

# Theory Use in Practice: A National Survey of Therapists Who Use the Model of Human Occupation

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## KEY WORDS

- clinical reasoning
- conceptual practice models
- occupation-based practice

**OBJECTIVE.** This study describes how occupational therapists who reported using the Model of Human Occupation (MOHO) actually use the concepts and tools of this model in everyday practice as well as identifies supports and barriers to its use.

**METHOD.** A systematic random sample of 1,000 occupational therapists was surveyed as to what theories they used in their practice. Those using MOHO (430) were sent a detailed questionnaire; 259 therapists (60.2%) responded to the survey questionnaire.

**RESULTS.** More than 80% of respondents indicated that they used MOHO in their practice at least some of the time. Therapists reported that MOHO supports holistic, occupation-focused, client-centered, and evidence-based practice. They reported finding MOHO concepts useful for treatment planning and intervention. Most saw the major barrier to using MOHO as their own lack of knowledge.

**CONCLUSION.** Making resources more readily available and accessible to therapists might enhance the extent to which they use conceptual models such as MOHO.

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Contemporary scholars in occupational therapy agree that *occupation* should be the central construct underlying the field and its practice (Christiansen, Baum, & Haugen, 2004; Kielhofner, 2004; Wood, 1998; Yerxa, 1992). Occupation-focused practice is considered important because it focuses beyond impairment reduction to enable clients to realize meaningful participation in life occupations (Christiansen, 1999; Clark, 1993; Kielhofner, 2002, 2005; Law, 1998; Townsend, 1997; Wilcock, 2001; Wood, 1998). Nonetheless, practice has yet to fully embrace occupation-focused practice (Christiansen, 1999; Fisher, 1998; Gray, 1998; Wood, 1998). For instance, a recent National Board for Certification in Occupational Therapy (NBCOT; 2004) study concluded that entry-level practitioners predominantly use traditional impairment-oriented assessments and interventions and show only a modest trend toward using occupationally oriented perspectives.

Over the past 3 decades, several practice models have been proposed as vehicles to guide occupation-focused practice. These models offer occupationally oriented theory to guide practice (Barrett & Kielhofner, 2003; Dunn, McClain, Brown, & Youngstrom, 2003; Kielhofner, Forsyth, & Barrett, 2003; Schultz & Schkade, 2003; Stewart et al., 2003). There is evidence that the Model of Human Occupation (MOHO) is the most widely used occupation-based model in the United States and internationally (Brown, Rodger, Brown, & Roevers, 2005; Haglund, Ekbladh, Thorell, & Hallberg, 2000; Law & McColl, 1989; NBCOT, 2004; Wikeby, Lundgren, & Archenholtz, 2006). Little is known, however, about how practitioners chose and actually use this occupation-based model.

The overall aim of this study was to describe how occupational therapists who reported using MOHO actually use its concepts and tools in everyday practice. By generating insights into how therapists approach an occupationally oriented model and identifying factors that support or hinder its use, this study aims to shed light on how conceptual practice models might more readily support occupation-focused practice.

## Review of the Literature

Only a few studies have examined occupational therapists' perception, knowledge, and use of theory. Collectively, these studies have sought to identify factors associated with awareness and valuing of theory and knowledge and use of theory. The sections that follow characterize what these studies reveal.

### *Knowledge of Theory*

Van Deusen-Fox (1981) found that recently graduated therapists in the United States had limited knowledge of occupational therapy theory. Law and McColl (1989) concluded that the level of knowledge about theories among occupational therapists in Canada was moderate (i.e., between 38% and 73% of therapists could recognize the source of major occupational therapy theoretical concepts). Haglund et al. (2000) found that therapists in psychiatric settings in Sweden were generally not able to identify or articulate occupational therapy theories supporting their actions. Javetz and Katz (1989) similarly found that occupational therapists in Israel had difficulty articulating the theories they used. Overall, these studies suggest that practitioners' knowledge of theory is modest.

### *Factors Influencing Values and Knowledge Concerning Theory*

Two studies (Barris & Kielhofner, 1985; Van Deusen-Fox, 1981) found that bachelor's-level therapists placed less value on theory than postbaccalaureate-level therapists. Two other studies found that experienced therapists valued theory more than did recent graduates (Van Deusen, 1985, 1986). In contrast, another study found that graduate-level therapists had a lower level of knowledge than undergraduate-level therapists and also found that being more recently educated was associated with a higher level of knowledge (Law & McColl, 1989). Yet another study (Haglund et al., 2000) found no relationship between years of experience and education level and therapists' identification of the theoretical models they used. In sum, the evidence concerning how education and experience influence attitudes toward and knowledge of theory in occupational

therapy is inconclusive. A study by Wikeby et al. (2006) indicated that expert therapists saw theory as valuable but differed on whether its value was in determining outcomes of therapy or in providing a justification for the occupational therapy treatment.

### *Factors Influencing Use of Theory*

Several investigations have shed some light on factors that may influence therapists' use of theory. An exploratory, qualitative study about use of theory in a rehabilitation setting found that although therapists highly valued the use of theory in practice, they lacked an understanding of theory and did not implement theory in their practice (Elliott, Velde, & Wittman, 2002). In a similar vein, another investigation found that fewer therapists actually used theories than reported valuing theory. The two studies suggest that therapists' attitudes are not the primary barriers to use of theory (Law & McColl, 1989). One study found an association between knowledge of theory and theory use, suggesting that a therapist's underlying comfort and familiarity with a theory is related to its integration in practice (Law & McColl, 1989).

One investigation found that therapists predominantly referenced theories widely used in their specialty areas (Javetz & Katz, 1989). Two other studies similarly found that therapists working with children mostly used the developmental and sensory integration models most commonly applied with infants and young children (Brown et al., 2005; Lawlor & Henderson, 1989). Studies on theory use among therapists in educational settings (Crowe & Kanny, 1990; Storch & Eskow, 1996) found that school-based therapists used a multitheoretical approach influenced by their context. Haglund et al. (2000) found that, with the exception of 40% of practitioners who reported using MOHO, occupational therapists predominantly used interdisciplinary (i.e., non-occupational therapy) theories that characterized the psychiatric settings in which they worked. Wikeby et al. (2006) found that therapists predominantly used MOHO but also made use of other theories in their practice to maintain a holistic perspective. These studies' findings suggest that therapists' use of theory involves using multiple theories or models and is mostly influenced by their setting or specialty area and their beliefs about their clients' needs.

### *How Theory Is Used in Practice*

Only one study examined in detail how therapists use theory; it examined occupational therapists in psychiatric settings who characterized themselves as using MOHO (Munoz, Lawlor, & Kielhofner, 1993). The study concluded that therapists valued MOHO's holistic approach and easily incorporated other practice models along with it. This study's

major finding was that when therapists applied theoretical concepts, the detailed subconcepts offered by MOHO at the time were not as useful as the overall general concepts, which therapists adapted to their clients' characteristics and circumstances. This finding led to revisions in MOHO that emphasized adapting concepts such as personal causation to each client while eliminating the more detailed subconcepts (e.g., internal-external control and expectancy of success). This study and the subsequent changes in MOHO demonstrate that studying how practitioners use a model can help to guide its development and ensure that it is readily applicable to practice.

## Purpose

Previous research concerning therapists' awareness of, attitudes about, and use of theory in occupational therapy practice is extremely limited and leads to no clear understanding of those issues. Because practitioners are being urged to adopt occupational-based theories, it is important to have a better understanding of how therapists choose, think about, and implement a theory in their practice. Such knowledge has the potential to identify what types of efforts might increase theory use and to guide the development of theory and tools for its application. Thus, our purpose in this study was to describe how therapists perceive and use a prevalent practice model, MOHO, and to identify supports and barriers to its use. Consequently, we aimed to answer the following questions:

- Do therapists differ in their understanding and use of MOHO by experience, education, client population, and practice setting?
- How do occupational therapists characterize their understanding and perception of the usefulness of MOHO concepts?
- How do occupational therapists report using MOHO concepts and tools in their practice?
- What do occupational therapists report as benefits and challenges to using MOHO?

## Method and Participants

This survey study used a mailed questionnaire to elicit information from practicing occupational therapists who reported that they were using MOHO. The study was approved by the Institutional Review Board at the University of Illinois at Chicago (IRB No. 2005-0241).

To generate the sample, an initial survey, which asked therapists what theories they used in practice, was sent to

a systematic random sample of 1,000 occupational therapists generated by the American Occupational Therapy Association (AOTA) member-sampling database. Of the practicing therapists who responded, 430 (80.7%) indicated that they used MOHO in their practice at least some of the time. Those 430 therapists were then sent the study survey. Follow-up surveys were sent to nonrespondents 4 weeks and 8 weeks after the initial survey, as recommended by Forsyth and Kviz (2006). A total of 259 therapists responded to the survey questionnaire for a response rate of 60.2%. Of those, 3 were ineligible because they were no longer practicing, resulting in a total of 256 study participants.

## Survey Instrument

The survey instrument for this study was developed in several stages. As recommended by Forsyth and Kviz (2006), focus groups and consultation with experts in the use of MOHO were used to generate content and to refine the questionnaire so that it comprehensively addressed the research questions, was clear, and reflected the circumstances and perspectives of the intended respondents. Initially, four focus groups involving a total of 17 practicing therapists were conducted to gather information about how therapists chose and were using MOHO in practice and the barriers and benefits they perceived to using MOHO. Information from the focus groups and a review of the questionnaire used by Munoz et al. (1993) was used to generate a first draft of the survey instrument. Then, several drafts of the instrument were sent iteratively to 30 occupational therapists and researchers who were knowledgeable about MOHO. They were asked to complete the survey and provide feedback about its clarity and comprehensiveness. After several revisions of the instrument based on extensive feedback, another focus group was conducted with participants from the original four focus groups. This focus group specifically examined the questions' relevance and clarity and resulted in further revisions that are reflected in the final survey instrument. No formal psychometric testing of the instrument was done before the study.

## Data Analysis

The survey results were analyzed using the Statistical Program for the Social Sciences software program (SPSS, Inc., Chicago, IL). Descriptive statistics were used to answer the study questions. Missing data across all the variables were, on average, 2.5%; all percentages reported are based on valid responses; and frequency data represent the actual number of people who responded to each question.

## Results

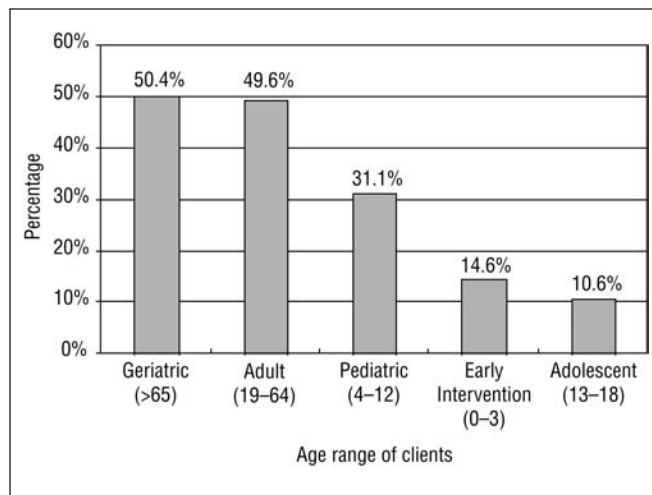
### Characteristics of Respondents

Table 1 presents the characteristics of the respondents. Most (90.2%) were women; 9.8% were men. The age range in this group was 23 to 77, yielding a mean age of 41.11 ( $SD = 10.51$ ). More than two-thirds entered the field with a bachelor's degree, and nearly half attained a graduate degree at some point in their career (Table 1). Participants had a range of experience; notably, more than half had more than a decade of experience.

Participants practiced with a wide range of client groups and within a variety of practice settings (Figures 1 and 2). The primary problems addressed across the client groups were motor and movement difficulties (95.3%), cognitive-perceptual and learning problems (89.2%), sensory impairments (85.1%), and emotional and behavioral problems (65.2%; data not shown). Table 2 illustrates length and intensity of interventions. Across all settings, half of the therapists reported the average length of intervention for clients to be more than 5 weeks. Although there was a range in the number of treatment sessions, the largest group of participants (31.2%) saw clients for more than 30 sessions.

### Influence of Experience, Education, Client Population, and Practice Setting on Understanding and Use of MOHO

Analyses were performed to determine any differences by therapist experience, education, practice setting, and client characteristics for any of the questions addressed in the following sections. Contrary to expectations, no significant differences in knowledge and use of MOHO were found for



**Figure 1. Age range of clients seen by therapists. Percentages total more than 100 because therapists could indicate more than one group.**

any of the variables. The one exception was that three assessments acquired specifically for use in pediatric areas were more frequently used by practitioners working in pediatric areas. Thus, for purposes of answering the remaining study questions, the participants were treated as a single sample.

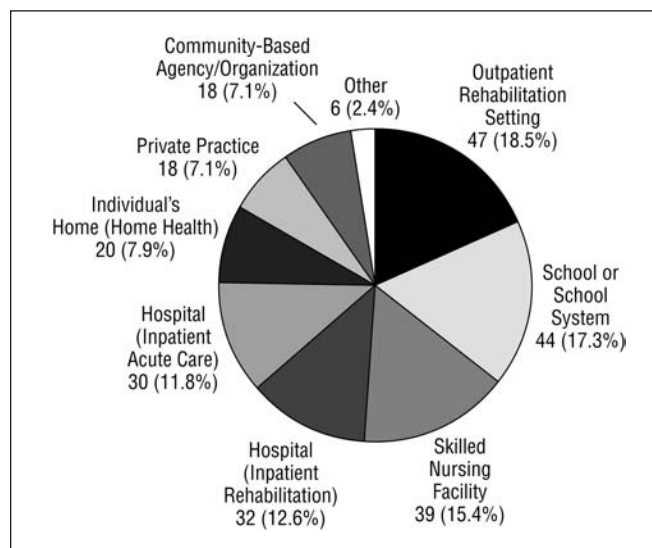
### Understanding of MOHO Concepts and Perceived Usefulness

Table 3 presents therapists' reported understanding (*don't understand/know*, *somewhat understand*, or *very clearly understand*) of MOHO concepts and how useful (*not useful/don't know*, *somewhat useful*, or *very useful*) they find each concept. In general, a high percentage of respondents reported that they either somewhat or clearly understood the four main

**Table 1. Therapists' Degrees and Experience ( $N = 256$ )**

Degree and Experience	<i>n</i>	%
Degree earned to become an occupational therapist		
Bachelor's	179	70.5
Entry master's	68	26.7
Certificate	6	2.4
Occupational therapy doctorate	1	0.4
Highest degree earned in any field		
Bachelor's	140	55.1
Master's	108	42.5
Doctorate	6	2.4
Experience as an occupational therapist		
Less than 1 year	8	3.2
1-5 years	58	22.9
6-10 years	48	19.0
11-20 years	67	26.5
More than 20 years	72	28.5

*Note.* Frequency data represent the actual number of people who responded to each question.



**Figure 2. Practice settings in which clients are treated.**



**Table 2. Length and Number of Sessions of Therapy (N = 256)**

Length and Number of Sessions	N	%
Average length		
Less than 1 week	15	6.0
1–2 weeks	24	9.6
2–weeks	32	12.7
3–5 weeks	56	22.3
More than 5 weeks	124	49.4
Typical intensity		
Fewer than 10 sessions	57	22.5
10–20 sessions	62	24.5
20–30 sessions	55	21.7
More than 30 sessions	79	31.3

Note. Frequency data represent the actual number of people who responded to each question.

MOHO concepts of volition (92.4%), habituation (90.4%), performance capacity (90.0%), and environment (98.0%). Other MOHO concepts that were reported as understood the most by a high percentage of therapists were occupational performance (100%), motor skills (99.2%), interest (99.2%), skills in general (98.4%), roles (98.4%), values (98.4%), communication and interaction skills (98%), and

process skills (96.8%). Concepts such as habits (95.2%), personal causation (91.7%), occupational participation (90.5%), social groups (90.1%), occupational competence (89.7%), occupational adaptation (88.9%), and occupational identity (87.8%) were reported as the next most understood concepts. Environmental concepts such as spaces, objects, and occupational forms were somewhat less understood. The concepts reported as least understood were the lived body (33.1%) and specific systems theory concepts such as emergence and heterarchy (38.9%).

Therapists' responses to the usefulness of each concept (see Table 3) demonstrated a nearly identical pattern to their understanding of these concepts. Of the 25 concepts rated, 10 were rated as *very useful* by more than half the respondents. Those concepts included the environment, the concepts related to skill and performance, the habituation concepts of roles and habits, and the volition concepts of values and interests. Seven concepts were rated as *very useful* by fewer than one-third of the respondents; those were concepts related to the environment, systems theory, and the lived body.

**Table 3. Therapists' Understanding and Perceived Usefulness of Model of Human Occupation Concepts**

Concept	Understanding (%)		Usefulness (%)	
	Somewhat Understand	Very Clearly Understand	Somewhat Useful	Very Useful
Occupational performance	39.4	60.6	39.8	57.0
Motor skills	16.5	82.7	16.7	80.5
Interest	25.5	73.7	27.9	69.7
Skills (in general)	30.7	67.7	32.0	65.2
Roles	32.7	65.7	35.1	60.2
Value	34.4	64.0	34.7	60.6
Environment (in general)	30.3	67.7	32.3	63.7
Communication and interaction skills	35.0	63.0	39.4	56.2
Process skills	34.6	62.2	33.5	60.6
Habits	37.2	58.0	40.2	53.0
Volition (in general)	49.8	42.6	45.6	40.4
Personal causation	56.2	35.5	48.4	37.1
Occupational participation	50.2	40.3	45.5	39.9
Habituation (in general)	50.4	40.0	47.2	38.4
Social groups	48.0	42.1	50.8	35.5
Performance capacity	45.4	44.6	40.2	46.6
Occupational competence	54.7	35.0	48.6	34.0
Occupational adaptation	49.0	39.9	44.3	39.5
Occupational identity	51.6	36.2	49.4	30.0
Objects	48.8	28.3	46.8	23.6
Spaces	52.4	24.0	49.6	20.8
Systems theory (in general)	53.9	16.5	43.7	14.7
Occupational forms	48.8	10.2	41.6	8.4
Emergence and heterarchy	35.0	3.9	28.5	2.8
Lived body	26.7	6.4	22.4	6.8

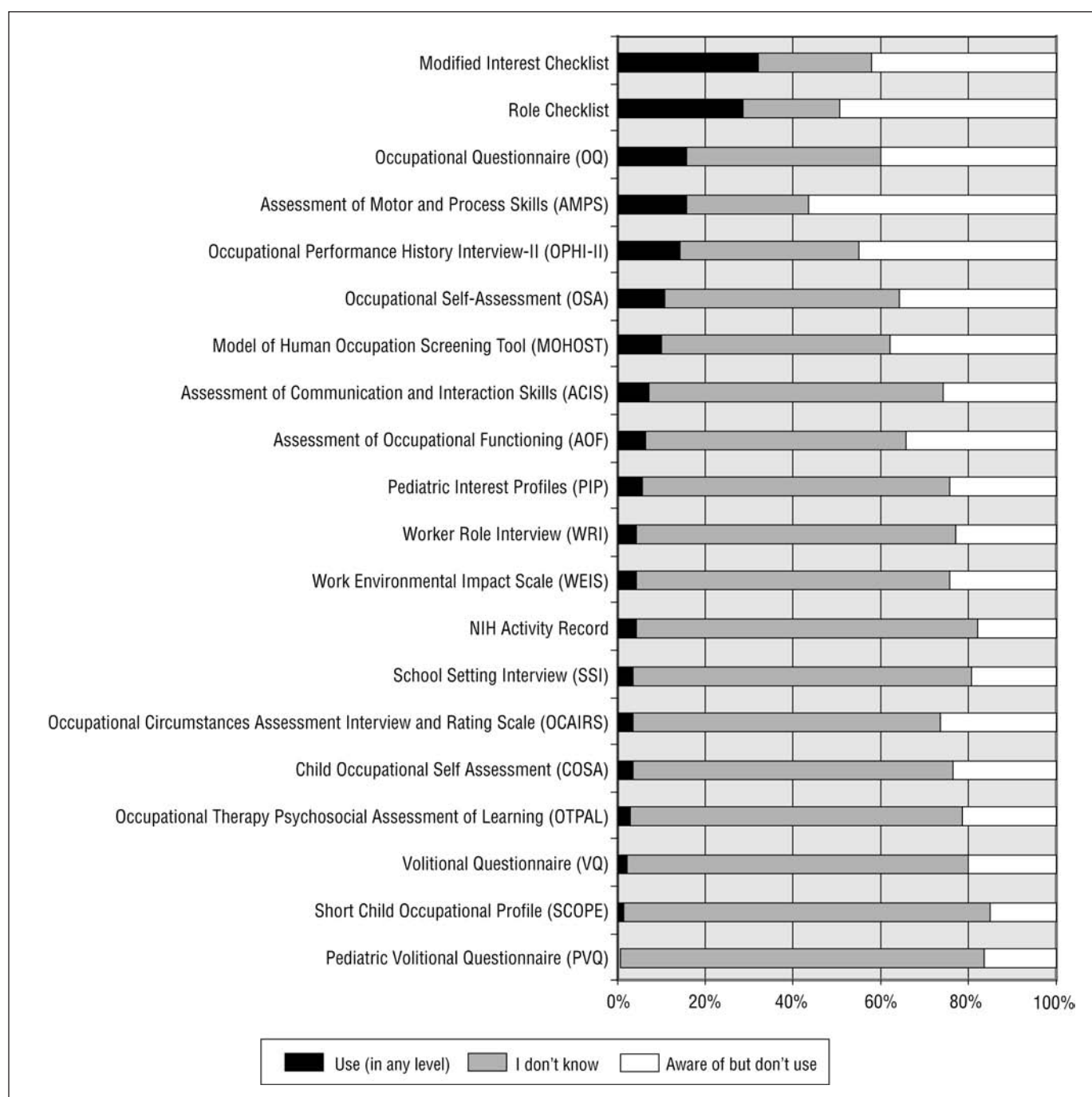
Note. Concepts are listed in order from most to least understood.

### Use of MOHO Concepts and Tools in Practice

Although more than half of these therapists reported that MOHO assessments were uniquely suited to their clients' needs (64.4%) and indicated that MOHO assessments were easy to explain to their clients (56.8%), most (99.2%) responded that they used formal MOHO-based assessments with only up to half of their clients. Moreover, one in five therapists indicated that they had created a "home-grown" MOHO assessment.

Therapists' reported awareness and use of each assessment are shown in Figure 3. According to therapists' reports, the most frequently used assessments were the Modified

Interest Checklist (32.0%), the Role Checklist (28.7%), and the Occupational Questionnaire (15.6%). The least used assessments were the Pediatric Volitional Questionnaire (0.4%) and Short Child Occupational Profile (1.2%). Notably, a high percentage of assessments were unknown to the respondents. Their reported use of these formal assessments was related to the type of population with which they worked. There was a trend for therapists to more frequently report use of assessments designed for the populations (adult vs. pediatric) for whom they provided services. However, only the Child Occupational Self Assessment (Keller, Kafkes, Basu, Federico, & Kielhofner,



**Figure 3. Therapist's awareness and use of Model of Human Occupation assessments.**

2005) [ $\chi^2(3, N = 231) = 13.29, p = .00$ ], Pediatric Interest Profiles (Henry, 2000) [ $\chi^2(3, N = 233) = 23.59, p = .00$ ], and School Setting Interview (Hemmingsson, Egilson, Hoffman, & Kielhofner, 2005) [ $\chi^2(3, N = 234) = 15.21, p = .00$ ] were significantly more frequently used by therapists working in pediatrics.

Of the respondents, 52.5% reported that they used MOHO concepts or ideas to understand their client's circumstances with more than half of their client population. About 35% of therapists responded that they used intervention strategies based on MOHO with more than half of their clients. Therapists also reported using the following occupational therapy models along with MOHO for intervention: biomechanical (94.4%), motor control or neurodevelopment (93.9%), cognitive-perceptual (84.9%), cognitive disabilities (84.7%), and sensory integration (76.5%).

Therapists were asked about their use of specific MOHO concepts to generate treatment goals. According to therapists' reports, motor skills (96.3%), roles (95.3%), interests (94.8%), physical environment (95.6%), process skills (94.8%), and performance capacity (94.1%) were most frequently used to generate treatment goals. Communication and interaction skills (90.4%), habits (89.2%), and social environment (87.6%) were the next most frequently reported as used, followed by occupational competence (83.2%), occupational identity (81.9%), values (81.2%), and personal causation (78.5%).

### *Strengths of MOHO*

Therapists were asked whether they agreed with the statements about strengths of MOHO that had been identified through the focus groups. Their responses indicated that the major areas of perceived strength were that MOHO facilitated client-centered practice, structured treatment planning and monitoring, and enhanced professional identity and competence.

*Client-Centered Practice.* Respondents also overwhelmingly agreed that MOHO supports a client-centered approach (98.0%) and provides a holistic view of clients (97.6%). Most therapists reported that using MOHO enhanced their ability to relate to clients (85.0%) and prioritize their needs (82.8%). Most reported that using MOHO enhanced their clients' satisfaction with occupational therapy services (77.5%).

Consistent with their reported perceptions that MOHO supported client-centered practice, more than a quarter (27.1%) of respondents reported that they actively involved clients directly in completing and interpreting MOHO assessments, and 50% of therapists indicated that they had discussed MOHO-based assessment findings with clients. Moreover, half of therapists also replied that they had taught

clients MOHO concepts to provide them with insights or understanding of their own circumstances, and 1 in 10 therapists indicated that they had taught clients to use MOHO assessments to evaluate and monitor their situation themselves.

*Treatment Planning and Monitoring.* Most therapists (88.8%) agreed that MOHO provides a strong base for generating treatment goals and helps them identify a rationale for intervention. Most also agreed that MOHO structures their thinking about clients and helps them in the treatment-planning process (85.4%). A somewhat smaller majority of therapists reported that MOHO helped them treat aspects of clients that would otherwise be missed (66.0%) and recognize more subtle aspects of clients' progress (72.3%). Along with this, 94.0% agreed that MOHO can readily be used in intervention in conjunction with any other model or theory.

*Professional Identity and Practice.* In relation to professional identity and confidence, 90.2% of therapists agreed that MOHO allowed them to conduct occupation-focused practice. A somewhat smaller majority agreed that MOHO supported evidence-based practice (70.9%). Most therapists agreed that MOHO gave them confidence as an occupational therapist (77.8%) and allowed them to effectively communicate about their role as an occupational therapist to team members and clients (68.6%). Most also reported that MOHO helped them articulate clients' needs to the interdisciplinary team (75.8%) and allowed them to have influence in interdisciplinary decision making concerning client treatment and discharge (64.6%). About half agreed that their use of MOHO had resulted in positive feedback from interdisciplinary staff (53.0%) and positively affected the respect they received from other professions (50.6%).

More than half of therapists agreed that an in-depth narrative assessment was a strength (54.1%). Fewer than one-third agreed that using MOHO helped them attain resources in their setting (32.7%), and about a quarter agreed that other professionals readily understood and valued MOHO-based documentation (25.3%).

### *Challenges and Barriers to Using MOHO*

Therapists were also asked to reflect on the challenges to using MOHO that had been identified in the focus groups. Their responses indicated that the greatest barriers were knowledge, difficulties with the complexity of MOHO concepts and tools, client barriers, and logistic barriers.

*Insufficient Knowledge About MOHO.* Interestingly, the greatest barrier that therapists reported was their need for more knowledge and skills to use MOHO (80.2%). Those therapists as a whole, however, had made efforts to learn about MOHO. More than two-thirds of therapists (66.4%)

had read one of the MOHO books, about 10% reported visiting the MOHO Web site ([www.moho.uic.edu](http://www.moho.uic.edu)), about 60% responded that they learned about MOHO through their own efforts, and 15.3% indicated that they attended a workshop or other continuing education course on MOHO.

About a third of the respondents felt that using MOHO assessments (39.0%) and setting goals based on MOHO (37.1%) was difficult for them. A quarter found it difficult to come up with MOHO-based intervention strategies, and 18.2% had difficulty understanding MOHO theory.

*Client-Related and Logistic Barriers.* Some therapists reported that MOHO assessments were too complicated for their clients (47.4%) and that it was hard to make clients understand MOHO concepts (41.6%). A small group reported that their clients were resistant to the kinds of interventions that are suggested by MOHO (12.5%). Nearly two-thirds of respondents reported that MOHO assessments were too time consuming for their settings (70.8%) and that time restrictions and productivity demands limited their use of MOHO (63.7%). Some therapists reported that their use of MOHO was hard to document (45.1%) and difficult to get reimbursement for (35.3%). Some also reported barriers in that the use of MOHO concepts did not fit with the philosophy or focus of services in their practice setting (22.6%) and were not supported by other professionals in the setting (15.6%).

## Discussion

Unlike some previous studies, this study found no significant differences related to therapists' demographic characteristics in understanding and using theory (i.e., education level, length of experience). Moreover, no significant differences were found in knowledge and use of MOHO across practice setting or with regard to length of treatment and number of treatment sessions. This finding was somewhat surprising because we anticipated that therapists in more acute care settings and with less time for intervention might have found MOHO less useful: Those settings tend to emphasize medical-model or impairment-focused interventions. It was also interesting that no differences were found related to the age of client population served or type of impairments addressed. This lack of differences suggests that therapists are able to make adaptations to MOHO concepts to best fit their practice circumstances. Although it was beyond the scope of this study, it will be important in the future to examine in more detail how therapists adapt and use theoretical concepts in everyday practice across different types of settings.

Participants in general reported that they had a good understanding of MOHO concepts and, for the most part,

found these concepts useful in their practice. It is not surprising that concepts of performance and skills were among the most understood and useful given the field's long history of emphasis on functional capacity. However, it is notable that the more occupationally oriented concepts (interests, roles, values, habits) were perceived as equally understandable and useful. This finding suggests that therapists may be using more occupationally oriented concepts in their practice than was suggested by the recent NBCOT (2004) survey. However, this issue needs to be examined in more detail. It would, for instance, be very telling to scrutinize how much therapists use such concepts in the process of treatment planning and intervention.

Therapists had the least understanding of more recently developed concepts such as dynamical systems theory and the lived body. That finding is not surprising because of the 80% who reported reading the text *A Model of Human Occupation: Theory and Practice* (Kielhofner, 1985, 1995, 2002), more than half reported that their knowledge was based on the book's first or second edition, which did not incorporate those concepts.

Although MOHO emphasizes the importance of the environment, therapists seemed to have less understanding of this aspect of the model. That is, although they reported understanding the general concept of the environment, they had much less of an understanding of the environmental concepts of objects, spaces, and occupational forms. The finding suggests that even more prominence should be given to the environment in future revisions of MOHO. Historically, MOHO has emphasized systems concepts as its foundation, yet therapists tend to find these concepts least useful. This finding suggests that this aspect of the model might be deemphasized, that the practical implications of these ideas need to be more clearly articulated, or both.

Therapists' perceptions of the usefulness of MOHO concepts was nearly identical to their understanding of those concepts. Although this association is insufficient to conclude that increased knowledge contributes to greater perceived usefulness, it is consistent with Law and McColl's (1989) findings that therapists' underlying comfort and familiarity with theory contributes to its use, as well as with the widely accepted idea that learning proceeds on a continuum from comprehension to application (Anderson & Krathwohl, 2001; Bloom, Englehart, Furst, Hill, & Krathwohl, 1956).

In terms of therapists' use of theoretical concepts, it appears from this study that therapists are generally comfortable with and see benefits in using MOHO concepts to understand their clients, set treatment goals, and provide a rationale for their interventions. This study did not ask therapists for examples of treatment goals and strategies



based on MOHO, but this would be of interest in future research. It is worth noting that the reported relative ease of setting MOHO-based treatment goals and strategies found in this study contrasts with past anecdotal information that therapists find it challenging to develop MOHO-based treatment goals and interventions. The third edition of the MOHO text (Kielhofner, 2002) included specific materials designed to support therapists in identifying treatment goals and strategies. Additional efforts to make MOHO-based intervention strategies more explicit have been completed and are being undertaken. For instance, the *Remotivation Process Manual* (de las Heras, Llerena, & Kielhofner, 2003) details interventions designed to increase volition. This manual grew out of the efforts and experiences of practitioners who implemented MOHO with clients who had motivational problems. A similar manual is being developed to address intervention strategies for children with motivational challenges. There are also MOHO-based intervention protocols that have been developed for community-based programming, supporting return to employment and facilitating adaptation following a first psychotic break (Braveman, Kielhofner, Belanger, de las Heras, & Llerena, 2002). As these and other resources are developed and become known to practitioners, they should increase the ease with which therapists can use MOHO to guide treatment planning and intervention.

Therapists' use of available MOHO-based assessments was modest. In part, this finding appears to be related to therapists' awareness of the range of available MOHO-based assessments. Many therapists were unaware of the majority of MOHO-based assessments, especially those developed in the past 5 years, and they tended to use older assessments. Another factor that may have contributed to the use of assessments was the logistics of assessment administration. For example, 70.8% of therapists felt that MOHO-based assessments took too much time to administer. However, a concerted effort has been made in recent years to create shorter and more efficient assessments (e.g., Bowyer, Ross, Schwartz, Kielhofner, & Kramer, 2005; Parkinson, Forsyth, & Kielhofner, 2005). Therapists were largely unaware of the existence of these assessments.

It is noteworthy that a fifth of therapists reported developing their own assessment that reflected MOHO concepts. There has been a concerted effort in occupational therapy to encourage therapists to use standardized assessments and, in particular, the 20 standardized assessments that have been developed on the basis of MOHO. Therefore, the development of home-grown assessments could be seen as counterproductive. Another, more important lesson can be taken from this finding, however. The development of standard-

ized assessments requires substantial expertise, time, and resources and, therefore, has traditionally been undertaken by academics. As Kielhofner (2005) noted, when academics develop assessments they tend to emphasize psychometric concerns over utilitarian concerns; as a result, practitioners may find that the assessments have a limited ability to meet their local needs. This pattern may account for Brown et al.'s (2005) finding that there was an inconsistency between the assessments used by pediatric therapists and the theoretical models they reported. One assessment, the Model of Human Occupation Screening Tool (MOHOST; Kielhofner, 2005), was initiated by practitioners as a home-grown assessment and then developed through collaboration between academics and practitioners. Although the MOHOST had only been available for 1 year at the time of this study, it was already the fifth most used assessment, and figures from the MOHO Clearinghouse, where the MOHOST is sold, indicate that it is already among the most popular, even compared with assessments that have been available for more than a decade.

The MOHOST experience strongly suggests that efforts to develop practice resources through collaboration with practitioners, in which practitioners take a lead role, will result in adoption of those resources in practice. This argument is offered on behalf of the scholarship-of-practice effort that now guides the development of MOHO practice resources (Crist & Kielhofner, 2005; Kielhofner, 2005). Like participants in Munoz et al.'s (1993) study, those therapists felt that MOHO provided a holistic view of their clients and was easily integrated with other models. Therapists also strongly regarded MOHO as supporting client-centered practice.

This finding is not surprising because MOHO was developed with the aim of supporting therapists to look beyond impairments to consider the client's perspective and lifestyle. The concept of volition, for example, leads therapists to directly consider what clients hold as important, what they are interested in, and how they feel about their performance. The concept of habituation leads therapists to be concerned about clients' daily lives and involvement in life roles. Concern for those dimensions of the client's life results in treatment planning and intervention that must be tailored to the client's circumstances, not simply the underlying impairment. Additionally, most MOHO assessments are designed to elicit the client's perspective on his or her occupational circumstances, and published discussions of MOHO-based interventions emphasize the centrality of the client's perspective and occupational engagement to the therapy process (de las Heras et al., 2003; Kielhofner, 2002). This emphasis on client-centered strategies is consistent with

the finding of this study: that the majority of respondents reported that they used MOHO to implement client-centered therapeutic interactions by involving clients in the assessment process and teaching them MOHO concepts.

Therapists also reported that MOHO allowed them to have an occupation-focused practice and a clearer professional identity. This is not surprising because the original intention of MOHO was to support occupation-focused practice (Kielhofner & Burke, 1980). MOHO is the oldest model in the field that explicitly addresses clients' occupational needs.

Although therapists identified logistic issues (e.g., time, lack of support in their context, reimbursement) as barriers to using MOHO, the most pervasive barrier they identified was lack of knowledge. Notably, participants reported that they had made fairly significant attempts to learn about MOHO on their own (e.g., reading books, attending workshops, participating in discussion groups). Therapists also wrote comments in the margins of the survey indicating that they were exposed to the variety of MOHO assessments and the Web site for the first time through completion of the survey and noting the need for continuing education courses to keep them abreast of this rapidly developing model.

## Study Limitations

This study was based on a sample of AOTA members who self-reported that they used MOHO. Several potential sources of bias are present in this study. First, because the sample was limited to therapists who were members of AOTA, it may not be representative of all practitioners in the United States. Second, although the study's response rate compares favorably with other recently reported surveys of occupational therapists (e.g., the NBCOT, 2004, survey), those who responded to this survey may have been more interested in MOHO and therefore willing to complete a survey on this model.

Although the survey instrument was developed with focus groups and feedback, no formal psychometric testing was done before the study. Another limitation is that this study relied on self-report, and differences may exist between the information that therapists report and the information that might be obtained through other methods, such as observation. Moreover, the use of a written questionnaire limited the extent to which this study could examine subtle nuances in the way therapists used MOHO that might be revealed through a combination of in-depth observation and interviewing. Many of the questions raised by this study bear examination through more direct and intensive methods of data collection.

## Conclusion and Recommendations

In conclusion, several patterns of findings emerged from this study. First, according to therapists' self-reports, MOHO is widely used in practice. Reasons for using MOHO include therapists' perception that it supports a holistic, occupation-focused, client-centered, and evidence-based practice. Therapists were comfortable with most MOHO concepts and used them in their clinical reasoning. However, therapists made less use of formal MOHO assessment tools. Although therapists identified some external barriers to using MOHO (e.g., time restriction), most reported that the major barrier is their own knowledge. Other evidence also suggests that knowledge (e.g., awareness of assessments) is a major factor limiting the extent to which therapists use MOHO resources.

Given that a major barrier to using MOHO is knowledge, efforts to make such knowledge more readily available might enhance the extent to which therapists use this model. Therapists receive their initial knowledge of MOHO during their basic education. In this study, recently graduated therapists did not differ significantly in their knowledge and use of MOHO from therapists educated more than a decade ago. This finding raises the question of whether educational programs are making new therapists sufficiently aware of the range of resources associated with this model. Given that it is the most widely used occupation-focused model among new therapists (NBCOT, 2004), it may be that more emphasis should be placed on MOHO during basic professional education. Nonetheless, this model continues to develop at a robust pace, so keeping apace after graduation also is important. For this reason, a variety of means of disseminating information need to be explored for their utility to therapists. Respondents' comments on the survey indicate that the Web site ([www.moho.uic.edu](http://www.moho.uic.edu)) is a useful resource. The Web site contains a listing of MOHO-based assessments that can be downloaded or purchased, information on volition, and so forth. It also includes an evidence-based search engine that generates MOHO references on topics the user can specify. Many therapists also belong to an active MOHO electronic mailing list that can be joined through the Web site; dialogue on this electronic mailing list is almost exclusively focused on issues of practice. Various forms of continuing education, especially online courses, may also be an option for keeping therapists updated. Finally, consideration should be given to academic-practice collaborations such as those undertaken in the United Kingdom. There is evidence that these efforts to build a more occupation-focused and evidenced-based practice have had considerable success (Forsyth, Duncan, & Summerfield-Mann, 2005; Forsyth, Summerfield-Mann, & Kielhofner, 2005). ▲

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## References

- Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *Taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.
- Barrett, L., & Kielhofner, G. (2003). Theories derived from occupational behavior perspectives: An overview of occupational behavior. In E. B. Crepeau, E. S. Cohn, & B. A. Boyt Schell (Eds.), *Willard and Spackman's occupational therapy* (10th ed., pp. 209–212). Philadelphia: Lippincott Williams & Wilkins.
- Barris, R., & Kielhofner, G. (1985). Generating and using knowledge in occupational therapy: Implications for professional education. *Occupational Therapy Journal of Research*, 5, 113–124.
- Bloom, B., Englehart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. New York: Longmans, Green.
- Bowyer, P., Ross, M., Schwartz, O., Kielhofner, G., & Kramer, J. (2005). *The Short Child Occupational Profile (SCOPE)* (Version 2.1). Chicago: MOHO Clearinghouse.
- Braveman, B., Kielhofner, G., Belanger, R., de las Heras, C. G., & Llerena, V. (2002). Program development. In G. Kielhofner (Ed.), *A model of human occupation: Theory and application* (3rd ed., pp. 491–519). Philadelphia: F. A. Davis.
- Brown, G. T., Rodger, S., Brown, A., & Roever, C. (2005). A comparison of Canadian and Australian pediatric occupational therapists. *Occupational Therapy International*, 12, 137–161.
- Christiansen, C. (1999). Defining lives: Occupation as identity: An essay on competence, coherence and the creation of meaning. *American Journal of Occupational Therapy*, 53, 547–558.
- Christiansen, C. H., Baum, C. M., & Haugen, J. B. (Eds.). (2004). *Occupational therapy: Performance, participation, and well-being* (3rd ed.). Thorofare, NJ: Slack.
- Clark, F. (1993). Occupation embedded in a real life: Interweaving occupational science and occupational therapy. *American Journal of Occupational Therapy*, 47, 1067–1077.
- Crist, P., & Kielhofner, G. (2005). *The scholarship of practice: Academic–practice collaborations for promoting occupational therapy*. Binghamton, NY: Haworth.
- Crowe, T. K., & Kanny, E. M. (1990). Occupational therapy practice in school systems: A survey of northwest therapists. *Physical and Occupational Therapy in Pediatrics*, 10(3), 69–83.
- de las Heras, C. G., Llerena, V., & Kielhofner, G. (2003). *Remotivation process: Progressive intervention for individuals with severe volitional challenges* (Version 1.0). Chicago: MOHO Clearinghouse.
- Dunn, W., McClain, L. H., Brown, C., & Youngstrom, M. J. (2003). Theories derived from occupational behavior perspectives: The ecology of human performance. In E. B. Crepeau, E. S. Cohn, & B. A. Boyt Schell (Eds.), *Willard and Spackman's occupational therapy* (10th ed., pp. 223–227). Philadelphia: Lippincott Williams & Wilkins.
- Elliott, S. J., Velde, B. P., & Wittman, P. P. (2002). The use of theory in everyday practice: An exploratory study. *Occupational Therapy in Health Care*, 16, 45–62.
- Fisher, A. G. (1998). Uniting practice and theory in an occupational framework. *American Journal of Occupational Therapy*, 54, 509–521.
- Forsyth, K., Duncan, E., & Summerfield-Mann, L. (2005). Scholarship of practice in the United Kingdom: An occupational therapy service case study. In P. Crist & G. Kielhofner (Eds.), *The scholarship of practice* (pp. 17–30). New York: Haworth.
- Forsyth, K., & Kviz, F. J. (2006). Survey research design. In G. Kielhofner (Ed.), *Research in occupational therapy* (pp. 91–109). Philadelphia: F. A. Davis.
- Forsyth, K., Summerfield-Mann, L., & Kielhofner, G. (2005). A scholarship of practice: Making occupation-focused, theory-driven, evidence-based practice a reality. *British Journal of Occupational Therapy*, 68, 261–268.
- Gray, J. M. (1998). Putting occupation into practice: Occupation as ends, occupation as means. *American Journal of Occupational Therapy*, 52, 354–364.
- Haglund, L., Ekbladh, E., Thorell, L.-H., & Hallberg, I. R. (2000). Practice models in Swedish psychiatric occupational therapy. *Scandinavian Journal of Occupational Therapy*, 7, 107–113.
- Hemmingson, H., Egilson, S., Hoffman, O., & Kielhofner, G. (2005). *School Setting Interview, Version 3.0*. Nacka: Swedish Association of Occupational Therapists.
- Henry, A. D. (2000). *Pediatric Interest Profiles: Surveys of play for children and adolescents*. San Antonio: Therapy Skill Builders. Retrieved November 27, 2007, from www.moho.uic.edu/assessments
- Javetz, R., & Katz, N. (1989). Knowledgeability of theories of occupational therapy practitioners in Israel. *American Journal of Occupational Therapy*, 43, 664–675.
- Keller, J., Kafkes, A., Basu, S., Federico, J., & Kielhofner, G. (2005). *Child Occupational Self Assessment, Version 2.1*. Chicago: University of Illinois, College of Applied Health Services, Department of Occupational Therapy, Model of Human Occupation Clearinghouse.
- Kielhofner, G. (1985). *A Model of Human Occupation: Theory and application*. Baltimore: Williams & Wilkins.
- Kielhofner, G. (1995). *A Model of Human Occupation: Theory and application* (2nd ed.). Baltimore: Williams & Wilkins.
- Kielhofner, G. (2002). *A Model of Human Occupation: Theory and application* (3rd ed.). Baltimore: Williams & Wilkins.
- Kielhofner, G. (2004). *Conceptual foundations of occupational therapy* (3rd ed.). Philadelphia: F. A. Davis.
- Kielhofner, G. (2005). Scholarship and practice: Bridging the divide. *American Journal of Occupational Therapy*, 59, 231–239.
- Kielhofner, G., & Burke, J. (1980). A model of human occupation, part 1: Conceptual framework and content. *American Journal of Occupational Therapy*, 34, 572–581.

- Kielhofner, G., Forsyth, K., & Barrett, L. (2003). Theories derived from occupational behavior perspectives: The Model of Human Occupation. In E. B. Crepeau, E. S. Cohn, & B. A. Boyt Schell (Eds.), *Willard and Spackman's occupational therapy* (10th ed., pp. 212–219). Philadelphia: Lippincott Williams & Wilkins.
- Law, M. (Ed.). (1998). *Client-centered occupational therapy*. Thorofare, NJ: Slack.
- Law, M., & McColl, M. A. (1989). Knowledge and use of theory among occupational therapists: A Canadian survey. *Canadian Journal of Occupational Therapy*, 56, 198–204.
- Lawlor, M. C., & Henderson, A. (1989). A descriptive study of clinical practice patterns of occupational therapists working with infants and young children. *American Journal of Occupational Therapy*, 43, 755–764.
- Munoz, J. P., Lawlor, M., & Kielhofner, G. (1993). Use of the Model of Human Occupation: A survey of therapists in psychiatric practice. *Occupational Therapy Journal of Research*, 13, 117–139.
- National Board for Certification in Occupational Therapy. (2004). A practice analysis study of entry-level occupational therapist registered and certified occupational therapy assistant practice. *Occupational Therapy Journal of Research: Occupation, Participation, and Health*, 24(Suppl. 1), S1–S31.
- Parkinson, S., Forsyth, K., & Kielhofner, G. (2005). *The Model of Human Occupation Screening Tool* (Version 2.0). Chicago: MOHO Clearinghouse.
- Schultz, S., & Schkade, J. K. (2003). Theories derived from occupational behavior perspectives: Occupational adaptation. In E. B. Crepeau, E. S. Cohn, & B. A. Boyt Schell (Eds.), *Willard and Spackman's occupational therapy* (10th ed., pp. 220–223). Philadelphia: Lippincott Williams & Wilkins.
- Stewart, D., Letts, L., Law, M., Cooper, B. A., Strong, S., & Rigby, P. J. (2003). Theories derived from occupational behavior perspectives: The Person-Environment-Occupation Model. In E. B. Crepeau, E. S. Cohn, & B. A. Boyt Schell (Eds.), *Willard and Spackman's occupational therapy* (10th ed., pp. 227–233). Philadelphia: Lippincott Williams & Wilkins.
- Storch, B. A., & Eskow, K. G. (1996). Theory application by school-based occupational therapists. *American Journal of Occupational Therapy*, 50, 662–668.
- Townsend, E. (1997). Occupation: Potential for personal and social transformation. *Journal of Occupational Science*, 4, 18–28.
- Van Deusen, J. (1985). Relationship of occupational therapists' education and experience to perceived value of theory development. *Occupational Therapy Journal of Research*, 5, 223–231.
- Van Deusen, J. (1986). Occupational therapy theory: Values held by undergraduate students. *Occupational Therapy Journal of Research*, 6, 115–122.
- Van Deusen-Fox, J. (1981). Occupational therapy theory development: Knowledge and values held by recent graduates. *Occupational Therapy Journal of Research*, 1, 79–93.
- Wikeby, M., Lundgren, B., & Archenholtz, B. (2006). Occupational therapists' reflection on practice within psychiatric care: A Delphi study. *Scandinavian Journal of Occupational Therapy*, 13, 151–159.
- Wilcock, A. A. (2001). Occupational science: The key to broadening horizons. *British Journal of Occupational Therapy*, 4(2), 56–61.
- Wood, W. (1998). It is jump time for occupational therapy. *American Journal of Occupational Therapy*, 52, 403–411.
- Yerxa, E. J. (1992). Some implications of occupational therapy's history for its epistemology, values, and relation to medicine. *American Journal of Occupational Therapy*, 46, 79–83.