Becoming Critical Consumers of Evidence in Occupational Therapy for Children and Youth

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This special issue of the *American Journal of Occupational Therapy* on interventions for children and youth highlights the current developments in and evidence for the effectiveness of occupational therapy interventions and psychometric properties of assessments for children and youth. In this guest editorial, we identify various factors that challenge the implementation of evidence-based strategies in daily clinical practice. We assert that scholars, educators, and practitioners need to address several strategic steps. To facilitate critical consumption of evidence in practice, efforts need to be made to build capacity for evidence production and evidence use through implementation science and to ensure that evidence-based practice is not only taught but also reflectively applied across the educational curriculum and that clinicians are given more access to resources that are easy to translate to daily clinical practice.

In the past decade, growth of the published evidence on the efficacy and effectiveness of occupational therapy interventions for children and youth has been expansive. The *American Journal of Occupational Therapy* has published three special issues focusing on children and youth: first in 2013 (early intervention), second in 2018 (sensory integration), and the current issue (interventions for children and youth). This special issue contains 17 articles addressing various current issues and trends in occupational therapy practice for children and youth, including 8 systematic reviews, 6 of which are part of the American Occupational Therapy Association's (AOTA's) Evidence-Based Practice (EBP) Project. AOTA has also published four practice guidelines for children and youth based on many of the systematic reviews that have been completed: early childhood (ages 0–5 yr; Frolek-Clark & Kingsley, 2013); mental health promotion, prevention, and intervention (Bazyk & Arbesman, 2013); children and adolescents with challenges in sensory processing and integration (Watling et al., 2018); and people with autism spectrum disorder (Tomchek & Koenig, 2016). Updates and expansions to current practice guidelines as well as new practice guidelines for children and youth (ages 5–21 yr) are forthcoming.

Systematic reviews are increasingly being used as a mechanism to consolidate information on intervention efficacy and effectiveness. However, the use of systematic reviews has been documented as posing challenges to daily use by practicing clinicians (Gervais et al., 2002). Using a focus group discussion methodology, DiRezze et al. (2013) explored how the use of tables summarizing findings from systematic reviews can aid practitioners in translating knowledge to practice, known as *knowledge translation* (KT). They found that practitioners may benefit from translation of technical statistical findings, summaries of direct and practical

implications of study findings for clinical practice, and discussions of studies' strength and quality of evidence.

The AOTA EBP Project was first conceptualized in 1998 and emerged as a mechanism to develop standardized methods to make occupational therapy intervention and outcome information published in peer-reviewed journals easily accessible to and usable by clinicians (Lieberman & Scheer, 2002). Since then, the AOTA EBP Project group has collaborated with many scholars, experts, and practitioners and, as of the time of this writing, has produced 48 critically appraised topics (CATs) from systematic reviews of interventions for children and youth. These systematic reviews have been consolidated as official practice guidelines (Table 1 summarizes available CATs based on systematic reviews).

Despite the growth in the number and quality of research studies addressing the efficacy of interventions within the scope of occupational therapy practice for children and youth, a significant gap remains between research and practice. It is widely understood that it can take as long as two decades for scientific research recommendations to be implemented in practice (Morris et al., 2011; Thomas & Law, 2013). KT methodologies, such as professional development training, mentoring, collaborative learning communities, and journal clubs, are increasingly available, yet the ability to stay abreast of an increasingly robust body of literature and translate evidence to practice continues to lag. The gap between what is known, how it is disseminated and absorbed, and what is done in practice has a significant impact on service delivery outcomes (Davis et al., 2003). Occupational therapy practitioners are at risk of using interventions that are unnecessary, are contraindicated, or lack sufficient evidence and of missing opportunities to introduce interventions that can more effectively, efficiently, or predictably improve clients' participation and performance (Mallidou et al., 2018).

In the next sections, we identify several challenges in translating knowledge for use in practice and provide recommendations for educators, scholars, and clinicians on how to address these challenges and bridge the evidence-to-practice gap.

Challenges in Translating Evidence

Researchers and practitioners agree that disseminating research through publications and conference presentations may not be enough to change practice in meaningful and sustainable ways (Bennett et al., 2018). Several theoretical and pragmatic methods to narrow the evidence gap have been developed, and although these models require competencies that include research literacy (e.g., skills in research and EBP processes, resources, and dissemination methods), understanding data synthesis and application across various settings and populations (e.g., empirical research; annual, technical, and project reports; white papers; organizational documents), and a lifelong commitment to collaboratively share knowledge and foster innovation in one's unique practice context (Mallidou et al., 2018), few offer clear application processes to facilitate KT. The development of competencies alone may be insufficient to make research accessible to practitioners (Lencucha et al., 2007).

Practitioners may struggle to find relevant research that reflects a practical, occupation-based focus and attends to the range of their practice settings, the complex occupational performance issues that different client groups may experience, and clients' markedly disparate life circumstances (Cramm et al., 2013). Accessing and effectively translating research that is well aligned with clinical practice is time consuming, costly, and difficult to fit into a busy practice. After all, the array of topics for which practitioners are responsible is vast. Laverdure (2019) asserted that pediatric practice is diverse, and it may be difficult to apply available research to practice settings that are beholden to unique regulatory and organizational mandates, policies, and structures (e.g., early intervention and school practice). Practitioners may also be embedded in interdisciplinary or multidisciplinary practice contexts that are resistant to change.

In addition, practitioners may be entrenched in particular practice patterns (Cramm et al., 2013) on which they rely and with which they achieve positive results. They may rely on clinical intuition (Harold, 2019), trusting their clinical

Table 1. Summary of Available CATs on Children and Youth from the AOTA EBP Project as of October 2019

Available CATs, Category (*n*)	CAT Themes and Topics (*n*)
Early intervention (13)	Motor development (3) • Early intervention • Preschool • Cerebral palsy ADLs (3) • Feeding • Toileting • Sleep Cognition (4) • Parent-implemented interventions • Interventions in preschool classrooms • OT and team-led interventions for preschool-aged children • OT and team-led interventions for premature and developmentally delayed infants Mental health (3) • Touch-based interventions • Parent–child interaction • Parent and teacher instruction-based interventions
Children and youth ages 5–21 yr and school-based practice (19)	Occupations (5) • ADLs • Driving and community mobility • Health management • Rest and sleep • Play and leisure Learning and academic achievement (5) • Handwriting • Literacy • Physical activity • Educational participation • Social participation Mental health (9) • Yoga interventions • Video and computer games • Occupations and life skills training • Outdoor activities and camps • Play activities and occupations • Sports activities • Mindfulness interventions • Creative arts activities and occupations • Animal-assisted activities and occupations
Autism spectrum disorder (13)	Occupations (3) • ADLs, IADLs, sleep • Education • Work Social interaction, stereotypical or repetitive behaviors, play and leisure (3) • Restricted and repetitive behaviors, play, and leisure • Social skills • Social communication Family interaction (1): Parent self-efficacy, coping, resiliency, and participation Sensory-based and ASI interventions (6) • ASI Interventions for autism • Sensory-based interventions • Weighted vest • Dynamic seating surface • Sound therapies • Sensory aspects of an environment
Sensory processing and sensory integration (4)	ASI Sensory-based strategies and environmental interventions Parent and teacher strategies Cognitive and occupation-based interventions

Note. CATs can be found at https://www.aota.org/Practice/Children-Youth/Evidence-based.aspx. ADLs = activities of daily living; AOTA = American Occupational Therapy Association; EBP = Evidence-Based Practice; ASI = Ayres Sensory Integration; CATs = Critically Appraised Topics; IADLs = instrumental activities of daily living; OT = occupational therapy.

expertise and what they or their peers know rather than accessing research. For many practitioners, this practice is more convenient than and preferred to accessing research (Grol & Grimshaw, 2003). Continuing education products attractive to practitioners may lack supporting evidence, and social media sites, with which many practitioners engage, may not be informed by the best available research.

Lack of clear theoretical and pragmatic models that facilitate evidence application in practice, limited capacity in research literacy and KT methods, reduced accessibility to relevant evidence, and established practice patterns that limit the use of evidence in practice contribute to the challenges practitioners face in translating knowledge. Overcoming these barriers and narrowing the evidence-to-practice gap will require the collaborative efforts of scholars who produce and disseminate knowledge that informs practice, organizations that distill research and create evidence-based resources and tools, and practitioners who are critical consumers of research and apply evidence in their clinical practice.

Developing and Applying Evidence Across Pediatric Settings
For Scholars Developing Evidence

Accelerating the adoption of evidence into practice must first begin with the scholars who conduct and disseminate research. It is not uncommon for research processes, from inception to dissemination, to be completed in academic or laboratory settings, with the primary focus being treatment efficacy in controlled contexts. Following up this research with studies of effectiveness in natural practice environments and investigating how feasibly an intervention can be adopted in real-world practice settings are often not prioritized or are difficult because of planning, resource, setting, and practice constraints. Thus, much research is disseminated with the assumption that publications will be accessible, interpretable, and easily translated into practice through practitioner and educator efforts (Hoffman et al., 2017). However, this is often not the case, and there are many challenges to efficiently and reliably integrating scientific studies into the schools, clinics, hospitals, and communities in which pediatric therapy occurs. Thus, it is incumbent on scholars to acknowledge their role in the delay in evidence being transferred into practice and to actively consider, beginning with study design, what can be done to enhance their interventions' accessibility and applicability. Not considering consumers throughout the research process and collaborating with clinicians in various practice settings is shortsighted and inefficient and can be detrimental to the advancement of occupational therapy practice.

Implementation science (IS) is a burgeoning area of study of scientific methods focused on the systematic uptake of research findings and other EBPs into routine practice to improve the quality and effectiveness of health services (Eccles & Mittman, 2006). IS is the perfect avenue for researchers to take in combating the evidence-to-practice gap. It provides strategies for conducting research from an implementation perspective and coalesces the role of scholars in translating evidence with the needs and challenges of the practice settings in which the evidence is intended to be used. Juckett et al. (2019) recently put forth a call for occupational therapy scholars to use IS principles throughout the research process. They proposed four action steps to help researchers facilitate the integration of EBPs into practice:

1. Collaborate with researchers who specialize in IS, which has been shown to reduce the uptake of research into practice to as little as 3 yr (Balas & Boren, 2000; Fixsen et al., 2001; Juckett et al., 2019).

2. Collaborate with practitioners to understand the opportunities for and challenges in integrating EBP into routine care.

3. Design studies that measure outcomes to better understand, from the outset, how the research can be applied more efficiently in practice.

4. Describe implementation strategies in publications using a consistent reporting structure, so it is clear what was done to examine implementation and how it may relate to the consumer's setting and practice.

Communities of Practice (CoPs) are another mechanism that is increasingly being used in occupational therapy practice to translate knowledge for clinical use. CoPs are formalized social learning systems that consist of three elements: (1) an understanding and sense of a common purpose, (2) mutual engagement of members, and (3) production of a shared repertoire of resources (Wenger, 2000). Bazyk et al.'s (2015) Every Moment Counts project is one of the most expansive applications of CoPs to build the capacity of school practitioners to address the mental health needs of children and youth in schools. Grajo and Candler (2017) have used a CoP approach to collaboratively develop and translate knowledge on the use of an occupation-based reading intervention for children with literacy challenges. The AOTA Pediatric Practice Group and, more recently, the AOTA Special Interest Sections have been expanding the use of CoPs to codevelop and translate knowledge of EBPs in a variety of member-driven topics and need areas.

For Educators Bridging the Gap Between the Academic Setting and Clinical Practice

In the *Occupational Therapy Education Research Agenda—Revised,* occupational therapy educators are tasked with socializing students into EBP (AOTA, 2018). Students are taught to critically appraise both qualitative and quantitative research to inform clinical decision making. Although these objectives are well integrated into many occupational therapy curricula, the challenge is moving this practice forward beyond the academy. The literature exploring the barriers to and supports for occupational therapy practitioners using research evidence in daily clinical decisions is limited. Therefore, the problem of bridging the gap between the classroom and clinical practice includes pedagogical practices and addressing the barriers students will face in clinical practice.

Although occupational therapy education programs train students to critically appraise research, they may lack the opportunity to directly apply it to a real-life client in a practice scenario (Moyers et al., 2014). It is important to link evidence to the treatment planning and clinical reasoning process. There are multiple ways to accomplish this through the use of simulated patients, case studies, and integration of assignments into fieldwork experiences. It is important for occupational therapy educators to be apprised of the barriers clinicians face in accessing literature, locating meaningful literature, and expressing its value and in teaching students how to avoid these barriers in practice.

For Practitioners Consuming Evidence

Practitioners face multiple barriers to locating, consuming, and applying research evidence in daily practice. Beyond finding time, keeping up productivity, and working within the limits of funding sources, it is also difficult to find research that lines up with specific client profiles (Cramm et al., 2013). Several strategies are available to address these barriers.

Finding a research article that is a perfect match to a specific client and that supports clinical reasoning and treatment planning is rare. Gaining skills in searching for and extrapolating relevant information from the literature may be a more effective strategy. For example, searching for specific performance skills, body structures, occupations, or environmental barriers may yield more relevant information than searching by diagnosis. After research is located, critical evaluation of study quality then becomes important. Many guides are available to assist in appraisal of an article. Journal clubs with a specific case focus offer a great way to approach specific clients from multiple perspectives.

When locating evidence, an important strategy for occupational therapy clinicians is to leverage their membership in professional organizations. The most extensive supports for practitioners specific to occupational therapy evidence can be found through AOTA. The Association has extensive resources in its Evidence Exchange (https://www.aota.org/Practice/Researchers/Evidence-Exchange.aspx), including Critically Appraised Papers and practice guidelines. The Special Interest Sections and the AOTA social media platform CommunOT (https://communot.aota.org/home) provide guided exploration of implementation of the best available evidence in practice. Many state associations offer their members access to research databases, and membership in other professional organizations outside of occupational

therapy may include journal subscriptions. Colleges and universities often offer library access to alumni, and many offer library access to practitioners who work with fieldwork students.

Conclusion

The aim of this special issue on interventions for children and youth in the domain of occupational therapy practice is not only to provide practitioners with current and cutting-edge research on a diverse set of topics related to pediatric practice but also to provide relevant, accessible, and easily useful resources to guide intervention and improve outcomes for children and youth and the people who care for and support them.

References

American Occupational Therapy Association. (2018). Occupational therapy education research agenda—revised. *American Journal of Occupational Therapy*, *72*(Suppl. 2), 7212420070. https://doi.org/ajot.2018.72S218

Balas, E. A., & Boren, S. A. (2000). Managing clinical knowledge for health care improvement. *Yearbook of Medical Informatics*, *2000*, 65–70.

Bazyk, S., & Arbesman, M. (2013). *Occupational therapy practice guidelines for mental health promotion, prevention, and intervention for children and youth*. Bethesda, MD: AOTA Press.

Bazyk, S., Demirjian, L., LaGuardia, T., Thompson-Repas, K., Conway, C., & Michaud, P. (2015). Building capacity of occupational therapy practitioners to address the mental health needs of children and youth: A mixed-methods study of knowledge translation. *American Journal of Occupational Therapy*, *69*, 6906180060. https://doi.org/10.5014/ajot.2015.019182

Bennett, S., Laver, K., & Clemson, L. (2018). Progressing knowledge translation in occupational therapy. *Australian Occupational Therapy Journal*, *65*, 156–160. https://doi.org/10.1111/1440-1630.12473

Cramm, H., White, C., & Krupa, T. (2013). From periphery to player: Strategically positioning occupational therapy within the knowledge translation landscape. *American Journal of Occupational Therapy*, *67*, 119–125. https://doi.org/10.5014/ajot.2013.005678

Davis, D., Evans, M., Jadad, A., Perrier, L., Rath, D., Ryan, D., . . . Zwarenstein, M. (2003). The case for knowledge translation: Shortening the journey from evidence to effect. *BMJ*, *327*, 33–35. https://doi.org/10.1136/bmj.327.7405.33

DiRezze, B., Santesso, N., & Law, M. (2013). Exploring the utility of a novel knowledge translation tool for school-based occupational therapists. *British Journal of Occupational Therapy*, *76*, 194–199. https://doi.org/10.4276/030802213X13651610908498

Eccles, M. P., & Mittman, B. S. (2006). Welcome to implementation science. *Implementation Science*, *1*, 1. https://doi.org/10.1186/1748-5908-1-1

Fixsen, D. L., Blase, K. A., Timbers, G. D., & Wolf, M. M. (2001). In search of program implementation: 792 replications of the Teaching–Family Model. In G. A. Bernfeld, D. P. Farrington, & A. W. Leschied (Eds.), *Offender rehabilitation in practice: Implementing and evaluating effective programs* (pp. 149–166). London: Wiley.

Frolek-Clark, G., & Kingsley, C. (2013). *Occupational therapy practice guidelines for early childhood: Birth through 5 years*. Bethesda, MD: AOTA Press.

Gervais, I. S., Poirier, A., Van Iterson, L., & Egan, M. (2002). Attempting to use a Cochrane review: Experience of three occupational therapists. *American Journal of Occupational Therapy*, *56*, 110–113. https://doi.org/10.5014/ajot.56.1.110

Grajo, L., & Candler, C. (2017). The Occupation and Participation Approach to Reading Intervention (OPARI): A community of practice study. *Journal of Occupational Therapy, Schools, and Early Intervention*, *10*, 90–99. https://doi.org/10.1080/19411243.2016.1257967

Grol, R., & Grimshaw, J. (2003). From best evidence to best practice: Effective implementation of change in patients' care. *Lancet*, *362*, 1225–1230. https://doi.org/10.1016/S0140-6736(03)14546-1

Harold, M. (2019). The research translation problem: A modest proposal. *ASHA Leader*, *24*, 52–61. https://doi.org/10.1044/leader.FTR2.24072019.52

Hoffman, T., Bennett, S., & Del Mar, C. (2017). *Evidence-based practice across the health professions*. Amsterdam: Elsevier.

Juckett, L. A., Robinson, M. L., & Wengerd, L. R. (2019). The Issue Is—Narrowing the gap: An implementation science research agenda for the occupational therapy profession. *American Journal of Occupational Therapy*, *73*, 7305347010. https://doi.org/10.5014/ajot.2019.033902

Laverdure, P. (2019). Knowledge translation: Embracing the shift from professional to practice development. *SIS Quarterly Practice Connections*, *4*(4), 8–10.

Lencucha, R., Kothari, A., & Rouse, M. J. (2007). The Issue Is—Knowledge translation: A concept for occupational therapy. *American Journal of Occupational Therapy*, *61*, 593–596. https://doi.org/10.5014/ajot.61.5.593

Lieberman, D., & Scheer, J. (2002). AOTA's Evidence-Based Literature Review Project: An overview. *American Journal of Occupational Therapy*, *56*, 344–349. https://doi.org/10.5014/ajot.56.3.344

Mallidou, A. A., Atherton, P., Chan, L., Frisch, N., Glegg, S., & Scarrow, G. (2018). Core knowledge translation competencies: A scoping review. *BMC Health Services Research*, *18*, 502. https://doi.org/10.1186/s12913-018-3314-4

Morris, Z. S., Wooding, S., & Grant, J. (2011). The answer is 17 years, what is the question: Understanding time lags in translational research. *Journal of the Royal Society of Medicine*, *104*, 510–520. https://doi.org/10.1258/jrsm.2011.110180

Moyers, P. A., Finch Guthrie, P. L., Swan, A. R., & Sathe, L. A. (2014). Interprofessional evidence-based clinical scholar program: Learning to work together. *American Journal of Occupational Therapy*, *68*(Suppl. 2), S23–S31. https://doi.org/10.5014/ajot.2014.012609

Thomas, A., & Law, M. (2013). Research utilization and evidence-based practice in occupational therapy: A scoping study. *American Journal of Occupational Therapy, 67*, e55–e65. https://doi.org/10.5014/ajot.2013.006395

Tomchek, S., & Koenig, K. (2016). *Occupational therapy practice guidelines for individuals with autism spectrum disorder.* Bethesda, MD: AOTA Press.

Watling, R., Kuhaneck, H., Parham, D., & Schaaf, R. (2018). *Occupational therapy practice guidelines for children and youth with challenges in sensory integration and sensory processing.* Bethesda, MD: AOTA Press.

Wenger, E. (2000). Communities of practice and social learning systems. *Organization, 7*, 225–246. https://doi.org/10.1177/135050840072002