Issuing Assistive Devices to Older Patients in Rehabilitation: An Exploratory Study

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Occupational therapists play a critical role in determining which assistive devices are provided to older adults and when and how instruction occurs during rehabilitation. This exploratory qualitative study used focus group methodology and Fleming's concept of the therapist with a three-track mind to examine how occupational therapists describe the process of issuing assistive devices to elderly persons in rehabilitation. We identified six interrelated steps involved in issuing an assistive device to an older person with a cerebrovascular accident. These steps were the selection of a device, an activity, a site for instruction, a method of instruction, the time to introduce a device during hospitalization, and reinforcement of its use. Therapists used procedural, interactive, and conditional reasoning to make decisions within each step and individualize device training. The findings from this study underscore the complex series of decisions and skilled clinical judgments involved in issuing assistive devices to older persons. Additionally, the study shows that focus group methodology is a valuable approach by which to identify how therapists reason about specific therapeutic practices.

The potential of assistive devices to enhance the quality of life of older persons is widely recognized by both the research and clinical communities (LaBuda, 1990; "Low Technology for Maximizing Independence," 1986). Evidence from national and regional surveys has indicated that assistive devices are used with increasing frequency among elderly persons with an impairment (LaPlante, Hendershot, & Moss, 1992; Macken, 1986), may lessen the need for personal assistance (Manton, Corder, & Stallard, 1993), and are perceived by users as critical to their ability to function effectively (Batavia & Hanner, 1990; Brooks, 1991; Phillips & Zhao, 1993). Other studies have demonstrated that anywhere from 50% to 85% of issued devices tend to be used consistently in the home (Bynum & Rogers, 1987; Garber & Gregorio, 1990; Geiger, 1990; Gitlin, Levine, & Geiger, 1993; Mueller & Delitto, 1985; Page, Galen, Fitzgerald, & Feeney, 1980) and that older persons often express a need for additional devices than those currently owned (LaPlante et al., 1992; Mann, Karuza, Hurren, & Tomita, 1993).

Despite the important role of assistive devices in extending the opportunities and abilities of older adults, little is understood as to how assistive technologies are acquired. Older adults with a first-time chronic disabling condition usually acquire assistive devices in rehabilitation. Occupational therapists play a critical role in determining which assistive devices are provided and when and how instruction occurs during hospitalization. However, there is no information available regarding how occupational therapists select assistive devices and instruct users. Several studies have suggested that inadequate instruction may be a primary reason for the abandonment or infrequent use of a device by patients upon their return home (Bynum & Rogers, 1987; Caudrey & Seeger, 1983; Gitlin et al., 1993). Furthermore, a national survey of occupational therapists found that therapists lacked knowledge of available high technologies and reported limited continuing education opportunities in this area (Somerville, Wilson, Shanfield, & Mack, 1990).

This article reports the findings from an exploratory qualitative study that examined how occupational therapists make clinical judgments about device need for older patients in rehabilitation for a cerebrovascular accident (CVA). Qualitative research has been identified as an important approach for understanding the process of clinical reasoning of occupational therapists as well as basic practices in rehabilitation (Mattingly, 1991; Mattingly & Fleming, 1994; Spencer, 1993). This study used focus group methodology to examine how therapists approach the basic daily practice of issuing assistive devices in the rehabilitation setting. Fleming's framework of the therapist with a three-track mind (1991), was used to gain insights into the kinds of decisions therapists engage in to issue an assistive device and the factors that influence their reasoning process.
Method

Focus Group Methodology

Focus group methodology has been identified as a research strategy that is particularly appropriate to understand the thinking processes and decision making of a particular group of persons (Barduhn & Furman, 1991; Batavia & Hanner, 1990). In this methodology, persons with similar experiences or backgrounds are brought together to share their viewpoints and perspectives within a semistructured group interview format. Through the group’s interactions and discussion, substantial insights are obtained regarding how participants think about and solve the presenting problem or topic area (Krueger, 1988; Patton, 1990).

This study involved two focus groups composed of 11 occupational therapists from freestanding rehabilitation hospitals located throughout the state of Pennsylvania. The first focus group was 1 hr in length and was conducted with five therapists who worked in the same rehabilitation facility. The second focus group was 2 hr in duration and involved six therapists who worked in different rehabilitation facilities throughout Pennsylvania. These therapists were attending the annual meetings of the Pennsylvania Occupational Therapy Association and had agreed to participate in the study. The participants in both groups reported having from 2 to more than 10 years of clinical experience in rehabilitation. Four of the 11 participants were men, and 4 of the 11 had master's degrees.

The procedures for selecting the sample and the specific aspects of the methodology used in this study have been reported elsewhere (Gilpin, 1993; Gilpin, Burgh, Dodson, & Freda, 1995). Briefly, in each focus group, participants were first asked to read a short case example and were instructed to refer to this case throughout the discussion period that followed. The case example contained basic medical and social information of a patient with a CVA. This information was similar to that which would be available to a therapist before working with a patient in rehabilitation. The case was developed by an investigative team composed of researchers, three occupational therapists, including a director of a department of occupational therapy in a rehabilitation facility, and an occupational therapist with recognized expertise in the clinical reasoning literature and is provided in the Appendix. After reading the case, the group was asked to respond to a series of questions that were designed to obtain an understanding of how therapists would proceed in issuing an assistive device for this particular case.

Analytic Approach

The focus group discussions were audiotaped and then transcribed. The transcriptions were checked for accuracy by thorough readings and comparing random segments to the audiotape portion. The first analytic step involved the documentation of responses for each specific question that had been posed by the investigative team within the focus groups (Krueger, 1988). The second analytic step involved identifying patterns of thinking that represented a sense of regularity and structure across all responses (Luborsky, 1994). Fleming’s (1991) concept of the “three-track mind” was used as a framework from which to understand the way therapists described the process of issuing assistive devices. In this framework, the clinical reasoning of therapists occurs on three interrelated levels: a procedural track, which represents the concrete steps and procedures a therapist may implement; an interactive track, which refers to the strategies therapists use to understand and interact with a particular patient to individualize treatment; and a conditional reasoning, in which a therapist moves toward a comprehensive understanding of a patient’s situation and the potential for change. In this study, categories emerged that reflected the steps therapists follow in issuing an assistive device. Within each step, therapists demonstrated procedural, interactive, and conditional reasoning as they discussed their approach in issuing an assistive device to Mr. G., the patient in the vignette.

Three analytic strategies – multiple coders, peer debriefing, and member checks – were used to enhance the credibility of emerging interpretations (DePoy & Gitlin, 1994; Guba, 1981). The use of multiple coders is effective in verifying the coding of categories. This approach involved independent readings by the two authors followed by meetings to confirm emerging impressions. Through this process, an initial coding scheme evolved. Each author then independently coded the transcripts via the coding scheme and then compared coding decisions. Discrepancies were reconciled through discussion and resulted in the refinement of categorical definitions. This refinement was followed by a process of recoding and independent verification by each author. Additionally, the transcripts from one focus group were initially used to identify categories. The emerging categorical schema was then used to code the transcript produced from the second focus group. In this way, one group was used to test and verify the findings from the other. The overwhelming congruence between the two focus groups provided an indication that a level of saturation had been achieved. Saturation in a qualitative study has been defined as the point at which no new information can be obtained (DePoy & Gitlin, 1994).

In the second strategy to enhance credibility, peer debriefing was used to validate interpretations. This involved the presentation of the interpretive schema to members of the investigative team and to an eight-member advisory panel composed of consumers, clinicians, researchers, and a representative from the assistive device industry.
The third approach to assure credibility involved the use of member checks. In this approach, participants themselves are requested to review the findings and comment as to their accuracy. For this study, focus group participants were mailed specific aspects of the analysis to examine and provide feedback. Of the 11 participants, 8 (73%) responded to the mailing. Comments from these respondents confirmed the analytic scheme, and no additional insights were gained or modifications necessary.

Findings

It was evident from the transcripts that device selection and instruction involved a complex series of interrelated decisions and skilled clinical judgments. We identified six interdependent steps or considerations that were involved in issuing an assistive device to an older person with a CVA (see Figure 1).

In the following sections we describe each step and use segments from the transcripts to illustrate how participants used procedural, interactive, and conditional reasoning. Although these six steps are presented in a linear fashion, participants described a dynamic process by which one step or consideration interfaced or occurred simultaneously with the other.

1. Selecting a Device

An obvious initial step in issuing a device is determining need and selecting an appropriate aid. This action was based on complex reasoning that therapists described as evolving throughout the therapeutic process. Participants appeared to consider a wide range of factors in making an initial device selection for a person such as Mr. G., the patient in the vignette. We categorized the factors that participants discussed as those that reflected patient-focused concerns and those that reflected concerns external to the patient (device characteristics, hospital policy, and the organization of health care services).

Patient-focused factors: The first and most immediate area of concern for participants were the characteristics of the patient, Mr. G. As shown in Figure 2, 22 characteristics or personal factors were identified in the transcripts, 4 of which we considered to be medical, 13 psychosocial, and 5 situational.

Participants who tended to reason procedurally emphasized the use of assistive devices to enhance function and focused on medical factors to determine a device selection for Mr. G. These participants questioned Mr. G.'s physical and cognitive capabilities for using a device.

I immediately thought if he is impaired perceptually, will he be able to use equipment. . . . perceptual and cognitive areas would need to be evaluated. . . . before you would issue equipment for him to use.

I personally would probably start off trying to figure out where his left upper extremity was and its recovery and seeing if I could work with that to get it more functional first versus whether I would go ahead right away and start issuing the suction things that would stabilize so that he could use his right hand.

Other participants expressed more concern with developing an understanding of Mr. G. and gaining his ac-

Figure 1. Six considerations in device training.

Figure 2. Twenty-two factors therapists consider in selecting and training patients in adaptive devices. SES = socio economic status.
ceptance of device use. These participants asked, “What is this patient about?” “What are his interests?” “What does he want to do and be?” as a basis from which to determine need and select an appropriate device. Their interactive reasoning emphasized primarily psychosocial factors such as previous role history and activity level, present psychological state, and future personal goals. These factors were used to evaluate the area of performance most important to Mr. G. and his state of readiness for a particular device as a basis for selecting a device to enhance his well-being.

He was an active person, an Italian, and senior-center goer and that at least gives him some types of things to look forward to. Hopefully he liked to go to the senior citizen center and it wasn’t just a place that he had to go to, maybe that would be a big role in his life.

Participants demonstrated conditional reasoning as well in their focus on situational factors as a way of putting together a treatment plan involving a device. Living arrangement, family involvement, potential availability of community supports, and the physical environment of the home and its safety were raised as important considerations in shaping device selections.

The things that stuck me are that one, he had a stroke. So I started going through a list of equipment that he might use, but then “67-year-old Italian gentleman from South Philadelphia” starts to put other things in my mind. The fact that he lives alone made an impression, and that he had been a butcher. That starts to generate ideas for me.

External factors. Consideration of factors external to Mr. G. included a concern with the availability and characteristics of a device, hospital policy for issuing devices, and insurance or the funding source for a particular assistive device. Participants who demonstrated more procedural reasoning evaluated Mr. G.’s device needs in the context of these external factors.

I don’t think Mr. G. is going to be able to tie his shoes himself and so right there I would try and work on compensation first. Then if that didn’t work, I would try elastic. I would look at him and see if he’s able to afford it, if his insurance is going to cover anything, I want to make it easier for him so he won’t expend too much of his own energy. But maybe he could benefit more from [self-gripping fastener] than another type of shoe.

I think I would try and choose [equipment] still as a result of function but also as a result of an insurance perspective. If you’re fighting time and you’re fighting reimbursement, then to make the person most functional and have a functional change and get reimbursed for your service, you may introduce the equipment... if they are receptive to this.

2. Activity Fit

A second step in issuing a device involved choosing an activity that would: (a) not frustrate the patient, (b) provide a successful experience, and (c) facilitate a patient’s acceptance of the device. In selecting an activity that met these three criteria, participants demonstrated different forms of reasoning.

Those with a more procedural orientation considered function, perception, and cognitive ability as the critical determinants of an activity choice. These participants expressed a uniform or standard way of approaching activity selection.

I generally tend to start with the simpler, more basic activities like grooming and see if they are receptive to it... It’s a good way to ease him [Mr. G.] into it, it is just what I have found to work... You are giving him tasks that are more automatic, so chances are if he does have some perceptual problems, it’s not going to be as frustrating for him to do these things.

Those who demonstrated more interactive reasoning emphasized the need to assume the perspective of the patient and discussed activities that would be meaningful to the person. Activity selections were based on considerations of Mr. G.’s previous roles and current living situation.

You would really want to get out of Mr. G. what he really can’t do but wishes he could do.

Probably if you started working with some homemaking type things. Since he was a butcher, maybe you would want to try some kitchen activities. He could make a simple meal for himself and another therapist or a couple of other people give him a good feeling... good success.

My immediate thought was to get him back into the kitchen. If he’s Italian and cooks all his meals, he probably makes everything from scratch and might just need equipment to be independent.

3. Determining the Best Time to Introduce a Device

The time in rehabilitation to introduce a device was another tacit decision made by participants. Participants appeared to make this decision by evaluating the patient’s medical stability (“I categorize those things that are not going to change, like the roles... his support system. But his arm might change, so there might be some things that I’m not going to do just yet because that might change or his psychological status could change”), state of psychological readiness (“If they are motivated, I would be more willing to try a variety of different equipment. And if they are less motivated, then one piece of equipment or none at all.”), and the extent to which there would be other opportunities for device prescription (in-home care, outpatient care, or a nursing home).

For some participants, devices were introduced as a last resort, after all other treatment approaches had failed. One participant stated, “I avoid adaptive equipment when at all possible, I really do.”

4. Choosing an Instructional Site

Another step in issuing an assistive device is selecting a place for instruction. Participants had a limited choice as
5. Instructing in Use

Selecting an instructional approach was another tacit clinical step, which was referred to as a “sell job” (“You still have to do the sell job no matter what you are giving to them”). A wide range of approaches were indicated, including the use of group training (“I think in the group settings I’ve worked with there is a lot of feedback and influence from the peers and often they might listen to that rather than you”), role modeling (“I might use patient role modeling...I might put him in a group activity and my only goal the first day might be just social interaction”), verbal instruction, and inclusion of a family member.

6. Reinforcing Device Use

A final important step in device instruction in the hospital involved introducing independent opportunities for its use by the patient and securing the support and cooperation of other health professionals who often presented as barriers to the therapeutic process.

The family was also viewed as having an important role in reinforcing device use.

Discussion

Although clinical reasoning has emerged as an important arena of inquiry in occupational therapy, clinical decisions regarding specific treatment approaches in rehabilitation remain unexplored. The process of clinical decision making about assistive technology for elderly patients is particularly important in light of recent legislative efforts to develop a systematic approach to the delivery of assistive technological services (Technology-Related Assistance for Individuals With Disabilities Act of 1988, Public Law 100-407), and increasing documentation that device use can contribute to independent living. There are four important findings which emerged from this pilot study. First, six interdependent steps or considerations were identified in issuing an assistive device in a rehabilitation facility:

1. Selecting a device
2. Developing an activity in which to introduce a device
3. Choosing a site for instruction
4. Determining the best time in rehabilitation to introduce a device
5. Providing instruction
6. Reinforcing device use.

The identification of these six steps provides a framework from which to instruct occupational therapy students and therapists in rehabilitation as to the practice choices and range of decisions necessary in issuing an assistive device during hospitalization. Additionally, these steps inform us as to the areas in which therapists may need additional training to become more effective in issuing an assistive device to an older patient. For example, although motivation, readiness, and adaptation have been identified as important psychological components of the rehabilitation process (Kemp, 1993), focus group participants expressed frustration with patients who had goals that differed from theirs or who appeared less motivated or unwilling to try an approach such as an assistive device.

Participants also expressed a limited range of strategies for resolving conflicts in perspectives and working effectively in such situations (Gitlin, 1993). The findings also suggest that these participants used traditional instructional approaches (e.g., role modeling, demonstration) and may benefit from exposure to other ways of approaching device instruction, especially to persons who are older. The literature on adult learning and technology, for example, does provide insight as to an instructional approach that may be effective with an older patient. This literature has suggested that older persons...
learn the use of new technologies more effectively by breaking the task into component parts, introducing the skill within the context in which it will be used, and offering short learning sessions interspersed with practice opportunities (Czaja & Barr, 1989).

The second finding of importance is the clarification of the ways in which participants engaged in procedural, interactive, and conditional reasoning in the six-step process of issuing an assistive device. Patient-focused, hospital-device characteristics, and service delivery factors were actively evaluated and weighed with regard to their impact on each of the six steps involved in issuing an aid. Participants who primarily used procedural thinking emphasized functional, medical, and external factors and approached each step in a standard, predetermined way. Participants using an interactive, conditional approach expressed concern with building rapport, making a personal connection, and understanding the patient's perspective from which to approach each of the six steps. The participants' focus was on individualizing an assistive device intervention based on knowledge of the patient's perspective. These participants evaluated a patient's readiness or motivation and specific situational factors as the most critical in issuing a device. Their thinking reflected a form of narrative reasoning described by Pattingly (1991) as the therapist's attempt to integrate a person's experience of disability with the rehabilitation process itself.

These focus groups were composed of therapists who ranged in years of clinical experience. The variability in practice perspectives, especially the contrast of a procedural orientation versus a more interactive, conditional approach, may, in part, reflect those differences that have been documented to occur between the novice and advanced clinician (Benner, 1984).

The third point that emerged from this study is the role of social structure in influencing clinical decisions. Although social structure has been largely ignored in the study of clinical reasoning (Clark, Potter, & McKinlay, 1991), this study highlights how the thinking of participants was bound by the organization of rehabilitation. In each step in issuing an assistive device, hospital-based and service delivery or organizational factors were important determinants of therapeutic decisions and sometimes presented as barriers to providing effective care. For example, therapists were limited to choosing one of three on-site locations—the clinic, patient's room, or cafeteria—to introduce an activity and a device. As therapists bemoaned, these locations offered limited opportunities for practice and did not reflect the specific context of device use for older persons. Additionally, fewer rehabilitation hospitals routinely enable therapists to conduct a home and community assessment while a patient is hospitalized to assess future device need, yet the characteristics of home and community were critical components of the conditional reasoning process of participants. Limited knowledge of home and community posed a barrier in determining the present and future individual device needs for a patient. Additionally, participants cited the lack of time to provide extended and consistent device training in the hospital, and limited opportunities to involve family members as hindering their ability to adequately select and instruct in device use. These structural obstacles had a direct impact on the thinking and decisions of participants and seemed to produce a level of uncertainty and discomfort with their own clinical judgments.

Finally, the fourth point to emerge from this exploratory study is that participants discussed issuing assistive devices only for functional concerns. Participants did not once consider devices to enable leisure or work pursuits. The singular focus on function reflects the unidimensional approach to rehabilitation and perhaps the participants' lack of knowledge of the range of devices that are available to enable older persons to engage in other meaningful life activities. It also reflects how the structure of rehabilitation limits the potential of occupational therapy practice and does not enable therapists to practice in ways that may be more effective.

In conclusion, the rehabilitation hospital is often the first setting in which older patients are introduced to assistive devices. As gatekeepers to technology, occupational therapists may have a profound impact on a patient's knowledge, acceptace, and use of assistive aids and, ultimately, the success of the rehabilitation effort. This exploratory study demonstrates the value of focus group methodology to uncover the tacit knowledge by which occupational therapists practice in rehabilitation and the clinical reasoning used in issuing an assistive device. It also highlights the need for additional research to evaluate the process by which occupational therapists issue assistive devices in other contexts, such as the home, and most important, whether differences in reasoning affect patient outcomes such as actual device use by older patients.

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Appendix
Case Vignette

Mr. G. is a 67-year-old Italian gentleman from South Philadelphia. He had a right CVA which resulted in a nonfunctional left upper extremity with moderate flexion synergy and a weakened left lower extremity which required a molded ankle foot orthosis. He is able to ambulate independently with a quad cane for short distances. He does have a left neglect which required verbal cueing in order for him to attend to that side. For the most part he was within functional limits in other perceptual and cognitive areas.

He lives alone in a two-story rowhouse; his two sons and one brother live within 5 miles of his home. Before the stroke he did his own shopping and cooked his own meals.

Before the stroke his favorite activity was to go to the senior center and play bingo; he is interested in continuing that activity. He is also a regular churchgoer. He retired from a butcher shop 2 years ago.

References


Low technology for maximizing independence (1986, Fall), Generations.


