

Original Article

Users' Satisfaction with Assistive Devices in South Korea

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Abstract. [Purpose] The objective of this study was to determine users' satisfaction with assistive devices, and their serviceability and effectiveness. [Methods] A random sample of 138 users participated in this study. The Korean-Quebec User Evaluation of Satisfaction with Assistive Technology 2.0 and an additional questionnaire were used for data collection. Data were analyzed by using descriptive statistics. [Results] Overall client satisfaction was high. Respondents most commonly reported use of their device for "personal activities of daily living" and "mobility", and considered engagement in "activities of daily living", and "social participation" to be most desirable, respectively. [Conclusion] This study will provide rehabilitation professionals with valuable information about client satisfaction with assistive devices.

Key words: Assistive devices, K-QUEST 2.0, Satisfaction

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INTRODUCTION

Assistive Technologies (ATs), defined as "electrical or mechanical devices designed to help people recover movement", have demonstrated clinical benefits in upper-limb stroke rehabilitation¹⁾. AT has the potential to reduce the effects of occupational performance limitations on everyday life activities by facilitating and enhancing work performance and social interactions^{2, 3)}. An assistive device may compensate for decreased or lost physical function and ability to manage the activities of daily life, increase or maintain function and ability, and prevent future loss of function and ability. Assistive technologies may provide; an increased intensity of therapy without a corresponding increase in clinical contact time, motivating relevant activities, either functional or impairment based, and can be used outside the hospital¹⁾. Also, a health-care professional must provide an assistive technology intervention that enhances the user's self-reliance while maintaining quality in a cost-effective manner⁴⁾.

The imperative of adopting the philosophy and methods of evidence-based practice confronts many fields of human service, assistive technologies among them⁵⁾. Therapists are under increasing pressure to base their practices more firmly on "evidence" and to verify the effects of certain interventions. Evidence-based practice should form the basis of all rehabilitation, including the application of assistive

devices. Very little data is available in this area⁶⁾. An empirical and useful evidence base for the outcomes of assistive device use requires research based on relevant and valid evaluation tools as well as a client-centered working model. This is a challenge, as few measures are available that target the measurement of assistive device use outcomes⁷⁾.

The Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST) was developed by an occupational therapist in Canada during the 1980s. It can be either self-administered or completed with the help of an evaluator⁸⁾. It is designed to evaluate a person's satisfaction with his or her assistive device and can be used with adolescents, adults, and elderly people who have acquired an assistive device because of physical or sensory impairments. QUEST 2.0 has been amended to focus on satisfaction with specific features of an assistive device as well as certain characteristics of services related to the device⁹⁾.

The selection and clinical evaluation of any assistive device should involve the client¹⁰⁾. It is important to analyze the benefits and limitations of a device from the user's point of view. This information supports policy makers in the identification of optimal health-care procedures in this field⁷⁾. Despite the increasing need for, interest in, and use of assistive devices among clients, no study has analyzed the outcomes of these prescriptions in South Korea.

The aim of this study was to evaluate client satisfaction concerning products and service related to assistive devices and their serviceability and usefulness.

PARTICIPANTS AND METHODS

A cross-sectional follow-up study design was used. Two assistive device centers in Seoul, South Korea, participated. The regional councils for the areas in which the centers

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were locate decided the selection of assistive devices available for prescription. Assistive devices were distributed through these centers.

A postal package containing questionnaires was sent to a random sample of 448 users of assistive devices during the winter of 2011. One questionnaire included items concerning demographic data and questions about usage as well as the user's opinion of how the device had influenced activity engagement. The other questionnaire was a Korean-Quebec User Evaluation of Satisfaction with Assistive Technology (K-QUEST 2.0) form. User sampling was performed from the regional councils' registries of all prescriptions for assistive devices in 2011. An addressed reply envelope and a letter explaining the objectives of the study were also provided.

The K-QUEST 2.0 scale investigates two dimensions: satisfaction with the device (eight items) and satisfaction with the assistive device service (four items)⁸. Evaluation related to the characteristics of the device includes user satisfaction with "dimensions", "weight", "adjustment", "safety", "durability", "simplicity of use", "comfort", and "effectiveness." Each item is scored on a 5-point satisfaction scale, where 1 denotes "not satisfied at all" and 5 denotes "very satisfied". Evaluation associated with the related services includes user satisfaction with "service delivery", "repairs and servicing", "professional services", and "follow-up". The same 5-point satisfaction scale as above is used to rate these items. A checklist with the 12 satisfaction items is presented on the QUEST 2.0 form, and the user is asked to select the three most important items. The psychometric properties of QUEST 2.0 have been validated in several studies¹¹⁻¹⁴.

Data from both questionnaires were analyzed by using descriptive statistics. This study was approved by the Institutional Review Board of Soonchunhyang University. All participants provided informed consent before participating.

RESULTS

A total of 142 (72%) users out of 448 originally queried returned the questionnaires. Included in the data analysis are 138 users with several types of assistive devices. In all, 75 men and 63 women participated (Table 1).

Participants mainly used assistive devices for mobility or seating and positioning. User satisfaction levels for both assistive device (AD) and assistive device service (ADS) were high, as illustrated in Table 2. A majority of users marked the ratings "more or less satisfied" or "quite satisfied" for most items. Satisfaction ratings for "weight" and "repairs & services" were the lowest for the AD and ADS dimensions, respectively. "Ease of use" and "durability" in the AD dimension and "service delivery" in the ADS were deemed the three most important factors.

Participants used their assistive devices for "personal activities of daily living" (n = 79/209, 37.80%), "mobility" (n = 72/209, 34.45%), "education" (n = 12/209, 5.74%), "cultural, leisure, and sports activity" (n = 8/209, 3.83%), "communication" (n = 5/209, 2.39%), "religious and spiri-

Table 1. Demographic data of responding users of assistive devices (n=138)

Gender n (%)	Male	75 (54.3)
	Female	63 (45.7)
Age n (%)	Under ten years	28 (20.3)
	10 – 19 years	31 (22.5)
	20 – 29 years	25 (18.1)
	30 – 39 years	16 (11.6)
	40 – 49 years	11 (8.0)
	50 – 59 years	16 (11.6)
	60 – 69 years	8 (5.8)
Disability severity n (%)	Over 70 years	3 (2.2)
	First	119 (86.2)
	Second	13 (9.4)
	Third	6 (4.4)
Residence n (%)	Other	67 (48.6)
	Apartment	67 (48.6)
	Single family	15 (10.9)
	Multi-family	20 (14.5)
Highest level of education n (%)	Other	36 (26.1)
	None	23 (16.7)
	Elementary school	23 (16.7)
	Middle school	34 (24.6)
	High school	34 (24.6)
	College	19 (13.8)
	Graduate school	5 (3.6)

tual activities" (n = 5/239, 2.09%), and "work" (n = 4/209, 1.91%). Users expressed difficulty engaging in activities (n = 85/135, 62.96%). The most desired activities to engage in and most difficult to perform were "activities of daily living" followed by "social participation" (Table 3).

DISCUSSION

Assistive devices improve the ability of the user to perform activities of daily living^{15, 16}. They also decrease users' dependence on human assistance, especially assistance from informal caregivers, that is, friends, family, and community members who provide unpaid assistance to ill or disabled recipients¹⁷.

A hallmark of evidence-based practice is a commitment to addressing consumers' goals⁵. Evaluation of success must be based on evidence obtained from the user's point of view. For the AT field, this entails an emphasis on outcomes research that speaks to the contributions that devices and related services make to users' daily lives⁵.

This is the first experimental study to examine the impact of assistive technology-focused interventions on users' satisfaction with and the usefulness of assistive devices in South Korea. The results from K-QUEST 2.0 showed that the overall satisfaction for both AD and ADS was high. The level of satisfaction with "weight" and "adjustments" in the AD dimension and "repair & services" in the ADS dimension were relatively lower than with other categories. Users

Table 2. Item by item analysis of aspects affecting user satisfaction and their relative importance to users of assistive devices

Items	Satisfaction*(N=138)					Most important items*,**	
	Not satisfied at all	Not very satisfied	More or less satisfied	Quite Satisfied	Very satisfied		
Assistive device	Dimensions	2 (1.4)	20 (14.5)	39 (28.3)	42 (30.4)	35 (25.4)	35 (25.7)
	Weight	13 (9.4)	26 (18.8)	40 (29.0)	36 (26.1)	23 (16.7)	23 (16.7)
	Adjustment	9 (6.5)	24 (17.4)	35 (25.4)	40 (29.0)	30 (21.7)	30 (21.7)
	Safety	2 (1.4)	17 (12.3)	40 (29.0)	44 (31.9)	35 (25.4)	35 (25.4)
	Durability	6 (4.3)	15 (10.9)	34 (24.6)	43 (31.2)	40 (29.0)	40 (29.0)
	Ease of use	5 (3.6)	12 (8.7)	37 (26.8)	41 (29.7)	43 (31.2)	43 (31.2)
	Comport	5 (3.6)	16 (11.6)	42 (30.4)	47 (34.1)	28 (20.3)	28 (21.3)
Assistive device service	Effectiveness	3 (2.2)	5 (3.6)	40 (29.0)	51 (37.0)	37 (26.8)	37 (26.8)
	Service delivery	12 (8.7)	18 (13.0)	36 (26.1)	31 (22.5)	40 (29.0)	40 (29.0)
	Repairs & services	14 (10.1)	33 (23.9)	35 (25.4)	26 (18.8)	30 (21.7)	30 (21.7)
	Professional Service	7 (5.1)	26 (18.8)	41 (29.7)	28 (20.3)	36 (26.1)	36 (26.1)
	Follow up	15 (10.9)	22 (15.9)	46 (33.3)	27 (19.6)	28 (20.3)	28 (20.3)

* n (%); ** multiple responses

Table 3. Comparison of user ratings of activity difficulty and desirability

	Activity found difficult to engage in*,**	Activity desirable to engage in*,**
Activities of daily livings	96 (28.1)	134 (30.2)
Rest and sleep	19 (5.6)	16 (3.6)
Education	45 (13.2)	57 (12.9)
Work	37 (10.8)	39 (8.8)
Play	43 (12.6)	69 (15.6)
Leisure	35 (10.2)	58 (13.1)
Social participation	67 (19.6)	70 (15.8)

* n (%); ** multiple responses

most often considered “ease of use” and “durability” in the AD dimension and “service delivery” in the ADS dimension to be the most important items. Therefore, health-care providers need to have information about various types of assistive devices to enable them to educate users on how to utilize and adapt their prescribed devices, and need to provide follow-up service.

Overall, K-QUEST 2.0 showed that satisfaction with ADS was lower than with the AD. The two device centers in Seoul, South Korea, began to prescribe assistive devices a few years ago. Similar results may be found in other centers that have opened recently outside of Seoul. One plausible explanation for obtaining lower satisfaction with ADS is that user-centered assistive device delivery systems have not been established. Professional services and support should be based on individual needs and promote community participation¹⁸). Only a few suppliers provide assistive devices for many consumers without full consideration of needs, body fit, and follow-up service¹⁹). Assistive device suppliers and centers therefore need to develop effective assistive device delivery models for users.

Determining the outcomes of assistive device interven-

tions designed to improve participation of users provides critical feedback to clients, therapists, and agencies that provide funding for equipment²⁰). As social participation reflects the fulfillment of personal roles²¹), appraisal of participation outcomes for each individual is critical²²). Most participants use assistive devices to improve their “personal activities of daily living” and “mobility”. Nevertheless, they express difficulty in engaging in both “activities of daily living” and “social participation” while declaring a desire to perform these activities. These results indicate that continuous social and economic support derived from the users’ points of view must be provided to secure basic activities and social engagement.

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