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THE SAFETY OF KINDERGARTEN ENVIRONMENT – A PREREQUISITE OR A LIMITATION TO THE WELL-BEING OF CHILDREN IN EARLY AND PRESCHOOL AGE

Abstract: *The safety of children in early and preschool education and care institutions is one of the prerequisites for the holistic development and well-being of children. Such safety includes daily supervision of the entire space, timely response to risks, encouragement of children to self-protective behaviours, and cooperation with parents. It is legitimate to question the extent to which safety measures (in terms of restrictions on movement and motor activities, supervision of children, and prohibition of certain materials and tools) act as a limitation on children's play activities, learning opportunities, and the development of independence and agency. This paper analyses the legal provisions for the protection of children in the early and preschool education and care system, risk assessment, preventive measures, and protocols. The opinion of educators (N=358) who assessed the safety of kindergarten spaces as extremely important. They single out the visibility of the space (86.03%), hygienic conditions (84.08%), the removal of dangerous objects within reach of children (80.73%), and ensuring materials within children's reach to prevent climbing (80.17%) as important dimensions. No statistically significant correlation was found between safety assessment and educators' age and level of education.*

Keywords: *child protection, children's rights, prevention program, risky play, safe environment*

INTRODUCTION

Security can be interpreted as an objective state in which a person or system is protected from danger, threats, harm, or unwanted consequences, but also as a subjective feeling of physical, socio-emotional, economic, and/or health, and more recently, informational protection and the absence of threat. Security presupposes prevention (potentially dangerous situations) and reaction (actions in response to threats to the security of an individual or system). Children represent a particularly vulnerable group that requires special security care from the community (Delač Fabris & Rosić-Jakupović, 2023; Hadžikadunić et al., 2016).

Child safety in the educational context of institutional early childhood education and care (hereinafter ECEC) presupposes a continuous process of risk prevention and protection of children from physical, emotional, and social threats. It is possible to assume that:

- an appropriate spatial and material environment that optimally minimizes the possibility of injury, ensures hygienic conditions and adult supervision as well as protection;
- a socio-emotional environment that allows children a sense of acceptance and appreciation, support, cooperation, and freedom of expression, without fear of negative reactions from the environment (rejection, exclusion, punishment).

A pedagogical perspective on the safety of early and preschool children also assumes inclusiveness. Inclusion is interpreted as understanding, respecting, and accepting diversity and ensuring the possibility of equal participation in the educational process. This can be observed at both the spatial and social levels. The concept of universal design is advocated as an environment that enables participation and safety for all children, regardless of their (developmental and psychophysical) abilities and (cultural) background (Bouillet, 2019).

Child development theories (Erikson, 1963) and theories of psychological needs (Glasser, 1996; Maslow, 1953) view security as one of the fundamental human needs and key predictors of development. In children, a sense of safety is the foundation for stable emotional and social development, including the preservation of physical and psychological integrity. Consistent and attentive care in early childhood is a prerequisite for building identity and a sense of personal worth (self-confidence and self-esteem) and for forming quality social relationships (Erikson, 1963). At the same time, security is a prerequisite for the satisfaction of all other psychological needs (Glasser, 1996).

Due to their age and psychophysical status, children are at greater risk of vulnerability than adults. Living in poor conditions (poverty and risk of poverty, inappropriate parenting, impaired family status, social deprivation) increases the risk of children's vulnerability (Visković, Marušić & Topić, 2023). Exposure to social and physical insecurity, lack of stability and

predictability can disrupt a child's emotional balance, limit social interactions, and negatively affect the overall development (Višnjić-Jevtić & Visković, 2021). Institutional ECEC cannot compensate for all the risks of growing up. However, it can contribute to the personal, social and educational well-being of early and preschool children. The experience of kindergarten as a safe place provides the child with a place for social interaction, play, exploration and learning (Glasser, 1996; Maslow, 1954).

Safety measures in ECEC assume defined rules, procedures and organisational activities that protect children from potential risks and crises. Safety protocols are pre-developed flowcharts of how to proceed in certain situations that are, potentially or actually, threatening to children and to other staff involved in the educational process. Protocols regulate, for example, the daily admission of children to the institution, the treatment in case of injuries, protection from infectious diseases and the prevention of violence and abuse.

Veselinović (2010) believes that safety measures should focus on: physical environmental measures, preservation and improvement of the child's health, psychosocial measures that ensure a safe environment and activities that encourage the development of the child's self-protection and self-preservation. Research has shown that preschool children recognize sources of danger and appropriate response strategies, depending on the situation (home, kindergarten, road, or playground). They distinguish "dangerous" people and "trustworthy people", but they experience the concept of safety differently (Veselinović, 2010).

The purpose of integrating safety measures into the educational process is to protect children. At the same time, safety measures should enable children, not restrict their freedom of movement, exploration, expression, and learning. The space in which children spend their daily lives can have high educational potential (Bobbio, 2019; Fushtei & Sarancha, 2023). Movement and the development of movement are related not only to physical health but also to cognitive development. Motor activities can contribute to the concretization of abstract concepts (Spaulding et al., 2010). Connecting movement, exploration, and creativity helps develop self-regulation, concentration, and the ability to solve problem situations (Gagen & Getchell, 2006). The indoor and outdoor spaces of the kindergarten, equipment, toys, and materials should be functional and adapted to the developmental possibilities of children, but also directed towards the zone of proximal development (Paris, 2020). The safety of kindergarten conditions should be a predictor of the development of children's full potential. Such a position emphasizes the importance of linking scientifically grounded evidence on the role of the environment in children's learning and holistic development with the experiences of practitioners.

Beaulieu and Beno (2024) emphasize the importance of a balance of safety and *risky play* for the overall development of children. Sandseter et al. (2021)

interpret *risky play* as an exciting and unpredictable children's activity that includes an objective risk of (minor) injuries. Research shows that risky play contributes to physical health (increased physical activity, development of motor skills, and skills of assessing conditions and possibilities, and boosting immunity) and to children's mental health (reducing stress, boosting self-confidence, resilience, and social skills). Social interactions during risky play contribute to children's socio-emotional skills by developing cooperative behaviours, a sense of belonging, solving problem situations and conflicts, and risk assessment. At the same time, risky play allows children to confront and explore potentially dangerous situations and materials as well as to test personal abilities (dexterity, speed, problem-solving, etc.). It is necessary to distinguish between "risk" (which the child can assess and control) and "danger" (which the child cannot recognise or manage). Some authors (Maleš, Milanović & Stričević, 2005) single out fire and flammable objects, glass surfaces, access to small objects, sharp edges of furniture, hot objects, and the possibility of climbing high surfaces as examples of danger. At the same time, some authors believe that the most dangerous situations and objects are those with which children have no experience (Slunjski, 2012).

Overprotection and focus on preventing all risks and possible injuries to children can limit their learning and the benefits of play as a medium through which children learn. Child-centered pedagogy, needs, and right to participate in their personal upbringing and education suggest a balance between developmental benefits and prevention of possible injuries. This includes removing hazards, but not removing all risks. Moreover, providing (relatively) risky opportunities appropriate to the child's age, abilities, and context is recommended (Beaulieu & Beno, 2024). Changes in communication approaches are also advised. For example, instead of prohibitions ("you must not climb"), it is necessary to encourage the assessment of risks and possible outcomes ("how high can you climb, how can you protect yourself"). Practitioners are thus expected to provide natural and flexible materials and time for free play (Clark, 2022). Sandseter et al. (2021) believe that without risky play, children cannot develop appropriate independence and responsible decision-making. Spatial-material and process solutions are expected from public educational policy, experts-practitioners within the paradigm "as safe as necessary", instead of "as safe as possible".

Clark (2022) emphasises the importance of children being in a natural environment and experiencing risk directly as a starting point for play and learning. The absence of risk (e.g., rocks, trees) and excessive adult supervision limit children's activity (Sahlberg & Doyle, 2024). Free use of space and choice of activities, including potentially risky activities and materials, can also be interpreted as a child's right (Višnjić-Jevtić, Sadownik & Engdahl, 2021).

Višnjić-Jevtić and Panić (2020) showed that educators encourage children to engage in activities that involve risk and show greater confidence in children's ability to self-preservation more often than parents. It is possible that, due to experience and expertise, they have greater confidence in children's abilities. Parents are more cautious, especially when it comes to using potentially dangerous tools such as hammers, nails, or knives. This, in addition to fear for children's safety, can also be attributed to issues of trust in children's capabilities. An analysis of sociodemographic characteristics showed that a higher level of education among both educators and parents correlates with a more liberal approach to risky play (Višnjić-Jevtić & Panić, 2020).

The triangulation of scientific research findings and ECEC practice highlights the need for a balance between the need for security and freedom. Collaborative relationships between all stakeholders in the process, including children (UNICEF, 2001), and within the context of the specific conditions of a particular social and spatial-material environment (Towner & Towner, 2001), enable the appreciation of developmental specificities and awareness of the natural vulnerability of children. Therefore, Paris (2020) emphasises that the safety of children is not the result of individual rules, but the shared responsibility of all adults within the early childhood education and care (ECEC) system, including parents. Paris (2020) highlights the need for active supervision of the physical environment, the social context, and children's (potentially risky) activities, as well as for anticipating their needs and reactions. Also advocates a culture of safety that balances protection and development. This aligns with views that children's safety is the result of collaborative and responsible behaviours that provide protection to children and trust to parents (Jelašić, 2007).

LEGISLATIVE AND STRATEGIC FRAMEWORK FOR THE PROTECTION OF CHILDREN IN ECEC IN THE REPUBLIC OF CROATIA

The *Convention on the Rights of the Child* (UN, 1989) is a fundamental international document that guarantees various rights of children, with the obligation of signatory states to respect, implement, and advocate for them. The *Charter of Fundamental Rights of the EU* (2006) guarantees children the right to protection and care as a predictor of children's well-being. All legal regulations and documents – *the National Curriculum for Early and Preschool Education* (2015), as well as educational curricula at the level of ECEC institutions – should be aligned with the *Convention on the Rights of the Child* (1989) and other binding international treaties ratified by the Republic of Croatia.

All legal regulations in the Republic of Croatia ensure a safe, stimulating, and supportive physical-material and social environment for children. The *Act on Preschool Education* (2022) addresses issues of health care, nutrition, and social welfare, as well as the protection of children's well-being in kindergartens. The above implies safety, although the term safety is not explicitly stated. The *Child Health Protection Program, Hygiene and Proper Nutrition of Children in Kindergartens* (2002, 2006, 2007), in addition to health and hygiene protection and nutrition, states the importance of safe furniture (stability, rounded edges, non-toxic materials and colours), healthy and structurally sound toys, and adequate hygienic conditions for children. The ECEC *State Pedagogical Standard* (hereinafter SPS, 2008, 2010) determines spatial, hygienic-technical, material, and personnel conditions, with an emphasis on safety. It warns of the need for clean and well-maintained indoor spatial-material environment and outdoor surroundings, as well as the removal of hazardous objects from children's reach.

The SPS (2008, 2010) clearly defines the hygienic and technical conditions of the premises, as well as the criteria for equipment, didactic materials, and aids that must be safe, certified, and adapted to children's age. The classroom should have at least 5 m² in the nursery and at least 3 m² per child in the kindergarten group. Outdoor spaces intended for children must be fenced, physically protected from possible dangers, and contain green areas that provide both sunny and shaded areas for play. Playgrounds should provide a minimum area of 15 m² per child. Equipment and play structures in outdoor areas should be stable, regularly maintained, and appropriate to the children's age. Access to drinking water and water for play should be provided.

The criteria for the number of children in educational groups directly contribute to safety. The regulated number of children in the regular program depends on the age of the children and the enrolment of children with special educational needs. Educational groups (SPS; 2008, 2010) can have from 5 (children aged six to 12 months) to 25 children (in the year before starting primary school). The inclusion of one child with special educational needs implies 2 to 4 fewer children with regular development in the group. The safety of children is additionally ensured by the number of educators, professional associates, and other staff members. All stakeholders should participate in the creation of the space and activities, as well as in the safety and developmental needs of children. Technical and support staff should ensure the cleanliness, correctness, and functionality of the space, which further reduces the risk of injuries and health problems.

The *Ministry of Science and Education* (2007) introduced the obligation to develop safety and preventive measures and protocols for dealing with crises at the level of each institution. Safety and protection programs define protective measures depending on the conditions in a particular institution, as well as the

corresponding protocols for dealing with potentially risky situations. Emphasis is placed on the development of self-protection skills, professional training of employees, and cooperation with parents and the local community (Seme Stojnović & Vidović, 2007).

The development of safety and protection programs is preceded by a risk assessment and identification of potentially dangerous situations such as injuries, infectious diseases, and natural hazards (*Law on Occupational Safety*, 2014, 2018; *Ordinance on the Development of Risk Assessment*, 2014). Preventive measures include physical and technical protection (fences, controlled entrances, safety locks), ensuring sanitary and nutritional conditions, and regular checks on the correctness of equipment and premises (SPS; 2008, 2010). Training of employees in the field of *First Aid*, evacuation, and fire protection is required (*Act on Fire Protection*, 2010, 2022). The education and development of children's self-protective competences are carried out in a way appropriate to their age and psychophysical status – through games, stories, and simulations. Children's independence, agency, and self-respect are encouraged without enhancing emotional insecurity (fear of injury, natural hazards, etc.).

Crisis management protocols include evacuation protocols in the event of fire, earthquake, or other emergencies (*Civil Protection Act*, 2015, 2018, 2020, 2021, 2022). Each institution is required to have an evacuation plan and marked evacuation routes, appoint responsible persons, and organise and conduct regular evacuation drills in cooperation with the competent services. The roles and responsibilities of employees (principal, professional, and support staff) are clearly defined. Parents should be informed about the rules and procedures, as well as included in training or crisis simulations, which encourages shared responsibility for the well-being of children. The system relies on continuous monitoring and evaluation, which includes documenting accidents, regular checking of the protocol, and updating the plan according to new circumstances and regulations.

In ECEC practice, there are noticeable deviations from the legal regulations. The *Ombudswoman for Children* (2024) warns of numerous complaints from parents regarding safety, spatial, and organisational conditions in ECEC. Complaints most often relate to the exceeding of the number of children in groups and the spatial conditions, as well as the inappropriate physical environment of kindergarten facilities (proximity to roads and garbage collectors). However, some complaints from parents can be interpreted as parental conformity without consideration for children's safety. For example, these include objections to "strict" kindergarten rules, locked doors, and meal schedules. Some safety programs outside Croatia, such as *Monnet International School* (2018), emphasize the responsibility of parents in addition to the ECEC responsibility. Parents are required to strictly follow the protocols for bringing

children to kindergarten and picking them up, as well as to respect the child's health status, which must not pose a risk to the child and/or their peers.

Following certain crises (unauthorised entry into educational institutions and attacks on children), a *Protocol on the Control of Entry and Exit from School Institutions* was adopted in early 2025. This protocol does not cover ECEC facilities, and no security assessment of the potential threat has been carried out. Unfortunately, practice has shown that formal compliance with the protocol, for example, indiscriminate employment of security guards, does not contribute to the safety and well-being of children.

Some research indicates that some parents, while at work, primarily expect kindergartens to provide conditions for children's safety (Seme Stojnović & Vidović, 2007). Compliance with legal provisions and systematic development of the quality of the educational process can contribute to a safe environment that provides protection to children and trust to parents (Visković, Višnjić Jevtić & Marušić, 2022). At the same time, research indicates the necessity of developing children's self-protective competencies (Kožul & Car, 2007) and the synergy of cooperation between all stakeholders in the educational process, practitioners and parents (Jelašić, 2007).

Seme Stojnović and Vidović (2007) argue that safety, protection, and prevention programs are important for the quality of ECEC institutions. However, they are not self-sufficient. The *Child Safety Good Practice Guide* (MacKay et al., 2006) provides an overview of effective *strategies* for unintentional injury prevention based on evidence and adapted practices. The so-called good practice is promoted, which is defined as a strategy that has been evaluated and has shown effectiveness, has strong expert support, and is accurate in practice. The development of children's self-protective competencies, the education of employees to deal with crises and stress, cooperation with parents, and the local community are encouraged.

Following the above, it is justified to examine the recognisability of safety elements in ECEC practice. In addition to a theoretical analysis of relevant sources, this paper presents an overview of research findings on educators' perspectives within the ECEC system regarding the safety of children's stay in kindergartens, the adequacy of physical space, and examples of good practice. The study aims to gain insight into practitioners' views on existing and desired safety conditions, as well as on preventive and protective measures in kindergartens. The collected and analysed data may be used to develop guidelines for pedagogically justified safety measures in early childhood education and care (ECEC). It is assumed that there is no statistically significant association between educators' assessments and their age or work experience. At the same time, differences in assessments are expected with respect to educators' level of education. Triangulation of the research findings with relevant scientific sources may enable the identification of distinctions

between scientifically grounded evaluations of the relationship between optimal safety and developmental conditions for children in kindergartens and educators' personal paradigms.

METHODOLOGY

The research was conducted in the physical environment of ECEC institutions, with the consent of the institutions' principals. Participation was voluntary, and all participants were informed about the purpose of the research. With informed consent, they were guaranteed anonymity and the right to withdraw.

The collected data were processed using the statistical program *Statistical Program for the Social Scientists 25* (SPSS 25). For general description, measures of central tendency (arithmetic mean) and measures of dispersion (standard deviation, frequencies) were calculated. Inferential statistics measures were used to investigate the possible association between the age and level of education of the research participants and their assessment of the importance of safety measures in kindergarten.

Research instrument

The *Questionnaire on the Opinion of Educators Considering Safety of Children in Kindergartens*/Q-OESK is a part of the study on the adequacy of the spatial and material structure and arrangement of kindergartens. The research instrument was constructed based on the analysis of relevant literature. The instrument contains independent variables (socio-demographic characteristics, level of education, type, and headquarters of the ECEC institution founder), a Scale of assessment of importance or agreement (17 items). A 5-point Likert-type scale with a neutral point was used, with 1 as the lowest and 5 as the highest level of assessment. Participants had the opportunity to argue their assessment and supplement their statements.

The reliability of the instrument was determined by applying Cronbach's Alpha (α= .857) and is appropriate for this type of research.

Sample

The sample included 358 educators in the Split-Dalmatia County (hereinafter SDC) and Šibenik-Knin County (hereinafter ŠKC), and is representative of the population. The sample included only 2 (0.7%) male educators, so this data was not taken into further processing. The data is indicative of the gender structure of the educator population in the Republic of Croatia. According to available data from the *Central Bureau of Statistics* (hereinafter CBS, 2025), 1.02% of male educators are in the ECEC system in Croatia.

The average age of participants is 41.55 years (SD=11.62). Participants have an average of 18.5 years of work experience, ranging from beginner to 23 years. The mode is 15 years. Most participants hold an ECEC bachelor's degree (N=216; 60.34%). The sample includes three workers with secondary education, which is 0.84% of the sample, so this data was not taken into further processing. According to CBS (2025), the sample is representative according to the level of education.

The absolute majority of participants (N=328; 91.62%) work in kindergartens founded by a local government unit, 15 participants (4.19%) work in institutions founded by a religious community, and 15 participants (4.19%) work in institutions founded by a natural or legal person. This structure of kindergarten founders is representative of the population (CBS, 2025). Most participants work in cities (N=347, 96.93%), and only 5 participants (1.4%) live in smaller towns, which were not taken into further processing.

The sample obtained was representative in terms of structure (gender and level of education of participants, type of ECEC institution founder) and population size (Cohen et al., 2007).

RESULTS AND DISCUSSION

The processed data, collected in this research, indicate that most participants consider *the safety of the spaces* in which children stay to be extremely important (M=4.78; SD=0.483). As predictors of a safe stay in a kindergarten, they assess *the location of the space in which children stay on the ground floor of the building* (M=4.08; SD=1.74). As an important safety factor, they also highlight *the location of the kindergarten in a detached building* (M=4.54; SD=0.74), *protected by a high fence* (M=4.45; SD=0,82), and *having a strictly controlled entrance to the building* (M=4.77; SD=0.55). They *advocate the installation of a tartan surface in the kindergarten yard* (M=4.31; SD= 0.89) in order to prevent injuries to children. These data correlate with older sources that suggest high spatial safety standards to prevent possible injuries to children (Towner & Errington, 2004) but not with strategies for developing children's self-protective competencies (MacKay et al., 2006).

Educators in the sample particularly emphasise the importance of *clear visibility* (M=4.91; SD=0.34; N=308; 86.03%). They estimate that all spaces where children are staying should be *visible to educators* (M=4.52; SD=0.64); for example, hallways should be visible from the living room. According to the participants' argumentative statements, the greatest disadvantage refers to the difficulty of children's visibility in the restrooms. Often, restrooms do not allow visual contact with the living room area. This information can be interpreted as the need for educators to ensure safe conditions for children, especially at an early age, but also as a need for supervision and a kind of directedness towards

children. Sahlberg and Doyle (2024) emphasise that greater supervision by educators reduces children's agency and freedom of exploration, expression, and play. At the same time, it is questionable whether the lack of visibility is a consequence of the inadequate architectural design of the building and the size of the classroom, the equipment with bulky furniture and/or the excessive enrolment of children in violation of SPS guidelines (2008, 2010).

Clear visibility of space can sometimes be improved by appropriate spatial and material arrangement and restructuring of activity centres. Responsibility for this is attributed to educators, which can also mean neglecting the perspective of children. According to research by Burić (2006), the main advantages of structuring space and equipping it with materials are suitability to children's age and design in accordance with safety recommendations (for example, rounded edges of furniture, unavailability of potentially dangerous tools that children do not know how to handle). The limited possibility of changing and repurposing, as well as the functionality of space and equipment, are highlighted as disadvantages of existing kindergarten spaces. Such primarily architectural solutions of kindergarten spaces are contrary to the concept of universal design (Clark, 2022).

Research participants were asked to express their agreement with the elements of space that guarantee the safety of children in kindergartens (Table 1). Their assessment corresponds to the safety measures indicated in the SPS (2008, 2010). Moreover, some studies show that injuries in the environment are a major cause of morbidity and mortality in children, with the highest incidence in Eastern Europe and the former USSR (Towner and Errington, 2004). Unfortunately, there is no relevant summative data available on children's injuries in kindergartens, although this should be recorded at the level of the individual institution.

Table 1.
Educator's agreement with the safety regulations of the kindergarten space

The space where children spend their daily time should be	N	%
clear visibility	308	86.03
hygienically maintained	301	84.08
dangerous objects out of reach of children	289	80.73
materials within reach of children so they don't climb	287	80.17
protected electrical sockets	273	76.26
non-toxic materials	250	69.83
furniture with rounded edges	245	68.44
with low compartments	217	60.61
all of the aforementioned	162	45.25

The majority of participants emphasized the need to keep dangerous objects out of children's reach, while also considering the importance of placing materials at a level accessible to children to prevent climbing (Table 1). Although these data refer to educators' focus on child safety, they can partly be problematized from the pedagogical aspect of children's developmental needs. For example, materials should be accessible to encourage exploration and expression (Slunjski, 2012). Removing materials from children limits their independence and agency (Clark, 2022; Sahlberg & Doyle, 2024). The reason for removing materials from children's reach should not be to limit children's motor activities that contribute to their overall development (Slunjski, 2012).

According to research by Plevnik (2011), educators value running and catching games as the most popular activities for children, and, despite the frequency of injuries, they do not perceive them as dangerous. Conversely, they consider climbing to be the most dangerous basic motor pattern, although it, along with crawling, is crucial for motor development (Plevnik, 2011). The modern lifestyle and adults' fear of falls have led to its neglect, thus failing to take advantage of its contribution to harmonious development and long-term injury prevention. The role of the modern educator is shifting from direct teaching to observation and support, and encouraging children's active learning while providing diverse, high-quality, and constantly available materials that stimulate children's curiosity and exploration (Sindik, 2008; Slunjski, 2012). Although climbing is a natural and important developmental need for children, the findings of this research show that educators consider it important to place materials at a level accessible to children precisely to prevent climbing. This approach may unintentionally lead to limiting climbing as an activity, instead of a differentiated approach that distinguishes between dangerous and developmentally stimulating situations. The prevailing safety paradigm, dominated by risk avoidance rather than thoughtful management, should be critically examined. Removing opportunities for climbing deprives children of the opportunity to develop motor skills, spatial orientation, self-confidence, and the ability to assess their own limits. The theory of risky play emphasises the importance of providing challenges in controlled conditions, where safety is not defined by the complete elimination of potentially dangerous activities, but by creating conditions in which children can explore, experiment, and develop while minimising real dangers (Sandseter et al., 2021). The problem possibly lies not in the act of climbing itself, but in the lack of opportunities that would enable children to climb safely and give adults the confidence that such an activity is a constructive part of the educational process. Given that educators are more likely than parents to encourage children to engage in activities that involve risk (Višnjić-Jevtić & Panić, 2020), it is worth examining whether parents' attitudes are the reason for educators' reservations about risky play.

Safety also includes the use of non-toxic materials, which is emphasised by the absolute majority of participants. Hauptman and Woolf (2017) emphasise that children are at greater risk of ingesting environmental toxins due to their lower body mass, proximity to sources of contamination, and more frequent mouthing and swallowing of objects. The main sources of toxins are contaminated water, food, and dust, as well as products such as toys, furniture, spices, and herbal preparations. The most common toxins (lead, arsenic, mercury, PFAS, pesticides, PBDE, bisphenol A, phthalates, and formaldehyde) are associated with developmental, neurological, hormonal, and other health problems in children (Jovančević, Školnik Popović, & Jovančević, 2015).

The findings of this study confirm that participants perceive the safety of premises as one of the significant factors of child safety in ECEC. They emphasise clear visibility, cleanliness, elimination of potential hazards, and the use of safe materials. The participants had the opportunity to supplement and argue their assessments. Most of them emphasise shortcomings in the spatial planning of the kindergarten facility. They state that practical and functional aspects of the space are often neglected, such as ceiling height and acoustics, energy efficiency, and natural ventilation options. In particular, glass walls without openings or skylights that can only be opened in the event of a fire are installed in the classroom. This indicates the importance of adapting the architectural solutions of the kindergarten, which contribute to the safety of the interior and exterior space, movement, and visibility of children. The presence of environmentally sound construction materials and a balance of light, ventilation, and biophilic elements can directly contribute to the safety and health of children. In every sense, cooperation between architects and pedagogues-practitioners is necessary. The architecture of the kindergarten, in addition to the aesthetic and functional dimension, should primarily respond to safety and pedagogical requirements, which does not diminish the importance of the pedagogical paradigms of practitioners.

The assessment of educators, concerning individual safety elements in the space in relation to their level of education, was investigated (Table 2). Using a one-way analysis of variance (ANOVA) test, no statistically significant difference in estimates ($p > .05$) was found between sample subgroups according to education level.

Table 2.
Safety of rooms where children spend their time each day, according to their level of education (p > .05)

Safety of rooms where children spend time each day	Level of education		
	Bachelor's degree	Student at a University Master's study	Master's degree
clear visibility	184	28	89
	84.02%	87.50%	87.25%
with materials within reach of children so they don't climb	173	28	84
	79.00%	87.50%	82.35%
protected electrical sockets	167	22	79
	76.26%	68.75%	77.45%
dangerous objects out of reach of children	175	26	83
	79.91%	81.25%	81.37%
furniture with rounded edges	135	23	57
	61.64%	71.88%	55.88%
non-toxic materials	145	22	75
	66.21%	68.75%	73.53%

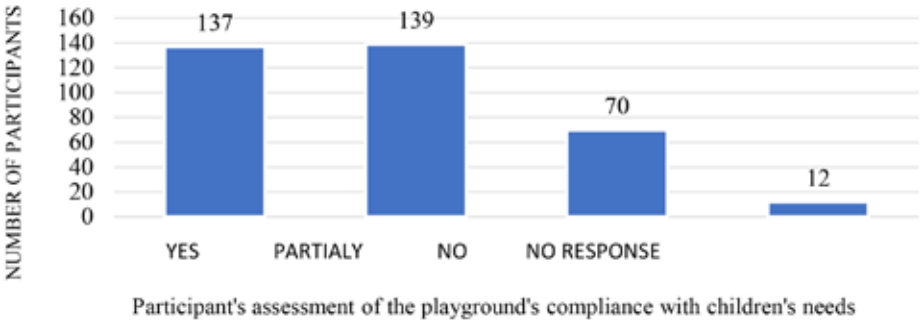
An additional analysis, using Spearman's correlation coefficient, investigated the relationship between the age of the participants and the listed safety elements. A statistically significant, although minimal, positive relationship was observed between the age of the educator and attitude towards the importance of using furniture with rounded edges ($r = 0.13$; $p = 0.011$). Older educators emphasise the importance of the safety element to a greater extent, possibly due to their many years of experience working with children and recognising potential risks in kindergartens. For the other observed safety elements, no statistically significant relationship with the age of the participants was found ($p > 0.05$). Possible awareness of importance is not conditioned by the age of the educator but is present in all age groups.

Table 3.
Correlation of the assessment of the safety of spaces where children reside with the age of the participants

Age and safety	R	p
clear visibility	-0.05	0.384
with materials within reach of children to prevent them from climbing	0.00	0.973
protected electrical sockets	0.04	0.452
dangerous objects out of reach of children	-0.03	0.569
furniture with rounded edges	0.13	0.011
non-toxic materials	-0.01	0.867
with low compartments	-0.06	0.247
clean and well-maintained rooms	-0.04	0.432

Participants were asked to assess the compliance between the architectural and spatial design of the facility in which they work and the guidelines of the SPS (2008, 2010). A third of the participants (30.17%) believe that the facility fully meets the legal requirements. Most participants (N=181; 50.56%) believe that these requirements are only partially met, while 17.60% (N=63) believe that the facility does not meet the prescribed conditions (Graph 1).

Graph 1.
Participants' perception of the facility's compliance with the SPS guidelines (2008, 2010)



When assessing the safety of classrooms where children spend their daily time, participants focused most on the central part. Therefore, the compliance of a classroom in one educational group with the SPS guidelines (2008, 2010),

i.e., 5 m² per child in a nursery and 3 m² per child in a kindergarten, was investigated (Graph 2).

Graph 2.
Participants' perceptions of the compatibility of the children's classroom size



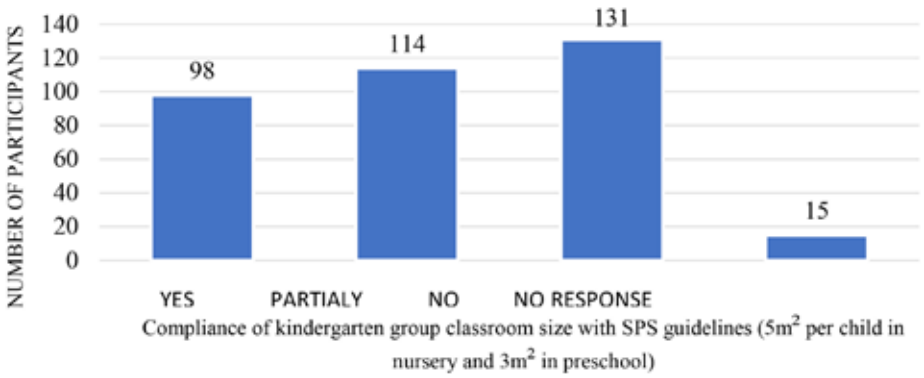
Almost a third of the participants, 98 of them (27.37%), believe that the size of the classroom is fully in accordance with the regulations, while 114 participants (31.84%) estimate that this compliance with SPS (2008, 2010) is only partial. The relative majority of the participants (36.59%, N=131) believe that the size of the classroom does not meet the prescribed standards. The size of the classrooms is not appropriate to the SPS (2008, 2010) guidelines in relation to the number of children in the group. This assessment is in line with the report of the *Ombudswoman for Children* (2024). The excessive number of children in educational groups undermines the safety of children. A larger number of children in a group requires more furniture, which reduces the number and variety of incentive centres and limits the possibilities for children's research and play activities. Limited space further reduces the possibility of free movement and physical activities. At the same time, visibility and insight into potentially risky children's play are reduced. The risk of inadequate space is also recognised by parents (Veselinović, 2010).

These findings should also be analysed in the context of the facility's construction age. Educators from the sample estimate that most of the facilities where they work are approximately 40 years old. In the 1970s, given the rapid increase in population, the construction of kindergartens in cities was intensified (Bobovec et al., 2020). Most of the facilities built at that time were in line with the legal regulations of the time. However, the focus on the quality of ECEC and the safety of children in the system resulted in stricter criteria for the child-group ratio in the kindergarten space.

In parallel with the new facilities, the yard space was also developed (Bobovec et al., 2020). The research participants were therefore asked to assess the compliance of the playground with pedagogical guidelines and children's

needs (Graph 3). The majority of educators believe that the playgrounds are completely appropriate (N=137; 38.27%) and partially appropriate (N=139; 38.83%) to children's needs.

Graph 3.
Participant's assessment of the playground's compliance with children's needs



Using Spearman's correlation coefficient, no statistically significant correlation was found between the age of the participants and the level of assessment ($r=0.183$; $p > 0.367$). Using a one-way analysis of variance (ANOVA) test, no statistically significant differences were found in the participants' assessments of the kindergarten founder ($F=2.575$; $p=0.153$).

The research findings clearly confirm that educators, regardless of age and level of education, consider the safety of the space in which children spend time to be one of the key aspects of the quality of work in a kindergarten. Clearness and cleanliness of spaces, removal of potentially dangerous objects, placing materials at a level that prevents climbing, protecting electrical sockets, use of non-toxic materials, furniture with rounded edges, and low partitions are recognized as priorities. The high level of agreement among the participants indicates a strong professional awareness of the importance of preventive action and creating a safe environment. Although a slight correlation was observed between the age of educators and greater sensitivity to certain safety elements, safety criteria are generally equally important to all educators in the sample. At the same time, the results on the compliance of facilities and classrooms with the provisions of the SPS (2008, 2010) indicate certain shortcomings – only a small proportion of educators believe that these standards are fully met, while the majority estimate that they are met only partially or not at all. Such findings indicate the need for systematic investment in infrastructure and spatial conditions to ensure that safety standards are fully implemented in all institutions.

CONCLUSION

Focusing on the holistic development and well-being of early and preschool children in the ECEC system requires a balance of safety measures and the pedagogical purposefulness of individual approaches and procedures. The basic guidelines should be offered by public education policy. However, such guidelines are also a statement of community culture – how parents and the broader social environment perceive safety and respect the prescribed measures. It is unjustified to disregard scientific evidence, for example regarding the importance and safety of the physical-material and social environment for the development of children's risky play. The relationship between potential risks and safety as a frame of reference can contribute to the development of children's self-confidence and self-esteem. This indicates the necessity of cooperation between researchers and practitioners, as well as interdisciplinary collaboration between architects and educators.

Educators, as the fundamental bearers of practice in ECEC, are encouraged to redefine the spatial and material conditions for children's play and learning while simultaneously respecting safety measures and protocols. These measures are primarily focused on physical limitations, while possibly insufficient attention is paid to the development of children's self-protective competencies. At the same time, an analysis of the safety elements of kindergarten facilities indicates limitations of architectural and infrastructural solutions, and the equipment of kindergartens. Research participants point to the lack of visibility (primarily in indoor spaces intended for children) and to the spatial constraints of playrooms. Overcapacity of facilities further restricts spatial solutions and safety measures.

This research included a large number of educators; hence, the sample is representative considering the population and therefore justifies generalizations. The findings indicate a high level of perception of safety elements and the responsibility of educators for the safety of children during their stay in kindergarten. At the same time, this can also be interpreted as a limitation of educators' pedagogical paradigms – insufficient trust in children, ignorance or misunderstanding of the benefits of risky play for the holistic development of children, failure to recognise the importance of developing children's self-protective activities. Monitoring children's activities can be justified by safety measures, but it can also be interpreted as a failure to accept children's agency, a failure to respect the child's right to active participation in personal upbringing and education. This indicates the need for additional education of both practitioners and parents. In a broader context, this can also be interpreted as insufficient collaboration with community, local, and public educational policy in (re)defining pedagogical and safety norms. Understanding the concept of community culture as a way of life suggests the need to question safety both as a value and as a need in relation to children's other fundamental needs.

The perception of risk and potentially dangerous situations in children's behaviour, such as climbing, also points to a need to examine the pedagogical paradigms of educators, but also of all other stakeholders in the educational process. Changes in the ways of living and overall culture in the community, e.g., a sedentary lifestyle and a culture of children's overprotection, point to the need to research the consequences, but also the possibilities of preventing the risks of such a culture. In this regard, the safety of children cannot be analysed without considering their pedagogical and psychological well-being and contemporary scientific knowledge.

It is justified to conclude that the overall well-being of children, including the safety of children's stay in the ECEC system, is the result of the synergy of legal regulations, professional guidelines, and pedagogical practice. The educator cannot be alone in this process. Scientifically grounded research can provide strong arguments for re-examining existing legal regulations and pedagogical practice in the field of safety conditions in relation to children's well-being.

Research limitations

This research is primarily focused on the safety of the kindergarten facilities' infrastructure – the adequacy of the facility, the interior and exterior space, and individual safety elements of equipment and toys. Other aspects of safety that would include social situations (potentially dangerous persons) or existing safety measures and protocols were not included. This can be justified by the paradigm of good practice, i.e., the praxeological efficiency of existing safety measures and protocols. However, other systems, such as primary schools, also had such a perspective until incidents with catastrophic outcomes (attacks on children at school) occurred. The above highlights the need for further research and assessment of risks and potentially dangerous situations in the ECEC system.

In order to comprehensively consider the perspectives of all stakeholders in the process, it is necessary to examine the views of both parents of children enrolled in kindergartens and the children themselves. Although professional opinions – primarily those of educators – are often overlooked in the architectural design of kindergartens, children's views are almost never heard. *The Convention on the Rights of the* Child (1989) and the current *National Curriculum for Early Childhood Education and Care* (2015) guarantee children the right to express their views, to be heard, and to participate in matters concerning their own education and upbringing. A commitment to the systematic development of quality in ECEC should, among other things, take children's perspectives into account.

REFERENCES

Beaulieu, E., & Beno, S. (2024). Healthy childhood development through outdoor risky play: Navigating the balance with injury prevention. *Paediatrics & Child Health, 29*(4), 255–261.

Bobbio, A. (2020). La pedagogia di Loris Malaguzzi.: Per una 'nuova'idea di bambino. *RELAdEI. Revista Latinoamericana de Educación Infantil*, *9*(2), 85–93. https://revistas.usc.gal/index.php/reladei/article/view/7080/10637

Bobovec, B., Mateković, D. & Rako, G. (2020). *Odrastanje uz arhitekturu, Dječji vrtići i škole u 21. stoljeću*.

Bouillet, D. (2019). *Inkluzivno obrazovanje: odabrane teme*. Zagreb: Učiteljski fakultet Sveučilišta u Zagrebu.

Burić, H. (2006). Prostor iz perspektive vrtića. *Dijete, vrtić, obitelj: Časopis za odgoj i naobrazbu predškolske djece namijenjen stručnjacima i roditeljima*, 12(44), 18–20.

Clark, A. (2022). *Slow knowledge and the unhurried child: Time for slow pedagogies in early childhood education*. Routledge.

Cohen, L., Manion, L., & Morrison, K. (2007). *Metode istraživanja u obrazovanju*. Naklada Slap.

Delač Fabris, S. & Rosić-Jakupović, A. (2023). Procjena rizika ugroženosti spolne viktimizacije djece na temelju analize stanja sigurnosti turističkih objekata. *Policija i sigurnost*, *32*(1), 83–102.

Central Bureau of Statistics (2025). *Kindergartens and other legal entities that implement preschool education programs. Beginning of the pedagogical year 2024/2025* https://podaci.dzs.hr/2025/hr/97131

European Union (2016). *Charter of Fundamental Rights of the European Union* (2016/C 202/02). The Official Gazette of the European Union, C 202, 389–405.

Erikson, E. H. (1963). *Childhood and society* (Vol. 2, p. 1964). New York: Norton.

Fushtei, O., & Sarancha, I. (2023). Formation of environmental culture in preschool children. *Personality and environmental issues*, *4*, 21–25.

Gagen, L. M., & Getchell, N. (2006). Using 'constraints' to design developmentally appropriate movement activities for early childhood education. *Early Childhood Education Journal*, *34*(3), 227–232.

Glasser, W. (1996). *Choice Theory: A New Psychology of Personal Freedom*. Harper Collins.

Hadžikadunić, A., Borovina, A., Ahić, J., Purišević, F. & Novaković, R. (2016). Uloga lokalne zajednice u stvaranju sigurnih prostora za igru djece i mladih. *Sports Logos/Sportski Logos*, *14*(27).

Hauptman, M., & Woolf, A. D. (2017). Childhood ingestions of environmental toxins: What are the risks? *Pediatric Annals, 46*(12), e466–e471.

Jelašić, Đ. (2007). Zdravo i sigurno dijete u jaslicama i vrtiću. *Dijete, vrtić, obitelj: Časopis za odgoj i naobrazbu predškolske djece namijenjen stručnjacima i roditeljima*, *13*(49), 29–30.

Jovančević, M., Školnik Popović, V. & Jovančević, S. (2015). Utjecaj kemijskih toksina na rast i razvoj djece. *Medicinski vjesnik*, *47*(1-2)), 111-115.

Kožul, S., & Car, L. (2007). Sigurnost djece – odgovornost odraslih. *Dijete Vrtić Obitelj: Časopis za odgoj i naobrazbu predškolske djece namijenjen stručnjacima i roditeljima*, *23*(49), 23–24.

Maleš, D., Milanović, M., & Stričević, I. (2003). *Živjeti i učiti prava - Odgoj za ljudska prava u sustavu predškolskog odgoja.* Filozofski fakultet u Zagrebu

Maslow, A. H. (1954). *Motivation and Personality*. Harper & Row

MacKay, M., Vincenten, J., Brussoni, M., & Towner, L. (2006). *Child Safety Good Practice Guide: Good investments in unintentional child injury prevention and safety* 4 *promotion*. Amsterdam: European Child Safety Alliance, Eurosafe. ISBN 978-90- 6788-318-4

Monnet International School – Międzynarodowe Przedszkole Misia Paddingtona (2018). S*afety rules in the kindergarten*. Varšava.

Ministry of Science, Education and Youth (2025). *Protocol on the control of entry and exit from school institutions https://mzom.gov.hr/UserDocsImages/dokumenti/Obrazovanje/Protokol/Protokol-za-O-i-SS-ver-2-1-2025.pdf*

Paris, J. (2020). Safety. In *Health, safety, and nutrition in early childhood education* (1st ed., pp. 27–145). College of the Canyons.

Plevnik, M. (2011). Fundamental motor patterns in kindergarten. In D. Milanović and G. Sporiš (Ed.), *Proceedings book of 6th International Scientific Conference on Kinesiology* (str. 297–299). Zagreb: University of Zagreb, Faculty of Kinesiology.

Ombudswoman for Children. (2025). *Izvješće o radu pravobraniteljice za djecu 2024.* https://dijete.hr/hr/izvjesce-o-radu-pravobraniteljice-za-djecu-u-2024-godini/

Republic of Croatia (2008). *State Pedagogical Standard for Preschool Education and Care (SPS).* Official Gazette, No. 63/2008.

Republic of Croatia (2010). *Amendments to the State Pedagogical Standard for Preschool Education and Care (SPS).* Official Gazette, No. 90/2010.

Republic of Croatia (2015). *National Curriculum for Early and Preschool Education.* Official Gazette, 5/15.

Republic of Croatia (2014). *Regulations on the preparation of risk assessments.* Official Gazette, 112/14.

Republic of Croatia (2007). *Program for child health protection, hygiene and proper nutrition of children in kindergartens,* Official Gazette*,* 105/02, 121/07.

Republic of Croatia (2023). *Law on Preschool Education.* Official Gazette, 57/22, 101/23.

Republic of Croatia (2018). *Occupational Safety and Health Act.* Official Gazette, 71/14, 118/14, 154/14, 94/18, 96/18.

Republic of Croatia (2022). *Fire Protection Act.* Official Gazette, 92/10, 114/22

Republic of Croatia (2022). *Civil Protection System Act.* Official Gazette, 82/15, 118/18, 31/20, 20/21, 114/22.

United Nations (1989). *Convention on the Rights of the Child.*

UNICEF Innocenti Research Centre. (2001). *A league table of child death by injury in rich nations*. Report Card No. 2. Florence: UNICEF.

Sahlberg, P., & Doyle, W. (2024). *Neka se djeca igraju - kako će više igre učiniti naše škole boljima i pomoći djeci napredovat*. Školska knjiga.

Sandseter, E. B. H., Kleppe, R., & Sando, O. J. (2021). The prevalence of risky play in young children's indoor and outdoor free play. *Early Childhood Education Journal*, *49*(2), 303-312.

Seme Stojnović, I., & Vidović, T. (2007). Sigurnosni i zaštitni programi u dječjem vrtiću. *Dijete, vrtić, obitelj: Časopis za odgoj i naobrazbu predškolske djece namijenjen stručnjacima i roditeljima*, *13*(49), 2–6.

Sindik, J. (2008). Poticajno okruženje i osobni prostor u djece u dječjem vrtiću. *Metodički obzori,* 3 (1), str. 143–154.

Slunjski, E. (2012). *Tragovima dječjih stopa – istraživačka perspektiva djeteta u radu na projektu*. Zagreb: Profil.

Spaulding, L. S., Mostert, M. P., & Beam, A. P. (2010). Is Brain Gym an effective educational intervention? *Exceptionality*, *18*(1), 18–30.

Towner, E., & Towner, J. (2001). The prevention of childhood unintentional injury. *Current Paediatrics*, *11*(6), 403-408.

Towner, E., & Errington, G. (2004). *How can injuries in children and older people be prevented?* Copenhagen: WHO Regional Office for Europe. (Health Evidence Network report).

Visković, I., Marušić, A., & Topić, J. (2023). Djeca u riziku socijalne isključenosti u ranom i predškolskom odgojno-obrazovnom sustavu. *Školski vjesnik: časopis za pedagogijsku teoriju i praksu*, *72*(2), 174–190.

Visković, I., Višnjić Jevtić, A. & Marušić, A. (2022). Teachers' Opinions on Recognisable Aspects of the Institutional Early Childhood Education Culture. *Nova promišljanja o djetinjstvu: zbornik radova s međunarodne znanstveno-umjetničke konferencije održane u Zadru 4. i 5. lipnja 2021.*, 397–412.

Višnjić Jevtić, A., & Visković, I. (2021). Roditeljstvo u vrijeme pandemije Covid-19: perspektiva roditelja djece rane i predškolske dobi. *Metodički ogledi*, *28*(1), 11–38.

Višnjić-Jevtić, A., Sadownik, A. R., & Engdahl, I. (2021, April). Broadening the rights of children in the Anthropocene. In *Young children in the world and their rights: Thirty years with the United Nations Convention on the rights of the child* (pp. 237–273). Cham: Springer International Publishing.

Višnjić Jevtić, A., & Panić, F. (2020). Samoprocjena roditeljskih i odgojiteljskih stavova prema rizičnoj igri. In A. Višnjić Jevtić, B. Filipan-Žignić, G. Lapat, & K. Mikulan (Eds.), *Jezik, književnost i obrazovanje – suvremeni koncepti. Zbornik radova s međunarodnog znanstvenog skupa 4. Međimurski filološki i pedagoški dani* (pp. 227–235). Učiteljski fakultet Sveučilišta u Zagreb.

Veselinović, Z. (2010). Roditeljsko vrednovanje preventivnog programa sigurnosti djece u dječjem vrtiću. *Metodički ogledi: časopis za filozofiju odgoja*, *17*(1-2), 177-198.