OBJECTIVE. Attention to executive functioning (EF) and its effect on occupational performance is increasing in the occupational therapy literature. This study explored occupational therapists' perceptions of how EF is recognized and addressed within occupational therapy for children and youth.

METHOD. Inductive qualitative content analysis was used to analyze the in-depth interview data from 13 occupational therapists with a range of practice contexts and experience.

RESULTS. EF should be explicitly considered during clinical reasoning. System and professional barriers create challenges to occupational therapists, constraining their ability to recognize, label, and address EF performance issues. Occupational therapists who have integrated EF into their practice perspective have acquired knowledge and skills through interprofessional collaborations, client interactions, and professional development opportunities.

CONCLUSION. Occupational therapists working with children and youth need an occupational EF framework and practice resources if they are to integrate an EF lens to more broadly enable occupational performance.

Executive functioning (EF) is a complex neuropsychological concept referring to a person's coordinated ability to plan, initiate, organize, connect information, transition, shift mindsets, set goals, prioritize, remember, and self-monitor. Also referred to as executive skills or executive functions, EF is intimately connected with the processes by which people do purposeful activity, independent of intelligence (Cox, 2007; Dawson & Guare, 2010). Although traditionally associated with the assessment of impairment in traumatic brain injuries, psychology and education have more recently expanded their examination of EF in other contexts. Forming foundational skills for success across academic, social, leisure, and family activities, EF informs children's ability to initiate tasks, regulate emotions and behaviors, and progress toward goals (Dawson & Guare, 2010; McCloskey, Perkins, & Van Divner, 2009; Meltzer, 2007).

EF deficits are not unusual; they are the common denominator across the most prevalent disorders of childhood—attention deficit hyperactivity disorder (ADHD), learning disabilities, anxiety disorders, and autism spectrum disorders (Altarac & Sarooha, 2007; Children's Mental Health Ontario, 2007; Faraone, Sergeant, Gillberg, & Biederman, 2003). This heterogeneous group of children and adolescents often has their needs go undetected and unmet, despite their impairment. They are then at risk for secondary mental health problems, lifelong reduction in income earning potential, increased likelihood to access...
government income support programs, greater risk of dropping out of high school, and higher risk of involvement with the criminal justice system (Crawford, 2002; Schultz, 2003).

Notwithstanding the prevalence and pervasive effect of EF issues, research has suggested that traditional approaches, primarily fine motor, gross motor, and visual–perceptual performance component assessment and intervention, are used in occupational therapy with elementary school children (Case-Smith & Archer, 2008). Fine motor and sensory integrative milestone acquisition are emphasized (Cahill, 2006) to resolve handwriting issues (Case-Smith, 2002; Hoy, Egan, & Feder, 2011). As a result, unless they demonstrate sensory or motor issues, children and youth experiencing occupational performance issues associated with EF issues may not receive occupational therapy services that would address EF (Cahill, 2006). Yet, occupational therapists have the skills and positioning within the system to identify those students who, because of EF issues, are having difficulty doing what they need to do, want to do, or are expected to do. Once identified, occupational therapists could provide targeted interventions before secondary and lifelong effects develop (Chandler, 2007; Schultz, 2003). The purpose of this qualitative study was to explore how occupational therapists perceive EF to be recognized and addressed within occupational therapy practice with school-aged children and youth.

Method

Design

A qualitative research approach was selected to explore occupational therapists’ perceptions of EF in occupational therapy with school-aged children. A qualitative approach allows one to investigate complex issues and to create rich descriptions that foster an enhanced understanding of the topic under study (Creswell, 2007; Patton, 2002). When a paucity of research literature on a multifaceted phenomenon exists, qualitative content analysis can be used (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). Cited widely, Elo and Kyngäs (2008) explicated the process of qualitative content analysis by synthesizing previous methodological articles that used this approach to qualitative analysis; their recommended procedures were implemented in this study.

This study received ethical clearance from the Queen’s University Health Sciences Research Ethics Board, and participants provided written consent concerning their participation.

Sample

Potential participants were identified through professional networks, conferences, and occupational therapy agencies. Participants were purposively selected to ensure variation in types of professional experiences, number of years working with school-aged children, education, and age; such diversity in the sample increases the likelihood of a richer exploration of the phenomenon (Patton, 2002). To identify “key informant experts” (Creswell, 2007), critical case and snowball sampling were used. The expert sample was defined as occupational therapists who have worked with children, adolescents, or both in settings where EF issues would be common. Stratified purposive sampling was also used to identify benchmark occupational therapists who were working with school-aged children who did not meet the expert inclusion criteria. Recruitment continued until theoretical saturation had been met (Creswell, 2007).

Data Collection

The first author (Cramm) conducted the in-depth, semi-structured interviews, each lasting approximately 90 min. General demographic information such as age and years of practice with school-aged children was collected. To explore perceptions of EF and its effect on occupational performance in school-aged children, open-ended questions such as “How would you conceptualize executive functioning?” were used along with open-ended probes that were specific to the participant’s response (Hsieh & Shannon, 2005). All participants were questioned about the same areas to promote dependability of the findings (Graneheim & Lundman, 2004).

Data Analysis

Verbatim interview transcripts were reviewed for accuracy, and two of the authors (Cramm and Krupa) conducted the analyses, adhering to the phases of qualitative inductive content analysis (i.e., immersion in data, line-by-line derivation of codes, iterative coding, converting notes into labels for initial coding scheme) described by Elo and Kyngäs (2008). A coding scheme is a systematic and analytic procedure used to create a map of categories based on comparative strategies between data (Elo & Kyngäs, 2008). Codes and categories emerge inductively from the data (Hsieh & Shannon, 2005) as meaning units that contain related content and context, followed by themes to link meanings of categories together and abstraction to achieve higher level description and interpretation (Graneheim & Lundman, 2004).
Rigor was ensured through review and revision of tentative labels along with ongoing dialogue and review among all authors (Graneheim & Lundman, 2004). Member checking was completed iteratively during data collection and analysis, and final themes were also sent out for member checking to promote rigor. To enhance reliability, we repeatedly revisited the data to assess how well the categories and themes represented and reflected the data (Elo & Kyngäs, 2008). Numbers, rather than names, are used to ensure anonymity of participants’ identity.

Findings

Thirteen occupational therapists with a range of professional experience with school-aged children were recruited. Drawn from 10 different communities of varying size across Canada, participants were involved in a combination of practice settings that included community agencies, school-based occupational therapy, private practice, center-based services, and academic institutions. Ten of the occupational therapists met the expert criteria (OT–E), and 3 met the benchmark (OT–B), which represents the broad population of occupational therapists. Figure 1 describes characteristics of the sample in more detail.

Three themes were identified and developed. The first theme addresses the “need to see” EF in children and youth. The second theme captures barriers that limit how well an occupational therapist working with school-aged children “can see” through the EF lens. Finally, the third theme proposes ways in which occupational therapists “learn to see” through the EF lens.

Theme 1: The Need to See Executive Functioning

Misunderstood Children. Participants noted that it is common for adults to misunderstand EF performance issues among children and youth, perceiving them to be lazy, lacking in motivation, or willfully misbehaving. EF performance issues are often “misinterpreted as, ‘this is behaviour’ . . . they’ve got voluntary control . . . they’re doing it on purpose” (OT07–B). Being able to see past the externalizing behaviors requires that an occupational therapist recognize that EF is a factor in the occupational performance issue, identify its effect, and label it accordingly.

Widespread Effects. The occupational therapists in the study described the effects of EF issues on occupational performance as negative and widespread, interfering with independence levels and engagement in preferred occupations. From social interaction to self-care routines to the classroom to doing homework, school-aged children with EF issues were consistently described as struggling to get started, to understand what was expected of them, to realize that they needed to ask for help, and to recognize when they were missing information. Making sense out of the task at hand can overwhelm school-aged children’s EF, because “they truly don’t know how to make sense of what they are seeing” (OT13–E).

Core to that difficulty is being able to break the task down into its essential elements, a process that helps define the plan and its sequence, and a sense of the desired product: “You’re stuck before you even start” (OT10–E). Discerning the most salient aspects of a task proves challenging, compounded by deficits in discrete EF performance components such as attention, memory, cognitive rigidity, and impulse control. A child with working memory issues may express, “It’s in my head, I just can’t
find it, I know it’s in my head” (OT02–E). Such deficits add significant burden to completing nonroutine tasks. Moreover, with growing age, curriculum and family expectations increasingly tax a student’s EF as projects are introduced, writing becomes less about copying words and more about generating organized and integrated written composition, and increased levels of independence and self-direction are expected at home.

**Negative Consequences.** If EF impairments are not recognized and accommodated, children and youth who are struggling will question whether “it’s something wrong and different and bad about them compared to their peers? Because everyone else seems to get it” (OT13–E). Within their primary productivity role as students, children and youth with EF problems increasingly avoid tasks that exceed their EF capacity, such as written composition. School refusal and disengagement from the student role become more and more common with increasing grade level, as do secondary mental health issues such as depression, anxiety, and even suicide. Consequently, participants described foreseeable sequelae: “You either get the outburst behavior or you get the kid that is not engaged. He is just sitting there” (OT08–B). To mitigate these types of negative outcomes, participants emphasized the importance of incorporating an EF lens into the occupational therapy practice repertoire with school-aged children: “It needs to become an EF lens into the occupational therapy practice repertoire with school-aged children: “It needs to become one of the hypotheses that we generate, we test, we accept, we reject that, you know, the reason he can’t do that” (OT02–E).

**Theme 2: Barriers to Seeing Executive Functioning**

**Obscured From View.** Occupational therapists in the study consistently reported that consideration of EF within school-aged practice occurs, at best, inadvertently. Many participants remarked that they may not be consciously aware of the presence or influence of EF on occupational performance, attributing the source of performance issues to sensory or motor factors. Difficulties in getting started, for example, may be interpreted as a sensory integrative praxis issue rather than as an EF impairment in initiation. As a result, occupational therapists may directly observe performance-manifesting EF issues, but not recognize them as such: “Executive functioning doesn’t get the—it’s not front and center; for pediatric therapists, in my experience, it’s almost like executive functioning gets labeled as all these other things in kids” (OT03–E).

In addition to the use of different labels, participants noted that it is quite difficult to tease out the role of EF from other contributing factors. For example, specification of task requirements must be confirmed: “Just because you don’t know what’s required of that task does not mean you have a planning problem” (OT04–E). Determining whether anxiety is a primary condition or secondary to disordered doing is akin to sorting out which came first—the chicken or the egg. Consideration of EF issues happens much later in the clinical reasoning process after the “most obvious ones . . . because it becomes more and more complex” (OT07–B), and it may not be considered at all. That focus may flow from services that have a “pretty narrow focus” (OT02–E) on remediation of the perceived sensory or motor deficit.

Although sensory, motor, or both approaches are necessary, they may not be sufficient to respond to the complexity and depth of the occupational performance issues stemming from EF issues. A seasoned occupational therapist remarked that “we’ve sold ourselves down that river by doing, you know, working on printing and so, when there is so much more a child needs to do to get to school, organizational part or all the life skill stuff is not addressed” (OT05–E). Therapists often feel constrained by their program mandate, which encourages them to focus on specific components. The system may be “set up to not have you go there” (OT03–E).

**Feeling Ill Equipped.** Study participants consistently reported that although curriculum covering EF is associated with adult brain injury and commonly considered part of the repertoire of occupational therapy knowledge and skills, therapists do not necessarily integrate or translate that knowledge base beyond the adult population or recognize its relevance across the life span and occupational performance domains. A recent graduate lamented that “no one told us” (OT12–B) that the kids with whom occupational therapy works would have EF issues. Indeed, one participant asserted that occupational therapists with questions about EF “can’t really find those answers in textbooks . . . executive function needs to be put within a context but they don’t have the context even” (OT04–E). Without this context, psychological reports that identify and describe EF issues may not be used, because their relevance to occupational therapy is unclear.

Moreover, even when therapists did identify that EF is an issue, they reported feeling ill-equipped to address this “murky” (OT12–B) area. Requiring more information about what EF issues might look like from a performance perspective, as well as the developmental trajectories of typical and atypical EF across the life span, participants described needing more information about assessments, theories, models, and frameworks that explicate EF and its relation to occupational performance: “I don’t have a framework that I refer to and I don’t even know if there
is one... I’ve got ideas and feelings and some evidence about it” (OT09–E). Therapists reported similar concerns about interventions. Therapists wondered whether organizational strategies such as checklists and visual timers were little more than common sense as they “just seem so basic... I’m a highly trained professional, I shouldn’t, you know, surely, I have more to offer than that” (OT02–E). Cognitive strategies used to mediate a child’s performance on a task garnered a similar response, as participants seemed unsure whether their prompts were merely helpful or actually part of an intervention framework.

**Politics of Change.** Several study participants speculated that occupational therapists may be less assertive and confident than other health care professionals in explicitly addressing EF. Therapists are feeling as though they need permission, like, this is an OT thing, but I think they get anxious or you know, you just feel like, ooh, this isn’t really my role, you know, why are you talking about this, but it is, it is the part of the whole, you are in the idea, you are in the job of improving occupational performance. (OT11–E)

Participants also broached the notion that therapists may prefer certain approaches to practice because of a comfort level with certain types of practice models or may prefer enacting a prescriptive rather than a collaborative role with clients. In addition, pressures within occupational therapy practice contexts may impede the broadening of how the occupational therapists’ expertise is deployed. One occupational therapist speculated that broadening the lens to include EF may create considerable resistance from educators who are used to a particular pattern of occupational therapy interventions:

There’s an understanding out there that the OT role is going to be this, and to step in with something new might be—it would take a while for people to get on board with it, or there might be some disappointment because a lot of people really like to hear that it’s a sensory issue. (OT12–B)

This situation creates a complex climate for incorporating an additional lens into practice. Indeed, occupational therapists who have integrated EF into their practice perspective reported tension and conflict with other occupational therapists. For instance, one participant described an experience of being challenged by another occupational therapist: “It was—very confrontational and it was very, ‘What? You have no right to even address this. This isn’t handwriting!’” (OT13–E). As a result, there may be forces at play within the profession and practice contexts to maintain the status quo of traditional approaches.

**Theme 3: Learning to See Through the Executive Functioning Lens**

**Interprofessional Relationships.** The role of interprofessional relationships was reported as critical to acquiring an EF lens, but it depended on “whether you get exposed to it or not” (OT11–E). Having established EF language, frameworks, and models, education and psychology colleagues, in particular, played significant roles in enabling occupational therapists to being able to see EF. Opportunities to engage in interprofessional dialogue were described as enlightening and formative, allowing occupational therapists to gain skills such as understanding and interpreting psychological assessment reports.

Participants also championed the transformative power of mentorship from outside of the profession, citing highly experienced professionals with knowledge and experience with EF who, as one participant noted, “have the education and who they themselves can identify that that’s what the issue is. So people that understand that piece to it, I think, how they would address things from that point of view” (OT09–E). Participants who had had access to these kinds of mentors and interprofessional relationships recognized that their experiences were exceptional and outside of what is generally available.

**Working With Clients.** Digging deeper to reveal the role of EF seems to happen when traditional approaches are not effective in resolving the occupational performance issues with clients who have conditions such as ADHD. Therapists reflected that their personal shifts were precipitated by “feeling like lots of the other component-based bottom-up approaches are not particularly effective” (OT03–E) and that “what I was doing wasn’t making a whole lot of difference” (OT02–E). Participants noted that incorporating EF into their clinical reasoning aligned closely with their individual and the profession’s shift toward top-down, occupation-based practice, enabling a shift toward attending to the “how” of occupational performance and engagement: The focus on execution of occupational performance implicit with the EF lens is “so perfectly OT because, you know, it’s part of that whole, why can’t they do it” (OT11–E).

Explicitly considering EF and its relation to occupational performance “gives OT a whole new way of looking at this stuff that it’s always been there but we haven’t really put words to or put a lot of value to” (OT09–E). Teasing out these EF performance issues requires observing performance of daily occupations and dynamic performance analysis that will reveal “where the glitch is” (OT13–E) and lay the foundations for the intervention plan. Furthermore, participants reported that
systematic trial of a variety of interventions can help to expose the source of the performance issue such that “the intervention starts to explain the problem, rather than the problem the intervention” (OT04–E).

Also helpful was the opportunity to make connections between standardized assessments and real-life performance. The degree to which the practice context afforded the occupational therapist the opportunity to do just that was highly variable. Participants who had worked in various practice contexts with school-aged children reported that working within clients’ homes laid bare the daily challenges the child and family face when managing EF difficulties. Working in community settings “makes you see the reality really quickly” (OT09–E) in a way that a more defined, school-based role may not.

Reﬁning the Lens Through Professional Development

Several participants reported that postgraduate courses with a special education focus helped crystallize the nature of the EF difficulties seen in occupational performance. Moreover, psychology coursework within preservice or postgraduate education proved useful around the assessment and cognitive constructs associated with EF difficulties. Engaging in professional development from education or psychology helped participants learn how to translate psychological reports and educational assessments “into a summary of what this kid might look like and what the reasons might be for the difﬁculties they were having” (OT03–E).

In addition to formal education, several therapists reported a range of specific models, assessments, or authors, most of whom are psychologists, as instrumental in their personal process of developing their EF lens. Workshops, training opportunities, and books by psychologists such as Lev Vygotsky, educators such as Richard Lavoie, and speech–language pathologists such as Mark Ylvisaker were cited most commonly. Of particular note within the occupational therapy profession was the Cognitive Orientation to daily Occupational Performance (CO–OP; Polatajko & Mandich, 2004) approach. Several participants reported that learning about CO–OP had had a transformative impact on their practice and that they generalized this approach to the executive-level difﬁculties many school-aged children experience. With its focus on process, the “power of that kind of an approach when you give them a way to solve problems and a way to look at their activities” (OT03–E) was reported to effectively facilitate occupational performance.

Discussion

Participants reported that issues associated with EF may be tacitly addressed or attributed to sensory or motor frameworks but that explicit recognition of EF is important if negative secondary effects are to be avoided. Therapists in the study also identiﬁed a series of barriers that make it difﬁcult for occupational therapists to recognize the EF issues and to target services toward them. Key factors and opportunities were identiﬁed that have supported occupational therapists’ integration of EF into their practice repertoire.

Participants described EF as inextricably entwined with performance; moreover, participants associated EF with a top-down, occupational perspective. Yet, EF has historically been interpreted as a set of discrete skills or processes that have ﬁnite capacities, in keeping with the body functions dimension within the International Classiﬁcation of Functioning, Disability and Health–Children and Youth Version (ICF–CY; World Health Organization, 2007). Nevertheless, participants emphasized that EF is inherent within occupational performance of complex, dynamic, and goal-directed occupations, situating EF instead within the ICF–CY activity and participation dimension (Josman & Rosenblum, 2011). This conceptualization of EF is in keeping with more recent occupational therapy literature that shifts the understanding of EF issues from a set of performance components impaired within a diagnostic category to recognizing them as “an occupational performance problem” (Wolf & Baum, 2011, p. 43).

Despite this shift, practice contexts, service mandates, and professional pressures continue to shape occupational therapy services for school-aged children, generally circumscribing the role of the occupational therapist to address ﬁne motor, gross motor, and sensory impairments. As a result, the degree to which occupational therapists have latitude in enacting their scope more fully is unclear. In contrast to the emphasis within the profession on enabling occupation, participants reported feeling constrained. Traditional emphasis on remediating performance components presumed to hinder occupational performance issues make it hard to practise as occupational therapists. . . . Sometimes these therapists enthusiastically defend what they are doing as being “real” occupational therapy, stressing the idea that assessing and remediating underlying impairments will ultimately result in enhanced occupational performance. More often than not, however, such persons readily acknowledge a troubled sense that what they are doing is not what they feel they should be doing, and that they struggle with how to make a change in their practice. At worst, they feel powerless to effect change. (Fisher, 2003, pp. 193–194)

If the system frames the child in medical rather than occupational terms, therapists are “caught between providing
occupation-based intervention and meeting the needs of the health care system” (Rogers, 2007, p. 10); these goals should align but often do not. The system is structured for occupational therapists to not even see EF, let alone address it. This is problematic, because accurate identification and labeling of EF issues may pave the way for a shift in adults’ interpretation of a child’s difficulties and that, with this improved understanding, parents “can move onto advocating for their child, finding early interventions that will promote adaptation and may prevent secondary consequences” (Missiuna et al., 2008, p. 28).

Participants expressed little confidence in the profession’s comfort around addressing higher level cognitive development associated with EF. Occupational therapists may have a general knowledge base in EF from their academic curriculum in adult brain injury, but few occupational therapy resources support therapists in developing their knowledge and skills about executive occupational performance issues among children: a single article (Weiner, Toglia, & Berg, 2012) within occupational therapy for occupational therapists speaks directly to EF and its effect on occupational performance for school-aged children. Psychology and education resources may prove useful, and occupational therapists may piece together resources over time that support their clinical reasoning.

Interprofessional resources are also limited. Many of the occupational therapists in the study had outstanding access to interprofessional relationships that played a critical role in making the role of EF salient within their practice. Despite the knowledge that health professionals need a variety of mentors to support their professional development (Higgs & Titchen, 2001; Rappolt, Mitra, & Murphy, 2002), the vast majority of occupational therapists working with school-aged children have no such opportunity. Service delivery infrastructure allowing access to peer or interprofessional mentorship is quite constrained for school-based therapists, who are often independent contractors working on their own at a variety of school sites; community agencies, academic institutions, and private practice settings may allow a greater latitude in the scope and breadth of the occupational therapy role.

These multilevel tensions described by participants mean that changing the perception of the nature and breadth of the occupational therapy role with children and youth may elicit resistance, both within occupational therapy and across sectors. Vulnerability created through change may account for some of the internal politics occupational therapists reported when they deviated from the traditional perception of the occupational therapist role and experienced “negative sanctions” and “hostility” from peers because they were “not supportive of one another in attempts to further their own careers and professional standing” (Griffin, 2001, p. 31). When working to develop new opportunities within a role, system obstacles can hinder change and new learning (Higgs & Titchen, 2001; McCluskey & Cusick, 2002). Change disrupts the equilibrium within the system; predictable and familiar expectations, values, and attitudes make up the status quo (Piderit, 2000). Simmons Carlsson (2009) likened the preference for maintaining traditional practice patterns to a “rut” that is “all too often hard to break out of because we so know the way of it; frequently cemented because people expect us to be in that rut” (p. 6).

Implications for Occupational Therapy Practice

EF is affected by development and common childhood neurobiological conditions. To effectively enable occupational performance issues, identifying and recognizing EF issues is important when working with children and youth. Implications for occupational therapy practice are as follows:

- Occupational performance issues associated with EF are poorly understood.
- EF needs to be explicitly and systematically considered in the clinical reasoning process if negative secondary consequences are to be avoided.
- Individual- and system-level barriers to acquiring the EF lens exist.
- Learning to see EF issues is supported through interprofessional relationships, clients, and professional development opportunities.

Limitations and Future Research

Various sampling strategies and recruitment sources were used, and several potential expert and benchmark participants declined to participate. Occupational therapists who opted to participate may represent occupational therapists who support the need to recognize and label EF performance issues, so the full breadth of perspectives within the profession may not be adequately represented. Although participants were drawn from multiple geographic regions, inclusion of participants from all provinces and territories might have allowed for further transferability of the findings, because the difficulties reported in school-based service delivery may be a function of specific regional practices and not necessarily generalizable to other counties, school boards, or provinces.

This research represents part of a larger research project that developed an executive occupational performance
competency framework. The next step in this program of research would be to develop an interactive educational module (Hollenbeck, 2010; Marrelli, Tondora, & Hoge, 2005) that provides occupational therapists with accessible professional development opportunities to acquire the executive occupational performance capacities. Moreover, generating momentum toward adoption and implementation of the EF lens at a systems level necessitates strategic alliances with important stakeholders, such as educators, psychologists, and parents.

Conclusion

Occupational therapists who work with school-aged children and youth reported that occupational performance issues associated with EF are poorly recognized and addressed. Occupational therapists have both a perceived and an actual lack of preparation to adequately address the EF needs of children and youth, and few options exist for continuing occupational therapy education to shore up their knowledge and skills. To develop the EF occupational performance lens, occupational therapists can learn to see EF, typically through building interprofessional relationships with educators or psychologists, learning from clients, self-study, and postgraduate courses. Systemic and professional barriers pose challenges to occupational therapists who move to increase EF awareness in their practice. Occupational therapists working with school-aged children do not have access to an occupational therapy model that might help facilitate the integration of EF into occupational therapists’ practice radar. A way of understanding what knowledge and skills are required to effectively and accurately intervene with school-aged children is needed to mitigate the pervasive effect of EF issues on occupational performance.

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