

Review article

Mapping Psychological Resilience in Early Childhood: A Bibliometric Analysis of Research Trends

İlayda Gürsoy Kızılaslan ^{a, *}

^a Department of Preschool Education, Faculty of Education, Canakkale Onsekiz Mart University, Çanakkale, Türkiye.

Abstract

The aim of this study is to examine the thematic structure and research trends of studies on psychological resilience in early childhood through a bibliometric approach. For this purpose, studies indexed in the Web of Science (WoS) Core Collection database were analyzed based on keyword co-occurrence analysis. In line with the inclusion criteria, a total of 58 articles were included in the analysis. A bibliometric science mapping approach was adopted, and VOSviewer software was used during the analysis process. The findings reveal that research on psychological resilience in early childhood is structured around five main thematic clusters. These clusters were identified as adverse childhood experiences and protective factors, resilience–stress–trauma processes, adolescence and psychological outcomes, mental health and social support systems, and child-focused studies. The network structure indicates that the concept of “resilience” occupies a central position in the field and is strongly connected to both risk factors and protective mechanisms. Temporal analysis findings suggest that earlier studies predominantly focused on risk and trauma, whereas more recent research has increasingly emphasized mental health, social support, and positive developmental experiences. The density analysis further demonstrates that resilience serves as the primary focal point in the literature, around which various thematic domains are organized. In conclusion, research on psychological resilience in early childhood has evolved toward a more comprehensive and developmentally oriented perspective over time. Accordingly, future studies are recommended to place greater emphasis on protective factors and intervention-based approaches.

Keywords: Resilience, Early Childhood, Bibliometric Analysis, Vosviewer.

Received: 30 April 2026 * **Accepted:** 20 May 2026 * **Published:** 25 September 2026

* Corresponding author:

İlayda Gürsoy Kızılaslan is a Dr. in the Department of Preschool Education at Canakkale Onsekiz Mart University in Çanakkale, Türkiye. Her research interests include the Early Childhood Education. She has lived, worked, and studied in Çanakkale, Türkiye.
Email: ilaydagursoy@comu.edu.tr

INTRODUCTION

Early childhood represents a critical developmental period during which children's cognitive, social-emotional, and behavioral capacities undergo rapid and foundational change. During these formative years, children not only acquire basic academic and interpersonal skills, but also begin to develop the ability to cope with stress, transitions, frustration, peer interactions, and various environmental challenges. Within this context, psychological resilience is conceptualized as the capacity of the child to adapt positively and maintain developmental progress despite exposure to adversity, risk, or unfavorable life conditions (Masten et al., 2021; Ungar, 2021). Contemporary perspectives emphasize that resilience should not be viewed as a fixed individual trait; rather, it is understood as a dynamic, developmental, and multisystemic process shaped through ongoing interactions among the child, family, educators, school environment, and broader social context (Masten et al., 2021; Ungar & Theron, 2020).

The development of psychological resilience in early childhood is closely intertwined with social-emotional competencies. Skills such as recognizing, expressing, and regulating emotions play a crucial role in enabling children to respond more adaptively to challenging situations. Empirical evidence indicates a significant and positive association between emotional competence and resilience among preschool children, with emotional understanding and regulation emerging as key contributors to resilience development (Chen et al., 2021). In a similar vein, self-regulation abilities in early childhood have been identified as important predictors of later resilience-related outcomes (Robson et al., 2020).

Early childhood education settings constitute an essential protective context for fostering resilience. High-quality early learning environments can support children in forming secure relationships, receiving emotional support, and developing effective coping strategies. For instance, the "Roots of Resilience" professional development program for early childhood educators has been shown to enhance children's protective factors by strengthening teacher practices (Lipscomb et al., 2021). In addition, the quality of teacher-child relationships has been highlighted as a significant factor influencing children's stress regulation and adaptive functioning (Jeon et al., 2021).

Recent research has expanded its focus beyond classroom-based social-emotional learning interventions to include alternative early childhood environments, such as nature-based education. Comparative studies indicate that nature-based preschool experiences may contribute positively to resilience-related protective factors, including initiative, self-regulation, and attachment (Ernst et al., 2021). Furthermore, studies conducted in the context of the COVID-19 pandemic suggest that resilience in early childhood has become increasingly critical under conditions of uncertainty, with family-child interactions playing a central role in supporting adaptive outcomes (Prime et al., 2020).

Despite the growing body of research, there remains a limited number of studies that comprehensively examine the thematic structure of psychological resilience research in early childhood. Existing studies tend to focus on specific dimensions such as emotion regulation, social-emotional

learning, teacher support, trauma-informed practices, or nature-based education, rather than providing an integrative overview of the field. Therefore, identifying research trends, key concepts, and thematic clusters through bibliometric methods is essential for advancing the understanding of this domain. In this regard, the present study aims to analyze research on psychological resilience in early childhood indexed in the Web of Science database, with the goal of revealing the thematic structure, developmental trends, and potential research gaps in the field.

Aim of the Study

The primary aim of this study is to examine the thematic structure and research trends of studies on psychological resilience in early childhood through a bibliometric approach. In line with this aim, publications indexed in the Web of Science database were analyzed using keyword co-occurrence analysis in order to identify the main research themes, conceptual relationships, and emerging areas within the field.

More specifically, the study seeks to (i) reveal the evolution of research on psychological resilience in early childhood, (ii) identify the most influential authors, countries, and sources contributing to the literature, and (iii) map the thematic clusters that shape the intellectual structure of the field. By providing a comprehensive overview of the existing body of knowledge, this study aims to contribute to a deeper understanding of current research directions and to highlight potential gaps for future studies.

METHOD

Research Design

This study employed a bibliometric analysis approach to examine the thematic structure and research trends in studies on psychological resilience in early childhood. Bibliometric analysis is a systematic method that enables the quantitative and visual examination of scientific production within a specific research field. It is widely used to identify publication trends, key research actors, conceptual relationships, and the intellectual structure of scientific domains (Donthu et al., 2021; Aria & Cuccurullo, 2017). In bibliometric studies, performance analysis and science mapping techniques are often used in combination; while performance analysis evaluates productivity at the level of publications, citations, authors, countries, and sources, science mapping reveals the conceptual and structural relationships within the research field (Donthu et al., 2021).

Data Collection Process

The data used in this study were retrieved from the Web of Science (WoS) Core Collection database. WoS is one of the most commonly used databases in bibliometric research, allowing for the retrieval of interdisciplinary scientific publications and the export of bibliographic data for further analysis (Donthu et al., 2021). In this study, the search was conducted within the “Topic” field of the

WoS database. The keywords “resilience,” “psychological resilience,” and “emotional resilience” were combined with “child,” “early childhood,” “preschool,” and “kindergarten.”

The initial search yielded a total of 591 publications. To ensure consistency and relevance, several inclusion criteria were applied. Only articles published in English between 2016 and 2026 were included in the analysis. In addition, studies were limited to those indexed under the “Education Educational Research” category. Based on these criteria, the final dataset consisted of 58 articles.

Data Analysis

A bibliometric science mapping approach was used to analyze the collected data. To identify the conceptual structure of research on psychological resilience in early childhood, a keyword co-occurrence analysis was conducted. This technique is effective in revealing how frequently concepts appear together and how they are structurally related within a research field (Donthu et al., 2021). The analysis was carried out using VOSviewer software, which is a widely used tool for constructing, visualizing, and analyzing bibliometric networks (van Eck & Waltman, 2010). In this study, author keywords were used as the primary unit of analysis, and only those exceeding a predefined minimum occurrence threshold were included. Based on the resulting network visualizations, thematic clusters were identified and interpreted to reflect the prevailing research trends in the field.

RESULTS

In this study, a keyword co-occurrence analysis was conducted to reveal the conceptual structure of research on psychological resilience in early childhood. The resulting network structure provides a visual representation of the relationships among key concepts in the field, as well as prevailing research trends. The findings indicate that the examined studies are concentrated around specific thematic clusters, which are interconnected within the overall network. In the network map, the size of the nodes reflects the frequency of concept usage, while the links between nodes represent the strength of relationships among concepts. Additionally, the colors indicate groups of concepts that are more strongly connected, representing distinct thematic clusters.

Accordingly, the results demonstrate that research on psychological resilience in early childhood is structured around five main thematic clusters. The network structure derived from the keyword co-occurrence analysis is presented in Figure 1.

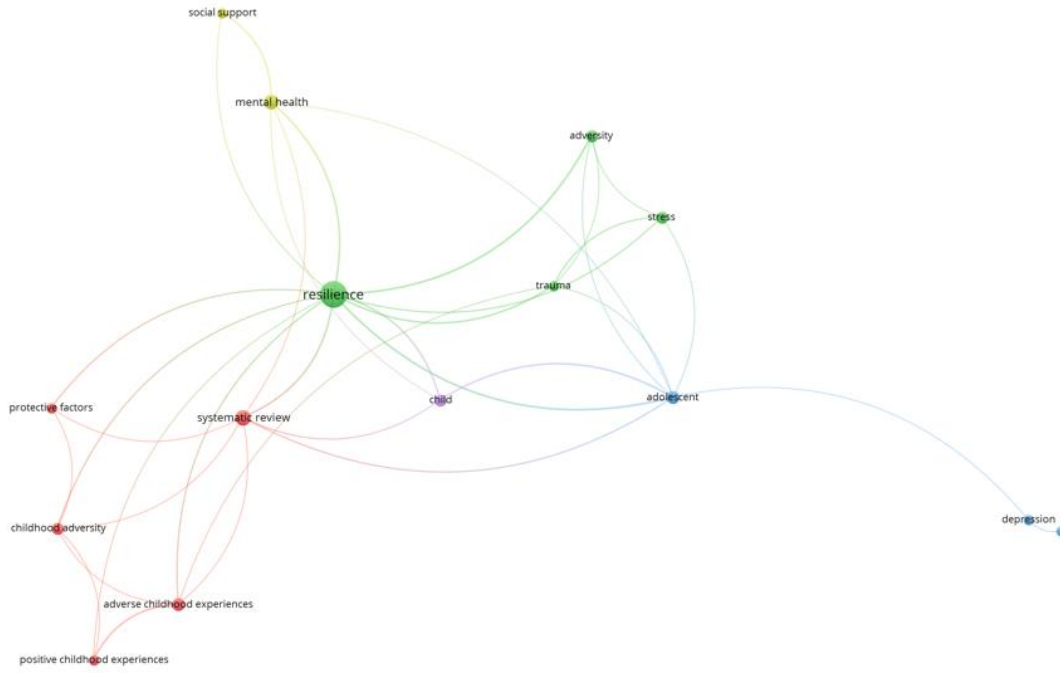


Figure 1. Co-occurrence Network and Thematic Clusters of Research on Psychological Resilience in Early Childhood

The first cluster (red) is primarily organized around the theme of adverse childhood experiences and protective factors. This cluster includes concepts such as “adverse childhood experiences,” “childhood adversity,” “positive childhood experiences,” “protective factors,” and “systematic review.” This structure indicates that resilience has been extensively examined in relation to risk factors in the literature, with particular emphasis on protective mechanisms developed in response to adverse early life experiences. The presence of the term “systematic review” within this cluster further suggests that synthesis-based studies are gaining increasing attention in this area.

The second cluster (green) is associated with resilience, stress, and trauma processes. This cluster includes the concepts “resilience,” “adversity,” “stress,” and “trauma.” The prominence of these terms indicates that resilience is frequently studied in direct relation to risk and trauma, often focusing on individuals’ capacity to cope with stress. The central positioning of this cluster within the network also suggests that the field is conceptually structured around the relationship between risk and resilience.

The third cluster (blue) is organized around adolescence and psychological outcomes. It includes the concepts “adolescent,” “depression,” and “meta-analysis.” This pattern indicates that resilience processes originating in early childhood are often linked to mental health outcomes during adolescence, particularly in relation to depression. The inclusion of “meta-analysis” also highlights the presence of quantitative synthesis studies within this line of research.

The fourth cluster (yellow) relates to mental health and social support systems. The key concepts within this cluster are “mental health” and “social support.” This finding suggests that resilience is not

only conceptualized as an individual capacity but is also examined within the broader context of social support mechanisms and psychological well-being. The strong connections between social support and resilience further emphasize the importance of environmental and relational factors.

The fifth cluster (purple) represents child-focused studies. This cluster includes only the concept “child,” indicating that research centered on child samples occupies a central position in the literature, while remaining conceptually integrated with other thematic domains.

Figure 2 presents the temporal distribution of keywords related to research on psychological resilience in early childhood.

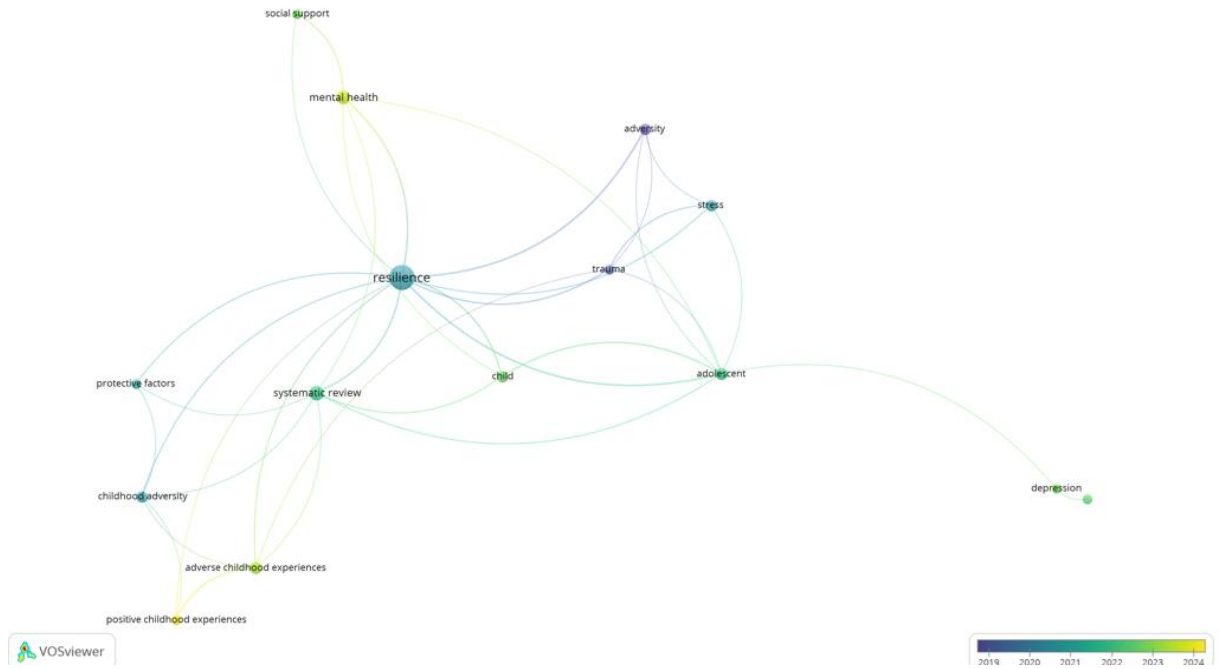


Figure 2. Temporal distribution of studies

Figure 2 illustrates the temporal distribution of keywords related to research on psychological resilience in early childhood using an overlay visualization technique. The color scale represents the average publication year of the concepts, where blue tones indicate earlier studies, green tones represent the intermediate period, and yellow tones correspond to more recent research. An examination of the findings shows that the concepts “adversity,” “trauma,” and to some extent “stress” are represented in darker colors, indicating that these topics were more prominently addressed in earlier studies. This suggests that resilience research initially focused largely on risk factors and adverse life experiences.

In contrast, the concepts “mental health,” “social support,” and “positive childhood experiences” appear in lighter, yellowish tones, indicating that these topics have gained prominence in more recent studies. This shift suggests that the research field has gradually moved beyond a purely risk-oriented perspective toward a more comprehensive framework that also incorporates mental health, social

support systems, and positive developmental experiences. Furthermore, the concept of “systematic review” is also associated with relatively recent tones, indicating an increase in studies aimed at synthesizing accumulated knowledge in the field. This trend suggests that research on psychological resilience in early childhood has reached a certain level of maturity and is increasingly being examined through comprehensive and integrative approaches.

On the other hand, the concept of “resilience” is positioned at the center of the network and is represented by mid-to-recent color tones. This indicates that resilience has remained a consistent focal point of research over time while continuing to maintain its relevance in contemporary studies. Overall, the temporal distribution findings demonstrate that research on psychological resilience in early childhood has evolved from a primary focus on risk and trauma toward a broader, developmentally informed perspective that integrates mental health, social support, and positive developmental processes. Figure 4 presents the density map of research on psychological resilience in early childhood.

In summary, the findings in the first unit reveal that thinking comes to the fore with the themes of critical, creative, and caring thinking through the conceptual framework of thinking, the distinction of thinking types, and self-efficacy components, and that the unit also addresses the act of thinking as a critical and value-oriented responsibility (caring).

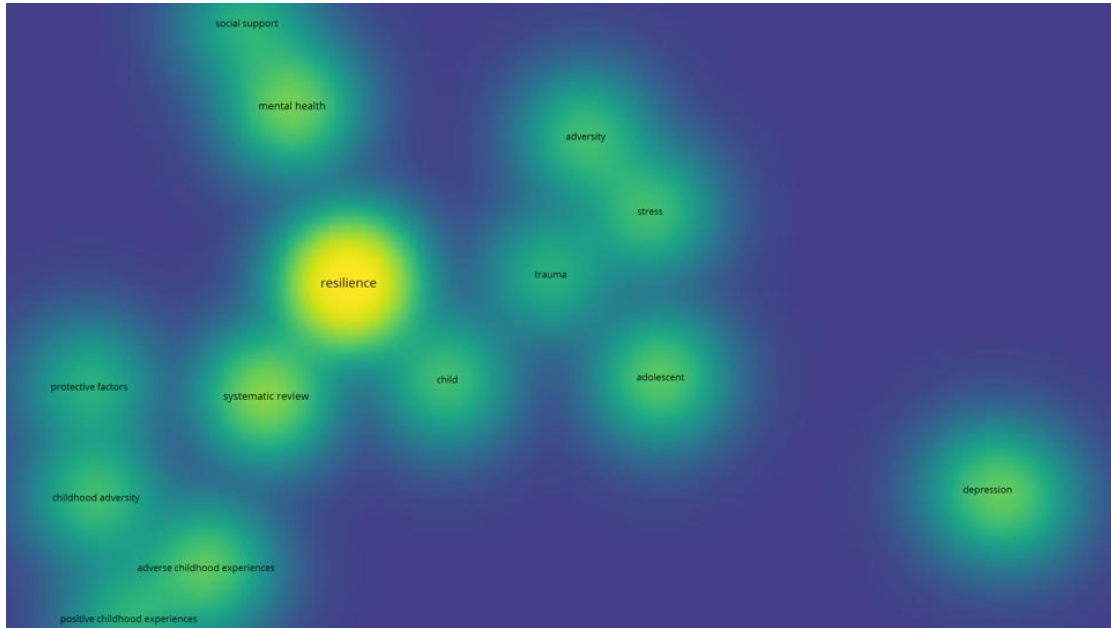


Figure 4. Density map of research on psychological resilience in early childhood

Figure 4 presents the keyword density distribution of studies on psychological resilience in early childhood. The density visualization highlights the intensity levels of key concepts and reveals the conceptual centers of gravity within the field. In the figure, yellow tones represent high-density areas, green indicates moderate density, and blue corresponds to low-density regions. The findings clearly show that the concept of “resilience” has the highest density and is centrally positioned within the research field. This indicates that resilience constitutes the primary focal point in the literature, around

which other concepts are organized. It is also notable that the concepts “systematic review” and “child,” located in close proximity to “resilience,” form relatively high-density clusters. This suggests that the literature is characterized both by studies focusing on child populations and by synthesis-based research aiming to provide comprehensive overviews of the field.

An examination of concepts at a moderate density level reveals two main thematic axes. The first axis is formed by “adversity,” “stress,” and “trauma,” representing risk factors and adverse life experiences. The close positioning and similar density levels of these concepts indicate that a substantial portion of resilience research is grounded in a risk-oriented framework.

The second axis consists of “mental health” and “social support,” reflecting a focus on psychological well-being and support systems. The presence of these concepts in moderate-to-high density regions suggests that resilience is increasingly examined not only in relation to risk, but also in connection with individuals’ psychological well-being and their social environments. In lower-density regions, concepts such as “protective factors,” “childhood adversity,” “adverse childhood experiences,” and “positive childhood experiences” are observed. This pattern suggests that, although these topics are present in the literature, they are addressed in a more limited number of studies or represent more specialized subfields.

Similarly, the concepts “adolescent” and “depression” are located in relatively low-density areas. This finding indicates that, while resilience research is primarily situated within the early childhood context, some studies extend the analysis to developmental trajectories, linking early resilience processes to adolescent mental health outcomes; however, this line of inquiry appears to be less extensively explored.

Overall, the density map findings demonstrate that the concept of resilience occupies a central position in early childhood research, with interconnected thematic domains—including risk factors, mental health, social support, and developmental processes—organized around this core construct.

DISCUSSION

The findings of this study reveal that research on psychological resilience in early childhood is characterized by a multidimensional conceptual structure, in which resilience is addressed through both risk-related and protective processes. The co-occurrence network clearly positions “resilience” at the center of the field, functioning as a connecting node across different thematic clusters. This centrality supports contemporary perspectives that conceptualize resilience not as a fixed individual trait, but as a dynamic and multisystemic process shaped through interactions among various ecological systems (Masten et al., 2021; Ungar & Theron, 2020).

At the same time, the results indicate that a substantial portion of the literature remains grounded in risk-oriented frameworks. The strong associations observed between resilience and concepts such as “adversity,” “trauma,” and “stress” suggest that resilience is frequently examined in the context of

individuals' responses to challenging or adverse life conditions. This pattern is consistent with prior research emphasizing the role of exposure to risk in shaping adaptive processes and developmental outcomes (Prime et al., 2020; Masten et al., 2021). However, the findings also point to a noticeable shift beyond a purely deficit-focused perspective. The prominence of terms such as “mental health” and “social support” within both the network and density analyses indicates an increasing emphasis on protective mechanisms and well-being-oriented approaches. This suggests that resilience is progressively being understood in relation to supportive environments and positive developmental resources, rather than solely as a response to adversity. Such a shift aligns with recent work highlighting the importance of social contexts and relational support systems in fostering resilience (Ungar, 2021; Jeon et al., 2018).

The temporal analysis further reinforces this evolving orientation within the field. The overlay visualization demonstrates that earlier studies were more closely associated with risk-related constructs, particularly “adversity” and “trauma,” whereas more recent publications tend to emphasize “mental health,” “social support,” and “systematic review.” This transition suggests a gradual movement from problem-focused frameworks toward more integrative approaches that incorporate both risk and protective dimensions. Additionally, the increasing visibility of systematic reviews indicates a growing effort to consolidate and synthesize accumulated knowledge, reflecting a maturation of the research field (Donthu et al., 2021). Findings from the density analysis also support these interpretations. While “resilience” remains the most prominent and densely connected concept, the presence of multiple secondary focal areas—such as risk factors, mental health, and support systems—demonstrates that the field is not homogeneous, but rather composed of interconnected yet distinct thematic domains. This layered structure highlights the interdisciplinary and evolving nature of resilience research in early childhood.

Another important insight concerns the developmental continuity reflected in the literature. The connections identified between “child” and “adolescent,” as well as between “adolescent” and “depression,” suggest that resilience is examined across developmental stages, linking early childhood experiences to later mental health outcomes. This pattern underscores the long-term significance of early resilience processes and supports the view that early interventions may have enduring effects on psychological adjustment (Masten et al., 2021; Prime et al., 2020).

Overall, the results of this study suggest that research on psychological resilience in early childhood has evolved from an initial focus on adversity and trauma toward a more comprehensive framework that integrates protective factors, mental health, and supportive environments. This shift reflects both theoretical advancement and increased attention to applied implications, emphasizing the need for holistic and developmentally informed approaches in early childhood education and intervention practices.

Conclusion

This study examined the thematic structure and research trends of studies on psychological resilience in early childhood through a bibliometric approach. The findings indicate that the concept of resilience occupies a central position within the field and serves as a key construct linking different conceptual dimensions. The results further demonstrate that research on psychological resilience in early childhood reflects a multidimensional structure, characterized by dynamic interactions among risk factors, protective mechanisms, mental health, and developmental processes.

The findings also suggest a notable shift in the literature over time. While earlier studies primarily focused on risk-related concepts such as adverse childhood experiences, trauma, and stress, more recent research has increasingly adopted a broader and more integrative perspective. In particular, the growing emphasis on mental health, social support, and positive developmental experiences indicates a transition toward approaches that highlight protective and supportive factors. This shift reflects an evolving understanding of resilience, not merely as a response to adversity, but as a process shaped by individual strengths and environmental resources. In addition, the results point to a developmental continuity in resilience research. The association between early childhood resilience processes and mental health outcomes in adolescence suggests that resilience is examined within a life-course perspective. This finding underscores the importance of early interventions, as efforts to support resilience during early childhood may have long-term implications for psychological adjustment and well-being.

Overall, this study highlights that research on psychological resilience in early childhood has evolved toward a more comprehensive, interdisciplinary, and application-oriented framework. Based on these findings, future research should move beyond a sole focus on risk factors and place greater emphasis on protective mechanisms and intervention-based approaches. Furthermore, studies conducted across diverse cultural contexts are likely to contribute to a deeper understanding of both the universal and context-specific dimensions of resilience.

Additional Declaration

Author Contributions

The author was solely responsible for the development of the research idea, literature review, data analysis and interpretation, as well as the writing and language/formatting revisions of the manuscript. The author has approved the final version of the manuscript. The contribution rate of the author is 100%.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Responsible Artificial Intelligence Statement

In this study, AI-assisted language tools were used to a limited extent for improving grammar, clarity, and overall readability, as well as for refining the linguistic structure of the Turkish–English abstract and keywords. These tools were not used for generating scientific content, conducting legal evaluations, or producing conclusions. All responsibility for content accuracy, verification of sources, and the final version of the manuscript rests solely with the author. Any potential implications arising from the use of AI tools are fully assumed by the author.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this study.

Ethics Approval

All procedures in this study were conducted in accordance with the principles of Pen Academic Publishing Research Ethics Policy. Since the study does not involve any direct application on human or animal subjects, ethical approval was not required.

REFERENCES

- Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/10.1016/j.joi.2017.08.007>
- Chen, H., Hong, Q., Xu, J., Liu, F., Wen, Y., & Gu, X. (2021). Resilience coping in preschool children: The role of emotional ability, age, and gender. *International Journal of Environmental Research and Public Health*, 18(9), Article 5027. <https://doi.org/10.3390/ijerph18095027>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Ernst, J., Juckett, H., & Sobel, D. (2021). Comparing the impact of nature, blended, and traditional preschools on children's resilience: Some nature may be better than none. *Frontiers in Psychology*, 12, Article 724340. <https://doi.org/10.3389/fpsyg.2021.724340>
- Jeon, L., Buettner, C. K., & Grant, A. A. (2018). Early childhood teachers' psychological well-being: Exploring potential predictors of depression, stress, and emotional exhaustion. *Early Education and Development*, 29(1), 53–69. <https://doi.org/10.1080/10409289.2017.1341806>
- Jeon, L., Buettner, C. K., & Grant, A. A. (2021). Early childhood teachers' psychological well-being: Exploring potential predictors of teacher-child relationships. *Early Childhood Research Quarterly*, 56, 1–14. <https://doi.org/10.1016/j.ecresq.2021.02.002>
- Lipscomb, S. T., Hatfield, B., Goka-Dubose, E., Lewis, H., & Fisher, P. A. (2021). Impacts of Roots of Resilience professional development for early childhood teachers on young children's protective factors. *Early Childhood Research Quarterly*, 56, 1–14. <https://doi.org/10.1016/j.ecresq.2021.02.002>
- Masten, A. S., Lucke, C. M., Nelson, K. M., & Stallworthy, I. C. (2021). Resilience in development and psychopathology: Multisystem perspectives. *Annual Review of Clinical Psychology*, 17, 521–549. <https://doi.org/10.1146/annurev-clinpsy-081219-120307>

- Prime, H., Wade, M., & Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. *American Psychologist*, 75(5), 631–643. <https://doi.org/10.1037/amp0000660>
- Robson, D. A., Allen, M. S., & Howard, S. J. (2020). Self-regulation in childhood as a predictor of future outcomes: A meta-analytic review. *Psychological Bulletin*, 146(4), 324–354. <https://doi.org/10.1037/bul0000227>
- Ungar, M. (2021). *Multisystemic resilience: Adaptation and transformation in contexts of change*. Oxford University Press. <https://doi.org/10.1093/oso/9780190095888.001.0001>
- Ungar, M., & Theron, L. (2020). Resilience and mental health: How multisystemic processes contribute to positive outcomes. *The Lancet Psychiatry*, 7(5), 441–448. [https://doi.org/10.1016/S2215-0366\(19\)30434-1](https://doi.org/10.1016/S2215-0366(19)30434-1)
- van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84, 523–538. <https://doi.org/10.1007/s11192-009-0146-3>