belonging to the class and which the teacher uses to motivate various activities. Beth described its use even when a child is not feeling well: "*When the children are not feeling well, they get the panda* (a symbol of the class), *and they can rest until their parents come for them. They get the panda as comfort, and they can lie on the bench with it."* So, this is about intuitive use of a CTO. However, even this practice is intuitive, where the actions of others have been taken over without deeper analysis. Claire's justification for their use is that *"I have seen the rituals in practice, when we were in college, (...), so one is intuitively inspired and then wants to use it later in practice*." This approach, that an object can help a child to integrate into the classroom collective and perceive himself as part of it, was rejected by one respondent, Gina: *"I try to treat my pupils more maturely already. For me, definitely from third grade onwards, a stuffed animal, or any mascot--no."*

Teachers also strive to establish a personal relationship through frequent communication with the children, sharing their concerns and interests and time spent with them. The relationship with the pupil was mentioned five times. For example, Eva stated, "*I try to give them my time, so that I don't even leave for those little breaks to learn about them."* According to some of the respondents, personal relationships include the possibility of physical touch (stroking), which some younger children may require, but some respondents find physical contact between teacher and child unacceptable. Eva also mentioned a mailbox where the child can write any message at any time either to her or to one of the other children. Class rules were also mentioned to feel secure for the children, and the existence of a "class leader"- the one who takes care of the classroom environment.

Neither the length of teaching experience nor individual parenting experience was a factor in the respondents' attitudes and opinions. The personality setting and level of empathy of the teacher as well as the culture of the school seemed to be the key elements. These two subcodes were each present once. For example, novice teacher Claire found it difficult to bear her colleague's disapproval. "*I have to admit that I had periods where I felt sorry for myself and I needed to vent it, even with maybe the guidance counsellor, to make sure that I was doing it right because I hadn't been in the practice that long. So maybe I would have let myself get pushed around, but in hindsight I'm glad I didn't and that I stood my ground."*

The model (Figure 2) illustrates how formal and informal teacher education, cooperation with pupils and parents, and the teacher's personal experience contribute to the awareness, detection, and pedagogical handling of children's emotional needs, especially in relation to TO and TR. These processes lead to either intuitive or conscious pedagogical responses that help foster a safe and emotionally supportive classroom climate.

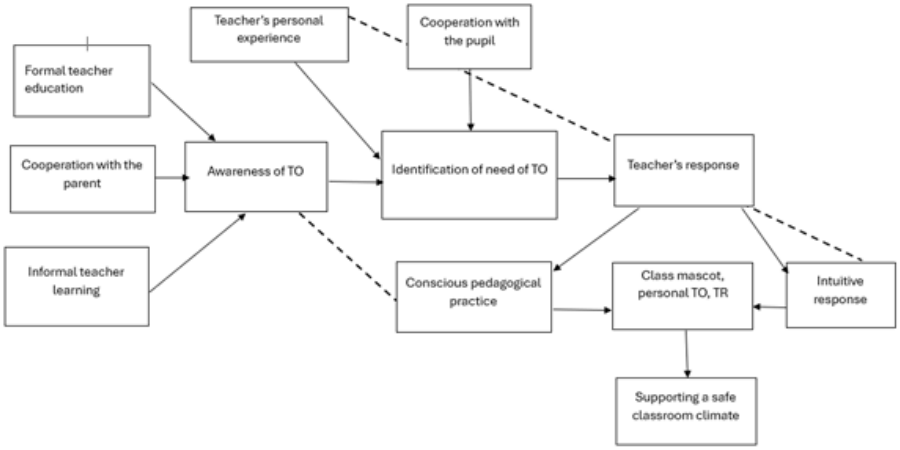

Figure 2
A conceptual model of teacher practices influencing the use of transitional objects

Conclusion and discussion

The issue of well-being and its provision during education is complex. At the very beginning of schooling, it is crucial to make pupils feel safe and to facilitate their adaptation to the school's way of working. Teachers need to have theoretical knowledge of psychology that enables them to act and organize the classroom environment and educational reality in a way that is in line with the needs of individual pupils. However, our study shows that teachers lack erudition in this area. Intuitively, they strive to create a safe environment, but act based on personal experience and in imitation of other teachers' approaches. In situations where discrepancies arise between their own pedagogical approach and the prevailing norms within their school context, pre-service teachers often lack a robust conceptual framework on which to rely. This underscores a legitimate need to reinforce transdisciplinary approaches (Loudová Stralczynská and Koželuhová, 2022) in teacher education programs, which would provide a broader application of psychology knowledge to pedagogical practice.

At the same time, it is necessary to include in the course's material concerning well-being in its entirety. The study revealed that respondents use very few resources to promote a safe classroom climate. They intuitively use alternative CTO and TO, during which pupils can get to know each other by sharing. It is mainly to enhance

the development of their socio-emotional skills (McCallum and Price, 2015; Norwich et al, 2022).

However, if we think of well-being as a process that focuses not only on a set of individual activities operating in the here and now, but as a process that supports sustainable development, then we need to focus on the way in which the learner is also engaged. In this concept, the influence of the environment (personal, classroom, school) on the pupil as well as the emotional support of TO and RTO play a key role. Objects that have a link to the home can be considered as bridges. The classroom space can be thought of as a place of safety to which the children also have a responsibility; for example, they can participate in decorating the class and taking care of plants and pets. The presence of flowers and pets is welcome, given the empirical findings that emotional well-being and overall health can be improved through contact and bonding with a living animal (King, 2011; Crump and Derting, 2015). The transition to school can be emotionally demanding for young children.

It is important to recognize that the significance of transitional objects extends beyond their immediate regulatory function. Empirical studies suggest that early use of TOs may have long-term implications for the development of secure attachment patterns, provided that the object is relinquished in accordance with the child's developmental trajectory. A longitudinal study by Bachar et al. (1997) demonstrated that children who used TOs in early childhood and discontinued their use before adolescence were more likely to develop secure attachment styles during adolescence. Conversely, persistent attachment to TOs into adolescence was associated with elevated psychological stress and relational immaturity. These findings emphasize the potential of TOs not only as tools for managing acute stress during transition, but also as foundational elements in fostering long-term emotional resilience and relational security. Within the context of promoting well-being in educational settings, this underscores the importance of teacher sensitivity to such transitional signals and highlights the need to integrate this awareness into teacher education curricula.

The use of TO and TR, RTO and CRO in education has not yet received sufficient attention in studies. Nor is there data on the proportion of pupils who require such an approach. Existing studies describe between 50% and 70% of children under 7 years of age as having a TO, but there are transcultural differences (Lee, and Hood, 2021). Accordingly, at least half the children in classrooms could have a TO. Their presence in close personal proximity or deliberate work with TO, TR, RTO and

CRO would facilitate children's adaptation to the school environment, or alleviate the stress associated with school.

However, our research suggests that teachers rarely identify a child with a need for a TO. This confirms that this is a topic in which they are insufficiently informed.

These findings have implications not only for pedagogical practice but also for children's well-being. As studies have shown, well-being in educational settings is closely linked to a range of health outcomes, including reduced anxiety, improved emotional regulation, and stronger immune and neuroendocrine functioning (e.g., King, 2011; Crump and Derting, 2015). When teachers recognize and respond to the individual needs of pupils, rather than exclusively focusing on academic performance, they contribute to a classroom climate that supports both mental and physical health.

Limitation

A limitation of the study is the small sample of respondents. Nevertheless, it provides insights and questions that should be asked. It stimulates discussion about how to practically implement pupil learning, of which ensuring pupils' well-being is a natural part, without resigning them to academic achievement (Clarke, 2020), and how to prepare prospective teachers to identify pupils' individual learning needs. Finally, it points to the importance of systematically incorporating TO and TR into teaching practice and strengthening teacher preparation in well-being.

References

Armstrong, L. L., Watt, E., St John, E., and Desson, S. (2019). The Child Identity and Purpose Questionnaire–Interactive: Development and Validation of the Revised, Video-based Version Using a Knowledge Translation-integrated Approach. *The Humanistic Psychologist, 48*(3), 298–317. https://doi.org/10.1037/hum0000147

Bachar, E., Canetti, L., Galilee-Weisstub, E., Kaplan-DeNour, A., and Shalev, A. Y. (1998). Childhood vs. Adolescence Transitional Object Attachment, and its Relation to Mental Health and Parental Bonding. *Child Psychiatry and Human Development*, *28*(3), 149–167. https://doi.org–/10.1023/A:1022881726177

Borenstein, L. (2019). When More "We" Becomes More "Me": Transitional Objects and Forward Movement in Child Psychotherapy. *Journal of Infant, Child, and Adolescent Psychotherapy*, *18*(3), 223-233. https://doi.org/10.1080 /15289168.2019.1603910

Bowlby, J. (1969). *Attachment and Loss* (Vol. 1). New York: Basic Books.

Busch, F. (2017). Dimensions of the First Transitional Object. *The Psychoanalytic Study of the Child*, *29*(1), 215-229. https://doi.org/10.1080/00797308.1974.11822620

Chang-Kredl, S., Farley, L., Garlen, J. C., and Sonu, D. (2024). Ongoing Attachments with Stuffed Toys: Conceptualizing Childhood and Teaching through Transitional Objects. *Early Years*, *45*(1), 132–145. https://doi.org/10.1080/09575146.2024.2329595

Clarke, T. (2020). Children's Well-being and their Academic Achievement: The Dangerous Discourse of 'Trade-offs' in Education. *Theory and Research in Education*, *18*(3), 263–294. https://doi.org–/10.1177/1477878520980197

Crump, C., and Derting, T. L. (2015). Effects of Pet Therapy on the Psychological and Physiological Stress Levels of First-Year Female Undergraduates. *North American Journal of Psychology*, *17*(3). https://doi.org/10.5964 /najp.2015.17.3

David, J., and Norberg, M. M. (2022) Redefining Object Attachment: Development and Validation of a New Scale. *Journal of Behavioral Addictions*, *11*(3), 941-951. https://doi.org/10.1556 /2006.2022.00065

Dozier, M. E., and Ayers, C. R. (2021). Object Attachment as we Grow Older. *Current Opinion in Psychology*, *39*, 105-108. https://doi.org/10.1016/j.copsyc.2020.08.012

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D. and Schellinger, K. B. (2011). The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*, *82*: 405-432. https://doi.org/10.1111/j.1467-8624.2010.01564.x

Ereaut, G., and Whiting, R. (2008). *What Do we Mean by 'Well-being'? And why Might it Matter? Research Report*. Department of Children, Schools and Families.

Evangelou, M., Sylva, K., Kyriacou, M., Wild, M., and Glenny, G. (2009). *Early Years Learning and Development. A Literature Review*. Department of Children, Schools and Families.

Fonagy, P., and Target, M. (2003). *Psychoanalytic Theories: Perspectives from Developmental Psychopathology*. Whurr Publishers.

Fortuna, K., Baor, L., Israel, S., Abadi, A., and Knafo, A. (2014). Attachment to Inanimate Objects and Early Childcare: A Twin Study. *Frontiers in Psychology*, *5*, 486. https://doi.org/10.3389 /fpsyg.2014.00486

Frydenberg, E., Deans, J., and Liang, R. (2022) *Promoting Well-Being in the Pre-School Years: Research, Applications and Strategies*. Routledge.

Jackson, J., Noble, K., Anzai, D., Mitchell, P., and Cloney, D. (2020). *Assessment of Children as Having a Strong Sense of Identity in Early Childhood Education and Care: Literature Review*. Victorian Curriculum and Assessment Authority.

Jones, L. M. (2002). Attachment Object Effects on Children's Anxiety During School-Related Transitional. (Master's Thesis), University of North Florida King, C. A (2011). *The Relationship Between Human-dog Attachment and College Adjustment* (Doctoral dissertation), Northern Illinois University.

Ko, C. H., Liang, Y. T., Liao, Y. C., and Chen, H. F. (2024). Exploring the Relationship Between Transitional Object, Attachment and Emotion Regulation in College Students. *Healthcare, 13* (1), 39. https://doi.org/10.3390 /healthcare13010039

Koch, A. B. (2018), Children's Perspectives on Happiness and Subjective Well-being in Preschool. *Children* and *Society*, *32*: 73-83. https://doi.org/10.1111/chso.12225

Lee, A., and Hood, B. (2021). The Origins and Development of Attachment Object Behavior. *Current Opinion in Psychology*, *39*, 72-75. https://doi.org/10.1016/j.copsyc.2020.11.015

Loudová Stralczynská, B., and Koželuhová, E. (2022). Innovative Practice in Initial Professional Studies for Czech Pre-School Teachers. *Excellence and Innovation in Learning and Teaching*, (2022/2). https://doi.org/10.3280/exioa2-2022oa15079

Mahalski, P. A., Silva, P. A., and Spears, G. F. (1985). Children's Attachment to Soft Objects at Bedtime, Child Rearing, and Child Development. *Journal of the American Academy of Child Psychiatry*, *24*(4), 442-446.

Mahler, M. S., Pine, F., and Bergman, A. (1975). *The Psychological Birth of the Human Infant: Symbiosis and Individuation*. Basic Books.

Miles, B. A., Huberman, M., and Saldana, J. (2014). *Qualitative Data Analysis*. SAGE.

Málková, S. (2023). *Creating a Positive Classroom Climate at Primary School* (Master's thesis) University of West Bohemia in Pilsen.

Mashford-Scott, A., Church, A., and Tayler, C. (2012). Seeking Children's Perspectives on their Well-being in Early Childhood Settings. *IJEC 44*, 231-247 https://doi.org/10.1007/s13158-012-0069-7

Maslow, A. H. (1943). Conflict, Frustration, and the Theory of Threat. In Tomkins, S. S. (ed.). *Contemporary Psychopathology: A Source Book* (pp. 588-594). Harvard University Press.

McCallum, F., Price, D. (2015). *Nurturing Well-being Development in Education*. Routledge. https://doi.org/10.4324/9781315760834

Mendez, G. (2020). *Transitional Support System for Children's Treatment Centers* (Master's thesis, OCAD University). OCAD University Open Research Repository. https://openresearch.ocadu.ca/id/eprint/2994/

Noble, T., McGrath, H., Wyatt, T., Carbines, R. and Robb, L. (2008) *Scoping Study into Approaches to Student Well-being: Literature Review. Report to the Department of Education, Employment and Workplace Relations*. Australian Catholic University & Erebus International.

Norwich, B., Moore, D., Stentiford, L., and Hall, D. (2022). A Critical Consideration of Mental Health and Well-being in Education: Thinking about School Aims in Terms of Well-being. *British Educational Research Journal*, *48*(4), 803-820. https://doi.org/10.1002/berj.3795

Powdthavee, N., and Vignoles, A. (2008) Mental Health of Parents and Life Satisfaction of Children: A Within-family Analysis of Intergenerational Transmission of Well-being. *Social Indicators Research 88*: 397-422. https://doi.org/10.1007/s11205-007-9223-2

Rudmin, F. W. (ed.). (1991). *To Have Possessions: A Handbook on Ownership and Property*. Select Press.

Ryff, C. (1989) Happiness is Everything, or is it? Explorations on the Meaning of Psychological Well-being. *Journal of Personality and Social Psychology*, 57(6), pp. 1069-1081.

Samdal, O., Nutbeam, D., Wold, B., and Kannas, L. (1998). Achieving Health and Educational Goals Through Schools-a Study of the Importance of the School Climate and the Students' Satisfaction with School. *Health Education Research*, *13*(3), 383-397. https://doi.org/10.1093/her/13.3.383

Scobee, B. (2023). *Stuffed Animals for Coping and Communication in the Hospital: A Child Life Perspective* (Master's thesis). Eastern Washington University.

Shoshani, A. and Slone, M. (2017) Positive Education for Young Children: Effects of Positive Psychology Intervention for Preschool Children on Subjective Well Being and Learning Behaviors. *Frontiers in Psychology*. *8*:1866. https://doi.org/10.3389/fpsyg.2017.01866

Schultz, E. W., Glass, R. M., and Kamholtz, J. D. (1987). School Climate: Psychological Health and Well-being in School. *Journal of School Health*, *57*(10), 432-436. https://doi.org/10.1111/j.1746-1561.1987.tb03166.x

Spratt, J. (2016). Childhood Well-being: What Role for Education? *British Educational Research Journal*, *42*(2), 223-239. https://doi.org/10.1002/berj.3211

Stevenson, O., and Winnicott, D. W. (2017). The First Treasured Possession. *The Psychoanalytic Study of the Child*, *9*(1), 199-217. https://doi.org/10.1080/00797308.1954.11822538

Třísková, K. (2021). *Specifics of the Formation of the Child's Relationship to the Transitional Object* (Bachelor's thesis). University of South Bohemia in České Budějovice.

University of West Bohemia. (2024). Code of Ethics of the University of West Bohemia in Pilsen. University of West Bohemia in Pilsen. Available at https://doc-public.zcu.cz/rest/cmis/document/workspace://SpacesStore/43ecfbf9-12a7-43ea-bf19-8e296b6497–b7/content

Viberg, M. (2003). *The Teddy Bear in Psychology: A Prospective Study with Focus on Children's Use of Transitional Objects* (Doctoral dissertation). Department of Psychology, Lund University. https://lup.lub.lu.se/record/465566

Winnicott, D. W. (1953). Transitional Objects and Transitional Phenomena: A study of the First Not-me Possession. *International Journal of Psychoanalysis*, *34*(2), 89–97.

Winnicott, D. W. (1991). *Playing and Reality*. Psychology Press.

Yamaguchi, M., and Moriguchi, Y. (2020). Developmental Change in Attachment Objects during Childhood. *Early Child Development and Care*, *192*(1), 1–14. https://doi.org/10.1080/03–004430.2020.1841756

Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (6th ed.). Sage Publications.

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DOES TEACHERS' INTEREST AFFECT THE FREQUENCY OF TEACHING AND LEARNING OUTSIDE THE CLASSROOM IN EARLY SOCIAL STUDIES?

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Abstract/Izvleček

The article presents the findings of a study aimed at determining whether teachers' personal interests and other factors influence the implementation of teaching and learning outside the classroom in early social studies within primary education. A convergent mixed-method research design was employed. The results indicate that, in practice, teaching and learning outside the classroom in early social studies is implemented less frequently than would be expected based on the didactic guidelines for early social studies instruction. Most teachers conduct such lessons only once a month or less. Teachers' personal interests emerged as a significant factor influencing the frequency of teaching and learning outside the classroom.

Ali učiteljev interes vpliva na pogostost izvajanja pouka izven učilnice pri začetnem družboslovju?

V članku so predstavljene ugotovitve raziskave, katere namen je bil ugotoviti, ali učiteljev interes in drugi dejavniki vplivajo na uveljavljanje pouka izven učilnice pri začetnem družboslovju v osnovnošolskem izobraževanju. Uporabljen je bil konvergentni model kombiniranega raziskovalnega pristopa. Rezultati kažejo, da se pouk izven učilnice pri začetnem družboslovju v praksi izvaja manj pogosto, kot bi bilo za pričakovati glede na didaktične smernice poučevanja začetnega družboslovja, saj večina učiteljev izvaja pouk izven učilnice le enkrat na mesec ali redkeje. Učiteljev osebni interes se je izkazal kot pomemben dejavnik, ki vpliva na pogostost izvajanja pouka izven učilnice.

Keywords:
primary Education, Social Studies, Experiential Learning, Teaching and Learning outside the classroom, convergent mixed methods approach.

Ključne besede:
osnovna šola, družboslovje, izkustveno učenje, pouk izven učilnice, konvergentni model kombiniranega raziskovanja.

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Introduction

In the early years of primary education, social studies in Slovenia is taught through two subjects: Spoznavanje okolja (Environmental Studies), taught in grades 1 through 3, and Družba (Social Studies), taught in grades 4 and 5. Based on didactic recommendations from both curricula (Budnar et al., 2011; Kolar et al., 2011) as well as academic and professional literature on social studies teaching methodology (Ellis, 2007; Grant and VanSledright, 2021; Maxim, 2018; Seefeldt and Galper, 2005), it is recommended that both subjects include teaching and learning outside the classroom as an experiential component of instruction. Based on findings from prior research (Jančič Hegediš and Hus, 2017, 2019; Korban Črnjavič and Hus, 2009), it can be assumed that teaching and learning outside the classroom in Environmental Studies and Social Studies is rarely implemented in Slovenian primary schools. Research on the frequency of such instructional practices at the primary level consistently shows that teachers tend to associate teaching and learning outside the classroom primarily with physical education and science. At the same time, its integration into social studies remains limited (Gosenar and Cencič, 2019). In 2019, an expert group comprising Novak, Skribe Dimec, Krajnc Urbanija, Legvart, and Trampuž reviewed the Environmental Studies curriculum. In their Report on the Analysis of the Environmental Studies Curriculum (Novak et al., 2020), they proposed that the curriculum should more explicitly and systematically integrate teaching and learning outside the classroom, recommending that one-third of total instructional hours for the subject be conducted in teaching and learning outside classroom settings. Likewise, the expert group evaluating the Social Studies curriculum, in their Summary of Reports from Curriculum Review Groups for Primary and Secondary Schools (Povzetek poročil skupin za analizo učnih načrtov v osnovni šoli in gimnaziji, 2021) emphasized the need to incorporate a variety of didactic approaches and to promote active learning both inside and outside the classroom.

The purpose of the present study was to determine whether teachers' personal interests and other factors influence the implementation of teaching and learning outside the classroom in early social studies within primary education.

We were interested in the following:

Did teachers implement teaching and learning outside the classroom in early social studies during the 2023/2024 school year as frequently as they had planned at the beginning of the school year?

How many times did teachers implement teaching and learning outside the classroom in early social studies during the 2023/2024 school year?
How many class hours do teachers typically allocate for a single implementation of teaching and learning outside the classroom in early social studies?
Is teachers' interest in teaching and learning outside the classroom in early social studies related to the frequency of its implementation?
According to teachers and principals, which factors most strongly influence the planning of teaching and learning outside the classroom in early social studies?

Teaching and learning outside the classroom

In the English-language references, various terms are used to describe teaching and learning outside the classroom, including:

- *learning outside the classroom* (Beames et al., 2012; Sedgwick, 2012; Waite, 2011),
- *out-of-classroom learning* (Nundy et al., 2020),
- *learning in natural environments* (Edwards-Jones et al., 2018), and
- *teaching and learning outside the classroom education* (Allison, 2020; Borsos et al., 2022; Jirasek and Turčova, 2020; Porter, 2018; Quay, 2020; Sedgwick, 2012; White, 2020).

The last term, teaching and learning outside the classroom education, is predominantly used in the context of science-related content and topics connected to the natural environment.
In this article, we use the term teaching and learning outside the classroom to refer to teaching and learning that occur beyond the traditional classroom setting and include elements of experiential learning.
Spending time outside the classroom and engaging in play within authentic environments are essential for the holistic development of students. The use of teaching and learning outside classroom learning environments has been shown to significantly impact students' academic achievement (Chawla, 2015; Kuo et al., 2019). The knowledge acquired in such contexts tends to be more lasting and meaningful (Mannion et al., 2013, Korošet et. Al., 2009). Research indicates that teaching and learning outside the classroom positively influences students' cognitive, physical, and emotional development by facilitating the attainment of learning objectives in unique educational settings (Acar, 2014; Coates and Pimlott-Wilson, 2019; Djonko-Moore and Joseph, 2016).

Authors further note that this approach enhances students' self-confidence, collaboration skills, and motivation to learn and contributes to their mental well-being. Behavioural changes have also been observed in students who regularly participate in such learning experiences (Mann et al., 2022). Well-designed teaching and learning that engages and motivates students is less likely to result in classroom management issues (Pšunder, 2004).

Methodology

A convergent mixed methods design was used in the study to ensure a comprehensive and multifaceted approach to cross-sectional data collection. In this design, quantitative and qualitative data collection are equally important, conducted independently, and may occur concurrently (Creswell and Plano Clark, 2017). Within the quantitative approach, a descriptive and causal-non-experimental method of empirical educational research was applied. As part of the qualitative approach, data were collected through focus group discussions with teachers and interviews with school leadership staff from the participating schools.

Research purpose

This study aimed to examine the frequency of implementing teaching and learning outside the classroom in early social studies education and to identify the barriers associated with its implementation. Specifically, the study aimed to investigate how often teachers implement teaching and learning outside the classroom in early social studies, how teachers' attitudes toward this approach are related to its frequency, which factors most influence the planning of such teaching, and what barriers and limitations are encountered by teachers and school leadership staff during its implementation.

Sample

For the quantitative part of the study, 309 primary school teachers from Slovenia were included in the research sample, using stratified random sampling. Sampling was conducted at the primary school level, and the number of teachers in the sample was proportionally distributed according to the share of schools in individual statistical regions, ensuring balanced regional representation and overall sample representativeness.

The highest proportion of participating teachers taught the 2nd grade (22.0%), followed by 5th grade (21.7%), 1st grade (20.1%), 3rd grade (18.4%), and 4th grade (17.8%). Regarding school location, 48.5% of teachers work in urban areas, 35.6% in rural areas, and 15.9% in suburban areas.

Regarding professional titles, most teachers held the title mentor (44.0%). Most respondents had more than 21 years of teaching experience (44.0%), while the fewest had between 11 and 20 years (25.9%).

In the qualitative part of the study, the sample for the focus groups with primary school teachers and the interviews with school leadership staff was drawn from the same schools included in the quantitative phase. The focus groups involved six primary education teachers, and five interviews were conducted with school principals.

Instrument

We used a teacher questionnaire, a focus group with primary school teachers, and interviews with school leadership staff. The questionnaire measuring the frequency of implementing teaching and learning outside the classroom, as well as the influence of teachers' attitudes and other factors affecting planning, was developed based on a review of relevant literature and current theoretical frameworks related to outdoor and experiential learning in early social studies. The focus group for primary school teachers and the interviews with principals were designed as qualitative research instruments aimed at an in-depth examination of teachers' and principals' attitudes, experiences, and practices related to teaching and learning outside the classroom in early social studies.

Measurement Characteristics of the Instruments

The validity of the questionnaire was ensured through expert evaluation. Two specialists—one in social studies didactics and the other in statistical sciences—assessed the questionnaire, focus group, and interview questions. Before implementation, the questionnaire was pilot-tested and thereby empirically validated. As part of the pilot testing, we received feedback regarding the clarity of the questions, the time required to complete the questionnaire, the content's relevance to the research questions, and the technical aspects of the online format on 1ka. Based on the results, we revised certain questions and appropriately adapted the instruments to ensure their clarity and consistent interpretation among participants.

Reliability was ensured by carefully constructing unambiguous and specific questions, accompanied by clear and precise instructions for all three instruments. The reliability of the section of the questionnaire assessing teachers' attitudes was tested using Cronbach's alpha coefficient (α). For the set of twelve statements measuring teachers' attitudes, the coefficient was 0.834, indicating good internal consistency. These attitude measures were the basis for conducting factor and subsequent regression analyses.

The objectivity of the questionnaire was supported using online (individual) data collection without the presence of an evaluator. The questions were phrased in a neutral manner to reduce the risk of suggestive influence, and the instructions provided were explicit and unambiguous. Likewise, in both the focus groups and interviews, the interviewer refrained from providing any feedback that might influence participants' responses.

Data collection

The data were collected using an online surveying tool, as well as through focus groups and interviews.

Data Analysis Methods

Before the analysis, the collected data were appropriately prepared, which included data screening and cleaning. The data were then processed for statistical analysis using suitable software tools: SPSS for the quantitative part and Atlas.ti for the qualitative part of the study.

In the quantitative part, the data were analysed using descriptive and inferential statistics. The following statistical methods were applied:

Frequency distributions (f, f %).

Chi-square test (χ^2) to examine the associations between two nominal variables.

Analysis of variance (ANOVA) was used to compare arithmetic means across independent variables. First, Levene's F test was performed to assess the homogeneity of variances. If the variances were homogeneous ($p > 0.05$), the F-test (ANOVA) assuming equal variances was applied. When the assumption of homogeneity was not met ($p < 0.05$), Welch's test was used instead.

Factor analysis was conducted to explore teachers' attitudes towards planning, implementation, and evaluation of early social studies teaching and learning outside the classroom.

Regression analysis was used to examine the relationships between independent and dependent variables.

In the qualitative part of the study, data were analysed using qualitative content analysis (Flick, 2018; Gibbs, 2018). Qualitative data obtained from focus groups and interviews were triangulated with the quantitative data from the questionnaire. This triangulation approach enabled a more comprehensive understanding of the research problem by allowing separate data sources to complement and reinforce each other, thereby strengthening the validity of the study's conclusions.

Results with Interpretation

Frequency of Teaching and Learning Outside the Classroom

In the first question regarding the implementation of teaching and learning outside the classroom, we were interested in whether teachers conducted such lessons as frequently as planned at the beginning of the school year.

The results show that half the teachers (52.1%) conducted teaching and learning outside the classroom as frequently as they had planned at the beginning of the school year. A good third of the teachers (35.3%) conducted such lessons less frequently than planned, and 12.6% of teachers reported that they conducted them more frequently than initially planned.

To determine statistically significant differences between groups based on grade level, school environment, professional title, and years of teaching experience, we used the χ^2 test. The test revealed no statistically significant differences among teachers based on grade level, professional title, or years of teaching. However, statistically significant differences were found regarding the environment ($p = 0.041$) where the primary school was located. The results indicate that the frequency of teaching and learning outside the classroom corresponded more closely to the initial plans for teachers working in suburban areas. In contrast, teachers from rural areas taught and learned outside the classroom less frequently than planned at the beginning of the school year.

In the next section, we were interested in how frequently teachers had conducted teaching and learning in early social studies during the past school year (2023/2024).

The results show that most surveyed teachers had conducted teaching and learning in early social studies once a month or less during the 2023/2024 school year. This was followed by teachers (16.8%) who had conducted such lessons twice a year or less. The fewest teachers (11.7%) had conducted teaching and learning outside the classroom once a week or more frequently.

No statistically significant differences were found among teachers based on grade level, school environment, or years of teaching experience. However, a statistically significant difference was found with regard to professional title: counsellors and senior counsellors conducted teaching and learning outside the classroom more frequently than teachers without a title. Similar results regarding the frequency of teaching and learning outside the classroom for the broader subject of Environmental Studies (not limited to social studies content) were found in a 2016 study, which concluded that teachers most often conducted lessons outside the classroom once a month (Korban Črnjavič, 2016).

All principals interviewed in our study agreed that teaching and learning outside the classroom in early social studies is implemented too rarely, a concern they explicitly expressed. One principal added that the school actively encourages teaching and learning outside the classroom, but its implementation depends on individual teachers.

We were also interested in how many school hours teachers typically allocate for a single instance of teaching and learning outside the classroom in early social studies. The results show that half the teachers (50.5%) dedicate two school hours (90 minutes) per session. A total of 24.3% allocate one school hour or less. Teachers who dedicate four hours or more account for 13.9%, while the fewest teachers (11.3%) allocate three school hours per session. Further analyses revealed no statistically significant differences among teachers based on grade level, school environment, professional title, or years of teaching experience.

The impact of teachers' interest on the frequency of teaching and learning outside the classroom

To determine the influence of teachers' attitudes on the frequency of teaching and learning outside the classroom in early social studies, it was first necessary to conduct a factor analysis of teachers' attitudes. The attitudes themselves are not presented in detail in this article. However, they are mentioned here because we used the corresponding statements to calculate two dimensions: the teacher's interest in teaching and learning outside the classroom dimension and the perceived outcomes

of teaching and learning outside the classroom dimension. These were computed as the average values of the variables that belong to each factor.

The outcomes dimension received a significantly higher average score (M = 4.15) than the interest dimension (M = 3.69). This suggests that teachers are aware of the benefits of teaching and learning outside the classroom for their students and their professional development but are less motivated to implement it in practice.

To examine the effect of teachers' attitudes on the frequency of teaching and learning outside the classroom, a new numerical variable was created: the frequency of early social studies lessons conducted outside the classroom. This frequency was calculated based on two survey questions—one regarding how often teachers conduct early social studies outside the classroom and the other about the hours typically devoted to a single such session. Response values were standardized and multiplied to obtain an annual number of hours. This resulted in a numerical indicator representing the frequency of teaching and learning outside the classroom in early social studies, measured in hours. The results show that, on average, teachers dedicate approximately 25 hours per year (M = 24.59) to such teaching. The significant standard deviation indicates considerable variation among teachers. One-third (33.7%) of them reported only up to 10 hours per year, just over a third (35.9%) reported between 11 and 20 hours, and slightly less than a third (30.4%) reported more than 20 hours annually.

We then performed a regression analysis to assess the role of teachers' attitudes toward teaching and learning outside the classroom in early social studies in predicting its frequency. As independent variables, we included the two attitude dimensions—interest and perceived outcomes—and two statements related to perceived support from school leadership and collaboration with external experts.

Table 1

The role of teachers' attitudes in the frequency of teaching and learning outside the classroom in early social studies – results of the regression analysis

	Unstandardized beta	Standardized Beta	p	VIF
constant	-21.81		0.028	
interest dimension	9.37	0.29	<0.001	1.54
outcomes dimension	1.31	0.03	0.638	1.62
support from school leadership enables more frequent implementation of teaching and learning outside the classroom in early social studies	0.92	0.04	0.530	1.17

collaboration with external experts is important in planning and implementing teaching and learning outside the classroom	0.92	0.04	0.542	1.19
adjusted R-squared	0.093			

As shown in Table 1, only the interest dimension plays a significant role in teachers' implementation of teaching and learning outside the classroom in early social studies. A positive and statistically significant beta coefficient was confirmed for this dimension ($p < 0.001$). This indicates that teachers who are personally interested in conducting such lessons are more likely to do so. In contrast, their perception of student benefits, support from school leadership and collaboration with external experts do not significantly influence their decision to implement teaching and learning outside the classroom ($p > 0.05$). A study on the influence of teachers' values on teaching and learning outside the classroom also found that personal values strongly affect the implementation of teaching outside the classroom (Waite, 2011).

Teachers in the focus group emphasized the importance of personal interest, regardless of organizational or content-related challenges. One participant stated: *"I still think, you know, even though it's not always possible, if you really want to, you can find a few opportunities during the year. If you truly want to, of course."* Another teacher added: *"We really try—I think most of us want to do more outside the classroom."*

One of the interviewed principals noted: *"The main obstacles are mostly that teachers see teaching and learning outside the classroom lessons as the extra effort they would rather avoid."* According to the principals, this is partly because teaching and learning outside the classroom is only recommended in the curriculum and is therefore not mandatory for teachers. The teachers in the focus group also highlighted the role of individual interest. Although they held positive views about teaching and learning outside the classroom, one participant pointed out a generational difference, particularly in her experience with younger colleagues, whose attitudes she perceived as different. Two other teachers mentioned peer pressure as a barrier—especially from colleagues teaching in parallel classes who prefer more traditional forms of instruction. Resistance from colleagues was also identified as a barrier to teaching and learning outside the classroom by Šebjanič and Skribe Dimec (2019).

Factors Influencing the Planning of Teaching and Learning Outside the Classroom

In the questionnaire, teachers were presented with thirteen factors that might influence the planning of teaching and learning outside the classroom in early social studies. For each factor, they were asked to indicate how much it affected their planning on a scale from 1 (not important at all) to 5 (very important).

The results show that teachers ranked colleagues' availability for student supervision as the most influential factor (M = 4.47). Principals interviewed in the study also identified supervision as one of the significant challenges in organizing teaching and learning outside the classroom. They agreed that they were responsible for assigning accompanying staff for such lessons. While some principals reported no issues assigning staff, others noted a lack of available teachers. They consider assigning supervisors a key step in ensuring student safety and support during teaching and learning outside classroom activities.

"One of the biggest obstacles is the lack of teachers, which also affects the organization of accompanying staff. The regulations make it difficult to assign a teacher who can supervise students for an entire morning without missing scheduled classes."

Teachers in the focus groups repeatedly emphasized difficulties related to supervision:

"Supervision is always an issue—first and foremost. I have to say that we are running very tight in schools. We're all overloaded, we have increased workloads, and it's really difficult to additionally burden those already working in after-school care. It's definitely a problem."

According to the questionnaire data, the number of students in the class (M = 4.39) and the location of the lesson (M = 4.39) also significantly influence planning. Both were rated as important or very important by the majority of teachers. Fourth in rank was the factor of student characteristics (M = 4.27), followed closely by time available in the schedule (M = 4.24).

Statistically significant differences between teachers based on grade level were found for the factor cost of implementation ($p = 0.015$), which ranked sixth in overall importance. Teachers of fifth-grade classes rated this factor significantly higher (M = 4.22) compared to teachers of first (M = 3.69) and second grades (M = 3.99). Principals emphasized that high transportation costs and entrance fees greatly limit the feasibility of teaching and learning outside the classroom. They noted that parents cover most expenses. One teacher in the focus group stated:

"Now we must always ask parents' permission—whether they will fund it. It is not a huge cost, just a few euros, but still."

These costs typically include transportation, admission fees, and other direct expenses related to teaching and learning outside the classroom.

Štemberger (2012) also identified additional financial burdens as barriers to implementing teaching and learning outside the classroom. According to principals, funds for teaching and learning outside the classroom are often drawn from school funds, which are supported through voluntary contributions, donations, and various project-based grants. This was confirmed by teachers in the focus groups, who also noted that they try to obtain as much donor funding as possible. The lack of systemic funding for such activities frequently discourages teachers from organizing teaching and learning outside the classroom lessons.

Ranked fourth in importance was the factor of student characteristics (M = 4.27). Focus group participants agreed that implementing teaching and learning outside the classroom is heavily influenced by the specific needs of their students, which can present challenges in planning and execution. One teacher shared: *"It depends on the specific challenges you are dealing with. This year, I have a child with ADHD and autism, and I don't really dare go outside every day."* Two other teachers reported having students in wheelchairs in the past. They explained that they often had to improvise or adapt quickly to find suitable solutions. Some teachers felt left alone, as systemic support was lacking. Despite these challenges, they expressed willingness to find appropriate solutions through adaptations and collaboration.

In fifth place was the factor availability of time in the schedule (M = 4.24). Teachers in the focus groups also emphasized time constraints. One participant said:

"Above all, time—as has already been mentioned. Preparing for teaching and learning outside the classroom lessons requires much more effort than traditional classroom teaching. And that is probably why teaching and learning outside the classroom lessons aren't that frequent."

Another added that she often runs out of time for reflection and assessment. As noted earlier, half the surveyed teachers reported that they would dedicate more time to teaching and learning outside classroom teaching if they had more time for planning. Previous studies identified time constraints as a barrier to implementing teaching and learning outside the classroom in early social studies (Cengelci, 2013).

The factors identified as significant in implementing teaching and learning outside classroom teaching in early social studies point to a complex interplay of organizational, systemic, and personal elements. International authors conducting reviews of research on teaching and learning outside classroom teaching have also found that we still lack a complete understanding of the barriers teachers face.

Moreover, there are still no clear strategies or solutions for overcoming these barriers to ensure more frequent implementation of teaching and learning outside the classroom in early social studies (Patchen et al., 2024).

Conclusion

The study found that teachers' interest significantly affects the frequency of teaching and learning outside the classroom in early social studies. Therefore, we recommend that future primary school teachers become familiar with teaching and learning outside the classroom practices during their university studies, including within regular course content.

It would also be meaningful for practising teachers to dedicate a thematic session within professional learning communities to sharing best practices in teaching and learning outside the classroom in early social studies. Such exchanges could empower teachers and increase the visibility of those who successfully implement teaching and learning outside classroom lessons, which might, in turn, help foster greater interest among their colleagues.

Concerning the organizational and systemic barriers identified in the study, we propose that teaching and learning outside the classroom be formally integrated into national curricula with clearly defined minimum annual implementation standards. At present, it is mentioned only as a didactic recommendation. However, considering the current situation and supervision requirements for teaching and learning outside classroom activities, the most significant challenge remains the provision of adequate adult supervision. This issue could be partially addressed by scheduling some teaching and learning outside-the-classroom lessons in advance, even before the school year begins. If the main difficulty lies in escorting students from the school to the final location—where an external expert is involved in the lesson—a potential solution could be establishing a volunteer network to assist with student supervision en route.

Regarding the funding of teaching and learning outside the classroom, which is currently covered mainly by parents or through school funds, the government must ensure stable and sufficient dedicated funding. Teaching and learning outside the classroom are a regular and integral part of the curriculum, and the many associated benefits for students should motivate policymakers to secure continued access to these learning opportunities throughout primary education.

Finally, we would like to add limitations of the research that we identified. Although a stratified random sample of 309 teachers was used, uneven distribution across grade levels and professional titles may limit the generalizability of the findings. A broader and more balanced sample could improve representativeness. Furthermore, the regression model shows additional variables influencing teaching and learning outside the classroom practices that were not captured. A further longitudinal study could clarify the relationships better. In the future, it would be useful to upgrade this research, considering these limitations, which could enhance the validity and depth of understanding of teaching and learning outside the classroom in early social studies.

References

Acar, H. (2014). Learning Environments for Children in Outdoor Spaces. *Procedia - Social and Behavioral Sciences*, *141*, 846-853. https://doi.org/https://doi.org/10.1016/j.sbspro.2014.05.147

Allison, P. (2020). Influences on Anglophone approaches to outdoor education. In J. Parry and P. Allison (eds.), *Experiential Learning and Outdoor Education* (pp. 28-36). Routledge.

Beames, S., Higgins, P., and Nicol, R. (2012). *Learning Outside the Classroom. Theory and Guidelines for Practice*. Taylor & Francis.

Borsos, É., Banos-González, I., Boric, E., Lyngved Staberg, R., and Fekete, A. B. (2022). Trainee teachers' perceptions of outdoor education. *Environmental Education Research*, 1-20. https://doi.org/10.1080/13504622.2022.2031901

Budnar, M., Kerin, M., Umek, M., Raztresen, M., and Mirt, G. (2011). *Učni načrt. Osnovna šola. Družba*. Ministrstvo za šolstvo in šport. Zavod Republike Slovenije za šolstvo.

Cengelci, T. (2013). Social Studies Teacher' Views on Learning Outside the Classroom. *Educational Sciences: Theory and Practice*, *13*(3).

Chawla, L. (2015). Benefits of Nature Contact for Children. *Journal of Planning Literature*, *30*(4), 433-452. https://doi.org/10.1177/0885412215595441

Coates, J. K., and Pimlott-Wilson, H. (2019). Learning while playing: Children's Forest School experiences in the UK [Article]. *British Educational Research Journal*, *45*(1), 21-40. https://doi.org/10.1002/berj.3491

Creswell, J. W., and Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3 ed.). Sage Publications.

Djonko-Moore, C. M., and Joseph, N. M. (2016). Out of the Classroom and Into the City. *SAGE Open*, *6*(2), 215824401664964. https://doi.org/10.1177/2158244016649648

Edwards-Jones, A., Waite, S., and Passy, R. (2018). Falling into LINE: school strategies for overcoming challenges associated with learning in natural environments (LINE). *Education 3-13*, *46*(1), 49-63. https://doi.org/10.1080/03004279.2016.1176066

Ellis, A. K. (2007). *Teaching & Learning Elementary Social Studies*. Pearson Education Inc.

Flick, U. (2018). *Designing qualitative research*. SAGE.

Gibbs, G. R. (2018). *Analyzing qualitative data*. SAGE.

Gosenar, T., and Cencič, M. (2019). Učitelji razrednega pouka o pouku zunaj šole. *Sodobna pedagogika*, *70*(2), 52-69.

Grant, S. G., and VanSledright, B. (2021). *Elementary Social Studies. Constructing a Powerful Approach to Teaching and Learning*. Routledge.

Jančič Hegediš, P., and Hus, V. (2017). Učitelji in konstruktivistični pristop pri pouku družbe. *Pedagoška obzorja: časopis za didaktiko in metodiko*, *32*(3/4).

Jančič Hegediš, P., and Hus, V. (2019). Representation of teaching strategies based on constructivism in social studies. *International Journal of Innovation and Learning*, *25*(1), 64-77. doi:10.1504/IJIL.2019.096535

Jirasek, I., and Turčova, I. (2020). Experiential pedagogy in the Czech Republic. In J. Parry and P. Allison (Eds.), *Experiential Learning and Outdoor Education* (pp. 8-18). Routledge.

Korban Črnjavič, M., and Hus, V. (2009). Stališče učiteljev do izkustvenega učenja in poučevanja predmeta spoznavanje okolja. *Journal of Elementary Education*, *2*(1), 73–81. https://journ–als.um.si/index.php/education/article/view/235

Korošec, U., Ambrožič Dolinšek, J., and Hus, V. (2009). Pomen terenskega dela za bodoče učitelje razrednega pouka. *Journal of Elementary Education*, *2*(1), 49–58. https://journals.um.si/index–.php/education/article/view/233

Kolar, M., Krnel, D., and Velkavrh, A. (2011). *Učni načrt. Program osnovna šola. Spoznavanje okolja.*

Korban Črnjavič, M. (2016). *Refleksija učiteljev razrednega pouka o izvajanju izkušenjskega učenja in poučevanja izven učilnice pri pouku spoznavanja okolja.* Pedagoška fakulteta Univerze v Mariboru.

Kuo, M., Barnes, M., and Jordan, C. (2019). Do Experiences With Nature Promote Learning? Converging Evidence of a Cause-and-Effect Relationship [Mini Review]. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.00305

Mann, J., Gray, T., Truong, S., Brymer, E., Passy, R., Ho, S., Sahlberg, P., Ward, K., Bentsen, P., Curry, C., and Cowper, R. (2022). Getting Out of the Classroom and Into Nature: A Systematic Review of Nature-Specific Outdoor Learning on School Children's Learning and Development [Systematic Review]. *Frontiers in Public Health*, *10*. https://doi.o–rg/10.3389/fpubh.2022.877058

Mannion, G., Fenwick, A., and Lynch, J. (2013). Place-responsive pedagogy: learning from teachers' experiences of excursions in nature. *Environmental Education Research*, *19*(6), 792-809. https://doi.org/10.1080/13504622.2012.749980

Maxim, G. W. (2018). *Dynamic Social Studies* (11th ed.). Pearson Education, Inc.

Novak, L., Skribe Dimec, D., Krajnc Urbanija, P., Legvart, P., and Trampuž, M. (2020). *Poročilo o analizi učnega načrta za spoznavanje okolja.* https://www.zrss.si/gradiva/Analiza-UN/26_poznava–nje%20okolja_.pdf

Nundy, S., Dillon, J., and Dowd, P. (2020). Improving and encouranging teacher confidence in out-of-classroom learning: the impact of the Hampshire Trailblazer project on 3-13 curriculum practitioners. In S. Waite (ed.), *Outdoor Learning Research. Insight into forms and functions* (pp. 148-160). Routledge.

Patchen, A. K., Rakow, D. A., Wells, N. M., Hillson, S., and Meredith, G. R. (2024). Barriers to children's outdoor time: teachers' and principals' experiences in elementary schools. *Environmental Education Research*, *30*(1), 16-36. https://doi.org/10.1080/13504622.2–022.2099530

Porter, H. (2018). *Educating Outside.* Bloomsbury. *Povzetek poročil skupin za analizo učnih načrtov v osnovni šoli in gimnaziji.* (2021). https://www.zrss.–si/pdf/povzetek_porocil_skupin_za_analizo_–UN.pdf

Pšunder, M. (2004). *Disciplina v sodobni šoli.* Zavod Republike Slovenije za šolstvo.

Quay, J. (2020). John Dewey's conceptualisation of experience. In J. Parry and P. Allison (eds.), *Experiential Learning and Outdoor Education* (pp. 71-90). Routledge.

Sedgwick, F. (2012). *Lerning Outside the Primary Classroom.* Routledge.

Seefeldt, C., and Galper, A. (2005). *Active Experience for Active Children. Social Studies.* Pearson.

Šebjanič, E., and Skribe Dimec, D. (2019). Primeri dobre prakse pouka na prostem v Sloveniji in tujini. *Sodobna pedagogika*, *70 (136)*(2), 70–85.

Štemberger, V. (2012). Šolsko okolje kot učno okolje ali pouk zunaj. 84-90. VIR?

Waite, S. (2011). Teaching and learning outside the classroom: personal values, alternative pedagogies and standards. *Education 3-13*, *39*(1), 65–82. https://doi.org/10.1080/03004270903206141

White, J. (2020). *Playing and Learning Outdoors* (3rd ed.). Routledge Taylor & Francis Group.

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FROM DIGITAL TECHNOLOGY TO HEALTHY HABITS: INTERDISCIPLINARY FOUNDATIONS FOR DEVELOPING TRAINING PROGRAMS FOR A HEALTHY LIFESTYLE AMONG CHILDREN

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Abstract/Izvleček

This article explores the impact of digital technology on children's development, focussing on the physical, cognitive, and emotional domains. The introduction emphasises the benefits of digital tools for education and language acquisition, but also points out the associated risks such as physical inactivity, sleep disturbances and mental health problems. A rigorous methodological approach ensures the inclusion of high-quality data, while subsequent sections explore key themes, including the interplay between screen time, physical activity, and diet. The conclusion emphasises interdisciplinary interventions, including the ZŽS project framework, which integrates technology, health, and environmental responsibility. This approach aims to promote healthier lifestyle choices.

Od digitalne tehnologije do zdravih navad: interdisciplinarne podlage za razvoj programov usposabljanja za zdrav življenjski slog otrok

V članku proučujemo vplive digitalne tehnologije na otrokov razvoj, pri čemer se osredinjamo na telesne, kognitivne in čustvene vidike. V uvodu so poudarjene koristi digitalnih orodij za izobraževanje in učenje jezika, vendar so izpostavljena tudi povezana tveganja, kot so telesna nedejavnost, motnje spanja in težave z duševnim zdravjem. Dosleden metodološki pristop zagotavlja vključevanje kakovostnih podatkov, medtem ko podpoglavja obravnavajo ključne teme, vključno z medsebojnim vplivom časa pred zaslonom, telesne dejavnosti in prehrane. Zaključek poudarja interdisciplinarne ukrepe, vključno z okvirom projekta Zdrav življenjski slog za trajnostni razvoj in vseživljenjsko učenje (dalje ZŽS), ki združujejo tehnologijo, zdravje in varovanje okolja. Cilj tega pristopa je spodbujati izbiro zdravega življenjskega sloga.

Keywords:
digital technology, child development, mental health, physical activity.

Ključne besede:
digitalna tehnologija, otrokov razvoj, duševno zdravje, telesna dejavnost.

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Introduction

Digital technology increasingly shapes child development, offering cognitive stimulation, educational opportunities, and social connectivity, yet posing risks such as physical inactivity, sleep disruption, unhealthy dietary behaviours, and mental health concerns. Research highlights its benefits when integrated purposefully: educational applications and co-viewing with caregivers can boost cognitive skills, language acquisition, and problem-solving (Huber et al., 2018; Hill et al., 2016; Muppalla et al., 2023). However, unregulated screen use—especially in early childhood—can diminish attention spans, impair impulse control, and reduce creative play (Takeuchi et al., 2018; McHarg et al., 2020). Excessive screen time also displaces active play, increasing obesity risks (Ricci et al., 2021), disrupts sleep through blue light exposure (LeBourgeois et al., 2017), and contributes to emotional and behavioural issues (Staples et al., 2021). Screen-based food advertising promotes energy-dense, nutrient-poor diets (Folkvord et al., 2017; Scully et al., 2012), while overuse of digital platforms may elevate the risk of anxiety, depression, and negative self-perception (Slater and Tiggemann, 2016; Hoge et al., 2017). Still, emerging evidence suggests these effects depend on context and balanced use, with overall mental health impacts possibly minor (Odgers and Jensen, 2020).

This paper systematically examines how digital technology affects child development across the domains of physical activity, nutrition, sleep, cognition, and mental health. Adopting an interdisciplinary perspective, it addresses two key questions: (1) How can digital technology be optimized to support healthy development? (2) Which evidence-based strategies can caregivers, educators, and policymakers use to reduce risks? By synthesizing current research, it identifies critical gaps and offers practical recommendations for fostering children's well-being in an increasingly digital world.

Methodology

This review is based on a rigorous methodological approach that aims to include high-quality and credible sources. The literature was selected through a comprehensive search of scientific databases, including PubMed, Scopus, and Web of Science, favouring studies with high citation indices and robust methodological foundations. Particular attention was paid to meta-analyses and systematic reviews, as these provide aggregated findings and minimise the influence of outlier results.

Key steps in the methodology include the following:

1. Identification of relevant sources: Articles addressing the intersection between digital technology and child development were prioritised, focusing on core

topics such as physical activity, nutrition, sleep, cognitive development, and mental health.
2. Emphasis on meta-analyses: Studies that combine and summarise results from multiple research papers were prioritised to ensure comprehensive and balanced conclusions.
3. Inclusion and exclusion criteria: Articles were included based on their methodological rigour, relevance to the research objectives and publication in peer-reviewed journals. Exclusion criteria excluded studies with insufficient methodological transparency, limited sample sizes or non-replicable results.
4. Thematic categorisation and analysis: The selected sources were categorised into thematic areas, allowing for a structured synthesis and facilitating a clear presentation of key findings in the manuscript.

This methodological framework ensures that the conclusions drawn in this thesis are based on a solid foundation of reliable, evidence-based research and are consistent with best practise in interdisciplinary literature reviews.

Digital technology and children's health: key challenges and interventions
The interplay between screen time, physical activity, and sleep

Excessive screen use is associated with reduced physical activity and poor sleep, especially in younger children. Janssen et al (2020) found that prolonged screen use in children under five years of age correlates with shorter sleep duration and delayed sleep onset, suggesting a limitation of evening use. During the COVID-19 pandemic, Spanish children aged 0–4 years showed high levels of screen use and insufficient physical activity, not meeting WHO recommendations (Arufe-Giráldez et al., 2020; Morrison et al., 2021). Although the WHO guidelines emphasise a balance among screen use, physical activity, and adequate sleep (Willumsen and Bull, 2020), a critical review shows that there is little high-quality evidence on the psychological effects of screen time (Ophir et al., 2021). Overall, these findings emphasise the importance of structured interventions that encourage active play, limit excessive screen use, and promote healthy habits from an early age.

Balance between exercise and screens

Sedentary screen use often replaces active play, decreasing children's fitness and increasing the risk of obesity (Ricci et al., 2021; Keane et al., 2017). Outdoor activities and moderate to vigorous physical activity (MVPA) improve physical health, sleep, and overall fitness (Kredlow et al., 2015; World Health Organisation, 2019). Engberg

et al., (2021) showed that children who engage in at least six hours of physical activity per week in their free time do not have an increased risk of obesity due to digital media. For 5–6-year-olds, each additional hour spent outdoors results in approximately 10 minutes more MVPA (Larouche et al., 2017). Despite these benefits, many do not adhere to physical activity guidelines (Keane et al., 2017). Effective strategies include encouraging outdoor play, limiting screen time, and encouraging parental involvement (Charan et al., 2024).

Digital media and nutrition: the influence of food advertising

Food advertising on television and digital platforms promotes the consumption of high-calorie, low-nutrient foods (Folkvord et al., 2017; Robinson et al., 2017; Scully et al., 2012). Passive screen use further interrupts satiety cues and leads to overeating (Hill et al., 2016). Parental feeding practises, such as forcing or restricting certain foods, can exacerbate these effects (Norman et al., 2018). Even within recommended screen limits, television viewing predicts higher intake of unhealthy foods and lower intake of fruits and vegetables (Harrison et al., 2012). Similarly, teachers' knowledge has been shown to play a crucial role in shaping children's health-related habits. Sadaf and Huma (2021) found that school health programs significantly improved teachers' understanding of nutrition, hygiene, and illness prevention, which indirectly supports children's overall well-being. Stricter food marketing regulations, parental strategies that reduce screen use during mealtimes, and transparent advertising practises are needed to mitigate harmful dietary influences (Robinson et al., 2017; Scully et al., 2012).

Digital technology and children's mental health

Prolonged use of devices can increase the risk of anxiety and depression, as self-esteem is often tied to external validation through likes, comments, or gaming achievements (Slater and Tiggemann, 2016; Hoge et al., 2017). Over-reliance on virtual interactions can limit social skills in the real world and promote isolation (Ricci et al., 2021). Digital media also carries the risk of cyberbullying and negative social comparisons (Glover and Fritsch, 2017), although large-scale studies suggest that the overall impact on mental health is small (Odgers and Jensen, 2020). Experts recommend balancing screen time with offline activities, setting limits on content and teaching critical thinking skills (Reid Chassiakos et al., 2016). Mental health professionals should consider online behaviour in their treatment plans to control potential negative consequences (Glover and Fritsch, 2017).

Cognitive development: risks and benefits

Excessive or unsupervised screen use can impair attention span, critical thinking, and executive functions (Takeuchi et al., 2018; Ricci et al., 2021). Early screen time correlates with poorer inhibition skills (McHarg et al., 2020) and lower microstructural integrity of brain areas associated with language and literacy (Hutton et al., 2020). However, structured learning apps and interactive digital tools can improve working memory, literacy, and impulse control (Huber et al., 2018; Hill et al., 2016). Shared viewing with caregivers further supports positive outcomes by promoting engagement, guidance and understanding (Muppalla et al., 2023). A balance between screen use, hands-on play and face-to-face interaction is important to optimise the cognitive benefits while minimising the risks.

Digital media and sleep: understanding the disruption

Evening screen use disrupts melatonin production, delays sleep onset and reduces sleep quality (LeBourgeois et al., 2017). Studies link higher screen use before bedtime to shorter total sleep time and more frequent sleep disturbances in young children (Garrison and Christakis, 2012; Staples et al., 2020). Poor sleep can exacerbate cognitive and emotional difficulties, emphasising the need for screen-free routines. Time-shifting, psychological stimulation and blue light contribute to these disorders (LeBourgeois et al., 2017), and observational data confirm that screen use before bedtime correlates with delayed sleep and shortened duration of sleep (Staples et al., 2020). Caregivers can promote healthy sleep by limiting screen use before bedtime, establishing screen-free zones, and maintaining consistent routines for bedtime (Hale et al., 2018).

Connections: physical activity, nutrition, sleep, and mental health

Physical activity, nutrition, sleep, and mental health are intricately linked. For example, regular physical activity not only improves sleep quality, but also reduces anxiety and depression (Kredlow et al., 2015). Healthy eating habits support cognitive and emotional stability and promote consistent sleep patterns and energy for active play (Folkvord et al., 2017). Conversely, insufficient sleep can exacerbate poor eating habits, reduce physical activity levels, and increase mental health risks (Mindell et al., 2015; Staples et al., 2020). Stable mental health also promotes adherence to healthy habits (Hoge et al., 2017). Given this level of interdependence, comprehensive interventions — such as promoting outdoor activities, shared family meals and consistent bedtimes — can effectively promote all aspects of children's well-being from an early age.

The importance of forming healthy habits in early childhood

Healthy routines introduced early on support lifelong physical, cognitive, and emotional health. Rapid digitalisation offers opportunities but also threatens these routines and makes timely action on exercise, diet, screen use, and sleep essential (Baladaniya and Korat, 2024).

Creating a solid foundation: The role of physical activity

Regular exercise, starting at pre-school age, predicts an active adulthood, sharper motor skills, and better cardiovascular profiles (Kredlow et al., 2015; WHO, 2019). Outdoor play is particularly effective as it leads to spontaneous movement and fitness gains (Ricci et al., 2021). Early motor competence correlates with greater activity in adolescents and immediate benefits such as denser bones, improved mood, and better cardiorespiratory fitness (Loprinzi et al., 2012; Loprinzi et al., 2015). Competence also lowers future risk of chronic disease (Garcia et al., 2002) and is associated with better blood pressure and aerobic capacity in longitudinal cohorts (Proudfoot et al., 2019). Global guidelines therefore strongly recommend playing a fun, developmentally appropriate game every day (Willumsen and Bull, 2020).

Nutrition in early childhood: shaping lifelong health

Early eating habits strongly influence later preferences. Children who are offered balanced meals and guided by informed caregivers are less attracted to extremely processed foods (Folkvord et al., 2017), while the role modelling of parents — especially mothers — strongly influences food intake (Hill et al., 2016; Scaglioni et al., 2008). Hands-on meal preparation and learning where food comes from deepen understanding and acceptance of healthy choices (Metcalfe and Fiese, 2018). Recommended plates emphasise vegetables, fruits, whole grains, and lean proteins, while limiting high-energy, nutrient-poor foods (Melanson, 2008). However, excessive parental control can backfire and lead to overeating; positive modelling is safer (Scaglioni et al., 2008).

Digital literacy: preparing children for the digital age

Responsible use of technology must be taught alongside traditional play. Programmes that combine balanced screen habits, critical thinking, and source evaluation help children to navigate online spaces safely (Takeuchi et al., 2018). Collaborative efforts between parents and educators are most effective (Slater et al., 2016). The targeted integration of touchscreens into learning — accompanied by

adult guidance — encourages active rather than passive use (Donohue, 2014; Straker et al., 2018). Nevertheless, firm limits must be placed on screen time to protect physical and cognitive growth. Comprehensive approaches that combine media literacy, parental involvement and clear guidelines are key (Straker et al., 2018; Di Putra and Irwansyah, 2024). In addition, attention must be given to the hidden influence of recommendation systems and so-called information bubbles. Mihelač (2024) shows that most parents lack a deep understanding of how algorithms shape children's exposure to content, which can limit diversity of experiences and hinder critical development.

Introduce sleep routines

Consistent bedtimes support growth, cognition, and emotional regulation. Regular schedules and fewer screens before bedtime improve sleep quality by limiting the suppression of melatonin by blue light (LeBourgeois et al., 2017; Garrison and Christakis, 2012). Predictable routines are associated with better language, better executive function, and more consistent mood (Mindell et al., 2015; Kitsaras et al., 2018). Longitudinal data shows that habits established in childhood lead to healthier sleep years later (Fiese et al., 2021). Combining screen-free time with calming bedtime rituals is therefore a cornerstone of children's holistic development.

Using digital tools to promote a healthier lifestyle in children

In today's increasingly digital world, information, and communication technology (ICT) plays a crucial role in shaping children's habits and lifestyle choices. Educators are in a unique position to harness the potential of ICT tools to promote health awareness and positive behaviours in children. By integrating ICT into pedagogical practise, educators can promote digital literacy and ensure that children use technology critically and safely (Reid Chassiakos et al., 2016; Takeuchi et al., 2018).
ICT tools such as health monitoring apps, online collaboration platforms and educational games offer a variety of ways to promote well-being. These tools can do the following:

- Encourage physical activity through pedometers and fun fitness challenges (Ricci et al., 2021).
- Teach mindful screen use and create a balance between digital engagement and offline activities (Ponti et al., 2017).
- Support nutrition education with interactive tools that demonstrate healthy food choices and meal planning (Hill et al., 2016).

Educators can integrate these technologies into their lesson plans and emphasise their role not only in promoting healthy habits, but also in developing critical thinking and digital literacy skills. Training programmes for educators should focus on equipping them with the knowledge they need to use ICT purposefully and model responsible use of technology in their classrooms. For example, educators could lead projects where students use apps to track and reflect on their daily activity levels and link these results to broader discussions about physical health and well-being (Morrison et al., 2021).

Understanding the connections between human health and biodiversity is a critical component of holistic education. By familiarising students with topics such as ecosystems, sustainability, and the impact of biodiversity on human well-being, educators can instil a sense of environmental responsibility while promoting physical and mental health (Mantilla and Edwards, 2019; Larouche et al., 2017).

Outdoor learning experiences offer a double benefit: They foster an appreciation for biodiversity and encourage physical activity. Activities such as biodiversity mapping, nature walks or hands-on gardening projects allow students to combine theoretical knowledge with practical application. These activities promote physical health by reducing sedentary behaviour and encouraging movement, while also promoting cognitive development and emotional resilience through interaction with nature (Willumsen and Bull, 2020; Hutton et al., 2020).

Educators can link biodiversity education to healthy lifestyle habits by emphasising the role of ecosystems in food security and nutrition. For example, teaching about pollination and local agriculture can lead to discussions about fresh, nutrient-rich foods. Such interdisciplinary approaches reinforce the importance of biodiversity not only for environmental health, but also for personal well-being (Folkvord et al., 2017; Robinson et al., 2017).

Project framework for the integration of healthy lifestyles (ZŽS)

The ZŽS project aims to promote a sustainable approach to lifelong learning and well-being by encouraging multiple target groups to recognise the wider importance of healthy lifestyles. The project emphasises not only physical activity, healthy eating and sleeping habits, but also a holistic view of well-being that encompasses social inclusion, co-creation, acceptance, and trust within society. The key areas of focus are as follows:

- Health and well-being: Promoting physical activity, endurance and encouraging healthy eating and sleeping habits.

- Interdisciplinary integration: linking different areas such as sport, psychology, nutrition, science, art, sociology, and education.
- Creative learning approaches: Using different environments and experimental, exploratory learning to encourage creativity and collaboration.
- Fostering individual potential: encouraging non-competitive activities, creative expression, and sensory awareness, tailored to different age groups (Hill et al., 2016).
- Fostering collaboration: emphasising values such as equality, respect and active engagement while promoting cooperation and mutual understanding through shared activities (Baladaniya and Korat, 2024).

This holistic framework fits seamlessly with the themes discussed in this article and provides educators with actionable strategies to implement interdisciplinary approaches that promote comprehensive health and well-being. By integrating elements of the ZŽS project, educators can further enrich their curricula and ensure that students develop not only healthy habits, but also a deeper sense of community and environmental responsibility.

By combining insights from ICT and science education with the principles of the ZŽS project, educators can create a unified framework that addresses the multiple challenges of promoting healthy lifestyles in the digital age. Training programmes should do the following:

- Provide educators with the tools to balance screen time with active play and outdoor learning (Hale et al., 2018).
- Provide strategies to integrate digital literacy into physical and mental health lessons (Garrison and Christakis, 2012).
- Equip educators with interdisciplinary teaching approaches that link health, technology, and environmental sustainability (Reid Chassiakos et al., 2016).

Conclusion

Educators are at the forefront of creating healthy, balanced lifestyles for the next generation. By carefully integrating ICT tools, science education and the holistic principles of the ZŽS project into their lessons, they can promote digital literacy, encourage physical activity, and instil a great appreciation for biodiversity.

Research repeatedly emphasises the importance of these approaches:

- Integrating biodiversity into learning promotes cognitive and emotional resilience, as demonstrated by the role of outdoor learning in promoting mental and physical well-being (Larouche et al., 2017; Willumsen and Bull, 2020).

- Digital tools such as apps and games can improve critical thinking and promote active lifestyles, as found in studies on the impact of technology on health and learning (Takeuchi et al., 2018; Hill et al., 2016).
- Collaborative, interdisciplinary approaches, such as those emphasised in the ZŽS project, promote creativity, collaboration, and community engagement
- as seen in frameworks for holistic education (Baladaniya and Korat, 2024; Donohue, 2014).

These efforts will not only prepare children to navigate the complex digital world but also empower them to make informed choices that promote their overall well-being. By combining pedagogy with interdisciplinary principles, educators can cultivate lifelong habits that benefit both the individual and the community. This dynamic platform of technology, science and holistic education is key to addressing individual and societal challenges in promoting health and sustainability.

Implications and Future Directions

Building on our findings, future research should investigate the long-term effects of digital technology use on children's physical, cognitive, and emotional development. In particular, longitudinal studies could help to identify how controlled use of digital technologies, balanced with active offline use, affects developmental outcomes over time. Pilot intervention programmes incorporating elements from the ZŽS framework could provide valuable insights into practical strategies for educators and caregivers. Such interventions could include structured digital literacy training and outdoor experiential learning activities that promote healthier behaviours. Ultimately, these research initiatives could help policy makers develop evidence-based guidelines that promote a balanced and sustainable approach to children's use of digital technologies.

References

Arufe-Giráldez, V., Sanmiguel-Rodríguez, A., Zagalaz-Sánchez, M. L., Cachón-Zagalaz, J., and González-Valero, G. (2020). Sleep, physical activity and screens in 0-4 years Spanish children during the COVID-19 pandemic: Were the WHO recommendations met? *Journal of Human Sport and Exercise*, *17*(3), 484-503. https://doi.org/10.14198/jhse.2022.173.02

Baladaniya, M., and Korat, A. S. (2024). The Impact of Digital Technology Use on Child Development: A Comprehensive Literature Review. *Journal of Pediatrics Research Reviews & Reports*, 1–9. https://doi.org/10.47363/jprrr/2024(6)159

Charan, G. S., Kalia, R., Khurana, M. S., and Narang, G. S. (2024). From Screens to Sunshine: Rescuing Children's Outdoor Playtime in the Digital Era. *Journal of Indian Association for Child and Adolescent Mental Health*, *20*(1), 11–17. https://doi.org/10.1177/09731342241229845

Di Putra, R., and Irwansyah (2024). Empowering Children as Resilient Digital Citizens: Navigating the Challenges of the Digital Media Landscape. *International Journal for Multidisciplinary Research*, *6*(3), 1-13. https://doi.org/10.36948/ijfmr.2024.v06i03.22310

Donohue, C. (2014). Technology and digital media as tools for teaching and learning in the digital age. In *Technology and Digital Media in the Early Years,* ed, C. Donohue (pp. 21-35). Routledge.

Engberg, E., Leppänen, M. H., Sarkkola, C., and Viljakainen, H. (2021). Physical Activity Among Preadolescents Modifies the Long-Term Association Between Sedentary Time Spent Using Digital Media and the Increased Risk of Being Overweight. *Journal of Physical Activity and Health*, *18*(9), 1105–1112. https://doi.org/10.1123/jpah.2021-0163

Fiese, B. H., Cai, T., Sutter, C., and Bost, K. K. (2021). Bedtimes, bedtime routines, and children's sleep across the first 2 years of life. *Sleep*, *44*(8), 1-9. https://doi.org/10.1093/sleep/zsab045

Folkvord, F., Anschütz, D. J., and Buijzen, M. (2017). The effect of advergames on children's actual food consumption. *Journal of Advertising*, *46*(4), 458-469. https://doi.org/10.1080/00913–367.2017.1370136

Forster, E. M. (Ed.). (2022). Screen time for children and young people: opportunities, risks and contemporary challenges. *Journal of Children and Young People's Health*, *3*(1), 3. https://doi.org/10.33235/jcyph.3.1.3

Garcia, C., Garcia, L., Floyd, J., and Lawson, J. (2002). Improving Public Health through Early Childhood Movement Programs. *Journal of Physical Education, Recreation & Dance*, *73*(1), 27–31. https://doi.org/10.1080/07303084.2002.10605876

Garrison, M. M., and Christakis, D. A. (2012). The impact of a healthy media use intervention on sleep in preschool children. *Pediatrics*, *130*(3), e492-e499. https://doi.org/10.1542/peds.2011-3153

Glover, J., and Fritsch, S. L. (2018). #KidsAnxiety and Social Media. *Child and Adolescent Psychiatric Clinics of North America*, *27*(2), 171–182. https://doi.org/10.1016/j.chc.2017.11.005

Hale, L., Kirschen, G. W., LeBourgeois, M. K., Gradisar, M., Garrison, M. M., Montgomery-Downs, H., ... and Buxton, O. M. (2018). Youth screen media habits and sleep: sleep-friendly screen behavior recommendations for clinicians, educators, and parents. *Child and Adolescent Psychiatric Clinics of North America*, *27*(2), 229-245. https://doi.org/10.1016/j.chc.2017.11.014

Harrison, K., and Liechty, J. M. (2012). US Preschoolers' Media Exposure and Dietary Habits: The primacy of television and the limits of parental mediation. *Journal of Children and Media*, *6*(1), 18–36. https://doi.org/10.1080/17482798.2011.633402

Hill, D., Ameenuddin, N., Reid Chassiakos, Y. L., Cross, C., Hutchinson, J., Levine, A., ... and Swanson, W. S. (2016). Media and young minds. *Pediatrics*, *138*(5). https://doi.org/10.1542/peds.2016-2591

Hoge, E., Bickham, D., and Cantor, J. (2017). Digital Media, Anxiety, and Depression in Children. *Pediatrics*, *140*(Supplement_2), S76–S80. https://doi.org/10.1542/peds.2016-1758g

Huber, B., Yeates, M., Meyer, D., Fleckhammer, L., and Kaufman, J. (2018). The effects of screen media content on young children's executive functioning. *Journal of Experimental Child Psychology*, *170*, 72–85. https://doi.org/10.1016/j.jecp.2018.01.006

Hutton, J. S., Dudley, J., Horowitz-Kraus, T., DeWitt, T., and Holland, S. K. (2020). Associations Between Screen-Based Media Use and Brain White Matter Integrity in Preschool-Aged Children. *JAMA Pediatrics*, *174*(1), e193869. https://doi.org/10.1001/jamapediatr–ics.2019.3869

Janssen, X., Martin, A., Hughes, A. R., Hill, C. M., Kotronoulas, G., and Hesketh, K. R. (2020). Associations of screen time, sedentary time, and physical activity with sleep in under 5s: A systematic review and meta-analysis. *Sleep Medicine Reviews*, 49, 101226. https://doi.org/–10.1016/j.smrv.2019.101226

Keane, E., Li, X., Harrington, J. M., Fitzgerald, A. P., Perry, I. J., and Kearney, P. M. (2017). Physical Activity, Sedentary Behavior and the Risk of Overweight and Obesity in School-Aged Children. *Pediatric Exercise Science*, *29*(3), 408–418. https://doi.org/10.1123/pes.2016-0234

Kitsaras, G., Goodwin, M., Allan, J., Kelly, M. P., and Pretty, I. A. (2018). Bedtime routines child wellbeing & development. *BMC Public Health*, *18*(1). https://doi.org/10.1186/s12889-018-5290-3

Kredlow, M. A., Capozzoli, M. C., Hearon, B. A., Calkins, A. W., and Otto, M. W. (2015). The effects of physical activity on sleep: A meta-analytic review. *Journal of Behavioral Medicine*, *38*(3), 427-449. https://doi.org/10.1007/s10865-015-9617-6

Larouche, R., Garriguet, D., and Tremblay, M. S. (2016). Outdoor time, physical activity and sedentary time among young children: The 2012–2013 Canadian Health Measures Survey. *Canadian Journal of Public Health*, *107*(6), e500–e506. https://doi.org/10.17269/cjph.107.5700

LeBourgeois, M. K., Hale, L., Chang, A. M., Akacem, L. D., Montgomery-Downs, H. E., and Buxton, O. M. (2017). Digital media and sleep in childhood and adolescence. *Pediatrics*, *140*(Supplement 2), S92-S96. https://doi.org/10.1542/peds.2016-1758J

Loprinzi, P. D., Cardinal, B. J., Loprinzi, K. L., and Lee, H. (2012). Benefits and Environmental Determinants of Physical Activity in Children and Adolescents. *Obesity Facts*, *5*(4), 597–610. Portico. https://doi.org/10.1159/000342684

Loprinzi, P. D., Davis, R. E., and Fu, Y. C. (2015). Early motor skill competence and physical activity in childhood. *Preventive Medicine Reports*, *2*, 833-837. https://doi.org/10.1016/j.pmedr–.2015.09.015

Mantilla, A., and Edwards, S. (2019). Digital technology use by and with young children: A systematic review for the Statement on Young Children and Digital Technologies. *Australasian Journal of Early Childhood*, *44*(2), 182-195. https://doi.org/10.1177/1836939119832744

McHarg, G., Ribner, A. D., Devine, R. T., and Hughes, C. (2020). Infant screen exposure links to toddlers' inhibition, but not other EF constructs: A propensity score study. *Infancy*, *25*(2), 205–222. Portico. https://doi.org/10.1111/infa.12325

Melanson, K. J. (2008). Nutrition Review: Lifestyle Approaches to Promoting Healthy Eating for Children. *American Journal of Lifestyle Medicine*, *2*(1), 26–29. https://doi.org/10.1–177/1559827607309217

Merín, L., Toledano-González, A., Fernández-Aguilar, L., Nieto, M., del Olmo, N., and Latorre, J. M. (2024). Evaluation of the association between excessive screen use, sleep patterns and behavioral and cognitive aspects in preschool population. A systematic review. *European Child & Adolescent Psychiatry*, *33*(12), 4097–4114. https://doi.org/10.1007/s00787-024-02430-w

Metcalfe, J. J., and Fiese, B. H. (2018). Family food involvement is related to healthier dietary intake in preschool-aged children. *Appetite*, *126*, 195–200. https://doi.org/10.1016/j.appet.201–8.03.021

Mihelač, L. (2024). Recommendation systems, parents, and preschool children: the story behind digital technology = Priporočilni sistemi, starši in predšolski otroci. Revija za elementarno izobraževanje, 17(2), 155–170. https://doi.org/10.18690/rei.3488

Mindell, J. A., Li, A. M., Sadeh, A., Kwon, R., and Goh, D. Y. T. (2015). Bedtime Routines for Young Children: A Dose-Dependent Association with Sleep Outcomes. *Sleep*, *38*(5), 717–722. https://doi.org/10.5665/sleep.4662

Morrison, S. A., Meh, K., Sember, V., Starc, G., and Jurak, G. (2021). The effect of pandemic movement restriction policies on children's physical fitness, activity, screen time, and sleep. *Frontiers in Public Health*, *9*, 785679. https://doi.org/10.3389/fpubh.2021.785679

Muppalla, S. K., Vuppalapati, S., Reddy Pulliahgaru, A., and Sreenivasulu, H. (2023). Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management. *Cureus*. https://doi.org/10.7759/cureus.40608

Norman, J., Kelly, B., McMahon, A.-T., Boyland, E., Baur, L. A., Chapman, K., King, L., Hughes, C., and Bauman, A. (2018). Children's self-regulation of eating provides no defense against television and online food marketing. *Appetite*, *125*, 438–444. https://doi.org/10.101–6/j.appet.2018.02.026

Odgers, C. L., and Jensen, M. R. (2020). Annual Research Review: Adolescent mental health in the digital age: facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, *61*(3), 336–348. Portico. https://doi.org/10.1111/jcpp.13190

Ophir, Y., Rosenberg, H., and Tikochinski, R. (2021). What are the psychological impacts of children's screen use? A critical review and meta-analysis of the literature underlying the World Health

Organization guidelines. *Computers in Human Behavior*, *124*, 106925. https://doi.org/10.1016/–j.chb.2021.106925

Pestano Pérez, M., Pesek, I., Zmazek, B., & Lipovec, A. (2020). Video explanations as a useful digital source of education in the COVID 19 situation. Revija za elementarno izobraževanje, 13(4), 395–412. https://doi.org/10.18690/rei.13.4.395-412.2020f

Ponti, M., Bélanger, S., Grimes, R., Heard, J., Johnson, M., Moreau, E., Norris, M., Shaw, A., Stanwick, R., Van Lankveld, J., and Williams, R. (2017). Screen time and young children: Promoting health and development in a digital world. *Paediatrics & Child Health*, *22*(8), 461–468. https://doi.org/10.1093/pch/pxx123

Proudfoot, N. A., King-Dowling, S., Cairney, J., Bray, S. R., MacDonald, M. J., and Timmons, B. W. (2019). Physical Activity and Trajectories of Cardiovascular Health Indicators During Early Childhood. *Pediatrics*, *144*(1), e20182242. https://doi.org/10.1542/peds.2018-2242

Radesky, J. S., and Christakis, D. A. (2016). Increased screen time: implications for early childhood development and behavior. *Pediatric Clinics*, *63*(5), 827-839. https://doi.org/10.1016/j–.pcl.2016.06.006

Reid Chassiakos, Y. L., Radesky, J., Christakis, D., Moreno, M. A., Cross, C., Hill, D., ... and Swanson, W. S. (2016). Children and adolescents and digital media. *Pediatrics*, *138*(5), e20162593. https://doi.org/10.1542/peds.2016-2593

Ricci, R. C., Costa de Paulo, A. S., Borges de Freitas, A. K. P., et al. (2021). Impacts of technology on children's health: A systematic review. *Revista Paulista de Pediatria*, 41, e2020504. https://doi.org/10.1590/1984-0462/2023/41/2020504

Robinson, T. N., Banda, J. A., Hale, L., Lu, A. S., Fleming-Milici, F., Calvert, S. L., and Wartella, E. (2017). Screen Media Exposure and Obesity in Children and Adolescents. *Pediatrics*, *140*(Supplement_2), S97–S101. https://doi.org/10.1542/peds.2016-1758k

Sadaf, N., & Huma, A. (2021). Teachers' knowledge regarding children's health at the elementary school level. Revija za elementarno izobraževanje, 14(1), 93–110. https://doi.org/10.18690/r–ei.14.1.93-110.2021

Scaglioni, S., Salvioni, M., and Galimberti, C. (2008). Influence of parental attitudes in the development of children [sic] eating behaviour. *British Journal of Nutrition*, *99*(S1), S22–S25. https://doi.org/10.1017/s0007114508892471

Scully, M., Wakefield, M., Niven, P., Chapman, K., Crawford, D., Pratt, I. S., Baur, L. A., Flood, V., and Morley, B. (2012). Association between food marketing exposure and adolescents' food choices and eating behaviors. *Appetite*, *58*(1), 1–5. https://doi.org/10.1016/j.a–ppet.2011.09.020

Slater, A., and Tiggemann, M. (2016). Media exposure, body dissatisfaction, and disordered eating in preadolescent children: A test of the mediating role of social comparison. *Body Image*, *19*, 118-121. https://doi.org/10.1016/j.bodyim.2016.08.003

Staples, A. D., Hoyniak, C., McQuillan, M. E., Molfese, V., and Bates, J. E. (2021). Screen use before bedtime: Consequences for nighttime sleep in young children. *Infant Behavior and Development*, *62*, 101522. https://doi.org/10.1016/j.infbeh.2020.101522

Straker, L., Zabatiero, J., Danby, S., Thorpe, K., and Edwards, S. (2018). Conflicting Guidelines on Young Children's Screen Time and Use of Digital Technology Create Policy and Practice Dilemmas. *The Journal of Pediatrics*, 202, 300–303. https://doi.org/10.1016/–j.jpeds.2018.07.019

Takeuchi, H., Taki, Y., Hashizume, H., et al. (2018). Impact of videogame playing on the brain: Evidence from a longitudinal study in children. *Nature*, *563*(7729), 121-125. https://doi.org–/10.1038/s41562-018-0326-9

Willumsen, J., and Bull, F. (2020). Development of WHO Guidelines on Physical Activity, Sedentary Behavior, and Sleep for Children Less Than 5 Years of Age. *Journal of Physical Activity and Health*, *17*(1), 96–100. https://doi.org/10.1123/jpah.2019-0457

World Health Organization. (2019). Guidelines on physical activity, sedentary behaviour, and sleep for children under 5 years of age. *WHO Guidelines*. https://www.who.int/publica–tions/i/item/9789241550536

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LIFESTYLE CHARACTERISTICS OF STUDENTS WHO ARE OVERWEIGHT, OBESE, OR HAVE NORMAL BODY WEIGHT

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Abstract/Izvleček

This study examines the differences in body composition and lifestyle habits between normal-weight (NW) and overweight/obese (OW&O) university students. A sample of fifty-five students aged 21–25 years completed validated questionnaires (HLPCQ, IPAQ-SF, WHO-5) and underwent body composition analysis using the InBody 270 device. Statistical analyses included independent sample t-tests and Cohen's d effect sizes. OW&O students had significantly higher scores for body fat, fat-free mass, and skeletal muscle mass. While body composition differences were evident, lifestyle habits did not significantly differ between weight groups. Bias in lifestyle and well-being self-assessment calls for the development of more objective assessment tools and further research.

Keywords:
body composition, eating habits, sleeping habits, physical activity, social balance.

Značilnosti življenskega sloga študentov z normalno telesno maso, prekomerno telesno maso in debelostjo

Namen raziskave je raziskati razlike v telesni sestavi in življenjskih navadah med študenti z normalno telesno težo (dalje NTT) in študenti s prekomerno telesno težo in debelostjo (dalje PTT in D). Vzorec zajema 55 študentov, starih od 21 let do 25 let, ki so izpolnili standardizirane vprašalnike (HLPCQ, IPAQ-SF, WHO-5) in opravili meritve telesne sestave z napravo InBody 270. V sklopu statistične analize je bil izveden t-test za neodvisne vzorce ter izračunan kazalec Cohenov d za oceno velikosti učinkov. Študenti skupine PTT in D so imeli statistično značilno višje vrednosti telesne maščobe, brezmaščobne mase in mase skeletnih mišic. Čeprav so bile razlike v telesni sestavi očitne, se življenjske navade med skupinami ne razlikujejo statistično značilno. Pristranskost pri samoocenjevanju življenjskega sloga in dobrobiti kliče po oblikovanju objektivnejših merskih instrumentov in nadaljnjih raziskavah.

Ključne besede:
telesna sestava, prehranjevalne navade, spalne navade, gibalna dejavnost, socialno ravnovesje.

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Introduction

Overweight and obesity are global health problems that continue to spread rapidly, especially in the developed world, and are becoming an increasing threat to public health (WHO, 2017). According to the World Health Organization, they are among the most common causes of many chronic diseases, including cardiovascular disease, type 2 diabetes, certain cancers and musculoskeletal diseases (Blüher, 2019). Being overweight is often associated with a higher risk of hypertension, blood lipid disorders, inflammation, and metabolic disorders, making it an important risk factor for poorer quality of life and premature death (Hunot et al., 2016).

The problem of obesity is evident not only in the adult population, but also in young people and students, which is of particular concern as the period of adolescence is crucial for the formation of lifestyle habits and healthy eating and physical activity patterns that have a long-term impact on an individual's health (Rahmani et al., 2015). Studies have shown that weight gain often occurs among students, especially at the beginning of the academic period when young people are faced with new challenges and responsibilities, such as lifestyle changes, the stress of study commitments and changes in eating habits (Ogden et al., 2015). In many cases, these changes have a negative impact on eating patterns, physical activity and overall health, leading to an increase in cases of obesity and overweight among students (Mourtakos et al., 2015). Furthermore in student population weight status and the level of physical fitness are closely related (Matejek & Planinšec, 2016).

The increase in the prevalence of obesity and overweight among young students is not only a health problem but an issue with broad socio-economic impact. The health costs of obesity-related diseases are placing an increasing burden on health systems, while at the same time increasing the risk of a reduction in productivity and quality of life for individuals. In this context, it is important to note that obesity and overweight are not only physiological but also psychological problems, since they are associated with a higher risk of developing depression, anxiety, low self-esteem and social isolation (Hunot et al., 2016).

The association between body mass and lifestyle is complex and involves many factors, such as dietary habits, physical activity, stress, genetic factors, social and cultural factors, and other environmental factors (Chooi et al., 2019). Irregular food consumption, eating fast food and increased consumption of high-calorie snacks

and sugary drinks are among the key risk factors contributing to overweight (Kremmyda et al., 2008). Students, especially in urban settings, often do not have time to prepare healthy meals, leading to increased consumption of unhealthy foods. At the same time, in most cases, sedentary lifestyles are also increasing, as students often spend long hours in front of computers, for study commitments or leisure, which has the effect of reducing physical activity and increasing the risk of weight gain (Mokdad et al., 2003).

Another crucial factor influencing student eating habits and physical activity is the level of stress they face. Research has shown that stress can have a significant impact on eating habits, either leading to overeating or causing reduced appetite (Tomiyama, 2019). Young people are exposed to greater likelihood of experiencing stress and this period is critical for developing effective and constructive coping strategies (Dolenc, 2015). Students facing high levels of stress due to study commitments often seek comfort in unhealthy eating habits, such as consuming high-calorie snacks or sugary drinks, which can lead to weight gain (Dahlin et al., 2005). In addition, stress and sleep deprivation are associated with a greater risk of weight gain since they affect the hormonal balance that regulates appetite. Students experiencing long-term stress may be more prone to consume unhealthy foods such as high-fat and high-calorie meals, which further increases the risk of becoming overweight (Tomiyama, 2019).

These factors and their associations with obesity and overweight among students pose a number of challenges for the prevention of these conditions. At the same time, there is a need for targeted interventions and programmes to help students change their eating habits, promote physical activity, and manage stress. Programmes that include education on healthy eating patterns, the importance of physical activity and stress management techniques can make a significant contribution to the prevention of obesity and overweight. It is also important for universities and higher education institutions to focus on creating an environment conducive to healthy lifestyles, including providing access to healthy food options and opportunities for physical activity (Johnson et al., 2006).

In Slovenia, where we are also facing a growing problem of overweight among young people, it is important to focus on specific lifestyle habits and factors that influence students' body weight. In a study conducted among Slovenian university students, we will examine the prevalence of overweight and obesity and explore the links between body mass, eating habits, physical activity, and stress levels. Studying these

factors will help in the design of effective preventive measures to enable students to take responsibility for their health and prevent health problems in the future.
Since students are often in a period when their eating habits and lifestyles are changing, it is right to focus on this period as key to developing healthy habits that will help students maintain a normal body weight and health throughout their lives. Through research that includes an analysis of the factors associated with obesity and overweight, we aim to obtain valuable data that will contribute to understanding the causes of these problems and allow the development of targeted interventions to manage these global health problems.

Research objectives and hypotheses

The main aim of this study is to investigate the differences in body composition and lifestyle habits between normal weight and overweight/obese university students. We hypothesise that overweight and obese students will have significantly higher scores on body composition parameters (e.g., body fat, skeletal muscle mass) and lower scores on measures of lifestyle quality, including physical activity, dietary habits, and well-being. By examining these variables, the study aims to provide insights that can serve as a basis for interventions targeting lifestyle-related obesity risk in university students.

Methods

Research sample

The study was conducted on a non-random sample of pre-service teachers in primary education. The sample consisted of 55 students aged between 21 and 25 years (M = 22.3 years, SD = 1.045), of whom 47 participants (85.5%) were female (N = 47; 85.5%) and 8 participants (14.5%) were male.

Data collection procedures

The data collection process involved the administration of the questionnaires in a physical format. Participants first completed the HLPCQ, IPAQ-SF, and WHO-5 questionnaires. Immediately afterward, measurements of body height and body composition were conducted following a standardized protocol, which was explained to participants prior to testing.

To ensure consistency and accuracy in the body composition assessment using the InBody 270 device, participants were instructed to follow the preparatory guidelines outlined in the *InBody270 User's Manual (2021).*

Ethical considerations

Participation in the study was voluntary, and informed consent was obtained from all participants prior to data collection. Participants were assured of the anonymity and confidentiality of their responses. The study was conducted in accordance with the ethical standards of the university's research committee.

Methodological characteristics of instruments

In this study, we utilized three validated questionnaires to assess various aspects of lifestyle, physical activity, and well-being: the Healthy Lifestyle and Personal Control Questionnaire (HLPCQ), the International Physical Activity Questionnaire – Short Form (IPAQ-SF), and the World Health Organization Well-Being Index (WHO-5). Additionally, body composition was measured using the InBody 270 device, and body height was assessed using a height measuring device.

Healthy Lifestyle and Personal Control Questionnaire (HLPCQ) is a 26-item validated tool designed to measure the frequency of adopting positive lifestyle habits using a 4-point Likert scale (1 = Never or rarely, 2 = Sometimes, 3 = Often, 4 = Always). The introductory phrase for each item is "How often….?" The questionnaire consists of five subscales: (1) Healthy dietary choices (7 items, maximum score: 28), (2) Dietary harm avoidance (4 items, maximum score: 16), (3) Daily routine (8 items, maximum score: 32), (4) Organized physical activity (2 items, maximum score: 8), and (5) Social and mental balance (5 items, maximum score: 20). The total HLPCQ score ranges from 26 to 104, with higher scores indicating better control over lifestyle habits. The questionnaire has demonstrated good psychometric properties in previous research (Darviri et al., 2014).

International Physical Activity Questionnaire – Short Form (IPAQ-SF) is a widely used instrument designed to assess physical activity levels over the past seven days. It consists of seven items measuring time spent in vigorous-intensity activities, moderate-intensity activities, walking, and sedentary behaviour. The results allow for classification into three activity levels: low, moderate, and high. The IPAQ-SF has been validated in various populations and has demonstrated good reliability (Marinšek et al., 2022).

The *World Health Organization Well-Being Index (WHO-5)* is a brief, self-reported measure of subjective well-being. It consists of five positively worded statements related to mood, vitality, and general well-being, assessed using a 6-point Likert scale (0 = At no time, 5 = All the time). The total score ranges from 0 to 25, with higher scores indicating better well-being. The raw score is converted into a percentage (0–100) by multiplying by four. A total score below 13 suggests low well-being and the need for further screening for depression according to ICD-10 criteria (WHO, 2024).

Body composition was assessed using the InBody 270 device, which provides detailed information about overall body composition. Body height was measured using a height measuring device to ensure accurate anthropometric assessment.

Statistical methods

The data were analysed using IBM SPSS STATISTICS 29 software for the Windows operating system. Descriptive statistics, including arithmetic means (M) and standard deviations (SD), were calculated for all measured variables related to body composition and lifestyle parameters.

To examine differences between normal-weight (NW) and overweight and obese (OW&O) groups, an independent samples t-test was performed. This test assessed whether there were statistically significant differences between the two groups across various parameters, including body composition variables (proteins, minerals, fat mass, fat-free mass, skeletal muscle mass, and body fat percentage) and lifestyle factors (physical activity levels, dietary habits, daily routine, and personal control over lifestyle choices). The significance level was set at $p < 0.05$.

Effect sizes were calculated using Cohen's d to determine the magnitude of the differences between groups. Effect sizes were interpreted according to conventional thresholds, where $d = 0.2$ indicates a small effect, $d = 0.5$ a medium effect, and $d = 0.8$ or higher a large effect.

For the analysis of categorical variables and trends in lifestyle behaviours, participants were grouped according to specific categories, such as levels of physical activity, dietary habits, and daily routines. Differences between groups in these categorical variables were analysed using cross-tabulations and relevant statistical tests.

All statistical analyses were conducted with a significance level of $p < 0.05$. In cases where multiple comparisons were made, appropriate corrections were applied to minimize the risk of Type I errors.

Results and interpretation

Differences in body composition in normal weight (NW) students and overweight and obese students (OW&O)

The independent sample t-test and Cohen's d results from this study provide insights into the body composition differences between normal weight (NW) and overweight and obese (OW&O) groups across various parameters, including proteins, minerals, body fat, fat free mass, and skeletal muscle mass. These findings are contextualized within recent literature to understand the implications and significance of these differences.

Table 1

Differences in body composition in normal weight (NW) students and overweight and obese (OW & O) students

Variables	NW		OW & O		t (55)	p	Cohen's d
	M	SD	M	SD			
Proteins (kg)	9.63	1.84	10.70	1.88	-2.002	.025	-.575
Minerals (kg)	3.38	.60	3.83	.61	-2.624	.006	-.754
Fat (kg)	14.57	5.04	30.80	12.72	-5.215*	<.001	-1.950
FFM (kg)	48.62	9.10	54.16	9.25	-2.109	.020	-.606
SMM (kg)	27.02	5.54	30.27	5.67	-2.023	.024	-.581
Body fat (%)	23.26	7.75	35.49	9.54	-5.085	<.001	-1.461

Protein and Mineral Content

The overweight and obese group has a higher protein mass ($M = 10.70$ kg, $SD = 1.88$) than the normal weight group ($M = 9.63$ kg, $SD = 1.84$). This difference is statistically significant ($p < .05$), with a medium effect size (Cohen's $d = -0.575$), suggesting a noticeable but moderate increase in protein mass in the overweight/obese group. The overweight and obese group ($M = 3.83$ kg, $SD = 0.61$) has significantly higher mineral content than the normal weight group ($M = 3.38$ kg, $SD = 0.60$). This significant difference ($p < .01$) has a medium-to-large effect size (Cohen's $d = -0.754$), indicating a substantial increase in mineral content among the overweight/obese group.

The current study's findings reveal a statistically significant increase in both protein and mineral content among the overweight and obese group, with medium effect sizes. This increase aligns with findings by Zamboni et al. (2008), who found that overweight and obese adults often show higher absolute values of lean body components, including protein content, compared to leaner individuals. This is attributed to the generally higher body mass in overweight/obese individuals, which is accompanied by increases in both adipose and lean tissues. Moreover, the higher mineral mass may be partially explained by greater bone mass and mineral density, as noted in studies by Ho-Pham et al. (2014), suggesting that body weight positively correlates with bone density because of mechanical loading effects.

The current findings showing increased protein and mineral content in the overweight and obese group are consistent with recent findings by Jannsen et al. (2000), who reported that individuals with higher BMI have more lean tissue, which naturally contains protein and minerals. This supports the notion that, while overweight individuals may exhibit increased protein and mineral masses, these values reflect the overall increase in body mass rather than improved metabolic health. Additionally, Ho-Pham et al. (2014) found that higher body weight is positively correlated with increased bone mineral density, possibly as a result of the mechanical loading effect of excess weight, which enhances bone mineral content—a trend that aligns with the findings of the current study.

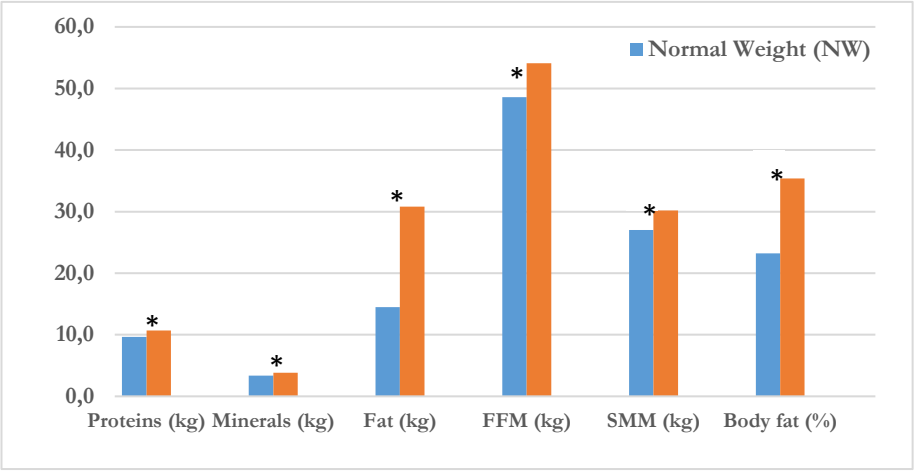
Body Composition and Body Fat (Body Composition and Adiposity)

Body fat is significantly higher in the overweight and obese group (M = 30.80 kg, SD = 12.72), compared to the normal weight group (M = 14.57 kg, SD = 5.04). With a very large effect size (Cohen's d = -1.950), this difference is not only highly significant but also represents a strong disparity in body fat between the two groups. Body fat percentage is significantly higher in the overweight and obese group (M = 35.49 %, SD = 9.54) than in the normal weight group (M = 23.26 %, SD = 7.75). With a very large effect size (Cohen's d = -1.461), this shows a significant and substantial difference, with the overweight/obese group having a notably higher body fat percentage.

The significantly higher body fat and body fat percentage observed in the overweight and obese group is consistent with extensive research indicating that adiposity measures are markedly higher among overweight and obese individuals compared to their normal-weight counterparts. Studies by Flegal et al. (2016) and Heymsfield

and Wadden (2017) have documented similar findings, where obese individuals consistently display elevated body fat levels due to excess energy storage in adipose tissue, a result of chronic energy imbalance. This pattern is also corroborated by Heymsfield (2005), who observed that excess body fat is the primary differentiator in body composition profiles across BMI categories, thus reinforcing the substantial disparities reported here. The observed significant differences in body fat and body fat percentage between normal-weight and overweight/obese groups align with findings in recent research. For example, Shea et al. (2012) documented similar patterns, noting that increased body fat is a consistent characteristic of overweight and obese groups.

Their findings reinforce the idea that higher adiposity is a primary contributor to the excess weight seen in these populations. These studies emphasize that elevated body fat levels are strongly associated with metabolic risk factors, which underscores the importance of examining body composition beyond weight alone.



Graph 1
*Statistically significant differences in body composition in NW and OW&O groups (*statistically significant differences)*

Fat-Free Mass and Skeletal Muscle Mass

The overweight & obese group (M = 54.16 kg, SD = 9.25) has significantly more fat-free mass than the normal weight group (M = 48.62 kg, SD = 9.10). This difference ($p < .05$) shows a medium effect size (Cohen's d = -0.606), suggesting a moderate increase in fat-free mass for the overweight/obese individuals.

There is a statistically significant difference in skeletal muscle mass ($p < .05$), with the overweight & obese group having a higher mass (M = 30.27 kg, SD = 5.67)

compared to the normal weight group (M = 27.02 kg, SD = 5.54). The medium effect size (Cohen's d = -0.581) indicates a moderate distinction in muscle mass between the groups.

Regarding fat-free mass and skeletal muscle mass, the present study found statistically significant but moderate increases in these measures among overweight and obese individuals compared to normal-weight participants. These findings align with those reported by Stenholm et al. (2009), who found that overweight and obese individuals tend to have higher absolute lean mass, potentially as a compensatory physiological response to increased body weight. Similarly, Morgan et al. (2020) indicated that lean body mass, including skeletal muscle, can be higher in individuals with greater body weight, a phenomenon partly explained by the need for increased musculoskeletal support of excess adipose tissue. However, Prado et al. also noted that relative muscle quality might be compromised in obese individuals because of fat infiltration into muscle tissue, an aspect not directly assessed in the current study. The current study found significant, though moderate, increases in fat-free mass and skeletal muscle mass in the overweight and obese group. This observation is supported by research from Rahemi et al. (2015), who reported that individuals with higher BMI tend to have greater absolute lean mass due to both increased muscle mass and connective tissue adaptations in response to excess body weight. Nonetheless, Rahemi and colleagues highlighted that, while lean mass might increase with body weight, the muscle quality and function may be compromised as a result of intramuscular fat accumulation. Similarly, Tallis et al. (2018) noted that increased lean mass in overweight individuals is typically not proportional to the fat mass increase, suggesting potential imbalances in muscle function and strength.

Differences in life-style parameters in Normal weight (NW) students and Overweight & Obese (OW&O) students

The independent sample t-test and Cohen's d results from this study provide insights into the lifestyle differences between normal weight (NW) and overweight & obese (OW&O) groups across various parameters, including physical activity, dietary habits, daily routines, and personal control over lifestyle choices. These findings are contextualized within recent literature to understand the implications and significance of these differences.

Table 2

Differences in Vigorous Physical Activity (hours) in the last seven days in Normal weight (NW) students and Overweight & Obese (OW & O) students

Variables	NW		OW & O		*t* (55)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Vigorous PA in last 7 days (h)	3.11	2.09	2.17	1.69	1.661	.040	.477

Physical Activity

In terms of vigorous physical activity over the past week, the NW group reported a mean of 3.11 days (SD = 2.09), compared to 2.17 days (SD = 1.69) for the OW&O group. Results of ANOVA show that the difference is statistically significant (t(55) = 1.661, p = .040, Cohen's d = .477). Findings align with those by Davis et al. (2006), who reported that overweight and obese individuals are generally less active in high-intensity physical activities compared to their normal-weight peers. The moderate effect size observed here (Cohen's d = .477) suggests a noticeable trend in the expected direction, supporting the need for targeted physical activity interventions among overweight populations to reduce associated health risks.

Table 3

Differences in life-style parameters in Normal weight (NW) students and Overweight & Obese (OW & O) students

Variables	NW		OW & O		*t* (55)	*p*	*Cohen's d*
	M	*SD*	*M*	*SD*			
Healthy Dietary Choices	16.24	3.66	15.11	3.07	1.131	.131	.325
Dietary Harm Avoidance	9.73	1.92	9.00	1.53	1.404	.083	.404
Daily Routine	17.70	4.70	15.39	3.97	1.797	.039	.516
Organised PA	5.32	1.94	4.61	1.61	1.345	.092	.387
Social and Mental Balance	14.35	2.16	14.00	3.13	.487	.314	.140
Healthy Lifestyle and Personal Control	63.35	10.54	58.11	8.98	1.811	.038	.520

Dietary Choices

Healthy dietary choices showed a small, non-significant difference between the NW (M = 16.24, SD = 3.66) and OW&O groups (M = 15.11, SD = 3.07), with a t-value of 1.131 and p-value of .131. A Cohen's d of .325 indicates a small effect size, suggesting minimal differences in healthy eating behaviours across groups. Recent studies, such as those by Costlow et al. (2025), emphasize that while diet quality is

critical for weight management, other factors like socio-economic status and environmental access to healthy foods can influence dietary choices independently of weight status. This might explain the lack of significant dietary differences observed here.

Dietary Harm Avoidance

Neither did the dietary harm avoidance parameter, which reflects the tendency to avoid harmful food choices, differ significantly between groups ($t(55) = 1.404$, $p = .083$, Cohen's $d = .404$). This small-to-moderate effect size suggests that both groups may display similar tendencies in avoiding detrimental dietary behaviours, supporting the findings of Dao et al. (2020), who argue that dietary behaviours may not vary significantly between weight categories, owing to shared cultural and environmental influences on food choices.

Daily Routine

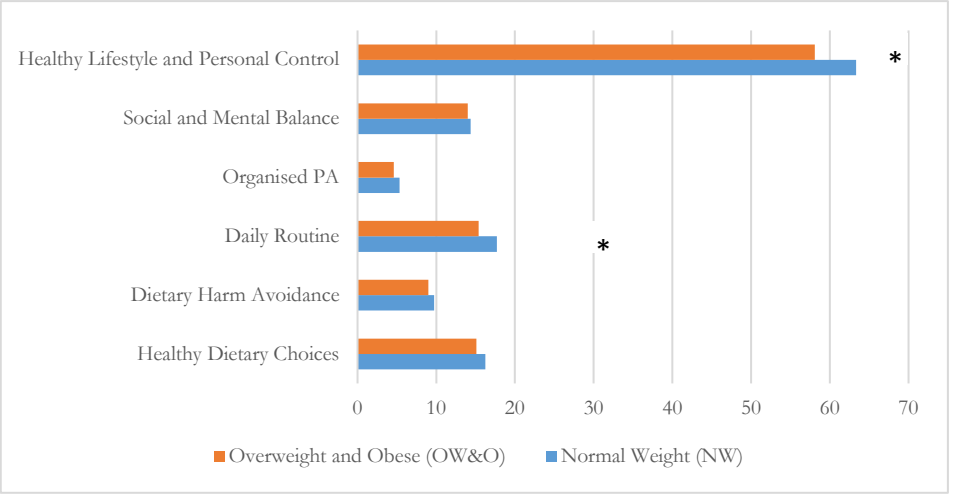
The daily routine parameter, encompassing structured daily activities, showed a statistically significant difference, with NW individuals reporting higher scores ($M = 17.70$, $SD = 4.70$) than OW&O individuals ($M = 15.39$, $SD = 3.97$). The t-value of 1.797 and p-value of .039, coupled with a moderate effect size (Cohen's $d = .516$), indicate that individuals in the NW group are more likely to engage in consistent daily routines. This finding is consistent with Bach (2025), who found that structured routines are associated with better weight management outcomes, since routines help reinforce healthy habits and reduce impulsive behaviours, which can contribute to weight gain.

Organized Physical Activity

While organized physical activity was higher among NW individuals ($M = 5.32$, $SD = 1.94$) than OW&O individuals ($M = 4.61$, $SD = 1.61$), this difference was not statistically significant ($t(55) = 1.345$, $p = .092$, Cohen's $d = .387$). The moderate effect size observed here suggests that participation in organized physical activities may be somewhat lower among the overweight and obese group. This finding aligns with recent observations by Deforche et al. (2006), who reported that overweight individuals often report less engagement in organized physical activities because of perceived physical and social barriers.

Social and Mental Balance

Both groups scored similarly in terms of social and mental balance, with a non-significant difference (t (55) = .487, p = .314, Cohen's d = .140), indicating that social and mental well-being are consistent across weight groups. This finding supports Emmer et al. (2020), who emphasized that social and mental factors might not directly correlate with weight status but instead reflect broader individual differences in coping and support networks.



Graph 2

*Scores on the Healthy Lifestyle and Personal Control Questionnaire (*statistically significant differences)*

Healthy Lifestyle and Personal Control

Finally, the overall score for healthy lifestyle and personal control was significantly higher in the NW group (M = 63.35, SD = 10.54) compared to the OW&O group (M = 58.11, SD = 8.98), with t(55) = 1.811, p = .038, and a moderate effect size (Cohen's d = .520). This suggests that individuals with normal weight may have greater perceived control over their lifestyle choices, a finding that aligns with recent research by Infurna et al. (2011), who observed that greater perceived control over health behaviours is associated with lower BMI and better health outcomes. The significance of personal control in lifestyle choices is increasingly recognized as a crucial factor in maintaining a healthy weight.

Limitations of the study

This study is subject to several limitations. First, the small, non-random sample (N = 55) of pre-service teachers limits the generalisability of the results to broader student populations. Secondly, all lifestyle variables (diet, physical activity, and well-being) were assessed using self-assessment questionnaires, which may be susceptible to biases such as social desirability and inaccurate recall. Future studies should incorporate more objective measurement tools (e.g., accelerometers, dietary logs, biochemical markers) to increase the validity of lifestyle assessment.

Conclusion

In conclusion, the findings on body composition align with those from the existing literature, showing that overweight and obese individuals have higher fat and lean mass. However, the lack of significant differences in physical activity and diet across groups is unexpected and calls for further study. Future research should include objective measures of physical activity and muscle quality to clarify links between body weight, body composition, and lifestyle behaviours. Surprisingly, no significant differences were found between the normal-weight and overweight/obese groups in high-intensity activity, diet, or healthy habits. These results are somewhat surprising, since other research, such as that by Ekelund et al. (2015), has shown a tendency for individuals with higher BMI to report lower physical activity levels. However, variations in self-reported physical activity measures, as observed by Prince et al. (2008), may influence these results, potentially underestimating the actual activity discrepancies across groups. Furthermore, socio-environmental factors, which heavily impact physical activity and dietary behaviours, may mediate lifestyle choices independently of body weight, as suggested by Baum and Ruhm (2009).

Interestingly, this study found no significant differences in high-intensity physical activity levels, healthy dietary choices, or other lifestyle habits between normal-weight and overweight/obese individuals. This contrasts with studies like Hansen et al. (2013), who reported that individuals with higher BMI often engage in lower physical activity levels, particularly in vigorous activities. However, as research by Klesges et al. (2004) suggests, self-reported physical activity may not reliably capture differences in actual activity intensity and duration, particularly among overweight individuals, who may over-report activity levels because of social desirability bias.

Additionally, environmental, and socio-economic factors affecting dietary and physical activity patterns could play a role, as suggested by Adams (2020), indicating that weight status alone may not fully predict lifestyle choices.

Overall, the study's findings align with recent research, particularly in showing higher adiposity and lean mass in overweight/obese compared to normal-weight individuals. Body composition differences—body fat, fat-free mass, and muscle mass—were most notable, with higher values in the overweight/obese group.

These insights can inform targeted health promotion programmes in universities, especially for future teachers who influence healthy habits.

Preventative strategies could include structured physical activity programmes, stress management, andnutrition education tailored to academic lifestyles. Integrating such content into teacher training could promote lasting healthy behaviours.

However, the lack of significant lifestyle differences warrants further investigation. Future research would benefit from using objective physical activity tracking and exploring the potential impact of muscle quality on health outcomes in overweight populations, given the potential discrepancies in muscle function despite increased lean mass.

References

Adams, J. (2020). Addressing socioeconomic inequalities in obesity: Democratising access to resources for achieving and maintaining a healthy weight. *PLoS Medicine*, *17*(7), e1003243.

Bach, S. (2025). *Mastering self-control: Behavioural strategies for sustainable weight maintenance*. Obesity Care Clinic. https://obesity-care-clinic.com/holistic-approach/coaching/mastering-self-control-behavioural-strategies-for-sustainable-weight-maintenance/?utm_source=chatgpt.com

Baum II, C. L., and Ruhm, C. J. (2009). Age, socioeconomic status and obesity growth. *Journal of health economics*, *28*(3), 635-648. https://doi.org/10.1016/j.jhealeco.2009.01.004

Blüher, M. (2019). Obesity: global epidemiology and pathogenesis. *Nature Reviews Endocrinology*, *15*(5), 288-298. https://doi.org/10.1038/s41574-019-0176-8

Chooi, Y. C., Ding, C., and Magkos, F. (2019). The epidemiology of obesity. *Metabolism*, *92*, 6-10. https://doi.org/10.1016/j.metabol.2018.09.005

Costlow, L., Herforth, A., Sulser, T. B., Cenacchi, N., and Masters, W. A. (2025). Global analysis reveals persistent shortfalls and regional differences in availability of foods needed for health. *Global Food Security*, *44*, 100825.

Dahlin, M., Joneborg, N., and Runeson, B. (2005). Stress and depression among medical students: A cross-sectional study. *Medical education*, *39*(6), 594-604. https://doi.org/10.1111/j.1365-2929.2005.02176.x

Dao, M. C., Thiron, S., Messer, E., Sergeant, C., Sévigné, A., Huart, C., Rossi, M., Silverman, I., Sakaida, K., and Bel Lassen, P. (2020). Cultural influences on the regulation of energy intake and obesity: A qualitative study comparing food customs and attitudes to eating in adults from France and the United States. *Nutrients*, *13*(1), 63.

Darviri, C., Alexopoulos, E. C., Artemiadis, A. K., Tigani, X., Kraniotou, C., Darvyri, P., and Chrousos, G. P. (2014). The Healthy Lifestyle and Personal Control Questionnaire (HLPCQ): a novel

tool for assessing self-empowerment through a constellation of daily activities. *BMC Public Health*, *14*, 1-10. https://doi.org/10.1186/1471-2458-14-995

Davis, J. N., Hodges, V. A., and Gillham, M. B. (2006). Physical activity compliance: differences between overweight/obese and normal-weight adults. *Obesity*, *14*(12), 2259-2265.

Deforche, B. I., De Bourdeaudhuij, I. M., and Tanghe, A. P. (2006). Attitude toward physical activity in normal-weight, overweight and obese adolescents. *Journal of adolescent health*, *38*(5), 560-568.

Dolenc, P. (2015). Stres in spoprijemanje s stresom v mladostništvu. *Journal of Elementary Education, 8*(4), 177–190. https://journals.um.si/index.php/education/article/view/402

Ekelund, U., Ward, H. A., Norat, T., Luan, J. a., May, A. M., Weiderpass, E., Sharp, S. J., Overvad, K., Østergaard, J. N., and Tjønneland, A. (2015). Physical activity and all-cause mortality across levels of overall and abdominal adiposity in European men and women: the European Prospective Investigation into Cancer and Nutrition Study (EPIC). *The American journal of clinical nutrition*, *101*(3), 613-621. https://doi.org/10.3945/ajcn.114.100065

Emmer, C., Bosnjak, M., and Mata, J. (2020). The association between weight stigma and mental health: A meta-analysis. *Obesity Reviews*, *21*(1), e12935.

Flegal, K. M., Kruszon-Moran, D., Carroll, M. D., Fryar, C. D., and Ogden, C. L. (2016). Trends in obesity among adults in the United States, 2005 to 2014. *Jama*, *315*(21), 2284-2291. https://doi.org/10.1001/jama.2016.6458

Hansen, B. H., Holme, I., Anderssen, S. A., and Kolle, E. (2013). Patterns of objectively measured physical activity in normal weight, overweight, and obese individuals (20–85 years): a cross-sectional study. *PLOS ONE*, *8*(1), e53044.

Heymsfield, S. (2005). *Human body composition* (Vol. 918). Human kinetics.

Heymsfield, S. B., and Wadden, T. A. (2017). Mechanisms, pathophysiology, and management of obesity. *New England Journal of Medicine*, *376*(3), 254-266. https://doi.org/10.1056/NEJMr–a1514009

Ho-Pham, L. T., Nguyen, U. D., and Nguyen, T. V. (2014). Association between lean mass, fat mass, and bone mineral density: a meta-analysis. *The Journal of Clinical Endocrinology & Metabolism*, *99*(1), 30-38. https://doi.org/10.1210/jc.2014-v99i12-30A

Hunot, C., Fildes, A., Croker, H., Llewellyn, C. H., Wardle, J., and Beeken, R. J. (2016). Appetitive traits and relationships with BMI in adults: Development of the Adult Eating Behaviour Questionnaire. *Appetite*, *105*, 356-363. https://doi.org/10.1016/j.appet.2016.05.024

InBody Co., L. (2021). *InBody270 User's Manual for Measurement Guide and Setup*. InBody Co., Ltd.

Infurna, F. J., Gerstorf, D., and Zarit, S. H. (2011). Examining dynamic links between perceived control and health: longitudinal evidence for differential effects in midlife and old age. *Developmental psychology*, *47*(1), 9.

Janssen, I., Heymsfield, S. B., Wang, Z., and Ross, R. (2000). Skeletal muscle mass and distribution in 468 men and women aged 18–88 yr. *Journal of applied Physiology*.

Johnson, D. B., Gerstein, D. E., Evans, A. E., and Woodward-Lopez, G. (2006). Preventing obesity: a life cycle perspective. *Journal of the American Dietetic Association*, *106*(1), 97-102. https://doi–.org/10.1016/j.jada.2005.09.048

Klesges, L. M., Baranowski, T., Beech, B., Cullen, K., Murray, D. M., Rochon, J., and Pratt, C. (2004). Social desirability bias in self-reported dietary, physical activity and weight concerns measures in 8-to 10-year-old African-American girls: results from the Girls Health Enrichment Multisite Studies (GEMS). *Preventive medicine*, *38*, 78-87.

Kremmyda, L.-S., Papadaki, A., Hondros, G., Kapsokefalou, M., and Scott, J. A. (2008). Differentiating between the effect of rapid dietary acculturation and the effect of living away from home for the first time, on the diets of Greek students studying in Glasgow. *Appetite*, *50*(2-3), 455-463. https://doi.org/10.1016/j.appet.2007.09.014

Marinšek, M., Bedenik, K., and Tekavc, J. (2022). Cross-cultural adaptation of the International Physical Activity Questionnaire (IPAQ) for use in education. *Slovenian Medical Journal*, *91*(9-10), 355-362. https://doi.org/10.6016/ZdravVestn.3286

Matejek, Č., & Planinšec, J. (2016). Differences in physical fitness among female students according to weight status. *Journal of Elementary Education, 9*(1/2), 33-41. https://journals.um.si/index.–php/education/article/view/372

Mokdad, A. H., Ford, E. S., Bowman, B. A., Dietz, W. H., Vinicor, F., Bales, V. S., and Marks, J. S. (2003). Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *Jama*, *289*(1), 76-79. https://doi.org/10.1001/jama.289.1.76

Morgan, P. T., Smeuninx, B., and Breen, L. (2020). Exploring the impact of obesity on skeletal muscle function in older age. *Frontiers in Nutrition*, *7*, 569904.

Mourtakos, S. P., Tambalis, K. D., Panagiotakos, D. B., Antonogeorgos, G., Arnaoutis, G., Karteroliotis, K., and Sidossis, L. S. (2015). Maternal lifestyle characteristics during pregnancy, and the risk of obesity in the offspring: a study of 5,125 children. *BMC pregnancy and childbirth*, *15*, 1-8. https://doi.org/10.1186/s12884-015-0498-z

Ogden, C. L., Carroll, M. D., Fryar, C. D., and Flegal, K. M. (2015). Prevalence of obesity among adults and youth: United States, 2011-2014.

Prince, S. A., Adamo, K. B., Hamel, M. E., Hardt, J., Gorber, S. C., and Tremblay, M. (2008). A comparison of direct versus self-report measures for assessing physical activity in adults: a systematic review. *International journal of behavioral nutrition and physical activity*, *5*, 1-24. https://doi.org/10.1186/1479-5868-5-56

Rahemi, H., Nigam, N., and Wakeling, J. M. (2015). The effect of intramuscular fat on skeletal muscle mechanics: implications for the elderly and obese. *Journal of The Royal Society Interface*, *12*(109), 20150365.

Rahmani, A., Sayehmiri, K., Asadollahi, K., Sarokhani, D., Islami, F., and Sarokhani, M. (2015). Investigation of the prevalence of obesity in Iran: a systematic review and meta-analysis study. *Acta Medica Iranica*, 596-607.

Shea, J., King, M., Yi, Y., Gulliver, W., and Sun, G. (2012). Body fat percentage is associated with cardiometabolic dysregulation in BMI-defined normal weight subjects. *Nutrition, metabolism and cardiovascular diseases*, *22*(9), 741-747.

Stenholm, S., Alley, D., Bandinelli, S., Griswold, M., Koskinen, S., Rantanen, T., Guralnik, J. M., and Ferrucci, L. (2009). The effect of obesity combined with low muscle strength on decline in mobility in older persons: results from the InCHIANTI study. *International journal of obesity*, *33*(6), 635-644. https://doi.org/10.1038/ijo.2009.62

Tallis, J., James, R. S., and Seebacher, F. (2018). The effects of obesity on skeletal muscle contractile function. *Journal of Experimental Biology*, *221*(13), jeb163840.

Tomiyama, A. J. (2019). Stress and obesity. *Annual review of psychology*, *70*(1), 703-718. https://doi.org/–10.1146/annurev-psych-010418-102936

WHO. (2017). *World Health Organization-Obesity and Overweight*. WHO Geneva, Switzerland.

WHO. (2024). *The World Health Organization-Five Well-Being Index (WHO-5) - Slovenian translation.* https://cdn.who.int/media/docs/default-source/mental-health/five-well-being-index-(who-5)/who-5_slovenian.pdf?sfvrsn=f9adb3c4_3

Zamboni, M., Mazzali, G., Fantin, F., Rossi, A., and Di Francesco, V. (2008). Sarcopenic obesity: a new category of obesity in the elderly. *Nutrition, metabolism and cardiovascular diseases*, *18*(5), 388-395. https://doi.org/10.1016/j.numecd.2007.10.002

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University Students' Lifestyle in the Context of Physical Activity, Sedentary Habits, and Academic Achievements

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Abstract/Izvleček

This study aims to explore the relationship between physical activity, sedentary behaviour, and academic achievement among university students. A total of 243 students aged 18 to 24 years participated. Physical activity was assessed using the International Physical Activity Questionnaire – Short Form, while sedentary behaviour was measured with the SIT-Q-7d. Academic achievement was based on self-reported average grades and compared across physical activity levels using one-way ANOVA. Results indicate that higher physical activity is not necessarily linked to better academic performance. Excessive involvement in physical activity may reduce study time, potentially leading to lower academic outcomes.

Keywords:
physical activity, sedentary behaviour, academic achievement, university students, cognitive performance.

Življenjski slog študentov v kontekstu gibalne dejavnosti, sedečega načina in akademskih dosežkov

Raziskava je preučevala povezavo med gibalno dejavnostjo, sedečim vedenjem in akademskim uspehom med 243 študenti, starimi od 18 do 24 let. Gibalna dejavnost je bila ocenjena z vprašalnikom IPAQ-SF, sedeče vedenje z vprašalnikom SIT-Q-7d, akademski uspeh pa s povprečno oceno. Rezultati enosmerne ANOVE so pokazali, da višja raven gibalne dejavnosti ni nujno povezana z boljšimi akademskimi dosežki in da prekomerna predanost gibalni dejavnosti lahko zmanjša čas, ki je na voljo za učenje, in tako vpliva na akademsko uspešnost. Nasprotno pa lahko zmerno sedeče vedenje, zlasti ob vikendih, v kombinaciji z učnimi dejavnostmi, koristi akademski uspešnosti.

Ključne besede:
gibalne dejavnosti, sedeče vedenje, akademski dosežki, študenti, kognitivna uspešnost.

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Introduction

The academic performance of university students is influenced by a complex interplay of lifestyle factors, with physical activity (PA) and sedentary behaviour emerging as important determinants. Longitudinal randomized controlled trials (RCTs) provide robust evidence that moderate PA enhances cognitive functions essential for academic success, such as working memory, attention, and executive control (Donnelly et al., 2016; Erickson et al., 2019). For instance, a meta-analysis of RCTs by Álvarez-Bueno et al. (2017) demonstrated that structured PA interventions improve academic outcomes in children and adolescents, with benefits attributed to enhanced brain connectivity and neurogenesis. Similarly, Hillman et al. (2014) found in an RCT that regular aerobic exercise improves executive function in children, suggesting potential benefits for university students. Beyond cognition, PA is associated with improved mental health, including better stress management and mood regulation, further facilitating academic achievement (Liu and Taresh, 2024). In contrast, excessive sedentary behaviour, particularly non-educational screen time, often correlates with suboptimal academic outcomes due to reduced cognitive engagement and physical well-being (Tremblay et al., 2011; Sánchez et al., 2024). However, certain sedentary activities like studying or reading may positively contribute to academic performance when structured appropriately (Hunter et al., 2018).

Regional differences also play an important role in shaping physical activity habits. For instance, Jančič and Planinšec (2018) found that students from Maribor were more physically active than their peers from Novi Sad, especially in family-based and unorganized physical activities. Such findings emphasize the influence of cultural and local contexts, which may extend into university years (Jančič & Planinšec, 2018). Despite this evidence, the assumption that higher PA levels universally enhance academic achievement is not without contradictions. Several studies report inconsistent or null associations, particularly in settings with academic demands and time constraints. For example, Pandolfo et al. (2018) found no correlation between PA and academic performance among high school students, suggesting that PA may not directly translate to academic benefits in demanding educational contexts. Similarly, Daley and Ryan (2000) reported no correlations between PA and academic performance in secondary school adolescents, indicating that time spent on PA may compete with study time. Vedøy et al. (2021) found no associations between objectively measured PA and academic achievement among Norwegian adolescents,

reinforcing that PA's cognitive benefits may not always translate to better grades. Additionally, Suárez-Cano et al. (2023) reported no correlation between PA and academic performance among Colombian students, highlighting the inconsistent relationship in diverse educational settings. These findings challenge the prevailing narrative and highlight the need to explore the optimal balance of PA for academic success. The role of sedentary behaviour is equally complex. While prolonged inactivity is detrimental, specific sedentary activities, such as academic work, may support cognitive development and academic outcomes (Sánchez-Oliva et al., 2023). For instance, Hunter et al. (2018) reported that time spent on homework is positively associated with academic performance, unlike leisure-oriented screen time, which correlates with poorer results. These contradictions underscore the need for a nuanced understanding of lifestyle factors in higher education.

The motivation for this study stems from the need to address these inconsistencies and examine how PA and sedentary behaviour are associated with academic achievement among university students in Slovenia during a non-exam period. University students face unique challenges, including balancing academic responsibilities, social activities, and personal well-being, which may alter the efficacy of PA and sedentary behaviours. Prior research, such as Lipošek et al. (2019), suggests that moderate PA (2–3 hours per week) is positively associated with academic success, while excessive PA may not yield additional benefits. However, much of the literature focuses on children or adolescents, with fewer studies addressing higher education settings where academic demands are more intense and self-directed. The timing of data collection is critical, as PA levels may decrease during exam periods due to increased study time. This study captures students' typical lifestyle patterns by focusing on a non-exam period, providing a clearer picture of how PA and sedentary behaviour relate to academic performance. With its structured curricula and high academic expectations, Slovenia's educational system offers a unique context to explore these relationships, potentially informing tailored interventions for similar environments.

The growing public health concern about sedentary lifestyles among young adults further underscores the importance of this research. The prevalence of sedentary behaviour, particularly screen-based activities, has risen, contributing to a decline in physical and cognitive health (Sánchez et al., 2024). Interventions to promote PA and reduce harmful sedentary behaviours are critical, but their design requires a nuanced understanding of which behaviours support or hinder academic outcomes (Kovalenko, 2024). For example, Syväoja et al. (2014) found that academically

oriented sedentary time enhances sustained attention, while excessive non-educational screen time impairs cognitive function. These findings suggest that interventions must distinguish between beneficial and detrimental sedentary behaviours to optimize student performance. Additionally, individual differences, such as gender or baseline fitness levels, may moderate the effects of PA and sedentary behaviour (Salas-Gomez et al., 2020). For instance, Salas-Gomez et al. (2020) noted that PA's cognitive benefits may be more pronounced in women, suggesting potential gender-specific responses that could influence intervention strategies.

Theoretically, the relationship between PA, sedentary behaviour, and academic achievement is grounded in ecological models of health behaviour, which emphasize interactions between individual, environmental, and societal factors (Sallis et al., 2015). These models suggest that students' lifestyle choices are shaped by their academic environment, access to recreational facilities, and cultural attitudes toward PA. Understanding these dynamics is critical in Slovenia, where outdoor recreational opportunities are abundant, but screen-based sedentary behaviour is increasingly prevalent. Longitudinal RCTs, such as those by Donnelly et al. (2016), provide substantial evidence but are less common in university populations, highlighting a research gap. This study aims to lay the groundwork for longitudinal investigations by examining lifestyle factors in a non-exam period, offering insights into temporal relationships.

The societal implications of this research extend beyond academia, as fostering healthy lifestyles among university students can contribute to long-term health and productivity. Sedentary behaviour is a growing public health challenge with implications for obesity, mental health, and cognitive decline (Tremblay et al., 2011). Promoting PA in educational settings can mitigate these risks while enhancing academic performance, creating a dual benefit for students and society. However, the design of such interventions requires careful consideration of competing demands on student time. For example, Badrić et al. (2015) emphasized the importance of recreational PA for adolescents' health but noted barriers such as academic workload and limited access to facilities. These barriers are equally relevant for university students, who often juggle multiple responsibilities. By identifying optimal PA levels and sedentary behaviour patterns, this study can inform policies integrating PA into university curricula, such as mandatory PA programs or campus-based fitness initiatives. In addition to all the benefits of recreational activity, the

issues related to the formation of ecological awareness associated with a positive attitude toward the health benefits of physical exercise stand out (Prskalo, 2018).

Globally, the relevance of this research is amplified by the universal challenge of declining PA and rising sedentary behaviour among young adults. The World Health Organization (2020) highlights that insufficient PA is a leading risk factor for non-communicable diseases, underscoring the need for evidence-based interventions. Studies from diverse contexts, such as Australia (Syväoja et al., 2014) and Spain (Sánchez-Oliva et al., 2023), suggest that the interplay between PA, sedentary behaviour, and academic performance is a global concern, yet context-specific factors, such as educational systems and cultural norms, shape outcomes. Slovenia's blend of structured education and outdoor recreational culture provides a unique lens to examine these dynamics, with potential implications for other countries. This study aims to contribute to the global evidence base by comprehensively analysing how PA and sedentary behaviour relate to academic achievement, informing local and international efforts to promote student well-being.

This study hypothesizes that moderate PA positively correlates with academic performance, while excessive PA may reduce study time and negatively impact grades. Conversely, prolonged sedentary behaviour, particularly non-educational, is expected to negatively correlate with academic outcomes, whereas academically oriented sedentary time may be beneficial. By addressing these hypotheses, this research seeks to advance the understanding of lifestyle factors in higher education and support the development of evidence-based interventions that balance PA and study demands, ultimately enhancing student success.

Methods

Sample Description

The study included 243 students from the University of Maribor, Slovenia, of whom 192 (79%) were female. Participants ranged in age from 18 to 24 years ($M = 21.34$, $SD = 1.46$).

Survey Questionnaires

PA was assessed using the International Physical Activity Questionnaire – Short Form (IPAQ-SF), a validated tool that measures the intensity (light, moderate, vigorous), duration, and frequency of physical activity over the past seven days (Lee

et al., 2011). The IPAQ-SF provides data on moderate to vigorous PA (MVPA) and light PA (LPA), allowing for categorization based on activity levels.

Sedentary behaviour was evaluated with the SIT-Q-7d questionnaire, which captures sitting time across various domains, including meals, commuting, studying, part-time work, and screen use (Wijndaele et al., 2014). This tool provides detailed insight into students' sedentary habits on weekdays and weekends.

Academic achievement was defined as the average grade of all passed exams, based on the Slovenian grading scale (6–10, where 6 is the minimum passing grade). Non-passed exams were excluded from the average grade calculation. Demographic information, including gender, age, and year of study, was also collected.

Data Collection

Data were collected via an online survey conducted in October 2023, during a non-exam period, to avoid bias from reduced physical activity associated with exam preparation. Students received a secure survey link, including the IPAQ-SF, SIT-Q-7d, questions about their cumulative average academic grade (based on all passed exams up to that point), and demographic details. The non-exam period ensured that PA levels, as captured by the IPAQ-SF's 7-day recall, reflected typical lifestyle patterns rather than exam-related constraints.

Statistical Analysis

Data were analysed using SPSS version 29. Based on World Health Organization (2020) guidelines, participants were categorized into three PA groups for MVPA: less active (<150 min/week), moderately active (151–300 min/week), and highly active (>300 min/week). A similar categorization was applied to LPA: less active (<150 min/week), moderately active (151–300 min/week), and highly active (>300 min/week). For sedentary behaviour, participants were divided into five groups based on daily sitting time on weekdays and weekends: <240 min/day, 241–300 min/day, 301–360 min/day, 361–420 min/day, and >420 min/day. ANOVA was used to determine whether there was a difference between the three groups at a risk level of $p < 0.05$. An additional post-hoc Scheffé test was used to determine differences between groups.

Results

Table 1

Differences in academic grades between moderate to vigorous physical activity (MVPA) groups

Group MVPA	N	M	SD	F	p	η^2
<150 min/week	63	8.64	.54	12.27	.001	.093
151-300 min/week	68	8.24	.63			
>300 min/week	112	8.20	.58			
Total	243	8.33	.61			

Note: Post-hoc Scheffé differences: <150 min/week higher than 151–300 min/week ($p < .001$) and >300 min/week ($p < .001$).

Table 1 presents the one-way ANOVA results for academic grades between MVPA groups. A difference was found ($F(2, 240) = 12.27$, $p = .001$, $\eta^2 = 0.093$), indicating a medium to large effect size according to Cohen's (1988) criteria. Post-hoc Scheffé tests revealed that the less active group (<150 min/week, $M = 8.64$) had higher grades than the 151–300 min/week ($M = 8.24$, $p < .001$) and >300 min/week ($M = 8.20$, $p < .001$) groups. No difference was found between the 151–300 and >300 min/week groups ($p = .925$).

Table 2

Differences in academic grades between light physical activity (LPA) groups

GroupLPA	N	M	SD	F	p	η^2
<150 min/week	63	8.54	.69	7.62	.001	.060
151-300 min/week	102	8.34	.52			
>300 min/week	77	8.15	.61			
Total	242	8.33	.61			

Note: Post-hoc Scheffé difference: <150 min/week higher than >300 min/week ($p < .001$).

Findings in Table 2 indicate a difference in academic grades across LPA groups ($F(2, 239) = 7.62$, $p = .001$, $\eta^2 = 0.060$), and the effect size was moderate according to Cohen's (1988) criteria. Post-hoc Scheffé tests indicated that the <150 min/week group ($M = 8.55$) had higher grades than the >300 min/week group ($M = 8.15$, $p < .001$). No differences were found between <150 and 151–300 min/week ($p = .099$) or 151–300 and >300 min/week ($p = .114$).

Table 3

Differences in academic grades between weekday sedentary groups (WSG)

Group WSG	N	M	SD	F	p	η^2
<240 min/day	44	8.38	.42			
241-300 min/day	75	8.20	.65			
301-360 min/day	46	8.37	.59	1.913	0.109	-
361-420 min/day	27	8.56	.81			
>420 min/day	51	8.31	.56			
Total	243	8.33	.61			

Table 3 indicates no difference in academic grades across weekday sedentary groups ($F(4, 238) = 1.913$, $p = .109$, $\eta^2 = 0.031$. The highest mean grade was in the 361–420 min/day group ($M = 8.56$), but no post-hoc comparisons were conducted.

Table 4

Differences in academic grades between weekend day sedentary groups (WDSG)

Group WDSG	N	M	SD	F	p	η^2
<240 min/day	24	8.36	.39			
241-300 min/day	47	8.30	.47			
301-360 min/day	63	8.13	.72	2.904	0.023	0.047
361-420 min/day	44	8.45	.34			
>420 min/day	65	8.45	.74			
Total	243	8.33	.61			

Note: Post-hoc Scheffé tests showed no pairwise differences (all $p > .05$).

Table 4 shows a difference across weekend day sedentary groups ($F(4, 238) = 2.904$, $p = .023$, $\eta^2 = 0.047$), indicating a medium effect size according to Cohen's (1988) criteria. Post-hoc Scheffé tests revealed no pairwise differences (all $p > .05$), with the closest comparison between 301–360 min/day ($M = 8.13$) and >420 min/day ($M = 8.45$, $p = .063$).

Discussion

This study examined the relationship between PA, sedentary behaviour, and academic achievement among university students in Slovenia during a non-exam

period. The findings revealed an unexpected pattern: students engaging in less than 150 minutes per week of MVPA and LPA achieved higher academic grades than those with higher PA levels. Additionally, weekday sedentary behaviour showed no impact on grades. In contrast, weekend sedentary behaviour had a weak association, with higher grades observed in groups with 361–420 and >420 minutes per day. These results challenge the conventional assumption that increased PA enhances academic performance and suggest a more nuanced interplay between lifestyle factors and academic outcomes.

The counterintuitive finding that lower MVPA and LPA levels were associated with better academic grades aligns with a limited but growing body of research. For instance, Pandolfo et al. (2018) found no correlation between PA and academic performance among high school students, suggesting that PA may not directly enhance grades in contexts with high academic demands. Similarly, Daley and Ryan (2000) reported no correlations between PA and academic performance in secondary school adolescents. This indicates that time spent on PA may compete with academic tasks, reducing study efficiency. Vedøy et al. (2021) found no associations between objectively measured PA and academic achievement among Norwegian adolescents, supporting that PA's cognitive benefits may not consistently translate to academic outcomes. Likewise, Suárez-Cano et al. (2023) reported no correlation between PA and academic performance among Colombian students, emphasizing the inconsistent relationship across diverse educational contexts. Our results, with MVPA ($\eta^2 = 0.093$) and LPA ($\eta^2 = 0.060$) showing medium effect sizes, suggest that students prioritizing study over PA may benefit academically, possibly because of increased coursework and exam preparation time. This is particularly relevant during non-exam periods, as data collection in October 2023 avoided exam-related reductions in PA, ensuring typical lifestyle patterns were captured.

Conversely, numerous studies report a positive correlation between PA and academic achievement, highlighting our findings' discrepancies. Through longitudinal RCTs, Donnelly et al. (2016) demonstrated that structured PA interventions improve cognitive functions like working memory, which supports academic success. Álvarez-Bueno et al. (2017) found in a meta-analysis that regular PA enhances academic outcomes in children and adolescents, attributing benefits to neurogenesis and improved brain connectivity. These studies suggest that moderate PA (e.g., 150–300 min/week) optimizes cognitive performance, contrasting with our finding that the least active group (<150 min/week) performed best. The discrepancy may stem from contextual factors, such as the university setting, where

academic demands are self-directed and time-intensive, potentially amplifying the trade-off between PA and study time (Pandolfo et al., 2018).

Regarding sedentary behaviour, the lack of effect on weekdays ($\eta^2 = 0.031$, $p = .109$) aligns with research indicating that not all sedentary behaviour is detrimental. Hunter et al. (2018) found that academically oriented sedentary time, such as studying, is associated with better academic performance, unlike leisure-based screen time. The highest grades in the 361–420 min/day group suggest moderate weekday sitting, likely involving academic tasks, which may support concentration and learning. The weak effect of weekend sedentary behaviour ($\eta^2 = 0.047$, $p = .023$), with higher grades in the 361–420 and >420 min/day groups, further supports this. Sánchez-Oliva et al. (2023) noted that structured sedentary activities, like reading or writing, can enhance cognitive outcomes, which may explain why prolonged weekend sitting did not impair grades. However, studies like Daramola and Aribasoye (2023) argue that excessive sedentary behaviour impairs cognitive function, suggesting that the type and context of sedentary activity are critical moderators.

The finding that higher PA levels were associated with lower grades may reflect a time allocation issue. Students engaging in >300 min/week of MVPA or LPA may have less time for academic tasks, as suggested by Yu et al. (2023), who noted that excessive PA can lead to cognitive fatigue or reduced study efficiency. This is particularly relevant for LPA, where the lowest grades in the >300 min/week group ($\eta^2 = 0.060$) indicate that even light activities, if excessive, may displace study time. Similarly, the weak effect of weekend sedentary behaviour suggests that students who spend more time on academic tasks during weekends may outperform those with less structured routines. This aligns with Syväoja et al. (2014), who found that academically oriented sedentary time enhances attention. These results underscore the importance of balancing PA and study time, with moderate PA and structured sedentary behaviour potentially optimizing academic outcomes. Several limitations must be acknowledged. First, the study relied on self-reported measures (IPAQ-SF, SIT-Q-7d), which may introduce response bias or inaccuracies. Objective tools like accelerometers could improve data accuracy. Second, the cross-sectional design limits causal inferences; longitudinal studies are needed to establish temporal relationships. Third, the sample was predominantly female (79%) and from a single institution, potentially limiting generalizability. Finally, factors like sleep, diet, and mental health, which may mediate PA and academic performance, were not assessed. Future research should explore the qualitative nature of sedentary behaviour to distinguish between productive (e.g., studying) and unproductive (e.g., screen time)

activities. Longitudinal studies could clarify the long-term effects of PA and sedentary behaviour on academic outcomes, addressing the current study's cross-sectional limitations. Investigating moderating factors, such as gender, stress, or academic workload, may further explain discrepancies with studies reporting positive PA effects. Additionally, replicating the study in diverse educational contexts could enhance external validity and identify context-specific patterns.

Conclusion

This study provides novel insights into the complex relationship between PA, sedentary behaviour, and academic achievement among university students.
The finding that lower PA levels and structured weekend sedentary behaviour are associated with higher grades challenges the assumption that more PA universally enhances academic performance. These results highlight the need for a balanced lifestyle, where moderate PA and academically oriented sedentary time optimize study efficiency. By citing studies with opposing findings, this research underscores the role of contextual factors in shaping academic outcomes, offering practical implications for students and educators aiming to design effective lifestyle interventions.

References

Álvarez-Bueno, C., Pesce, C., Cavero-Redondo, I., Sánchez-López, M., Garrido-Miguel, M., and Martínez-Vizcaíno, V. (2017). Academic achievement and physical activity: A meta-analysis. *Pediatrics*, *140*(6), e20171498.

Badrić, M., Prskalo, I., and Matijević, M. (2015). Primary school pupils' free time activities. *Croatian Journal of Education*, 17(2), 299–332.

Cohen, J. (1988). *The effect size. Statistical power analysis for the behavioral sciences*. Abingdon: Routledge, 77–83.

Daley, A. J., and Ryan, J. (2000). Academic performance and participation in physical activity by secondary school adolescents. *Perceptual and Motor Skills*, *91*(2), 531–534.

Daramola, M. A., and Aribasoye, R. M. (2023). Effect of Physical Activity, Exercise and Sedentary Behaviour on Academic Performance of Students in Higher Institutions. *European Journal of Theoretical and Applied Sciences*, *1*(6), 547-556.

Donnelly, J. E., Hillman, C. H., Castelli, D., Etnier, J. L., Lee, S., Tomporowski, P., ... and Szabo-Reed, A. N. (2016). Physical activity, fitness, cognitive function, and academic achievement in children: A systematic review. *Medicine & Science in Sports & Exercise*, *48*(6), 1197–1222.

Erickson, K. I., Hillman, C., Stillman, C. M., Ballard, R. M., Bloodgood, B., Conroy, D. E., ... and Powell, K. E. (2019). Physical activity, cognition, and brain outcomes: A review of the 2018 physical activity guidelines. *Medicine & Science in Sports & Exercise*, *51*(6), 1242–1251.

Hillman, C. H., Pontifex, M. B., Castelli, D. M., Khan, N. A., Raine, L. B., Scudder, M. R., ... and Kamijo, K. (2014). Effects of the FITKids randomized controlled trial on executive control and brain function. *Pediatrics*, *134*(4), e1063–e1071.

Hunter, S., Leatherdale, S. T., and Carson, V. (2018). The 3-year longitudinal impact of sedentary behavior on the academic achievement of secondary school students. *Journal of School Health*, *88*(9), 660–668.

Kovalenko, A. (2024). Formation of healthy lifestyle of students by means of physical training. *Scientific Journal of Polonia University*, *62*(1), 175–181.

Jančič, J., & Planinšec, . J. (2018). Primerjava športnih dejavnosti učencev iz Maribora in Novega Sada. Journal of Elementary Education, 11(4), 330-340. https://journals.um.si/index.php–/education/article/view/174

Lee, P. H., Macfarlane, D. J., Lam, T. H., and Stewart, S. M. (2011). Validity of the International Physical Activity Questionnaire Short Form (IPAQ-SF): A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, *8*(1), 115.

Lipošek, S., Planinšec, J., Leskošek, B., and Pajtler, A. (2019). Physical activity of university students and its relation to physical fitness and academic success. *Annales Kinesiologiae*, *9*(2).

Liu, T., and Taresh, S. (2024). The impact of sports participation on college students' learning outcomes: A mixed methods study based on multiple campuses. *Journal of Ecohumanism*, *3*(7), 3649–3666.

Pandolfo, K., Minuzzi, T., Azambuja, C., and Dos Santos, D. (2017). Physical activity and academic performance in high school students. *Revista Brasileira de Atividade Física & Saúde*, *22*(5), 486-492.

Prskalo, I. (2018). Kinesiology and Sustainable Development. *Croatian Journal of Education = Hrvatski časopis za odgoj i obrazovanje*, *20* (Sp. ed. 3), 321-327.

Sallis, J. F., and Owen, N. (2015). *Ecological models of health behavior*. In K. Glanz, B. K. Rimer, and K. Viswanath (eds.), *Health behavior: Theory, research, and practice* (5th ed., pp. 43-64). Jossey-Bass.

Salas-Gomez, D., Fernandez-Gorgojo, M., Pozueta, A., Diaz-Ceballos, I., Lamarain, M., Perez, C., ... and Sanchez-Juan, P. (2020). Physical activity is associated with better executive function in university students. *Frontiers in Human Neuroscience*, *14*, 11.

Sánchez, J. A. O., del Pozo, J., Álvarez-Barbosa, F., and Alfonso-Rosa, R. M. (2024). Longitudinal analysis of the effect of sedentary behavior on body composition, physical fitness, and academic performance in preadolescents and adolescents. *E-balonmano.com Journal Sports Science*, *20*(2), 197–206.

Sánchez-Oliva, D., Leech, R. M., Esteban-Cornejo, I., Cristi-Montero, C., Pérez-Bey, A., Cabanas-Sánchez, V., ... and Castro-Piñero, J. (2023). Sedentary behaviour profiles and longitudinal associations with academic performance in youth: The UP&DOWN study. *Journal of Sports Sciences*, *41*(2), 181–189.

Suárez-Cano, L., Bernal-Ballén, A., and Briceño Martínez, J. J. (2023). A Multivariate Study for Determining the Relationship Between Physical Activity, Physical Fitness, and Academic Performance. *Sportis. Scientific Journal of School Sport, Physical Education and Psychomotricity*, *9*(2), 284-301.

Syväoja, H. J., Tammelin, T. H., Ahonen, T., Kankaanpää, A., and Kantomaa, M. T. (2014). The associations of objectively measured physical activity and sedentary time with cognitive functions in school-aged children. *PloS one*, *9*(7), e103559.

Tremblay, M. S., LeBlanc, A. G., Kho, M. E., Saunders, T. J., Larouche, R., Colley, R. C., ... and Gorber, S. C. (2011). Systematic review of sedentary behaviour and health indicators in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity*, *8*, 1-22.

Vedøy, I. B., Skulberg, K. R., Anderssen, S. A., Tjomsland, H. E., and Thurston, M. (2021). Physical activity and academic achievement among Norwegian adolescents: Findings from a longitudinal study. *Preventive Medicine Reports*, *21*, 101312.

Wijndaele, K., De Bourdeaudhuij, I., Godino, J. G., Lynch, B. M., Griffin, S. J., Westgate, K., and Brage, S. (2014). Reliability and validity of a domain-specific last 7-d sedentary time questionnaire. *Medicine and Science in Sports and Exercise*, *46*(6), 1248-60.

World Health Organization. (2020). *WHO guidelines on physical activity and sedentary behaviour*. World Health Organization.

Yu, M., Han, X., Wang, X., and Guan, R. (2023). Effects of Physical Exercise on Executive Functions among College Students in China: Exploring the Influence of Exercise Intensity and Duration. *Behavioral Sciences*, *13*(12), 987.

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PREDICTORS OF WELL-BEING IN UNIVERSITY STUDENTS: THE DOMINANT ROLE OF SOCIAL AND MENTAL BALANCE AND PHYSICAL EXERCISE OVER DIETARY HABITS AND DAILY ROUTINES

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Abstract/Izvleček

This study examines the relationship between well-being, social and mental balance, physical exercise, dietary habits, and daily routines among university students. Using standardised questionnaires, we obtained results showing that social and mental balance is the strongest predictor of well-being, followed by organised physical exercise. Although dietary habits and daily routines are correlated with well-being, their predictive influence remains limited. The results point to the importance of holistic interventions that integrate social support, structured physical activity, and healthy lifestyle choices in increasing overall well-being. Future research should investigate longitudinal effects and intervention-based approaches to develop sustainable well-being strategies tailored to students' needs.

Napovedniki dobrobiti študentov: Prevladujoča vloga socialnega in duševnega ravnovesja ter telesne vadbe v primerjavi s prehranskimi navadami in dnevnimi rutinami

V članku analiziramo razmerje med dobrobitjo, socialnim in duševnim ravnovesjem, telesno vadbo, prehranskimi navadami in vsakodnevnimi rutinami pri študentih. Rezultati, pridobljeni s pomočjo standardiziranih vprašalnikov, kažejo, da sta socialno in duševno ravnovesje najmočnejša napovednika dobrobiti študentov, sledi pa jima organizirana telesna vadba. Čeprav so prehranske navade in dnevne rutine povezane z dobrobitjo, je ne napovedujeta statistično značilno. Rezultati poudarjajo pomen celostnih intervencij, ki vključujejo socialno podporo, strukturirano telesno aktivnost in zdrave življenjske navade za izboljšanje splošne dobrobiti. V prihodnjih raziskavah bi morali preučiti dolgoročne učinke in pristope, ki temeljijo na intervencijah, da bi razvili trajnostne strategije za krepitev dobrobiti, prilagojene potrebam študentov.

Keywords:
university students, well-being, social and mental balance, physical exercise, dietary habits, daily routines.

Ključne besede:
študenti, dobrobit, socialno in duševno ravnovesje, telesna vadba, prehranske navade, dnevna rutina.

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Well-being as a multi-layered concept

In the past, there have been various perspectives on and attempts to define the concept of well-being. These range from the hedonic approach, which focuses on happiness and defines well-being in terms of pleasure attainment and pain avoidance, to the eudaimonic approach, which focuses on meaning and self-realization and defines well-being as the extent to which a person is fully functional (Ryan and Deci, 2001), to the definition of well-being as the balance point between an individual's resource pool and the challenges they face, where stable well-being means that individuals have the psychological, social and physical resources they need to cope with a particular psychological, social and/or physical challenge (Dodge et al., 2012). Most research focuses on psychological well-being, which broadly encompasses the entire mental health continuum (Ropret et al., 2023), and only a few focus on general well-being. Therefore, we address the well-being of higher education students, the factors that determine their well-being and ways to improve it.

Definitions of psychological well-being and the measures used to determine it vary widely in research, but the 5-item World Health Organization Well-Being Index (WHO-5) is among the most commonly used questionnaires to assess subjective psychological well-being in different domains (Topp et al., 2015) and reflects aspects other than just the absence of the symptoms of psychological distress (Bech et al., 2003). Higher levels of well-being are associated with a range of better outcomes in terms of physical health and longevity (Diener et al., 2017), as well as success at the professional, personal and interpersonal levels: individuals with high levels of well-being show higher productivity at work, more effective learning, and greater creativity, along with more prosocial behaviour and positive relationships (Ruggeri et al., 2020).

On the other hand, research has also shown that various aspects can support an individual's well-being, such as social support through close and caring relationships (Feeney and Collins, 2015), activities for one's mental balance (Lyubomirsky and Layous, 2013), physical activity, and especially regular outdoor physical activity (Lesser and Nienhuis, 2020), regular activities or routines (Avni-Babdad, 2011) and healthy dietary habits (Geraets and Heinz, 2023).

Mental balance can be defined as a sense of tranquillity that arises from inner peace and harmonious relationships with the external world (Joshanloo, 2022). This sense

of equilibrium contributes significantly to psychological well-being, particularly in stressful academic environments.

Social support, on the other hand, is the perception or experience of being cared for and valued and of being part of a mutually supportive social network (Taylor, 2011). Relatedly, social well-being refers to positive functioning and involves being able to contribute to society (social contribution), feeling part of a community (social integration), believing that society is becoming a better place for all people (social actualization), and feeling that the way society functions makes sense to them (social coherence) (Galderisi et al., 2015). Within this framework, social balance is also relevant. It is a classic psychological theory positing that a triad of individuals is balanced if all three are mutual friends, or if two are friends who share hostility towards a third (Nishi and Masuda, 2014). While originating from social psychology, this concept illustrates the importance of consistency and harmony in social relationships for an individual's sense of social stability and well-being.

Social interactions significantly affect health and longevity (Holt-Lunstad, 2018), and many of these interactions are interlinked with physical activity (Jennings and Bamkole, 2019), particularly in older populations (Shvedko et al., 2018). Physical activity networks can contribute to increased physical participation, which promotes human well-being, including physical and mental health (WHO, 2018). Physically active people experience less stress, depression, and anxiety, but certain types, duration and frequency of exercise may be more effective than others (Chekroud et al., 2018).

Regarding regular activities, Avni-Babdad (2011) found that greater feelings of safety, confidence and well-being were reported in routine situations. They claim that routine promotes feelings of safety, confidence, and well-being in many aspects of daily life.

Research also suggests that healthy dietary habits are associated with positive health, well-being, and behaviour, while unhealthy dietary habits are associated with health problems and risk behaviours, especially in adolescence (Geraets and Heinz, 2023). Among university students, a positive relationship has also been found between a healthful diet and greater life satisfaction (Schnettler et al., 2015), indicating the importance of incorporating physical, psychological, and cognitive resources to promote well-being. The relationships between these aspects are based on the biopsychosocial model (Engel, 1977), which emphasises that biological, psychological, and social factors jointly influence health and well-being.

In this context, recent research emphasises the importance of a multidisciplinary approach to analysing the related phenomena (Taukeni, 2019).

Building on the above-mentioned research findings on the vital role of various aspects of social, psychological, and biological factors in understanding the well-being of university students, the present study aims to investigate the role of social and psychological balance in predicting participants' well-being. In addition, we aim to assess whether reported physical activity, daily routines and healthy dietary habits explain an additional proportion of the variance in measures of well-being.

Method

Participants

The survey was conducted as part of the project "NOO: Healthy lifestyles for sustainable development and lifelong learning" and took place in 2024. Before completing the survey, respondents were informed about the objectives of the survey and the voluntary nature of participation, as well as the conditions of confidentiality and anonymity.

The questionnaire was completed in a classroom where a member of the research team was present to explain the instructions to the students and answer any questions about the study. The survey was voluntary and lasted approximately 15 minutes.

A non-randomised sample of university students, prospective primary school teachers, was used for the study. The sample comprised 55 students aged 21 to 25 years (M = 22.3, SD = 1.045), with the majority being female (47 participants, 85.5%) and the remainder male (8 participants, 14.5%).

Table 1
Demographics of the sample

	N	*%*
Gender		
Female	47	85.5
Male	8	14.5
Age		
21 - 22 years	39	70.9
23 – 24 years	14	25.5
25 – 26 years	2	3.6

N = Number of participants

Measures

During data collection, questionnaires were completed by participants in a physical format. Participants first completed the HLPCQ, IPAQ-SF and WHO-5 questionnaires.

Socio-demographic variables such as age, gender, current weight and height were recorded. In addition to this socio-demographic data, the data described below was also collected.

Well-being (World Health Organization Well-being Index (WHO-5; WHO, 2024a))

The World Health Organization-Five Well-Being Index (WHO-5; WHO, 2024a), using the Slovenian translation (2024b), was applied to assess subjective well-being. This brief, validated five-item scale uses a six-point response format (0–5) referring to the past 14 days. Raw scores (0–25) are converted to a percentage scale (0–100) by multiplying by four, with higher scores indicating greater well-being. In this study, Cronbach's alpha was 0.71. The WHO-5 has demonstrated strong reliability and validity across populations and is widely used both as a depression screening tool and as an outcome measure in clinical trials and population studies (Topp et al., 2015; WHO, 1998).

The Healthy Lifestyle and Personal Control Questionnaire (HLPCQ; Darviri et al., 2014)

The Healthy Lifestyle and Personal Control Questionnaire (HLPCQ) is a validated 26-item tool assessing the frequency of adopting positive lifestyle habits on a 4-point Likert scale (1 = Never to 4 = Always) (Darviri et al., 2014). It covers five domains: healthy dietary choices (7 items), dietary harm avoidance (4), daily routine (8), organised physical exercise (2), and social and mental balance (5). Total scores range from 26 to 104, with higher scores indicating greater lifestyle control. In our sample, the mean score was 61.64 (SD = 10.28; range = 40–87), suggesting limited control over health-related habits. The scale showed good reliability (Cronbach's $\alpha = 0.86$), consistent with previous findings (Babicki et al., 2024; Darviri et al., 2014).

Statistical analysis

The data were analysed using IBM SPSS STATISTICS 29 software for the Windows operating system. Statistical analysis was performed on complete data (N=55). To examine the associations among psychological well-being and healthy lifestyle and personal control subscales, Pearson correlation tests were performed. A hierarchical

regression analysis using the *enter* method was conducted to analyse the effects of a healthy lifestyle and personal control subscales on well-being.

Results

The proportion of missing values for each variable was low (less than 1% for all variables), and each participant had at least 95% of the data available for each scale. Missing values were replaced using the Expectation Maximization (EM) algorithm, which was applied separately for each dimension. The descriptive statistics for the included variables are presented in Table 2.

Table 2
Means, standard deviations and correlations

	M	*SD*	1.	2.	3.	4.	5.
1. Well-being	61.45	14.20					
2. Social and mental balance	14.24	2.49	.58**				
3. Organized Physical Exercise	5.09	1.86	.44**	.22			
4. Dietary Healthy Choices	15.87	3.49	.30*	.32*	.29*		
5. Dietary Harm Avoidance	9.49	1.82	.39**	.39**	.29*	.52**	
6. Daily Routine	16.95	4.57	.35**	.44**	.31*	.49**	.30*

Notes. $*p < .05$, $**p < .001$.

Well-being had a mean score of 61.45 (SD = 14.20) out of a possible 100 percent, indicating a moderate average level of well-being among the participants. The standard deviation indicates moderate to high variability and reflects a wide range of reported well-being within the sample.Similarly, the social and mental balance index (HLPCQ subscale) had a mean score of 14.24 (SD = 2.49) out of a possible score of 20 points, indicating moderate levels of aspects of social and mental balance, with relatively consistent responses as indicated by the moderate standard deviation.

In terms of physical activity, the organised physical exercise index (HLPCQ subscale) yielded a mean score of 5.09 (SD = 1.86) out of a possible 10 points, indicating a moderate level of engagement in organised physical exercise. The high standard deviation indicates that some participants were very engaged in organized physical exercise, while others indicated a low level of engagement.

The healthy dietary choices index (HLPCQ subscale) had a mean score of 15.87 (SD = 3.49) out of a possible 28 points, indicating a moderate tendency towards healthy dietary choices, although the moderate to high standard deviation suggests greater

variability in this behaviour. The dietary harm avoidance index (HLPCQ subscale) had a mean score of 9.49 (SD = 1.82) out of a possible 16 points, indicating moderate avoidance of harmful dietary habits, with moderate variability in participants' responses.

Finally, the daily routine index (HLPCQ subscale) had a mean score of 16.95 (SD = 4.57) out of a possible 32 points, indicating a moderately structured and consistent approach to daily activities. The relatively high standard deviation also indicates notable variability, with some participants maintaining very regular routines, while others reported more irregular patterns.

Most of these factors thus showed moderate to high variability, which illustrates the distinct individual experiences and practices among the participants in our study.

Examination of the Pearson correlation coefficients shows that most variables correlate positively with each other as expected (moderate to high correlation).

Well-being (1) is positively and statistically significantly correlated with all other indexes (HLPCQ subscales), suggesting that social balance, physical exercise, dietary habits, and daily routine are key factors for general well-being. All correlations are above the 0.3 level, confirming that it makes sense to include all predictors in the hierarchical multiple regression model.

The strongest relationship is between well-being (1) and social and mental balance (2), suggesting that individuals with greater mental and social balance tend to report greater well-being, and demonstrating the importance of interpersonal relationships and mental health for overall well-being.

In addition, well-being (1) is strongly correlated with organised physical exercise (3), suggesting that individuals who participate more frequently in organised physical exercise tend to report greater well-being, highlighting the importance of regular physical exercise for mental health.

Dietary habits, such as avoiding harmful dietary practises (5) and making healthy dietary choices (4), are strongly correlated, suggesting that individuals who adopt healthy dietary habits often also avoid harmful dietary practises.

Daily routine (6) shows positive moderate associations with several factors, suggesting that consistency and structure in daily life relates to various aspects of lifestyle and overall well-being.

A hierarchical regression analysis was performed, using the *enter* method (Table 3) to analyse the effects of social and mental balance, organised physical exercise, perceived dietary habits and daily routines on well-being.

All predictors were centred around the mean to avoid multicollinearity (Aiken and West, 1991). Preliminary analyses showed that all assumptions for a hierarchical regression were met. Using the variance inflation factor (VIF) indicators, we can conclude that there are no multicollinearity problems in our data (VIF indicators between 1 and 2). We also checked for the existence of influence points that could distort the regression model. These were not detected in our analyses (Cook's distance values between 0.00 and 0.12). A further check of the assumptions showed that the assumptions of homoscedasticity, linearity and approximate normal distribution of the residuals were not significantly violated for the selected models (the standardised coefficients were between -2.28 and 1.76).

The first step in the regression consisted of the index of social and mental balance; in the second step, the index of organised physical activity was added, and in the third step the indices of healthy dietary choices, avoidance of harmful dietary practises and daily routine. The overall regression model predicted about 46% of the variance in well-being ($R^2 = 0.46$, $F(5,49) = 8.25$, $p<.001$).

Table 3

Hierarchical multiple regression analysis for variables predicting well-being.

	Well-being					
	Model 1		**Model 2**		**Model 3**	
	B	**β**	**B**	**β**	**B**	**B**
Step 1: Social and mental balance	3.31	.58*	2.90	.51*	2.64	.46*
ΔR2		.34*				
Step 2:						
Organized Physical Exercise			2.55	.33*	2.35	.31*
ΔR2				.11*		
Step 3:						
Dietary Healthy Choices					-0.07	-.02
Dietary Harm Avoidance					0.97	.12
Daily Routine					0.06	.02
ΔR2						.01
Total R^2	.34*		.44*		.46*	
F for ΔR^2	27.14*		9.99*		0.35	

*$p<.01$.

As shown in Table 3, the social and mental balance index entered in the first step explains about 34% of the variance in well-being and is a significant predictor of

well-being. The direction of the correlation is positive, meaning that those who report higher values for the social and mental balance variables also report a higher level of well-being.

In the second step, we extended the model to include organised physical activity. After controlling for social and mental balance, step two additionally predicted about 11% of the variance in well-being, and the relationship was positive: i.e. higher scores on organised physical exercise were associated with higher well-being scores.

In step three, we added measures of diet and daily routine, which explained only an additional 1% of the variance in well-being, but this was not statistically significant. None of these individual measures had a statistically significant impact either.

Discussion

The aim of this study was to investigate the relationships between various lifestyle factors — social and mental balance, organised physical exercise, dietary habits, and daily routines — and their effects on general well-being.

Although the correlations observed in this study provide valuable insights, it is important to consider potential confounding variables that may influence these relationships. For this reason, a hierarchical regression analysis was also performed. The results suggest that social and mental balance and organised physical exercise are important predictors of well-being. Although dietary habits and daily routines relate to well-being, they do not contribute much to explaining the variance in well-being scores beyond the two factors mentioned above. Overall, all factors included explain 46% of the variance in well-being, highlighting the significant influence of healthy lifestyle choices and behaviours on participants' well-being. The results are consistent with previous studies showing that healthy lifestyle choices such as physical activity, spending time in nature, diet and nutrition, good relationships, enjoyable activities, religious and spiritual involvement, and relaxation and stress management are associated with better well-being and mental health (Walsh, 2011).

The results emphasise the strong and positive relationship between social and mental balance and well-being, which explains about 34% of the variance in well-being. Around a third of the variance in well-being is linked to the fact that respondents are more likely to report sharing their personal problems or worries with others, meeting and conversing daily with their family, focusing on positive thoughts when faced with difficulties, balancing time between work, personal life and leisure, and clearing their brain of thoughts or the next day's programme before going to bed.

This finding is consistent with existing research emphasising the importance of social support in promoting psychological well-being, confirming that supportive social relationships are a strong predictor of subjective well-being (Diener et al., 2018). This finding also aligns with research confirming that simple positive activities (such as practising optimism, affirming one's core values, etc.) can increase well-being (Layous and Lyubomirsky, 2014). Since research also suggests that fluctuations in life balance predict fluctuations in well-being (Sheldon et al., 2010), it is even more important to identify distinct factors that could contribute to stabilising perceptions of well-being.

The vital role of social and mental balance in well-being suggests that interventions targeting mental health, such as stress management, emotion regulation and improving social relationships, can have a profound impact on enhancing overall well-being. In addition, future research could investigate the specific dimensions of social and mental balance that most strongly influence well-being.

The index of organised physical exercise also proves to be a significant predictor of well-being and explains an additional 11% of the variance in well-being after controlling for social and mental balance. This finding is consistent with a review study demonstrating the positive effects of exercise on mental health and well-being (Mahindru et al., 2023). Regular physical activity during leisure time also appears to reduce undergraduate students' susceptibility to potential mental health problems or poor well-being (Rodríguez-Romo et al., 2022). The strong correlation between well-being and physical exercise in the present study underlines the importance of organised physical activity not only for physical health but also for mental well-being. Given the size of the effect and the reported correlations, it is likely that the relationship between physical exercise and well-being is complex. This is also evident from recent research (Martín-Rodríguez et al., 2024) affirming that both physiological and psychological factors are influenced by exercise.

Interventions to promote regular structured exercise (e.g., fitness classes, team sports) can therefore be a valuable strategy to improve well-being, particularly for undergraduate students, especially when combined with mental health and social support programmes. The relevance of such initiatives becomes even clearer in light of the findings by Planinšec & Matejek (2020), which show that in-service teachers, after completing their undergraduate studies, report only moderate competence in knowledge and understanding of physical activity for shaping a healthy lifestyle and improving quality of life.

Interestingly, dietary healthy choices and dietary harm avoidance, as well as daily routines, do not contribute significantly to explaining the variance in well-being beyond social and mental balance and physical exercise. This finding is inconsistent with some previous research suggesting that diet and related daily routines are among the components of lifestyle that may support psychological well-being (Gheonea et al., 2023). Although there is a moderate correlation between these factors and well-being, their weak predictive power in the regression model suggests that their influence is less direct in our sample or possibly mediated by other factors. For example, dietary habits may be more important in certain populations or contexts (e.g., individuals with dietary restrictions or those with chronic health conditions), but in this study, the sample (undergraduate students) does not include a large proportion of individuals for whom diet is an important determinant of well-being. Daily routines, while important for structuring, may not have the same direct impact on well-being as the more dynamic factors, such as mental balance or exercise, as they are more associated with dietary habits and routines in this questionnaire.

These findings suggest that future studies could benefit from investigating the moderating factors (e.g., individual health status, socio-economic background, or lifestyle) that might enhance or attenuate the effects of dietary habits and daily routines on well-being. In addition, it is worthwhile to consider longitudinal studies that can capture the longer-term effects of dietary changes or the restructuring of routines on well-being.

Study Strengths and Limitations

One of the strengths of this study is its comprehensive approach, which includes a range of (healthy) lifestyle factors in the analysis of well-being. By analysing the role of social, physical, and dietary factors in a single model, the study provides a nuanced understanding of the relative importance of these predictors.

However, there are several limitations that should be considered. First, the cross-sectional design of the study limits the ability to infer causality. Although correlations and regression analyses suggest associations, we cannot conclude that improving social balance or physical activity directly improves well-being. Future research using longitudinal or experimental designs would be valuable to establish causal relationships. Secondly, the use of self-report techniques may lead to bias, since subjects may over- or under-report certain behaviours, particularly in relation to physical activity or dietary habits. Third, although the study included several important lifestyle factors, other factors such as sleep quality, personality traits and

genetic predisposition may also play a significant role in determining well-being and were not analysed here. Fourth, the size and complexity of the sample should be considered in further research. The representation of the male gender in the sample was very low, which limits the generalizability of the findings. In the future, it would be advisable to include more gender-balanced samples.

Conclusion

Social and mental balance and organised physical exercise were found to be the most important predictors of well-being, explaining about 45% of the variance, while dietary habits and daily routines had little additional predictive power. This suggests that students who maintain strong interpersonal relationships, manage stress effectively and engage in physical activity tend to report higher levels of well-being, emphasising the importance of both social and physical aspects to mental health. While healthy dietary habits and structured daily routines correlated with well-being, their unique contribution to predicting well-being was minimal when controlling for social and physical factors.

The results of this study suggest that interventions to improve well-being should take a holistic approach. These interventions could include improving social support networks by promoting strong interpersonal relationships and community engagement. Programmes such as social skills workshops and mindfulness training could strengthen participants' social relationships and emotional resilience. Promoting organised physical activity is equally important. Structured exercise programmes, such as group fitness classes or sports teams, could provide both the physical benefits of exercise and the social benefits of group participation. Promoting healthy dietary habits and routines is another major area of intervention, although this was not found to be an important predictor of well-being in our sample.

The findings emphasise the importance of considering both the psychosocial and physical dimensions in interventions to improve well-being. Programmes that combine mental health support (e.g., counselling, mindfulness, social skills training) with physical activity (e.g., exercise programmes, fitness challenges) could be more effective than those that focus on a single area.

Promoting well-being requires an integrative approach that addresses multiple lifestyle factors simultaneously. Structured programmes and community initiatives that focus on social support, physical activity, dietary habits, and the formation of

routines can play a crucial role in improving well-being, as both the current study and previous research show. Future studies could further investigate the long-term effects of such interventions and their applicability in different populations.

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References

Aiken, L. S., and West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.

Avni-Babad D. (2011). Routine and feelings of safety, confidence, and well-being. *British Journal of Psychology*, *102*(2), 223–244. https://doi.org/10.1348/000712610X513617

Babicki, M., Kloda, K., Ledwoch, J., Janiak, S., Krzyżanowski, F., Zieliński, T., Grabska, P., Gajowiak, D., Malchrzak, W., and Mastalerz-Migas, A. (2024). The impact of lifestyle, measured with the HLPCQ questionnaire on the prevalence of metabolic syndrome in Poland: a multicenter study. *Scientific Reports*, *14*(1), 10070. https://doi.org/10.1038/s41598-024-60866-1

Bech, P., Olsen, L. R., Kjoller, M., and Rasmussen, N. K. (2003). Measuring well-being rather than the absence of distress symptoms: a comparison of the SF-36 Mental Health subscale and the WHO-Five Well-Being Scale. *International Journal of Methods in Psychiatric Research, 12*(2), 85–91. https://doi.org/10.1002/mpr.145

Chekroud, S. R., Gueorguieva, R., Zheutlin, A. B., Paulus, M., Krumholz, H. M., Krystal, J. H., and Chekroud, A. M. (2018). Association between physical exercise and mental health in 1·2 million individuals in the USA between 2011 and 2015: a cross-sectional study. *The Lancet Psychiatry, 5*(9), 739–746. https://doi.org/10.1016/S2215-0366(18)30227-X

Darviri, C., Alexopoulos, E. C., Artemiadis, A. K., Tigani, X., Kraniotou, C., Darvyri, P., and Chrousos, G. P. (2014). The Healthy Lifestyle and Personal Control Questionnaire (HLPCQ): a novel tool for assessing self-empowerment through a constellation of daily activities. *BMC Public Health*, *14*, 995. https://doi.org/10.1186/1471-2458-14-995

Diener, E., Pressman, S. D., Hunter, J., and Delgadillo-Chase, D. (2017). If, Why, and When Subjective Well-Being Influences Health, and Future Needed Research. *Applied Psychology. Health and Well-being*, *9*(2), 133–167. https://doi.org/10.1111/aphw.12090

Diener, E., Oishi, S., and Tay, L. (2018). Advances in subjective well-being research. *Nature Human Behaviour, 2*(4), 253-260. https://doi.org/10.1038/s41562-018-0307-6

Dodge, R., Daly, A. P., Huyton, J., and Sanders, L. D. (2012). The Challenge of Defining Wellbeing. *International Journal of Wellbeing, 2*, 222-235. https://doi.org/10.5502/ijw.v2i3.4

Engel, G.L. (1977). The need for a new medical model: A challenge for biomedicine. *Science, 196*(4286), 129-36.

Feeney, B. C., and Collins, N. L. (2015). A new look at social support: a theoretical perspective on thriving through relationships. *Personality and Social Psychology Review: an official journal of the Society for Personality and Social Psychology, Inc, 19*(2), 113–147. https://doi.org/10.1177/1088–868314544222

Galderisi, S., Heinz, A., Kastrup, M., Beezhold, J., and Sartorius, N. (2015). Toward a new definition of mental health. *World Psychiatry: official journal of the World Psychiatric Association (WPA), 14*(2), 231–233. https://doi.org/10.1002/wps.20231

Geraets, A. F. J., and Heinz, A. (2023). The associations of dietary habits with health, well-being, and behavior in adolescents: A cluster analysis. *Child: Care, Health and Development*, *49*(3), 497–507. https://doi.org/10.1111/cch.13064

Gheonea, T. C., Oancea, C. N., Mititelu, M., Lupu, E. C., Ioniţă-Mîndrican, C. B., and Rogoveanu, I. (2023). Nutrition and Mental Well-Being: Exploring Connections and Holistic Approaches. *Journal of Clinical Medicine,12*(22), 7180. https://doi.org/10.3390/jcm12227180

Jennings, V., and Bamkole, O. (2019). The Relationship between Social Cohesion and Urban Green Space: An Avenue for Health Promotion. *International Journal of Environmental Research and Public Health, 16*(3), 452. https://doi.org/10.3390/ijerph16030452

Joshanloo, M. (2022). Mental Balance in 116 Nations: Where It Is Experienced and Valued. *International Journal of Environmental Research and Public Health*, *19*(19), 12457. https://doi.org/1–0.3390/ijerph191912457

Holt-Lunstad, J. (2018). Why social relationships are important for physical health: A systems approach to understanding and modifying risk and protection. *Annual Review of Psychology, 69*, 437–458. https://doi.org/10.1146/annurev-psych-122216-011902

Layous, K., and Lyubomirsky, S. (2014). The how, why, what, when, and who of happiness: Mechanisms underlying the success of positive activity interventions. In J. Gruber and J. T. Moskowitz (Eds.), *Positive emotion: Integrating the light sides and dark sides*, 473–495. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199926725.003.0025

Lesser, I. A., and Nienhuis, C. P. (2020). The Impact of COVID-19 on Physical Activity Behavior and Well-Being of Canadians. *International Journal of Environmental Research and Public Health, 17*(11), 3899. https://doi.org/10.3390/ijerph17113899

Lyubomirsky, S., and Layous, K. (2013). How Do Simple Positive Activities Increase Well-Being? *Current Directions in Psychological Science, 22*(1), 57-62. https://doi.org/10.1177/0963–721412469809

Mahindru, A., Patil, P., and Agrawal, V. (2023). Role of Physical Activity on [sic] Mental Health and Well-Being: A Review. *Cureus, 15*(1), e33475. https://doi.org/10.7759/cureus.33475

Martín-Rodríguez, A., Gostian-Ropotin, L. A., Beltrán-Velasco, A. I., Belando-Pedreño, N., Simón, J. A., López-Mora, C., Navarro-Jiménez, E., Tornero-Aguilera, J. F., and Clemente-Suárez, V. J. (2024). Sporting Mind: The Interplay of Physical Activity and Psychological Health. *Sports (Basel, Switzerland), 12*(1), 37. https://doi.org/10.3390/sports12010037

Nishi, R., and Masuda, N. (2014). Dynamics of social balance under temporal interaction. *EPL (Europhysics Letters) 107*, 4: 48003. http://dx.doi.org/10.1209/0295-5075/107/48003

NOO: Zdrav življenjski slog (ZŽS) za trajnostni razvoj in vseživljenjsko učenje [Healthy Lifestyle for Sustainable Development and Lifelong Learning]. https://kre-aktiven.si/en/zzs/

Planinšec, J. and Matejek, Č. (2020). Poučevanje predmeta šport z vidika kompetenc razrednih učiteljev. *Revija za elementarno izobraževanje (Journal of elementary education), 13*(4). http://dx.doi.org/–10.18690/rei.13.4.413-428.2020

Rodríguez-Romo, G., Acebes-Sánchez, J., García-Merino, S., Garrido-Muñoz, M., Blanco-García, C., and Diez-Vega, I. (2022). Physical Activity and Mental Health in Undergraduate Students. *International Journal of Environmental Research and Public Health*, *20*(1):195. https://doi.org–/10.3390/ijerph20010195

Ropret, N., Košir, U., Roškar, S., Klopčič, V., and Vrdelja, M. (2023). Psychological Well-Being and Resilience of Slovenian Students during the COVID-19 Pandemic. *Zdravstveno varstvo, 62*(2), 101–108. https://doi.org/10.2478/sjph-2023-0014

Ruggeri, K., Garcia-Garzon, E., Maguire, Á., Matz, S., and Huppert, F. A. (2020). Well-being is more than happiness and life satisfaction: a multidimensional analysis of 21 countries. *Health and Quality of Life Outcomes*, *18*(1), 192. https://doi.org/10.1186/s12955-020-01423-y

Ryan, R. M., and Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52,* 141–166. https://doi.–org/10.1146/annurev.psych.52.1.141

Schnettler, B., Miranda, H., Lobos, G., Orellana, L., Sepúlveda, J., Denegri, M., Etchebarne, S., Mora, M., and Grunert, K. G. (2015). Eating habits and subjective well-being. A typology of students in Chilean state universities. *Appetite*, *89*, 203–214. https://doi.org/10.1016/j.appe–t.2015.02.008

Sheldon, K. M., Cummins, R., and Kamble, S. (2010). Life balance and well-being: testing a novel conceptual and measurement approach. *Journal of Personality, 78*(4):1093–134. https://doi.o–rg/10.1111/j.1467-6494.2010.00644.x

Shvedko, A. V., Whittaker, A. C., Thompson, J. L., and Greig, C. A. (2018). Physical activity interventions for treatment of social isolation, loneliness or low social support in older adults: A systematic review and meta-analysis of randomised controlled trials. *Psychology of Sport and Exercise, 34*, 128–137. https://doi.org/10.1186/s40814-018-0379-0

Taukeni, G. S. (2019). *Introductory Chapter: Bio-Psychosocial Model of Health. IntechOpen*. https://do–i.org/10.5772/intechopen.85024

Taylor, S. E. (2011). Social Support: A Review. In H. S. Friedman (Ed.), *The Oxford Handbook of Health Psychology*, 189-214. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780–195342819.013.0009

Topp, C. W., Østergaard, S. D., Søndergaard, S., and Bech, P. (2015). The WHO-5 Well-Being Index: a systematic review of the literature. *Psychotherapy and Psychosomatics, 84*(3), 167–176. https://doi.org/10.1159/000376585

Walsh, R. (2011). Lifestyle and Mental Health. *American Psychologist, 66*(7), 579-92. https://doi.o–rg/10.1037/a0021769

WHO - World Health Organization Regional Office for Europe. (1998). *Wellbeing measures in primary health care*/the DepCare Project: report on a WHO meeting: Stockholm, Sweden, 12–13 February 1998. Copenhagen: World Health Organization Regional Office for Europe. https://iris.who.int/handle/10665/349766. (Accessed December 29th 2024.)

World Health Organization (WHO). 2018. *Global action plan on physical activity 2018-2030: More active people for a healthier world: at a glance*. https://apps.who.int/iris/bitstream/handle/10665/2727–21/WHO-NMH-PND-18.5-eng.pdf. (Accessed January 5th 2025.)

World Health Organization (WHO). 2024a. *The World Health Organization-Five Well-Being Index (WHO-5)*.https://www.who.int/publications/m/item/WHO-UCN-MSD-MHE-2024.01. (Accessed January 2nd 2025.)

World Health Organization (WHO). 2024b. *The World Health Organization-Five Well-Being Index (WHO-5)*. Slovenian translation. https://cdn.who.int/media/docs/default-source/mental-health–/five-well-being-index-(who-5)/who-5_slovenian.pdf?sfvrsn=f9adb3c4_3. (Accessed January 2nd 2025.)

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THE WANDA REFLECTIVE METHOD AS A TOOL FOR IMPROVING TEACHERS' WELL-BEING

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Abstract/Izvleček

This qualitative research study focuses on teachers' well-being in the context of the WANDA reflective method. The aim was to explore teachers' subjective perceptions of the benefits of WANDA on their well-being. Data were collected through a qualitative written interview technique. The research sample consisted of sixteen primary and pre-primary teachers who had completed the WANDA method. Content analysis of the data was conducted using thematic analysis based on the PERMA model. The results showed that WANDA contributes to teachers' well-being in the areas of Relationship, Meaning, Positive Emotions, and Engagement. The Accomplishments category was the least represented.

Reflektivna metoda WANDA kot orodje za izboljšanje dobrobiti učiteljev

V kvalitativni raziskavi se osredinjamo na dobrobit učiteljev v okviru refleksivne metode WANDA. Cilj je bil raziskati subjektivne zaznave učiteljev o koristih metode WANDA za njihovo dobro. Podatki so bili zbrani s kvalitativno tehniko pisnega intervjuja. Raziskovalni vzorec je sestavljalo 16 osnovnošolskih in predšolskih učiteljev, ki so opravili usposabljanje za izvajanje skupinske refleksije z metodo WANDA. Vsebinska analiza podatkov je bila izvedena z uporabo tematske analize na podlagi modela PERMA. Rezultati so pokazali, da metoda WANDA prispeva k dobrobiti učiteljev na naslednjih področjih: *odnosi, pomen, pozitivna čustva in zavzetost*. Najmanj zastopana je bila kategorija *dosežki*.

Keywords:
WANDA, well-being, teachers' well-being, PERMA.

Ključne besede:
WANDA, dobro počutje, dobrobit učiteljev, PERMA.

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Introduction

Well-being is understood as the result of subjective assessments of quality of life (Deci and Ryan, 2008) and is now a central concern for both individuals and educational systems. Research shows that higher levels of well-being correlate with better learning outcomes, social behaviour, health, and resilience (Huppert et al., 2013). In an educational context, teachers' well-being is essential for teachers themselves and for students' academic and emotional development (Taylor et al., 2024). As reported by (Thapa et al., 2013; Toropova et al., 2021), the widespread problem of low levels of teacher well-being and mental health has detrimental effects on schools. European policy documents increasingly emphasise promoting teacher well-being through systemic support and professional development opportunities (Eurydice, 2021).

The PERMA Theoretical Model

Most recently, a new conceptual framework has been proposed in an OECD working paper, in which teachers' professional well-being is defined around four key dimensions of well-being: cognitive, subjective, physical and mental, and social well-being (Viac and Fraser, 2020). Teachers' emotions and well-being have far-reaching consequences for themselves, their students, and the education system. Our study is based on Seligman's theoretical model PERMA because most studies on teacher well-being fall within the domains of well-being psychology and positive psychology (Hascher and Waber, 2021). Research has shown significant positive associations between each PERMA component and physical health, vitality, job satisfaction, life satisfaction, and organizational commitment (Kern, Waters, Alder, and White, 2014). PERMA is also a predictor of psychological distress (Forgeard et al., 2011). Proactive work on the PERMA components increases aspects of well-being and reduces psychological distress.

The PERMA™ model focuses on five key components of well-being that Seligman believes contribute to human well-being (Seligman, 2011). The PERMA components are as follows: *Positive Emotion*: This element focuses on the experience of positive emotions such as joy, gratitude, and love. Positive emotions enhance our overall well-being and motivation. *Engagement*: This element refers to being fully absorbed in activities that challenge and engage us, often leading to a state of "flow". *Relationships*: This element emphasizes the importance of strong, supportive relationships with family, friends, and partners. Healthy relationships are crucial for

our mental health and happiness. *Meaning*: This element involves having a sense of purpose and meaning in life, which can come from various sources such as religion, philosophy, or personal beliefs. *Accomplishment*: This element focuses on achieving goals and experiencing a sense of accomplishment and pride in our achievements (Seligman, 2012).

Research confirms the importance of the individual categories of PERMA for well-being. A positive emotional state helps us to better cope with challenges and maintain motivation and productivity so that individuals increase their performance and achieve their personal and professional goals (Fredrickson, 2010; Csikszentmihalyi, 2009). Positive Emotions build lasting psychological, social, and intellectual capital, enhancing our resilience and psychological well-being (Paakkanen et al., 2021). Positivity can improve psychological and physiological well-being when coping with negative emotions (Fredrickson, 2001). Psychological engagement is enhanced when professionals are asked to analyse their practice in a safe, dialogic environment (Fullagar and Kelloway, 2009; Aldrup et al., 2018). Professional and personal relationships significantly predict well-being outcomes, with professional relationships being the strongest protective factor against emotional exhaustion (Smetáčková and Francová, 2020).

The study used the WANDA reflective group method to explore the contribution made by aspects of teachers' perceived well-being to reflective practice. However, no studies to date have systematically analysed how reflective group methods like WANDA—designed to improve the collegial climate and promote professional self-awareness—impact these dimensions through a PERMA lens.

This study addresses this critical gap by combining the PERMA framework with qualitative analysis of teachers' reflective writing generated through the WANDA method. It responds to the growing call for research that is both theory-grounded and context-sensitive (Hascher et al., 2021; Kelchtermans, 2006), illuminating not only which PERMA domains are affected but also how they interconnect in teachers' subjective experiences.

The WANDA Method

The WANDA method is an internationally recognized tool for group reflection among teachers. The name comes from the words *waarderen* (to appreciate) and *daden* (to analyse actions) (De Schepper et al., 2016).

The method was developed in Belgium and is used to support a system for building professional learning communities (De Schepper et al., 2016). It develops participants' metacognitive thinking in group reflection on their practice.

Unlike other reflective practices, WANDA has a fixed structure. The facilitator guides teachers through five phases of analysis and appreciative inquiry (Cooperrider and Whitney, 2006) that unfold around teachers' exploration of a problem situation from different perspectives. Appreciative analysis ensures that problem situations are approached critically but respectfully, focusing on what might work rather than on what did not work or what went wrong.

The method is based on group reflection that leads participants to understand the relationship between what they think and what they do. WANDA sessions should be conducted in groups of 8-12 participants, with meetings scheduled at least once every 4-6 weeks and each meeting lasting 2.5 hours or longer. Adequate time is essential to foster the development of strong relationships among participants and create the safe environment necessary for meeting effectiveness. The first session begins with the facilitator helping the participants establish common rules guiding the process. The sessions follow a set structure, and each session consists of five phases: looking back, selecting a case, asking questions, gathering perspectives, and giving advice. The WANDA method can be implemented in an existing professional learning community or help build a new professional learning community. WANDA represents a method that focuses on collegial relationships, also known as peer relationships (Falk et al., 2019, p. 10).

The main aim of this qualitative study is to explore how primary and pre-primary schoolteachers perceive the benefits of the WANDA reflective method about their professional well-being, using the PERMA model as an analytical framework. Specifically, the study aims to identify which dimensions of well-being—Positive Emotions, Engagement, Relationships, Meaning, and Accomplishments—are activated or strengthened through participation in WANDA, and how teachers reflect on these changes.

We aim to contribute to a multi-domain-specific approach to teacher well-being (Hascher et al., 2021), which explores the factors that may promote or undermine teacher well-being across distinct psychological dimensions. In light of the study's conceptual framework, the following research questions were formulated:

1. *How do teachers who participated in the WANDA reflective method describe its impact on specific dimensions of their well-being, as defined by the PERMA model?*

2. *Which domains of the PERMA framework (Positive Emotions, Engagement, Relationships, Meaning, Accomplishments) are most and least reflected in teachers' self-reported experiences?*

Methodology

A qualitative research design was chosen, using a written questioning technique that allows respondents to freely express their experiences and reflections without the constraints of predefined answers (Smith and Brown, 2023). Written responses to four interview open-ended questions served as the data source. The intention was to elicit both experiential and reflective content:

1. *How important was the WANDA course for your personal development/ what did you learn about yourself?* (Q1)
2. *How important was the WANDA course for your professional development/what did you learn?* (Q2)
3. *How can WANDA contribute to the well-being of a teacher's professional life?* (Q3)
4. *Please indicate anything else you consider important.* (Q4)

Research Participants

The research sample consisted of a total of eighteen female primary and pre-primary teachers who had attended a training course on the WANDA structured reflective technique. The teachers participated in a total of 80 hours of regular group meetings held once a month from 2023–2024. Each meeting lasted 2–3 hours. All female teachers (N = 18) were approached for written reflection, but data from sixteen of them were analysed for the purposes of the research. The research population included ten primary teachers and six pre-primary teachers. Of the primary education teachers, six had teaching experience ranging from 3–6 years, while four teachers had more than 15 years of experience. Of the pre-primary teachers, three had more than 20 years of experience, and three had teaching experience ranging from 6–12 years.

Procedures and Analysis

For the purposes of qualitative content analysis, the method of thematic data analysis (Braun and Clark, 2006) was chosen based on the theoretical framework of the PERMA model.

A deductive approach was applied in the analysis, with the predefined categories of the PERMA model serving as the framework for analysing the written responses of the WANDA course participants. The analysis was conducted in the ATLAS.ti software environment. The initial phase of the work involved detailed familiarisation by the researchers with the data, breaking down the text into meaning units and identifying the text units corresponding to the PERMA model's dimensions. A total of 221 meaning units of text were obtained, four of which, owing to their incompleteness, were excluded from the research analysis. Each text unit was further related to context, analysed, and assigned to the appropriate category of the PERMA model. The teachers' statements in the respective categories of the PERMA model were subjected to more detailed analysis, and with respect to the theoretical background, the PERMA model was sub-categorized. The subcategories created allowed for a deeper understanding and interpretation of the data obtained.

Results

One of the main research questions was *how* teachers *who participated in the WANDA reflective method describe its impact on specific dimensions of their well-being, as defined by the PERMA model.* The results are described and related to the individual categories of the PERMA model.

WANDA represents a method that focuses on the domain of collegial relationships, also known as peer relationships (Falk et al., 2019, p. 10). *Relationships* is the category that was most saturated in the research. In this category, teachers' statements such as "*finding a supportive group,*" "*peer support and sharing experiences,*" and "*peer support, inspiration...*" were significantly more prevalent and were included in the subcategory *Building professional community. Trust and open communication* was the second most saturated subcategory of this domain. WANDA participants indicated the importance of respectful communication within the professional community of teachers: "*Communication and its form is essential in interpersonal (professional, personal) relationships*," "*I have learned to listen more*."

As part of the *meaning* category, we identified two subcategories in the analysed statements. The category *Strengthening* Teacher *Identity* is represented by the statement, "*As the group grew, as Wanda grew within us, so did my awareness of myself and my place among people*." Teachers reported that group reflection and sharing of experiences contributed to strengthening their identity and awareness of their place among colleagues. *Collegial support and professional sharing* is the second subcategory of

the *meaning* domain. Teachers feel that WANDA provides them with a structured space to share experiences and support each other, strengthening their professional relationships and collaboration. The statement "*I learned to see situations differently*" shows that teachers gained a new perspective on their work through collegial sharing, which allows them to see situations from different perspectives.

Based on the qualitative analysis, we identified four meaning positions in this category area of PERMA, which were classified into the subcategories of *Relaxation and Stress Reduction, Appreciation of Collegial Support, Enjoyment of the WANDA Process*, and *New Perspective on Situations*. The most frequently represented subcategory was *Relaxation and Stress Reduction*. The need for teachers to cope with negative emotions, foster positivity and emotional stability, and gain more control over their work is evident here. We can mention statements such as *"The process itself can help me find inner balance and confidence,"* or *"WANDA can help* teachers *from the anxiety of being in professional situations that they can't handle."* Another subcategory is *Appreciation of Collegial Support*. Here, the value of the statement is feeling grateful for being supported and inspired by others. The type of gratitude elicited in the respondents' statements is felt as a response to a specific action by another person (Lambert, Graham and Finchman, 2009). Respondents expressed appreciation, including appreciation at a cognitive level. This is evidenced by the statement, *"Thank you for the opportunity to be part of a not just fine group,"* or *"Thank you for the opportunity to participate in the course."* Regarding frequency, the third subcategory*, Joy of the WANDA process*, was the least represented. Here, positive emotions associated with joy and satisfaction in self-reflection are expressed: "*I like to reflect on myself," or* "*I consider the completion of WANDA as one of the best seminars for my personal development."* The last subcategory is represented by *New Perspective on Situations*. It is represented by statements such as "*To gain distance*," or *"That it is possible to find a good way out of an initially hopeless or extremely unpleasant situation."* Respondents here describe a change in perspective and the ability to gain perspective, contributing to emotional stability.

Engagement in the PERMA model takes the form of full immersion in the activity, and focus on the task at hand, which is related to the skills needed to manage the task (Csikszentmihalyi and LeFevre, 1989). This link was also shown by analysis of the respondents' statements. We called the first subcategory *Full Concentration on the Task*. In the context of WANDA, respondents reflected on the opportunity to become deeply immersed in the problem at hand by being consciously involved in its complex analysis and thinking about viable solutions. The second subcategory*, Empowering Skills*, is related to the importance of empowering professional skills that

enable deep engagement. Respondents' statements indicate a deeper engagement in reflection and personal growth, a sign of higher *engagement* and achieving a flow state. The *WANDA* subcategory *in professional and personal practice* includes statements focused on experiences of deep reflective techniques that enabled respondents in this cohort to use participatory immersion in analysis and problem-solving in their personal lives and teaching practice situations, as well. This subcategory is illustrated by the statement "*making little Wandas in my head*" or "*being able to observe with understanding.*"

Another area of PERMA is *accomplishment*. Teachers who achieve success regularly reflect on their performance and evaluate what is working and what needs improvement. This self-reflection allows them to continually improve and achieve higher levels of professionalism and *self-efficacy* awareness. When teachers see that their efforts produce positive results, they feel more confident in their abilities and more motivated to continue their work. We identified three subcategories. *The meaning of professional growth* includes statements such as "*Work on yourself, learn from mistakes.*" The ability to learn from experiences and mistakes is emphasized as an opportunity to learn and improve. The *Professional and Personal Growth* subcategory points to the complementary relationship between teachers' personal and professional lives. "*I blend professional and personal development. I know that I can keep learning, improving, finding more ways or limits.*" The third subcategory is grounded in the meaning of *Professional Self-Esteem* that WANDA conveys to participants. Expressions such as "*It has moved me forward*," "*I have deepened my skills*," and "*I have learned*" were abundant in the teachers' accounts.

Based on the theoretical framework, we formulated the second research question: *Which domains of the PERMA framework (Positive Emotions, Engagement, Relationships, Meaning, Accomplishments) are most and least reflected in teachers' self-reported experiences?*

A total of 221 meaning units of text were obtained. Twenty-eight meaning units of text were assigned to the *Positive Emotions* category, 33 meaning units of text were assigned to the *Engagement* category, 83 meaning units of text were assigned to the *Relationship* category, 56 meaning units of text were assigned to the *Meaning* category, and 21 meaning units of text were assigned to the *Accomplishment* category. The teachers' statements in the respective categories of the PERMA model were subjected to more detailed analysis, and with respect to the theoretical background, the PERMA model was sub-categorized. The subcategories created allowed for a deeper understanding and interpretation of the data obtained.

Based on the written reflections of pre-primary and primary school teachers, it was found that group reflection using the WANDA method contributed significantly to the area of *Relationships*. This category represented the highest saturated category among all the questions asked about teachers' personal and professional development. The *Meaning* category, which refers to perceived meaning about the profession, also had a significant presence. Comparable results in terms of saturation were achieved for the *Positive Emotion* and *Engagement* categories. Concerning the WANDA method, the *Accomplishment* category emerged as the least represented category of teacher well-being. The results of the partial questions from the teachers' written reflections are presented in Chart 1.

In interview question Q1 (*What was the significance of completing the WANDA course for your personal development/what did you learn about yourself?),* all categories of the PERMA model were represented. Participants perceived the benefits of the WANDA course in all areas of teachers' professional well-being, emphasizing the significant representation of the categories *Relationships* and *Meaning*.

In interview question Q2 (*What was the significance of completing the WANDA course for your professional development/what did you learn*?), the categories of *Relationships* and *Engagement* emerged as significant. An interesting result is that out of the sixty-two units of meaning in the analysed text, no statement about professional development could be associated with the category *Positive Emotion* for the WANDA course participants.

Significant differences were found for interview question Q3 (*How can WANDA contribute to teachers' professional well-being?*), which explicitly asked participants about the perceived contribution of the WANDA method to teachers' professional well-being. The *Relationship* category was the dominant category here. The second category mentioned was *Meaning*. The same result was obtained for question Q1. For the participants, these categories of the PERMA model are important both in personal development and in the perceived professional well-being of teachers. The third category mentioned was *Positive Emotion*. For WANDA participants, the least saturated categories were *Accomplishments* and *Engagement*.

In interview question Q4 (*List anything else that you consider important*), participants were asked to list anything additional that they considered important after completing the WANDA course. Here, *Positive Emotions* and *Relationships* emerged as significant and interrelated categories. The *Accomplishment* category had zero representation in this question, similar to the question on teachers' perceived professional well-being (Q3).

Accomplishment does not represent a significant category in the benefits of the WANDA method for course participants.

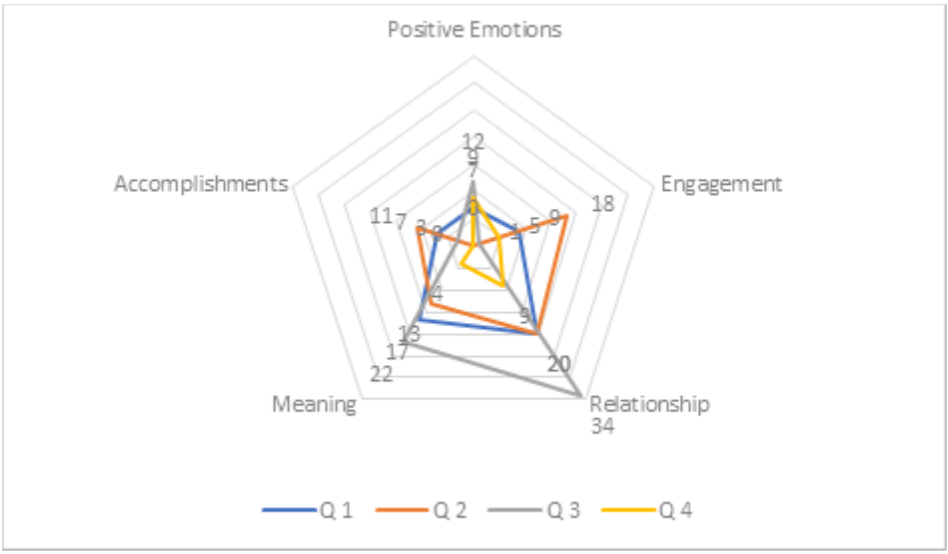

Chart 1
Saturation rate in the PERMA dimensions

Discussion

This study explored how the WANDA reflective method influences the five dimensions of teacher well-being as conceptualized in the PERMA model. The results indicate that *Relationships* and *Meaning* are the most affected domains, followed by *Positive Emotion* and *Engagement*, while *Accomplishment* was the least frequently represented. These findings answer the research question: Teachers perceive WANDA as a tool that supports specific well-being domains, particularly through collaborative reflection and strengthened relational dynamics.

The prominence of the *Relationships* domain is supported by extensive evidence from both Czech and international research. The large-scale study by Smetáčková and Francová (2020) involving 2,394 primary school teachers confirmed that the perceived quality of relationships within school teams significantly correlates with symptoms of burnout. Teachers experiencing high-quality professional relationships reported lower levels of emotional exhaustion and greater job satisfaction.

Moreover, their findings emphasized that professional rather than personal relationships had a stronger predictive effect on well-being. This distinction is mirrored in our findings, where teachers most frequently highlighted the professional value of mutual support and shared reflection within the WANDA process.

According to Konu et al. (2010) and Romano and Wahlstrom (2000), we can also point to the meaning of effective communication, trust, and providing support and assistance among teachers, all of which reduce stress and tension and contribute to overall well-being. The strong link between the categories of *Relationships* and *Positive Emotion* suggests that experiencing one's own and others' positive emotions (e.g., sharing joy) strengthens connections that "*lead to many positive outcomes, such as subjective well-being, less negative affect, greater trust, and improved relationship quality*" (Paakkanen et al., 2021, p. 2). Finally, the strong link between the dimensions of *Relationships* and *Engagement* should be mentioned, which points to the importance of positive relationships in expanding teacher engagement (Kilgallon et al., 2008).

The *Meaning* dimension emerged through teachers' reflections on professional identity, purpose, and the transformative potential of shared storytelling. This supports research by Zhai et al. (2024), who argue that professional meaning is deepened through collaborative narrative processing and that reflective dialogue helps teachers reframe stressful experiences into coherent narratives of purpose and resilience.

Positive Emotion was represented through gratitude, stress relief, and emotional regulation, which aligns with Fredrickson's (2001) theory that cultivating positive emotion enhances adaptive capacity. Teachers reported increased emotional balance and the ability to gain perspective on challenging situations, suggesting that structured reflection supports emotional clarity and recovery, as also noted in the work of Paakkanen et al. (2021).

Although *Engagement* appeared less frequently, some participants described deep involvement in the reflective process and improved metacognitive awareness of their work. This supports the claim that psychological engagement is enhanced when professionals are invited to analyse their practice in a safe, dialogic environment (Fullagar and Kelloway, 2009; Aldrup et al., 2018).

The domain of *Accomplishment* was rarely referenced, though some participants reported increased self-confidence or a clearer awareness of their competences. However, these reflections were subtle and may suggest that this domain requires

more structured goal setting or external validation to be activated through reflection—a limitation also observed in previous studies (Collie et al., 2012; Zee and Koomen, 2016).

Implications for Practice

The study underscores that group reflection methods such as WANDA can play a meaningful role in promoting teacher well-being, particularly in relational support and sense-making domains. Implementing such approaches into professional development policies could not only mitigate emotional strain but also contribute to reducing teacher burnout, as supported by national-level data (Smetáčková and Francová, 2020). Moreover, emphasizing structured peer interaction can counteract the individualized and isolating nature of teaching in Czech schools, where systemic support for collaboration is often lacking (Kasíková and Dubec, 2009).

Limitations of the Study

This qualitative study was limited by a small, homogeneous sample (N = 16 female teachers), which reduces generalizability. As a method, written reflection may not fully capture all aspects of well-being—especially domains like Accomplishment. Furthermore, the study lacked pre/post measures and relied on a self-report technique, which may introduce subjective bias. Future studies should explore mixed-method or longitudinal approaches and examine WANDA's effect across diverse school cultures and genders.

Conclusion

WANDA appears promising for supporting teacher well-being by reinforcing relationships, fostering professional meaning, and enabling emotional resilience. These findings emphasize the importance of creating structured reflective spaces in schools and highlight the interdependence between social connectedness and emotional well-being in educational practice.

References

Aldrup, K., Klusmann, U., Lüdtke, O., Göllner, R., and Trautwein, U. (2018). Student and teacher well-being: Testing the mediating role of the teacher-student relationship. *Teaching and Teacher Education*, 58, 126–136.

Braun, V., and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Collie, R. J., Shapka, J. D., and Perry, N. E. (2012). School climate and social-emotional learning: Predicting teacher stress, job satisfaction, and teaching efficacy. *Teaching and Teacher Education*, 28(5), 718–727.

Cooperrider, D., and Whitney, D. (2006). Appreciative inquiry: A positive revolution in change. In P. Holman et al. (eds.), *The change handbook*. San Francisco: Berrett-Koehler Publishers, Inc. ISBN 8601200632934.

Csikszentmihalyi, M. (2009). *Flow: The psychology of optimal experience*. Harper Row.

De Schepper, B. et al. (2016). When WANDA meets ISSA: Group reflection for professional development in ECEC. Ghent.

Deci, E. L., and Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of happiness studies*, *9*(1), 1-11. https://doi.org/10.1007/s10902-006-9018-1

European Commission/EACEA/Eurydice. (2021). Teachers in Europe: Careers, development and well-being. Eurydice report. Publications Office of the European Union.

Falk, D., Varni, E., Finder, J., and Frisoli, P. (2019). Landscape review: teacher well-being in low resource, crisis, and conflict-affected settings. *Inter-agency Network for Education in Emergencies*. https://inee.org/sites/default/files/resources/TWB%20Landscape%20Review_August%202019_0.pdf

Forgeard, M. J., Jayawickreme, E., Kern, M., and Seligman, M. (2011). Doing the right thing: Measuring well-being for public policy. *International Journal of Well-being*, *1*(1), 79–106. https://doi.org/10.5502/IJW.V1I1.15

Fredrickson, B. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *The American Psychologist, 56*(3), 218–226. https://doi.org/10.1037/0003-066X.56.3.218

Fredrickson, B. (2010). *Positivity: Groundbreaking research reveals how to release your inner optimism and thrive*. Oneworld.

Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine, and A. Plant (eds.), *Advances in Experimental Social Psychology* (Vol. 47, pp. 1–53). Academic Press.

Fullagar, C. J., and Kelloway, E. K. (2009). Flow at work: An experience sampling approach. *Journal of Occupational Health Psychology*, 14(3), 329–340.

Hascher, T., and Waber, J. (2021). Teacher Well-being: A Systematic Review of the Research Literature from the Year 2000–2019. *Educational Research Review, 34,* Article 100411. https://doi.org/10.1016/j.edurev.2021.100411

Hascher, T., Beltman, S., and Mansfield, C. (2021). Teacher well-being and resilience: Toward an integrative model. *Educational Research, 63*(4), 416–439. https://doi.org/10.1080/00131881.2021.1980416

Huppert, F. A., and So, T. T. C. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social Indicators Research, 110*, 837–861. https://doi.org/10.1007/s11205-011-9966-7

Kelchtermans, G. (2006). Teacher collaboration and collegiality: The case of peer coaching. *Teaching and Teacher Education*, 22(5), 601– 616.

Kern, M. L., Waters, L., Adler, A., and White, M. (2014). Assessing employee well-being in schools using a multifaceted approach: Associations with physical health, life satisfaction, and professional thriving. *Psychology, 5*(6), 500–513. https://doi.org/10.4236/psych.2014.56060

Konu, A., Viitanen, E., and Lintonen, T. (2010). Teachers' well-being and perceptions of leadership practices. *International Journal of Workplace Health Management*, 3(1), 44–57. https://doi.org/10.1108/17538351011031939

Lambert, N. M., Graham, S. M., and Fincham, F. D. (2009). A prototype analysis of gratitude: Varieties of gratitude experiences. *Personality and Social Psychology Bulletin, 35*, 1193– 1207.

Paakkanen, M. A., Martela, F., and Pessi, A. B. (2021). Responding to positive emotions at work: The four steps and potential benefits of a validating response to coworkers' positive experiences. *Frontiers in Psychology, 12.* https://doi.org/10.3389/fpsyg.2021.668160

Romano, J. L., and Wahlstrom, K. (2000). Professional stress and well-being of K–12 teachers in alternative educational settings: a leadership agenda. *International Journal of Leadership in Education*, 3(2), 121–135. https://doi.org/10.1080/136031200292777

Seligman, M. E. P. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Atria Books.

Seligman, M. E. P. (2011). *Well-being: The five essential elements*. Free Press.

Seligman, M. E. P. (2012). *Flourish: A visionary new understanding of happiness and well-being*. Free Press.

Seligman, M. E. P. (2018). PERMA and the building blocks of well-being. *The Journal of Positive Psychology, 13*(4), 333–335.

Smetáčková, I., and Francová, V. (2020). Souvislosti mezi vnímanou kvalitou vztahů v pedagogických sborech a syndromem vyhoření u vyučujících základních škol. *Studia paedagogica*, *25*(1), 9-32.

Smith, J. A., and Brown, L. (2023). Exploring qualitative written inquiry: Techniques and applications. *Qualitative Research*, 23(1), 45–60. https://doi.org/10.1177/14687941221098765

Taylor, L., Zhou, W., Boyle, L., Funk, S., and De Neve, J.-E. (2024). Well-being for schoolteachers (Report No. 2). International Baccalaureate Organization. well-being-for-schoolteachers-final-report.pdf.

Thapa, A., Cohen, J., Guffey, S., and Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research*, 83(3), 357–385. https://doi.org/10.3102/003–4654313483907

Toropova, A., Myrberg, E., and Johansson, S. (2021). Teacher job satisfaction: the importance of school working conditions and teacher characteristics. *Educational Review*, 73(1), 71-97. https://doi.org/10.1080/00131911.2019.1705247.

Viac, C., and Fraser, P. (2020). Teachers' well-being: A framework for data collection and analysis. *OECD Education Working Papers*, 213. OECD Publishing. https://doi.org/10.1787/–c36fc9d3-en

Zee, M., and Koomen, H. M. Y. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Teaching and Teacher Education*, 60, 144–155.

Zhai, Y., Tripp, J., and Liu, X. (2024). Science teacher identity research: a scoping literature review. *International Journal of STEM Education*, 11, 20.

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Planinšec, J. (2002). Športna vzgoja in medpredmetne povezave v osnovni šoli. *Šport*, *50*(1), 11–15.

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Fošnarič, S. (2002). Obremenitve šolskega delovnega okolja in otrokova uspešnost. V M. Juričič (ur.), *Šolska higiena: zbornik prispevkov* (str. 27–34). Ljubljana: Sekcija za šolsko in visokošolsko medicino SZD.

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MANUSCRIPT SUBMISSION GUIDELINES

The basic purpose of the journal *JEE* is to cover a broad spectrum of education theory and its implications for teaching practice, seeking to bridge and integrate diverse methodological and substantive research. The Editorial Board brings together academics and researchers from different European countries, who seek to promote a vigorous dialogue between scholars in various fields both central and related to scientific enquiry in education.

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Fošnarič, S. (2002). Obremenitve šolskega delovnega okolja in otrokova uspešnost. V M. Juričič (ur.), *Šolska higiena: zbornik prispevkov* (str. 27–34). Ljubljana: Sekcija za šolsko in visokošolsko medicino SZD.

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