

A New Era in Preschool Education: The Effects of COVID-19 on Children and on the Pedagogical Practice

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ABSTRACT

The COVID-19 pandemic triggered changes that continue to impact the everyday practice of preschool education and the physical and psychological well-being of children. More than five years have passed since the start of the 2020 pandemic; therefore, beyond the description of the acute crisis period, the study outlines post-pandemic phenomena from the viewpoint of preschool teachers. Between July 1 and 30, 2025, 100 preschool teachers completed an anonymous, online questionnaire as part of this research. The questionnaire included closed-ended questions, multiple choice questions, Likert scale statements, and open-ended questions that focused on children's somatic symptoms (e.g. fatigue, sleep disturbances, headaches), psychological and behavioural problems (anxiety, disengagement, increased need for attention), and the changes in pedagogical practice and cooperation with parents. The majority of participants reported a decline in their sense of security and autonomy, a more frequent onset of somatic and psychological symptoms in children, growing complexity of pedagogical work, and increasing challenges in cooperating with parents. The study highlights the multidimensional challenges of post-COVID early childhood education and emphasises the need for psychosocial supporting systems and the conscious strengthening of preschool–family partnerships to promote children's healthy development.

Keywords: COVID-19; early childhood education; post-pandemic impacts; psychosocial wellbeing; preschool–family partnership; pedagogical challenges.

INTRODUCTION

Over five years have passed since the COVID-19 outbreak in 2020, creating an opportunity to examine how the pandemic impacted early childhood education not merely as an acute crisis phenomenon, but as pedagogical and psychosocial patterns that have proven to be partially enduring. An increasingly important question of the post-pandemic era is: To what extent and in what ways have the new institutional modes of operation, family stress burdens, and children's emotional and social experiences of the pandemic been integrated into everyday preschool life, and what new professional challenges do they generate for teachers?

The pandemic caused structural and operational transformations at all levels of the public education system, including early childhood education. The development of preschool-aged children unfolds intensively across physical, emotional, and social dimensions; therefore, the restriction of community life, physical distancing, and changing pedagogical conditions posed heightened challenges for them [1]. As a result of public health regulations,

educational practices, and forms of communication with parents have changed, while a more frequent occurrence of somatic and psychological complaints among children has also become observable [2].

Institutional functioning transformed in several ways. Restrictions on entry to preschools, the introduction of health protocols (e.g. temperature checks, hand sanitisation, mask-wearing), and the curtailment of parental presence resulted in significant emotional strain [3]. The disruption of established routines and the narrowing of personal interactions were associated with a decline in the sense of security and the emergence of anxiety symptoms in many children [4].

The pandemic limited access to individualised developmental support and specialised services, increasing the risk of developmental delays, particularly among children from disadvantaged backgrounds and those with special educational needs [5]. The longer-term consequences of these missed developmental opportunities remain perceptible in the post-pandemic period.

Teachers had to adapt rapidly by incorporating digital tools and online platforms to maintain contact with children and families, while pedagogical tasks became more complex [6–7]. The partnership between preschool and family was reorganised along new communication structures, resulting in a reconfiguration of relational dynamics [1].

As a consequence of the pandemic, the role of preschool teachers expanded beyond educational responsibilities to include an intensified function of psychological support, which led to professional workload increases. Therefore, strengthening psychosocial support systems, developing pedagogical competences, and consciously stabilising cooperation between institutions and families have become priorities in the post-pandemic era [4].

Although numerous national and international studies have examined the immediate effects of the pandemic, the systematic exploration of the persisting physical, psychological, and relational patterns in the post-pandemic period remains limited in the context of early childhood education. The present study provides an empirical investigation of the changes preschool teachers perceive in children's physical and psychological well-being and behaviour in the post-COVID period, as well as in pedagogical practice and preschool–family cooperation. The findings may contribute to a more nuanced understanding of post-pandemic challenges in early childhood and to the development of professional interventions that support children's emotional security.

LITERATURE REVIEW

The impacts of COVID-19 on the Preschool Education System

The coronavirus outbreak in the spring of 2020 drastically transformed the public education framework, including daily practices in preschool education. Pandemic-related measures—including institutional closures, the introduction of emergency childcare arrangements, and the expansion of digital communication—fundamentally reshaped preschool operations [3]. Pedagogical activities grounded in face-to-face presence and community interaction were pushed into the background, while online communication and remote forms of contact became predominant. However, these solutions were unable to fully compensate for children's social learning, the development of peer relationships, and learning situations based on shared experiences.

Teachers had to adapt their pedagogical practices by employing innovative digital tools. They sought to maintain contact with children and families, while professional responsibilities simultaneously became more complex [6–7]. Although theoretical frameworks for digital pedagogy were available [6], their application in preschool settings raised numerous methodological challenges.

The edited volume, *Chapters from the Digital Experiences of COVID-19 Distance Education*, presents detailed, interview-based accounts of pedagogical experiences gained during the digital transition [8]. According to one preschool teacher's account, the introduction of the digital schedule initially generated uncertainty, yet it also created opportunities for professional renewal. Regular communication via online platforms, the sharing of daily recommendations and activity suggestions, as well as parental feedback (photos and videos), gave rise to new patterns of interaction [9].

An account from an institutional leadership perspective further highlights the organisational challenges of the digital transition: establishing GDPR-compliant systems, assessing teachers' digital infrastructure, and creating unified frameworks for content provision constituted significant leadership responsibilities [9]. Thematic planning was implemented with consideration of parental and children's needs, placing particular emphasis on creative learning experiences that could be realised at home [9].

The pandemic also transformed the relationship between families and institutions. The suspension of face-to-face presence and the enforced shift to digital communication resulted in new partnership dynamics. Vargáné Nagy points out that restrictions on parents' institutional presence, along with differences in digital competences and access to technological resources, significantly influenced children's developmental opportunities [10]. The shift

of developmental support into the online environment posed particular challenges for children with atypical developmental trajectories [10].

The author further emphasises that teachers were subject to considerable mental and psychological strain. In many cases, the development of their digital competences was the result of self-directed learning processes, often accompanied by methodological innovation. As a consequence of the pandemic, not only were children's social relationships disrupted, but preschool teachers' professional role perceptions and competence structures were also reshaped, particularly in the areas of online communication, documentation, and parental communication [10].

Children's physical and psychological well-being in the pandemic period

One of the most intensively examined areas of the COVID-19 pandemic has been children's mental health. International and national studies indicate an increase in children's anxiety, emotional instability, and the prevalence of behavioural problems during the pandemic [2].

According to a representative survey conducted by UNICEF Hungary, more than half of children aged 3–7 exhibited pandemic-related psychological symptoms, including sleep disturbances, hyperactivity, attention difficulties, and non-compliant behaviour [4]. Disrupted daily routines, social isolation, and increased parental psychological burden jointly contributed to a decline in children's emotional security. The absence of stable relationships and predictable routines may result in heightened vulnerability during the particularly sensitive period of early childhood development [4].

The "Uplifting Programme" (Lélekemelő Program) launched by UNICEF aimed to strengthen mental health support at a systemic level by recognising the strategic importance of mental well-being within public education [4]. Such well-being is particularly significant in the case of preschool-aged children because the foundations of emotional regulation, social learning, and behavioural patterns are established during this developmental stage.

Timár's account, based on institutional experience, similarly confirms that children became more emotionally unstable, pandemic-related motifs appeared in their play, and readjustment to previous routines and rule systems proved challenging upon their return [3]. Interviews with children suggest that they interpreted the pandemic situation at their own developmental level and attempted to process uncertainty, experiences of loss, and new regulations through play [3].

The literature suggests that the pandemic impacts cannot be captured solely as short-term crisis symptoms. Mental strain, emotional uncertainty, and adaptation difficulties may have generated psychosocial patterns that remain in preschool practice during the post-pandemic period and may influence children's emotional stability and social integration in the longer term [2,4].

Teachers' strain and need for support

The pandemic period posed not only organisational and administrative challenges for preschool teachers but also entailed considerable psychological strain. The altered work schedule, the responsibility of complying with health protocols, and the rapid—often unprepared—transition to digital forms of communication created new types of professional expectations.

Villányi's study indicates that a substantial proportion of teachers reported increased mental exhaustion, emotional strain, and a heightened risk of burnout [1]. In the crisis, teachers simultaneously assumed educational, organisational, and psychological support roles, while also having to adapt their family lives to uncertain and continuously changing circumstances. This multi-layered role conflict and increased responsibility significantly intensified their emotional burden.

At the same time, Timár's account based on institutional experience emphasises teachers' adaptability and professional commitment [3]. The crisis stimulated the acquisition of new competences, particularly in the areas of digital tool use, online communication, and flexible planning. However, professional adaptation often occurred without structured institutional support; many teachers developed their digital and methodological competences through self-directed learning.

The pandemic also affected teacher education and teacher mentoring systems. The digitalisation of student teaching practice could not compensate for the lack of direct interaction with children. Such direct interaction influences the depth and quality of experiential learning [3], suggesting that the pandemic may have long-term implications for processes of professional socialisation and the competence development of novice teachers.

Overall, the literature reveals that teachers' workload increased quantitatively and qualitatively, leading to a redefinition of the professional role [1,3]. The traditional educational role was complemented by an intensified psychosocial support function, making the development of new competencies and the strengthening of institutional and systemic support mechanisms necessary [1,4].

The role of families and parental cooperation

The pandemic significantly impacted family functioning, which indirectly affected early childhood education processes. The literature points to a dual pattern: while some families reported strengthened shared activities and deeper family relationships, others experienced role conflicts, job insecurity, and psychological exhaustion [3,4].

The enforced shift to digital communication fundamentally reshaped the structure of teacher–parent interactions. Reducing face-to-face presence and informal communication channels limited opportunities for spontaneous feedback, while the use of online platforms required new forms of collaborative competence from both parties [3,10]. Villányi highlights that parents’ digital competences and access to technological resources significantly influenced the quality of cooperation and, consequently, the effectiveness of preschool educational processes [1,10].

According to the literature, many parents experienced difficulties in following the developmental recommendations provided by teachers, paired with reduced motivation, increasing tension, and greater screen use among children [1,3,10]. This situation particularly reinforced existing social and educational inequalities among families with fewer resources [5].

Thus, the pandemic not only transformed institutional functioning but also altered the structural and communicative foundations of preschool–family partnerships [1,3,10]. In the post-pandemic period, the conscious restructuring of cooperation, the strengthening of informal relational channels, and differentiated support for families to mitigate inequalities have become especially important [4–5].

Learning gaps and systemic challenges

Although early childhood education primarily aims to support children’s social, emotional, and foundational cognitive development, the COVID-19 pandemic led to significant changes within this institutional space of socialisation. Institutional closures, home isolation, and the restriction of direct pedagogical interactions perceptibly influenced children’s developmental pace and learning patterns [3,5].

Holb and colleagues point out that the period of remote education—although primarily focused on school-aged children—also indirectly resulted in learning and social delays among preschool-aged children [5]. According to teachers’ experiences, particularly affected areas included rule adherence, communication skills, and vocabulary development [5]. The absence of structured community-based learning situations was especially prevalent among children whose family backgrounds were unable to compensate for the regular, interaction-based developmental environment provided by preschools [4–5].

Inequalities in access to digital devices and differences in parental competencies further deepened social disparities among preschool users [5,10]. In families from disadvantaged backgrounds, it became particularly evident that the lack of pedagogical support may influence school readiness and later learning trajectories in the long term, thereby reinforcing structural inequalities as a consequence of the pandemic [5].

As a result of the pandemic, early childhood education was, at least partially, displaced into the digital sphere, which represented not only a technical but also a pedagogical challenge [6–7]. Pintér emphasises that digital learning generated more individualised learning pathways, foregrounding the facilitator role of the teacher [7]. However, this model is only limitedly applicable in early childhood education, where development is fundamentally grounded in personal presence, emotional security, and play-based communal learning experiences [4].

The absence of direct pedagogical presence, the decline in emotional security, and the limitations of the physical educational environment particularly affected young children [4]. Online contact was unable to fully substitute the core processes of preschool education, especially caring pedagogical support and the social learning realised through peer relationships [4–5].

These factors collectively indicate the need for systemic intervention. Rethinking early childhood education, strengthening compensatory programmes for disadvantaged children, and providing targeted professional support for teachers are essential to mitigate learning delays and promote equal developmental opportunities [4–5]. Overall, the pandemic did not merely cause temporary disruptions in early childhood education, but also revealed structural challenges that require long-term policy and institutional reflection, as well as the development of empirically grounded intervention strategies [5,10].

International empirical research results on the psychosocial effects of the pandemic

The psychosocial effects of the COVID-19 pandemic on children and families have been examined in numerous international empirical studies, providing an important interpretative framework for contextualising national experiences. The international literature consistently indicates that children experienced heightened

feelings of isolation, alongside increased prevalence of anxiety and depressive symptoms during the pandemic [2,11].

In their longitudinal study, Gotlib and colleagues demonstrated that prior stressful life events significantly increased the risk of pandemic-related stress and depressive symptoms among adolescents [11]. These associations remained significant even after controlling for demographic variables, suggesting that the pandemic effects were amplified along pre-existing vulnerability factors [11]. Although the study did not focus on preschool-aged children, its findings are theoretically relevant for interpreting early-life psychological vulnerability and sensitive developmental periods.

Further international analyses have shown that parental illness, quarantine situations, and job insecurity substantially increased psychological strain within families, which manifested in children as anxiety, emotional instability, and symptoms of post-traumatic stress [2]. These findings underscore the decisive role of family system functioning in children's adaptation processes, particularly in times of crisis [4].

Overall, international empirical evidence suggests that the pandemic cannot be understood merely as a temporary crisis, but rather as an event with potentially enduring psychological and relational consequences [2,11]. At the same time, a considerable proportion of studies focus on school-aged children and adolescents, whereas empirical data concerning preschool-aged children and the institutional context of early childhood education remain far more limited.

This research gap justifies investigating which physical, psychological, and relational patterns can be identified in Hungarian preschool practice since the outbreak of the pandemic, based on teachers' perceptions.

AIMS, RESEARCH QUESTIONS, AND ASSUMPTIONS

Research aim

This research study aims to explore the observable physical, psychological, and relational changes in preschool education practice more than five years after the outbreak of the COVID-19 pandemic, based on teachers' perceptions. The investigation focuses on post-pandemic phenomena that extend beyond the acute crisis period and may have become permanently embedded in institutional functioning.

The study centres on the following dimensions:

- 1) the emergence of children's somatic and psychological symptoms;
- 2) changes in behavioural patterns, adaptive capacity, and sense of security;
- 3) transformations in preschool teacher–parent cooperation; and
- 4) shifts in the workload and complexity of pedagogical work.

Furthermore, the study aims to develop an empirically grounded interpretative framework that may contribute to a deeper understanding of the psychosocial challenges of post-pandemic early childhood education and to the strengthening of pedagogical practices that support children's emotional security and developmental opportunities.

Research questions

In line with the above aims, the following research questions guide the study:

1. What physical and psychological complaints do preschool teachers perceive among preschool-aged children in the years following the pandemic?
2. How have children's behavioural patterns, adaptive capacity, and sense of security changed in connection with transformations in their community and family environments?
3. In what ways has cooperation between preschool teachers and parents evolved in the post-COVID period?
4. What pedagogical and organisational challenges characterise everyday preschool practice in the post-pandemic period?
5. What patterns of pedagogical adaptation can be identified based on teachers' experiences in the post-pandemic period?

Research assumptions

The study is descriptive and exploratory in nature and therefore does not rely on classical hypothesis testing. Nevertheless, based on national and international literature, certain interpretative premises can be formulated to provide a framework for data analysis.

The following assumptions guide the investigation:

- Preschool teachers perceive a higher frequency of somatic complaints among children in the post-pandemic period, particularly in relation to sleep disturbances, fatigue, and recurrent physical symptoms.
- Children's psychological state is characterised by increased anxiety, heightened emotional sensitivity, withdrawal, and a reduced sense of security.
- The form and quality of preschool–family cooperation have changed and influenced pedagogical practice.
- The professional role of teachers has expanded beyond educational responsibilities to include a more pronounced psychosocial support dimension.

These premises are not intended to prove causal relationships but rather to support the structured interpretation of findings in light of trends named in the literature.

METHODS

Research approach

The research employed a quantitatively dominant, cross-sectional questionnaire design complemented by qualitative elements. Based on preschool teachers' perceptions, the aim was to explore the physical, psychological, and pedagogical effects of the post-COVID period on early childhood education.

Data collection took place between July 1 and 30, 2025, in an anonymous online format. The online survey enabled the inclusion of teachers working in different geographical regions and ensured voluntary and secure participation.

The research is descriptive and exploratory; it presents and interprets teachers' experiences in a structured manner rather than establishing causal relationships.

Sampling and sample characteristics

Sampling was conducted using a voluntary, non-probability convenience sampling procedure. The questionnaire was issued through professional online platforms and teacher networks.

The study involved 100 preschool teachers working in Hungary across different types of settlements (capital city, county seats, towns, and villages) and in institutions with diverse maintainers and organisational structures. The sample can be considered heterogeneous in institutional and geographical terms; however, it is not representative. The findings reflect the perceptions of the respondents and cannot be generalised to the entire population of preschool teachers.

Data collection instrument

Data were collected using a structured online questionnaire (Google Forms platform).

- The questionnaire included the following types of items:
- Likert-scale statements (5-point scale) addressing children's somatic symptoms (e.g. sleep disturbances, fatigue, headaches), psychological state (e.g. anxiety, withdrawal), and changes in pedagogical practice and parental cooperation
- Multiple-choice questions designed to identify the most often observed symptoms and pedagogical challenges
- Open-ended questions that provide opportunities for respondents to elaborate on individual experiences, reflections, and interpretations

The questionnaire items were developed based on a review of relevant national and international literature, particularly on studies examining the impact of the pandemic on mental health, institutional functioning, and pedagogical practice.

Content validity was examined through a pilot study.

Data processing and analysis

The collected data were exported from Google Forms and prepared for statistical analysis. Closed-ended items were analysed using descriptive statistics, including frequency and percentage distributions. Proportions of agreement were examined in the case of Likert-scale items, with particular attention paid to marked response patterns. Responses to open-ended questions were subjected to qualitative content analysis. Responses were organised into thematic categories after repeated readings of the textual data. Categories were developed

inductively based on recurring content patterns and were structured along physical, psychological, relational, and pedagogical dimensions. Special attention was paid to finding interactional patterns between children, parents, and teachers.

The purpose of the analysis was to present and interpret teachers' perceptions in a structured manner, not to show causal relationships.

Validity and reliability

Internal validity was strengthened by the precise definition of the target group (preschool teachers) and the assurance of anonymous participation. A pilot study was conducted with a group of 10 teachers, resulting in the refinement of item wording and structure. During qualitative content analysis, the development of categories was systematically documented, contributing to the transparency and reliability of the analytical process.

Ethical considerations

The research followed ethical standards. Participation was voluntary, and participants were informed in advance about the research aims and the conditions of data handling. Data were processed exclusively for scientific purposes and treated confidentially.

RESULTS

Based on preschool teachers' experiences, the study aimed to explore observable physical, psychological, and pedagogical changes in early childhood education in the post-COVID period. One hundred preschool teachers completed the questionnaire. The responses reveal clearly identifiable patterns indicating changes in children's physical well-being, emotional state, and pedagogical practice.

Demographical characteristics of the sample

The respondents have substantial professional experience. Among the participants, 52% have worked in the profession for more than 21 years, 31% have 11–20 years of experience, 12% have 6–10 years, and 5% have 0–5 years of experience as preschool teachers (Figure 1). The high proportion of teachers with extensive professional experience suggests that the sample includes respondents with a solid basis for comparing pre-pandemic and post-pandemic periods.

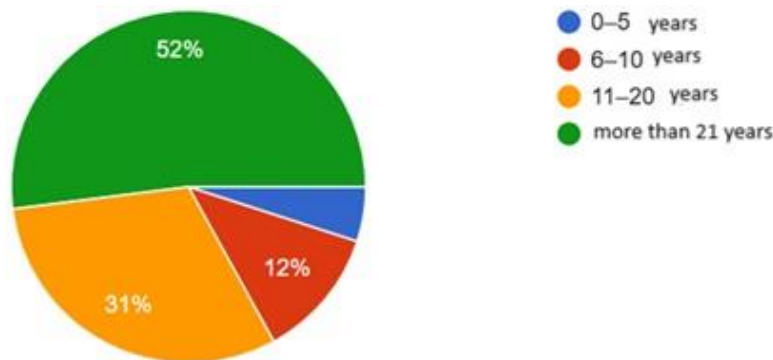


Figure 1. Distribution of Respondents by Years of Professional Experience (N = 100)

Among the respondents, 46% work in county seats, 24% in towns, 21% in villages, and 9% in the capital city (Figure 2). Based on this geographical distribution, the sample represents different types of settlements, allowing for a more nuanced understanding of institutional experiences.

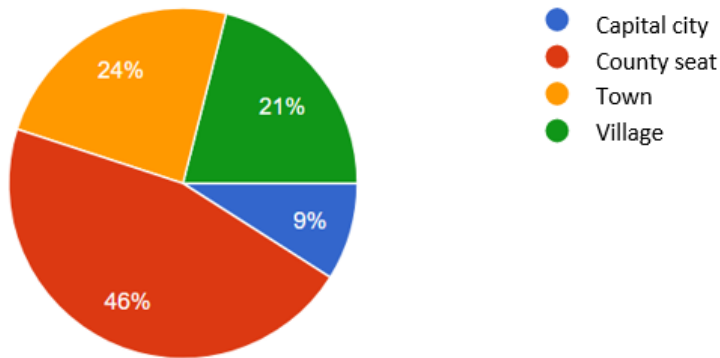


Figure 2. Distribution of Respondents by Type of Settlement (N = 100)

The majority of respondents (75%) work in mixed-age groups, while a smaller proportion teach in age-homogeneous groups (Figure 3). The high prevalence of mixed-age groups is particularly relevant for this study, as managing diverse developmental levels and needs within the same group may pose complex pedagogical challenges.

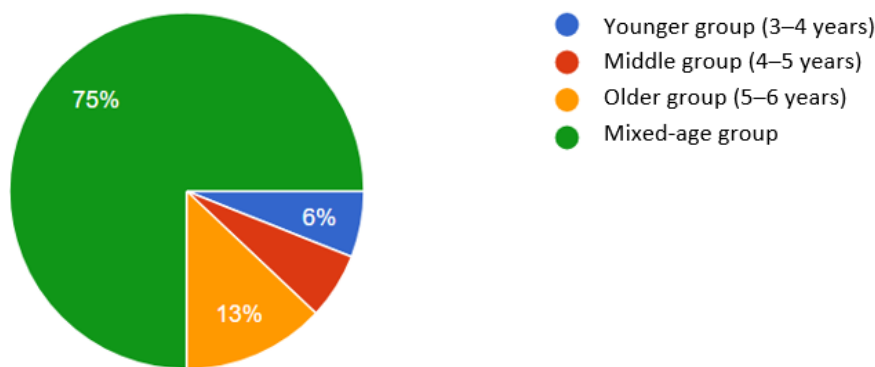


Figure 3. Distribution of Respondents by Taught Group Type (N = 100)

A total of 98% of respondents were actively working during the COVID-19 period of 2020–2021 (Figure 4), indicating that they have direct experience of the institutional and pedagogical consequences of the pandemic. This circumstance increases the relevance and credibility of the responses when interpreting post-pandemic changes.

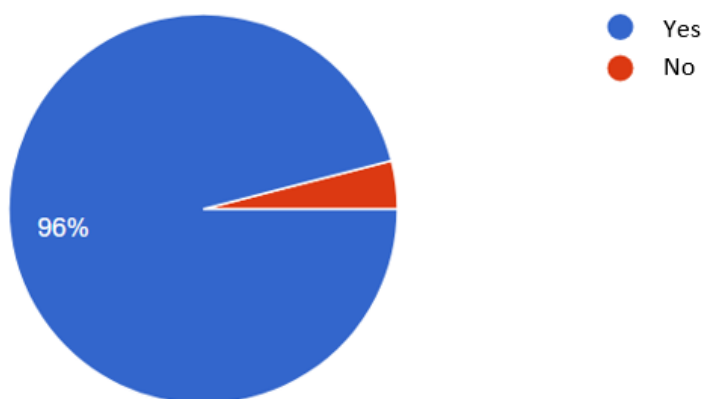


Figure 4. Proportion of Respondents Actively Working During the COVID-19 Period (N = 100)

Detection of post-COVID somatic symptoms

A total of 88% of responding preschool teachers reported that physical complaints among children have become more frequent since the COVID-19 pandemic (Figure 5). This proportion clearly indicates that the emergence of somatic symptoms has become a widely observable phenomenon in preschool practice during the post-pandemic period.

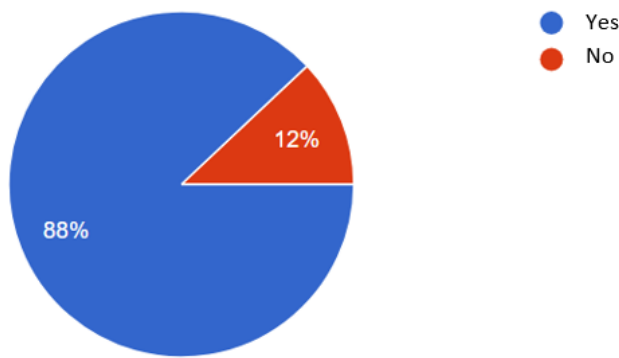


Figure 5. Proportion of teachers who detected physical complaints (N = 100)

The most frequently reported symptoms included fatigue (80%), sleep disturbances (67%), loss of appetite (66%), abdominal pain (55%), and headaches (50%) (Figure 6).

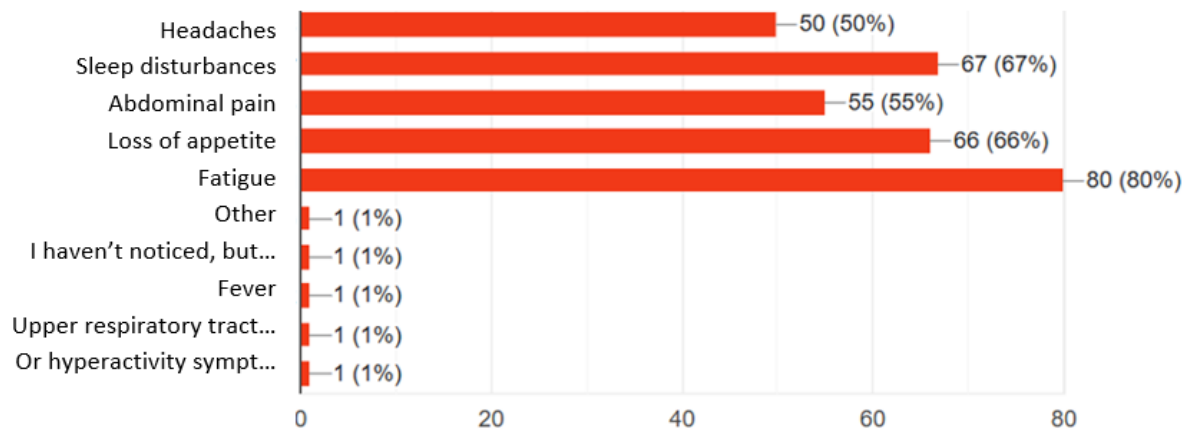


Figure 6. Most Frequently Reported Physical Symptoms (N = 100)

Regarding the frequency of symptoms, 54% of respondents reported observing them every week, 24% every month, while 22% indicated that they occur only rarely (Figure 7). The high proportion of weekly occurrences suggests that the phenomenon is regularly present in preschool settings.

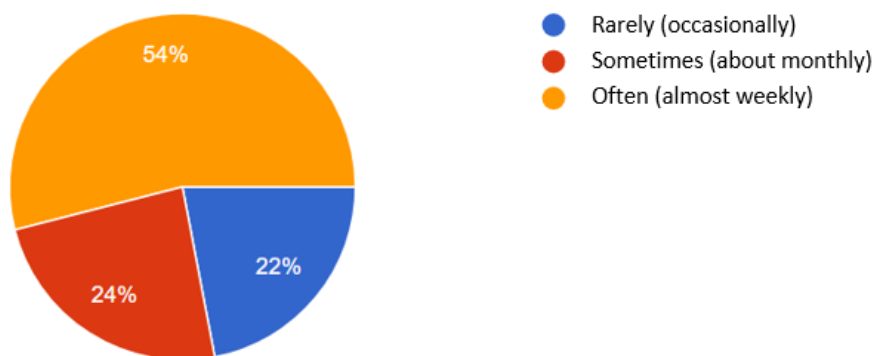


Figure 7. Frequency of the Occurrence of Somatic Symptoms (N = 100)

The analysis of gender distribution (Figure 8) showed that 94.9% of respondents did not observe differences between boys and girls in the occurrence of physical complaints. Only a small proportion of respondents indicated that either girls or boys were more affected.

These findings suggest that somatic symptoms emerging in the post-COVID period cannot be interpreted as gender-specific phenomena but are more likely associated with age-related and psychosocial factors. According to teachers' experiences, physical complaints are likely to be linked to children's emotional strain and the somatisation of internal tensions.

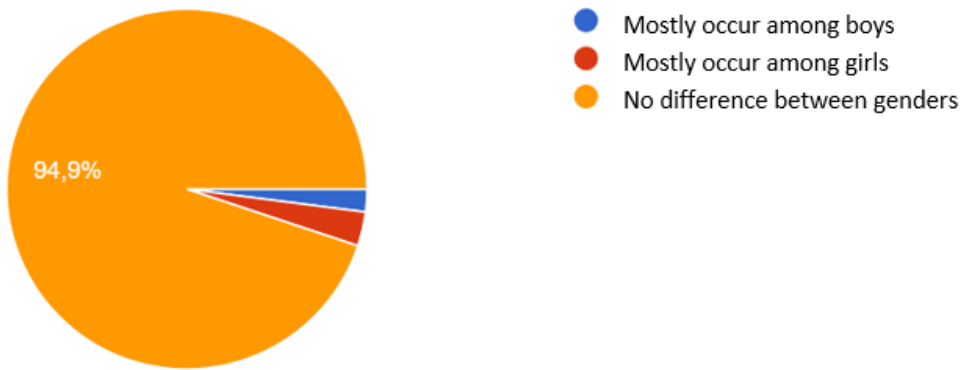


Figure 8. Teachers' Perceptions of the Gender Distribution of Somatic Symptoms (N = 100)

When examining the presumed underlying causes of the symptoms (Figure 9), the vast majority of preschool teachers identified psychological factors. A total of 75.3% of respondents indicated anxiety and stress as the primary causes. Additionally, 10.3% highlighted parental tension and changes in the family environment, while health-related factors—such as more frequent illnesses—were mentioned to a lesser extent. Approximately 5% of respondents were uncertain about the causes (“I do not know”), suggesting that the interpretation of somatic symptoms is not always clear in preschool practice.

Overall, the findings indicate that, according to teachers' perceptions, physical complaints are primarily associated with psychological and family-related factors, which is consistent with the conclusions of previous national studies [1,8].

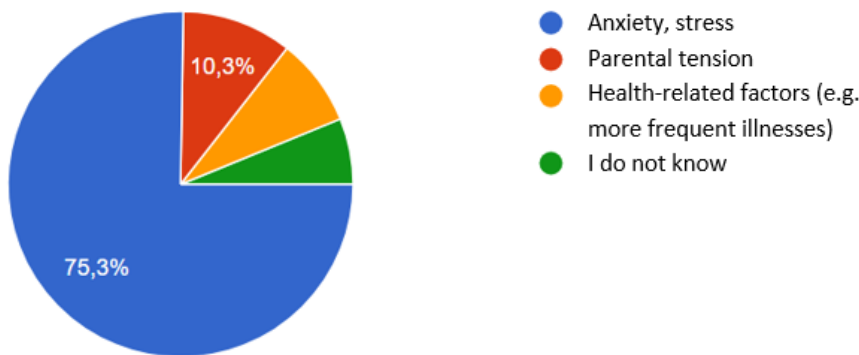


Figure 9. Most Frequently Perceived Causes of Somatic Symptoms (N = 100)

Behavioural changes and the sense of security

Behavioural changes perceived by preschool teachers reveal a clear pattern (Figure 10). Respondents were allowed to select multiple answers; therefore, the percentages reflect the frequency of occurrence of the individual phenomena.

The most frequently reported change was an increased need for adult attention (84.8%). Anxiety and irritability were each reported by 82.8% of respondents, indicating behavioural manifestations of internal tension and emotional instability. Social withdrawal was observed by 64.6% of respondents, while more frequent crying was reported in 39.4% of cases. Only 3% of respondents reported no noticeable changes in children's behaviour.

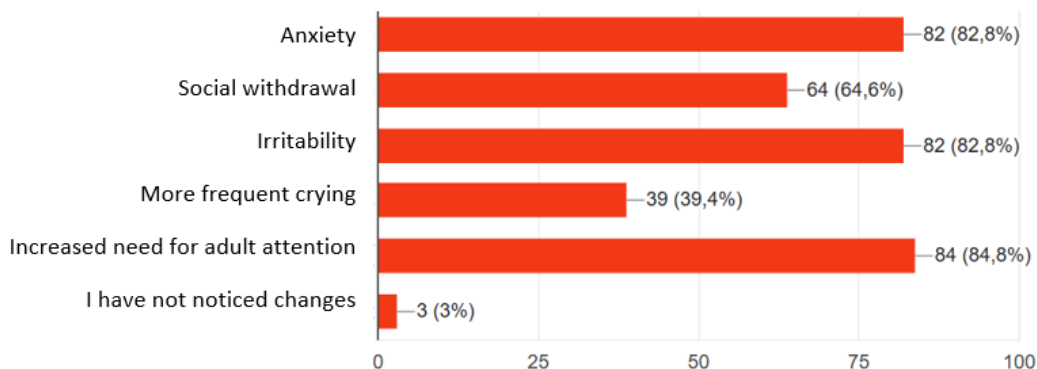


Figure 10. Behavioural changes after COVID-19 (N = 100)

The assessment of children’s sense of security also indicates a negative shift (Figure 11). A total of 72% of respondents perceived a decline, 22% reported no change, while 6% indicated an improvement. These findings suggest that the majority of teachers observed a decrease in children’s emotional stability following the pandemic.

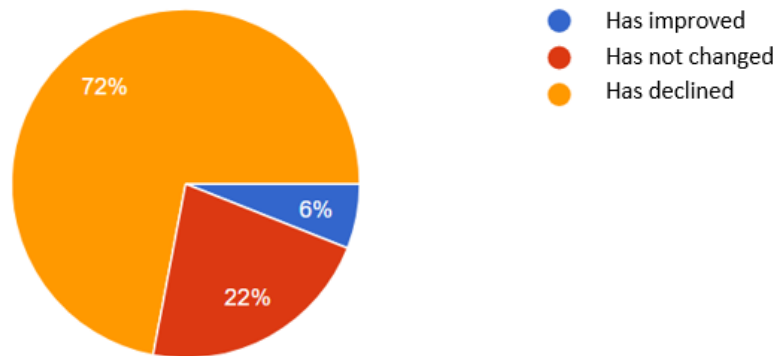


Figure 11. Changes in Children’s Sense of Security (N = 100)

The assessment of children’s autonomy shows a similar trend (Figure 12). A total of 69% of respondents reported a decline, 25% observed no change, while 6% indicated improvement, suggesting that the pandemic period may also have influenced the development of autonomous behavioural patterns.

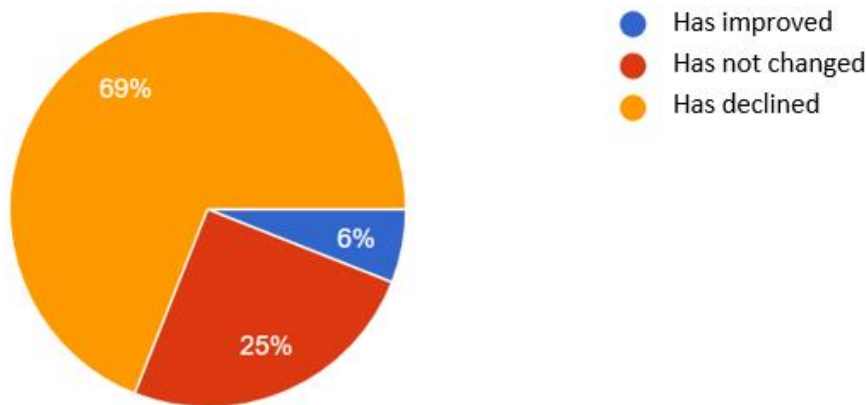


Figure 12. Changes in Children’s Autonomy (N = 100)

The content analysis of the open-ended responses further nuanced the quantitative findings. According to teachers’ accounts, the process of settling children into preschool has become more challenging and separation anxiety has increased. Several respondents referred to the growing use of digital devices, which was associated with attention difficulties, delays in speech development, and reduced physical activity.

Parental influences and partnership

The post-pandemic period has brought noticeable changes not only in children’s behaviour but also in family functioning. A total of 80% of respondents frequently noticed increased parental nervousness and anxiety (Figure 13), indicating the presence of heightened psychological strain within families.

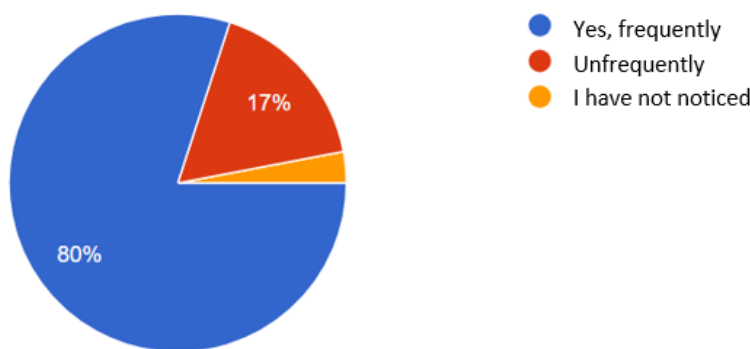


Figure 13. Proportion of Detected Parental Anxiety (N = 100)

According to 85% of the teachers, tense family atmospheres are often reflected in children’s behaviour (Figure 14), highlighting the significance of the emotional interactions within the child–parent relationship.

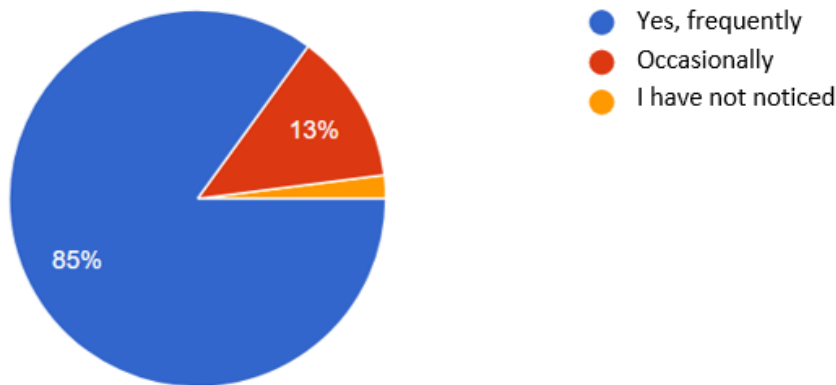


Figure 14. Perceived Impact of Parental Tension on Children (N = 100)

The quality of cooperation with parents was perceived as declining by 71% of respondents, while smaller proportions reported stagnation or improvement (Figure 15). These findings suggest that the dynamics of the teacher–parent relationship have faced new challenges in the post-pandemic period.

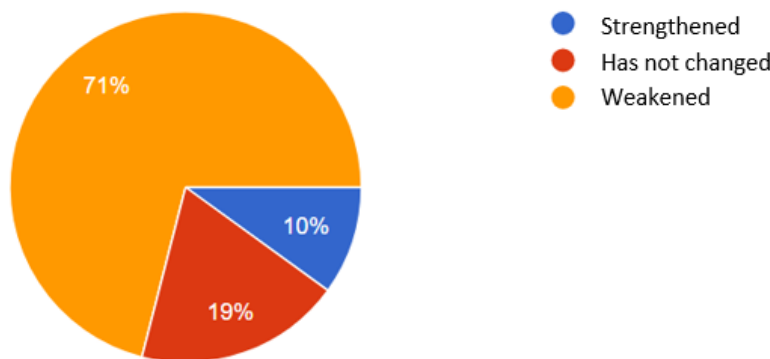


Figure 15. Perceived Changes in cooperation with families (N = 100)

Likert-scale statements (Figure 16) further nuanced the findings. More than 80% of respondents agreed that more persistent anxiety has been observable among children since the pandemic, and that children have become more sensitive to parents’ moods and behaviour. High levels of agreement were also found regarding the deterioration of children’s adaptive capacity, as well as the increase in social withdrawal and the decline in their sense of security within the preschool environment.

Overall, the quantitative findings indicate that, in the post-pandemic period, teachers perceive complex and interrelated changes in children’s emotional states, behaviour, and the quality of cooperation with families. These phenomena appear not as isolated developments but as mutually reinforcing factors within preschool practice. This observation is consistent with findings in the national literature, which emphasise the vulnerability of social relationships and the destabilisation of mental well-being following the pandemic [10]. In addition to the closed-ended questions, the open responses provided an opportunity to capture the experiential patterns and interpretations underlying these phenomena.

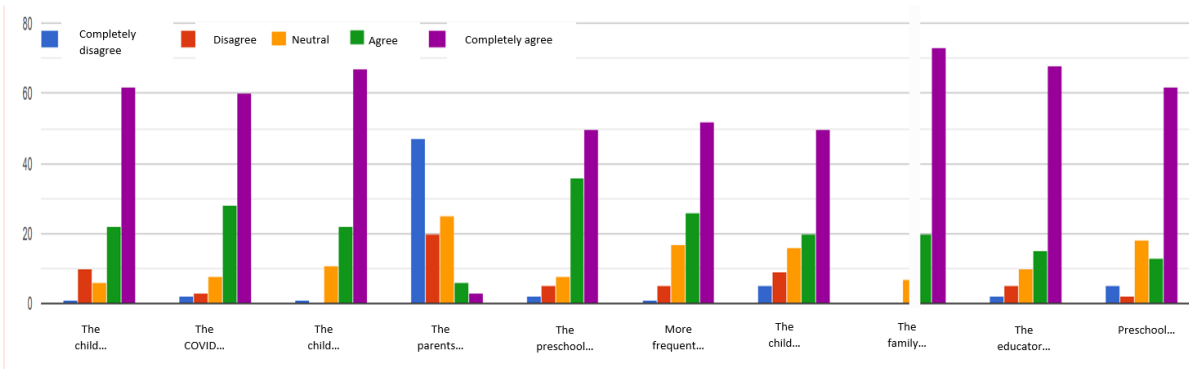


Figure 16. Teachers’ Agreement with Statements on the Effects of the Post-COVID Period (N = 100)

Thematic analysis of open responses

The qualitative content analysis of the open-ended responses aimed to gain a deeper understanding of preschool teachers' experiences. The analysis was conducted inductively. After repeated readings of the responses, thematic categories were developed based on recurring content patterns. The following main thematic units emerged from the analysis:

1. Difficulties in the adjustment process and increased separation anxiety

Several teachers reported that the process of settling children into preschool has changed considerably. Due to restrictions on parents' presence in the institution and the shorter, more structured adjustment period, children's separation anxiety appeared more pronounced, and the adaptation process became emotionally more demanding.

2. Consequences of confinement and social isolation

According to the responses, the lack of community experiences and the reduction of playground and family interactions had longer-term effects on children's social behaviour and emotional stability. Several teachers also referred to increased difficulties in conflict management and weaker rule adherence.

3. Characteristics of the "COVID generation"

Several respondents referred to children born during the pandemic or who spent their early years in isolation as a distinct group. In their case, heightened anxiety, uncertainty, and emotional sensitivity were observed, which may also hinder integration into the preschool community.

4. Increased use of digital devices

According to teachers' accounts, the rise in screen time is associated with attention difficulties, delays in speech development, and reduced physical activity. Several respondents also reported an increasing need for speech therapy and developmental support services.

5. Increase in the number of children with special educational needs (SEN) and learning or behavioural difficulties

According to respondents' perceptions, the proportion of children with special educational needs (SEN) and those experiencing learning or behavioural difficulties has increased, reinforcing the importance of differentiated pedagogical approaches and individualised developmental support.

6. Psychological strain on teachers

Some responses highlighted the growing mental burden on teachers. Increased emotional and administrative demands, as well as the growing complexity of supporting children, may indirectly affect the quality of the educational process.

The qualitative findings reinforce the trends identified in the quantitative data: the pandemic impacted children, families, and teachers in complex and multi-layered ways. According to teachers' accounts, pedagogical tasks have become more complex; alongside educational activities, greater emphasis has been placed on psychological support and the conscious creation of emotional security. The study indicates that the effects of the COVID-19 pandemic remain observable in the post-pandemic period and justify the strengthening of supportive pedagogical environments and preschool-family partnerships.

Summarised interpretation of the findings

Based on the results of the questionnaire survey, preschool teachers widely perceive changes in children's physical well-being, emotional state, and behaviour in the post-COVID period. A substantial proportion of respondents reported more frequent somatic complaints (e.g. fatigue, sleep disturbances, abdominal pain, headaches), which, according to their perceptions, are often associated with stress and anxiety.

Among behavioural patterns, the most prominent changes included an increased need for adult attention, heightened anxiety, and irritability, as well as a notable level of social withdrawal. The majority of teachers also perceived a decline in children's sense of security and autonomy, which may indicate the vulnerability of emotional stability during the post-pandemic adaptation process.

Family-related factors also emerged as significant. A considerable proportion of respondents reported increased parental anxiety and believed that family tensions are often reflected in children's behaviour. In several cases, the perceived quality of teacher-parent cooperation showed a declining trend, revealing a reconfiguration of educational partnerships.

It is important to emphasise that the presented findings reflect teachers' perceptions. Interpreting the data requires a cautious approach given the descriptive nature of the research; nevertheless, the results reveal consistent patterns that point to the longer-term psychosocial consequences of the pandemic within the context of early childhood education.

Emerging pedagogical responses and adaptive strategies

The open responses provided by teachers reflect not only the perception of challenges but also implicitly indicate emerging pedagogical response strategies. According to the accounts, a shift in emphasis can be observed in early childhood education during the post-pandemic period: alongside cognitive developmental goals, greater attention is devoted to consciously reinforcing emotional security, maintaining stable daily routines, and providing predictable pedagogical structures.

The reconsideration of the adjustment process, a more sensitive pedagogical presence aimed at addressing separation anxiety, as well as strengthened differentiated attention and individual support, can be interpreted as adaptive responses within pedagogical practice. Several responses also indicate that teachers are making more conscious efforts to improve the regularity and quality of communication with parents, recognising the decisive role of the family system in shaping children's emotional well-being.

The growing emphasis on a mental health-oriented approach, supporting emotional expression, and the more frequent application of practices aimed at developing conflict management and self-regulation skills can likewise be interpreted as signs of pedagogical adaptation. At the same time, the responses also highlight teachers' increasing need for professional and psychological support, pointing to the necessity of strengthening institutional and systemic support mechanisms.

Overall, it can be concluded that post-pandemic early childhood education is not merely focused on addressing the consequences of the pandemic, but also reflects a shift towards a more adaptive, emotionally secure, and child-centred pedagogical culture.

CONCLUSION

Based on the results of the study, it can be concluded that the post-COVID period has brought perceptible changes in several dimensions of early childhood education, according to preschool teachers' perceptions. Both the quantitative and qualitative data reveal consistent patterns regarding shifts in children's physical well-being, emotional state, and behaviour.

In relation to the research questions, the findings indicate that teachers perceive more frequent somatic complaints among children—particularly fatigue, sleep disturbances, and recurrent physical symptoms—which, according to their perceptions, are often associated with psychological factors. Among behavioural changes, an increased need for adult attention, anxiety, irritability, and social withdrawal were reported with notable frequency. The perceived decline in children's sense of security and autonomy may indicate the vulnerability of adaptation processes in the post-pandemic period.

The results also highlight the role of family-related factors. According to teachers' perceptions, parental anxiety and tense family environments are often reflected in children's behaviour, while teacher–parent cooperation in several cases has undergone structural and qualitative changes. The identified phenomena can be interpreted as interconnected, multi-level patterns in which the child, the family, and the institutional environment interact dynamically.

Qualitative findings further suggest an adaptive shift in pedagogical practice: the conscious strengthening of emotional security, the reconsideration of the adjustment process, and the growing emphasis on a mental health-oriented approach all indicate a movement toward a pedagogical culture centred on emotional security.

It is noteworthy that the study is cross-sectional and descriptive in nature and based on teachers' perceptions; therefore, it is not suitable for establishing causal relationships. The sample is not representative, which limits the generalisability of the findings. Nevertheless, the identified patterns are consistent with psychosocial trends reported in both national and international literature. They provide an empirical basis for further investigation of post-pandemic early childhood education.

Future research may benefit from the application of longitudinal research designs and the inclusion of multiple perspectives—particularly those of parents and children—to achieve a more comprehensive understanding of the phenomena.

Overall, the study contributes to the interpretation of the longer-term psychosocial consequences of the COVID-19 pandemic in the context of early childhood education. It highlights that the post-pandemic period can be understood not merely as the aftermath of a crisis, but also as part of a broader process of structural and pedagogical adaptation. In this sense, post-pandemic early childhood education does not only involve managing the consequences of the crisis but also reflects a process of pedagogical reconfiguration in which emotional security and psychosocial sensitivity become key organising principles of educational practice.

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