Occupational therapists strive to be mindful, competent practitioners and continuously look for ways to improve practice. Applied behavior analysis (ABA) has strong evidence of effectiveness in helping people with autism achieve goals, yet it does not seem to be implemented in occupational therapy practice. To better understand whether ABA could be an evidence-based option to expand occupational therapy practice, the authors conducted an iterative, multiphase investigation of relevant literature. Findings suggest that occupational therapists apply developmental and sensory approaches to autism treatment. The occupational therapy literature does not reflect any use of ABA despite its strong evidence base. Occupational therapists may currently avoid using ABA principles because of a perception that ABA is not client centered. ABA principles and occupational therapy are compatible, and the two could work synergistically.

This article presents a literature-based argument for the use of applied behavior analysis (ABA) in occupational therapy practice. In doing so, we describe the relevant literature to determine the extent to which ABA is used, consider possible reasons for not using it, and make the case that strong compatibility exists between the principles of ABA and occupational therapy and that the two could work synergistically.

Background

Occupational therapy is one of the most common services received by people (especially children) with autism spectrum disorder (ASD; McLennan, Huculak, & Sheehan, 2008). Occupational therapists contribute to the diagnostic process and support and educate families in a variety of settings, using their expertise to enable engagement in occupations such as play, self-care, school activities, and employment (American Occupational Therapy Association [AOTA], 2015; Rodger & Polatajko, 2014). Services based on ABA principles are also among the treatment options most frequently sought by people with autism (Matson, Turygin, et al., 2012).

The literature pertaining to autism treatment is vast (Matson, Turygin, et al., 2012), and both occupational therapy and ABA perspectives can be found. Despite overlap in the areas of function addressed by ABA and occupational therapy, we found almost no overlap in these literatures: Although the ABA literature (journals in the field of behavioral science) makes occasional reference to occupational therapy, the occupational therapy literature is silent on the topic of ABA (a literature search yielded only one article mentioning ABA, which was published in 1996 and related to feeding interventions for adults with acquired brain injury).

We found this silence intriguing, so we set out to understand the relationship between occupational therapy treatment approaches to autism and the ABA approach. We undertook a staged approach: asking and answering a series of questions to lead to an understanding of the absence of ABA in occupational therapy practice, as reflected in the literature. In so doing, we saw the emergence of an argument for the development of a synergistic relationship.
Perspectives on Autism Treatment

In the general literature on ASD, ABA is the predominant approach to intervention. It is broadly considered the preferred treatment approach, even at the level of government—it is recognized and supported by the governments of Canada, Australia, and the United States (Dillenburger, McKerr, & Jordan, 2014). This support is based on the wealth of available evidence, recently summarized by Anagnostou et al. (2014) in a review article published in the *Canadian Medical Association Journal*. These authors examined evidence related to diagnosis as well as to biomedical and nonbiomedical treatments. With respect to nonbiomedical treatments, Anagnostou et al. synthesized six meta-analyses and found that ABA-based approaches showed the strongest effects in treating symptoms of ASD and achieving therapeutic goals. Moreover, approaches based on ABA principles were found to have the highest level of evidence. An interesting finding was that the benefits of ABA approaches were maximized when implemented in everyday contexts and included activities based on children’s interests.

In the occupational therapy literature on autism, the predominant approaches to intervention are derived from sensory processing, sensory integration, and developmental perspectives. Two articles looked at the way occupational therapists approach working with clients with ASD. Kadar, McDonald, and Lentin (2012) examined the ways in which occupational therapy practices changed over time from 2002 to 2012. Occupational therapists in this study reported high use of theories, assessments, and interventions based on sensory integration, and this use remained consistent over the 10 years under review. Ashburner, Rodger, Ziviani, and Jones (2014) looked at surveys from 818 occupational therapists practicing in Queensland, Australia. Of these therapists, 235 identified that they work with clients who have autism. Among the occupational therapists working in the field of ASD, the prevalent focus was on sensory processing in relation to assessment, intervention, and primary areas of knowledge. Therapists also reported using general developmental approaches as well as visual supports, though to a lesser extent.

Understanding the Difference

When discussing occupational therapy, the ABA literature seems to focus on occupational therapists’ use of sensory integration approaches (Devlin, Healy, Leader, & Hughes, 2011; Matson, Adams, Williams, & Riske, 2013; McGinnis, Blakely, Harvey, Hodges, & Rickards, 2013; Schreck & Miller, 2010) and illustrates a somewhat conflicted perception. On the one hand, a number of ABA therapists report using sensory integration in their practice (Schreck & Miller, 2010). On the other hand, articles can be found that warn ABA therapists against this practice (Devlin et al., 2011; Matson et al., 2013; Schreck & Miller, 2010). This tension highlighted in the ABA literature is echoed in the broader autism literature, which frames sensory integration therapy as complementary or alternative medicine (Hanson et al., 2007) and occasionally references the policy statement issued by the American Academy of Pediatrics that urges physicians to advise patients and parents that the evidence of effectiveness for sensory-based therapies is limited and inconclusive (Zimmer & Desch, 2012).

As mentioned earlier, ABA is not discussed in the occupational therapy literature. A conclusive reason for this omission remains elusive, because there is no discourse to examine. To uncover possible reasons, we turned to literature focusing on criticisms of ABA. We found that ABA suffers from widespread reputational problems, even stigma, secondary to widespread misperceptions held by a variety of professionals, presumably including occupational therapists (Gambrill, 2012; Matson, Turygin, et al., 2012; Schreck & Miller, 2010). The ABA literature has identified three primary reputational problems: (1) Many professionals working outside the field of ABA misunderstand it as being limited to discrete trial training, (2) it is perceived to fail to consider generalization, and (3) it is perceived to fail to consider client desires and interests (Gambrill, 2012; Matson, Turygin, et al., 2012; Schreck & Miller, 2010). These reputational problems offer a quite plausible explanation for the absence of ABA in occupational therapy practice and literature. To practitioners, evidence (such as that supporting ABA) is necessary but not sufficient for a treatment approach to be embraced by the profession (Townsend & Polatajko, 2007). Occupational therapists insist on using strategies that are evidence based, client centered, and focused on function (Townsend & Polatajko, 2007).

The ABA literature has addressed ABA’s three primary reputational myths: (1) ABA is in fact a broad science that is concerned with the causes of socially significant behaviors and is applied through many tools, of which discrete trial training is just one (Cooper, Heron, & Heward, 2007; Sigafos & Schlosser, 2008); (2) ABA stresses planning for generalization of skills across people, settings, and time from the first day of treatment (Cooper et al., 2007); and (3) ABA identifies social validity (how the client feels about targets, procedures, and people involved) as being vitally important (Wolf, 1978). Furthermore, it focuses on building a behavioral repertoire to increase client choice by increasing skills to draw from (Gambrill, 2012). Because the ABA literature describes these perceptions of ABA as misperceptions, it is useful to examine the literature to determine whether ABA principles may possibly be applied in client-centered, occupation-focused intervention.
Compatabilities Between Literature on Applied Behavior Analysis and the Occupational Therapy Literature

Points of intersection can be found between the occupational therapy and the ABA literatures. The occupational therapy literature stresses the importance of a strengths-based approach to practice (Townsend & Polatajko, 2007). The ABA literature also emphasizes using a strengths-based approach to build the skills of clients and significant others (Gambrill, 2012). Rather than focusing only on extinguishing unwanted behaviors, ABA applies a learning paradigm to change. This paradigm includes creating behavior and skill repertoires such as those that compete with undesired behaviors (Schwartz & Goldiamond, 1975, as cited in Gambrill, 2012).

The occupational therapy literature emphasizes consideration for social and cultural context, seeing that people shape and are shaped by their environments (Townsend & Polatajko, 2007). So, too, does the ABA literature. Attention to context and environmental influences is identified as a key characteristic of ABA (Gambrill, 2012). In their 1987 foundational article, Baer, Wolf, and Risley described ABA as concerned with “behaviors of the client that trouble that person; but more often, also behaviors of people other than the client” (p. 314).

Both the occupational therapy and the ABA literatures identify the importance of making decisions collaboratively (Baer et al., 1987; Townsend & Polatajko, 2007). For example, they both recommend planning goals and related interventions directly with clients as much as possible; collaboratively choosing target goals, identifying generalization strategies, and choosing reinforcers (Ontario Association for Behavior Analysis, 2010; Townsend & Polatajko, 2007).

The occupational therapy and the ABA literatures contain similar guidelines pertaining to the prioritization of goals. The U.S. Behavior Analyst Certification Board (2012) has recommended that practitioners prioritize client behaviors and skills that (1) may threaten the health or safety of self or others; (2) may be a barrier to their inclusion in important activities or settings; (3) limit participation in family and community life; and (4) are developmentally appropriate adaptive, social, or functional skills that are fundamental to health, social inclusion, and independence. For example, when working on a developmental skill, therapists must consider its current function and future value to both the individual and his or her community. The emphasis on participation expressed by the U.S. Behavior Analyst Certification Board is aligned with the Canadian Process Practice Framework for occupational therapy (Davis, Craik, & Polatajko, 2007) and the Occupational Therapy Practice Framework: Domain and Process (3rd ed.; AOTA, 2014).

The ABA literature supports the implementation of a mediator model: one that supports the client with ASD by supporting, educating, and coaching the important people in his or her life (Matson, Hattier, & Belva, 2012). The ABA literature has shown that schoolteachers, early childhood educators, parents, and health care professionals can learn to effectively apply the principles of ABA. The occupational therapy literature also supports this model as an effective, efficient, and client-centered way of practice (Case-Smith & Arbesman, 2008; Rodger & Polatajko, 2014).

Comparison of the occupational therapy and the ABA literatures suggests that the two approaches can actually be combined to enhance outcomes. Because many occupational therapists express a desire to improve their practice with clients who have autism (Ashburner et al., 2014), it seems worth considering how application of ABA principles may improve occupational therapy outcomes as well as how an occupational therapy perspective can maximize the benefits of ABA.

Synergy Between Applied Behavior Analysis and Occupational Therapy

Application of ABA principles has the potential to enhance occupational therapy intervention on the basis of ABA’s effectiveness in addressing several areas relevant to occupational therapy. Matson, Hattier, and Belva (2012) found interventions based on ABA to be effective in promoting work skills, self-care, play and leisure, and peer engagement and in minimizing the disruption of sensory behaviors (Matson, Hattier, & Belva, 2012). These areas are the very areas addressed by occupational therapy practitioners serving people with autism (Rodger & Polatajko, 2014). Occupational therapy practice can augment ABA outcomes because it offers features not typically considered in ABA. Occupational therapy practitioners value playfulness and can build a rich play experience while working on component skills of play. In addition, occupational therapy practitioners implement strategies in real-life contexts using naturalistic techniques (Spitzer, 2008).

One critical component of occupational therapy practice that lies outside ABA is its holistic perspective, particularly practitioners’ skill in analyzing people’s behaviors and occupational performance on multiple levels (as described in the Fit chart; Polatajko, 2007, as cited in Townsend & Polatajko, 2007, p. 213). Although modern-day ABA scientists go beyond the observable and consider a person’s thoughts, feelings, desires, and calculations (Cooper et al., 2007), occupational therapists carry out a much broader analysis because they are trained in assessing and addressing performance components such as transitions, sensory differences, social skills, and motor issues (Rodger & Polatajko, 2014). Occupational therapy practitioners can identify and address a person’s difficulties with executive functioning, sensory processing, physiological self-regulation (Cramm, Krupa, Missiuna, Lysaght, & Parker, 2013), anxiety, phobias (Chugh-Gupta, Baldassarre, & Vrkljan, 2013), and components of movement such as praxis and strength (Rodger & Polatajko, 2014). Examples include selecting reinforcers on the basis of an understanding of tactile responses and conducting performance analysis on the basis of an understanding of reflex patterns.

This deeper analysis also extends to occupational therapy practitioners’ understanding of the environment. The Canadian Model of Occupational Performance and Engagement (Townsend & Polatajko, 2007) defines the environment as having cultural, institutional, physical, and social elements that can enable or constrain...
occupational performance. Looking at the environment in this way makes practitioners particularly adept at developing antecedent strategies—those that set the client up for success. Examples include coaching peers in effective ways to socially engage a child with ASD, reducing the sensory demands of the environment, and educating teachers about the characteristics of ASD so that they are more accepting of certain behaviors.

Principles of ABA can be applied for more effective and evidence-based implementation of sensory-based strategies. For instance, ABA principles would suggest that timing of sensory input strategies is critical (Cooper et al., 2007), for example, when a client demonstrates unwanted behaviors, such as striking him- or herself or someone else, and then immediately receives sensory input meant to calm him or her (e.g., a familiar person comes and applies deep pressure to the client’s shoulders). This application of a sensory-based strategy could inadvertently reinforce the striking behavior, leading to its increase. An occupational therapist with this insight can instruct caregivers to implement calming strategies at the first signs of agitation, before undesired behavior is demonstrated.

Directions for Action: Clinical and Research

Occupational therapists seeking to enhance their application of a developmental approach to working with clients who have ASD can look to literature on the Early Start Denver Model. This model is an approach to autism treatment that is based on both developmental science and behavioral science (Rogers et al., 2006). It is also advisable to look into pivotal response training, an approach based on ABA that uses naturalistic and play-based methods and is well supported by evidence (Koegel, 2000; Rogers et al., 2006). In their 2005 book *Is It Sensory or Is It Behavior?* Murray-Slutsky and Paris explored ways to draw from behaviorist theory and incorporate it into all phases of occupational therapy practice.

Because occupational therapists report finding little help in the literature (Ashburner et al., 2014), more literature related to ASD from an occupational therapy perspective is needed. Additional systematic reviews on interventions for ASD, also from an occupational therapy perspective, would be helpful so that clinicians can access information on levels of evidence in a time-efficient way. The field could benefit from research that directly explores why occupational therapists use the approaches they do when working with clients who have ASD. Research directly investigating practitioners’ use of ABA principles could better elucidate the benefits and risks of this application.

Conclusion

Examining the relevant literature revealed that current trends in occupational therapy approaches to autism intervention diverge from predominant approaches in the field. The ABA literature suggests that there are widely held misperceptions of ABA as not being client centered, which is a plausible explanation for its absence from the occupational therapy literature and practice. However, because ABA is an approach supported by strong evidence (Anagnostou et al., 2014; Reichow, Barton, Boyd, & Hume, 2012), it has the potential to improve occupational therapy outcomes. In addition, occupational therapy practitioners possess analysis skills that make them well suited to adapt ABA principles within a broader approach. Therefore, practitioners must mindfully evaluate the potential of applying ABA within occupational therapy practice. Contending with this issue can bring improvements to occupational therapy practice and to ABA practice and, most important, can improve outcomes for clients with ASD.

References


