



Implementation frameworks in child, youth and family services – Results from a scoping review



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ABSTRACT

Background & objectives: Implementation frameworks are designed to articulate the actions and behaviors considered necessary for successful implementation of interventions, programs or services. Such frameworks have been increasingly used in social services for children, youth and families (which include family and parenting support, out-of-home care (foster care) placements, child protection, family violence, juvenile justice and community services). The purposes of this review were (a) to identify studies employing an implementation framework in this field; (b) map the literature to better understand these frameworks and the ways in which they are being applied; (c) to ascertain the ways in which implementation frameworks are being tested; and (d) to describe the current state of evidence surrounding their use in the field.

Method: For this scoping review, searches of the literature were conducted within PsycINFO, MEDLINE, CINAHL, ASSIA, Embase, Embase Classic, Social Work Abstracts, ERIC and Sociological Abstracts. Databases were searched for published, peer reviewed English language evaluation studies that applied - and reported on this application - implementation frameworks in the child, youth and family service sector. No limits were placed on years. Any type of study design was eligible from single case studies to randomized controlled trials.

Results: Out of a total of 8541 publications located, thirty-three met the inclusion criteria. They included eight frameworks that have been applied in the sector. Few of the identified frameworks were based on rigorous research designs. Common strategies used within the frameworks included staging implementation, key influences (e.g., competencies, organizational factors, leadership), stakeholder identification and engagement, and capacity measurement and building. Rarely were these approaches theoretically grounded or fully developed, and limited information was provided about their characteristics, development or interconnectedness. In short, research underpinning frameworks and their use has been meager, especially considering their proliferation in the field.

Conclusions: This review identifies a need to strengthen the conceptualization of core strategies that are integrated into implementation frameworks, including an articulation of their underlying logic. In the future, implementation science and practice may gain from moving away from comprehensive and complex implementation frameworks towards a more flexible, modular approach to implementation based on the application and combination of effective ‘implementation core strategies’. Future research may also draw a more complete picture of the state of implementation frameworks by expanding search terms to also include other sectors and domains into systematic reviews.

1. Background

The calls for ‘evidence-informed’ and ‘evidence-based’ practice approaches have become stronger in health, social work, and education since the advent of ‘evidence-based medicine’ in the 1980’s (Shlonsky & Gibbs, 2004), and the number of evidence-based programs available has grown substantially (Dixon & Schwarz, 2013; Kazdin,

2008; Novins, Green, Legha, & Aarons, 2013). Simultaneously, the need to understand and facilitate the transport of effective interventions into real life settings has become stronger (Proctor, Landsverk, Aarons, Chambers, & Mittman, 2008).

In the past two decades, a new field has emerged that focuses on how to create this knowledge and understanding: Implementation science (Brownsong, Colditz, & Proctor, 2012; Khalil, 2016). Despite its

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newness, the literature in this field has seen a vast growth of strategies, models and frameworks in recent years, all aiming to describe the complexity of implementation processes and to identify key influences that help individuals, organizations and systems to better understand and guide their implementation work (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Novins et al., 2013; Powell et al., 2015; Tabak, Khoong, Chambers, & Brownson, 2012). A recent review by Tabak et al. (2012) found 61 unique dissemination and implementation models and frameworks currently in use within the broad implementation science literature, indicating considerable proliferation.

Child, youth and family services represent a sector that has shared this proliferation. This sector consists of government and provider organizations working with vulnerable populations within areas such as family and parenting support, child protection, family violence, juvenile justice and community services. Studies have consistently documented that paying attention to implementation can not only increase the quality of the implementation process itself, but also improve clinical outcomes for the children, youth and families who are the end-users of social welfare services (Campie & Sokolsky, 2016; Durlak & DuPre, 2008; Lipsey, 2009; Mildon & Shlonsky, 2011; Powell, Proctor, & Glass, 2014).

It is therefore not surprising that the child and family services sector pays greater attention to questions about implementation. This is reflected in articles describing implementation frameworks (Ghate, 2015; Hanson, Self-Brown, Rostad, & Jackson, 2016; Kaye, DePanfilis, Bright, & Fisher, 2012; Pipkin, Sterrett, Antle, & Christensen, 2013); studies employing these frameworks in their implementation of specific programs or services (Barbee, Christensen, Antle, Wandersman, & Cahn, 2011; Brown et al., 2014; Glisson et al., 2010); and in major government institutions, charitable funding organizations, and professional associations listing implementation frameworks as their guides (Metz, Naoom, Halle, & Bartley, 2015; Project Permanency Innovations Initiative Evaluation Team, 2013; Supplee & Metz, 2015).

Practitioners and agencies working in child, youth and family services implement complex psychosocial interventions but evidence of significant improvements for the sector's target population – vulnerable families, whose physical or mental health may be threatened by individual, parental or family circumstances – is often inconsistent (Barlow, Simkiss, & Stewart-Brown, 2009; Danese & Tan, 2013; De Swart et al., 2012; Fraser et al., 2013; Vermeulen-Smit, Verdurmen, & Engels, 2015). While the uptake of empirically supported treatments in the sector is developing (Chambers, Wang, & Insel, 2010; Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Novins et al., 2013), their benefit for families will likely only be fully realized when they are implemented with high quality. Obtaining this high quality can be difficult given that the sector is characterized by significant consumer complexities, bureaucratic and hierarchical structures, and a tendency towards risk-averse behavior (Camasso & Jagannathan, 2012, 2014; Gambrell & Shlonsky, 2001; Mansell, 2006; Mildon, Shlonsky, & Dickinson, 2014; Regehr, Bogo, Shlonsky, & LeBlanc, 2010).

The sector's interest in implementation therefore is highly relevant. However, in light of these different system constraints, government and provider organizations working with children, young people and families in need of support would benefit from clear guidance surrounding how to use implementation frameworks – guidance that is based on solid evidence rather than opinion. Hence, to better understand the range and use of implementation frameworks that are central to the child, youth and family services sector, a scoping review was conducted.

2. Method: a scoping review

The application of implementation frameworks in the child and family services sector is understudied, and no scoping reviews with this focus have been conducted thus far. Existing reviews either cut across all human service sectors (Tabak et al., 2012) or focus only on other sectors such as health (Moullin, 2015; Prihodova, Guerin, & Kernohan, 2015).

Scoping reviews are often used as a precursor to full systematic reviews, and rather than detailing the effectiveness of programs or services, are designed to broadly map the extant literature in a particular area (Arksey & O'Malley, 2005; Gough, Oliver, & Thomas, 2012). That is, scoping reviews differ from full systematic reviews in that they broadly describe what the literature contains, using narrative methods, rather than answering specific, narrowly focused questions of cause and effect.

The primary goals of the review were to:

- Identify studies employing an implementation framework in child, youth, and family services and map this literature to better understand these frameworks and the ways in which they are being applied;
- Ascertain the ways in which implementation frameworks are being tested and describe the current state of evidence surrounding their use in the field.

2.1. Search strategy

For this scoping review, the following bibliographic databases were used: PsycINFO, MEDLINE, CINAHL, ASSIA, Embase, Embase Classic, Social Work Abstracts, ERIC and Sociological Abstracts. Databases were searched for published, peer reviewed English language evaluation studies that applied - and reported on this application - implementation frameworks in the child, youth and family service sector. No limits were placed on years. The search strategy employed a wide but targeted range of terms describing 'implementation', 'framework', 'children', 'families' and 'evaluation', and these were combined and run separately in each database (i.e., search terms sometimes varied between databases).

In order to increase efficiency, the implementation and child-specific search terms were combined with search terms designed to identify 'studies'. Studies that were not describing work within the child, youth and families sector as well as opinion pieces, editorials, conference proceedings and similar publications were excluded. All study designs were included, ranging from single case studies to randomized controlled trials.

A formal search of the grey literature was not part of this review. However, subject matter experts were consulted, and reference lists of included studies were searched for other relevant articles. The search terms used in OVID PsycINFO appear in the results addendum. Search strategies used in other databases are available from the authors upon request. Searches were conducted in November 2016.

2.2. Study eligibility

Decisions to include or exclude an article were guided by our definition of an implementation framework – *a coherent set of interlinked elements or factors that - together - constitute a generic structure for describing, understanding or guiding implementation processes* – a definition, which aligns with earlier literature (Flaspohler, Anderson-Butcher, & Wandersman, Duffy, et al., 2008; Meyers, Wandersman, & Durlak, 2012). This definition separates the literature on frameworks from related studies focusing on implementation models developed specifically for a single intervention, or single or multiple, specific implementation strategies that are not integrated into packaged frameworks.

2.3. Literature screening and synthesis

The first author (BA) screened the literature with support from three research assistants. Abstract and title screening was distributed across team members and supervised by the first author. Full text screening was conducted by the first author, who also conducted the data extraction and analysis. All authors were equally involved in developing the discussion of findings.

In order to synthesize the content of implementation frameworks in a systematic manner, five key questions were developed to guide the data extraction and results reporting. Their development was informed by

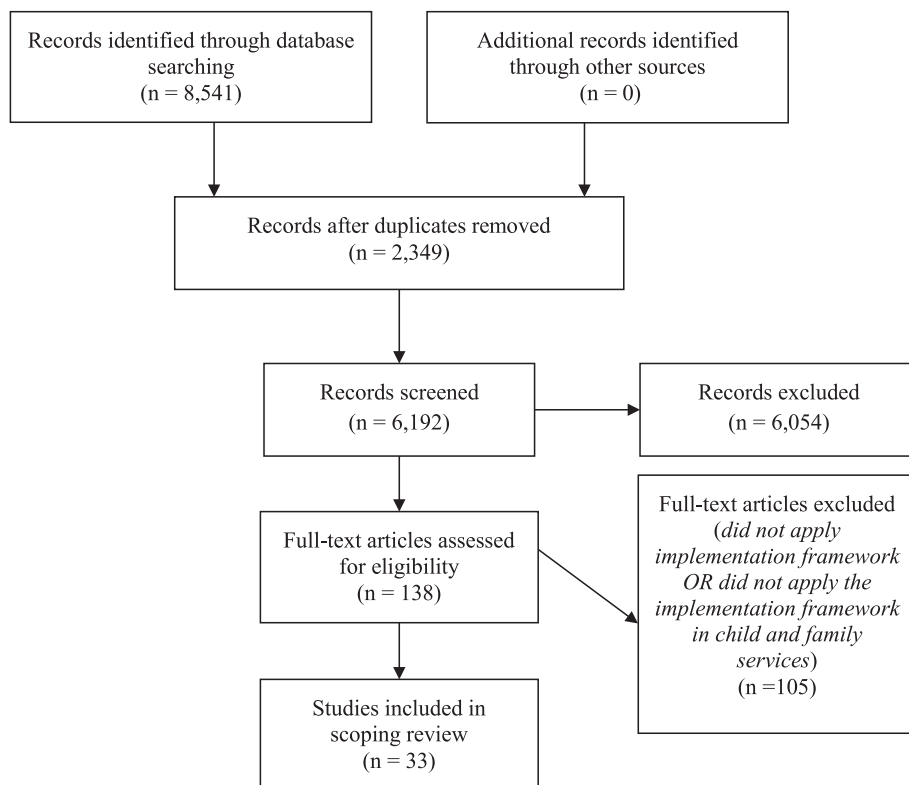


Fig. 1. Flow of papers through the scoping process.

previous efforts to identify commonalities of existing implementation frameworks (Meyers et al., 2012), which showed that both the purpose for which a framework was developed and the underlying implementation process and steps defined as critical for implementation were crucial for capturing the essence of a framework. These aspects are reflected in questions one to three below. In addition, the role of stakeholders in framework utilization has been highlighted in this literature (ibid.). This informed the development of question four and five below.

1. **Purpose:** For which purpose was the framework developed?
2. **Process:** Over time, how does the process (i.e., ordering, timing, duration) of implementation unfold?
3. **Key influences:** At any given time during implementation, which key influences will potentially impact implementation quality?
4. **Stakeholders:** Which stakeholders are described as essential to implementation processes?
5. **Capacity:** How is 'capacity' to support implementation processes conceptualized as part of the framework?

The detailed data analysis focusing on the concepts included in the research questions was conducted by systematically sourcing and extracting information included in the articles that referred to one or more of these concepts. This information was systematically listed in data tables, which were reviewed and summarized by the primary author. This information is contained in the results addendum. An additional analysis of stakeholders listed in the implementation framework literature was conducted by listing every stakeholder mentioned in the articles and locating them at either frontline, organization, community or policy levels of the stakeholder ecology. The stakeholders identified are listed in the electronic results addendum. Finally, the identified articles were screened for their information on implementation capacities. All information was again listed in separate files and reviewed and summarized by the primary author. Focus points for this summary were how implementation frameworks describe the purpose, task and composition of implementation capacities.

2.4. Additional key literature on implementation frameworks

The information in our original systematic search was supplemented by an additional search aimed at generating greater detail on each of the identified frameworks. Conceptual models that described the frameworks were located and used to fill in the gaps. That is, once an established framework was located, additional information was used to more fully describe it. This approach has its roots in the use of qualitative studies to more fully describe interventions or populations in systematic reviews (Higgins & Green, 2011), though systematic search methods were not used to find the conceptual articles. The first author (BA) selected these articles based on the following criteria:

1. The article had to be written by one or more of the identified framework developers.
2. The article had to provide a comprehensive presentation of the framework, its inherent concepts, underlying theory, and methods used to source data to inform its development.

These articles were included in the data extraction to consolidate the presentation of results, and the discussion. The eleven articles that were selected for this purpose are listed in Table 4 in the electronic results addendum. This integration of the conceptual and empirical literature facilitated a richer, more informative picture of the included implementation frameworks, their use, and their usability.

3. Results

3.1. An overview of included studies and frameworks

Out of a total of 8541 studies located, 138 papers were selected for full-text, comprehensive screening for inclusion. The flow of papers through the screening process of this scoping review is summarized in Fig. 1.

Thirty-three of the 138 articles met the inclusion criteria. These articles are listed in Table 1, along with a brief description of the way in

Table 1
Studies included in the final sample.

Implementation framework	Studies	Study content & use of implementation framework
AIF - Active Implementation Frameworks	<p>(1) (Gotham et al., 2008). An Implementation Story: Moving the GAIN from Pilot Project to Statewide Use.</p> <p>(2) (Graff, Springer, Bitar, Gee, & Arredondo, 2010). A Purveyor Team's Experience: lessons learned from implementing a behavioral health care program in primary care settings.</p> <p>(3) (Barwick, Kimber, & Fearing, 2011). Shifting sands: a case study of process change in scaling up for evidence-based practice.</p> <p>(4) (Kimber et al., 2012). Becoming an evidence-based service provider: staff perceptions and experiences of organizational change.</p> <p>(5) (Ogden et al., 2012). Measurement of implementation components ten years after a nationwide introduction of empirically supported programs – a pilot study.</p> <p>(6) (Fogatch, Patterson, & Gewirtz, 2013). Looking forward: the promise of widespread implementation of parent training programs.</p> <p>(7) (McCrae, Scannapieco, Leake, Potter, & Menefee, 2014)</p>	<p>Case study^a summarizing the experience with piloting and scaling the use of the Global Appraisal of Individual Needs – Initial assessment (GAIN-I) with substance abuse treatment programs in the state of Missouri, U.S. Applies the AIF's stages of implementation, core implementation components and implementation teams retrospectively to analyze the experience gained from the process.</p> <p>Case study summarizing a team of expert's experience with planning the implementation of an adolescent behavioral health program in five sites by using the AIF – especially its drivers – as a tool.</p> <p>Case study This publication covers the same change process as the publications by Kimber, Barwick, and Fearing (2012) and Fearing, Barwick, and Kimber (2013) listed below.</p> <p>Case study reporting data collected from staff, who were involved in an organizational change process involving the implementation of several EBPs. AIF is used to reflect data and evaluate AIF's utility. This publication covers the same change process as the publications by Barwick et al., 2011 listed above and Fearing et al. (2013) listed below.</p> <p>Validation study piloting the 'Measure of Implementation Components' representing the core components of implementation included in the AIF (Fixsen, Ponzano, Naoom, & Blase, 2008); based on the 'Implementation Component Questionnaire' used in interviews with 218 participants involved in the implementation of Parent Management Training (PMT-O) and Multi Systemic Therapy (MST) in Norway.</p> <p>Case study of a decade of implementation of Parent Management Training-Oregon Model (PMT-O). AIF – especially its stages – were used to present implementation experience from three different cases.</p>
<p>(8) (Bertram, Schaffer, & Charmin, 2014). Changing organization culture: data driven participatory evaluation and revision of wraparound implementation.</p> <p>(9) (Fearing et al., 2013). Clinical Transformation: Manager's perspectives on implementation of evidence-based practice.</p>	<p>Mixed methods study combining a quantitative survey and qualitative case studies; the study examines the level of buy in among staff involved in the state wide implementation of a set of standard child welfare practices and protocols in the U.S. and analyses whether this buy in is related to organizational readiness and implementation one year after project start. The AIF guides the implementation project, and sites involved received technical assistance from the National Research Network (NIRN), whose staff has developed the AIF. To measure the process of implementation, a measure was developed – the Implementation Process Measure (IPM), which is described as partly reflecting the AIF. A separate publication (Armstrong et al., 2014) describes this process measure and the way in which it utilizes the AIF.</p> <p>Program evaluation^b of Wraparound Implementation. AIF – especially drivers – was used as a lens to identify implementation challenges and target points for improving implementation.</p>	
<p>(10) (Metz, Bartley, et al., 2015). Active implementation frameworks for successful service delivery: Catawba County Child Wellbeing Project</p> <p>(11) (Salveron et al., 2015). Changing the Way we do Child Protection. The Implementation of Signs of Safety® within the Western Australia Department for Child Protection and Family Support.</p> <p>(12) (Glisson & Schoenwald, 2005). The ARC Organizational and Community Intervention Strategy for Implementing Evidence-based Children's Mental Health Treatments</p> <p>(13) (Glisson et al., 2010). Randomized Trial of MST and ARC in a Two-Level Evidence-Based</p>	<p>Case study exploring how managers at Kinark Child and Family Services (Ontario, Canada) viewed and perceived an organizational change process through which all clinical services were to be evidence-based. The organization chose the AIF as a guiding structure for the change process and worked with e.g. 'implementation teams'. Based on the qualitative data gathered through observations and interviews, the authors conclude that '... results provide some support for its [the AIF's] utility in guiding behavioral healthcare organizations through the implementation journey ...' (Fearing et al., 2013, p. 465). This publication covers the same change process as the publications by Barwick et al., 2011 and Kimber et al. (2012) above.</p> <p>Case study illustrating how a county department applied the AIF to support the implementation of evidence-based practices in child welfare.</p> <p>Case study aiming to identify key themes and experiences with the implementation of the Signs of Safety intervention through the Department for Child Protection and Family Support in Western Australia. The AIF is used as a heuristic to structure themes and topics emerging from data gathered through document review and semi-structured interviews.</p> <p>Case study presenting ARC in detail and introducing a study that aims to test outcomes and costs of ARC when applied in the implementation of Multisystemic Therapy (MST).</p>	
ARC Organizational and Community Intervention Model		<p>RCT^c assessing the effectiveness of Multisystemic Therapy compared to treatment as usual - each implemented in combination with or without the ARC intervention. Youth in the MST + ARC condition</p> <p>(continued on next page)</p>

Table 1 (continued)

Implementation framework	Studies	Study content & use of implementation framework
CDT – The Community Development Team	<p>Treatment Implementation Strategy</p> <p>(14) (Glisson et al., 2012). Randomized trial of the availability, responsiveness, and continuity (ARC) organizational intervention with community-based mental health programs and clinicians serving youth</p> <p>(15) (Glisson, Hemmelgarn, Green, & Williams, 2013). Randomized Trial of the Availability, Responsiveness and Continuity (ARC) Organizational Intervention for Improving Youth Outcomes in Community Mental Health Programs</p> <p>(16) (Williams, Glisson, Hemmelgarn, & Green, 2016). Mechanisms of Change in the ARC organizational strategy: increasing mental health clinicians' EBP adoption through improved organizational culture and capacity.</p>	<p>entered out-of-home placements at a significantly lower rate than youth in the control condition. Sector: Mental Health; Scale: 615 youth referred to juvenile court in 14 rural Appalachian counties.</p> <p>RCT assessing whether the ARC condition improves the social organizational context of community-based mental health programs for youth. Organizational culture, climate, and work attitudes were significantly improved in the ARC condition after 18 months. Sector: Mental Health; Scale: 197 clinicians from 26 different mental health programs were assessed with the Organizational Social Context Measure (OSC); programs were randomized to either the 'ARC' or the 'no ARC' condition. The programs were part of a behavioral health system covering 17 counties in a southeastern state in the US.</p> <p>RCT. Builds on 2012 study. Assessing whether the ARC implementation condition improved youth outcomes in community based mental health programs. Youth outcomes were significantly better in the ARC based programs – especially in those with the most improved organizational social contexts. Sector: Mental Health; Scale: 402 youth participating in 18 different mental health programs based on individual, group and family therapy. The programs were part of a behavioral health system covering 17 counties in a southeastern state in the US.</p>
CFIR – The Consolidated Framework for Implementation Research	<p>(17) (Chamberlain et al., 2008). Engaging and recruiting counties in an experiment on implementing evidence-based practice in California.</p> <p>(18) (Saldana & Chamberlain, 2012). Supporting implementation: the role of community development teams to build infrastructure</p> <p>(19) (Saldana, Chamberlain, Bradford, Campbell, & Landsverk, 2014). The costs of implementing new strategies (COINS). A method for implementing implementation resources using the stages of implementation completion.</p> <p>(20) (Brown et al., 2014) evaluation of two implementation strategies in 51 child county public service systems in two states: results of a cluster randomized head-to-head implementation trial</p> <p>(21) (Marques et al., 2016). Providers' perspectives of factors influencing implementation of evidence-based treatments in a community mental health setting: a qualitative investigation of the training-practice gap.</p>	<p>RCT. Reports data from the initial phase of a randomized controlled trial aiming to test two different models of implementation for the work with Multidimensional Treatment Foster Care (MTFC), one of which is the CTD condition.</p> <p>RCT. Builds on 2008 study and applies the Stages of Implementation to measure implementation progress. Identifies variability among implementing sites in moving through implementation stages but does not relate this variability to CDT condition</p> <p>Cost evaluation study^d as part of RCT - related to Chamberlain et al. (2008). Study reports data documenting the potential of The Stages of Implementation (SIC) measure to map implementation costs for two different implementation models for MTFC.</p>
EPIS (Exploration Preparation Implementation and Sustainment) implementation conceptual model (including the interagency collaborative team [ICT] component)	<p>(22) (Hurlburt et al., 2014). Interagency Collaborative Team Model for capacity building to scale-up evidence-based practice.</p> <p>(23) (Aarons et al., 2014). Collaboration, negotiation, and coalescence for interagency-collaborative teams to scale-up evidence-based practice.</p> <p>(24) (Aarons et al., 2016). The Roles of system and organizational leadership in system-wide evidence-based intervention sustainment: a mixed-method study.</p>	<p>RCT. Builds on 2008 study and reports on the final outcomes of this study. The CDT implementation condition did not improve overall implementation measured in terms of implementation stages attained, number of youth placed or the rate at which MTFC was implemented. However, CDT counties served twice as many youth and completed recommended implementation activities more thoroughly.</p> <p>Qualitative study based on in-depth interviews with 28 U.S. providers of mental health services (social workers, psychologists, psychiatrists etc.) examining how organizational- and client-level factors ('CFIR factors') influence their attitudes towards evidence-based treatments. The CFIR and its five domains underpin all elements of the study (research question, questionnaire, data analysis). The authors conclude that provider perceptions of client-level implementation factors impact upon providers' attitudes towards evidence-based treatment.</p> <p>Case study presenting qualitative findings from interviews with 27 stakeholders involved in the early stage of implementation of SafeCare® in a large county in California, US. Interviews focus on the first application of the ICT component of EPIS. Concludes that the ICT may create structures and conditions that help resolve tensions between intervention and the implementing community.</p> <p>Qualitative study examining the role of collaboration in a state-wide implementation of SafeCare® in the U.S. The intervention is a manualized, evidence-based home visitation program targeting child abuse and neglect. The EPIS framework is the basic conceptual model guiding the study, e.g. study participants (N = 54) were selected to participate in individual interviews or focus groups based on the differentiation btw 'inner' and 'outer' context of the implementation; the concept of 'stages' is used in presenting findings.</p> <p>Mixed-Methods study examining how leadership – executed in the inner and outer context of the implementation of SafeCare® - relates to sustainment of this evidence-based intervention in 87 counties in the U.S. The EPIS framework is used to conceptualise the leadership factors that contribute to sustainment in both contexts, serves as an analytical tool and an overall framework for the study. Authors conclude that leadership</p>

(continued on next page)

Table 1 (continued)

Implementation framework	Studies	Study content & use of implementation framework
GTO - Getting To Outcomes	<p>(25) (Kotte et al., 2016). Facilitators and barriers of implementing a measurement feedback system in public youth mental health.</p> <p>(26) (Chinman et al., 2008). The getting to outcomes demonstration and evaluation: an illustration of the prevention support system</p> <p>(27) (Barbee et al., 2011). Successful adoption and implementation of a comprehensive casework practice model in a public child welfare agency: application of the GTO model</p> <p>(28) (Duffy et al., 2012). Enhancing teen pregnancy prevention in local communities: capacity building using the interactive systems framework</p>	<p>in both contexts predict sustainment of SafeCare® and provide characteristics of leadership that supports sustainment.</p> <p>Qualitative study examining facilitators and barriers to the state-wide implementation of the 'Ohio Scales', a measurement feedback system used by care coordinators in Hawaii working for the state's Child and Adolescent Mental Health Division. The EPIS framework is used as a structure to present the implementation framework and the results from interviews with 47 care coordinators. The authors identify both inner and outer context factor as impacting upon scale implementation at the state level.</p> <p>Quasi-experimental, longitudinal evaluation^d of the impact of GTO on individual capacity and program performance in two community-based, substance abuse prevention coalitions targeting children and youth. 2 programs from SC & 4 from CA were included – comparison groups were other programs & staff in the coalitions. Tracks implementation of GTO & user feedback on framework's utility & acceptability. Evaluation results show that GTO helps improve individual staff members' self-efficacy, attitudes, and behaviors needed to perform high quality prevention. Program performance was improved in the GTO programs with outcome evaluation-decision making, process evaluation and CQI mechanisms showing strongest improvements.</p> <p>Case study presenting the University of Louisiana's application of GTO as an aid to plan and implement Solution Based Case Work in different states. Concludes that GTO is a valuable help in the implementation of casework practice models at different system levels.</p>
ISF - The Integrated Systems Framework	<p>(29) (Chinman et al., 2013). An Intervention to improve program implementation: findings from a two-year cluster randomized trial of assets-getting to outcomes</p> <p>(30) (Pipkin et al., 2013). Washington State's adoption of a child welfare practice model: an illustration of the getting to outcomes implementation framework</p> <p>(31) (Haigunseith et al., 2012). Using the interactive systems framework in understanding the relation between general program capacity and implementation in afterschool settings</p>	<p>Pre-post evaluation^f of the implementation of GTO to support teen pregnancy prevention programs in 11 community-based organizations and three schools. Data collection based on interviews & a GTO specific rating scale. Concludes that all organizations increased their GTO performance over time – and that an intermediary prevention support system as described as part of the ISF can bridge the gap between research and practice successfully. Study thus also linked to ISF application studies.</p> <p>RCT evaluating the outcomes of a GTO implementation in 12 prevention coalitions in Maine, US, with 6 coalitions (= 30 programs) receiving the GTO intervention and 6 maintaining routine operations. No significant differences in prevention capacity were found between groups. Within the GTO groups significant differences in self-efficacy between extensive and less extensive GTO users were found. Concludes that GTO can help ensure investments in prevention programs.</p> <p>Case Study illustrating the application of GTO as part of Washington State Children Administration's statewide implementation of Solution-Based Case Work. Concludes that GTO is a valuable guide for keeping change processes 'on track', by e.g. providing a formal and practical structure for planning and assessment.</p>
PRISM - The Practical, Robust, Implementation and Sustainability Model	<p>(32) (Smythe-Leistico et al., 2012). Blending theory with practice: implementing kindergarten transition using the interactive systems framework</p> <p>(33) (Stephens, McGuire-Schwartz, Rourke, Fuss, & McKay, 2014). A learning collaborative supporting the implementation of an evidence-informed program, the '4Rs and 2Ss for children with conduct difficulties and their families'.</p>	<p>Pre-post evaluation of how organizational and community capacity impacts on the implementation of the Good Behavior Game intervention (GBG). Analysis of data from 8 programs that were part of the intervention group of an RCT on GBG effectiveness. ISF's support system is used as conceptual lens. Data collection based on survey data from 8 program directors & ongoing implementation monitoring data. Results suggest that both levels of capacity are important for a strong implementation of GBG, and that high levels of both types of capacities can help to achieve high quality implementation of GBG. Also concludes that ISF's understanding of the importance of the support system & capacities are valid.</p> <p>Case Study presenting the ISF as a guide for planning and structuring and a lens for understanding implementation processes. The implementation of the Kindergarten program Ready Freddy is used. Concludes that ISF is relevant in several situations of implementation.</p> <p>Qualitative study examining the implementation of the '4Rs and 2Ss' program, an evidence-informed intervention for groups of families with children diagnosed with behavioral problems. The PRISM conceptual framework guided the development of questions used to collect and analyze data from through structured conversations with clinical staff at 29 child mental health clinics in New York State that used the program. Results are presented following the four dimension of the PRISM. The authors conclude that the PRISM is a helpful framework in implementation research.</p>

^a Qualitative study emphasizing a detailed contextual analysis of an implementation process within an organization, a community or a system.

^b An evaluation aiming to identify barriers to an adherent implementation of an evidence-based program and focusing on implementation quality not on outcomes.

^c Randomized Controlled Trial with individuals, organizations, communities or systems randomized to different implementation conditions.

^d Randomized Controlled Trial with individuals, organizations, communities or systems randomized to different implementation conditions.

^e Controlled evaluation measuring implementation quality multiple times over several years. Control is achieved not through randomisation but through comparison with natural comparison groups.

^f Non-controlled evaluation measuring implementation quality at different points of time of the implementation process.

Table 2
A Comparison of core content of implementation frameworks that have been applied in child, youth and family service settings.

Framework	Purpose (The type of intervention or innovation a framework supports & other purposes articulated for the framework)	Process (Ways in which the identified implementation frameworks describe how implementation processes unfold over time)	Key Influences (Key influences or activities needed to support an implementation at any given point in time)	Stakeholders (Stakeholders at the frontline, organizational, community and policy level identified as essential to an implementation process)	Capacity (Individuals, teams or units that provide the skills, abilities, and resources called upon when implementing an intervention or innovation)
Active Implementation Frameworks (AIF) (Metz & Bartley, 2012)	Support the implementation of fully operationalized programs and practices that enable fidelity measurement. Focus on supporting organizations/systems.	4 implementation stages: exploration, installation, initial and full implementation. Stages are finalized through sustainability.	3 implementation drivers: competency, organizational, and leadership drivers. Improvement cycles.	Key stakeholders are funders, policy makers, program developers and implementing sites.	Implementation teams create buy in & readiness; install and sustain implementation infrastructure; assess fidelity & outcomes; build linkages with external systems; problem solve & sustain.
ARC Organizational and Community Intervention Model (Glisson & Schoenwald, 2005)	Focus on 'boundary spanning' = structuring the inter-organizational domain in between the implementing site and stakeholders/opinion leaders in the community. Support the implementation of any given core service technology.	4 implementation phases: problem identification, direction setting, implementation, and stabilization.	Develop stakeholder group to support effective services at community level ; facilitate service delivery at organizational level ; develop one-to-one relationships with community opinion leaders at individual level – thereby influence perceptions, attitudes & decisions at these levels.	Focus on stakeholders in the implementing community – whose composition is context specific – and their interplay with the ARC change agent. Strong focus on role of opinion leaders (who may not be stakeholders).	ARC Change agents bridge the social and technical gaps between implementers and community opinion leaders/stakeholders. 10 core interventions: Relationship building, network development, team building, information & data management, feedback, facilitate participatory decision-making, conflict resolution, COI, job redesign, self-regulation. Within the implementation process domain, opinion leaders, formally appointed implementation leaders, champions, and external change agents are highlighted as capacities to create engagement.
The Consolidated Framework for Implementation Research (CFIR) (Damschroder et al., 2009)	A 'pragmatic, meta-theoretical framework' (Damschroder et al., 2009, p. 12) developed to (a) consolidate existing constructs found to impact upon implementation and (b) support researchers in theory development and understanding implementation.	N/A	Identifies five major implementation domains: (1) the intervention; (2) the inner setting; (3) the outer setting; (4) the individuals involved; (5) the implementation process. Several constructs are included within each domain	Researchers are the core stakeholders to use the CFIR. The central stakeholders involved in implementation are individuals who work within an organization that initiates change.	The CTD increases the pace of implementation; promotes sustainable & model-adherent implementation; and improves client outcomes. Operates at county level. Organized as peer-to-peer networks; facilitated by CDT facilitator; networks meet six times to problem-solve and remove implementation barriers together.
CTD – The Community Development Team (Saldana & Chamberlain, 2012; Sosna & Marsenich, 2006)	Support the implementation of evidence-based programs such as MTEC, KEEP, MST, FFT to increase their implementation pace, sustainable, model-adherent implementation, and to improve outcomes.	3 implementation phases: pre-implementation, implementation, and sustainability.	Defines goals for each phase: Engagement, implementation planning and training for pre-implementation. Model-adherence & practitioner competence for implementation. Autonomous site for Sustainability. Typical processes and activities are described for each phase & goal.	County level focus: System leaders, agency directors, practitioners, and consumers together with program developers are mentioned. Highlights that importance of stakeholders may vary with implementation phases. CDT involves a peer-to-peer process among those stakeholders aiming to address barriers in implementation.	The CTD increases the pace of implementation; promotes sustainable & model-adherent outcomes. Operates at county level. Organized as peer-to-peer networks; facilitated by CDT facilitator; networks meet six times to problem-solve and remove implementation barriers together.
EPIS (Exploration Preparation Implementation and Sustainment) implementation conceptual model (Aarons et al., 2010, 2012; Hurlburt et al., 2014)	Support the implementation of different evidence-based practices in publicly funded settings serving children and families.	4 implementation phases: exploration, adoption & preparation, active implementation, sustainment.	Differs between inner and outer context factors in each implementation phase – all of which vary in their importance from phase to phase. 7 potential outer context factors: Sociopolitical context, funding, client advocacy, inter-organizational networks, intervention developers, leadership, and public-academic collaboration. 6 potential inner context factors: Organizational characteristics, individual adopter characteristics, leadership, innovation-values fit, fidelity monitoring & support, and staffing.	Key stakeholders are legislators, funders, professional organizations, client advocacy organizations, service providers, intervention developers, academic/research organizations, and possible networks among these.	Interagency Collaborative Team (ICT) introduced in SafeCare study – here clearly connected to EPIS stages. ICT described as teaming structure consisting of seed team (initiating & overseeing function) and several training teams (delivering intervention & feedback to seed team function).
Getting To Outcomes (GTO)	Help build an outcome base for and	2 phases: planning & evaluation. The	10 different steps need to be taken to	Stakeholders of the	N/A. Connected to Integrated Systems (continued on next page)

Table 2 (continued)

Framework	Purpose (The type of intervention or innovation a framework supports & other purposes articulated for the framework)	Process (Ways in which the identified implementation frameworks describe how implementation processes unfold over time)	Key Influences (Key influences or activities needed to support an implementation at any given point in time)	Stakeholders (Stakeholders at the frontline, organizational, community and policy level identified as essential to an implementation process)	Capacity (Individuals, teams or units that provide the skills, abilities, and resources called upon when implementing an intervention or innovation)
(Wandersman et al., 2000)	implement any prevention program or policy in a community or system.	planning phase consists of two sub-phases: (P1) the GTO process, and (P2) the feedback and continuous improvement loop.	move through GTO logic: Steps 1–3 addresses the needs, and goals of the community and identifies best practices (= P1). Steps 4–6 target the fit of the selected intervention and capacities & planning needed to implement it (= P2). Steps 7–10 are taken in evaluation phase and focus on CQI and sustainment activities.	implementing community are in focus: Staff, practitioners, leaders, funders, and intervention developers.	Framework (ISF), which may answer ‘capacity question’ for GTO.
Integrated Systems Framework (ISF) (Flaspohler, Anderson-Butcher, and Wandersman, 2008; Wandersman, Duffy, et al., 2008)	Developed as heuristic = experience-based framework for understanding the interplay of different systems needed to implement evidence-based practice in the field of prevention.	N/A	Three systems are in constant interplay during large-scale implementation: the synthesis and translation system; the support system; and the service delivery system. They interact under influence of policies; the political climate, funding structures, and existing research & theory.	The system perspective defines key stakeholders: Funders, researchers, practitioners, and technical assistance providers.	Highly differentiated concept of capacities, which can be either general or innovation-specific and exist within the delivery system at the individual, organizational, and the community level. The support system is the core capacity, which mediates between the synthesis and translation system and the delivery system and helps the delivery system to build capacities needed for successful implementation.
The Practical, Robust Implementation and Sustainability Model (PRISM) (Feldstein & Glasgow, 2008)	Developed as a ‘conceptual framework for improving practice’ and a tool for researchers and health care managers to evaluate and improve the adoption, implementation maintenance, reach and effectiveness of clinical programs and interventions.	3 implementation phases: (1) Development; (2) Implementation; (3) Maintenance.	4 ‘PRISM Elements’ can be activated in the implementation of clinical interventions – which should be viewed from an organizational and a patient perspective; (2) the external environment; (3) the implementation/sustainability infrastructure; (4) the recipients – which include both organizational recipients who work with the intervention and patient recipients, who receive services. For each element, a number of factors are defined as central key influences.	For the use of PRISM the focus is on: (a) researchers; (b) health care decision-makers. For implementation processes the focus is on staff at all levels of a health provider organization (recipients 1); and patients (recipients 2).	N/A. Model developers point to ‘implementation teams’ as a success factor identified in the implementation literature but this concept is not integrated into the model as a core component.

which the implementation framework was applied in each study. The full list of articles excluded at full text screening ($n = 105$) is contained in the electronic results addendum.

The 33 studies reported on eight distinct implementation frameworks that have been applied in child, youth and family service settings. All were developed in the U.S.:

- The Active Implementation Frameworks (AIF) (Fixsen, Blase, Naoom, & Wallace, 2009; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Metz & Bartley, 2012; Metz, Bartley, et al., 2015). Developed by the National Implementation Research Network, and based on a review of implementation literature from multiple disciplines, the AIF aims to guide implementation processes in human services.
- The Availability, Responsiveness and Continuity Organizational and Community Intervention Model (ARC) (Glisson, 2002; Glisson et al., 2010, 2012). Designed at the Center for Behavioral Health Research at the University of Tennessee, the ARC focuses on the development of organizational and community efforts to support effective children's services.
- The Community Development Team (CDT) (Saldana & Chamberlain, 2012; Sosna & Marsenich, 2006). The CDT was developed by the California Institute for Mental Health to support a model-adherent implementation of evidence-based programs in public mental health services.
- The Consolidated Framework for Implementation Research (CFIR) (Damschroder et al., 2009). Based on a review of implementation theories, the CFIR aims to consolidate existing constructs found to be essential to implementation and support implementation researchers in theory development and verification.
- The Exploration Preparation Implementation and Sustainment (EPIS) framework (Aarons, Hurlburt, & Horwitz, 2010; Aarons et al., 2014). The EPIS was developed to support the implementation of evidence-based programs in publicly funded child and family service settings.
- The Getting to Outcomes (GTO) framework (Wandersman, Imm, Chinman, & Kaftarian, 2000; Wandersman, Ebener, et al., 2008). The GTO was designed to assist practitioners, managers and evaluators in designing and describing strategies used to plan, implement and evaluate programs and policies in community services.
- The Integrated Systems Framework (ISF) (Wandersman, Duffy, et al., 2008). The ISF targets practitioners, funders and researchers involved in implementation processes in community services and aims to help stakeholders to better understand mutual needs and interests.
- The Practical, Robust Implementation and Sustainability Model (PRISM) (Feldstein & Glasgow, 2008). The PRISM was developed as a tool for health care researchers and decision-makers to monitor and assess program adoption, maintenance, reach and effectiveness.

Three broadly defined research designs were employed - thirteen case studies; nine non-controlled evaluations, and nine controlled studies. Two articles belonged to the category 'other' with one reporting a validation study of an implementation measure, and the other a cost validation study. Among the controlled designs, four articles covered the ARC model, which has been tested in two different projects in child, youth, and family services. Three articles, which all refer to the same research project, covered the CDT, and finally two articles applied GTO.

The majority of the studies was based on case study designs that used implementation frameworks as a 'lens' (Bertram et al., 2014; Graff et al., 2010) for structuring the process of implementation. In this type of application, the framework becomes a heuristic to provide a common understanding or language used by different stakeholders to evaluate the implementation of a given intervention. Furthermore, it is common to exclude some elements of the framework in these studies. For instance, as can be seen in Table 1, some case study applications only

reference framework *phases*, even though the framework may consist of additional approaches.

Few studies, both controlled and uncontrolled, assessed whether a framework, as a whole, adds value to an implementation process as opposed to using only selected pieces (e.g., by improving the pace or quality of the implementation or the program performance). In two articles, this involves testing what impact an implementation framework – in this case the ARC – may have on outcomes for end-users of services – youth in mental health (Glisson et al., 2010, 2013).

The content of the implementation frameworks is summarized in Table 2, which is based on the information included in the final literature selection and, extended with information derived from additional articles presenting these frameworks, as listed under the framework's name. This additional – often purely theoretical or conceptual – literature was consulted in all cases, as the applied studies did not provide information about the framework sufficient to answer all research questions.

3.2. A detailed analysis of the implementation framework literature

3.2.1. The purpose of implementation frameworks

With the exception of one framework, all were developed to support organizations or systems in their intervention implementation efforts. However, in doing so they differ in the types of interventions (evidence-based vs. other types of intervention) they are able to support, and the aspects of implementation (e.g. structuring the inter-organizational domain, enhancing program adherence etc.) that they focus on.

If interventions and practices to be implemented are viewed through a lens of 'operationalization' and mapped on a continuum going from less operationalized, innovative practices to fully operationalized programs that are based on specific fidelity requirements, the frameworks may lend themselves as implementation support tools as described in Fig. 2.

'Operationalization' is understood as the degree to which an intervention's target group characteristics need to be described and its application and implementation manualized, thereby providing clear guidance to attempts to replicate and scale up its use (Chambless & Ollendick, 2001).

The GTO – building on both evaluation and implementation activities – is described as applicable to any type of program or policy (Wandersman et al., 2000) whereas a framework like the CDT is developed to support the implementation of specific empirically supported treatments such as Multidimensional Treatment Foster Care (MTFC) (Saldana & Chamberlain, 2012). The remaining frameworks fall between these two poles of the continuum. For instance, the PRISM highlights 'health innovations' grounded in research as its core focus without requiring a particular level of operationalization. This differs from the AIF, which emphasizes the need to work with fully operationalized interventions but not necessarily to select an evidence-based program for implementation (Metz, Bartley, et al., 2015). The same is the case for the ARC, developed to support the implementation of 'effective child and family mental health services' (Glisson, 2002), p. 245). The EPIS, on the other hand, highlights 'EBPs in publicly funded settings serving children and families' (Aarons et al., 2010) as its focus, thereby moving this framework closer to the right of Fig. 2.

Implementation frameworks also differ in their level of universal applicability. Four of the frameworks – the AIF, EPIS, ISF, and the PRISM – fulfill a 'universal' purpose in that they build on universal aspects of implementation (e.g., stages) and are broadly applicable across different implementation settings (e.g., single organizations, communities, systems). Other frameworks, in contrast, have a more specific purpose targeting particular domains of the implementation process. The ARC addresses the *inter-organizational domain* between agencies involved in a community based implementation process (Glisson & Schoenwald, 2005). Similarly, the CDT aims to enable the

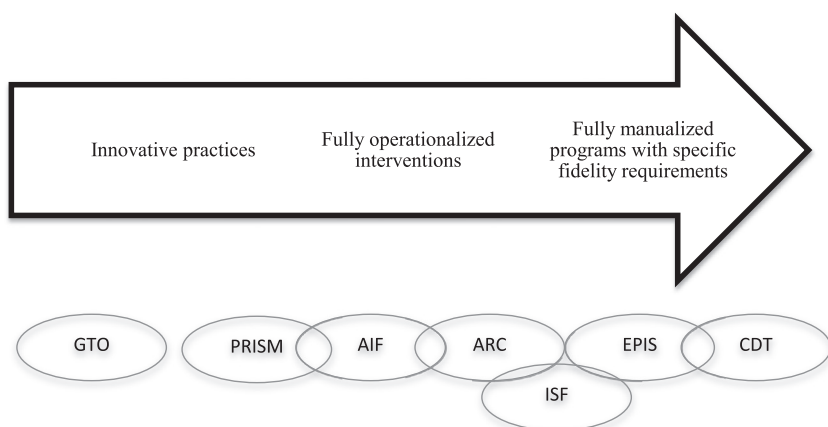


Fig. 2. The use of implementation frameworks with different types of interventions.

creation of communities of MTFC practice at the cross-county level – and therefore seems not to lend itself to an application at the single organization level. The specific function of the GTO is to provide practitioners with a systematic accountability approach. Hence, it includes a strong element of *evaluation* (Wandersman et al., 2000). Finally, the CFIR was developed as a meta-theoretical framework to support implementation researchers in theory development and verification. It is the one framework identified as part of this review that does not aim to support implementation practice in real life settings (Damschroder et al., 2009).

3.2.2. The process of implementation

There is striking agreement among framework developers that implementation takes place in **stages**. Across frameworks, the number of stages varies from two to four with four stages being chosen by three of the frameworks all of which define a type of pre-implementation phase (e.g. ‘exploration’ or ‘problem identification’), a planning phase (e.g. ‘installation’, ‘direction setting’ or ‘adoption & preparation’), an implementation phase (e.g. ‘initial’, ‘full’, and ‘active’ implementation) and a phase of sustainment (or ‘sustainability’ or ‘stabilization’). The ISF and the CFIR do not include a stage-based perspective.

3.2.3. The key influences of implementation

The frameworks build on a range of key influences needed to support implementation at any given point in time, and do so with differing levels of specificity.

While the AIF is rather abstract and focuses on *competencies, organizational factors* and *leadership* as three ‘handles’ that can be used to guide an implementation process at any stage (Metz, Bartley, et al., 2015; Metz & Albers, 2014; Metz & Bartley, 2012), the EPIS differentiates a broader number of drivers, weighs their influence differently across stages, and incorporates a stronger focus on outer context factors such as *political climate* or *current research and theory* (Aarons et al., 2010). The CFIR framework identifies five domains – the intervention, the inner and outer setting, the individuals involved and the process of an implementation – as influences in implementation. A number of constructs are then assigned to each of the domains. For instance, ‘planning’, ‘engaging’, ‘executing’, ‘reflecting and evaluating’ are activities highlighted as potentially affecting the *process quality* of an implementation (Damschroder et al., 2009).

Some of the frameworks (e.g., the ARC or the EPIS) are explicit about the different socio-ecologic levels – the individual, the organization, the community, the system or the inner- and outer-organizational level – across which implementation takes place and define specific factors or activities targeting one or more levels (Glisson, 2002; Glisson & Schoenwald, 2005). Other frameworks (e.g., the ISF) cover only a single level (e.g., system level) and are less concrete when describing activities and factors needed to support implementation

(Chambers, 2012; Wandersman, Duffy, et al., 2008).

Frameworks that focus on specific programs (e.g., CDT) are centered on implementation activities that relate to program-specific goals (Saldana & Chamberlain, 2012; Sosna & Marsenich, 2006). They differ from frameworks like the PRISM or the ARC that build on general principles that can be applied to “any core technology” (Glisson & Schoenwald, 2005). Similarly, the GTO defines ten generic steps for implementation and leaves it to the implementing system to decide which activities are necessary to achieve in each of these steps (Chinman et al., 2008; Wandersman et al., 2000). The ISF provides few, and rather general, instructions – such as ‘distilling information’, or ‘supporting others’ – for actions necessary to support implementation (Wandersman, Duffy, et al., 2008).

3.2.4. Implementation stakeholders

The applied studies provide a detailed picture of the variety of stakeholders potentially involved in ‘real life’ implementation work. Following the current literature (Greenhalgh, 2017; Sandfort & Moulton, 2015; Tabak et al., 2012), stakeholders were categorized into one of four groups¹:

1. Stakeholders at the **frontline level** of implementation involved in the delivery of services to end-users.
2. Stakeholders at the **organizational level** of implementation involved in supporting the service delivery at the front line.
3. Stakeholders at the **community level** of implementation - an inter-organizational space in which service providers connect with other agencies and individuals to jointly support the implementation of evidence-based practices.
4. Stakeholders at the **policy level** of implementation involved in funding and policy decision-making that enables the implementation of EBPs at the other levels of the implementation system.

Two major stakeholder groups are involved in implementation at the **frontline level**: The end-users of services or ‘service recipients’, and staff involved in delivering these services. Even though services may be provided to single individuals only, (extended) families, and broader networks around them can often be counted among stakeholders because they are included in intervention processes or are affected by them.

Three of the implementation frameworks assign end-users a central role in implementation: The EPIS highlights the potential role of client groups as active stakeholders in implementation (Aarons et al., 2010); the CFIR and the PRISM frameworks emphasize the importance of patient characteristics – demographics, disease burden, competing

¹ Refer to electronic results addendum for summary of this analysis.

demands and knowledge and beliefs – and needs for implementation success (Damschroder et al., 2009; Feldstein & Glasgow, 2008).

On the staff side of service delivery, implementation work includes the single practitioners, who provide direct services to children, youth or families. They often depend on specialist consultancy, supervision, or coaching, or are part of a treatment team and other work units that extend the group of professionals involved in program implementation.

At the level of the **single organization**, the studies give numerous examples of provider agencies involved in implementation. They often collaborate with a number of other organizations that provide support through research, technical assistance or other program or implementation ‘know how’. These organizations are university based program developers or independent intermediary or purveyor organizations specializing in supporting others in their implementation efforts (Franks, 2010; Franks & Bory, 2015; Oosthuizen & Louw, 2013).

At the **‘community’** level, businesses, faith-based organizations, tribes, neighborhoods and media are among relevant stakeholders to be included in implementation efforts according to the applied studies. To engage these players, implementation projects seem to build structures that can bring them together – work groups, coalitions, teams, committees and partnerships – and provide governance in the community sphere. In some cases, this collaboration receives formal support through designated roles focusing on implementation work: Change agents, facilitators or consultants.

‘Policy’ implementation stakeholders come from all levels of the political system – city, region, county, state, and federal – in either a funding or an administrative role. Non-governmental funders are involved, too, together with special interest organizations such as unions or national child welfare agencies. In none of the studies it is described in more detail around what and how policy stakeholder involvement takes place.

The EPIS and the ARC frameworks describe how stakeholders, and the levels of the implementation system at which they operate, should connect. The EPIS highlights the impact of inter-organizational networks on implementation processes – thereby giving these networks their own stakeholder status (Aarons et al., 2010, 2012). Within the ARC, ‘opinion leaders’ from the communities in which implementation is occurring (Glisson & Schoenwald, 2005) are ‘mediators’ between the frontline, organizational and community level of implementation. The CFIR does not address stakeholders as a particular topic in implementation but as a concept of relevance across all CFIR domains. However, four types of leaders are highlighted as potentially impacting implementation through engagement. These are ‘opinion leaders’, ‘formally appointed internal implementation leaders’, ‘champions’, and ‘external change agents’ (Damschroder et al., 2009).

3.2.5. Implementation capacity

Although the meaning of the term still lacks clarity (Flaspohler, Duffy, Wandersman, Stillman, & Maras, 2008), ‘capacity’ is commonly referred to as the human resources – e.g. skills, knowledge, attitudes – that are thought to provide systems with the ability to accomplish and sustain their goals (Hoge, Tondora, & Marrelli, 2005). In an attempt to delineate the concept of capacity, Flaspohler, Duffy, et al. (2008) suggested a distinction between organizational **general** capacity comprised of “leadership, organizational structure/management style, organizational climate, resource availability, staff capacity, and external relationships” (p. 191) and **innovation-specific** capacity, which are the unique skills, abilities, and resources called upon when implementing a specific innovation in an organization.

Most of the identified frameworks highlight the need to create ‘implementation capacity’ to enable, facilitate, and support the implementation work of organizations and systems.² The AIF and the EPIS

² The electronic appendix provides an overview of the purposes, tasks and compositions of the described capacities contained in the frameworks.

suggest ‘implementation teams’ as necessary to build this capacity. The ARC framework emphasizes the role of the ‘change agent’, while the ‘community development team’ is at the center of the CDT. The ISF points to the ‘support system’ as its capacity building entity – however, it is not as specific as the other frameworks regarding how to provide implementation support. The GTO, PRISM and CFIR do not discuss the need for a specific implementation team.

Common purposes of these different teams or individuals are to *liaise*, *span boundaries*, and *bridge gaps* among different systems, organizations, or roles related to the implementation process. Building connections between program developers and the active implementers of a site or a system is the prominent boundary spanning activity for the capacities in the AIF, the EPIS, and the CDT, whereas the ARC focuses on linking active implementers with other key stakeholders and opinion leaders in the surrounding community (Glisson & Schoenwald, 2005). The ISF positions the support system between the delivery and the synthesis/translation system and puts an emphasis on enabling research translation into practice (Wandersman, Duffy, et al., 2008; Wandersman et al., 2012).

The tasks that follow from these purposes look slightly different for the different frameworks: Whereas the AIF and the ARC keep a focus on ‘implementation skills’ in their task list, the CDT, EPIS, and ISF also view program related tasks (e.g., training in the EBP to be implemented) as a direct responsibility of the implementation team or change agent providing implementation capacity. This implies that the different teams or individuals may require different sets of knowledge and skills: The AIF and ARC expect that implementation teams or ‘change agents’ are familiar with the evidence-based programs to be implemented, but not at the level of clinical program experts, as training, coaching, supervision is assumed to be delivered by others. The CDT, EPIS and the ISF on the other hand assume clinical expertise to be present in their teams and systems because training, clinical support and development during implementation will be delivered directly through them.

While the AIF relies on an implementation team and thereby on a group of individuals, the ARC builds on either individual or groups of change agents. The AIF lists a number of core competencies for its implementation teams but also highlights that the responsibilities and skills needed may differ depending on the stage of an implementation process. The EPIS and the CDT describe the composition of their teams in broad terms and emphasize the need to include different types of stakeholders, but do not go into detail of these groups. The same is the case for the ISF, which keeps the description of the ‘support system’ at an abstract level and underlines that any support activity – provided by either single individuals or groups of different kind – may be considered as being part of this system.

4. Discussion

Implementation frameworks have a prominent role in supporting implementation practice in child, youth and family services. In the past two decades, their development has helped progress the field of implementation science and practice to gain a systematic and well-structured understanding of the potential complexity of implementation and possible ‘handles’ to facilitate targeted implementation processes. The above analysis has shown that:

1. Implementation frameworks were developed within specific contexts and with specific purposes in mind. When selecting a framework to support implementation practice, these purposes should be considered.
2. None of the identified frameworks were developed or applied outside the U.S. context. Thus, their alignment with other cultural, political and social systems is limited still.
3. There were few studies that tested implementation frameworks using rigorous designs (e.g., randomized controlled trials). In most cases, studies applied implementation frameworks as heuristics and

analytical tools.

4. The majority of identified implementation frameworks applied in child, youth and family services conceptualized implementation as happening in 2–4 different stages.
5. The frameworks identified a range of key influences needed to support implementation at any given point in time. These activities were described with differing levels of specificity.
6. A broad range of stakeholders were involved in implementation processes at the frontline, single organizational, community and policy level. Some (e.g. end-users or stakeholders at the policy level of the implementation system) were only minimally included in the implementation frameworks.
7. Most of the identified frameworks recommended the building of implementation capacities as necessary to implementation success. This may involve the use of single individuals or groups of staff who support implementation processes based on either program-specific or implementation-specific knowledge (or both).

4.1. Questioning implementation frameworks

The above findings indicate that, while substantial progress has been made, there is a need to further refine and clarify existing implementation frameworks if they are to gain and maintain a place in the ‘science’ part of ‘implementation science’. This section critically brings forward what we found to be the main limitations of empirical knowledge about frameworks through the review process. Overall, there is very little evidence to inform users about which frameworks to use, when, and in what way. Moreover, there is little empirically-driven clarity about the ways in which individual elements of frameworks work together.

For the concept of ‘implementation stages’, the literature provides little information about the characteristics of stages, paths for moving through stages, or the interconnectedness of stages. It remains unclear whether they contribute equally to implementation success, which levels of an organization or system they target, if they build upon or compensate for each other, and in which other ways they may be intertwined. Thus, it remains unclear what indicators could guide users of frameworks in identifying their current stage and in transitioning between stages. In a few cases it is highlighted that stages do not necessarily follow each other in a linear way, or that they may overlap (Metz & Bartley, 2012, p. 12) but this claim is not tested in any of the applied studies. The speed and level of activity that were associated with movement from one implementation stage to another (Chamberlain, Brown, & Saldana, 2011; Saldana, Chamberlain, Wang, & Brown, 2011) were assessed as part of the studies on the CDT (Brown et al., 2014), but these measures were not integrated into the framework.

For ‘key influences’ on implementation, the frameworks contain limited information on interrelations and causal linkages between the different key influences identified as essential for implementation. Some frameworks may define a chronology for the different steps that need to be taken to reach a specific goal, while others list these activities as parallel tasks without putting them in a specific order. The individual weights that different activities may have during implementation are not discussed, and in only few cases – e.g. the ARC – are these activities assumed to target specific socio-ecologic levels of the implementation system (i.e. the individual, organizational, community or system level). It therefore remains unclear whether these activities contribute equally to an implementation process, which levels of an organization or system they target, if they build upon or compensate for each other, and in which other ways they may be intertwined.

Given the complexity of collaboration in EBP implementation (Aarons et al., 2014; Palinkas et al., 2012), a well-grounded understanding of ‘implementation stakeholders’ and their roles in implementation processes is crucial. However, the literature on

implementation frameworks is still scarce on information on how to identify, rank, link, or engage different stakeholders, how to define their functions, and how to understand the ways in which they interact during implementation processes. Frameworks are not always differing clearly between different socio-ecologic levels of an implementation, and offer limited guidance on how to identify stakeholders, how to rank them in accordance to their closeness to the implementation process (e.g. by differing between primary and secondary stakeholders), how to define their different functions, or how to effectively link them to and engage them in these processes. The policy level of implementation is the one least discussed and explored in the studies. Several stakeholders at this level are mentioned but this often happens in passing and without clear exploration of their role in the implementation. Unclear, too remains the role of consumers in implementation, which is addressed by only few frameworks.

For the building of ‘implementation capacities’, the literature offers limited information about the recruitment of implementation agents or teams, their required skills and team composition. Also unclear is how to continuously develop teams throughout implementation processes, and how to integrate them into existing organizational or system wide governance structures.

The ultimate goal of implementation frameworks appears to be to improve outcomes. If higher levels of service implementation lead to better outcomes (Durlak & DuPre, 2008), then it is crucial that the tools used to guide implementation and improve its quality are examined. This review aligns with recent publications aiming to increase the in-depth understanding of implementation frameworks and their use (Helfrich et al., 2010; Kirk et al., 2016; Nilsen, 2015). Given the observations presented above, a number of suggestions for the improvement of implementation frameworks emerge from this review.

4.2. A call for strengthening implementation frameworks

At the practice level, it will be important for individuals, organizations, and systems to keep in mind that implementation frameworks were developed within a specific context and for a specific purpose. The selection of frameworks as practical implementation tools should be based on information about these contexts and purposes. Practitioners of implementation may also want to keep in mind that implementation frameworks, at their current stage of development, cannot be viewed as evidence-based approaches to implementation as few of them have undergone the type of empirical testing necessary to make such claims.

Against the backdrop of the review findings, current implementation frameworks can be seen as ‘multifaceted strategies’ (Powell et al., 2015; Proctor, Powell, & McMillen, 2013) considered (but not proven) to be of importance for the quality of an implementation process and for the outcomes of end-users of human services. These strategies build on generic elements or factors - stages, collaboration, stakeholders, training, and others - that, taken together, form an implementation process. Done well, each may contribute to the quality of the process. Therefore, they should be presented in detail and explicitly linked to other concepts. However, as implementation frameworks present themselves today, this is not always the case. On the contrary, most implementation frameworks could be improved in two ways:

- (1) Their inherent factors could be better grounded in theory leading to solid logic modeling.
- (2) They could better differentiate the importance and timing of specific factors.

One example where these improvements can be made is in the use of implementation ‘stages’. An implementation stage can be understood as a phase characterized by varying degrees of preparing for, learning about, becoming familiar with, and routinizing the use of an innovation. Depending on the stage at which an organization is implementing the innovation, different stakeholders need to be engaged, and different activities initiated. In the current versions of the implementation frameworks reviewed, none of this information is organized as part of a

logic model that could describe and explain, for example, which stakeholders need to be engaged in which phase, which activities will lead an organization or system into the next phase, or how different types of stakeholders or activities are related to each other within each of the stages.

Program logics or theories of change that connect the different factors of implementation frameworks through linking phrases such as ‘contribute to’, ‘require’ or ‘cause’ and which define both proximal and distal outcomes for the application of these frameworks are missing links in the current literature. Specific linking phrases can lead to specific hypotheses that can be rigorously tested and advance our understanding of what are effective – and less effective – strategies for implementation. This will help organizations or systems working to implement evidence-based interventions to make cost-effective choices about their implementation strategies instead of investing equally in all types of strategies, some of which may not make a difference to implementation quality and end-user outcomes.

4.3. Moving away from frameworks and towards core elements

An additional pathway towards strengthening the evidence base for implementation frameworks may be to apply concepts from the ‘modular design’ approach (Chorpita, Daleiden, & Weisz, 2005b) to this field.

Within evidence-based program and practice implementation, new perspectives, discussions, and approaches that move away from traditional manualized EBPs have emerged in recent years. This family of approaches views manualized programs as ‘black boxes’ that require considerable effort to implement and sustain, without being based on solid evidence about which parts of its content are the ‘active ingredients’ or mechanisms of change that create positive outcomes for end-users of services. Their proponents align in pointing to practitioner and provider difficulties implementing manualized, evidence-based programs with high fidelity and adapting them to local contexts, which prevents their large-scale application in broader service areas (Barth et al., 2011; Chorpita, Daleiden, & Hamilton, 2007; Chorpita et al., 2005).

To ensure scale-up of evidence-based practice, they suggest an approach that moves away from traditional programs and towards identification and extraction of the ingredients of effective programs - the common elements, factors, modules or kernels (Barth et al., 2011; Chorpita et al., 2005, 2007; Embry & Biglan, 2008; Lyon, Lau, McCauley, Stoep, & Chorpita, 2014). As part of adequate professional development supports (e.g. Southam-Gerow et al., 2014), these can then be made available to practitioners as separate, effective and implementable building blocks for use in the creation of customized interventions and programs that fit with any given local context and client need.

There is a parallel between this clinical debate and the debate about implementation frameworks. Similar to manualized evidence-based programs, implementation frameworks appear to come in ‘packages’ that contain a broad range of elements, all of which potentially could affect an implementation process and therefore are recommended as ‘equally important’. To better understand whether comprehensive implementation frameworks are needed, or if a ‘modular approach’ could be more practicable and effective in certain contexts, a more rigorous and strategy-focused approach may be warranted.

This could be achieved by synthesizing data about the effectiveness of the core concepts used in implementation frameworks and integrating them in ongoing refinements (Novins et al., 2013; Powell et al., 2014); and through a more widespread deployment of rigorous systematic reviews and meta-analysis (Shlonsky, Noonan, Littell, & Montgomery, 2010). Documenting this effectiveness may facilitate the creation of a list of single implementation elements that can be combined and adapted to any specific individual, organizational, community or system implementation context.

An attempt of moving into this direction is, for example, reflected in work conducted as part of a partnership between Washington State’s Children Administration and the University of Washington’s Evidence-

Based Practice Institute (Sedlar, Bruns, Walker, Kerns, & Negrete, 2015). The partnership has combined single implementation and intervention strategies into a logic model in which strategies link child, youth and family outcomes with system, organizational, implementation, and service inputs.

4.4. Limitations

This scoping review has a number of limitations. Implementation frameworks were included only if applied in the child and family services sector, which excludes implementation frameworks developed in other sectors (e.g., education or health). This review may therefore not provide a full picture of how implementation frameworks have been used and tested across human services as a whole. For example, the Consolidated Framework for Implementation Research (CFIR), represented with a single study in this review has its origin in health sciences and has been applied extensively in that discipline (Birken et al., 2017; Kirk et al., 2016). Similarly, the Promoting Action on Research Implementation in Health Services (PARiHS) framework has gained considerable attention and use in the health sector (Harvey & Kitson, 2016; Helfrich et al., 2010; Kitson et al., 2008; Rycroft-Malone, 2004; Stetler, Damschroder, Helfrich, & Hagedorn, 2011) but is not present in this review. Given that the purpose of this study is to examine the state of implementation frameworks in the child and family services sector, the narrowing of the sector scope has a good rationale. However, practitioners, organizational leaders and researchers working with implementation in child, youth and family services may find further insights into the use of implementation frameworks in related human service sectors.

The review searches only included English language publications. Articles written in other languages were not included. Also, this scoping review has a narrow focus on the implementation science literature. Literature published within domains that are related to implementation but use a different terminology (e.g., knowledge translation and dissemination) is not included. This was a conscious choice made to maintain a strong focus on implementation in this article. ‘Implementation’ is a more active approach to enhancing the uptake of evidence in practice and policy than the primarily passive ‘dissemination’. It also embraces a broader range of activities than ‘knowledge translation’. Given these differences, there was a clear rationale for not including frameworks from these disciplines. However, additional frameworks may have been developed and applied in these fields, and future research may draw a more complete picture of the state of implementation frameworks by expanding search terms to also include these domains.

Methodologically, the inclusion of conceptual literature on implementation frameworks to supplement empirical studies applying such a framework may be viewed as a limitation. Given the goal to understand implementation frameworks and their application within the child, youth and family service context, this inclusion of conceptual literature was considered necessary as empirical studies alone did not provide sufficient information to explain and discuss the frameworks in full.

Finally, it is worth highlighting that implementation science is still a fairly new discipline and its terminology quite diverse with limited standardization of terms. This may mean that the indexing of articles may be limited and some literature may have been missed. Risk minimization was attempted by searching both subject headings and titles/abstracts, as well as by inviting colleagues to identify relevant studies.

5. Conclusion

This review identified eight implementation frameworks that have been frequently applied in the sector of child, youth and family services. While we found that frameworks were fairly well-developed in terms of identifying stages and strategies, only few of the identified studies used rigorous research designs to test a framework. Common factors used in identified implementation frameworks were implementation stages, key

influences (such as competencies, organizational factors and leadership), stakeholders and capacity (individuals or teams providing implementation specific knowledge, and skills). Only in a few cases were these factors theoretically grounded or fully developed, and limited information was provided about their characteristics, development, or interconnectedness. This points to a need to strengthen the conceptualization of core elements that are integrated into implementation frameworks, including an articulation of the underlying logic of each.

This way, the first and very important wave of implementation framework development – characterized by the emergence of multiple frameworks aiming to capture the complexity of implementation conceptually – may lead to a ‘second wave’ of development that eventually enables the use of more flexible, modular approaches based on the application and combination of effective ‘implementation core elements’ for specific purposes across differing contexts.

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and material

The datasets used and/or analyzed during the current study available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contribution

BA and RM had the idea for the study and headed the scoping process. BA screened the literature with support from a research team at the Parenting Research Centre and the Centre for Evidence and Implementation. The data analysis was carried out by BA with support from RM. BA wrote the first draft of the paper. RM, AL and AS contributed to subsequent drafts of the paper and approved the final draft.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.chilcyouth.2017.07.003>.

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