

Outcomes or Impact? When the difficult to measure results appears: The experience in Spain.

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ABSTRACT

Interventions based on the use of Assistive Technology (AT) are a common strategy to promote improved participation and quality of life. Access to appropriate AT is considered a fundamental human right. However, the potential advantages of using AT are limited by a wide variety of factors that must be taken into account when prescribing the use of a particular product. That is why research on outcome measurement is absolutely necessary, being essential to carry out an adequate assessment of the user's needs with reliable measurement tools to improve decision making for the prescription and adaptations of AT.

In Spain, the research related to outcome measures in AT is deficient, because there are not many specific measurement instruments that are validated in the Spanish population. A review of the state of the art about the application of outcome measures in Spain is presented and compared with other European countries. The main challenge is to design and implement a suitable proposal to improve the approach and quality of the AT system. That new approach has to get the consideration from all stakeholders (policymakers, health managers, health professionals and the community) to integrate the measurement of impact derived by the use of AT on the policy goals in the health and social system of the country.

INTRODUCTION

Assistive technology (AT) is a wide and comprehensive group of products and devices designed to increase independence and contribute to the life quality of people with disabilities. These assistive devices constitute important supports that help in doing activities of daily living, being environmental factors facilitators to improve the functional performance of a person (activity & participation).

Literature reviews show that there are significant unmet needs for physical rehabilitation services, including access to appropriate AT across all regions of the world [1]. Otherwise, despite its great contribution, one AT doesn't always meet the specific characteristics of the final user [2].

Nevertheless, the World Health Organization (WHO) also estimates that only 1 in 10 people in need currently have access to assistive technology, owing to a lack of financing, availability, awareness, trained personnel and high costs [2]. An important part of the efforts towards universal coverage for assistive devices involves building national research capacity to generate a strong evidence base both for the real demand for AT in the communities and to prepare for the necessary investments in infrastructure and human resources [1]. Understanding the impact of AT on people's well-being, quality of life, inclusion, participation, empowerment, social and economic status is key to inform policy development, guide public investments and mobilize resources [1,4–6].

In Spain, the situation is complicated not only for the lack of equal access to affordable Assistive Technology but also the difficulty to get qualitative and quantitative data about the results derived from the AT service and intervention. In fact, there is a great lack and deficiency in the implementation of tools that allow obtaining quantitative data to justify the efficacy and effectiveness of the AT system in health services [3,4]. The application of the tools of outcome measures was published only in three research projects [8–10]

The purpose of this communication is to present the global perspective of the impact and outcome measure in Spain, a Mediterranean country where the use of AT is relegated to primarily the prescription of mobility devices. Also, the authors present their research work in the field of outcome measures to reflect on its usefulness in order to improve the provision of AT.

RESULTS

The prescription of assistive technology in Spain isn't guided by a protocol or guidelines, and in the majority of regions, the provision of AT is circumscribed to devices for mobility. In fact, the government (through Public Health System) only funds those products for mobility, so people don't have to pay for them. Nevertheless, they

have to buy and pay for themselves the other devices that can need in other activities (for instance, adjustable beds, hoist or bath chairs). The high price of AT and the lack of expertise and knowledge leads to people don't get the assistive device that they could use to promote their independence [5,6].

On the other hand, rehabilitation professionals in public health, during the prescription of AT, don't consider the psychosocial characteristics of the person, nor his/her activities in lifestyle neither environmental factors nor contexts. They are limited to the consideration of the anthropometric characteristics and the economic aspects so that the person can receive wheelchair funding by the health system. That situation leads to the possibility of the early abandonment or non-use of AT, with the corresponding loss of resources, and the reduction of opportunities to participation and performance activities [7].

The expertise and use of outcome measures and models in Spain are really low. Only three research on that topic has been documented and the authors, also researchers in these, are presenting this communication [8–10]. It is known that few occupational therapists are using the tool Psychosocial Impact of Assistive Device Scale (PIADS) in their clinical practice, but their application is not standardized or protocolized, and of course, not linked to research projects. So, that practice conditions that no data in this field are available to compare results or to get evidence about the outcomes of AT in the lives of people with disabilities.

The lack of information between professionals and users about the available AT and the resources to get one of the needed devices is one of the causes of this low knowledge about the possibilities of outcome measures [5].

In fact, in Spain, we have only two adapted and validated tools for outcome measures: The Psychosocial Impact of Assistive Scale [11] and the Matching Person and Technology [12]. In Table 1 is showed the synthesized data about research done with these instruments in Spain [9,10,13].

Table 1. Main data of research in outcome measures in Spain

Study	Year	Region	Sample	Outcome Measures	
				Instruments	Main results
Psychosocial impact of communication assistive technology in people with hearing impairment and deaf people[9]	2016	All territory in Spain	291 people with hearing impairment / deaf people	PIADS	<p>A positive psychosocial impact is associated with the use of support products for communication.</p> <p>A greater perceived impact was verified in the group of cochlear implant users followed by hearing aids and finally, users of video intermediation systems.</p> <p>A lower psychosocial impact was found for those participants who abandoned the support product one year after the evaluation.</p>
				Survey of Technology Use (SOTU) of the Matching Person and Technology Model	<p>The predisposition of participants to use communication assistive technology was high.</p> <p>The predisposition was higher in the group of deaf people using a cochlear implant than in the people with loss hearing.</p>
Psychosocial impact of wheelchair in the life of people with neuromuscular disorders [10,18]	2011	Region of Galicia	60 participants with Neuromuscular disorders	PIADS	The wheelchair has a positive social impact in terms of the perceived quality of life in persons with NMD. Among the different types of assistive tools, the electronic wheelchair offers improved competency and adaptability in users.
				SOTU and ATD PA from the Matching Person and Technology Model	<p>The wheelchair and the user (afflicted with NMD) are matched correctly.</p> <p>As the degree of user-device matching is increasingly optimized, the degree of the psychosocial impact associated with the use of the device becomes greater and with a higher positive value.</p>
Need, predisposition and adjustment for the use of	2007	All territory in Spain	155 university students: 57 students without disability and	SOTU and ET-PA from the Matching Person and Technology Model	The percentage of students with disabilities in the Spanish University is low, mainly due to lack of adaptations, and the absence of assistive technology. The predisposition to technology use, in general, has been positive (the number of

assistive technology in university students with disabilities [19]			98 persons with disability		<p>positive answers was higher than the negatives or neutral).</p> <p>Students with physical and visual sensory disabilities indicated less experience with online learning systems</p> <p>The virtual learning platforms (like Moodle) aren't completely accessible.</p>
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DISCUSSION

The authors highlight the special situation of outcome measures in AT in Spain, taking into account the low research projects related to that topic. It is noted that the availability of evaluation tools to help make decisions on the adoption of AT, based on the relevant factors, allows minimizing errors in decision making when matching people and technologies.

To improve that situation, it is necessary to convey the importance of the implementation of this perspective and practice based on the approach of outcome measures in assistive technology. The long term goal is always to optimize the resources and services, in equality, in order to offer and get the best solution for each person, independently of his/her condition.

This piece of work raises a set of challenges and opportunities. Tangible ways forward include [4,14]:

- Funded outcome global projects to get an international profile of AT practices.
- Mentorship/linkages to build knowledge and capacity between low- and middle-income countries and developed regions.
- Incorporation of research results into national catalogs of AT and take the results into account in the process of delivery of AT devices.

CONCLUSIONS

It is important to make the effort to spread it among the community of rehabilitation professionals and to demonstrate the interesting contribution of these tools to get more efficiency and efficacy of the AT provision system in the country. Finally, the importance is not only concerning getting outcome results but also to generate a real impact in the community, from the evidence.

The present contribution opens the debate to discuss and to address, from a critical perspective, the situation of an obsolete system and the generation of new ideas for the change; as well as the challenges posed at the International Summit from GAATO.

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