

A closer look at the specifics of organizing the multilevel monitoring within the project's framework reveals the following details.

The effectiveness of the "2x2" preschool education access model will be assessed throughout the project's duration (April 2024 to July 2025). The development and pilot implementation of the multilevel monitoring system have already begun.

The analytical data presented in the article characterize the initial phase of work with children, spanning four months from April to July 2024.

The multi-tiered monitoring system includes both initial and final assessments, along with interim (monthly) evaluations. Educators record the development results of children across key areas in Google Forms. Statistical data for each child are accumulated and calculated as average indicators, reflecting progress, current difficulties, and issues. Monthly data are generated and stored in electronic folders categorized by each child, each educator, region, and overall results for Ukraine.

Ethical considerations

In the course of the initial monitoring phase, informed consent was obtained from the parents of preschool children involved in the project. The procedure included explaining the purpose of the monitoring, tracking the children's developmental indicators, and detailing how the data would be utilized.

Data collection and storage are confidential and used solely for their intended purpose. Measures to protect data include encryption, secure storage, and restricted access to confidential information. The monitoring process is conducted fairly and does not discriminate against any child based on race, gender, socio-economic status, or any other characteristics. The data are used to identify educational gaps and disparities with the aim of providing targeted support and resources to address these issues. Regular feedback is ensured between parents and educators, adhering to interaction guidelines such as avoiding situations where parents might compare their child's development with others. Positive responses to parental inquiries are encouraged, along with offering alternative

educational and developmental options. It is crucial to avoid imposing rigid educational models on parents or asserting absolute truths. Instead, parents are encouraged to reinforce the skills their children have worked on at the preschool and to strengthen these skills within the family setting.

Results

Defining criteria and indicators for the development of older preschool children across key domains is an effective tool for selecting strategies to support mental health for the following reasons:

- a comprehensive assessment of developmental levels provides a holistic understanding of the child's overall well-being and ensures that no aspect of the child's development is overlooked;
- delays in different developmental domains can uniquely impact mental health; for instance, social development significantly affects a child's emotional well-being, while cognitive issues may influence self-esteem;
- clear criteria and indicators facilitate the early detection of mental health issues; for instance, difficulties with emotional regulation or social interaction in a child may be early signs of potential mental health problems;
- criteria and indicators based on developmental stages assist educators in identifying when a child deviates from typical developmental patterns and in adapting their approaches to support each child's mental health according to their individual developmental itinerary;
- the data collected assist in making well-informed decisions regarding the type and level of support needed for a child across different areas of development.

In defining the criteria and indicators for the development of older preschool children, we relied on the established frameworks of national and international standards, recommendations from the American Academy of Pediatrics, UNICEF's experience in supporting the most vulnerable children in crisis and early recovery contexts, as well as the Ukrainian Law "About Preschool Education" (*Law of Ukraine, 2001*).

The monitoring group of the Project identified five key domains (criteria) for the development of older preschool-aged children, with each criterion encompassing specific developmental indicators (70 in total): emotional development - 8 indicators; social interaction development - 8 indicators; cognitive development - 38 indicators; formation of positive self-esteem - 8 indicators; and resilience to stress - 8 indicators.

Support for the mental health of preschool-aged children in crisis conditions is a key component of multi-level monitoring. Among the five domains of development, four are crucial for establishing the foundation of children's mental health: "Emotional Development," "Social Interaction Development," "Formation of Positive Self-Esteem," and "Resilience to Stress." For instance, "Cognitive Development" is directly influenced by stress levels; if stress is high and prolonged, it can impede the formation of neural connections, potentially leading to long-term cognitive deficits.

The application of the specified criteria and indicators implies their standardization for use in various conditions, for example, considering alternative forms of preschool education. The tools and methods of assessment are characterized by their accessibility and ease of use.

The indicators are culturally relevant and designed for older preschool-aged children. They account for differences in development, behavior, and context, and are aimed at measuring educational losses and gaps.

The assessment of developmental levels in older preschool-aged children across the primary domains was conducted based on the collection of data for each child:

- the method of pedagogical observation, based on directly perceiving educational phenomena and processes in their entirety and dynamics, was used. Its primary task was to gather facts and record key characteristics using a set measurement scale. Due to children's natural and spontaneous behavior during their short time in educational settings, this method provides valuable insights. Observation, aimed at evaluating specific developmental criteria in older preschoolers, is purposeful, well-

planned by the educator, and conducted precisely without disrupting the situation.

- the study of each child's work products involves the educator organizing appropriate forms of activity with the children and analyzing products from representational and constructive activities (such as drawings, appliques, various images, and constructions), as well as from linguistic-creative activities (such as creative stories, dialogues, etc.), followed by evaluation using an established scale.

The comprehensive data collection was conducted through a combination of quantitative methods (standardized surveys and questionnaires) and qualitative methods (observations, examination of children's work products, and analysis of educators' feedback on the monitoring process). This approach ensures a thorough understanding of children's educational achievements in crisis conditions.

The measurement of developmental levels in older preschool-aged children across the primary domains during the initial monitoring process is conducted by evaluating the manifestation of indicators at both the minimum and maximum points for each child, and then determining the average score (average score = sum of all individual scores divided by the number of children). The average rating reflects the overall performance between the lowest and highest scores across children, educators, regions, and the country, using the web-based program Google Sheets, which is part of the Google Drive office suite.

The evaluation of indicators in Table 2 is conducted on a scale from 0 to 1 points. In analyzing the criteria and indicators for the development of older preschool-aged children across the developmental domains, we based our approach on the premise that the gradation of results is defined as follows:

- 0 - 0.3 - Low level;
- 0.4 - 0.7 - Average level;
- 0.8 - 1 - High level.

A low level of indicators (below 0.3 points) indicates the presence of educational losses and gaps.

By educational losses, we refer to the deterioration of a child's developmental indicators across primary domains, and the ability to acquire new skills and

competencies due to a lack of access to necessary educational resources, such as quality education and a supportive learning environment.

Gaps occur when there is a lack of consistency, progression, and gradual complexity in the process of child cognition, including the formation of concepts about the environment, the acquisition of concepts, and the understanding of patterns.

These losses can be classified as follows:

- Losses related to the development of concepts about nature, basic mathematics, language development, and both gross (major movements) and fine motor skills;
- Educational losses;
- Reduced pace of personal development;
- Psychological losses.

Addressing educational losses and gaps is a long-term and complex process that involves the collaborative efforts of preschool educational institutions (administration, educators, and parents), education management bodies, local government, public organizations, and state agencies. This collective effort is aimed at finding new, innovative, timely, and flexible solutions, such as alternative forms of preschool education during crises and early recovery in Ukraine.

Crises can present unprecedented challenges that traditional systems are unable to address effectively. Non-standard solutions offer a means to resolve problems through new and innovative approaches, achieving better outcomes with fewer resources by rethinking the operation of the preschool education system, and the distribution and utilization of resources.

Alternative forms of preschool education, such as the "2 by 2" learning format, illustrate how innovative approaches can be implemented. Identifying educational losses and gaps requires enhanced collaboration between educators and parents. These joint efforts ensure that children receive consistent support both within the preschool setting and at home, which is crucial for their mental well-being.

Unresolved gaps in a child's development can lead to stress and anxiety, as children may feel incapable of tackling tasks for

which they are unprepared. Identifying and addressing these gaps facilitates proper planning, thereby reducing stress.

Educational losses require prompt intervention and remediation, as the foundation for personal development is established during early childhood. If not addressed, these gaps and losses can reduce the opportunities for a smooth transition to primary education.

We consider the need for targeted educational interventions, such as:

- Support for academic success, given that mental health and academic achievement are closely interconnected. When children face mental health challenges, their ability to focus, actively engage in learning, and effectively respond to threats is significantly diminished.
- Creation of a supportive educational environment on alternative educational platforms, as establishing a sense of safety and trust can be a crucial factor in healing emotional wounds and recovery.
- Organization of additional activities, adaptation or modification of methods and approaches, and increased parental involvement in continuing education within the family context.

In the process of multi-level monitoring, initial losses and gaps have been recorded (see Table 2) as of May 1, 2024.

The total number of educational deficits and gaps across the main developmental domains for older preschool children (Table 2) at the stage of initial monitoring amounts to 42 low indicators, each scoring below 0.3 points (on a measurement scale from 0 to 1), which constitutes 60% of the total number of indicators.

By analyzing the total number of educational deficits and gaps at the initial monitoring stage, it is crucial to assess the prevalence of low indicators in each developmental domain. This will allow for correlating the domains and directing enhanced focus on those areas with the highest levels of educational deficits and gaps, as well as determining strategies for addressing them.

Table 2. Criteria and Indicators of Development for Older Preschool-Aged Children Across Primary Domains: Educational Losses and Gaps (Marked with an Asterisk)

Primary Domains of Development (Criteria)	Developmental Indicators for Children	Average Score
Emotional Development	Perceives their emotions as natural and important	0,36
	Understands how well their expressed emotions are appropriate to the situation, context of communication, and interactions with others	0,33
	Knows that there is no need to be ashamed of expressing their own emotions	0,43
	Can accurately identify and name their emotional states (e.g., sadness, fear, joy, anger)	0,26*
	Demonstrates a tendency to regulate the expression of emotions when necessary	0,26*
	Accepts that other people experience a range of emotional states, such as joy, pain, sadness, etc.	0,38
	Is capable of empathizing and showing compassion (e.g., hugging, comforting, etc.)	0,39
	Demonstrates emotional readiness to interact with others (e.g., friendliness, kindness, etc.)	0,40
Social Interaction Development	Perceives interaction with others as a natural domain that is not burdensome.	0,30*
	Demonstrates empathy and the ability to understand the needs and feelings of others during interactions.	0,26*
	Demonstrates the ability to establish constructive social connections.	0,25*
	Exhibits age-appropriate social skills (e.g., initiating communication, maintaining interactions, participating in collaboration, and demonstrating constructive behavior in conflict situations).	0,29*
	Distinguishes between the primary social roles of those involved in social interactions (e.g., adult, older individual, peer, etc.).	0,37
	Shows a tendency towards conventional (based on mutual respect) types of social interaction.	0,23*
	Recognizes that social interaction requires knowledge and adherence to etiquette, tact, and other social norms.	0,24*
	Recognizes their strengths (e.g., leadership abilities, following instructions, and task execution) and demonstrates them across various activities.	0,20*
Cognitive Development	Perceives educational and play activities as means to explore and understand the surrounding environment.	0,38
	Utilizes all parts of speech, grammatical categories, and various types of sentences of differing complexity.	0,19*
	Demonstrates initiative in communication with adults by asking various types of questions (e.g., "Why?", "How?", "What for?", "What do you think?", "In your opinion?", etc.).	0,31
	The vocabulary includes words from all parts of speech, various types of word formation, words of different complexities, synonyms, antonyms, epithets, metaphors, and words with multiple meanings. Demonstrates proper agreement in phrases and sentences according to linguistic norms (e.g., gender, number, case, verb conjugation, and vocative form).	0,14*
	Engages in discussions about the content, themes, characters, and actions of a story, answers questions from adults, expresses personal impressions and feelings, and makes evaluative and ethical judgments regarding the	0,22*

characters. Compares the assessments of literary characters with their own behavior and real-life events.	
Independently recounts familiar fairy tales, summarizes the content of literary works, and uses explanatory language (e.g., to describe the course of an upcoming game, the future plot of a drawing, appliqué, or craft).	0,22*
Describes events from their own life, the content of pictures, literary works, a given topic, as well as imaginary and play situations, based on observations and personal activities.	0,26*
Demonstrates cognitive activity and a need to explore the surrounding world.	0,35
Shows the ability to focus on performing educational and play activities.	0,33
Carries out the necessary actions to master reproductive methods of processing information and can follow provided templates accurately.	0,24*
Demonstrates effectiveness in acquiring, memorizing, and reproducing information.	0,25*
Supports the execution of educational and play activities in pairs and groups, shows interest in these types of tasks, and actively participates in them	0,32
Shows interest in creative and imaginative tasks, engages actively in their execution, and demonstrates their abilities with enthusiasm.	0,29*
Understands that the cardinality of a set is defined by a number, and that a number is represented by a graphical symbol—specifically, a digit.	0,31
According to the displayed digit, identifies or arranges the corresponding number of objects.	0,36
Understands the composition of a number as the sum of two smaller numbers and units, and constructs the number based on practical actions with objects.	0,21*
Distinguishes between three-dimensional and two-dimensional geometric shapes, and identifies their elements—sides, vertices, and angles—through tactile movement and verbal description.	0,24*
Measures parameters such as height, width, length, and thickness in various objects, materials, and constructions by overlaying, applying, and comparing them. Determines the weight of objects.	0,20*
Performs linear measurements using one or multiple units for height, foot length, as well as the height, width, length, and thickness of various objects and materials.	0,13*
Measures liquid and granular substances using one or multiple units of measurement.	0,15*
Orientates relative to themselves and other objects, and identifies directions such as ahead, behind, above, below, and between.	0,38
Navigates in time, understanding units such as day, week, month, year, seconds, minutes, and hours. Utilizes time models, stopwatches, hourglasses, and clock faces.	0,12*
Solves basic problems and exercises through practical activities with objects and applies fundamental mathematical concepts in play and everyday tasks.	0,19*
In constructive activities with blocks and building materials, children discuss with each other and with the educator the relationships between sizes and shapes used in the constructed model; count the blocks; and utilize simple diagrams necessary for construction.	0,22*
Understands the benefits that plants, animals, and insects can provide.	0,39
Demonstrates a conscientious attitude towards nature and the environment by turning off water and lights to conserve natural resources, and by properly disposing of or recycling products of human activity.	0,28*
Спостерігають і розповідають про об'єкти живої природи	0,36

	Sorts and measures natural materials by arranging leaves according to size, shape, and color, and by sequencing pine cones from largest to smallest. Maintains a monthly precipitation chart and identifies periods of highest and lowest moisture or dryness; estimates the weight of various natural objects. Cares for plants and animals together with adults, and discusses various aspects of their lives.	0,23*
	Boys and girls actively engage in activities they enjoy, regardless of gender stereotypes associated with certain toys and types of activities.	0,33
	Children show interest in and use toys, books, and materials that represent racial, cultural, age-related, gender, and ability diversity.	0,24*
	Children exhibit no negativity and demonstrate respectful attitudes towards the appearance, clothing, and language of different peoples and cultures; human abilities such as disabilities, mental health issues, and varied methods and paces of activity; atypical gender roles; and age-related expressions.	0,28*
	Children have basic understanding of artistic and creative (visual and decorative-applied) arts.	0,31
	Children respond positively to productive forms of artistic and creative activities such as drawing, sculpting, and collage.	0,45
	During free play, children sing or perform dance movements.	0,39
	Children take pleasure in using simple musical instruments and toys, as well as music players for individual use and recordings of musical works for group listening during free play.	0,32
	Children independently perform dramatized scenarios based on their favorite fairy tales and animations, selecting appropriate theatrical costumes, puppet attire elements, and enacting various roles within their play.	0,18*
	During free activities, children show a willingness to use electronic and technical devices for creative or physical engagement, such as creative drawing programs on tablets or participating in dance and movement activities.	0,26*
Developing Positive Self-Esteem	Demonstrates a positive self-perception.	0,47
	Exhibits confidence in personal abilities.	0,31
	Shows a willingness to accept others as they are.	0,33
	Demonstrates a tendency to differentiate actions and their consequences according to the occurring situations.	0,27*
	Responds to situations and the actions of adults and peers appropriately, adhering to social norms and accepted behavioral rules within the society.	0,29*
	Engages in collaboration with others and participates in creative and cooperative play."	0,35
	Understands and accepts the need to negotiate roles and rules of interaction, share toys, support one another, and so forth.	0,30
	Recognizes situations in which they feel uncertain and reflects on how to overcome them.	0,19*
Stress resilience	Demonstrates the ability to manage difficulties and stressful situations.	0,16*
	Recognizes states of anxiety, agitation, internal tension, and similar conditions.	0,23*
	Knows simple techniques for managing anxiety and calming down (such as having a comforting toy, suggesting to play a game like 'blowing out the candles on a cake,' etc.).	0,16*
	"Demonstrates the ability to adapt to new situations and changes, effectively cope with challenges, and recover from setbacks.	0,17*
	Possesses basic self-regulation skills in challenging situations, such as waiting their turn, controlling impulsive behaviors, and actions.	0,24*
	Demonstrates the ability to differentiate between frustration, despair, and	0,21*

discouragement in accordance with age-related characteristics, and exhibits skills in regulating these emotions.

Expresses needs, desires, and feelings verbally, without resorting to tantrums or other destructive behaviors. 0,29*

Adheres to social norms and rules, such as saying 'please' and 'thank you,' taking turns in conversation, respecting others' personal space, and so on. 0,35

In Table 3, the percentage calculation involves determining the number of low indicators within each domain. For example, under the criterion 'Development of Social Interaction,' 7 out of 8 low indicators were identified, representing 87.5%. This percentage highlights significant educational deficits and gaps, attributable to the inability

of children to attend preschool institutions due to the security situation in frontline areas. This situation necessitates the exploration of alternative solutions and effective measures, as well as a systematic approach to addressing educational deficits and reducing gaps.

Table 3. Indicators of Educational Deficits and Gaps as a Percentage of the Total Number of

Major Developmental Domains (Criteria)	Total Number of Indicators	Indicators of Educational Deficits and Gaps (%)
Emotional Development	8	2 (25%)
Social Interaction Development	8	7 (87,5%)
Cognitive Development	38	22 (58%)
Developing Positive Self-Esteem	8	4 (50%)
Stress resilience	8	7 (87,5%)

Indicators Across Major Developmental Domains (Initial Monitoring, April 2024).

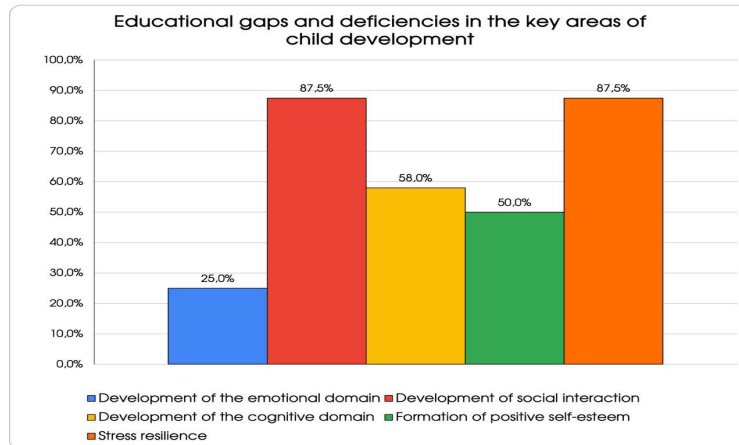


Diagram 1. Educational Deficits and Gaps Across Major Developmental Domains of the Child

At the initial monitoring stage, a correlation between the major developmental domains of older preschool children was established based on percentage indicators. The highest levels of deficits and gaps were observed in social interaction development and stress

resilience, both showing identical values (87.5%). These educational deficits are systemic and widespread, as children's lack of attendance at preschool institutions reduces opportunities for social interaction and play—the primary activity of early

childhood—which also negatively impacts cognitive development.

Low stress resilience is a significant educational loss, linked to frequent disruptions like air raid sirens, prolonged shelter stays, adult psychological instability, anxiety, separation from loved ones, and family losses. High stress levels can hinder neural connections, potentially causing long-term cognitive deficits. Chronic stress may reshape brain regions crucial for learning and memory, such as the hippocampus. In preschool children, low stress resilience can severely affect mental health, stressing the importance of supporting their psychological well-being.

The cognitive domain also indicates a high level of educational deficits and gaps—58%—due to the inability to spend sufficient time in a stimulating environment, progressing calmly and steadily with positive developmental momentum. The lack of attendance at preschool institutions reduces the structured educational experiences that promote the development of cognitive skills, language, mathematical concepts, and problem-solving abilities.

Among other domains, the formation of positive self-esteem has a moderate level of educational deficits and gaps at 50%, indicating significant issues related to the child's self-assessment potentially being undermined by a high-stress environment. In such contexts, self-esteem and self-efficacy

may decline. Additionally, the lack of time from adults to consistently acknowledge the child's achievements and strengths contributes to these deficits.

Educational gaps and losses in the emotional development domain are moderate (25%), indicating the child's capacity to adapt to challenging conditions and exhibit a wide range of emotions. Establishing the relationship between developmental indicators across major domains for older preschool children is crucial for understanding how these domains interact with one another, as child development is not isolated within specific domains.

This approach ensures that no domain is overlooked and that all aspects of the child's development are considered during the analysis.

Understanding specific areas where the child has deficits, such as in the domain of 'Cognitive Development' with the indicator 'Demonstrates low effectiveness in acquiring, remembering, and recalling information,' in correlation with the existing level of development in other domains, allows us to conclude that significant stress may impair the child's ability to focus, concentrate, and retain information. By closely monitoring all five domains, targeted strategies can be developed that not only address academic gaps but also contribute to overall personal development.

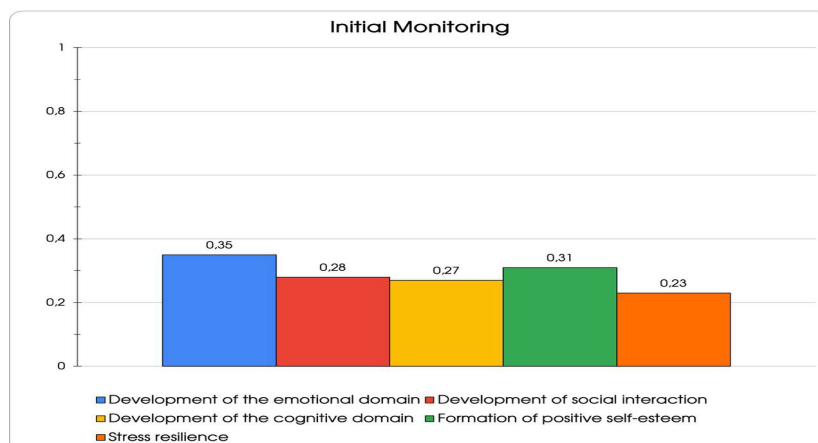


Diagram 2. Initial Monitoring

Preliminary data from the initial monitoring have enabled a clear identification of educational deficits and gaps. Based on the obtained statistical data, the highest

average indicators across Ukraine are observed in the emotional domain at 0.35% and in self-esteem formation at 0.31%. Comparable results are seen in cognitive

development at 0.27% and social interaction development at 0.28%. Indicators for stress resilience are lower compared to the others, at 0.23%.

Statistical indicators were calculated for the period of the initial monitoring (April 10, 2024). For each new child included in the initial monitoring stage, developmental indicators across major domains are established.

Analyzing the obtained data, it was considered that the development of older preschool children is not isolated within specific domains.

Understanding how the major developmental domains interact provides valuable insights into the overall development of the child and is practically significant for selecting strategies to address educational deficits and support the preservation of mental health. It was determined how delays in one domain can impact others, which allows for the development of more targeted and effective interventions, educational planning, and program development.

For instance, a child's language skills can significantly influence social interactions, and reducing stress levels can improve cognitive development. Gaps in cognitive skills can be minimized through the child's socio-emotional growth (Gross, et al., 2013).

Based on the obtained statistical data and qualitative analysis, strategies for addressing educational deficits and gaps were developed and implemented during the interim monitoring phase. Strategy for the Development and Implementation of an Alternative Preschool Education Format: '2 by 2'.

The strengths of the study lie in the systematic implementation of the strategies and measures we have identified within the framework of interim monitoring. This includes monthly tracking of the dynamics of reducing educational losses and gaps, enhancing psychological support, as well as overall progress in key developmental areas for older preschool children. The overall progress dynamics of older preschool children across developmental levels in key areas will be analyzed over the course of one month (from the end of June to the end of July 2024) at the interim monitoring stage

(Diagram 2). The data presented for this period represent the first phase of the interim monitoring, which is currently in the implementation stage and will continue until August 31, 2024.

The presented diagram 3 shows the progress in the development of older preschool children across five key areas at three levels: low, medium, and high. The qualitative indicators at each developmental level will be examined.

A low level (0-0.3) in children who have received low scores in key developmental areas is characterized by difficulties in recognizing patterns and understanding certain concepts. They face challenges in problem-solving and grasping cause-and-effect relationships. For example, they struggle with tasks such as counting, measurement, creative storytelling, and their outputs are often poorly detailed.

A medium level (0.4-0.7) in children who have received average scores in key developmental areas is characterized by moderate cognitive skills when solving specific tasks or problems. They demonstrate an understanding of subjects, objects, phenomena, and processes by identifying structural elements, though they still face certain difficulties. They show progress in areas such as memory, attention, and cognitive interest, although they have not yet reached an advanced level. For example, their language and communication skills, as well as mathematical and scientific concepts, generally develop steadily, and their ability to express thoughts and ideas improves.

A high level (0.8-1.0) in children who have received high scores in key developmental areas is characterized by a conscious understanding of subjects, objects, phenomena, and processes, with the ability to describe their elements and identify specific components. They demonstrate advanced cognitive skills, such as problem-solving, critical thinking, and logical reasoning. They act effortlessly and in various ways, showing creativity and imagination in their play and activities.

The percentage of children with a low level of emotional development has significantly decreased—from 34.2% at the beginning to 26.7% at the end. This indicates

an improvement with a reduction in the low level by 7.5 percentage points.

Medium Level:

June: 48.9%

July: 52.6%

The percentage of children with a medium level of emotional development increased from 48.9% to 52.6%, indicating growth.

High Level:

June: 17%

July: 20.7%

The high level increased by 3.7%, which is a positive shift. This trend reflects the advancement of children from the medium level to the higher level, reducing educational gaps.

The development of the cognitive sphere in older preschool children is observed through changes in the distribution of cognitive abilities and skills across three levels from the assessment at the end of June to the assessment at the end of July during the first stage of interim monitoring.

Low Level:

June: 33.7% July: 26.5%"

The percentage of children at the low level decreased from 33.7% to 26.5%. This indicates a significant improvement and reduction in educational gaps, as fewer children are now categorized at the lower level of cognitive development. The decrease of 7.2% suggests that some children who initially had a low cognitive level have moved to medium and high levels based on the final assessment results.

Medium Level:

June: 48.8%

July: 51.

The percentage of children at the medium level increased from 48.8% to 51.9%. The 3.1% increase indicates that more children have achieved or maintained a medium level of cognitive development. This rise may include children who moved from the low level to the medium level or those who remained at the medium level. Some children from the medium level have progressed to the high level.

High Level:

June: 17.5%

July: 21.7%

The percentage of children at the high level increased from 17.5% to 21.7%. This

4.2% increase is a positive trend, indicating that a significant number of children have reached a higher level of cognitive development.

The development of social interaction in older preschool children is observed through changes across three levels from the assessment at the end of June to the assessment at the end of July during the first stage of interim monitoring.

1. Low Level:

June: 34.6%

July: 28%"

The number of children with a low level of social interaction decreased by 6.6%. This indicates that some children who initially had a low level of social interaction improved their skills over the month, advancing to a higher level.

2. Medium Level:

June: 49%

July: 51.2%"

The medium level increased by 2.2%. This indicates a slight improvement, with most children maintaining a moderate level of social development. The fact that most children remain at this level suggests stability or a minor growth in social interaction skills and indicates a need for additional interventions.

3. High Level:

June: 16.4%

July: 20.8%"

The high level of social interaction development increased by 4.4%. This is a positive shift, as more children have reached a higher level.

The development of positive self-esteem in older preschool children is observed through changes across three levels from the assessment at the end of June to the assessment at the end of July during the first stage of interim monitoring.

Low Level:

June: 32.9%

July: 25.5%"

The percentage of children with low self-esteem significantly decreased from 32.9% to 25.5%, a reduction of 7.4%. This is a positive trend, indicating that fewer children have low self-esteem and that it has improved.

Medium Level:

June: 49.3%

July: 51.3%

49.3% to 51.3%. This indicates a slight shift of 2.2% towards the medium level, but it may also suggest stability within this group.

High Level:

June: 17.8%

July: 23.2%

The percentage of children with high self-esteem significantly increased from 17.8% to 23.2%. This indicates a positive shift in the development of self-esteem among these children."

The level of stress resilience in older preschool children is observed through changes across three levels from the assessment at the end of June to the assessment at the end of July during the first stage of interim monitoring.

Low Level:

June: 38.6%

July: 29.2%

The percentage of stress resilience levels showed a significant decrease from 38.6% to 29.2%, a reduction of 9.4%. This indicates an improvement in stress resilience and the effectiveness of the implemented measures.

Medium Level:

June: 46.6%

July: 51%

The percentage of children with a medium level of stress resilience increased from 46.6% to 51%, indicating a shift of a significant number of children from a lower to a medium level of stress resilience by 4.4%.

High Level:

June: 14.8%

July: 19.8%

The percentage of children with a high level of stress resilience increased from 14.8% to 19.9%, a rise of 5%. This indicates a positive trend, with more children developing a higher ability to cope with stress.

In conclusion, the data indicates that there have been significant and positive advancements across all developmental domains for older preschool children.

The most notable improvements are observed in the enhancement of children's stress resilience and significant positive changes in emotional development. These results may indicate the effectiveness of mental health support measures, which have improved stress resilience's impact on emotional development and positively influenced cognitive development. The observed improvements in social interaction underscore the importance of involving children in face-to-face preschool education. This, in turn, affects the formation of positive self-esteem and supports cognitive development through play and project-based activities, characterized by a high level of cooperation.

The final outcomes of the multi-level monitoring of developmental progress in older preschool children across key domains will be presented at the conclusion of the summative phase. These results will encompass a five-month research period, including additional aggregated data.

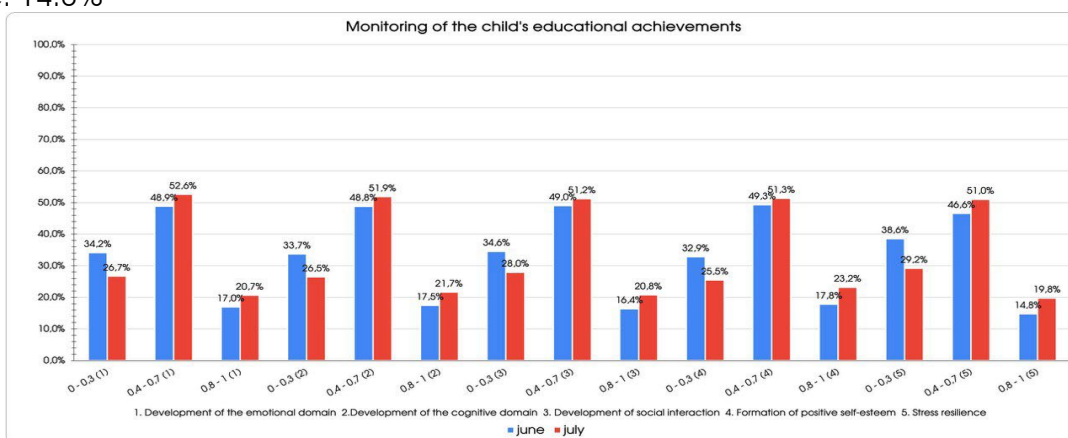


Diagram 3. Dynamics of Progress in Older Preschool Children Across Developmental Levels in Key Areas Over One Month (from the End of June to the End of July 2024) at the Interim Monitoring Stage

Table 4. Level 1 of the Multilevel Monitoring: 'Child Development Monitoring by Developmental Domains for Preschool Children.'

Components of Multilevel Measures for Implementing Strategies Monitoring

Initial Monitoring	<p>Establishing the initial developmental level of older preschool children in relevant domains, identifying educational deficits and gaps. Planning and making adjustments to the organization of educators' activities according to the identified needs of the children, and providing guidelines in the form of an educational pathway 'The Navigator' for preschool education at educational locations in the '2 by 2' format."</p>
Interim Monitoring: Individual Level	<p>Psychological support and regular assessment of positive developmental trends, as well as monitoring the dynamics of reducing educational deficits and gaps across developmental domains (emotional development, social interaction, cognitive development, formation of positive self-esteem, and stress resilience), to evaluate the effectiveness of the created conditions and psycho-pedagogical approaches. Documenting the results of observations on psycho-emotional manifestations, behavior, interaction, and educational activities of children. Collecting portfolios for each child—creative works and achievements on a monthly basis—to track progress and identify areas needing improvement.</p> <p>Application of a System of Measures to Address Educational Deficits and Gaps:</p> <p>Identify potential sources of stress factors that may impact mental health.</p> <p>Assess the level of risk after identifying potential sources of stress.</p> <p>Evaluate stress coping mechanisms and their effectiveness in specific situations.</p> <p>Observe children's behavior in various contexts.</p> <p>Review the educational environment and available resources for providing psychosocial support.</p> <p>Adjust the individual educational pathway according to identified trends.</p> <p>Apply adaptations and modifications to teaching methods, developmental environments, etc., as needed.</p> <p>Update outdated or lost play and didactic materials using own resources and financial support from UNICEF (e.g., provision of laptops, play sets, shelter equipment, materials for gross and fine motor development).</p> <p>Implement flexible timing to compensate for missed learning stages, address previous developmental stages, and reinforce knowledge, skills, and abilities.</p> <p>Allow more time for information absorption and understanding.</p> <p>reinforce the skills acquired by children within the family environment in a format acceptable to parents, so that through collaboration with educators and joint efforts, educational deficits and gaps can be reduced by applying consistent strategies.</p>
Interim Monitoring: Group Level	<p>Monitoring the collective progress and dynamics of children within a group entails a systematic evaluation of how the physical and social environment facilitates cognitive activity and development. This process includes assessing the overall performance and participation of the</p>

group (or subgroups) in various activities to establish levels of social engagement, free play, and peer cooperation (Kosenchuk, 2023). Based on the results obtained, addressing educational deficits and gaps requires:
 Adapting the educational environment to address identified deficits and gaps within group activities.
 Enhancing cooperative activities to improve social engagement and interaction.
 Optimizing resources and equipment to increase physical activity and support the development of both gross and fine motor skills (Kosenchuk, 2024).

Table 5. Level 2 of the Multilevel Monitoring System: "Organizational and Methodological Monitoring.

Strategy Name	Components Multilevel Monitoring	of Measures for the Implementation of Strategies
Strategy for Organizational-Methodological and Psychological Support for Educators in Maintaining and Preserving Children's Mental Health in Crisis Conditions.	for Organizational Monitoring and Professional Development of Educators Adapted to Crisis Conditions	Implementation of organizational monitoring by regional coordinators, including the examination of regulatory and legal frameworks; arrangement of the environment; organization of communication between educators and parents; and the educator's system of working with children, which affects the effectiveness of addressing educational losses and gaps. Organization of training webinars and intervision groups for discussing case studies from educators' experiences with specialists in early childhood development and the preservation of children's mental health, including participation by medical professionals. Training in the application of alternative methods for organizing the educational process, taking into account circumstances induced by the crisis, such as the fact that some level of stress is normal and can be beneficial, whereas excessive stress may inhibit a child's development. Monitoring feedback based on the analysis of the dynamics of overcoming educational losses and gaps, with the possibility of additional interventions aimed at fostering resilience through positive experiences and supportive relationships. Emergency preparedness training for various scenarios, including the evacuation of children to shelters, and the enhancement of knowledge in trauma-informed pedagogy (Vaaranen-Valkonen et al., 2022). Psychological support for educators, providing them with tools necessary for managing stress (Kosenchuk, & Tarnavska, 2023).
Strategy for Designing the Educational Process in the Context of Alternative Childhood Education Formats in the '2 by 2' Model.	Substantive Educational Process Early Organization Considering Analytical Data.	The Navigator, developed as part of the project, is an innovative, flexible model for planning and organizing the educational process for older preschool age, considering educational losses and gaps. The integrated approach to planning various forms of work—such as learning through play, implementing project-based and research activities, and focusing on

		<p>emotional and social development—is crucial for compensating educational losses, reducing gaps, and promoting active child development in crisis conditions. The organization of thematic meetings in the form of projects or quests allows for the simultaneous development of motor, logical-mathematical, and linguistic competencies, among others, within a limited timeframe.</p> <p>The implementation of activities—whether individual, group, or specially organized during free activities—is guided by the variable system of the Navigator.</p>
<p>Strategy for Substantive Compensating for Component Interrupted Organizing Educational Processes with Parents. and Short-Term Absences Through Interaction with Parents.</p>	<p>Active Involvement of Parents in Children's Learning of and Support at Home Using Materials from the Work'Navigator.'</p> <p>Cyclical Meetings Between Educators and Parents to Extend Home Education as a Compensatory Mechanism for Addressing Short-Term Absences of Children from Educational Settings.</p> <p>Online Support for Parents Through Thematic Webinars and the Operation of a Telegram Channel 'Interaction: Daily Steps Towards Shared Joy.'</p>	

Table 6. Level 3 of Multi-Level Monitoring 'Assessment of the Educational Environment Using the ECERS-3 Methodology.

Strategy Name	Components of Level Monitoring	Multi-Measures for the Implementation of Strategies
<p>Strategy for Restoring Educational Space Resources to Ensure Opportunities for Holistic Development of Preschool Children in Both Structured and Free Activities.</p>	<p>Assessment of the Educational Environment Using the ECERS-3 Methodology</p>	<p>Assessment by Regional Experts of the Quality of the Educational Environment Using the ECERS-3 Methodology (space and furnishings; personal care routines; language and literacy; types of educational and cognitive activities; interactions; program structure) with the aim of improving educational space resources to minimize educational losses and gaps (Harms et al., 2020).</p>

Practical value

The findings of this study hold practical significance for developing procedures to identify educational losses and gaps for each preschool child using specific methods and tools.

Additionally, the practical value lies in the validation of strategies for supporting and maintaining mental health, which are crucial not only for addressing educational losses and gaps but also for mitigating the effects of high stress, enhancing overall well-being, resilience, and the socialization processes of children.

Limitations and Future Directions

"The study may face limitations due to the escalation of military activities, which can impede the organization of the educational process and potentially slow progress in specific areas of child development.

Research conducted under crisis conditions frequently encounters issues related to limited funding and resource shortages, which can impact the scope and quality of the research.

Implementing the results of the monitoring in practice may pose a significant challenge during a crisis, as it requires the prioritization of key areas.

Future research should be longitudinal, tracking how the state of mental health in preschool children, beginning at the onset of a crisis, influences their subsequent development and growth.

Conclusions

The implementation of multi-level monitoring within the framework of the project 'Improving Access to Early Childhood Education Services in Emergency Situations and Early Recovery in

Ukraine' enhances the methodology and adapts it to changing conditions. This advancement supports the development of a team of researchers, monitoring experts, early childhood to expand into more intricate research areas.

Multi-level monitoring, grounded in a detailed and comprehensive approach, is crucial for the precise identification of educational losses and gaps in key developmental areas for older preschool children—namely, emotional development, social interaction, cognitive development, positive self-esteem, and stress resilience. The data obtained are used to delineate the specifics of support and preservation of mental health.

The implementation strategy of an alternative form of preschool education in the '2 by 2' format demonstrated that when the lack of full-time attendance at institutions is compensated by children attending educational locations twice a week for three hours, it significantly improves their social interaction, self-expression abilities, and stress resilience.

Understanding the interrelationships between developmental domains, for example, the influence of the emotional sphere on cognitive development, and the impact of increased general motor activity, along with the use of relaxation exercises on mental health, enhances children's resilience to stress.

The implementation of strategies aimed at supporting and preserving mental health, based on the results of multi-level monitoring, facilitates a better understanding of the needs of preschool children and their parents in areas close to military actions, as well as in more distant regions that remain under constant threat of bombings.

These efforts contributed to the development of targeted interventions for systematic psychological and pedagogical

support, as well as the design of optimized programs for preschool children's development. Such programs have been successfully tested and implemented within the framework of the Project (Kosenchuk, & Tarnavska, 2024a; Kosenchuk, & Tarnavska, 2024b).

Education specialists, ECERS-3 experts, and regional coordinators, equipping them to address complex challenges and issues in the field of early childhood education in Ukraine and

The study's results may have long-term implications, potentially leading to the renewal of educational practices, adapting them to crisis conditions, and developing a set of measures to support children's mental health in challenging circumstances. These efforts aim to overcome the effects of the crisis and contribute to building a more inclusive society.

Conflict of interest

The authors declare no conflict of interest.

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