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ORIGINAL RESEARCH

Translation and validation of the assistive technology device predisposition assessment in Greek in order to assess satisfaction with use of the selected assistive device

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ABSTRACT

Purpose: To examine the Assistive Technology Device Predisposition Assessment scale and provide evidence of validity and reliability of the Greek version. **Methods**: We translated and adapted the original instrument in Greek according to the most well-known guidelines recommendations. Field test studies were conducted in a rehabilitation hospital to validate the appropriateness of the final results. Ratings of the different items were statistically analyzed. We recruited 115 subjects who were administered the Form E of the original questionnaire. **Results**: The experimental analysis conducted revealed a three subscales structure: (i) Adaptability, (ii) Fit to Use, and (iii) Socializing. According to the results of our study the three subscales measure different constructs. Reliability measures (ICC = 0.981, Pearson's correlation = 0.963, Cronbach's $\alpha = 0.701$) yielded high values. Test-retest outcome showed great stability. **Conclusions**: This is the first study, at least to the knowledge of the authors, which focuses merely on measuring the satisfaction of the users from the used assistive device, while exploring the Assistive Technology Device Predisposition Assessment - Device Form in such depth. According to the results, it is a stable, valid and reliable instrument and applicable to the Greek population. Thus, it can be used to measure the satisfaction of patients with assistive devices.

➤ IMPLICATIONS FOR REHABILITATION

- The paper explores the cultural adaptability and applicability of ATD PA – Device Form.
- ATD PA – Device Form can be used to assess user satisfaction by the selected assistive device.
- ATD PA – Device Form is a valid and reliable instrument in measuring users' satisfaction in Greek reality.

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Introduction

Assistive Technology (AT) is defined by the (Tech Act, 1988) as "*any item piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities*".[1] Even though AT will not make the disability go away, it can, however, lessen the impact and increase independence. The selection of the appropriate AT is considered to be crucial,[2–5] but the problems faced are numerous (i.e. the cost of the assistive device, the required training, the service delivery, environmental factors, etc.).[6–8] After due examination, several studies have shown that different aspects seem to influence the decision in selecting the appropriate AT. For example, Federici and Borsci found that the user's choice is based both on the experience one has had while using or testing the AT, as well as on the perceived quality of the rehabilitation center or hospital providing the support and follow-up.[9] Another crucial issue that should be considered is why AT is abandoned. A thorough survey in Italy investigating the reasons why hearing and mobility devices are abandoned, has concluded upon the following: (i) the selected AT did not meet the user's needs and expectations, which is closely related to user satisfaction, and (ii) the AT delivery system needs to have a more patient-oriented approach.[10] Moreover, Federici et al. focuses on the end user's personal factors, as well as on his/her experience, as key to the appropriate AT.[11] According to the findings of this study, the absence of standard AT service provision, along with the need for a multidisciplinary approach on selecting an AT device, seems directly related to the successful outcome and AT solution.

As technology advances rapidly, nowadays, the problem has been shifted towards the improvement and measurement of each individual's quality of life even when facing disability conditions. AT can be effectively used as a means of improving the independent lifestyle of an individual, who is facing physical limitations. Thus, AT is closely related to the quality of life.[12–15]

Measuring user satisfaction helps to measure the overall quality of a product or service. Tracking user satisfaction during the development phase can help developers and researchers in ensuring that the changes made really improve the product/service for users. In customer relationship management, user (or customer) satisfaction is a measure of the degree to which a product or service meet the user's expectations. Consumer satisfaction is a basic concept in many domains (business, research, etc.). The concept of

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consumer satisfaction maintains a key position in marketing from the 1950's till today, with ongoing interest and importance. The realization of this importance has led to ongoing research on consumer satisfaction.[16–19] According to de Sá,[20] we can distinguish two different types of user satisfaction: the process-oriented approach (which equals to the difference between expected satisfaction and achieved satisfaction), and the outcome-oriented approach (as an attribute extracted from a product or service after its consumption). Sometimes, the term user experience is being used instead of user satisfaction. Even though these terms are often used interchangeably, user experience may have a slightly different meaning. According to ISO FDIS 9241 user experience is defined as *"a person's perceptions and responses that result from the use and/or anticipated use of a product, system or service."*, while usability is *"the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use."*[21,22] Following the above definitions, usability and user experience can both be measured during or after the use of a system/product as well. However, none of them take into account the aspect of time. To this end, usability is not concerned with learnability and user experience is not examined by means that user experience evolves from expectation, through actual interaction, to a total experience that includes reflection on the experience.[23] Trying to distinguish between the two terms, we could say that user experience is related to the user's emotions, perceptions, as well as physical and psychological responses occurring before, during and after use. On the other hand, usability is focused on the outcomes of interaction (i.e. the observed effectiveness and efficiency). However, in some cases user experience is considered as an "umbrella term" for all the user's perceptions and responses, whether measured subjectively or objectively.

The evaluation of any technological device requires the assessment of the product/service. In the AT outcome model suggested by Weiss-Lambrou, user satisfaction was also included as one of the important outcome measures for prescribing AT for people with disabilities.[24] Measuring the user's perception and satisfaction from the use of the selected assistive device is therefore mandatory for supporting any valid outcome or for further improving or designing new rehabilitation products.[25–29] One of the most well-known and widely used instruments targeting on evaluating overall user experience with assistive technology is the Assistive Technology Device Predisposition Assessment (ATD PA).[30] The ATD PA-Device Form is a 12-item questionnaire that examines consumer's subjective satisfaction - with achievements in a variety of functional areas - when using assistive technology. It is the last part of the 66-itemed ATD PA, a questionnaire based on the Matching Person and Technology (MPT) Model. The MPT process is validated for use by persons with disabilities (aged 15 and above) and is applicable across a variety of users and settings. The measures have proven to have good reliability and validity and, therefore have been used in research studies within the US, Canada, and Europe.[31–34] A complete list of validation studies regarding the ATD PA instrument and the MPT model can be found at the Institute of Matching Person and Technology.[35] The questionnaire rates the AT-person match and the anticipated support in using the device, i.e. the anticipated technological benefit. According to the MPT Institute, the ATD PA Device Form is compatible with the World Health Organizations' ICF (International Classification of Functioning, Disability and Health) and, thus, its measures may be considered relevant for use in assessing ICF domains as impacted by technology use.

Another valid and widely used outcome measure already designed to measure patient satisfaction with their assistive technology device is the Quebec User Evaluation of Satisfaction with assistive Technology (QUEST).[36] The instrument was designed based on the matching person and technology model.[37] QUEST 2.0 was initially developed in Canada, in English and French, and then translated into several languages.[38–43] There are some basic differences between the QUEST 2.0 and the ATD PA. QUEST 2.0 is consisted of an 8-item device domain and a 4-item service domain, and evaluates the user's satisfaction with the device and the vendor respectively. However, its items are not mapped in the ICF as, for example, the ATDPA. The ATD PA, on the other hand, has a more holistic approach. It examines consumer's subjective satisfaction with achievements in a variety of functional areas (i.e. functioning, temperament, lifestyle, and views of a particular assistive device) and is divided into two domains. The first domain is further divided into four sections (Section A asks respondents to rate their current capabilities in nine functional areas; Sections B and C inquire about quality of life; Section D contains statements about temperament and psychosocial support. Patients are asked to check what applies to them). The second domain of the ATD PA is designed to be administered into each assistive technology device, used across several time points and measures the expected benefit from the device.

The present study addresses the ATD PA Device Form. It has 12 items asking respondents to rate their predisposition to using the AT under consideration. As reported in [44] consumers' perspective on the used AT is a major key point for not being discarded. A Greek version has yet to be developed in order to explore user satisfaction and its application among the Greek population. Hence, the purpose of the study is to translate and validate the specific instrument in Greek.

Method

The study was divided into two separate phases: (i) translation phase, and (ii) field test of the Greek ATD PA (GR-ATD PA) in order to examine its performance and its application throughout the Greek population.

Phase 1: Translation

The translation phase followed the process depicted in Figure 1, according to Vallerand methodology [45] and the Guillemin et al.'s guidelines.[46]

According to Figure 1, two different teams where formed in order to translate the original instrument. Each team included one translator and two bilingual professionals working in the rehabilitation sector. The translations produced in step 1 where then passed on to two native-speaker experts (one occupational therapist and one physical therapist) who, independently translated the two versions backwards. In the next step, a committee (one translator, the author of the Greek instrument and one linguist) reviewed the outcomes of the previous steps and concluded on the first version of the GR-ATD PA. Their role was to examine the obtained results so that the localized version reproduces the meaning of the original instrument with absolute precision, while in accordance to the author's original purpose. In this way, the pilot version of the Greek ATD PA was prepared. The layout was the same as the original one. In the next step, six bilingual persons evaluated the English and Greek version of the ATD PA. In the case, a phrase or word led to any misunderstanding in relation to the original questionnaire, a new wording would be used for the specific items. The same procedure was followed until no points of misunderstanding existed and until the committee was satisfied that the

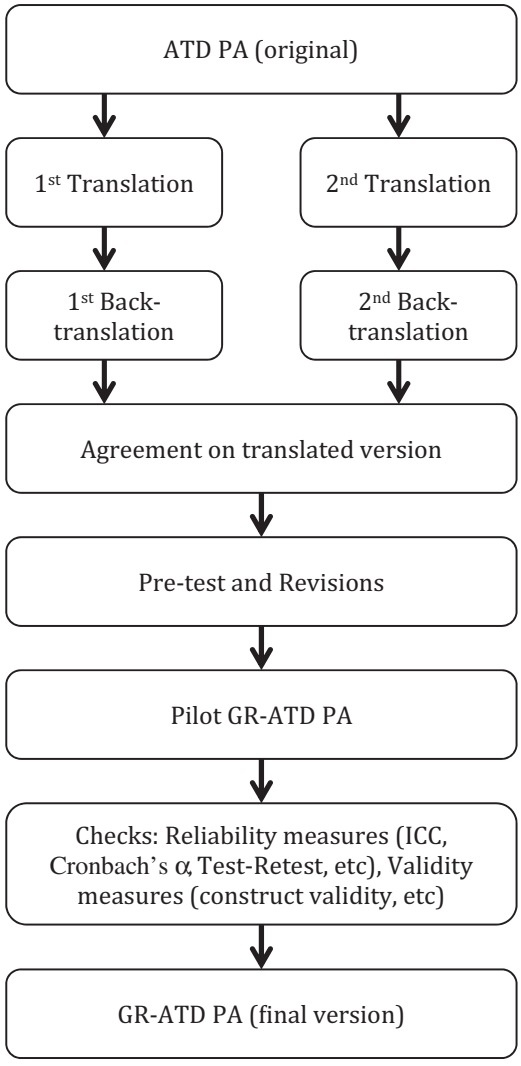

Figure 1. Translation procedures.

two versions evaluate the same things item by item, and therefore, no further linguistic adaptations were required.

Phase 2: Field test and evaluation of the GR-ATD PA

Participants

The study took place in a private rehabilitation center in Greece from September 2014 till February 2015. Individuals facing different health problems and disabilities were recruited for the study. They were invited to participate in the study. Once agreed upon, a consent form was signed explaining the purpose of the study, their role and the obligations of the rehabilitation center. Almost all participants were attending a rehabilitation program at the center's outpatient clinic at the time, or were being hospitalized. At first, the medical files from the patient's rehabilitation center were examined so as to exclude those who would not fit the study (i.e. those unable to give informed consent and/or provide reliable responses, while completing the provided questionnaire). Prior to communicating separately with each subject, a team comprised of an occupational therapist, a physical therapist and a physiatrist concluded on the criteria of the study. Each subject participating in the Mini Mental Stale Examination (MMSE) [47] should rate a score equal to or greater than 17, as well as being a user of a specific assistive device (in our case, most users were already using a mobility assistive device) for at least one month. The subjects were of both sexes, aged from 16 to 93 years old.

The study was approved by the Bioethics and Deontology Committee of the Technological Educational Institute of Athens. Permission was granted to the authors to use the ATD PA for the present study by the authors. After approaching 223 patients, 115 volunteered to participate in the study. Upon agreement, the subjects were administered the translated scale in two intervals. The second was conducted a week after the initial assessment. Apart from their scores in the performed examinations (MMSE and FIM-Functional Independence Measure) and their individual characteristics (i.e. the assistive technology used, the frequency of use, pathology, etc.), their demographic data were also recorded. All patients were invited to participate in the study at the outpatient department of the clinic. Information was provided about the study upon visit. Once agreed upon, an informed consent was signed. In addition, questionnaires were completed inside a private clinic room, within the presence of an experienced occupational therapist. All 115 participants completed both administrations. According to [48] the sample size was sufficient for the purpose of the study.

The ATD PA-Device Form is a 12-item self-assessment questionnaire, where respondents report their satisfaction from using the assistive device. The tool in question is patient-reported. The Greek version of the ATD PA was administered to the subjects, who then completed the available fields according to their knowledge and personal opinion. The researcher simply observed the whole process without simplifying or explaining a word, or even interfering with the concept of each question/item.

Statistical analysis

The Statistical Package of Social Sciences (IBM SPSS version 19, Armonk, NY) was used to conduct statistical analysis. The duration of the study was seven months (i.e. from July 2014 until January 2015). The Kolmogorov–Smirnov test was applied to test the assumption for normal distribution of the collected data. The GR-ATD PA was measured against its reliability and validity. Reliability was evaluated by assessing the instrument's internal consistency, test-retest reliability and repeatability. Internal consistency evaluates how well different questions (items) testing the latent structure of the instrument give consistent results. Cronbach's alpha coefficient assessed the internal consistency, using the data obtained from the initial assessment. A threshold value of 0.70 was chosen to indicate sufficient reliability for research purposes. As an additional evaluation test, Cronbach's α "if item deleted" was used. The test-retest reliability of the instrument is defined as the degree to which participants maintain their opinion in the repeated measurements of the questionnaire. Intra-class correlation coefficient (ICC) was applied to evaluate test-retest reliability, with a 95% confidence interval (CI). ICC, the most suitable statistical test for reliability assessment, ranges from 0 to 1, with 1 indicating perfect reliability. Cronbach's α and ICC correlations were characterized as follows: 0.00–0.25 = little, if any, correlation; 0.26–0.49 = low; 0.50–0.69 = moderate; 0.70–0.89 = high; and 0.90–1.00 = excellent.[49] Finally, repeatability is defined as the stability of the participants' responses over time (i.e. the ability to furnish consistent results, whenever the instrument is used). Repeatability is determined by calculating Pearson's product moment correlation coefficient (Pearson's r) between the initial total scores of the questionnaire and the reassessment ones. The Pearson correlation coefficient values were specified as follows: 0.00–0.19 = very weak correlation; 0.20–0.39 = weak correlation;

0.40–0.69 = moderate correlation; 0.70–0.89 = strong correlation; and 0.90–1.00 = very strong correlation.

By assessing the scale/subscale construct validity, the GR-ATD PA validity was evaluated. The construct validity refers to the degree to which an instrument measures the construct under investigation. In order to test whether all the items of each subscale were related to the same construct, the item-total correlations within each GR-ATD PA subscale were compared. Discriminant validity (one of the two construct validity types) tests whether concepts or measurements supposedly unrelated are, in fact, unrelated. Successful evaluation of discriminant validity shows that a test of a concept is not highly correlated with other tests designed to measure theoretically different concepts. In our study, a discriminant validity test was performed between the different GR-ATD PA subscales.

Results

The participants' characteristics are presented in Table 1. The patient mean age was 62.45 years (SD 19.29), and 55.7% (64/115) were women. The mean FIM and MMSE scores were 104.74 (SD 65.06) and 25.41 (SD 4.01), respectively. An average time for completing the questionnaire was around 8.5 minutes. A range of assistive technologies was evaluated, such as: a cane, a walker, a rollator with brakes, a scooter, a wheelchair, an orthosis, and a hearing assistive technology (Table 1).

Reliability

According to the conducted analysis, overall Cronbach's α was 0.701 (ranging from 0.605 to 0.701, individual items not included), indicating sufficient consistency (Table 2). Various reliability measures are summarized in Table 2. ICC (=0.981) was excellent, indicating that GR-ATD PA total scores were highly consistent between the two occasions (initial assessment and reassessment), whereas ICC for each item (ranging from 0.898 to 0.979) was also highly consistent between the two occasions and is presented in Table 3. The paired-samples *t*-test (between the initial assessment and the reassessment) indicated no significant statistical difference between initial assessment and reassessment. Pearson correlation coefficient was 0.963, thereby, indicating stability in the participants' responses over time.

Validity

Examination of item construct validity showed that all item intercorrelations of all item pairings were strong or moderate. Pearson's *r*, ranged from 0.537 to 0.783 for the first subscale "Adaptability" and from 0.691 to 0.801 for the second "Fit to Use", whereas from 0.498 to 0.767 for the third subscale "Socializing". This would provide evidence that all subscale items are related to the same construct (Table 4).

Examination of discriminant validity is presented in Table 5. Correlation between the three subscales indicates that discriminant validity exists between the subscale measuring "Adaptability" and the subscales measuring "Fit to use" and "Socializing", respectively. However, discriminant validity also exists between the subscale measuring "Fit to use" and the subscale measuring "Socializing". All three subscales measure, theoretically, different constructs.

Discussion

The objective of this study was to evaluate the validity, reliability and applicability of the ATD PA instrument among the Greek population. The target population was composed of heterogeneous groups. The diversity of the subjects, who participated in the study, ensures that the instrument was used by patients of various diseases, ages, and disabilities, also using various assistive devices. This can be considered as an asset for generalizing the outcomes of our study. The population of our study was carefully selected, so as to fill the instrument, on their own, or with the help of a therapist. All subjects had no cognitive impairment. They scored with 17 or higher in the MMSE scale.

The translation of the questionnaire was very demanding. There may have been cases where a word in English might have

Table 1. Characteristics of the participants.

Variables	Mean	SD	*n*
1. Age	62.45	19.29	115
2. FIM Score	104.74	65.06	115
3. MMSE Score	25.41	4.01	115
	Option	*n*	%
4. Sex:			
	Men	51	44.35
	Women	64	55.65
5. Type of assistive device used:			
	Cane	37	32.17
	Walker	31	26.96
	Rollator	2	1.74
	Scooter	3	2.61
	Wheelchair	28	24.35
	Orthosis	11	9.57
	Prostheses	1	0.87
	Hearing aid device	2	1.74
6. Education level:			
	No education	16	13.9
	Primary	34	29.6
	Secondary	52	45.2
	Tertiary	13	11.3
7. Diagnosis:			
	Stroke	23	20.00%
	Hip Fracture	24	20.87%
	Gait disorder	1	0.87%
	Guillain Barre	2	1.74%
	Total knee replacement	7	6.09%
	Femoral fracture	2	1.74%
	Parencephalitis	1	0.87%
	Myopathy	4	3.48%
	Traumatic brain injury	6	5.22%
	Meningitis	1	0.87%
	Multiple Sclerosis	6	5.22%
	Motor neuron diseases	6	5.22%
	Reye syndrome	1	0.87%
	Cerebral palsy	1	0.87%
	Ageing	6	5.22%
	Obesity	1	0.87%
	Anterior cruciate ligament rupture	2	1.74%
	Muscular dystrophy	1	0.87%
	Lung cancer - lower limbs weakness	1	0.87%
	CA of central nervous system	1	0.87%
	Lumbar spine fusion, lower limbs fracture	1	0.87%
	Multiple system atrophy	1	0.87%
	Osteoporosis	1	0.87%
	Quadriplegia	5	4.35%
	Burn	1	0.87%
	Cervical spine syndrome	1	0.87%
	Meningioma	1	0.87%
	Knee fracture	1	0.87%
	Bone edema	1	0.87%
8. Frequency of using the assistive device			
	Not often	11	9.50%
	Normal	16	13.90%
	Often	18	15.70%
	Very often	70	60.90%

Table 2. Measures of reliability of the GR-ATD PA.

Characteristics	Measure/test	Value	Significance (*p* value)
Internal consistency	Cronbach's α	0.701	0.000
Repeatability	Pearson's r	0.963	0.000
Test–retest reliability at initial assessment	ICC (95% CI)	0.981(0.973–0.987)	0.000
Test–retest reliability at reassessment	Paired-samples t-test		>0.05

Table 3. Item analysis of the GR-ATD PA.

Item	Mean (SD)	Cronbach's α if item deleted	ICC for each item
Item 1 (A): This device will help me to achieve my goals (including the primary AT goals written above).	4.09(1.279)	0.616	0.941
Item 2 (B): This device will benefit me and improve my quality of life.	4.13(1.285)	0.645	0.965
Item 3 (C): I am confident I know how to use this device and its various features.	4.71(0.893)	0.683	0.974
Item 4 (D): I will feel more secure (safe, sure of myself) when using this device.	4.64(0.907)	0.657	0.928
Item 5 (E): This device will fit well with my accustomed routine.	4.12(1.276)	0.605	0.906
Item 6 (F): I have the capabilities and stamina to use this device without discomfort, stress and fatigue.	4.27(1.035)	0.634	0.898
Item 7 (G): The supports, assistance and accommodations exist for successful use of this device.	3.86(1.401)	0.645	0.968
Item 8 (H): This device will physically fit in all desired environments (car, living room, etc.).	4.66(0.739)	0.667	0.957
Item 9 (I): I will feel comfortable (and *not* self-conscious) using this device around family.	4.73(0.813)	0.658	0.979
Item 10 (J): I will feel comfortable (and *not* self-conscious) using this device around friends.	4.50(1.087)	0.625	0.984
Item 11 (K): I will feel comfortable (and *not* self-conscious) using this device at school or work.	2.50(2.334)	0.701	0.977
Item 12 (L): I will feel comfortable (and *not* self-conscious) using this device around the community.	4.41(1.139)	0.629	0.928

Table 4. Construct validity of the GR-ATD PA (item-total score correlations).

	Pearson's *r*	Frequency of being selected as an importance item
Subscale "adaptability"		
Item 1 (A): This device will help me to achieve my goals (including the primary AT goals written above).	0.783	27
Item 2 (B): This device will benefit me and improve my quality of life.	0.598	40
Item 4 (D): I will feel more secure (safe, sure of myself) when using this device.	0.546	43
Item 5 (E): This device will fit well with my accustomed routine.	0.697	16
Item 6 (F): I have the capabilities and stamina to use this device without discomfort, stress and fatigue.	0.537	21
Item 7 (G): The supports, assistance and accommodations exist for successful use of this device.	0.751	12
Subscale "Fit to use"		
Item 3 (C): I am confident I know how to use this device and its various features.	0.801	23
Item 8 (H): This device will physically fit in all desired environments (car, living room, etc.).	0.691	10
Subscale "Socializing"		
Item 9 (I): I will feel comfortable (and *not* self-conscious) using this device around family.	0.498	16
Item 10 (J): I will feel comfortable (and *not* self-conscious) using this device around friends.	0.727	6
Item 11 (K): I will feel comfortable (and *not* self-conscious) using this device at school or work.	0.767	0
Item 12 (L): I will feel comfortable (and *not* self-conscious) using this device around the community.	0.735	51

Table 5. Discriminant validity of the GR-ATD PA (Pearson's *r* between subscales).

	Subscale "Adaptability"	Subscale "Fit to Use"	Subscale "Socializing"
Subscale "Adaptability"	1	0.087	0.191
Subscale "Fit to Use"	0.087	1	0.080
Subscale "Socializing"	0.191	0.080	1

an equivalent word in Greek; however, the two words may cover different areas of meaning, which may overlap, without being synonymous. Where interpretation of the meaning of these words is regarded, the effect of context may also differ from one language to other.[50]

According to the results of our study, the GR-ATD PA is a valid assessment tool for measuring satisfaction with assistive technology. However, some issues are not covered by the specific instrument. For example, the maintenance and after-sales support are not examined using this part of the questionnaire. Details regarding customization of the assistive device in use, training, continued support services, etc., are also not covered.

Another significant issue raised refers to the number of subscales. The multidimensionality of the instrument leads to three subscale structures: (i) Adaptability, (ii) Fit to Use, and (iii) Socializing. Items 1, 2, 4, 5, 6 and 7 constitute the "Adaptability" subscale, items 3 and 8 represent the "Fit to Use" subscale, and items 9, 10, 11 and 12 the "Socializing" one. The results presented in Table 5 reveals that the three subscales measure different constructs, since Pearson's r between subscales is relevant low. There is no prior study on this instrument to our knowledge (the ATD PA Device Form, for determining how well the devices in use match with the desired outcome). Moreover, this is the first Greek version of the ATD PA questionnaire.

The results of the statistical analysis indicated that the scale is a valid and reliable tool. Cronbach's α and ICC values were found excellent, indicating that the responses in our sample were internally consistent and stable across time. Moreover, Pearson's item coefficient investigation confirms the above-mentioned three subscale structure. Specifically, it confirms the utmost relevance of the subscale items, while satisfying simultaneously the requirement for discrimination of the produced subscales.

According to our study, the following factors were rated the highest in terms of satisfaction by the end-users: "feel comfortable using the device in the community", "feel secure when using the device", and "feel the device will benefit and improve my quality

of life''. This reveals the subjective opinions of the Greek population in relation to what is considered important in an assistive device.

Although there are several studies evaluating the psychometric properties of ATD PA,[27,33,51–53] there is no study, at least to the authors' knowledge, focusing on measuring the user's satisfaction with the assistive device in use. For example, Graves et al. tried to determine the structure of the three-scale underlying dimensions of the ATD PA, i.e. physical abilities, subjective well-being and personal factors.[54] The ''quality of life'' subscale validity of the ATD PA was evaluated in several studies. In some cases, it was related to the end users' satisfaction with their assistive technology device. Furthermore, the assistance of the ATD PA in determining the reasons for abandoning or not using the AT device was also examined. This also applies to the opinions voiced by the consumers and their therapists. In order to examine the factors influencing continued or discontinued use of mobility devices (e.g. canes, walkers, wheelchairs and crutches), other studies [55,56] researched the impact of consumer expectation and preference on predisposition to use assistive technology and their subjective need for an assistive device. According to researches,[57] the ATD PA focus well on the pertinent factors related to individuals' decisions to use or not use an assistive technology. The current work researches, for the first time, the validity and reliability of ATD PA-Device Form in Greece. Moreover, the authors could not find any prior study exploring the ATD PA-Device Form in such depth (i.e. subscales, etc.).

In general, the ATD PA (Person and Device Forms) evaluates a wide range of features. Besides personal and psychosocial characteristics, the Person Form also assesses functional capabilities and the quality of life or subjective well-being, according to the ICF domains of Activity and Participation. The Device Form, examined in our research, rates predisposition and the user's satisfaction with assistive technology and addresses expectation of benefit and the follow up from realization of benefit. Thus, the ATD PA has a holistic approach. Comparing it with other valid and reliable instruments, such as QUEST 2.0, it is supported that the ATD PA evaluates many more aspects than QUEST 2.0. The latter only measures the satisfaction derived from using the device and the service provided by the manufacturer/vendor. Of course, in our case, the ATD PA Device Form compared to the QUEST 2.0, lacks the capacity to measure several issues, like after-sales and service support, training needs, etc.

The current study confirms the applicability of the instrument in the Greek population, as well as, its potential to be adapted in different cultures and languages. Our intention is to study the ATD PA further in comparison to other relevant scales. According to the results, the produced GR-ATD PA can be used to measure the satisfaction of end users with assistive technology, particularly with almost any kind of mobility aid devices.

Conclusion

The study showed that the ATD PA is a valid and reliable tool and it can, therefore, be used to measure the satisfaction of people using assistive devices. Using instruments like the ATD PA can prove to be a really valuable tool in the hands of policy makers and researchers in the field of AT. In order to have both more functional and participatory users of AT, it is crucial there is a deep understanding of the real needs of the end users, as well as a perfect match between user and AT. The benefits of such a match are significant (e.g. less health expenditure for both patients and healthcare system, increased feeling of satisfaction, building a society for all, better rehabilitation results etc.). Thus, the need for professionals using valid and reliable instruments is of extreme importance for improving their services and the outcomes for the end users even more.

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Compliance with ethical standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Inform consent was obtained from all individual participants included in the study.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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