



Implementation Of Multi-Tiered Systems of Support (MTSS) In Education: Challenges, Strategies, And Impact on Students' Social-Emotional Development. A Scoping Review

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ABSTRACT

The Multi-Tiered Systems of Support (MTSS) framework is pivotal in educational settings, designed to enhance student outcomes through structured support systems that address academic, behavioral, and social-emotional needs. This scoping review explores the complexities of implementing MTSS, identifies effective strategies, and assesses its impact on students' social-emotional development. The review analyzed articles source from Google Scholar, PubMed, and ScienceDirect as a database with a range of publications between 2019-2023 using the keywords: Adolescents, Multi-Tiered Systems of Support, Education and adolescents. There were 18 articles that met the inclusion criteria. The findings suggest that when effectively implemented, MTSS significantly improves social-emotional development. This involves strategic planning, interdisciplinary collaboration, culturally responsive practices, and active participation of families and communities. School leadership plays a vital role in coordinating these efforts, while culturally relevant practices and teacher self-assessment tools help address the diverse needs of students. Additionally, family involvement is a crucial factor in enhancing academic performance and reducing behavioral issues, contributing to the overall social-emotional development of students. A well-coordinated strategy is necessary to optimize the effectiveness of MTSS and improve student outcomes.

Keywords: Adolescent; Multi-Tiered Systems of Support; Education

ABSTRAK

Kerangka kerja Multi-Tiered Systems of Support (MTSS) sangat penting dalam pengaturan pendidikan, yang dirancang untuk meningkatkan hasil siswa melalui sistem pendukung terstruktur yang menangani kebutuhan akademik, perilaku, dan sosial-emosional. Tinjauan pelingkupan ini mengeksplorasi kompleksitas penerapan MTSS, mengidentifikasi strategi yang efektif, dan menilai dampaknya terhadap perkembangan sosial-emosional siswa. Tinjauan tersebut menganalisis sumber artikel dari Google Scholar, PubMed, dan ScienceDirect sebagai database dengan berbagai publikasi antara tahun 2019-2023 menggunakan kata kunci: Remaja, Sistem Dukungan Bertingkat, Pendidikan dan remaja. Ada 18 artikel yang memenuhi kriteria inklusi. Temuan menunjukkan bahwa ketika diterapkan secara efektif, MTSS secara signifikan meningkatkan perkembangan sosial-emosional. Ini melibatkan perencanaan strategis, kolaborasi interdisipliner, praktik responsif budaya, dan partisipasi aktif keluarga dan komunitas. Kepemimpinan sekolah memainkan peran penting dalam mengoordinasikan upaya ini, sementara praktik yang relevan secara budaya dan alat penilaian mandiri guru membantu memenuhi beragam kebutuhan siswa. Selain itu, keterlibatan keluarga merupakan faktor penting dalam meningkatkan kinerja akademik dan mengurangi masalah perilaku, berkontribusi pada perkembangan sosial-emosional siswa secara keseluruhan. Strategi yang terkoordinasi dengan baik diperlukan untuk mengoptimalkan efektivitas MTSS dan meningkatkan hasil siswa.

Kata kunci: Remaja; Sistem Dukungan Bertingkat; Pendidikan

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INTRODUCTION

Implementing Multi-Tiered Systems of Supports (MTSS) in education involves several challenges, strategic approaches, and significant impacts on students' social-emotional development. (Losinski, 2021) Here's an overview of the key points: Challenges of Implementing MTSS like Coordinating Practices and Expectations. One of the major challenges is coordinating school-wide practices and ensuring that all staff understand and adhere to the MTSS process. Effective coordination requires a clear MTSS plan, regular professional development, and consistent application across the board (Linan-Thompson, 2022), (Reward, 2023), (AIR, 2023).

The MTSS support system is an educational framework designed to improve student outcomes through structured support mechanisms. It integrates academic and behavioral interventions tailored to individual needs, encouraging collaboration between educators and stakeholders. (Edwin & Bahr, 2023) (Bobo, 2023) The Multi-Tiered Systems of Support (MTSS) framework has emerged as a pivotal approach in educational settings, designed to address the diverse needs of students across academic, behavioral, and social-emotional domains. This framework integrates multiple levels of intervention, providing tailored support that ranges from universal preventive strategies to more intensive, individualized assistance. (Health Bureau et al., 2017), (Malone, 2022)

However, despite its potential benefits, the application of MTSS in education faces several challenges. These include the complexity of coordinating resources, ensuring fidelity in implementation, and addressing variability in school environments. Furthermore, successfully integrating MTSS to enhance students' social-emotional development requires specific strategies that cater to diverse student populations while promoting a positive school culture. (Cook et al., 2015)

This scoping review aims to explore the challenges of implementing MTSS in educational settings, identify strategies that have been effective in overcoming these obstacles, and assess the overall impact of MTSS on students' social-emotional development. By synthesizing the current literature, this review will provide a comprehensive understanding of how MTSS can be utilized to foster supportive, inclusive educational environments that promote holistic student growth.

RESEARCH METHOD

Research Approach

Scoping review of the literature has been finished by means of identifying the varieties of available evidence and key elements associated with Implementation of Multi-Tiered Systems of Support (MTSS) in Education: Challenges, Strategies, and Impact on Students' Social-Emotional Development. a total of five steps suggested by using Tricco et al. were followed in this research, (1) pick out the research query, (2) perceive relevant preceding research, (3) select using an iterative team method, (4) chart the information by way of summarizing quantitative information and qualitative thematic evaluation, and (5) collate, summarize, and record the results, but, endorsed consultation with stakeholders turned into now not implemented when you consider that it is taken into consideration an optional element of scoping critiques. (Murniati et al., 2022)-(Chambers et al., 2016)

RESULTS OF STUDY

At some point of the preliminary seek, 1133 articles have been retrieved from all databases, with 201 titles assembly the screening criteria. In Mendeley computing device, which become used to acquire eligible titles from databases, all 5 titles diagnosed as duplicates were removed. After the summary screening, one hundred sixty articles have been decided on, report selected through summary 102 articles, of which met the inclusion standards and have been moved directly to the full-textual content eligibility degree. complete-textual content screening revealed that ninety two articles have been dominated out and the ultimate 18 had been blanketed for records extraction as shown in figure 1. suggests a summary of traits of the diagnosed studies.

DISCUSSION

The entire article used for analysis in this review is focused on the implementation of Multi-Tiered Systems of Support (MTSS) in educational settings. It examines various strategic approaches and their impacts, particularly on students' social-emotional development. The effectiveness of MTSS appears to vary across different school contexts and levels of resource availability, indicating that economic, structural, and sociocultural factors play significant roles in shaping the outcomes of these interventions. The key elements influencing the success of MTSS implementation are;

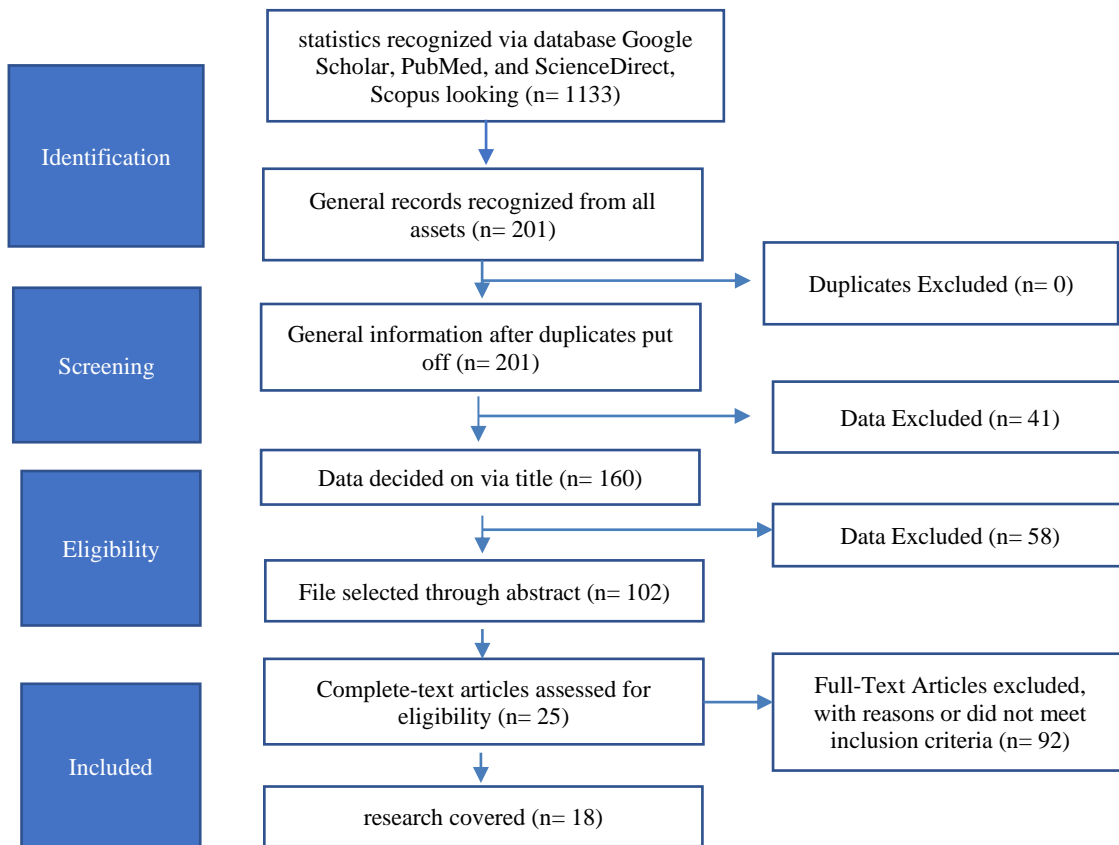


Figure 1. PRISMA

Challenges in MTSS Implementation

The implementation of MTSS in educational settings is influenced by a range of factors, including school leadership, culturally relevant practices, and cross-disciplinary collaboration. For instance, Jeong Hoon Choi et al. (2019) found that the quality of school leadership plays a critical role in mediating technical assistance and overall MTSS implementation success.(Choi, 2019) This highlights the need for effective leadership in navigating the technical and procedural complexities involved in establishing MTSS. Furthermore, Lorena M. Gonzales et al. (2022)(Gonzalez, 2022) identified significant gaps in research, particularly in the application of MTSS frameworks to linguistically diverse students, underscoring the need for culturally responsive approaches and appropriate assessments. These challenges point to the importance of ongoing professional development and stakeholder engagement, as explored by Castillo, J M et al. (2022), to enhance implementation fidelity and student outcomes.(Castillo, 2022)

Strategies for Overcoming Implementation Barriers

Effective MTSS implementation often requires a multi-pronged approach. Hank S et al. (2021) revealed the importance of aligning school improvement plans with MTSS to enhance student performance, suggesting that strategic planning is essential for successful outcomes.(Bohanon, 2021) Cross-disciplinary collaboration, as emphasized by Porter, S G et al. (2019), is also crucial in integrating MTSS into school systems, particularly in secondary schools.(Porter, 2019) In addition, Fallon, L M et al. (2023) advocated for the use of culturally relevant practices and teacher self-assessment tools, which can improve teacher awareness and responsiveness to diverse student needs.(Richter et al., 2022)

Another important strategy is the involvement of families and communities in the MTSS process. Zachary et al. (2020) discussed the role of family involvement in improving academic achievement and reducing behavioral problems, which is a critical component of holistic support systems for students.(Davidson et al., 2019)

Impact on Social-Emotional Development

MTSS has shown significant potential in improving students' social-emotional development. Kathleen Lynne Lane et al. (2021) demonstrated that MTSS-B (Behavior) interventions were effective in improving classroom management and reducing emotional and behavioral disorders (EBD) among high school students.(Yengo et al., 2022) This highlights the importance of targeted behavioral interventions in promoting a positive school environment.

Moreover, Sarah Lindstrom Johnson et al. (2022) found that MTSS-B interventions positively impacted both student and staff perceptions of school climate, enhancing feelings of security, support, and collaboration. (Lindstrom Johnson et al., n.d.) This, in turn, contributes to improved social-emotional well-being, which is vital for students' overall development. Similarly, Celeste Malone et al. (2022) emphasized how MTSS frameworks can be tailored to address racism and improve mental health for racial and ethnic minority students, demonstrating the flexibility of MTSS to cater to the diverse needs of students. (Malone, 2022)

In conclusion, the implementation of MTSS faces several challenges, but strategic planning, professional development, cultural responsiveness, and family involvement are key to overcoming these barriers. MTSS has a profound impact on students' social-emotional development, helping schools foster safer and more supportive environments that are conducive to both academic success and mental well-being.

No	Researcher/Title/Year	Research Methods / Country / data source / age of respondents	Research Results
1	Hank S, et al. The Role of School Improvement Planning in the Implementation of MTSS in Secondary Schools. (Bohanon, 2021)(2021)	Survey study USA Primary data Secondary data 12-18 years	A significant relationship between school improvement planning and MTSS and state school improvement report cards on student performance.
2	Lorena M. Gonzales, et al Unlocking the Promise of Multitiered Systems of Support (MTSS) for Linguistically Diverse Students: Advancing Science, Practice, and Equity. (Gonzalez, 2022)	Literature review , Amerika Serikat, Kanada, Inggris, Australia, Selandia Baru Secondary data 6 – 18 years	MTSS has the potential to support the academic and social-emotional needs of linguistically diverse students, there are significant gaps in research and require further research, including the development of culturally responsive MTSS frameworks, the use of appropriate assessments for diverse students
3	Kathleen Lynne Lane, et al. A Randomized Controlled Trial of MTSS-B in High Schools: Improving Classroom Management to Prevent EBDs. (Bradshaw, 2021)	Randomized controlled trial USA Primary data 14-18 years	MTSS-B is effective in improving classroom management and reducing the risk of EBD (emotional and behavioral disorders) in high school students.
4	Celeste Malone, et al. Applying a MTSS Framework to Address Racism and Promote Mental Health for Racial/Ethnic Minoritized Youth. (Malone, 2022)	Literature review Amerika Serikat, Kanada, Inggris, Australia Secondary data 15-24 years	MTSS can address racism and improve the mental health of racial/ethnic minority youth through specific interventions.
5.	Porter, S G, et al. It Takes a Well-Organized Village: Implementing RTI/MTSS Models in Secondary Schools. (Porter, 2021)	Literature review America and Europe Secondary data 12-18 years	The importance of cross-disciplinary collaboration in the successful implementation of the RTI (Response to Intervention) and MTSS models in secondary schools.
6	Fallon, L M, et al. Teacher Self-Assessment of Culturally Relevant Practice to Inform Educator Professional Development Decisions in MTSS Contexts. (Fallon, 2023)	The study did not investigate any specific country. Literature review The importance of cross-disciplinary collaboration in the successful implementation of the RTI (Response to Intervention) and MTSS models in secondary schools.	The importance of culturally relevant practices in the implementation of MTSS and teacher self-assessment tools.
7	Wayne Sailor, et al. Preparing Teacher Educators for Statewide Scale-Up of Multi-Tiered System of Support (MTSS). (Sailor, 2021)	Literature review The source provided does not mention a specific country Secondary data	The need for teacher and educator administrators to prepare for large-scale MTSS in education.
8	Jeong Hoon Choi, et al An Analysis of Mediating Effects of School Leadership on MTSS Implementation. (Choi, 2019)	Survey study The source provided does not mention a specific country Primary data	The quality of school leadership mediates the relationship between technical assistance and MTSS implementation.
9	Frank Webb, et al	Qualitative research design The source provided does not mention a specific country	School psychologists are instrumental in implementing MTSS in rural school districts.

	School Psychologists as Agents of Change: Implementing MTSS in a Rural School District.(Webb, 2021)	Primary data	
10	Scott, T , et al An Examination of the Association between MTSS Implementation Fidelity Measures and Student Outcome. (Scott, 2019)	Survey study USA Primary data 6 – 18 years	High levels of MTSS implementation fidelity are associated with better student outcomes.
11	Castillo, J M ,et al A Scoping Review of the Literature on Professional Learning for MTSS.(Castillo, 2022)	Scoping Review The source provided does not mention a specific country Secondary data	The MTSS engages a wide range of stakeholders and demonstrates the need for further research on the effectiveness of professional learning approaches and their impact on student outcomes.
12	Zachary, et al Better Together: Using MTSS as a Structure for Building School–Family Partnerships.(Weingarten, 2020)	Literature review Secondary data	Family involvement is important for improving academic achievement and reducing social and behavioral problems in students.
13	Sarah Lindstrom Johnson , et al Effects of an MTSS-B Intervention on Student and Staff Perceptions of School Climate: Findings From Two Group Randomized Trials.(Lindstrom Johnson et al., n.d.) (2022)	RCT Primary data	The MTSS-B intervention had a positive impact on student and staff perceptions of the school climate. This increases students' feelings of security, support, and engagement within the school environment. Similarly, staff members also reported positive changes in their perceptions of safety, support, and collaboration in schools.
14	Nabunya, et al Prevalence and correlates of depressive symptoms among high school adolescent girls in southern Uganda.(Nabunya et al., 2020)	Uganda RCT Primary data 16 years and above	The study revealed that 16.35% of the sample showed symptoms of major depression, while almost one in three adolescent girls experienced moderate depressive symptoms. This incident is more common in adolescents aged 16 years and older. It was also found that good family relationships, social support, and high levels of psychological well-being, such as positive self-concept and self-esteem, were associated with lower symptoms of depression.
15	Widman, L et al Sexual assertiveness skills and sexual decision-making in adolescent girls: Randomized controlled trial of an online program.(Widman et al., 2018)	Amerika Serikat RCT Primary data 15 years	The online HEART program has been proven to be effective in increasing sexual assertiveness and sexual decision-making in adolescent girls. These positive effects, including knowledge about HIV/STIs, attitudes toward condom use, and sexual communication skills, persisted up to 4 months of follow-up.
16	Grose, et al Mental health, empowerment, and violence against young women in lower-income countries: A review of reviews.(Grose et al., 2019)	East Asia and Pacific systematic review Primary data 18 -25 years	Violence against women in low-income countries has a devastating impact on their mental health. The study found that empowerment interventions can reduce the risk of violence and improve the mental health of young women.
18	García-Carrión , et al Children and Adolescents Mental Health: A Systematic Review of Interaction-Based Interventions in Schools and Communities.(García-Carrión et al., 2019)	United States, Canada, Australia, and the United Kingdom systematic review Primary data 17-25 years	Interventions in schools and communities that promote positive interactions between teachers, parents, and community members have shown reductions in problematic behaviors and symptoms of depression and anxiety in children and adolescents. Other positive effects include improved social skills and personal well-being.

CONCLUSION

The conclusion drawn from the discussion on the implementation of Multi-Tiered Systems of Support (MTSS) in education is that successful MTSS implementation requires a multi-faceted approach involving strategic planning, collaboration across disciplines, culturally responsive practices, and active involvement of families and communities. School leadership plays a crucial role in guiding and aligning these efforts, while culturally relevant practices and teacher self-assessment tools help educators better address diverse student needs. Family involvement, as highlighted, significantly contributes to improved academic performance and reduced behavioral issues, making it a key element in

fostering students' social-emotional development.(Arora et al., 2019; August et al., 2018) Overall, a comprehensive, well-coordinated strategy is essential for enhancing the effectiveness of MTSS and promoting positive student outcomes.

To ensure the effective implementation of MTSS, schools should prioritize strategic planning guided by strong leadership, foster interdisciplinary collaboration, and provide professional development for educators in culturally responsive practices. Engaging families and communities is essential to supporting students' academic and social-emotional development, while regular monitoring and evaluation help refine strategies to meet diverse student needs. A well-coordinated approach integrating these elements will enhance the effectiveness of MTSS and promote positive student outcomes.

1. **Strategic Planning and Strong Leadership:** Effective implementation of MTSS begins with strategic planning, which involves setting clear goals, allocating resources, and establishing timelines. Strong leadership is crucial in this phase, as leaders must articulate a vision for MTSS that aligns with the school's mission and values. Research indicates that school leaders who actively engage in the planning process can foster a culture of collaboration and accountability (Harris & Jones, 2015). Leaders should also ensure that all stakeholders, including teachers, support staff, and families, are involved in the planning process to create a shared understanding of MTSS.
2. **Interdisciplinary Collaboration:** Collaboration among educators from various disciplines is essential for the successful implementation of MTSS. Interdisciplinary teams can analyze data, share insights, and develop integrated strategies that address the multifaceted needs of students. Schools that foster collaborative environments see improved student outcomes, as educators can leverage diverse expertise to create more effective interventions. Regular meetings and professional learning communities (PLCs) can facilitate this collaboration, allowing educators to discuss student progress and refine instructional practices.(Sugai & Horner, 2020)
3. **Professional Development in Culturally Responsive Practices:** Professional development is a critical component of MTSS, particularly in equipping educators with the skills necessary to implement culturally responsive practices. Culturally responsive teaching acknowledges the diverse backgrounds of students and incorporates their cultural references into the learning process (Sugai & Horner, 2020). Training educators in these practices can enhance their ability to connect with students, thereby improving engagement and academic performance. Schools should prioritize ongoing professional development that includes workshops, coaching, and peer observations focused on culturally responsive strategies.(Sailor, 2021)
4. **Engaging Families and Communities:** Engaging families and communities is vital to supporting students' academic and social-emotional development. Research shows that family involvement in education is linked to improved student achievement and behavior. Schools should create opportunities for families to participate in the MTSS process, such as workshops that educate parents about the framework and its benefits. Additionally, partnerships with community organizations can provide additional resources and support for students and families, fostering a holistic approach to education.(Weingarten, 2020)
5. **Regular Monitoring and Evaluation:** To ensure the effectiveness of MTSS, schools must implement regular monitoring and evaluation processes. This involves collecting and analyzing data on student performance, intervention effectiveness, and overall program implementation. Continuous assessment allows schools to identify areas for improvement and adjust strategies accordingly. Actions and ensuring that they meet the diverse needs of students(Crim, 2023),(Cardona, 2021).

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Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this article.

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