
Intervention Planning Facets—Four Facets of Occupational Therapy Intervention Planning: Economics, Ethics, Professional Judgment, and Evidence-Based Practice

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KEY WORDS

- client care planning
- occupational therapy
- professional autonomy

OBJECTIVE. This study determined occupational therapists' perceptions of the following facets of intervention planning: economics, ethics, independent professional judgment, and evidence-based practice.

METHOD. A cross-sectional survey of 142 occupational therapists who provide short-term rehabilitation in five northeastern states was undertaken.

RESULTS. Most occupational therapists ($n = 137$, 96.5%) fell into one of four clusters, with the largest cluster ($n = 86$, 60.6%) having positive perceptions about ethics and independent professional judgment but negative perceptions about economic issues. Smaller clusters of occupational therapists were more positive about economic issues or less positive about ethics and independent professional judgment. Negative perceptions about the ability to implement evidence-based practice spanned all clusters.

CONCLUSION. American Occupational Therapy Association's efforts to educate occupational therapists about ethics appear to be effective. Most occupational therapists exercise independent professional judgment but perceive economic limitations when developing intervention plans. Practicing occupational therapists need additional research to support evidence-based practice and help in accessing and using research.

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The nature and complexity of occupational therapy has evolved in recent years in a health care market driven by efforts to improve the quality and cost-effectiveness of interventions (Ottenbacher, Tickle-Degnen, & Hasselkus, 2002). Therapists are challenged by multiple factors, particularly cost-containment, that influence their ability to deliver occupational therapy services. Between 1993 and 2001, Medicare spending for long-term care and short-term rehabilitation (STR) facilities increased more than 475%, from \$398 million to \$1.9 billion (Medicare Payment Advisory Commission, 2004). In an effort to control spiraling costs, the health care insurance system shifted to one in which the third-party payers influence the type and amount of health care provided (Walker, 2001). The payer, whose economic interest favors those services with a proven record of cost-effective success, is a principal stakeholder in the transaction between the insured (client) and the health care provider (e.g., occupational therapist). Payers scrutinize potential health care providers to ensure that quality care is provided at a minimal cost. As a result, it has become increasingly necessary to use research evidence to establish the efficacy of occupational therapy interventions (Lieberman & Scheer, 2002; Rappolt, 2003).

Demanding accountability through evidence, however, need not be viewed solely as a third-party strategy for reducing costs. It also is a method for proving our

adeptness as health care providers and generating evidence that supports innovations in practice (Chiu & Tickle-Degnen, 2002). Research can evaluate the effectiveness of interventions, and the results may be used to either reinforce or revise clinical assumptions. It is essential that therapists recognize that research is vital in ensuring professional credibility in a cost-conscious health care environment (Aslop, 1997; Craik & Rappolt, 2006; Holm, 2000; Law & Baum, 1998; Von Zweck, 1999) and that they continuously evaluate intervention strategies, considering both clinical efficacy and cost-effectiveness (Christiansen & Lou, 2001).

Literature Review

Evidence-Based Practice for Occupational Therapy

Scholars report that current literature shows a lack of research relevant to occupational therapy practice, suggesting that additional research to support evidence-based practice (EBP) in occupational therapy is essential (Dubouloz, Egan, Vallerand, & Von Zweck, 1999; Dysart & Tomlin, 2002; Kielhofner, 2005; Rappolt, 2003). Kielhofner (2005) reported that much current research in occupational therapy lacks practical relevance, thus making it difficult for therapists to apply research findings to intervention planning. In addition, when research findings are equivocal, therapists often do not know which results should be used. For example, Dysart and Tomlin (2002) noted that participants found it difficult to apply research findings to practice because of conflicting conclusions from multiple studies. Therapists, who often do not have the skills for research analysis, can become exasperated when faced with conflicting evidence, especially if the client could be harmed.

Another issue concerning the use of research in occupational therapy intervention planning is that each client is unique and that the complexities of human occupation cannot be understood easily and quantified using reductionist research models (Curtin & Jaramazovic, 2001). Because each client differs in his or her performance skills and patterns, it has been difficult to generalize research findings to other clients (American Occupational Therapy Association [AOTA], 2002; Curtin & Jaramazovic, 2001; Rappolt, 2003). Despite occupational therapists' obdurate position on EBP, however, it is crucial that therapists appraise current and best assessments and interventions using best evidence standards to ensure efficacy in practice. They should do so with the understanding that research results are not recipes for practice but rather provide information and guidance with which a therapist can organize, evaluate, and integrate interventions (Tickle-Degnen, 1999; Tickle-Degnen & Bedell, 2003).

Economic Constraints of Cost Containment

To support fiscal accountability and their financial goals, health care institutions have implemented policies and procedures to increase productivity and efficiency, often including specific therapist productivity requirements. However, at the center of cost-containment campaigns are therapists and the clients they serve (Slater, 2005). Cost-containment policies and procedures often contradict the professional standards of occupational therapy and circumvent achieving the goals of clients (Slater, 2005). For example, an institution may require occupational therapists to perform group interventions and bill for individual or concurrent treatments (Slater, 2005).

Exercising Independent Professional Judgment

As health care providers, occupational therapists have a duty to exercise *independent professional judgment (IPJ)*, the ability to design and develop an intervention strategy within one's scope of practice, without undue influence from nonoccupational therapists, by processing a client's needs and desires in multiple contexts and to execute an effective intervention plan (Burton, 2004). Therapists must perform competent client assessments, assess current research evidence, and evaluate a physician's order for appropriateness or reasonableness and potential harm (Cavico & Cavico, 1995) while using several clinical reasoning approaches (e.g., procedural, conditional, narrative, pragmatic, ethical) to identify the problem and formulate a plan of action (Barnitt & Partridge, 1997; Mattingly & Fleming, 1994; Schell & Cervero, 1993; Unsworth, 2005). Formulating appropriate interventions requires (1) careful consideration of the client's personal, occupational, and contextual needs; (2) an appreciation of and commitment to personal and professional ethics; (3) an awareness of institutional, political, and economic contexts; (4) pragmatic, action-oriented thinking; and (5) the ability to learn from experience (Aaronson, 1998). Because choosing interventions requires a multifaceted abstraction of clinical reasoning, IPJ is, therefore, not synonymous with clinical reasoning; rather, it is the freedom to exercise clinical reasoning (Grundy, 1987) autonomously and to translate and apply professional theory to clinical practice. This study sought to explore how contextual demands and resource limitations facilitate or hinder a therapist's ability to exercise IPJ.

In the "Joint Position Statement on Evidenced-Based Occupational Therapy," the Canadian Association of Occupational Therapists (CAOT) et al. (1999) developed a model of clinical decision making that considers IPJ, client needs, and research evidence as equally important and relevant when developing intervention plans. Evidence-based research is a necessary and valuable facet of clinical decision

making (Crain, 2004; Rappolt, 2003); therefore, not only must intervention planning be done using a pro forma or mechanical approach, but therapists also have an obligation to use scientific evidence when designing interventions. Although the use of evidence-based research is implied in exercising IPJ, it is seldom apparent in practice. The researchers initially assumed that exercising IPJ, as a facet of intervention planning, would reasonably include using evidence-based research. In this study, however, EBP was found to be a separate facet of intervention planning. The use of evidence is a necessary component of intervention planning, and a prudent and assiduous therapist would be remiss in not using evidence to test and revise clinical hypotheses (Tickle-Degnen, 2000).

Ethical Guidelines for Occupational Therapy Practice

Professional ethics and standards regulate conduct, reinforce confidence in the profession, and protect the community (AOTA, 2004). AOTA has developed three documents that guide ethical therapy practice: (1) *Occupational Therapy Code of Ethics* (the *Code*; AOTA, 2005), (2) *Core Values and Attitudes of Occupational Therapy Practice* (AOTA, 1993), and (3) *Guidelines to the Occupational Therapy Code of Ethics* (AOTA, 1998a). The code of ethics outlines the responsibilities of all occupational therapy professionals and provides them with guidelines for promoting and maintaining high standards of ethical behavior. Principle 4 of the *Code* (AOTA, 2005, p. 3) states that “occupational therapy personnel shall achieve and continually maintain high standards of competence.” Clinical competence requires the synthesis of theory and scientific evidence, personal and professional experiences, clinical and ethical reasoning, and the ability to predict outcomes and transform knowledge (Fesler-Birch, 2005). Therefore, IPJ is predicated on adherence to Principle 4, which acknowledges the significance of the ethical and EBP facets considered in this study.

Summary

The four facets of intervention planning cannot be understood in isolation. Exercising IPJ, adhering to ethical principals, and implementing EBP are constrained by cost-containment demands imposed by payers and by a lack of available research. As therapists strive to manage the competing demands of economics, IPJ, and EBP, they must continue to be mindful of ethical mandates. The *Code* clearly states that a critical examination of current evidence is a condition of ethical practice (AOTA, 2005, p. 3). Lloyd-Smith (1997) identified EBP as an ethical, conscientious, and discriminative process. This begs the question that if EBP is, as he says, ethical, to what extent is the failure to engage in EBP unethical? In addition, payers demand evi-

dence-based justification for occupational therapy intervention plans (Lieberman & Scheer, 2002), yet such evidence is lacking, which may exacerbate economic constraints.

Aims

This study was designed to explore self-reported perceptions of various facets of intervention planning (IPJ, ethics, and economics) of occupational therapists who are employed in STR settings. In addition, the study determined whether these therapists can be placed into groups on the basis of their differing perceptions of intervention planning facets.

Method

Design

This study was a prospective, cross-sectional survey of occupational therapists who work in adult STR facilities. The study protocol was approved by the New York Institution of Technology Institutional Review Board (IRB). Analyses were undertaken with approval by the Stony Brook University IRB.

Sample

State medical facility databases were used to locate STR facilities in the following five states: New York, Massachusetts, Connecticut, Rhode Island, and New Jersey (Helpline Database, 2005; New York State Department of Health, 2005). STR facilities were selected because economic constraints (such as predetermined durations and types of treatment) are similar at almost all adult STR facilities. A total of 771 surveys (230 to New York, 228 to Massachusetts, 98 to Connecticut, 33 to Rhode Island, and 182 to New Jersey) were mailed to all STR facilities and addressed to the occupational therapy service. Of these 771 surveys, 142 surveys were completed by an occupational therapist for an 18.4% response rate. Our convenience sample of 142 therapists included 53 from New York, 46 from Massachusetts, 18 from Connecticut, 7 from Rhode Island, and 18 from New Jersey.

Procedure

All surveys included a self-addressed (to the principal investigator), stamped envelope and, in an attempt to increase the response rate, a raffle ticket (prize worth \$50). A cover letter accompanied the survey; it described the purpose of the study and informed participants that returning the survey would serve as consent to participate. The cover letter included a request that surveys be completed only by an

occupational therapist, and all returned surveys met this criterion. A 3-week deadline was given for survey return. Participants returned the completed survey along with the raffle ticket (on which each wrote his or her name, credentials, address, and telephone number). After the raffle, all participants' identifying information was destroyed to maintain confidentiality.

Instrumentation

The survey was designed by the researchers to determine how comfortable occupational therapists are adhering to the requirements of (1) economics, (2) ethics, and (3) IPJ when developing intervention plans. For each facet, 10 questions used a 5-point Likert scale with the following choices: 5 (*strongly agree*), 4 (*agree*), 3 (*neutral*), 2 (*disagree*), and 1 (*strongly disagree*). The survey required approximately 10 min to complete. Participants were given space for comments and suggestions. A copy of the survey and a summary of the data are available on request.

Reliability Analysis

Researchers planned to create three summary scales, each of which would serve as an indicator of how comfortable therapists were with a single, underlying facet (economics, ethics, and IPJ) of intervention planning. To be valid, all the items making up a scale must be internally reliable, meaning that all the items in a scale must measure a single concept. An assessment of each scale's internal reliability was performed using Cronbach's alpha (Bohrnstedt; 1983, George & Mallery, 2003; Norušis, 2003). To do this, the scores for each of the individual questions were arranged so that a score of 5 represented the *most positive* (comfortable) response and a score of 1 represented the *most negative* (least comfortable) response.

For the 10 ethical questions, the Cronbach's alpha was .768, indicating acceptable reliability for the ethical scale. For the 10 economic questions, the Cronbach's alpha was .603, indicating questionable reliability. Removing 4 questions improved the Cronbach's alpha to .696, indicating acceptable reliability for an economic scale made up of the 6 remaining questions. For the 10 IPJ questions, the Cronbach's alpha was .500, indicating poor reliability. Removing 3 questions improved the Cronbach's alpha to .697, indicating acceptable reliability for an IPJ scale made up of the 7 remaining questions.

A reliability analysis of two of the removed IPJ questions (both about applying research to treatment) yielded a Cronbach's alpha of .402, which would generally be considered unacceptable. However, Cronbach's alpha tends to be lower for scales with three or fewer items (Peterson, 1994),

and because these two questions had face validity as similar, they were used to construct a research application scale. The five remaining items, four from the economic section and one from the IPJ section, lacked face validity as similar, so no further attempt was made to construct scales. Instead, these five questions were analyzed as independent questions.

In an exploratory factor analysis (Kielhofner, 2005; Norušis, 2003) of the 25 questions that made up the four scales (results available on request), all the questions in the ethics and IPJ scales loaded onto the first factor (mean factor load = 0.531), with all but one question having a factor loading greater than 0.35. The questions in the economic scale all loaded onto the second factor (mean factor load = 0.614), with factor loadings greater than 0.49, and the two questions in the research application scale both loaded onto a third factor (mean factor load = 0.718), with factor loadings above 0.71. One question addressing EBP, which might have been included in the research application scale, remained in the IPJ scale, because moving it to the research application scale would have lowered Cronbach's alpha for both the IPJ and the research application scales. In addition, the factor analysis indicated that this question should be included in the IPJ scale, because this question had a factor loading of 0.511 on the IPJ/ethics factor but a factor loading of only 0.224 on the research application factor.

Data Analysis

The quantitative data were analyzed using SPSS version 13.0 (SPSS, Inc., Chicago, IL), and the comments and suggestions were evaluated using NVivo, version 1.1 (NVivo, 1999). Missing data were replaced with the median value for that question. In all, for 142 surveys, each with 30 items, only 17 missing values were replaced. Then, the following eight scales were calculated for each participant: average and total economic score, average and total ethical score, average and total IPJ score, and average and total research application score. A General Linear Model compared the mean scores for the four average scales (economic, ethical, IPJ, and research application) and the scores for the five independent questions with the scores as nine levels of a within-subjects variable and state as a between-subjects variable. A cluster analysis classified occupational therapists into groups using nine variables: the four total scales (economic, ethical, IPJ, and research application) and the five independent questions (Norušis, 2003; Romesburg, 2004). A one-way analysis of variance (ANOVA) was used to compare the mean scores for each of the nine variables to determine if these differed by cluster.

Results

Occupational Therapists' Perceptions of Intervention Planning Facets

For these occupational therapists, the ethical scale was the most positive, followed by the IPJ scale, and then the independent IPJ question. Next most positive was the research application scale, followed by the four independent economic questions; the economic scale was least positive. All mean differences were statistically significant, indicating the therapists' opinions of the four intervention planning facets and five independent questions were different. Table 1 lists the four intervention planning scales in order of descending mean (from most positive to least positive). There was no evidence that the means differed by state [$F(32, 532) = 1.203$].

Grouping Therapists on the Basis of Their Perceptions of the Intervention Planning Facets

The cluster analysis indicated that a seven-cluster solution was best for these data. Cluster 1 had 86 participants (60.6%), Cluster 2 had 16 participants (11.3%), Cluster 3 had 20 participants (14.1%), Cluster 4 had 15 participants (10.6%), Cluster 5 had 3 participants (2.1%), and Cluster 6 and Cluster 7 each had 1 participant (0.7% each). Having three small clusters is not a concern, because, within any large group, it is likely that there will be some people who are distinct from most or all of the others.

Because Clusters 5, 6, and 7 had so few cases, they were not included in the ANOVA of cluster differences. There were no statistically significant differences between Clusters 1, 2, 3, and 4 on the research application scale and the five independent questions. No statistically significant differences were found between these clusters on the economic, ethical, and IPJ scales. Clusters 1 and 2 were similar on the economic scale and lower on this scale than Clusters 3 and 4, which were similar to each other on this scale. Moreover, Clusters 1 and 3 were similar on the ethical scale and the IPJ scale and higher on these two scales than Clusters 2 and 4, which were similar to each other on these scales. Table 2

shows each cluster's mean and standard deviation for the four scales and summarizes the relative positions of each cluster on each facet.

Discussion

This study sought to investigate how occupational therapists perceive various facets of intervention planning in STR settings and to determine how this varies among therapists. A survey was developed to obtain participant self-report indicators of comfort level with three facets: (1) economic constraints, (2) ethics, and (3) IPJ. An additional facet, EBP, was identified in this study. Dissatisfaction was anticipated among participants because third-party payers influence service delivery in STR settings. Challenges to IPJ in implementing services ethically from a client-centered, occupation-based perspective and implementing EBP in a payer-influenced environment also were anticipated (Fesler-Birch; 2005; Grundy, 1987; Lieberman & Scheer, 2002; Rappolt, 2003; Unsworth, 2005).

Occupational Therapists' Perceptions of Intervention Planning Facets

The study provides evidence for the existence of four facets present in occupational therapy intervention planning. Table 1 shows the four scales that were used as indicators of therapists' perceptions of these facets (see Data Analysis section for an explanation of the four scales) descending from the most positive to the least positive. The highest mean was for the ethical scale, indicating that these therapists, as expected, feel comfortable upholding ethical principles, a vital component of occupational therapy intervention planning, as outlined by AOTA's professional code of ethics (AOTA, 2005). The second highest mean was for the IPJ scale, indicating that these therapists exercise autonomy (IPJ) in their development of intervention plans. Autonomy is the foundation of a professional identity, permits rational choice in clinical reasoning without undue influence from other professionals, and is a prerequisite for ethical practice (Cavico & Cavico,

Table 1. Comparison of Means, Standard Deviations, Minimums, and Maximums for the Four Intervention Planning Scales and General Linear Model of Within-Subjects Effects ($N = 142$)

Facet Description (Variable)	Min.	Max.	<i>M</i>	<i>SD</i>	<i>df</i>	<i>SS</i>	<i>F</i>
Average ethical scale	3.60	5.00	4.60	0.31	1		
Average independent professional judgment scale	3.14	5.00	4.30	0.37	1	7.19	73.07*
Average research application scale	1.00	4.50	2.81	0.80	1	41.22	53.23*
Average economic scale	1.00	4.33	2.38	0.65	1	97.84	201.66*

Note. *SS* = sum of squares.

* $p < .001$, indicating that the mean for the variable in this row is less than the mean for the variable in the previous row.

Table 2. Between-Group (Clusters) Differences for the Four Intervention Planning Scales (N = 137)

Facet Description (Variable)	Cluster 1 (n = 86)		Cluster 2 (n = 16)		Cluster 3 (n = 20)		Cluster 4 (n = 15)		F(3, 133)	Post Hoc
	M	SD	M	SD	M	SD	M	SD		
Total ethical scale	47.28	1.95	40.75	1.88	47.70	1.42	42.00	1.89	83.94*	1 = 3 < 2 = 4
		+		-		+		-		
Total independent professional judgment scale	30.92	2.16	27.75	1.44	30.65	1.69	27.47	2.30	20.42*	1 = 3 < 2 = 4
		+		-		+		-		
Total research application scale	5.73	1.66	5.88	1.67	5.25	1.45	5.13	1.60	1.07	1 = 2 = 3 = 4
Total economic scale	12.76	2.48	12.19	1.56	20.00	1.84	18.60	1.55	81.28*	3 = 4 < 1 = 2
		-		-		+		+		

Note. + = relatively more positive; - = relatively more negative.

* $p < .001$, indicating that the mean for all clusters is the same.

1995; Grundy, 1987). Participants' answers averaged below neutral for the research application scale, indicating that therapists had negative perceptions about applying research results during intervention planning (see the Research for Evidence-Based Practice section). Not surprisingly, these therapists had the most negative perceptions about the economic constraints, which often limit therapists' choices for client care, that they face when designing and implementing intervention plans.

Therapists are often frustrated by intransigent payers that challenge what, based on the therapists' professional judgment and in accordance with standards of practice, are the best therapeutic services. Instead, therapists must go through a process of self-mediation, altering optimal therapeutic interventions to conform to third-party payer rules (Slater, 2005; Walker, 2001). Of the participants, 66.2% responded negatively to the statement that managed care increases the quality and outcomes of therapy for clients, and 60.6% thought that they are unable to implement the most effective care plans under current reimbursement policies. This finding corresponds with Walker's (2001) findings, which indicated therapists' decisions are heavily influenced by reimbursement policies, such as predetermined lengths of stay, imposed by third-party payers. Although 63.4% of the participants did not agree that the managed care system provides sufficient treatment time to meet the clients' needs, despite these economic constraints, it appears that therapists continue to struggle to provide quality care.

Grouping Therapists on the Basis of Their Perceptions of Intervention Planning Facets

Table 2 summarizes the cluster analysis results. Clustering of the participants yielded four major groups of therapists. Cluster 1, the largest cluster (60.6%), can be characterized as relatively more positive about ethics and IPJ and relatively less positive about economic constraints. One participant from Cluster 1 stated, "Managed care companies make tra-

ditional occupational therapy interventions more difficult." Other participants from Cluster 1 shared similar concerns about current practice limitations. These findings agree with previous studies, which suggest that therapists abide by a personal code of ethics and are motivated not by third-party payment systems but by a desire to provide quality occupational therapy services (Curtin & Jaramazovic, 2001; Walker, 2001).

Participants in Cluster 2 (11.3%) were relatively less positive about all three facets: ethics, IPJ, and economic constraints (see Table 2). This finding may indicate that some therapists are particularly uneasy with the many challenges of working in a setting where the formulation of occupational therapy intervention plans is reimbursement driven. Participants in Cluster 4 (10.6%) were relatively less positive about ethics and IPJ and relatively more positive about economic constraints. Participants in Cluster 4 may conform to cost-containment demands but may sense that their ethics or autonomy have been compromised in doing this.

Interestingly, participants in Cluster 3 (14.1%) were relatively more positive about all three facets: ethics, IPJ, and economic constraints. Although one can complain that current reimbursement policies limit choices in practice, the reality is that cost containment is necessary to maintain a viable health care industry. Cluster 3 may indicate that some therapists have developed policies and procedures to improve efficiency and effectiveness in occupational therapy delivery, enabling them to deliver high-quality, effective interventions within the confines of managed care limitations (Walker, 2001). If so, this might explain why these therapists feel very positive about upholding professional ethics, positive about exercising IPJ, and even slightly positive about economic constraints, whereas most other therapists had negative perceptions about economic constraints. Cluster 3 may be a model for adjustment, and protocols used by these therapists might provide models for others to develop effective strategies to meet managed care demands. Nevertheless, optimism

must be tempered with caution. If intervention plans conform to managed care requirements, therapists must also ensure that these plans meet applicable standards of occupational therapy practice (AOTA, 1998b). As one participant from Cluster 3 eloquently wrote, “reimbursement does not motivate therapists to give quality care ... the motivation to provide high-quality care comes from the therapist.”

In addition, all the participants in Cluster 3 who commented on economic issues concerning reimbursement reported having administrative support (e.g., a care manager, social worker, discharge planning department, utilization reviewer) to manage issues regarding reimbursement. Participants in Cluster 3 reported a greater capacity to remain client focused. Perhaps it is not that participants in Cluster 3 have adapted to the managed care environment but that the STR facility has adapted. This redistribution of facility resources, such as hiring support staff, changing role and practice strategies, and streamlining documentation procedures allows therapists to focus on what is important: clinical intervention (Walker, 2001).

The data illustrate how ethics and autonomy (IPJ) are linked (see Table 2). In all four major clusters, if participants were relatively negative about ethics, they were also relatively negative about IPJ; if they were relatively positive about ethics, they were also relatively positive about IPJ. Formulation of intervention plans requires a process of client collaboration, use of relevant research, and clinical expertise (Crain, 2004; Rappolt, 2003; Tickle-Degnen, 2000; Tickle-Degnen & Bedell, 2003). When resources are scarce (e.g., available research, equipment, staff), therapists plan interventions based on the best available options, not on the best intervention possible. When a therapist is confronted with an ethical dilemma, autonomy permits the resulting choice to be based on professional and ethical standards of care (Christiansen & Lou, 2001; Walker, 2001). In a more general sense, people cannot apply ethical principles without autonomy (IPJ), so it is not surprising that participants who perceived one of these facets positively also perceived the other positively. The similarity between ethics and IPJ was verified in the exploratory factor analysis, which indicated that all of the questions in the ethics and IPJ scales loaded onto the same factor.

Research for Evidence-Based Practice

During the study's design, it was assumed that EBP was a component of IPJ, but the results indicated that it was a distinct facet. Although the clusters differed with respect to the scales for ethics, IPJ, and economic constraints, the clusters did not differ significantly with respect to the research application scale (see Table 2). In response to one question, 26.0% of the participants reported difficulty applying current research in their clinical decision making,

whereas 34.5% remained neutral. In addition, 57.7% agreed that not enough research is relevant to occupational therapy interventions. Those results are consistent with other studies (Dubouloz et al., 1999; Dysart & Tomlin, 2002; Kielhofner, 2005; Rappolt, 2003). Yet, for other questions, such as “I utilize evidence-based practice ethically and appropriately during the evaluation and intervention processes” and “Client evidence, research evidence, and my own professional expertise are of equal importance in implementing treatment interventions,” respectively, 96.5% and 83.4% agreed. This apparent inconsistency might have happened because participants interpreted these other questions (both of which were included in the IPJ scale and loaded onto the first factor) to imply “when such research is available.”

As noted previously, the cluster analysis was able to identify one cluster (Cluster 3) that might include some therapists in STR settings who have developed effective strategies so that occupational therapy intervention plans can meet managed care treatment limitations (see discussion of Cluster 3, previously mentioned). This finding leads to our recommendation that members of that cluster might provide leadership to the entire occupational therapy profession in its quest to perform client-centered care with cost-effective intervention plans. In the same vein, if the cluster analysis had been able to identify a cluster whose participants had more positive perceptions about their use of research for EBP, a similar recommendation would have been made that the occupational therapy profession look to members of that cluster for guidance to achieve the goal of widespread EBP, but, alas, no such cluster was identified. Rather, there was consensus among participants that they were unable to apply research to intervention planning, with the mean for all four major clusters falling below neutral.

This inability to identify a cluster of therapists who had positive perceptions about their application of research to intervention planning is not entirely surprising. Negative perceptions among therapists about implementing EBP have been identified as stemming from several possible causes, including (a) a lack of relevant occupational therapy research to support EBP, (b) a lack of access to evidence-based research, (c) insufficient training or education about how to understand and use research, or (d) frustration about the lack of a centralized databank for relevant research resources (Dubouloz et al., 1999; Dysart & Tomlin, 2002; Kielhofner, 2005; Rappolt, 2003). These negative perceptions may be associated with what Craik and Rappolt (2006, p. 161) identified as a “perceived lack of skill to acquire, appraise, and integrate research into practice.” Individual therapists or STR facilities (i.e., Cluster 3) may, in isolation, through clinical experience using a combination of dedication, perseverance, inspiration,

administrative support, and maybe a little luck, develop a protocol for cost-effective intervention plans. However, expertise in EBP cannot develop in isolation, in the absence of sufficient research, which a majority of the participants agreed does not yet exist.

Study Limitations

Sample

Although this study's focus on STR settings may alert therapists and academics about concerns affecting current issues in the development of intervention plans, several important limitations in the study must be considered. The surveys were distributed only to STR facilities and only in five states, all within the northeast region. Therefore, the results may not apply to therapists in other types of facilities and in other locations. Although there were no significant differences among these five northeast states, expanding the study area to other regions of the United States or other countries might produce different results or show interregional or international differences. In addition, the results' generalizability may be affected by a nonresponse bias, because only 18.4% of the surveys were returned. It is possible that therapists in the remaining 81.6% of the STR facilities have different opinions about how IPJ, ethics, EBP, and economics affect care planning. Therapists with the strongest feelings about these care-planning facets may have been more likely to return the survey.

Survey Reliability

Four questions decreased the internal reliability of the economic scale, and three questions decreased the internal reliability of the IPJ scale (two of which were used to create the research application scale). Although these questions appeared to have face validity as measuring similar concepts when the survey was created, the Cronbach's alpha assessment on the actual data yielded less than acceptable reliability scores. In addition, the Kaiser–Meyer–Olkin measures of sampling adequacy (from the factor analysis) for these seven questions were all in or near the unacceptable range: from 0.356 to 0.517. Therefore, five of the questions were not included in any scale and the Cronbach's alpha for the research application scale (of two questions) was lower than is commonly acceptable (Peterson, 1994). Because this is the first and only use of this survey, neither the Cronbach's alpha reliability analysis nor the factor analysis could be verified; such verification would require another sample.

Survey Data

A few participants indicated that they were uncertain of what one (or more) questions were asking. For example, the term *intuition* in an IPJ question may have had a negative connotation, particularly because that section of the instrument focused on the application of research. Refining the phrasing of some questions (especially the five questions that were not included in any scale) and adding additional questions (especially to the unanticipated research application scale) might improve the reliability, validity, and usefulness of the instrument to achieve the study's objectives in the future. Last, including demographic information such as gender, years of experience, and years of employment at their current workplace could be useful in understanding and interpreting the data and refining the cluster analysis.

Recommendations for Future Research

This study should be replicated in a larger geographic area and include therapists in practice areas other than STR. Before that study is done, the survey should be enhanced (as described previously), and further analysis of its psychometric properties, including confirmatory factor analysis and verification of the reliability analysis using data from a new sample, is warranted. Any additional studies should implement the Total Design Method for mailed questionnaires to improve the response rate (Dillman, 1983).

Further research on the effects of economic constraints on practice is needed to determine how they affect clients' treatment outcomes and, using a societywide cost-benefit analysis, costs of providing (or not providing) health care. Specifically, research is needed to address how reimbursement policies might be designed to minimize or eliminate threats to therapists' professional ethics, IPJ, and EBP in the intervention planning process.

Conclusion

Perhaps the characteristics identified in some clusters could facilitate identification of a gold standard for occupational therapy intervention within a STR setting. For example, although strengths and weaknesses exist in each of the clusters, therapists in Cluster 3 indicated positive perceptions about three of the intervention planning facets: ethics, IPJ, and economics. Perhaps identifying this group of therapists, and comparing their practice methods with those of the other groups who were not as positive, might identify solutions that would benefit all therapists.

Although ethical practice, IPJ, economic constraints, and EBP may appear to be distinct, they are all interrelated facets of the intervention planning process. When seeking to understand how each facet affects intervention planning, studies should simultaneously consider all the facets rather than examine each independently. This study identifies concerns about the economic facet and how it may affect the ethics of care and the autonomy (IPJ) of practice and, in turn, that it may be exacerbated by the paucity of research for EBP. Therapists need to build a body of research to justify occupational therapy interventions, and make this research available to busy, practicing therapists when they are developing intervention plans, or risk reduced payment and approval for occupational therapy services (Lieberman & Scheer, 2002). Such research may demonstrate that occupational therapy intervention, delivered at the appropriate time and using the appropriate combination of therapeutic modalities, is cost effective; improves clinical outcomes (Rappolt, 2003); and may, in turn, mitigate many of the concerns that therapists have about the effects of managed care on intervention planning. ▲

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