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Adaptation of Preschool Children with Special Educational Needs to an Inclusive Environment Through Games: A Systematic Review

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 September 2025 and was last updated on 14 September 2025.

INTRODUCTION

Review question / Objective This systematic review aims to investigate the effectiveness of using play-based practices as a means of adapting preschool children with special educational needs to an inclusive educational environment. Research question: What play-based practices demonstrate effectiveness in adapting children with special educational needs to an inclusive environment?

Rationale The adaptation of preschool children with special educational needs to an inclusive educational environment represents a complex process of gradual adjustment of children with developmental disabilities to conditions of shared learning and education with neurotypical peers. Adaptive mechanisms in children with special

educational needs are characterized by increased complexity and require specialized pedagogical strategies that consider individual characteristics of cognitive, sensory, and socio-emotional development.

The research problem lies in the existence of an objective contradiction between the growing need for evidence-based approaches to adapting preschool children with special educational needs to an inclusive environment and the insufficiency of systematized analysis of global experience in applying play-based practices in this field.

Condition being studied We are examining the impact of play-based practices on the adaptation of preschool children with special educational needs in inclusive educational environments. Specifically, we focus on research that describes, studies, or investigates the application features of

various types of play activities on the processes of social, emotional, and cognitive adaptation of children with diverse developmental disabilities across various sociocultural and institutional contexts on an international scale.

METHODS

Search strategy For conducting this systematic review, scientometric databases Web of Science, Scopus, and Google Scholar were utilized. The selection of these databases is justified by their unique indexing characteristics and ability to ensure maximum coverage of relevant scientific literature. Web of Science represents a selective bibliographic platform with the most stringent publication quality criteria, providing access to high-impact research. Scopus is distinguished by the broadest geographical and linguistic coverage of indexed sources, including European, Asian, and Latin American publications. Google Scholar serves the function of covering regional publications and research that are not represented in international indexes.

Keywords for the search include "kindergarten adaptation", "preschoolers with special educational needs", "inclusive environment", and "play-based interventions". The search is conducted across Abstract, Title, and Keywords fields in the databases. The chronological framework of the study covers the period from 1975 to 2025. Selective criteria include publication type "Review Article" and thematic category "Education Educational Research." Language restrictions are not applied in the material selection process.

Participant or population The participants of this review are preschool children aged 3 to 6 years with special educational needs. This review considers various nosological groups, including children with attention deficit hyperactivity disorder, severe speech impairments, visual impairments, autism spectrum disorders, developmental delays, musculoskeletal disorders, and hearing impairments.

Intervention Interventions include various play-based practices as means of pedagogical intervention in the context of adapting children with special educational needs to an inclusive environment. Play activity is considered the leading type of activity in preschool age, during which intensive development of mental functions and mastery of social relationships occurs. Interventions encompass structured play programs, socially-mediated play activities involving neurotypical peers, games for developing

executive functions, developmental games for forming creativity skills, group communication and adaptation, specially designed games for developing inhibition skills, working memory and motor coordination, as well as play-based methodologies with systematic involvement of parents and educational professionals.

Comparator Comparison is conducted with standard adaptation programs of preschool institutions without play components or with natural adaptation without structured play interventions. Control conditions represent traditional approaches to adapting children with special educational needs that do not include purposeful application of play-based practices.

Study designs to be included Not reported.

Eligibility criteria Empirical studies examining the phenomenon of kindergarten adaptation, focusing on preschoolers with special educational needs in inclusive educational environments with the application of play interventions, are included. Works published in peer-reviewed scientific journals during the period 1975-2025 are considered, regardless of research methodology, including qualitative, quantitative, or mixed methods. Study participants must be exclusively preschool children with special educational needs undergoing adaptation in an inclusive educational environment, without restrictions on type of developmental disorder, language of instruction, or form of educational organization.

Studies of gray literature are excluded, including unpublished dissertations on play therapy without peer review, technical reports from educational institutions on play program implementation, and methodological recommendations from ministries of education on inclusive practices. The category of inappropriate study participants encompasses research involving school-age children, adults with disabilities in educational programs, neurotypical preschoolers without special educational needs, as well as children with severe multiple disabilities requiring specialized medical support. Inappropriate central research phenomena include works focusing on academic readiness without emphasis on adaptation, pharmacological treatment of behavioral disorders, family counseling without play components, and traditional pedagogical methods without the use of play technologies. Inappropriate research settings represent studies conducted in specialized correctional institutions, home environments without peer participation, clinical rehabilitation centers, and private therapeutic offices that do not

meet the criteria of an inclusive educational environment.

Information sources The primary sources for the systematic review are Web of Science, Scopus, and Google Scholar databases. Only empirical peer-reviewed articles from scientific journals examining the impact of play practices on the adaptation of preschool children with special educational needs to an inclusive environment are included. Conceptual and review studies, as well as gray literature, are excluded. The combined use of platforms ensured methodological rigor through the inclusion of high-quality international research while simultaneously guaranteeing comprehensive coverage through access to regional sources, minimizing the risk of systematic selection bias and enhancing the representativeness of systematic analysis results.

Main outcome(s) The primary outcome measured in this study is the effectiveness of play practices in adapting preschool children with special educational needs to an inclusive environment. Measurement was conducted through assessment of improvement in social skills and communicative abilities, development of executive functions including attention, working memory and inhibition abilities, reduction in anxiety levels and behavioral problems, enhancement of overall adaptive potential, improvement in quality of interaction with neurotypical peers, as well as development of emotional regulation and self-control skills. It is expected that the conclusions of this systematic review will identify specific play interaction strategies that significantly contribute to enhancing the effectiveness of adaptation processes, determine optimal models of socially-mediated play activities involving neurotypical peers and significant adults, and provide evidence-based recommendations for individualizing play approaches for various categories of children with special educational needs.

Additional outcome(s) Not reported.

Data management All data are stored in a specialized Excel database created by the authors with systematic division by thematic categories and key research characteristics. The process of publication selection and analysis was conducted by two independent researchers using standardized assessment procedures. For each publication, bibliographic data, methodological research characteristics, demographic parameters of participants, detailed description of types of play interventions, measured variables, and main results with conclusions were recorded.

Disagreements in assessing publication relevance and the data extraction process were discussed by the entire research team until consensus was reached. To ensure reliability and reproducibility of the selection process, a standardized data extraction form was used, including predetermined criteria and analysis categories. The status of each publication was documented with detailed indication of reasons for inclusion or exclusion.

Quality assessment / Risk of bias analysis To minimize bias, a team of four researchers strictly adhered to a predetermined protocol for studying the impact of play practices on adaptation of children with special educational needs. The quality of included studies was assessed using the Joanna Briggs Institute checklist, which demonstrates versatility in evaluating qualitative, quantitative, and mixed methodological approaches. The JBI checklist consists of 10 criteria, each assessed using categories of "Yes," "No," "Unclear," or "Not applicable." The assessment process was conducted independently by two experts with subsequent collegial resolution of discrepancies.

The research question was formulated using the structured PICO framework, where the population is represented by preschool children with special educational needs, intervention includes play practices, comparison element consists of natural adaptation without special play programs, and outcome is defined as successful adaptation to an inclusive educational environment. The research team follows recommendations outlined in the PRISMA guidelines for systematic reviews and meta-analyses. All disagreements regarding inclusion or exclusion of studies, as well as their qualitative analysis, were discussed collectively by the group until full consensus was reached.

Strategy of data synthesis Studies selected for review and analysis were examined using a narrative synthesis approach. Initially, descriptive analysis is conducted for systematic comparison of play practice characteristics and their application in various research contexts. Summary tables were used for structured presentation of key information, including study design, demographic characteristics of participants, types and duration of play interventions, applied research instruments, and measured adaptation outcomes.

Subsequently, thematic analysis of included studies was implemented with systematic coding according to the following analytical categories: types of special educational needs and their specific characteristics, classification of play intervention types and their theoretical foundations, organizational conditions including

group and individual formats, degree and nature of participation by parents and educational professionals, temporal parameters including duration and intensity of play interventions, as well as the spectrum of measured adaptation process outcomes and their operational definitions.

This synthesis methodology ensured comprehensive understanding of the effectiveness of various play approaches for adapting children with special educational needs and forms a scientific foundation for developing evidence-based recommendations for applying play practices in inclusive educational environments.

Subgroup analysis Not reported.

Sensitivity analysis Not reported.

Language restriction Not reported.

Country(ies) involved Kazakhstan.

Keywords "kindergarten adaptation", "preschoolers with special educational needs", "inclusive environment", and "play-based interventions".

Dissemination plans This systematic review is planned to be published in a high-ranking peer-reviewed international scientific journal. The research results will be presented to university faculty, preschool education specialists, researchers in the field of inclusive education in Kazakhstan, as well as to the international scientific community through participation in relevant conferences and seminars.

The review will make a significant contribution to the development of evidence-based approaches to adapting children with special educational needs in inclusive environments, forming effective play practices in preschool education, as well as training educators in the field of special pedagogy and inclusive education. The methodology for conducting the systematic review will be integrated into professional development programs for higher education institution staff and preschool education practitioners.

Contributions of each author

Author 1 - Kerimbayeva Rysty - Kerimbayeva Rysty conducted research conceptualization, developed theoretical foundations of the systematic review, formulated the research question, and participated in writing the systematic review protocol.

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Author 2 - Aigul Syzdykbayeva - Syzdykbayeva Aigul served as the corresponding author, provided

methodological guidance for the research, conducted meta-synthesis of data, coordinated manuscript preparation, and provided overall leadership of the research project.

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Author 3 - Makhabbat Ospanbayeva - Ospanbayeva Makhabbat conducted selection of publications from databases, performed independent expertise of selected publications, participated in data analysis and quality assessment of studies.

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Author 4 - Yulduz Iminova - Iminova Yulduz performed independent expertise of selected publications, conducted quality assessment of included studies, participated in resolving disagreements during study selection, and managed the formatting of the bibliographic apparatus.

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