CASEmakers
Sources of Information About Early Childhood & Family Support Practices

Sources of Information about Implementation Science

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Abstract

Selected references providing information about implementation science are included in this CASEmaker. Implementation science has evolved over the last 20 years to address the research-to-practice gap established in all fields of study. The source materials in this bibliography provide a foundation for understanding the development of varying terminology, theories, frameworks, and strategies pertaining to implementation science. The references explain how implementation science helps facilitate evidence-based innovations and practices, limits the barriers that might appear, and produces positive outcomes for families and children.

Introduction

Implementation science is a relatively new field that has been developing over the last twenty years to address the research-to-practice gap established in all fields of study. Researchers, grant funders, organizations, programs, and practitioners acknowledge promising innovations with proven positive outcomes take years to become mainstream practice (Brock et al., 2020; Cook & Odom, 2013; Douglas & Burshnic, 2019; Fixsen et al., 2005; Goldstein et al., 2019; Morris et al., 2011). Innovations or evidence-based practices that work in controlled conditions may not transfer to real-life settings for numerous reasons (Olswang & Prelock, 2015; McBeath et al., 2019), and implementation science's focus is facilitating researchers and practitioners working together to put innovations into practice more quickly.

Implementation science has evolved through different fields resulting in the development of varying terminology, theories, frameworks, and strategies. A consensus is developing that paying attention to the implementation process of a research-proven innovation or evidence-based practice increases the likelihood of intended outcomes (Britto et al., 2018; Bertram et al., 2015; Dunst et al., 2013; Fixsen et al., 2005; Ghate, 2016). This *CASE*maker provides selected references that describe implementation science along with barriers and facilitators to implementation that may be useful for early childhood intervention programs and practitioners.

What is Implementation Science?

The standard definition of implementation science originates from an article written by Eccles & Mittmans (2006), which defines implementation science as "the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services" (p. 1). Although originally phrased in health care terms, implementation science applies to any field of research or practice hoping to increase the use of evidence-based innovations or practices and is recommended by early childhood intervention leaders to understand how to best close the research-to-practice gap. The following references provide an introduction and general overview of implementation science:

Albers, B., Shlonsky, A., & Mildon, R. (Eds.). (2020). *Implementation science 3.0*. Springer. https://doi.org/10.1007/978-3-030-03874-8

Bauer, M. S., & Kirchner, J. (2020). Implementation science: What is it and why should I care? *Psychiatry Research*, *283*, Article 112376. https://doi.org/10.1016/j.psychres.2019.04.025

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Douglas, N. F., & Burshnic, V. L. (2019). Implementation science: Tackling the research to practice gap in communication sciences and disorders. *Perspectives of the ASHA Special Interest Groups*, *4*(1), 3-7. https://doi.org/10.1044/2018_PERS-ST-2018-0000

Fixsen, D. L., Blasé, K. A., & Van Dyke, M. K. (2019). *Implementation practice & science*. Active Implementation Research Network.

Implementation Theory

Implementation is part of the "diffusion-dissemination-implementation continuum" (Rapport et al., 2017, p.119). The theories supporting each individual part of this continuum help explain the interconnectedness between the three sciences (Dearing et al., 2018). Birkin et al. (2017) propose that "theories guide implementation, facilitate the identification of determinants of implementation, and guide the selection of implementation strategies" (p. 2). Implementation researchers stress the interconnectedness of theories, strategies, and frameworks, and how understanding this promotes putting evidence-based innovations and practices into use (Leeman et al., 2017; Nilsen, 2020). A basic understanding of implementation science theory may help program directors and practitioners promote utilization of evidence-based practices (Franks & Schroeder, 2013). The following references provide information about implementation theories:

Dearing, J. W., Kee, K. F., & Peng, T. Q. (2018). Historical roots of dissemination and implementation science. In R. C. Brownson, G. A. Colditz, & E. K. Proctor (Eds.), *Dissemination and implementation research in health: Translating science to practice* (2nd ed., pp. 47-62). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199751877.003.0003

Franks, R. P., & Schroeder, J. (2013). Implementation science: What do we know and where do we go from here? In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying implementation science in early childhood programs and systems*. Paul H. Brookes Publishing Company.

Nilsen, P. (2020). Making sense of implementation theories, models, and frameworks. In B. Albers, A. Shlonsky, & R. Mildon (Eds.), *Implementation science 3.0* (pp. 53-79). Springer. https://doi.org/10.1007/978-3-030-03874-8_3

Rx Prescription for Practice Rx

Improve your knowledge and understanding of implementation science through reading the following:

Dearing, J. W., Kee, K. F., & Peng, T. Q. (2018). Historical roots of dissemination and implementation science. In R. C. Brownson, G. A. Colditz, & E. K. Proctor (Eds.), *Dissemination and implementation research in health: Translating science to practice* (2nd ed., pp. 47-62). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199751877.003.0003

Fixsen, D. L., Blasé, K. A., & Van Dyke, M. K. (2019). *Implementation practice & science*. Active Implementation Research Network.

Franks, R. P., & Schroeder, J. (2013). Implementation science: What do we know and where do we go from here? In T. Halle, A. Metz, & I. Martinez-Beck (Eds.), *Applying implementation science in early childhood programs and systems.* Paul H. Brookes Publishing Company.

Kemp, C. (2020). Research informing practice in early childhood intervention: How hard can it be? *Infants & Young Children*, *33*(3), 163-172. https://doi.org/10.1097/IYC.0000000000000168

Nilsen, P. (2020). Making sense of implementation theories, models, and frameworks. In B. Albers, A. Shlonsky, & R. Mildon (Eds.), *Implementation science 3.0* (pp. 53-79). Springer. https://doi.org/10.1007/978-3-030-03874-8_3

Frameworks to Put Evidenced-based Practices to Work

Using guiding theory, leaders in implementation science have developed frameworks that provide detailed strategies, intervention components, implementation drivers, and stages of implementation. (Bertram et al., 2015). Birkin et al. (2017) provide a list of popular frameworks in the literature that give guidance in implementing evidence-based practices. Frameworks provide steps or strategies and topics to guide programs and practitioners in effective implementation. The type of innovation or practice influences which framework is helpful, but regardless of the framework chosen, Fixsen et al. (2009) state "[t]here is substantial agreement that implementation is a recursive process" with "stages [that] are not linear as each appears to impact the others in complex ways", and full implementation of new evidence-based practice is expected to take 2 to 4 years (Bertram et al., 2015; Fixsen et al., 2009; Fixsen et al., 2013). The following references provide information about implementation frameworks, stages, and strategies:

Bertram, R. M., Blasé, K. A., & Fixsen, D. L. (2015). Improving programs and outcomes: Implementation frameworks and organization change. *Research on*

Social Work Practice, *25*(4), 477-487. https://doi.org/10.1177%2F1049731514537687

Birken, S. A., Powell, B. J., Shea, C. M., Haines, E. R., Kirk, M. A., Leeman, J., Rohweder, C., Damschroder, L., & Presseau, J. (2017). Criteria for selecting implementation science theories and frameworks: Results from an international survey. *Implementation Science*, *12*, Article 124. 1-9. https://doi.org/10.1186/s13012-017-0656-y

Metz, A., & Bartley, L. (2012). Active implementation frameworks for program success. *Zero to Three*, *32*(4), 11-18. https://eric.ed.gov/?id=EJ1002634

Meyers, D. C., Durlak, J. A., & Wandersman, A. (2012). The quality implementation framework: A synthesis of critical steps in the implementation process. *American Journal of Community Psychology*, *50*(3-4), 462-480. https://doi.org/10.1007/s10464-012-9522-x

Barriers to Evidence-based Innovations or Practices

Implementation science was developed to understand and overcome barriers that impede use of evidence-based innovations or practices. Barriers may appear across "multiple levels of context (individuals in treatment, providers, organizations, and other stakeholder groups)" (Bauer & Kirchner, 2020, p. 3). Individual and provider-related barriers often stem from lack of knowledge, understanding, or experience of evidenced-based approaches (Kemp, 2020). Organization or program barriers tend to be related to lack of collaboration and sustaining partnerships between stakeholders, professionals, administrators; lack of resources such as time, budget, or staff; and existing administrative policies (Barry et al., 2020; Fixsen et al., 2013; Movahedazarhouligh & Banerjee, 2020). The following references address barriers to implementation:

Barry, L., Holloway, J., & McMahon, J. (2020). A scoping review of the barriers and facilitators to the implementation of interventions in autism education. *Research in Autism Spectrum Disorders*, *78*, Article 101617. https://doi.org/10.1016/j.rasd.2020.101617

Fixsen, D., Blasé, K., Metz, A., & Van Dyke, M. (2013). Statewide implementation of evidence-based programs. *Exceptional Children*, *79*(2), 213–230. https://doi.org/10.1177%2F001440291307900206

Kemp, C. (2020). Research informing practice in early childhood intervention: How hard can it be? *Infants & Young Children*, *33*(3), 163-172. https://doi.org/10.1097/IYC.0000000000000168

Movahedazarhouligh, S., & Banerjee, R. (2020). Leadership in implementation of quality family-centred services in early childhood: An exploration of administrators' perceptions, needs and realities. *Early Child Development and Care*, *190*(6), 948-962. https://doi.org/10.1080/03004430.2018.1503256

Facilitators to Overcome Barriers

Various leaders within early childhood development and special education suggest the use of implementation science to facilitate the uptake of evidenced-based innovations and practices (Britto et al., 2018; Dunst et al., 2013; Odom et al., 2014). Fixsen et al. (2019) suggest three distinct clusters of implementation drivers – competency, organization, and leadership. Fleming et al. (2019) describe competency drivers as "the mechanisms used to develop, improve, and sustain the ability of service providers and other staff to implement an intervention as intended to benefit consumers" (p. 724) and suggest that most programs can concentrate efforts with existing staff by focusing on competency drivers. Fixsen et al. similarly propose preservice and in-service training, ongoing coaching and consultation, and staff evaluation to help practitioners with evidence-based innovations or practices. Other key facilitators, regardless of the implementation level, should be developing partnerships between researchers, practitioners, and families (Fixsen et al., 2013), understanding the implementation process is nonlinear (Ghate, 2016), and believing the innovation or practice will have benefits or positive outcomes supported by the research and evidence (Olswang & Prelock, 2015). Developing implementation teams is also suggested to facilitate the communication and collaboration between programs, practitioners, and stakeholders, and to ensure implementation strategies are being used to develop individuals' competencies to use the evidence-base innovation or practice. (Fixsen et al., 2019; Metz & Bartley, 2020). These selected references provide information pertaining to facilitators identified through implementation science:

Fixsen, D. L., Blasé, K. A., & Van Dyke, M. K. (2019). *Implementation practice & science*. Active Implementation Research Network.

Fleming, W. O., Apostolico, A. A., Mullenix, A. J., Starr, K., & Margolis, L. (2019). Putting implementation science into practice: Lessons from the creation of the National Maternal and Child Health Workforce Development Center. *Maternal and Child Health*

Journal, *23*(6), 722-732. https://doi.org/10.1007/s10995-018-02697-x

Ghate, D., (2016). From programs to systems: Deploying implementation science and practice for sustained real world effectiveness in services for children and families. *Journal of Clinical Child & Adolescent Psychology*, *45*(6), 812-826. https://doi.org/10.1080/15374416.2015.1077449

Metz, A., & Bartley, L. (2020). Implementation teams: A stakeholder view of leading and sustaining change. In B. Albers, A. Shlonsky, & R. Mildon (Eds.), *Implementation science 3.0* (pp. 199-225). Springer. https://doi.org/10.1007/978-3-030-03874-8_8

Conclusion

Implementation science has developed in response to the research-to-practice gap that exists in many fields including early childhood special education. Implementation science offers strategies to facilitate evidence-based innovations and practices, limit the barriers that might appear, and produce positive outcomes for families and children. This *CASE*maker bibliography provides references pertaining to implementation science and the drivers that facilitate utilization of practices. Using strategies from implementation science may help decrease the time it takes to make evidenced-based early intervention practices commonly used early intervention practices.

References

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Cook, B. G., & Odom, S. L. (2013). Evidence-based practices and implementation science in special education. *Exceptional Children*, *79*(2), 135-144. https://doi.org/10.1177%2F001440291307900201

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Nilsen, P. (2020). Making sense of implementation theories, models, and frameworks. In B. Albers, A. Shlonsky, & R. Mildon (Eds.), *Implementation science 3.0* (pp. 53-79). Springer. https://doi.org/10.1007/978-3-030-03874-8_3

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