Interrater reliability of measuring assistive devices in homes of persons with Parkinson's disease

Dana N. Frisch
The University of Toledo
Interrater Reliability of Measuring Assistive Devices in Homes of Persons with Parkinson’s Disease

Dana N. Frisch
Department of Occupational Therapy
The University of Toledo Health Science Campus
Abstract

The role of occupational therapy for people with Parkinson’s disease includes assistive technology (AT) devices that optimize occupations of daily living. The current descriptive study investigated the interrater reliability of the number of AT devices in the home and the usage of these devices in this population. Thirty-three community-dwelling participants were recruited from the Movement Disorders Clinic at The University of Toledo Health Science Campus; 12 of the 33 subjects were tested for interrater reliability. The Older Americans Resources and Services Multidimensional Functional Questionnaire (OMFAQ) and an AT device checklist were administered in a random, counterbalanced order. Interrater reliabilities for total number of devices and devices used were .96 and .97 respectively, indicating excellent reliability. The mean number of devices per home equaled 14.33 (SD = 9.54), and the mean for the number of devices used within the last month equaled 12.52 (SD = 8.09). This study demonstrates that persons with Parkinson’s possess AT devices and consider their devices useful. The interrater reliability of this study strengthens confidence that measurement of AT presence and use is an objective process that can be used in future studies.
Interrater Reliability of Measuring Assistive Devices in
Homes of Persons with Parkinson’s Disease

Parkinson’s disease, PD, is one of the most common progressive neurological
disorders. Progressive neurological disorders are diseases that affect various areas of the
central nervous system (CNS), are chronic in nature, and cause a deterioration of function
over time (Hansen & Atchison, 2000). Parkinson’s disease is most common in later adult
years; the mean age of onset is 55 to 60 years (Trombly & Radomski, 2002). The
substantia nigra plays a critical role in the generation of the neurotransmitter dopamine.
In Parkinson’s disease, this area of the brain is primarily affected. Without dopamine, the
brain’s ability to generate body movements is disrupted. This disruption produces signs
and symptoms characteristic of Parkinson’s disease (Weiner, Shulman, & Lang, 2001).

The four primary symptoms of PD are tremor, or trembling in hands, arms, legs,
jaw, and face; rigidity, or stiffness of the limbs and trunk; bradykinesia, or slowness of
movement; and postural instability, or impaired balance and coordination (National
Institute on Neurological Disorders and Stroke, n.d.). Secondary symptoms arise from a
combination of two or more primary symptoms. Among these secondary symptoms are
difficulty in walking, freezing or hesitation when walking, difficulty in turning, stooped
posture, difficulty in speaking, and difficulty in writing (Lieberman, 2002). Hansen and
Atchison (2000) also listed the following as secondary symptoms: swallowing
difficulties, poor balance, oculomotor impairments, reduced facial expression, sleep
disturbances, seborrhea, and reduced bowel and bladder function. This array of
symptoms varies among people with Parkinson’s disease. Some people may not
experience a specific symptom, whereas for others, that symptom might be a major complaint (Hansen & Atchison, 2000).

Hoehn and Yahr (1967) created a method of rating Parkinson’s disease from 0 to 5. The scale is a limited guide to treatment and outlook, and is used to evaluate how an individual is changing over time. This clinical scale focuses mainly on mobility (Lieberman, 2002). In stage 0 there are no visible symptoms of Parkinson’s disease. In stage I the symptoms are confined to one side of the body. Signs of Parkinson’s disease progress bilaterally in stage II, but balance is not impaired. Balance becomes impaired in stage III, and in stage IV Parkinson’s disease is functionally disabling. An individual with stage V Parkinson’s disease is confined to bed or wheelchair. The progression of Parkinson’s disease differs with each person. There are also fluctuations within each stage (Hansen & Atchison, 2000).

Identifying how Parkinson’s disease affects a patient’s quality of life is important. There are numerous reasons for the decrease in quality of life experienced by Parkinson’s disease patients: loss of mobility, falls, depression, social embarrassment, isolation, sleep disturbances, and dyskinesia (Foltynie, Lewis, & Barker, 2003). Parkinson’s disease is progressive. Routine dressing, hygiene, and feeding become increasingly slow and ponderous (Weiner, Shulman, & Lang, 2001). Toileting can become problematic because of the loss of bladder and bowel control. Eating may be difficult either because the person loses the coordination needed to self-feed or because of chewing or swallowing difficulties. Dysarthria or imperfect articulation can affect the person’s ability to communicate thoughts and needs and can limit social interaction. Functional mobility is another critical concern (Hansen & Atchison, 2000). As the disease progresses, people
with Parkinson’s disease walk with a kind of shuffle. They may feel unsteady, particularly when they try to turn, and may regularly find their feet suddenly motionless, which is known as freezing. When individuals experience freezing they have trouble with balance and may fall (Weiner, Shulman, & Lang, 2001). If the individual is employed, increasing limitations may require employment modification (Trombly & Radomski, 2002). Communication, mobility, eating problems, and depression may affect the person’s normal socialization with individuals or groups (Hansen & Atchison, 2000). Resting tremor is a disturbing symptom that may cause the person to feel embarrassed or ashamed to be seen in public (Weiner, Shulman, & Lang, 2001). Reduced facial expression and minimal hand gesture also contribute to decreased communication with others (Uitti, 1998).

Rehabilitation, including occupational therapy, enhances the lives of people with Parkinson’s disease. For persons living with Parkinson’s disease, occupational therapy can help increase their endurance, strength, general fitness, and energy level. It can also elevate their mood and decrease anxiety (Weiner, Shulman & Lang, 2001). The occupational therapist can show patients and families a variety of ways for dealing with loss of dexterity and slowness (Weiner, Shulman & Lang, 2001). Occupational therapy can also help by assessing patients in their own homes and making the necessary modifications. Therapy also may optimize a patient’s home or workplace environment. The occupational therapist can evaluate a patient getting in and out of bed, eating, dressing, and bathing, and can recommend simple techniques to optimize occupations of daily living while promoting an environment that minimizes the risk of falls (Foltynie, Lewis, & Barker, 2003). The therapist can also advise on the use of assistive household
equipment. The home can be made convenient and safe with bathroom grab bars, shower seats, and elevated toilet seats (Weiner, Shulman & Lang, 2001). Using a computer or tape recorder can substitute for writing. Meal preparation with the use of a microwave instead of an oven and the use of large-handled utensils and lightweight pans may be suggested. Poor dexterity, which impairs dressing abilities, can be less of a disability with Velcro fasteners and long shoehorns (Foltynie, Lewis & Barker, 2003). Assistive devices do more than just help people with Parkinson’s disease carry out simple tasks; they enable them to remain independent.

An assistive device is defined as any item, piece of equipment or product (whether acquired commercially off the shelf, modified, or customized) that is used to improve function in individuals with disabilities (Cook & Hussey, 1995). This is a broad definition that encompasses items designed specifically for persons with certain kinds of disabilities, as well as products that reach a broader market - products that may not originally have been designed specifically for persons with impairments. A raised toilet seat is clearly an assistive device. A microwave oven designed for the general population may also be an essential assistive device to enable a person with a cognitive impairment to heat food (Mann, Hurren, & Tomita, 1993).

Cook and Hussy (2002) categorized assistive devices as a) commercially available, b) modified, or c) custom-made products. Commercially available assistive devices are mass-produced, and include devices designed for the general population, as well as devices designed for individuals with disabilities. Commercially available assistive devices that are developed for the general public often incorporate the concept of universal design. According to Cook and Hussey (2002), modified assistive devices
encompass commercially available devices that cannot meet an individual’s needs until changes are made in the devices. For example, a commercially available augmentative communication device may require modification so that it can be mounted on a user’s wheelchair (Cook & Hussey, 2002). Custom-designed assistive devices are made specifically to enhance the occupation at hand. For example, seating and positioning systems for persons with severe disabilities are often individually contoured to achieve the necessary functional result (Cook & Hussey, 2002). The high rate of new or improved assistive technology being introduced into the market place complicates the process of adequate assessment of devices that may maximize function. Therapists who make recommendations for the purchase of assistive technology must seek out information on the personal qualities of the client and also remain vigilant concerning new technologies that may be of use to their clients (Gray, Quatrano, & Lieberman, 1998).

“The usefulness of measurement in clinical research and decision making depends on the extent to which clinicians can rely on data as accurate and meaningful indicators,” (Portney & Watkins, 2000, p. 61). The first prerequisite for measurement is reliability, or the extent to which a measurement is consistent and free from error (Portney & Watkins, 2000). Reliability of a measuring tool can be assessed in different ways. This study assesses interrater reliability. Interrater reliability allows the researcher to infer that the measurements obtained by one rater are likely to be representative of the subject’s true score, so that the results can be interpreted and applied with confidence (Portney & Watkins, 2000). Interrater reliability is estimated by having two or more trained observers making observations independently and recording the relevant variables
according to a predetermined plan or coding system (Polit & Hungler, 1983). Simultaneous scoring is not always possible for many variables that require interaction of the tester and subject, as is the case in this study. Interrater reliability is particularly important to this study because it strengthens the generalizability of the research outcomes and improves confidence in the data collected and the rational conclusions we draw from the data.

This study will test the interrater reliability of data collected in a parallel study by Garmon (2005) investigating the use of assistive technology devices in persons with Parkinson’s disease. The parallel study involves collection of the following data:

1) How many assistive technology devices are in the home and meant for the person (as opposed to being meant for others)?
2) How many assistive technology devices are meant for the person and used in the last month?
3) What kind of assistive technology devices were used in the past month?
4) How many assistive technology devices are: a) manufactured for the general public, including universal design; b) manufactured for persons with disability; or c) modified or custom-made?
5) How did the individual first find out about this assistive technology device?
6) If the assistive technology device was meant for the individual, why does he or she not use the device?

The focus of the current study is on the interrater reliability of questions 1 and 2 above.
Method

Sample

Thirty-three participants were recruited from the Movement Disorders Clinic at The University of Toledo Health Science Campus. The staff at the clinic, including the physician, medical students, and nurse practitioner conducted recruitment. The physician administered the Hoehn and Yahr Scale to determine diagnostic stage. Patients meeting all criteria were asked either personally or by telephone to participate in research on assistive technology devices. The selection criterion were as follows:

1) The patient must have a diagnosis of Parkinson’s disease at Stage II, III, IV on the Hoehn and Yahr Scale.

2) The patient must be a local resident of Toledo, or no more than thirty minutes from The University of Toledo Health Science Campus.

3) The patient must live in his or her own home.

A total of 12 of the 33 subjects were tested for interrater reliability for this study [3 out of the 13 subjects were reported on previously by Garmon (2005), and 9 of the 20 subjects were recruited after Garmon completed her phase of the project]. There were 22 subjects who were male, and 11 subjects were female. The average age of the participants was 69 years old (SD = 9.39).

Participants to receive a second home visit for interrater reliability were randomly selected. A table of random numbers was used in an attempt to identify approximately half of the total sample for interrater reliability purposes. Only 13 of 33 were actually recruited because some persons refused a second visit and because the current study did not start soon enough to recruit the first few subjects studied by Garmon.
Instrument

**Assistive Technology Devices Checklist.** The assistive devices checklist was derived from the ABLEDATA Indexing Terms (www.abledata.com). ABLEDATA is the largest and most well known general source of information on products for individuals with disabilities (Cook & Hussy, 2002). The ABLEDATA index includes 16 categories and all of the assistive devices within those categories. ABLEDATA has been used in several studies by Mann et al. (1993, 1994, 2004) to analyze assistive devices used by older Americans.

**Older Adults Resources and Services Multidimensional Functional Assessment Questionnaire (OMFAQ).** The OMFAQ is a structured questionnaire that has two distinctive parts. The OMFAQ is designed to obtain information on functional status (Part A) and service use (Part B) (Fillenbaum, 1988). Part B was not used in this study. Part A is divided into seven major sections: Administrative/demographic items, social resources, economic resources, mental health, physical health, activities of daily living, and informant assessments. In a validity study by Fillenbaum & Smyer (1981), the OMFAQ was found to have content and criterion validity in the economic resources, mental health, physical health, and activities of daily living categories. Interrater reliability was also assessed, with statistically significant levels for the first five sections of the OMFAQ (Fillenbaum & Smyer, 1981). The findings on validity and reliability compare favorably with those reported for other self-report assessments of function. The current study focused on the following sections: a) activities of daily living; b) income level (part of economic resources); c) economic well-being (part of informant
assessments); and d) items with the social support section. Information for the evaluation was obtained by interview.

Procedure

One of three student investigators conducted each first home visit. Upon the home visit, the student investigator explained the study to the patient, defined assistive technology devices, administered the informed consent, and described the interrater reliability component. The interviewer then administered the OMFAQ and the Assistive Devices Checklist in a counterbalanced order. The student investigator completed the checklist by going from room to room with the subject and family member if available identifying AT, and asking structured questions about each AT device. The questions included:

1) Have you used this device within the last month? [If yes, go to 2. If no, go to 1a]

   a. If not, was this device meant for you (versus being meant for someone else)? [If yes, go to 1b and then continue to 2. If no, stop here and find next device]

   b. If this device was meant for you, why don’t you use this device?

      i. Disability went away

      ii. Disability got worse so device is not adequate

      iii. Use of device makes me look or feel disabled or “different”

      iv. I have a better device for the problem

      v. Device broke or became defunct

      vi. Device never worked as intended
vii. I forgot to use it

viii. The device is not accessible, or not in the right place

ix. I don’t know how to use it

x. I figured out a better way to compensate

xi. Someone else does whatever needs doing so I don’t have to use device (spouse or hired help)

xii. Other ________________________________

2) How did you first find out about this device?

   a. Friend

   b. Healthcare provider

   c. Advertisement

   d. Store

   e. Other ________________________________

3) Categorize this device:

   a1) AT manufactured for the general public, including universal design

   a2) AT manufactured for persons with disability

   b) Modified

   c) Custom-made AT

4) Categorize this device:

   A) Architectural elements (built in design)

   B) Communication

   C) Computers

   D) Controls
E) Educational Management
F) Home Management
G) Orthotics
H) Personal Care
I) Prosthetics
J) Recreation
K) Seating
L) Sensory Disabilities
M) Transportation
N) Vocational Management
O) Walking
P) Wheeled Mobility

Of three data collectors, one (Garmon) collected first visit data on the first 13 subjects. A second data collector, the study’s primary investigator, checked three of these for interrater reliability on a second visit. The study’s primary investigator and a research assistant collected first visit data on the twenty remaining subjects and second visit data on nine of these subjects. Depending on convenience, either the primary investigator or the assistant conducted either the first visit or the second visit.

Upon the second home visit, the student investigator once again explained the study and the definition of assistive technology devices to the patient, and administered the informed consent. The interviewer then administered the Assistive Technology Devices Checklist according to the same protocol that was used in the first visit by going
from room to room and asking four primary questions to identify the patient’s assistive technology devices.

The following two research questions guided the study. Is the assistive technology devices checklist used to determine number of devices in person’s home reliable? Is this same checklist reliable when measuring devices used in the past month? There were six secondary questions included in the study. How many assistive devices are in the home and meant for the person? How many of those devices have been used in the last month? What kinds of assistive devices are in the home and used? How did the individual find out about the device? If the device is not used, why does the person not use the device? What are the sources of information concerning assistive devices that were procured?

Results

The intraclass correlation coefficient for generalization to a future single rater was used, formula 3.1 as described in Shrout and Fleiss (1979). Interrater reliability of total number of devices acquired was .96. Interrater reliability of devices used in the last month was .97. According to Eliasziw et al. (1994), the ICC is in the range considered “almost perfect.” Even though the sample size of this study was small, the ICC shows that the measure used is reliable.

The number of assistive devices each person had is summarized in Table 1. The mean number of devices per home and meant for the person was 14.33 (SD = 9.54). The mean number of devices used within the last month was 12.52 (SD = 8.09). Table 1 shows that the most common devices for people with PD were in the personal care category, with an average of 4.72 devices owned, and 3.94 used within the last month. Architectural elements were the next most common types of AT devices, with an average
of 3 devices owned, and 2.91 used within the last month, followed by home management items, with an average of 2.03 devices owned, and 1.63 devices used within the last month. All other categories were represented except prosthetics.

Another secondary objective of this study was to determine why people with PD were not using their AT devices. These data are summarized in Table 2. A total of 60 devices had not been used in the last month. The primary reason for not using AT devices was that “someone else does it for me,” with 18 responses. Other reasons why AT devices were not used included “Disability went away” (12 responses), “Disability got worse so device is no longer adequate,” and “The device never worked as intended” (each with 6 responses). Some other common responses included, “I have a better device for the problem,” “Don’t know how to use it,” and “Device prescribed but never used.” The least common reason why people did not use their devices was “use of the device makes me look or feel disabled or different.”

The data concerning how the individual first found out about the assistive technology device are summarized in Table 3. People most often found out about AT devices by way of a friend or relative, with 163 responses. The next most common way that people heard of his or her AT device was by way of a healthcare professional, with 118 responses. The third most common way of finding out about AT information was in the “other” category. Responses in this category included, “I figured it out for myself,” and “device used for other health problem or past surgery.” The least frequent methods of how people found out about their devices was through stores and advertisements.

Data on the sources of AT devices are summarized in Table 4. Devices manufactured for the general public but used to compensate for impairment were the
most common, with an average of 5.48 devices per individual. The second most common source included devices manufactured for persons with a disability, with an average of 4.87 devices. Devices manufactured for the general public but modified and custom-built devices were the least common sources of AT devices.

There was no significant correlation between the total number of devices and occupations of daily living (ODL), measured either through the OARS OMFAQ algorithm ($r = .12$, $p = .52$) or through the overall rating of ODL estimated by the interviewer after the conclusion of the OMFAQ ($r = .13$, $p = .47$). Nor was there a significant correlation between the total number of assistive devices and income level ($r = .11$, $p = .61$). A problem with this correlation is that nine persons declined to report income level. The correlation between total number of assistive devices and economic well-being estimated by the interviewer after the conclusion of the OMFAQ was also non-significant statistically ($r = .09$, $p = .62$). Nor were there significant correlations between the total number of assistive devices and other indicators of financial well-being and social supports. There also was no significant correlation between gender and number of devices; the 22 male subjects did not differ from the 11 female subjects in terms of total devices ($t = .06$, $p = .53$). Lastly there was no significant correlation between the 23 subjects who were married and the 10 subjects who were not ($t = .06$, $p = .55$). In summary, no predictors of total devices were found, and the same pattern held in terms of devices used.

**Discussion**

The most important finding from this study is the reliability of two raters measuring assistive devices. The interrater reliability of this study strengthens
confidence in the measurement of AT, both in this study and in future studies. Individuals can rely on the data from this study, and it can be predicted that in future studies other raters will obtain accurate results if the measurement is done under similar circumstances.

There was a high rate of AT device use by individuals with PD in the home. There was an average of 14.33 devices in the subjects’ home, which indicates that although many of the individuals may not be receiving occupational therapy services at this time, these individuals are still aware of AT devices available and are attaining these devices. The types of devices owned were interesting, and the top three device categories were the same as in the initial study (Garmon, 2005) that reported only on the first 13 subjects of 33 reported on in the current manuscript. The highest representation of devices used and meant for the person were in the personal care category (e.g., pill organizer, electric toothbrush), followed by architectural elements (e.g., grab bars, detachable shower heads), and home management (e.g., weighted silverware, microwave).

Assistive technology found in this study consisted mainly of commercially available devices. These devices include those manufactured for the general public including universal design (e.g., cordless telephone, electric razor). Those devices manufactured for persons with a disability were the second most common source of AT. This finding is similar to the initial data set of 13 (Garmon, 2005). The smallest percentages of devices were custom-made (e.g., medication schedules) or modified (e.g., color-coded containers). There was a high representation of commercially available devices. This may be due to the individuals in this study being between the stages 2 through 4 on the Hoehn and Yahr Scale, meaning they have minimal to moderate
functional impairments. If interviewing individuals in stage 5, wheeled mobility devices and custom-made or modified devices may have been more prevalent.

In contrast with the initial data set (Garmon, 2005), individuals in the larger data set of 33 most often found out about the AT devices by way of friends or relatives. Healthcare providers also played an important role in suggesting devices to persons with PD. Many of the participants also reported that they had figured out by themselves that an item could be used to help them function more independently. Advertisements and stores also had an influence on the devices individuals owned. In summary, individuals with PD have many information sources regarding AT devices. The use of AT devices is an individual preference that is greatly influenced by the person’s environment and support systems.

This study discovered that the subjects considered their devices useful, with a total of 413 of 473 devices used in the past month. For the 60 items not used in the last month, the primary reason individuals did not use their devices was that someone else performed tasks for them. This is different than the study by Page, Galer, Fitzgerald, and Feeney (1980), where 500 subjects found that after initially obtaining devices, they stopped using them chiefly because the devices were misprescribed, did not function properly, or failed to address actual needs. Only one individual reported that his or her device broke or became defunct which may be due to the increasing improvement in technology, which will continue to benefit this population. In the initial study (Garmon, 2005), the primary reason for abandonment was that the client’s functional ability improved. Similarly, the current study found that the second most popular reason for not using the AT device is that the person’s disability went away. No individual reported that
he or she did not use a device because it made him or her look or feel disabled. This could be due to individuals in this population primarily using devices that are manufactured for the general public; therefore they do not feel “different.” The overall image of persons with disabilities using AT devices may have improved and the general public is steadily becoming more familiar with AT devices due to the increase in positive consumer information.

Limitations

A limiting factor in this study was sample size. We initially planned to recruit 40 subjects and perform interrater reliability on 20. We ended up recruiting 33 subjects, with interrater reliability on 12. Scheduling conflicts between the clinic staff at the Movement Disorders Clinic and the investigators made it difficult to recruit subjects. A suggestion would be to have a paid employee recruit subjects. With a larger sample size, and greater power, statistically significant correlations might be found. However, the correlations found in this study were so small that a larger sample would not be significant predictors, unless the data pattern changed. Individual items could also be studied and types of items (e.g., reachers) could be considered in future research using a larger sample size.

Several subjects did not agree to a second home visit. This decreased the number of interrater reliability visits completed. The second home visit lasted about 20 minutes, in contrast to the first visit, which lasted an hour or more. Individuals either could not be reached or refused, stating that he or she gave us all the information on the first visit. One individual stated he was too busy moving, and some individuals had personal situations such as health problems or surgery. The amount of time between the first
home visit and the second home visit was sometimes two to three months. This is a long
time between visits. A suggestion is to set a limit of three weeks between visits. This
may increase interrater reliability. In the time between the two visits, the subject may
have attained new devices. The subjects also may be less likely to decline a second visit
if the second visit was done within three weeks of the first visit.
References


(2nd ed.). St. Louis: Mosby, Inc.


*Neurology, 17,* 427-442.


Table 1

Assistive Technology Devices in the Home and Used in Past Month (N=33)

<table>
<thead>
<tr>
<th></th>
<th>Total Acquired for the Subject</th>
<th>Number used in Past Month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Total Devices</td>
<td>14.33</td>
<td>9.54</td>
</tr>
<tr>
<td>Architectural Elements</td>
<td>3.00</td>
<td>2.18</td>
</tr>
<tr>
<td>Communication</td>
<td>0.69</td>
<td>0.77</td>
</tr>
<tr>
<td>Computers</td>
<td>0.48</td>
<td>0.79</td>
</tr>
<tr>
<td>Controls</td>
<td>0.39</td>
<td>0.61</td>
</tr>
<tr>
<td>Educational Management</td>
<td>0.18</td>
<td>0.46</td>
</tr>
<tr>
<td>Home Management</td>
<td>2.03</td>
<td>2.47</td>
</tr>
<tr>
<td>Orthotics</td>
<td>0.15</td>
<td>0.36</td>
</tr>
<tr>
<td>Personal Care</td>
<td>4.72</td>
<td>4.24</td>
</tr>
<tr>
<td>Prosthetics</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Recreation</td>
<td>0.24</td>
<td>0.66</td>
</tr>
<tr>
<td>Seating</td>
<td>0.45</td>
<td>0.87</td>
</tr>
<tr>
<td>Sensory Disabilities</td>
<td>0.24</td>
<td>0.56</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.21</td>
<td>0.42</td>
</tr>
<tr>
<td>Vocational Management</td>
<td>0.24</td>
<td>0.79</td>
</tr>
<tr>
<td>Walking</td>
<td>0.90</td>
<td>1.10</td>
</tr>
<tr>
<td>Wheeled Mobility</td>
<td>0.24</td>
<td>0.56</td>
</tr>
</tbody>
</table>
### Table 2

<table>
<thead>
<tr>
<th>Reason for Not Using the 60 AT Devices, Across 33 Subjects</th>
<th>Number Unused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disability went away</td>
<td>12</td>
</tr>
<tr>
<td>Disability got worse so device is not adequate</td>
<td>6</td>
</tr>
<tr>
<td>Use of the device makes me look or feel disabled or “different”</td>
<td>0</td>
</tr>
<tr>
<td>Better device for the problem</td>
<td>4</td>
</tr>
<tr>
<td>Device broke or became defunct</td>
<td>1</td>
</tr>
<tr>
<td>Device never worked as intended</td>
<td>6</td>
</tr>
<tr>
<td>Forget to use it</td>
<td>2</td>
</tr>
<tr>
<td>Device is not accessible, or not in the right place</td>
<td>1</td>
</tr>
<tr>
<td>Don’t know how to use it</td>
<td>3</td>
</tr>
<tr>
<td>Figured out a better way to compensate</td>
<td>2</td>
</tr>
<tr>
<td>Device prescribed but never used</td>
<td>3</td>
</tr>
<tr>
<td>Someone else does it for me</td>
<td>18</td>
</tr>
<tr>
<td>Not appropriate for time of year</td>
<td>1</td>
</tr>
<tr>
<td>Device already in home at purchase</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 3
*How did participants (N=33) find out about all AT devices*

<table>
<thead>
<tr>
<th>Source</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend or relative</td>
<td>163</td>
</tr>
<tr>
<td>Healthcare provider</td>
<td>118</td>
</tr>
<tr>
<td>Advertisement</td>
<td>41</td>
</tr>
<tr>
<td>Store</td>
<td>54</td>
</tr>
<tr>
<td>Other</td>
<td>97</td>
</tr>
</tbody>
</table>
Table 4
Sources of Information Concerning Assistive Devices That Were Procured (N=23)

<table>
<thead>
<tr>
<th>Source</th>
<th>M</th>
<th>SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufactured for General Public but Used to Compensate for Impairment</td>
<td>5.48</td>
<td>3.48</td>
<td>6</td>
<td>0 - 13</td>
</tr>
<tr>
<td>Manufactured for General Public but Modified</td>
<td>0.26</td>
<td>0.62</td>
<td>0</td>
<td>0 - 2</td>
</tr>
<tr>
<td>Manufactured for Disability Group</td>
<td>4.87</td>
<td>4.82</td>
<td>4</td>
<td>0 - 20</td>
</tr>
<tr>
<td>Custom Built</td>
<td>0.26</td>
<td>0.54</td>
<td>0</td>
<td>0 - 2</td>
</tr>
</tbody>
</table>