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Implementation-science strategies for scaling trauma-informed substance-use interventions in U.S. behavioral-health organizations

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Abstract

The prevalence of trauma exposure among individuals who are receiving substance-use treatment is significant in the United States, yet the implementation and scale-up of trauma-informed interventions in behavioral-health organizations remain uneven. Despite extensive evidence of the clinical value of trauma-informed substance-use care, there is also limited understanding of the adoption, implementation, and maintenance of these interventions in practice-based service environments. The study conducted a systematic review of peer-reviewed empirical studies published between 2020 and 2025 on the implementation-science strategies of the scaling of trauma-informed substance-use interventions at U.S. behavioral-health organizations. The search was conducted in ScienceDirect and Google Scholar and enriched with manual screening of references. The implementation-science paradigms were used to identify organizational, workforce, and system-level factors that impacted implementation processes and outcomes through the application of a thematic synthesis approach. The five key themes identified included: organizational readiness and leadership engagement; workforce training, support, and clarity, adaptation and contextual fit; multi-level implementation strategies, and long-term integration and sustainability. In the literature, organizational capacity, workforce support, and policy and financing alignment were more likely to be success factors influencing the implementation success than the design of the intervention. The results highlight the fact that national implications of trauma-informed substance-use interventions at the systems level are challenging. The aspect of scale-up needs to be effectively implemented with thought-through implementation and leadership commitment and incorporating trauma-informed care in standard organizational and policy frameworks.

Keywords: Trauma-Informed Care; Substance-Use Treatment; Implementation Science; Behavioral Health; Scale-Up

1. Introduction

Substance use disorders in the United States are closely linked to psychological trauma, such as childhood adversity, interpersonal violence, societal injustice, and chronic stress (Degenhardt et al., 2022; Zhang et al., 2020). Individuals in substance-use treatment report disproportionately high levels of trauma exposure, which has been linked to treatment engagement, relapse risk, and long-term recovery outcomes (Sinha et al., 2024; Miller-Roenigk et al., 2023). As a result, trauma-informed approaches are rising in popularity throughout the United States' behavioral-health systems as a means of improving care quality, safety, and equity for those struggling with substance use disorders (Bartholow et al., 2023).

Trauma-informed substance-use interventions seek to acknowledge the pervasive impact of trauma, prevent re-traumatization, and foster environments that promote trust, empowerment, and collaboration (Bartholow et al., 2023). Over the last decade, evidence for the clinical value of trauma-informed treatment has grown, resulting in widespread support from federal agencies, accrediting bodies, and professional organizations (Goldstein et al., 2024; World Health

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Organization, 2024). However, the implementation of trauma-informed approaches in behavioral health organizations remains unequal (Bills et al., 2023). Many programs show potential in preliminary studies or single areas but struggle to scale, sustain, or gain consistent administration across several service settings (McKay et al., 2021).

These problems highlight the importance of implementation science, which examines how evidence-based approaches are accepted, integrated, and sustained in real-world structures (Goldstein et al., 2024). Behavioral health organizations operate in complex organizational, workforce, and policy environments that significantly influence the effectiveness of implementation (Oral et al., 2020). Leadership participation, staff capability, financial stability, regulatory requirements, and system-level coordination all have an impact on whether trauma-informed substance-use interventions become standard care or temporary initiatives (Uglean et al., 2024; Bills et al., 2023).

Although there has been increased awareness of these challenges, the research on trauma-informed substance-use care remains dispersed across various disciplines and study categories (Goldstein et al., 2024; Oral et al., 2020). While certain research projects examined specific interventions or organizational experiences (Bills et al., 2023; Bartholow et al., 2023), there has been minimal synthesis of implementation-science strategies for scaling up across behavioral-health organizations in the United States (Goldstein et al., 2024). Less emphasis has been placed on how implementation procedures evolve, how organizational and system-level variables interact, and what conditions promote long-term sustainability (Oral et al., 2020; Uglean et al., 2024).

To address this issue, the current study undertakes a systematic literature review of empirical research published between 2020 and 2025 on implementation science strategies for scaling trauma-informed substance use treatments in U.S. behavioral health organizations. This review aims to identify common facilitators, challenges, and strategic approaches that influence adoption, implementation, and sustainability by synthesizing findings from various organizational contexts and implementation frameworks. By doing this, it aims to educate researchers, practitioners, and policymakers striving to improve trauma-informed substance-use care on a scale consistent with national behavioral-health needs.

The purpose of this systematic review is to synthesize empirical evidence on implementation-science strategies used to scale trauma-informed substance-use interventions in U.S. behavioral-health organizations.Specifically, the review examines how organizational, workforce, and system-level factors influence adoption, implementation, and sustainment across implementation phases.

1.1. Review Question

This systematic review was designed to address the following primary research question: What implementation-science strategies have been used to support the adoption, scale-up, and sustainment of trauma-informed substance-use interventions within U.S. behavioral-health organizations? To provide a comprehensive implementation-focused synthesis, the review further examined how organizational, workforce, and system-level factors influence implementation processes and outcomes across stages of exploration, preparation, implementation, and sustainment. By focusing on empirical studies conducted in U.S. behavioral-health settings, this review focused on identifying recurring facilitators, barriers, and strategic approaches that shape the successful integration of trauma-informed substance-use interventions into routine practice.

2. Methodology

2.1. Review Design and Reporting Standards

This analysis was undertaken as a systematic literature review in compliance with the PRISMA 2020 guidelines. A systematic review design was used to facilitate a transparent, reproducible, and methodologically rigorous synthesis of empirical information on implementation science methodologies for scaling trauma-informed substance use interventions in US behavioral health organizations (Page et al., 2021).

Systematic review methodology is suitable for implementation science research because it allows for a systematic evaluation of how evidence-based interventions are adopted, implemented, and sustained across a variety of organizational and system contexts. Unlike narrative or scoping reviews, this approach uses predetermined protocols for literature identification, screening, eligibility evaluation, and synthesis, lowering selection bias and increasing the credibility of findings.

This review concentrated on implementation science findings rather than clinical effectiveness solely. Eligible studies were employed to investigate implementation procedures, strategies, and results linked to the adoption, scaling up, sustainability, or system integration of trauma-informed substance use interventions. Because of the diversity in study designs, contexts, and outcome measures, quantitative meta-analysis was not carried out. Instead, a thematic synthesis approach was utilized to incorporate findings from various studies, in accordance with PRISMA guidelines for qualitative systematic reviews.

This systematic review was guided by the following research question: How have trauma-informed substance-use interventions been implemented and scaled within U.S. behavioral-health organizations, and what implementation-science strategies and contextual factors influence their adoption, implementation, and sustainment? The review focuses on organizational, workforce, and system-level implementation processes rather than clinical efficacy outcomes.

2.2. Data Sources

An extensive literature search was carried out using two electronic bibliographic databases: ScienceDirect and Google Scholar, supplemented by manual reference screening. These databases were adopted because they provide comprehensive coverage of peer-reviewed literature in public health, behavioral health services, implementation science, and applied health systems research. Collectively, they provide access to interdisciplinary expertise on trauma-informed care, substance use treatment, and organizational implementation strategies.

The search was confined to peer-reviewed journal papers to ensure that studies had undergone rigorous academic quality control. The review does not include grey literature, conference abstracts, dissertations, editorials, or policy briefs, which is consistent with its concentration on empirically grounded implementation science research.

Google Scholar was used to complement database searching and to reduce the risk of missing relevant interdisciplinary implementation studies, consistent with recommendations for systematic reviews in applied health research.

2.3. Search Strategy

The literature search was conducted systematically using predefined search strings across ScienceDirect, Google Scholar, and manual screening. Search terms combined three core domains: trauma-informed care, substance use or co-occurring disorder interventions, and implementation science processes. Key terms included variations of trauma-informed care, substance use treatment, implementation, scale-up, sustainment, and behavioral health organizations. Boolean operators were used to combine terms within and across domains, and database-specific syntax was applied as appropriate.

Searches were limited to peer-reviewed journal articles published between 2020 and 2025 and conducted in the United States behavioral health settings. The final search strategy was refined iteratively through preliminary searches to ensure relevance and completeness. The reference lists of all included studies were manually reviewed to identify additional eligible articles not captured through database searches.

2.4. Eligibility Criteria

Studies were eligible for inclusion if they met all of the following standards. Articles had to be peer-reviewed and published between 2020 and 2025. Studies had to be undertaken in the United States and in behavioral health contexts such as substance use treatment programs, community mental health organizations, integrated care systems, or government-funded behavioral health services. Eligible studies investigated trauma-informed approaches integrated into substance use or co-occurring disorder interventions, as well as explicit implementation procedures, strategies, or outcomes linked to adoption, scale-up, sustainability, or organizational integration.

Studies were omitted if they were undertaken outside the United States, focused exclusively on clinical effectiveness without an implementation component, or addressed trauma-informed care in general without any relevance to substance use interventions. Conceptual papers, opinion articles, editorials, dissertations, conference abstracts, and non-peer-reviewed sources were all omitted.

2.5. Study Selection Process

PRISMA reporting criteria were adhered to during the study selection process, which was systematic and multi-staged (Page et al., 2021). All entries obtained from database searches were transferred into a reference management system,

where duplicates were discovered and eliminated. The remaining records were subjected to title and abstract screening to determine their relevance to the review objectives.

During the initial screening process, studies that evidently did not fit the eligibility requirements were excluded. All remaining articles were then subjected to a full-text review to ensure their eligibility based on research setting, intervention emphasis, and implementation science content. Studies that did not meet all of the inclusion criteria at the full text stage were excluded, with explanations given.

The final collection of studies included in the review met all predefined eligibility criteria and were selected for qualitative synthesis. The accompanying PRISMA flow diagram depicts how studies progress through the identification, screening, eligibility, and inclusion stages.

2.6. Data Extraction

Data extraction was performed systematically across all included studies utilizing a standardized extraction methodology. Extracted data included publication characteristics, study design, organizational setting, target population, type of trauma-informed substance use intervention, implementation frameworks used (where applicable), implementation strategies reported, and outcomes related to adoption, scale-up, sustainment, or system integration. Additional information was gathered on reported challenges and facilitators to implementation, including organizational, workforce, and policy-level issues. Before synthesis, extracted data were examined for completeness and consistency to ensure precision and reduce extraction errors.

2.7. Data Synthesis

Given the diversity of study designs, intervention types, and implementation results, a quantitative meta-analysis was not suitable. Instead, a thematic synthesis technique was utilized to combine findings from various studies (Braun et al., 2021). This strategy allowed for the methodical identification of repeating patterns, methods, and barriers associated with implementation processes while retaining contextual detail relevant to U.S. behavioral health systems.

Themes were derived inductively through meticulous analysis of the extracted data and subsequently categorized according to fundamental constructs of implementation science, such as organizational readiness, workforce capacity, adaptation and contextual fit, multi-level implementation strategies, and sustainability. Where applicable, findings were interpreted using recognized implementation science frameworks to ensure analytical consistency across studies (Damschroder et al., 2022).

2.8. Quality Appraisal

The methodological quality of the included studies was appraised descriptively using the Mixed Methods Appraisal Tool (MMAT), which is designed for reviews that include qualitative, quantitative, and mixed methods study designs (Hong et al., 2020). The MMAT was selected because the included studies varied substantially in methodology and outcome reporting, reflecting the applied and practice-oriented nature of implementation science research. Each study was assessed across relevant MMAT domains, including clarity of research questions, appropriateness of study design, adequacy of data collection and analysis, and coherence between data and interpretations. Consistent with recommendations for systematic reviews of complex interventions, the quality appraisal was used to inform interpretation of the evidence rather than to exclude studies or generate numerical quality scores. This descriptive approach allowed the review to acknowledge variations in methodological rigor while preserving the breadth of implementation evidence necessary to examine real-world scaling processes within U.S. behavioral-health organizations.

2.9. Methodological Limitations

Several methodological limitations should be considered when interpreting the findings of this systematic review. First, although a comprehensive and transparent search strategy was utilized across multiple major databases, the review was restricted to peer-reviewed journal articles. Consequently, relevant implementation evidence reported in grey literature, government reports, or internal evaluations conducted by behavioral-health organizations may not be fully represented. A total of 36 peer-reviewed empirical studies met the inclusion criteria and were included in the final qualitative synthesis.

Secondly, while methodological quality was assessed descriptively using the Mixed Methods Appraisal Tool, the essential variety of study designs, outcome measures, and reporting procedures precluded direct comparisons between studies. A quality evaluation was utilized to aid interpretation rather than excluding studies, which is ideal for

implementation-focused synthesis but limits conclusions regarding comparative methodological strength.

Also, the heterogeneity in how trauma-informed care, implementation techniques, and implementation results were defined and reported across studies hindered rigorous assessments of fidelity, sustainability, and long-term effects. Inconsistent reporting also prevented the capacity to draw causal conclusions about the efficacy of various implementation tactics.

Lastly, limiting research to US-based studies published between 2020 and 2025 improves contextual relevance but restricts generalizability to other health systems or past implementation initiatives. Despite these limitations, the review's transparency, rigor, and credibility are strengthened by using a structured quality appraisal framework and adhering to PRISMA reporting standards.

3. Results: Thematic Synthesis of Findings

The systematic review identified an evolving body of literature on implementation science strategies for scaling trauma-informed substance-use interventions across behavioral health organizations in the United States between 2020 and 2025. The implementation efforts in the evaluated studies were conducted in a variety of service settings, which include outpatient substance-use treatment programs, community mental health centers, integrated primary care clinics, and publicly sponsored behavioral-health systems. Despite contextual variance, the research discovered an underlying set of implementation issues and strategies for organizational readiness, workforce capacity, fidelity-adaptation balance, and sustainability. The thematic synthesis yielded five key themes.

3.1. Organizational Readiness and Leadership Engagement

A key theme in the examined research lies in the crucial role of organizational readiness in enabling the successful adoption and scaling of trauma-informed substance-use interventions (Caci et al., 2025; Miake-Lye et al., 2020). Leadership engagement and institutional commitment were consistently identified as key requirements for implementation success within behavioral health settings (Meza et al., 2021). Organizations that demonstrated clear leadership support, such as policy endorsement, resource allocation, and symbolic prioritization of trauma-informed principles, were more likely to integrate interventions into daily practice rather than handling them as momentary efforts.

The literature further indicates that readiness extends beyond leadership to include organizational culture and infrastructure. Behavioral-health organizations with established quality improvement processes, data systems, and interdisciplinary collaboration structures demonstrated higher capability to absorb trauma-informed practices (Miake-Lye et al., 2020; Huo et al., 2023). Additionally, environments characterized by high staff turnover, fragmented workflows, or chronic underfunding faced persistent implementation barriers, even when evidence-based interventions were available (Hallett et al., 2024).

3.2. Workforce Training, Support, and Role Clarity

Workforce-related factors emerged as a central theme, shaping implementation outcomes (Goldstein et al., 2024; Huo et al., 2023). Across studies, training has been identified as a necessity but insufficient on its own to support sustained trauma-informed practice (Roberts et al., 2023; Bargeman et al., 2022). While initial training increased provider awareness and conceptual understanding of trauma-informed care, ongoing coaching, supervision, and reflective practice were critical for translating knowledge into consistent clinical behavior (Bills et al., 2023).

The reviewed studies highlight the fact that implementation success was enhanced when staff roles were clearly defined and aligned with trauma-informed principles (Ward et al., 2023; Kilpatrick et al., 2020). Ambiguity regarding responsibilities, particularly in multidisciplinary teams, often led to uneven uptake and diluted intervention fidelity (McGuier et al., 2023). Additionally, several studies underscored the emotional labor associated with trauma-informed substance-use jobs, noting that staff burnout and secondary traumatic stress posed significant threats to sustainability in the absence of institutional support systems (Bills et al., 2023; Huo et al., 2023).

3.3. Adaptation, Fidelity, and Contextual Fit

A recurring theme across the literature involves the tension between maintaining fidelity to evidence-based trauma-informed interventions and adapting them to local organizational contexts (Wiltsey Stirman, 2022). Rather than framing adaptation as a deviation from fidelity, many studies conceptualized adaptation as an essential component of successful

scaling, most often in complex behavioral-health systems (Mahon, 2022; Berring et al., 2024). Interventions that were flexibly adapted to align with organizational workflows, client populations, and regulatory requirements demonstrated greater uptake and durability (Mahon, 2022; Wortham et al., 2023).

However, the literature also cautions that unstructured or undocumented adaptations risk undermining the effectiveness of the intervention. Studies that reported systematic adaptation processes, often guided by implementation frameworks, were more likely to preserve core intervention components while maintaining contextual constraints (Pardoel et al., 2022; Eisman et al., 2022). This balance between fidelity and flexibility was particularly notable in publicly funded U.S. behavioral-health systems, where regulatory mandates and reimbursement structures influence service delivery and long-term sustainability (Dopp et al., 2020; Wortham et al., 2023).

3.4. Multi-Level Implementation Strategies

The synthesis reveals that effective scaling of trauma-informed substance-use interventions typically relied on multi-level implementation strategies rather than isolated actions. Successful initiatives combined individual-level strategies, such as clinician training, with organizational-level changes, as well as policy revisions, data monitoring, and workflow redesign (Bills et al., 2023; Goldstein et al., 2024). In several studies, system-level strategies such as cross-agency partnerships or alignment with state and federal behavioral-health initiatives were further reinforced by implementation efforts and supported broader scale-up (Oral et al., 2020; Goldstein et al., 2024)

The literature suggests that interventions embedded within broader organisational and system reforms were more resilient to organizational disruptions, funding fluctuations, and competing service demands (Bills et al., 2023). Moreover, independent implementation efforts that lacked alignment with organizational priorities or external policy environments were more vulnerable to discontinuation once initial funding or leadership support diminished (Goldstein et al., 2024).

From an implementation standpoint, these findings highlight the interaction between inner-setting, process, and outer-setting factors, as illustrated in established implementation frameworks such as the Consolidated Framework for Implementation Research (Damschroder et al., 2022). Altogether, the evidence highlights the fact that the sustainable scale-up of trauma-informed substance-use intervention requires coordinated efforts across individual, organizational, and system levels rather than dependence on single-component strategies.

3.5. Sustainability and Long-Term Integration

Sustainability emerged as a critical yet unevenly addressed theme across the reviewed studies. While many interventions demonstrated short-term feasibility and acceptability, fewer studies provided empirical evidence of long-term integration into routine practice (Bills et al., 2023; Goldstein et al., 2024). Factors associated with sustainability included continuous leadership engagement, institutionalization of trauma-informed policies, ongoing workforce development, and integration into performance monitoring systems (Oral et al., 2020; McKay, 2021).

The literature also highlights the fact that sustainability is shaped by external factors, such as reimbursement models, workforce pipelines, and broader behavioral-health policy environments in the United States (Uglean, 2024; Goldstein et al., 2024). Studies that explicitly addressed sustainability planning during early implementation phases were more likely to report enduring practice change, suggesting that sustainability should be treated as an essential implementation outcome rather than a downstream concern (Goldstein et al., 2024; Bills et al., 2023).

4. Implementation-Science Strategies for Scaling Trauma-Informed Substance-Use Interventions

This table synthesizes the key implementation-science strategies identified across reviewed studies and interpreted using established implementation science frameworks, including CFIR and EPIS (Damschroder et al., 2022; Goldstein et al., 2024; Bills et al., 2023; Oral et al., 2020).

It illustrates how organizational, workforce, and system-level actions support the scaling of trauma-informed substance-use interventions in U.S. behavioral-health organizations.

Implementation strategies are summarized in Table 1.

Table 1 Key implementation-science strategies identified across reviewed studies

Thematic Domain	Implementation Focus	Key Strategies Identified	Primary Level of Action	Implementation Framework Alignment
Organizational Readiness and Leadership Engagement	Institutional capacity and commitment to trauma-informed care	Leadership endorsement, allocation of resources, integration into organizational policies and mission statements	Organizational	CFIR: Inner Setting; EPIS: Preparation
Workforce Training, Support, and Role Clarity	Provider capability and sustainability	Initial training, ongoing supervision, reflective practice, emotional support to reduce burnout	Individual and Organizational	CFIR: Characteristics of Individuals; EPIS: Implementation
Adaptation, Fidelity, and Contextual Fit	Alignment of interventions with local context	Workflow adaptation, population-specific tailoring, structured modification while preserving core components	Organizational	CFIR: Intervention Characteristics; EPIS: Implementation
Multi-Level Implementation Strategies	Integration across organizational and system structures	Policy revision, data monitoring, interdisciplinary coordination, cross-agency collaboration	Organizational and System	CFIR: Process; EPIS: Implementation
Sustainability and Long-Term Integration	Continuation beyond initial implementation	Embedding practices into documentation systems, performance metrics, funding structures, and routine operations	Organizational and System	EPIS: Sustainment

5. Discussion

5.1. Interpretation of Findings Using the Consolidated Framework for Implementation Research (CFIR)

The findings of this systematic review can be clearly understood using the Consolidated Framework for Implementation Research (Damschroder et al., 2022), which provides a practical structure for examining how trauma-informed substance use interventions are implemented within U.S. behavioral health organizations. Across the reviewed studies, implementation success was influenced less by whether the intervention itself was effective and more by how well organizations were prepared to support, integrate, and sustain trauma-informed practices.

Factors related to the inner setting played a central role in shaping implementation outcomes. Organizational culture, leadership commitment, and workforce capacity were repeatedly identified as critical influences (Bills et al., 2023). Many studies reported that trauma-informed substance use interventions require meaningful changes in clinical routines, staff attitudes, and service delivery expectations (Goldstein et al., 2024). These changes were more likely to occur in organizations that placed effort into staff training, ongoing supervision, and leadership engagement. In contrast, settings with high staff turnover, limited training resources, or competing organizational priorities struggled to

maintain consistent implementation. These findings highlight the significance of organizational readiness and supportive internal environments in successful implementation (Oral et al., 2020).

The outer setting also shaped implementation and scale-up efforts. Several studies highlighted how funding structures, policy requirements, and system-level coordination affected the ability of organizations to sustain trauma-informed interventions (Oral et al., 2020). Reliance on short-term grants often limited long-term planning and expansion. In addition, misalignment between behavioral health policies and broader social service systems created barriers, particularly for organizations serving populations with complex needs. These challenges depict how external policy and financing environments influence implementation capacity (Goldstein et al., 2024).

Individual-level factors further contributed to implementation outcomes. Provider attitudes, confidence, and beliefs about trauma-informed care informed the consistency with which interventions were delivered. Resistance was often linked to concerns about workload, emotional strain, and lack of organizational support rather than disagreement with trauma-informed principles. When staff felt supported through training and supervision, implementation was more stable and sustained.

Implementation processes were also important. Studies that described clear planning strategies, stakeholder involvement, and ongoing feedback reported stronger integration of trauma-informed practices into routine substance use treatment (Goldstein et al., 2024). Gradual implementation, opportunities for adaptation, and collaboration across roles aided organizations in responding to challenges as they arose. These findings reinforce the idea that implementation is an ongoing process rather than a one-time event (Damschroder et al., 2022).

Overall, analyzing the findings through the CFIR framework shows that scaling trauma-informed substance use interventions in U.S. behavioral health organizations is primarily an organizational and systems-level challenge. Successful implementation depends on supportive internal conditions, aligned external settings, prepared staff, and deliberate implementation processes working together (Damschroder et al., 2022).

5.2. Interpretation of Findings Using the EPIS Framework

The findings of this review can also be interpreted using the Exploration, Preparation, Implementation, and Sustainment (EPIS) framework, which focuses on how interventions progress over time from initial consideration to long-term use (Moullin & Aarons, 2022). This framework is especially useful for understanding why many trauma-informed substance-use interventions appear promising but struggle to scale or persist across U.S. behavioral health organizations (Moullin et al., 2020).

During the exploration phase, organizations typically recognized the need for trauma-informed approaches in response to high rates of trauma exposure among people receiving substance use treatment. Many studies reported that awareness of trauma-related needs was already present among clinicians and administrators. However, decisions to adopt specific interventions were often influenced by external pressures such as funding opportunities, policy initiatives, or accreditation requirements rather than internal strategic planning (Powell et al., 2020; Stanton et al., 2022). This meant that adoption was sometimes reactive, driven by short-term incentives rather than long-term organizational readiness (Moullin & Aarons, 2022).

The preparation phase emerged as a major weakness across the literature. Although organizations expressed commitment to trauma-informed principles, many did not invest sufficient time or resources into preparing staff, adapting workflows, or establishing clear implementation plans. Training was frequently limited to brief workshops, with little attention to supervision, role clarification, or emotional support for providers (McGuier et al., 2023). As a result, organizations entered the implementation phase without fully addressing practical barriers, which increased the risk of inconsistent delivery (Moullin et al., 2020).

During the implementation phase, variability became more pronounced. Some organizations integrated trauma-informed practices into routine substance use treatment through gradual adjustments, team-based learning, and ongoing feedback. Others experienced implementation fatigue, staff resistance, or dilution of core intervention components. These challenges were often linked to competing clinical demands, staffing shortages, and limited managerial oversight (McGuier et al., 2023; Powell et al., 2020). The findings suggest that implementation success depended less on the intervention model itself and more on how organizations supported providers during routine delivery (Moullin & Aarons, 2022).

The sustainment phase was the least developed across the reviewed studies. Few interventions were evaluated beyond initial implementation periods, and long-term continuation was frequently threatened by funding instability and leadership turnover (Powell et al., 2020). When sustainment did occur, it was typically supported by embedding trauma-informed practices into organizational policies, documentation systems, and performance expectations rather than treating them as independent programs (Stanton et al., 2022; Krishnamoorthy et al., 2025). This demonstrates that sustainment requires structural integration, not ongoing enthusiasm solely (Moullin & Aarons, 2022).

Taken together, the EPIS framework highlights the fact that challenges in scaling trauma-informed substance use interventions are cumulative. Weaknesses in early exploration and preparation stages tend to resurface during implementation and undermine sustainment (Moullin et al., 2020; Krishnamoorthy et al., 2025). For U.S. behavioral health organizations, this suggests that national efforts to expand trauma-informed care should place emphasis on early planning, organizational readiness, and long-term system alignment rather than short-term adoption (Stanton et al., 2022).

5.3. National Importance and Implications for Scaling Trauma-Informed Substance-Use Interventions

Taken together, the findings of this review highlight that scaling trauma-informed substance-use interventions is not only an organizational challenge but a matter of national importance for the U.S. behavioral-health system (Goldstein et al., 2024; Oral et al., 2020). High rates of trauma exposure among people receiving substance-use treatment, combined with workforce shortages and uneven access to care, create conditions in which inconsistent implementation can widen existing disparities rather than reduce them (World Health Organization, 2024; Bills et al., 2023). The reviewed evidence suggests that without deliberate implementation strategies, trauma-informed approaches risk remaining fragmented, localized, and dependent on short-term funding rather than becoming a stable component of standard care (Goldstein et al., 2024).

From an implementation-science perspective, the findings indicate that national scale-up efforts must move beyond promoting trauma-informed principles and instead focus on strengthening the systems that support sustained delivery (Oral et al., 2020; Damschroder et al., 2022). Organizational readiness, workforce support, and leadership engagement repeatedly emerged as central determinants of success (Bills et al., 2023; Goldstein et al., 2024). When these conditions were weak, even well-designed interventions struggled to persist. This pattern suggests that national initiatives should prioritize investment in implementation infrastructure, including training pipelines, supervisory capacity, and organizational change processes, rather than relying solely on the dissemination of intervention models (Oral et al., 2020).

The results also highlight the importance of policy and financial alignment. Many implementation challenges identified in this review were linked to funding instability, reimbursement constraints, and misalignment between behavioral-health services and broader social-service systems (Uglean, 2024; Goldstein et al., 2024). At a national level, these structural barriers limit the ability of organizations to plan for long-term sustainment. Addressing these issues requires coordinated policy approaches that recognize trauma-informed substance-use care as a core component of behavioral-health services rather than an optional enhancement (Uglean, 2024).

Importantly, the findings suggest that scaling trauma-informed interventions has implications for workforce well-being and service quality. Providers were more likely to sustain trauma-informed practices when organizations acknowledged the emotional demands of the work and provided ongoing support (Bills et al., 2023). This has national relevance given widespread concerns about burnout and turnover in the U.S. behavioral-health workforce (Hallett et al., 2024). Implementation strategies that attend to provider support are therefore not only beneficial for intervention fidelity but also for workforce retention and system stability (Goldstein et al., 2024).

Overall, this review indicates that effective scale-up of trauma-informed substance-use interventions requires coordinated action across organizational, system, and policy levels (Damschroder et al., 2022; Oral et al., 2020). Treating implementation as a central component of behavioral-health reform, rather than a secondary consideration, is essential for achieving consistent, equitable, and sustainable trauma-informed care across the United States (Goldstein et al., 2024).

6. Future Directions for Research and Practice

The findings of this systematic review point to several clear directions for future research and practice in scaling trauma-informed substance-use interventions across U.S. behavioral-health organizations. One of the most consistent gaps in the literature is the limited attention to long-term outcomes. Many studies focused on early adoption or short-

term implementation success, with far fewer examining whether trauma-informed practices were sustained over time (Goldstein et al., 2024; Oral et al., 2020). Future research should prioritize longitudinal designs that track implementation beyond initial rollout, allowing for a deeper understanding of how interventions evolve, stabilize, or decline within real-world service systems (Damschroder et al., 2022).

There is also a need for greater clarity and consistency in how implementation outcomes are defined and measured. Across the reviewed studies, concepts such as adoption, fidelity, sustainability, and reach were operationalized in varied ways, making comparisons difficult (Goldstein et al., 2024). Developing and using standardized implementation measures would strengthen the evidence base and support a more meaningful synthesis across studies. This would also help policymakers and practitioners better assess which strategies are most effective for scaling trauma-informed care in different organizational contexts (Damschroder et al., 2022).

Future research should further explore how implementation strategies can be tailored to different types of behavioral-health organizations. Community-based providers, public-sector systems, and integrated care settings face distinct constraints related to funding, staffing, and regulatory oversight (Oral et al., 2020; Uglean, 2024). Comparative studies that examine how implementation strategies perform across these settings would provide valuable guidance for adapting trauma-informed approaches without compromising core principles (Goldstein et al., 2024).

From a practice perspective, future efforts should place stronger emphasis on implementation planning as an early and ongoing activity. Rather than treating scale-up as a final stage, organizations may benefit from incorporating sustainability considerations from the outset, including workforce support, leadership succession planning, and integration into routine policies and data systems (Bills et al., 2023). Research that documents how organizations successfully institutionalize trauma-informed practices can offer practical models for others facing similar challenges (Oral et al., 2020).

Finally, there is a need for closer integration between implementation science and behavioral-health policy. Many of the barriers identified in this review stem from system-level conditions that individual organizations cannot resolve alone (Goldstein et al., 2024; Uglean, 2024). Future work that links implementation evidence to policy design, financing structures, and workforce development initiatives could help translate research findings into broader system change. Advancing trauma-informed substance-use care at scale will therefore require continued collaboration between researchers, practitioners, and policymakers, grounded in implementation science and responsive to the realities of U.S. behavioral-health systems.

7. Conclusion

This systematic review examined the implementation science related to the scaling of trauma-informed interventions grounded in substance use across U.S. behavioral-health organizations. The results indicated that deficiencies in intervention design or clinical rationale can hardly be regarded as the primary impediments to scale-up; rather, organizational readiness, workforce support, and system alignment are more influential constraints.

Across diverse service settings, leadership engagement as reflected in operational change, including protected training time, supervisory support, and integration into routine documentation and performance guidelines, was more likely to persist as a trauma-informed intervention. Conversely, interventions implemented due to the short-term funding system or compliance requirement were often marginal to regular practice and were vulnerable to staff turnover and leadership transitions. Considered through the implementation science frameworks, the evidence indicates that early preparation and planning failures routinely recur during implementation, compromising long-term sustainment. These indicate that effective scale-up of trauma-informed substance-use care requires deliberate investment in implementation infrastructure, workforce stability, and policy coherence as opposed to the reliance on pilot programs or intermittent training efforts. These structural conditions need to be addressed to succeed in sustaining and system-wide implementation of trauma-informed care in the U.S. behavioral-health systems.

References

[1] Bartholow, L. A. M., & Huffman, R. T. (2023). The necessity of a trauma-informed paradigm in substance use disorder services. Journal of the American Psychiatric Nurses Association, 29(6), 470-476.

[2] Bills, L. J., Hutchison, S. L., Snider, M. D., Skrzypek, B. E., Minnich, C. L., Korney, J. M., ... & Herschell, A. D. (2023). Implementing a trauma-informed system of care: An analysis of learning collaborative outcomes. Journal of Traumatic Stress, 36(2), 433-443.

[3] Berring, L. L., Holm, T., Hansen, J. P., Delcomyn, C. L., Søndergaard, R., & Hvidhjelm, J. (2024, April). Implementing trauma-informed care—settings, definitions, interventions, measures, and implementation across settings: a scoping review. In Healthcare (Vol. 12, No. 9, p. 908). MDPI.

[4] Braun, V., & Clarke, V. (2021). Thematic analysis: A practical guide.

[5] Caci, L., Nyantakyi, E., Blum, K., Sonpar, A., Schultes, M. T., Albers, B., & Clack, L. (2025). Organizational readiness for change: A systematic review of the healthcare literature. Implementation Research and Practice, 6, 26334895251334536.

[6] Damschroder, L. J., Reardon, C. M., Widerquist, M. A. O., & Lowery, J. (2022). The updated Consolidated Framework for Implementation Research based on user feedback. *Implementation science*, *17*(1), 75.

[7] Degenhardt, L., Bharat, C., Glantz, M. D., Bromet, E. J., Alonso, J., Bruffaerts, R., ... & Wojtyniak, B. (2022). The associations between traumatic experiences and subsequent onset of a substance use disorder: Findings from the World Health Organization World Mental Health surveys. Drug and alcohol dependence, 240, 109574.

[8] Dopp, A. R., Narcisse, M. R., Mundey, P., Silovsky, J. F., Smith, A. B., Mandell, D., ... & Mendel, P. (2020). A scoping review of strategies for financing the implementation of evidence-based practices in behavioral health systems: state of the literature and future directions. Implementation Research and Practice, 1, 2633489520939980.

[9] Eisman, A. B., Kim, B., Salloum, R. G., Shuman, C. J., & Glasgow, R. E. (2022). Advancing rapid adaptation for urgent public health crises: Using implementation science to facilitate effective and efficient responses. Frontiers in Public Health, 10, 959567.

[10] Goldstein, E., Chokshi, B., Melendez-Torres, G. J., Rios, A., Jelley, M., & Lewis-O'Connor, A. (2024). Effectiveness of trauma-informed care implementation in health care settings: systematic review of reviews and realist synthesis. The Permanente Journal, 28(1), 135.

[11] Hallett, E., Simeon, E., Amba, V., Howington, D., McConnell, K. J., & Zhu, J. M. (2024). Factors influencing turnover and attrition in the public behavioral health system workforce: qualitative study. Psychiatric Services, 75(1), 55-63.

[12] Hong, Q. N., Pluye, P., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., ... & VEDEL, I. (2020). Mixed methods appraisal tool (MMAT) version française 2018. *Education for Information*.

[13] Huo, Y., Couzner, L., Windsor, T., Laver, K., Dissanayaka, N. N., & Cations, M. (2023). Barriers and enablers for the implementation of trauma-informed care in healthcare settings: a systematic review. Implementation science communications, 4(1), 49.

[14] Kilpatrick, K., Paquette, L., Jabbour, M., Tchouaket, E., Fernandez, N., Al Hakim, G., ... & Dubois, C. A. (2020). Systematic review of the characteristics of brief team interventions to clarify roles and improve functioning in healthcare teams. PLoS One, 15(6), e0234416.

[15] Krishnamoorthy, S., Armstrong, G., Ross, V., Mathieu, S., & Kõlves, K. (2025). The Role of Contextual Determinants in Implementation of Complex Suicide Prevention Interventions: An Application of the Exploration, Preparation, Implementation and Sustainment (EPIS) Framework. The International Journal of Health Planning and Management, 40(3), 655-671.

[16] Mahon, D. (2022). Implementing trauma informed care in human services: An ecological scoping review. Behavioral Sciences, 12(11), 431.

[17] Meza, R. D., Triplett, N. S., Woodard, G. S., Martin, P., Khairuzzaman, A. N., Jamora, G., & Dorsey, S. (2021). The relationship between first-level leadership and inner-context and implementation outcomes in behavioral health: a scoping review. Implementation Science, 16(1), 69.

[18] McGuier, E. A., Aarons, G. A., Byrne, K. A., Campbell, K. A., Keeshin, B., Rothenberger, S. D., ... & Kolko, D. J. (2023). Associations between teamwork and implementation outcomes in multidisciplinary cross-sector teams implementing a mental health screening and referral protocol. Implementation Science Communications, 4(1), 13.

[19] McKay, J. R. (2021). Impact of continuing care on recovery from substance use disorder. Alcohol research: current reviews, 41(1), 01.

[20] Miake-Lye, I. M., Delevan, D. M., Ganz, D. A., Mittman, B. S., & Finley, E. P. (2020). Unpacking organizational readiness for change: an updated systematic review and content analysis of assessments. BMC health services research, 20(1), 106.

[21] Miller-Roenigk, B., Awad, M., Crouch, M. C., & Gordon, D. M. (2023). Substance use and trauma among adult education students in the United States. Adult Education Quarterly, 73(1), 81-101.

[22] Moullin, J. C., & Aarons, G. A. (2022). Exploration, preparation, implementation, sustainment (EPIS) framework. In Implementation Science (pp. 51-55). Routledge.

[23] Moullin, J. C., Dickson, K. S., Stadnick, N. A., Albers, B., Nilsen, P., Broder-Fingert, S., ... & Aarons, G. A. (2020). Ten recommendations for using implementation frameworks in research and practice. Implementation science communications, 1(1), 42.

[24] Oral, R., Jennissen, C., Wojciak, A. S., Segal, R., Wibbenmeyer, L., Nielsen, A., ... & Peek-Asa, C. (2020). Nationwide efforts for trauma-informed care implementation and workforce development in healthcare and related fields: a systematic review. The Turkish journal of pediatrics, 62(6), 906-920.

[25] Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., … Moher, D. (2021).

[26] Pardoel, Z. E., Reijneveld, S. A., Postma, M. J., Lensink, R., Koot, J. A., Swe, K. H., ... & Landsman, J. A. (2022). A guideline for contextual adaptation of community-based health interventions. International Journal of Environmental Research and Public Health, 19(10), 5790.

[27] Powell, B. J., Haley, A. D., Patel, S. V., Amaya-Jackson, L., Glienke, B., Blythe, M., ... & Weinberger, M. (2020). Improving the implementation and sustainment of evidence-based practices in community mental health organizations: a study protocol for a matched-pair cluster randomized pilot study of the Collaborative Organizational Approach to Selecting and Tailoring Implementation Strategies (COAST-IS). Implementation science communications, 1(1), 9.

[28] Roberts, G., Halstead, S., Pepper, R., & McDonnell, L. (2023). Social care professionals' perceived barriers to implementing attachment and trauma-informed care training in their practice. Developmental child welfare, 5(1), 3-20.

[29] Sinha, R. (2024). Stress and substance use disorders: risk, relapse, and treatment outcomes. The Journal of clinical investigation, 134(16).

[30] Stanton, M. C., Ali, S. B., & the SUSTAIN Center Team. (2022). A typology of power in implementation: building on the exploration, preparation, implementation, sustainment (EPIS) framework to advance mental health and HIV health equity. Implementation Research and Practice, 3, 26334895211064250.

[31] Uglean, T. M. (2024). The Need for States to Implement Trauma-Informed Care Policies.

[32] Ward, W. L., Washburn, J. J., Triplett, P. T., Jones, S. L., Teigen, A., Dolphin, M., ... & Deal, N. (2023). Role distinctions and role overlap among behavioral health providers. Journal of Clinical Psychology in Medical Settings, 30(1), 80-91.

[33] Wiltsey Stirman, S. (2022). Implementing evidence-based mental-health treatments: Attending to training, fidelity, adaptation, and context. Current Directions in Psychological Science, 31(5), 436-442.

[34] World Health Organization. (2024). Global status report on alcohol and health and treatment of substance use disorders. World Health Organization.

[35] Wortham, W. K., Rodwin, A. H., Purtle, J., Munson, M. R., & Raghavan, R. (2023). Revisiting the policy ecology framework for implementation of evidence-based practices in mental health settings. Implementation Science, 18(1), 58.

[36] Zhang, S., Lin, X., Liu, J., Pan, Y., Zeng, X., Chen, F., & Wu, J. (2020). Prevalence of childhood trauma measured by the short form of the Childhood Trauma Questionnaire in people with substance use disorder: A meta-analysis. Psychiatry research, 294, 113524.