Factors Affecting Older Adults’ Use of Adaptive Equipment: Review of the Literature

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Key Words: aging • patient compliance • self-help devices

Objective. The purpose of this review was to identify the major findings of published research on the factors influencing older adults’ use of adaptive equipment.

Method. Fourteen studies involving an older adult sample were selected from major electronic bibliographic databases searched with a series of key words related to aging and equipment use. Results of these studies were compared to determine the most common factors influencing the use of adaptive equipment among older adults.

Results. Although the reviewed studies varied in their sampling strategies and designs, many results were similar. Between 47% and 82% of prescribed equipment continues to be used by older adults, with use decreasing over time. Findings from published studies show that equipment suitability, adequate training, and pre-prescription home visits contribute to these rates of use. Lack of fit among the person, his or her environment, and the equipment was the primary reason identified for nonuse.

Conclusion. The results of the published research provide practicing occupational therapists with a range of factors to consider when prescribing adaptive equipment to older adults. Although the findings of this review demonstrate remarkable consistency across existing research findings, future research is needed to identify what constitutes optimal device use, what factors provide personal motivation for using assistive devices, and how home visits influence use.


Occupational therapists are skilled in adapting activities and environments to facilitate and promote occupational engagement. They analyze occupations to determine why a client is having difficulty with an activity then modify or change the activity to increase the client’s potential for success. Modification occurs in two basic ways: “altering the task method [or] adapting the task object” (Moyers, 1999, pp. 276–277). Altering the task method involves changing the way a client performs the activity, such as using energy conservation techniques. Adapting the task object refers to changing the object involved in the activity and can include the use of adaptive equipment (Moyers, 1999).

Prescription and training in the use of adaptive equipment is one of the methods occupational therapists use to enhance and maintain the occupational performance of older adults. For the purposes of this article, adaptive equipment, adaptive device, assistive device, and aid are used interchangeably. Subtle variations exist in the definitions of these terms, but for the purpose of clarity, they will be defined as “any object or tool that maximizes a person’s...
independence in activities of daily living” (Jacobs, 1997, p. 12). This definition includes, but is not limited to, equipment for bathing, dressing, grooming, toileting, eating, and mobility.

Adaptive equipment can be critical in restoring occupational performance and preventing further decline among older adults. However, according to Moyer (1999), “because there is a great variety of adaptive equipment available, the prescription of adaptive equipment...appears deceptively easy. Careful consideration must be given to a variety of factors to ensure that the person successfully uses the adaptive equipment” (p. 277). Occupational therapists play several roles when presenting clients with adaptive equipment. First, they must determine what type of adaptive equipment is indicated for a particular client and how that equipment would enhance performance. Second, they must consider the client’s receptiveness to the equipment and the extent to which the device may call unnecessary attention to the client. Third, occupational therapists must train the client in use of and proper care for the equipment and instruct the client on how the equipment can enhance his or her health and safety.

Inappropriate prescription and distribution of assistive devices wastes time that could be better spent on adaptations and modifications that a client will find more suitable to his or her needs and environment. Inappropriate prescription and distribution also wastes private and public money by supplying adaptive equipment that the client may never use. Within the current health care environment, inefficiency has the potential to negatively influence reimbursement rates and strategies for therapists as well as health care premiums for clients and their employers.

This article presents a review of the published research on the factors affecting the use of adaptive equipment among older adults. If occupational therapy is to work toward an evidence-based practice and embrace client-centered therapy, it is critical to understand the factors that influence the use of adaptive equipment among older adults. Understanding these factors may enable occupational therapists to increase clients’ involvement in the decisions regarding adaptive equipment and thereby positively influence the rate of adaptive equipment use and the overall occupational performance of older adults.

With this background, the purpose of this article is to review and discuss the similarities and differences in findings across current studies on adaptive equipment use among older adults. The discussion addresses the target population, sampling strategies, study designs, and primary findings of the studies reviewed. Gaps in the existing knowledge base are identified. The guiding clinical question for this study was: Among older adults, what are the factors that affect the use of adaptive equipment as reported in the literature?

Method
The articles included in this review were obtained by searching electronic bibliographic databases in health sciences and occupational therapy and by conducting manual searches of reference lists of relevant peer-reviewed articles. For the electronic search, the providers accessed were Ovid, Proquest, and the American Occupational Therapy Foundation (AOTF). Within Ovid, the following databases were searched: Healthstar (1975–1998), MEDLINE (1995–1998, 1966–1994), and Cinahl (1982–1998). In Proquest, the database used was Proquest Direct. At the AOTF Web site (www.aotf.org), the articles were obtained from the “OT 101 Alphabetic Subject List” under “Self-Help Devices.” The primary search words used were adaptive equipment, adaptive device, adaptive technique, compensatory equipment, compensatory device, compensatory technique, perception, perceive, older, elder, geriatric, and combinations of these (e.g., adaptive equipment, perceive and elder).

Regardless of the search strategy (electronic or manual), an article was included in the review if it was written in English and was a research study with a substantive focus on adaptive equipment use. Articles were excluded from the review if they focused on a population other than older adults or if the research evaluated a particular product or prescription model.

Review and analysis of the identified articles were facilitated by summarizing articles on an appraisal matrix (Garrand, 1999). Table 1 presents a condensed version of the appraisal matrix.

Methodological Variability in Studies Reviewed
The review of the studies focused on methodological variability (e.g., samples, design, method) as well as on major findings.

Sample
All of the studies reported samples made up exclusively of older adults or adults who were at least 55 years of age or older. All studies included both men and women in their samples. Participants were selected through hospitals, retirement communities, general community settings, and home health care agencies and service organizations. This range of settings suggests that the study findings provide perspectives on the factors influencing adaptive equipment use among older adults with and without disabilities.

Design and Method
Both cross-sectional and longitudinal designs are represented in the studies reviewed, although cross-sectional designs predominate (Bynum & Rogers, 1987; Edwards & Jones, 1998; Finlayson & Havixbeck, 1992; Gitlin, Luborsky, & Schemm, 1998; Hartke, Prohaska, & Turner, 1998; Mann,
### Published Research on the Use of Assistive Devices Among Older Adults: 1980–1998

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Design</th>
<th>Method</th>
<th>Primary Study Objectives</th>
<th>Major Findings</th>
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</thead>
<tbody>
<tr>
<td>Bynum and Rogers (1987)</td>
<td>Convenience sample (N = 30) of home health care recipients discharged from occupational therapy, United States</td>
<td>Cross-sectional, observational</td>
<td>Structured questionnaire administered in a face-to-face interview</td>
<td>Describe frequency of device prescription, use, effectiveness, and extent and characteristics of training. Relate training to device use and functional independence.</td>
<td>Bedside commode prescribed the most frequently. Overall rate for use was 82%. Training typically occurred over one to two home health sessions, lasting 30 min or less. All but 1 participant stated that the training was adequate. Participants used 83% of the devices with training and 80% of the devices with no training.</td>
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<tr>
<td>Edwards and Jones (1998)</td>
<td>Randomly selected, population-based sample of community-based older adults (N = 1,405), United Kingdom</td>
<td>Cross-sectional and observational</td>
<td>Structured face-to-face interviews</td>
<td>Determine prevalence of and factors associated with device ownership and use.</td>
<td>Ownership increases with age and is more common with women than men. Most common mobility aid is a cane. Most of the devices were used (64%-92%), with more common use in persons 75 years of age and older for both mobility and bathroom. Gender affects usage of many types.</td>
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<tr>
<td>Finlayson and Havixbeck (1992)</td>
<td>Convenience sample of consecutive referrals to occupational therapy in a community hospital (N = 30), Canada</td>
<td>Cross-sectional and observational</td>
<td>Baseline data completed by therapist; in-home follow-up interview and observation completed with participant</td>
<td>Determine patient satisfaction with device training, rate of device use after discharge, and patient's opinions of quality of assistive devices.</td>
<td>The amount of training was adequate, but more time could be spent on tub transfers. Rate of use was 75% at follow-up. PredischARGE home visits increased use. Sock aid was considered most useful. Patients with acute conditions use devices more often than those with chronic disorders.</td>
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<tr>
<td>Ginlin, Levine, and Geiger (1993)</td>
<td>Convenience sample of patients discharged from a hospital rehabilitation unit who had been prescribed adaptive devices (N = 13), United States</td>
<td>Longitudinal and observational</td>
<td>Predictive interview; monthly interviews for 3 months following hospitalization</td>
<td>Describe long-term use of adaptive devices.</td>
<td>Before discharge, all patients reported devices as useful and expected continued use. At 1 month postdischarge, 45% of devices were seldom to never used; at 2 months, 33% were seldom to never used; at 3 months, 42% seldom or never used. Bathroom equipment was used most frequently. Factors affecting home use included the person, the environment, and the devices themselves.</td>
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<tr>
<td>Ginlin, Luborsky, and Schemm (1998)</td>
<td>Convenience sample of adults 55 years of age and older who had been hospitalized for cerebrovascular accident (CVA) and were being discharged to a private home (N = 103), United States</td>
<td>Cross-sectional and observational</td>
<td>Structured, qualitative interview (i.e., predetermined set of questions with freedom to elaborate)</td>
<td>Explore patients' initial perceptions of devices while in the acute phase of the illness.</td>
<td>Dressing devices received the highest percentage of positive comments. Seating devices received the most negative comments. The type of comment (positive, negative, mixed) did not significantly correlate with gender, age, race, or feelings about another device. Additional comments highlighted the learning curves associated with devise use and issues and dilemmas posed by devices.</td>
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<tr>
<td>Ginlin, Schemm, Landsberg, and Burgh (1996)</td>
<td>Convenience sample of adults 55 years of age and older with CVA, orthopedic deficit, or lower limb amputation from two rehabilitation hospitals (N = 86; complete data for all interviews), United States</td>
<td>Longitudinal and observational</td>
<td>Structured interview that included the Functional Independence Measure (FIM™) and a motivation survey. Interviews were conducted within 5 days before discharge and again at 1, 2, and 3 months at the participants' homes.</td>
<td>Describe pattern of device use in the 3 months following hospitalization, identify factors that predict use, and describe characteristics of users.</td>
<td>Average of eight devices each were used. In the first month, 50% were in frequent or constant use, 3% were in occasional use, and 47% were seldom or never used. Use in the first month is the strongest predictor. No significant differences were found among race, gender, and living arrangement.</td>
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<tr>
<td>Hartke, Prohaska, and Furner (1998)</td>
<td>Older subsample of respondents from the 1990 National Health Interview Survey; random, population-based sample of community-dwelling civilians (N = 14,210), United States</td>
<td>Cross-sectional and observational</td>
<td>Secondary analysis of existing data</td>
<td>Describe the use of assistive devices, multiple-device use, and the expressed need for devices.</td>
<td>About 23% of the participants used at least one assistive device. Those using assistive devices tended to be older, less educated, single, poorer, and living alone.</td>
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<tr>
<td>Haworth and Hopkins (1980)</td>
<td>Convenience sample of persons admitted to a hospital for a total hip replacement (N = 131), United Kingdom</td>
<td>Longitudinal and observational</td>
<td>Listing of devices owned and used at admission, 3 months, and 9 months</td>
<td>Determine the number of aids possessed and used and factors influencing possession and use.</td>
<td>The most common aids were for walking. Factors influencing the possession and use of aids were disease, age, and gender.</td>
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(continued)
Table 1
Published Research on the Use of Assistive Devices Among Older Adults: 1980–1998 (continued)

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<td>Mann, Hurten, and Tomita (1993)</td>
<td>Convenience sample of older adults who had received or were receiving services from a human service agency, hospital, or nursing home ($N = 157$), United States</td>
<td>Cross-sectional and observational</td>
<td>Nurse conducted interviews in participants' homes</td>
<td>Describe sample characteristics, types of assistive devices owned, use and satisfaction rates, problems with devices owned, and devices older persons need but do not have.</td>
<td>Participants with multiple impairments that include physical disabilities used the most devices. They are satisfied with the majority of devices they owned.</td>
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<tr>
<td>Newman (1998)</td>
<td>Convenience sample of persons living in a retirement ($N = 11$), United States</td>
<td>Cross-sectional and observational</td>
<td>Unstructured, qualitative interviews</td>
<td>Describe participants' opinions regarding adaptive equipment.</td>
<td>All opinions fell into four categories: positive, indifferent, hopeless, and negative. The perceptions are based on two basic psychological components: locus of control and symbolic nature of the equipment.</td>
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<tr>
<td>Parker and Thorslund (1991)</td>
<td>Random sample of rural, community-dwelling older adults who used technical aids ($N = 57$), Sweden</td>
<td>Cross-sectional and observational</td>
<td>In-home interview and observation</td>
<td>Describe prevalence and use of specific devices, reasoning behind use or nonuse, importance of the aids, and level of independence without the aids.</td>
<td>Participants had an average of 7.4 aids per person; 75% of aids were used. Ninety percent of participants had trouble bathing, with 75% of them possessing aids. Seventy-four percent of the participants had at least one aid that allowed autonomy. Many aids were in need of repair.</td>
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<tr>
<td>Sonn (1996)</td>
<td>Random, population-based sample of adults born in 1911 and 1912; allocation to intervention and comparison groups was unclear ($N = 595$), Sweden</td>
<td>Longitudinal, quasi-experimental</td>
<td>Interviews and observation at 70, 73, and 76 years of age for intervention group; interviews and observation at 76 years of age for comparison group</td>
<td>Study ownership, use, and effectiveness of assistive devices over time.</td>
<td>Fifty-two percent of women owned devices compared with 37% of men; 77% of all devices were used often. Participants used more assistive devices than human assistance for activities of daily living. Devices were effective in increasing feelings of safety and decreasing effort.</td>
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<tr>
<td>Sonn, Davegardh, Lindskog, and Steen (1996)</td>
<td>Convenience sample of all persons 70 years of age and older in a well-defined geographic area ($N = 112$), Sweden</td>
<td>Longitudinal, quasi-experimental with no comparison group</td>
<td>Structured interviews and occupational therapy intervention at baseline; sample followed at 6 and 12 months</td>
<td>Describe use and effectiveness of devices and unmet needs of the community.</td>
<td>Twenty-four percent of persons under 80 years of age and 57% of those 80 years of age and older used one or more devices daily, which were primarily for hygiene and mobility. No gender differences were identified.</td>
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<tr>
<td>Stowe, Thornely, Chamberlain, and Wright (1982)</td>
<td>Volunteer sample of patients discharged from one of four hospitals ($N = 100$) and randomly allocated to treatment and control groups, United Kingdom</td>
<td>Longitudinal, experimental</td>
<td>Control group received standard care; intervention group received two to three visits by an occupational therapist and prompt provision of aids and training.</td>
<td>Describe how the rates of use, level of function, and patient satisfaction are affected by prompt delivery of aids.</td>
<td>The rates of use was 85% for the intervention group and 73% for the control group. Reinforced instruction and practice with the aids increased use, patient satisfaction, and safety. One hundred percent of the intervention group was able to bathe compared with 80% of the control group.</td>
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*FIM™ is a trademark of the Uniform Data System for Medical Rehabilitation, a division of UB Foundation Activities, Inc.

Hurren, & Tomita, 1993; Newman, 1998; Parker & Thorslund, 1991; Stowe, Thornely, Chamberlain, & Wright, 1982). Pilot Study Two of Gitlin, Levine, and Geiger (1993) was also cross-sectional. The cross-sectional studies cannot account for changes in equipment use over time. As a result, the five studies that followed participants longitudinally allow a fuller perspective on factors influencing equipment use (Gitlin et al., 1993 [Pilot Study One]; Gitlin, Schemm, Landsberg, & Burgh, 1996; Haworth & Hopkins, 1980; Sonn, 1996; Sonn, Davegardh, Lindskog, & Steen, 1996). These five studies involved three to four contacts with participants spaced over time to track changes in adaptive equipment use. Follow-up times ranged from 3 months (Gitlin et al., 1993; Gitlin et al., 1996) to 6 years (Sonn, 1996).

Two studies reviewed had experimental designs. Stowe et al. (1982) used an experimental design with randomly allocated treatment and control groups. They compared the two groups on safe device use, controlling for extraneous variables such as learning over time, adjustment to disability, and motivation. The control group received standard care, and the treatment group received quicker provision of devices and additional training in the home after discharge. Sonn (1996) used a quasi-experimental design involving a randomly selected intervention group and two randomly selected comparison groups. Group assignment did not involve random allocation. The study compared rates of use and perceived effectiveness of assistive devices across the groups. The intervention group received a medical and social program focusing on aging, benefits of physical activity, and how to maintain independence either in a group or individually. The two compari-
son groups received standard health care services and were compared with the intervention group at the conclusion of the study only.

The remaining studies used interviews, surveys, questionnaires, and observation to obtain data. Hartke et al. (1998) conducted a secondary analysis of the data set of the National Health Interview Survey and Assistive Device Supplement.

**Geographical Region**

The studies reflect international findings and offer a broader perspective on factors influencing adaptive equipment use than would be possible if one were to consider findings from only one country. The studies included in this review were completed in Canada, the United States, the United Kingdom, and Sweden.

**Major Study Findings**

The study findings fall into six broad areas: ownership and prescription of adaptive equipment, rates of use, factors affecting use, reasons for nonuse, perceptions regarding adaptive devices, and effects of training.

**Ownership and prescription of adaptive equipment.** Findings on the number of assistive devices that older adults owned ranged from 1 to 24. Bynum and Rogers (1987) reported the lowest average number of devices (1.8), whereas Mann et al. (1993) reported the highest average number of devices (13.7). The range of devices owned was greatest in Parker and Thorslund (1991), which was 1 to 24 devices.

Occupational therapists and other health professionals prescribe adapted equipment, but it can also be purchased directly through medical supply houses and general merchandising. Therefore, differences exist in the most common devices prescribed and the most common devices owned. The most commonly prescribed categories of assistive devices in the studies reviewed included walking and mobility aids (Gitlin et al., 1996; Haworth & Hopkins, 1980; Parker & Thorslund, 1991), dressing and bathing devices (Gitlin et al., 1996; Haworth & Hopkins, 1980), and personal hygiene and communication devices (Parker & Thorslund, 1991). The most commonly owned devices included bedside commodes, bathtub benches, shower chairs (Bynum & Rogers, 1987; Sonn, 1996; Sonn et al., 1996), nonslip bath mats, and bathroom rails (Edwards & Jones, 1998; Sonn, 1996; Sonn et al., 1996). The most commonly owned mobility aids were canes (Edwards & Jones, 1998; Sonn, 1996; Sonn et al., 1996).

Having assistive devices, through direct purchase or through prescription, is associated with several demographic characteristics. Edwards and Jones (1998) and Haworth and Hopkins (1980) found that the likelihood of having assistive devices increases with age and extent of disability. In relation to disability, Mann et al. (1993) found that persons with both visual and physical impairments had more devices than persons with cognitive impairments. Having devices has also been found to be more common among women than men (Edwards & Jones, 1998; Sonn, 1996).

Persons who live alone were more likely to have bathroom rails and less likely to have a wheelchair than persons who lived with others (Edwards & Jones, 1998).

**Rates of use.** The most frequently used method of determining rates of use was to divide the number of aids used by the number of aids owned; some studies calculated this proportion across all aids and others subdivided into categories of aids (e.g., bathing aids). An alternative method was to ask the participant to categorize the frequency of use of a particular aid (e.g., never, seldom, frequent, always) (Gitlin et al., 1993; Gitlin et al., 1996; Sonn, 1996; Sonn et al., 1996). The overall rates of use in cross-sectional studies ranged from 75% (Finlayson & Havixbeck, 1992; Parker & Thorslund, 1991) to 82% (Bynum & Rogers, 1987). Gitlin et al. (1993) reported the lowest rate (47%) after a 3-month follow-up. Haworth and Hopkins (1980) reported an important decline in use from a high of 87% at the start of the study to lows of 54% at 3 months and 57% at 9 months.

The most frequently used adaptive equipment were bathroom aids (Gitlin et al., 1993) and mobility aids (Hartke et al., 1998). These findings are consistent with the opinions of the majority of therapists surveyed in Pilot Study Two of Gitlin et al. (1993). Haworth and Hopkins (1980) noted the largest discrepancy between possession and use of dressing aids. Although participants owned dressing aids, they had a strong tendency not to use them.

**Factors affecting use.** The most common factors identified in the literature as having a statistically significant association with adaptive equipment use were age, gender, education, living arrangement, marital status, income, health condition, and length of time since discharge. Greater use of adaptive equipment has been significantly linked with increased age (Edwards & Jones, 1998; Hartke et al., 1998; Haworth & Hopkins, 1980; Sonn, 1996). According to Sonn et al. (1996), 24% of persons under 80 years of age and 57% of those over 80 years of age used one or more devices daily.

Hartke et al. (1998) found that device users were less educated, more likely to be living alone and single, had lower incomes, and were less healthy. Living arrangements did not show a significant association with use in the work of Gitlin et al. (1996) nor did gender, which is consistent with the work of Sonn et al. (1996). Explanations for these discrepancies could be the result of different study populations or the types of devices under consideration.

Use was significantly greater for persons with acute orthopedic conditions than for those with chronic disorders (Finlayson & Havixbeck, 1992) and for persons with multiple impairments, including physical disabilities.
(Mann et al., 1993). These findings seem to correspond with those of Gitlin et al. (1996) that use in the first month after discharge could predict later use and that the client’s anticipation to use the device, including perceived need, was the strongest predictor of use.

**Reasons for nonuse.** The most commonly identified reason for nonuse of assistive devices was unsuitability of the aid (Bynum & Rogers, 1987; Finlayson & Havixbeck, 1992; Gitlin et al., 1993; Mann et al., 1993; Parker & Thorslund, 1991). This reason includes such concepts as ineffectiveness, misprescription, and equipment failure. The second most prevalent reason for nonuse was rejection of the aid (Finlayson & Havixbeck, 1992; Gitlin et al., 1993; Mann et al., 1993; Sonn et al., 1996). Some reasons for rejection were that the aids were too cumbersome, too time consuming, too much trouble, or called unwanted attention to the client. Other commonly cited reasons were functional improvement (Bynum & Rogers, 1987; Finlayson & Havixbeck, 1992; Parker & Thorslund, 1991; Sonn et al., 1996), task performed by others (Gitlin et al., 1993), and client perception of no need (Gitlin et al., 1993).

**Perceptions regarding adaptive devices.** Underlying many aspects of use are issues related to older adults’ perceptions about adaptive devices. Gitlin et al. (1998) and Newman (1998) both used a qualitative method to determine their study participants’ feelings about adaptive devices. Both studies found that each adaptive device evoked different feelings and comments.

Gitlin et al. (1998) reported that seating devices, such as cushions and support wedges, received the most negative comments, followed by devices for bathing (e.g., grab bar, long-handled sponge), feeding (e.g., rocker knife), and dressing (e.g., reacher, shoe horn). The participants expressed the greatest number of mixed comments about mobility devices. Newman (1998) found that wheelchairs received the highest number of negative comments. The results of Gitlin et al. determined that positive, negative, or mixed comments did not correlate significantly with race, age, gender, or feelings toward other aids.

Sonn (1996) and Sonn et al. (1996) studied the effectiveness of assistive devices on function through structured interviews. Some perceptions identified were that the devices made the user feel safer, more independent, and able to perform daily activities with less pain and effort. However, some participants believed that the devices made no difference or were complicated to use. These findings support Newman’s (1998) claims that perceptions surrounding assistive devices are based on two basic psychological components: locus of control and symbolic nature of the equipment.

**Effects of training.** A number of studies cite the effects of training as a factor influencing device use. Finlayson and Havixbeck (1992) found that the amount of training was satisfactory to the participants and that every participant (N = 29) could demonstrate the appropriate use of the devices he or she owned. Compared with their control group, Stowe et al.’s (1982) treatment group received additional training, extra visits by the occupational therapist, and faster provision of devices. The rate of use for the treatment group was 85%, whereas the rate for the control group was 73%. The treatment group received more instruction and demonstrated proper transfers into the bath 90% of the time as opposed to the control group, which transferred correctly 50% of the time. In addition, 100% of the treatment group was able to complete the bathing task, whereas only 80% of the control group succeeded.

**Discussion**

The overall purpose of this article was to review the existing research literature to answer the clinical question: Among older adults, what are the factors that affect the use of adaptive equipment? Answering this question is important for occupational therapists because adaptive equipment can be a critical component in restoring occupational performance and preventing further decline among older adults. Equipment is frequently prescribed when preparing an older client for discharge from hospital to the community or during home-based interventions focused on maintaining an individual in the community (Mann, Hurren, Tomita, Bengali, & Steinfeld, 1994).

The expectation that using appropriately prescribed equipment can facilitate discharge and maintain a person in the community is an important one and is based on the assumption that clients will actually use the items the occupational therapist prescribes. The studies reviewed in this article suggest that prescribing equipment that will actually be used requires careful consideration of many interacting factors. Three key categories of influencing factors have appeared through this review: personal (client) factors, factors related to the device and its fit with the client’s environment, and intervention-related factors.

**Personal (Client) Factors**

The personal (client)-related factors in the literature provide relatively little guidance to occupational therapists who wish to improve the rates of equipment use among older adults. Therapists cannot influence a client’s age, level of acuity, living arrangements, or marital status. The one client factor that therapists can attend to is the client’s expectation to use the device (Gitlin et al., 1996). Further research would be valuable to extend the current knowledge about this factor and to explore what encourages older clients to use their assistive devices. Qualitative exploration of the personal motivators for using assistive devices may help to explain why some older adults choose to use particular devices, whereas others do not. An important potential motivator to use assistive devices that has not been explored in the current literature is the meaningfulness of the occupation being facilitated. Information on such concerns as meaningfulness
may assist occupational therapists during their evaluation (e.g., guiding evaluation interviews) and to develop intervention plans to maximize equipment use after prescription.

Factors Related to the Device and Its Fit With the Client’s Environment

Lack of fit between the client’s environment and the device and the undesirable characteristics of the device itself both had a strong negative effect on use (e.g., Bynum & Rogers, 1987; Finlayson & Havixbeck, 1992; Parker & Thorslund, 1991). Finlayson and Havixbeck (1992) found that clients already owned some prescribed devices. In addition, several studies found devices that were inappropriate for the specific design of the client’s home (Finlayson & Havixbeck, 1992). Finlayson et al. (1996) found that a primary reason for nonuse was that the device was too complicated. All of these findings indicate the critical need for therapists to listen to clients’ needs, concerns, and opinions regarding adaptive equipment before prescription. The findings also suggest that more thorough interviews with the clients and a home visit before prescription could eliminate some instances of nonuse.

Lack of aid–environment fit, length of time since discharge from occupational therapy (Gitlin et al., 1993), and chronicity of the client’s condition that led to the prescription of the devise initially (Finlayson & Havixbeck, 1992) were strong forces in the nonuse of assistive devises. Rates of nonuse ranged from 25% to more than 50%. Although this descriptive information is valuable, it raises questions about what is the expected or optimal rate of use for equipment prescribed by occupational therapists in general, at particular times after prescription (e.g., at 1 month, 3 months), for particular clients, and for particular equipment (e.g., bathing, mobility). Knowing what to expect may assist occupational therapists in evaluating the extent and quality of their equipment-related interventions and in identifying areas in which improvements in use could be pursued.

The findings on the rates of nonuse emphasize the need for monitoring equipment use. They also emphasize the need for timely equipment retrieval when borrowed items from temporary loan programs are no longer required. Occupational therapists who prescribe equipment to self-paying clients must weigh safety and the likelihood of long-term use against the expense of the item. Prescribing expensive items that are unlikely to be used long term is not cost-effective for either the client or the insurer. If less expensive items can give equal results, occupational therapists must consider these options.

Intervention-Related Factors

Intervention-related factors played an important and positive role in the use of assistive devices among older adults in the articles reviewed (Finlayson & Havixbeck, 1992; Gitlin et al., 1993; Stowe et al., 1982), but many important questions remain unanswered in this area. It is unknown from the existing work whether frequency or duration of training influence equipment use and how long this influence lasts. In addition, it is unclear whether the positive influence of training is affected by who provides the training (e.g., occupational therapist, occupational therapy assistant, other professional) and where the training is given (e.g., in a health care facility, at home). None of the articles reviewed discussed specific instructional techniques; therefore, whether specific approaches are more or less effective in positively influencing device use is unclear. These questions need to be addressed through future research if our understanding of the intervention-related factors influencing use is to be expanded.

Conclusion

Much research has been done in the area of adaptive equipment use by older adults; however, we are far from understanding the complicated nature of the relationships between humans and assistive devices. For occupational therapists engaged in adaptive equipment prescription for older adults, all of the factors identified in this review must be considered if the expectation of facilitating discharge and maintaining persons in the community is to be met. Further research must be conducted and incorporated into the occupational therapy body of knowledge.

According to Hartke et al. (1998), 23% of older adults in U.S. communities use adaptive equipment. Considering the dramatically increasing number of older adults, this rate of use has potential implications for occupational therapists. Even modest rates of nonuse could result in a tremendous financial burden on the health care system and the people it serves. The occupational therapy community has an obligation to understand and apply the information available to enhance the appropriate prescription of adaptive equipment and encourage its use among clients. The fulfillment of this obligation can be accomplished through research, continuing education, and listening to the needs and concerns of each client.

Acknowledgments

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