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Measuring Access to Assistive Technology in the Public Rehabilitation Outpatient Setting in Costa Rica using the WHO Rapid Assistive Technology Assessment (rATA) Questionnaire

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Measuring Access to Assistive Technology in the Public Rehabilitation Outpatient Setting in Costa Rica Using the WHO Rapid Assistive Technology Assessment (rATA) Questionnaire

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Abstract. Costa Rica is a middle-income Central American country where health care provision works through CCSS, a socialized solidarity-based system where coverage is universalized and incorporates all social strata and geographical areas. We collected responses to the rATA in Costa Rica to determine access to assistive technology. The total sample for this study included 615 individuals, from all ages and geographical areas in Costa Rica, randomly selected among the users of every of the 22-outpatient rehabilitation service of the CCSS. The survey was performed via telephone due to the COVID-19 pandemic. The most important findings include that 68% of individuals reported using AP and 47% of individuals need new or replacement of AP (unmet need). The most used AP were spectacles (34%), therapeutic footwear (10%), and canes/sticks, tripod and quadripod (8%). Most AP (41%) came from the public sector. Out of the total, 39% were paid out-of-pocket 22% were provided by government sources. The main barrier for accessing AP was "Cannot afford" (36%). No association among the setting (urban or rural) with unsatisfied needs was identified, while an increase in the distance travelled to obtain an AP correlated with an increase in unsatisfied needs. An increase in age was associated with an increase in the use of AP. Despite having the possibility to prescribe within the system and provide subsidized products, there is still a high rate of unmet need. Most products need the user to pay for them, with affordability remaining the greatest challenge and distance to travel to obtain an AP remaining as a significant gap in access.

Keywords: Assistive Technology, rehabilitation, low-middle income country

1 Introduction

The WHO Global Disability Action Plan 2014-2021 highlights the lack of data regarding AT around the world and acknowledges significant statistical gaps between countries with higher and middle/low incomes. Data collection of the rATA survey for Costa Rica is relevant due to several factors: (a) The inclusion of Costa Rican data in the rATA offers information about access gaps to AT in a Central American country of
middle-income (b) There is a confluence of interests between the Caja Costarricense de Seguro Social (CCSS-Costa Rica’s national healthcare provider) and the GReAT, given that both need data to improve their response to AT needs, and both can provide data to contribute to the global understanding of AT. Finally, (c) the rATA data is extremely useful for our national healthcare provider, given its leading role in providing AT in Costa Rica.

Costa Rica’s economy corresponds to a middle-income country, but its epidemiological profile corresponds to a high-income. CCSS is the main healthcare provider in Costa Rica through a socialized system. It has universalized coverage that incorporates all social strata and geographical areas, giving coverage to over 90% of the Costa Rican population and delivering service through a national network divided by regions, allowing access across the whole territory [1]. Care is provided according to the health area of residence, through an increasing complexity system [2].

The CCSS prescribes selected AT through its own budget: Otolaryngology prescribes hearing aids, ophthalmology and optometry visual aids, while physical medicine and rehabilitation (PM&R) provides orthopedics and neurosurgery mobility aids. The widest range of aids is prescribed by PM&R. CCSS has an official “Manual for Technical Aids, Prosthesis, Medical Accessories and Orthopedic Devices” which allows physicians to prescribe different aids and offer different modalities of coverage [3]. However, the last update of this manual, defining which aids would be included and the amount of money allotted to each aid, was written in 2010, so an update to this manual is urgent. At the moment, mobility products are the main aspect of the manual and there are no products for daily life activities, cognition or language. This means the list is significantly behind in the requirements of WHO’s Priority Assistive Products List [4].

2 Methodology

The survey was implemented as a stand-alone method with a target population of people with disabilities who are users of the outpatient rehabilitation services of CCSS.

Rehabilitation services in the CCSS medical centers are in charge of covering all types of disabilities, with diagnoses ranging from acquired brain injury to spinal cord injury, neurological, oncologic, cardiac, orthopedic, rheumatologic and post intensive care unit rehabilitation, among many others. From this perspective, all functional domains addressed in the rATA (mobility, vision, hearing, cognition, communication and self-care) are subject to be managed by the CCSS Rehabilitation Services.

Since the CCSS oversees the treatment of up to 90% of the Costa Rican population, all socio-economic strata are represented. The health insurance in the country follows a socialized service, aiming to guarantee the same kind of services and treatment to every patient, regardless of the social stratum or income.

A database of the past 2 years of outpatient physiatrist consultations was obtained for 22 medical centers. It was compiled by the Medical Registry Department of the CCSS, and a subsample of it was selected through a systematic procedure to guarantee randomization.
The sample number was 615, stratified according to 6 geographic planification regions, using data regarding disability distribution from the Costa Rican National Disability Survey from 2018. It includes all ranges of age, socioeconomical groups, urban and rural settings alike. Costa Rica is a small country with varied geographical conditions, which means that small rural areas and urban areas are located very close to one another. Therefore, most hospitals and medical centers serve people from both urban and rural scenarios. As this survey was applied nationally, we have coverage of both areas across the country. The different geographic planification regions have different rates of urban/rural population, which was accounted for in the sampling process.

Data was collected through phone calls using the Spanish version of rATA. The enumerator group consisted of 16 physical medicine and rehabilitation physicians, who work in different hospitals across the CCSS network. All of them have extensive knowledge of the Costa Rican Health System and are prescribers of assistive technology devices themselves.

3 Findings

Important findings include there are as many children and teens that need AP as there are adults between 50-70 needing AP (both groups are 32% of the total). Despite a very high use of APs (68%) individuals reported many unmet needs (Table 1). Most AP come from public sector providers like CCSS (41%) and from private sector providers, such as private clinics and hospitals (39%).

<table>
<thead>
<tr>
<th>Actually uses AP</th>
<th>Has unmet AP needs</th>
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</thead>
<tbody>
<tr>
<td>Yes 419 (68%)</td>
<td>291 (47%)</td>
</tr>
<tr>
<td>No 196 (32%)</td>
<td>324 (53%)</td>
</tr>
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Spectacles are the most used assistive products (34%), followed by therapeutic footwear (10%) and canes/sticks, tripods and quadripods (8%). Meanwhile, products for selfcare are not used as much as would be expected and products for remembering are barely used at all (Table 2).

Table 1. Overall AP Use rATA Study Costa Rica 2021.

<table>
<thead>
<tr>
<th>Table 2. Overall AP Use rATA Study Costa Rica 2021 - Most used AP for each category, total number, and percent from the 615 people sample.</th>
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</thead>
<tbody>
<tr>
<td><strong>Mobility</strong></td>
</tr>
<tr>
<td><strong>Seeing</strong></td>
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<tr>
<td><strong>Hearing</strong></td>
</tr>
<tr>
<td><strong>Communication</strong></td>
</tr>
<tr>
<td><strong>Remembering</strong></td>
</tr>
</tbody>
</table>
Self-care Chairs for shower, bath, toilet (30; 4%). Grab-bars hand rails (26; 3%).
Incontinence products, absorbent (24; 3%).

Most AP were paid out-of-pocket (39%) and 22% were provided by government sources such as CCSS, followed by family/ friends (21%). Many patients reported needing multiple sources of funding.

The main barrier for accessing assistive products was that users "Cannot afford" them (36%).

There is no statistically significant association between the setting (urban or regional) and unsatisfied needs, while the increase in the distance travelled to obtain an assistive product correlates with an increment in unsatisfied needs.

An increase in age was significantly associated to an increment in the use of assistive products. An increase in the functional difficulty was associated with an increase in unmet needs.

The most common recommendation from users was for the wait time for APs to be reduced, followed by increase in product availability, since CCSS’s product list is focused mainly on mobility items, followed by some vision and hearing products with little to no access for communication, cognition and selfcare products. Other important recommendations included the need of more information about the use and availability of AP and the need of guidance services.

An interesting byproduct of this study was the potential to raise awareness about APs on PM&R peers who worked as enumerators, who come from very different regions of Costa Rica and might generate a multiplying effect, allowing for interest to grow in different stakeholders involved.

4 Analysis

There are three major findings in this study: (1) There as many children and teens that need AP as there are adults between 50 and 70 years old (both 32% of the total). (2) Many users get APs from private sources, not from the CCSS, and this might lead to increases in expenses. (3) The CCSS process to provide APs is complex and is mostly available in the urban regions of the Central Valley. This leads to lower use of CCSS resources, but also to longer distances travelled by AP patients.

First, regarding children and teenagers in the rATA, there are many more young people than expected in the sample Moreover, despite being groups of equal size with adult users, they have very unequal access to AP financing. Adults have limited avenues of financing with the public sector, including only CCSS and CONAPDIS. On the other hand, children have many additional sources of funding, including institutions such as the National Centre for Education Resources (CENAREC), and the Department of Educational Products for Students with Disability within the Ministry of Education, with the caveat that the prescription and provision of the AP might not be well integrated within the health system. This highlights an inequality within the system: funding for adults must be addressed.

Costa Rica’s geography allows for urban areas to be also located outside the Central Valley. Nevertheless 15 out of 22 centers with outpatient rehabilitation are located in
the Central Valley region. In this survey, 35.5% of the population came from rural areas, most of them outside the Central Valley. They could have received treatment close to their communities, but instead had to travel to hospitals in the Central Valley for their case to be addressed. This means travelling long distances for their medical care, with all the economic costs this might represent.

Regarding functional difficulties, 47% of the population presented some degree of mobility difficulty, 54% of the population reported vision difficulties, 13% hearing difficulties, 18% communication difficulties, 37% remembering difficulties, and 30% self-care difficulties. This data raises concern regarding the provision of rehabilitation services throughout the country. Physical therapy is widely extended and available in all centers, but occupational therapy, which is important for self-care activities, is only available in 5 centers. This also occurs with speech therapy, which is pivotal for communication disorders, but which is only available in 6 of the surveyed centers. Moreover, even though 37% of the patients reported remembering difficulties, only 2 centers have psychology and cognitive support services.

Since the main area that showed functional difficulties was sight, it is to be expected that spectacles are the most used assistive products (34%). This is followed by mobility, the second most common functional difficulty, where items such as therapeutic footwear (10%) and canes/sticks, tripod and quadripod (8%) are the second and third most used APs. Meanwhile, products for selfcare are not used as much as expected and products for remembering are barely used at all.

Despite a very high use of AP (68%) individuals reported very high unmet needs as well, which could not only mean the need for replacements but also the need for new or different APs. This might be related to the long wait times for medical appointments, which would force users to use a product that is damaged or worn off. There is also a lack of information on how to get new prescriptions within CCSS. Moreover, the product list approved for funding in the CCSS is centered on vision, hearing, and mobility and therefore many other needs are left out.

Most AP come from public sector providers like CCSS (41%) and from private sector providers, such as private clinics and hospitals (39%). The partial dependence on the private sector might be explained by the lack of availability and long wait times for some AP in the public sector. There is also a lack of knowledge from physicians and users about the AP that can be prescribed in CCSS or the mechanisms to do it, giving the common misconception that products must be obtained through private payment.

Most AP were paid out-of-pocket (39%) and 22% were provided by government sources such as CCSS, followed by family and friends (21%). Many patients reported needing multiple sources of funding. Long waiting times might be forcing users into buying the products themselves. The patients might also need to acquire products outside the CCSS’s list of subsidized products. One remarkable finding is the underuse of NGO resources; only 4% of the sample reported them as sources of AP.

Most of the population spent less than 50,000 Costa Rican colones (approx. $78) from their pocket money or family core on APs in the last 12 months. This amount is relatively small, mainly because many products have subsidies from CCSS. Costa Rica’s minimum wage per month is around 326,000 Costa Rican colones (approx. $515 USD).
32% of the population travelled less than 5km for their AP, but 14% travelled more than 100 kms. In both cases, the main product they travelled for were spectacles. Sometimes the approval for the AP might need to be in the same center where it was prescribed, which means someone might have to travel several times to health centers far from their home.

73% of the population was either very or quite satisfied with their AP and 71% of the population was either very or quite satisfied with the assessment and/or training for the AP. In addition to this, 69% of people were very or quite satisfied with the repair, maintenance and follow-up services of their AP. Spectacles, therapeutic footwear and canes were cited both as the devices that people are most satisfied with, and as the devices that people were most dissatisfied with. One explanation for this pattern is that there is a large group of the population who get their spectacles and footwear from the private sector, which allows for a larger variety in the offer, for more frequent changes in the AP, and for differences in the amount of use given to the AP. On the other hand, some users obtained the same product from the public sector, and the lack of variety there may also raise dissatisfaction. Finally, the limited number of AP mentioned, also shows the small variety of APs prescribed throughout the country.

77% of the population considered their AP to be either completely or mostly usable and 78% of the population was able to use their AP either completely or a lot despite environmental barriers. Almost the same products share reports of being highly usable and being unusable, such as spectacles and therapeutic footwear, which could be explained for the same reason mentioned above (i.e. products from both public and private providers). There could also be a lack of updates in the items, which would not allow the users to properly benefit from them and might create barriers to their use.

The main barrier for accessing assistive products was that users "Cannot afford" them (36%). However, many APs are provided by CCSS, so this might be related to people acquiring their products in the private sector because of CCSS appointment delays, and because of misinformation regarding products, including which products are available with a subsidy from CCSS or not.

There was no statistically significant association between the setting (urban or rural) and unsatisfied need, which might be a reflection of equity in access and opportunities regarding AP in both settings, despite the differences in distance. This might be due to the universal geographic coverage of the CCSS system.

The increase in the distance travelled to obtain an AP correlated with an increase in unsatisfied need. This entails fewer possibilities of follow up and maintenance of the AP. Transportation costs might also generate an inability to travel the long distances that some rural inhabitants need to cover to get an AP.

An increase in age are significantly associated to an increase in the use of AP. This is to be expected, as life expectancy in Costa Rica surpasses 80 years and functional decline can be observed more frequently in aging populations.

An increase in functional difficulties was associated with an increase in unmet need. This is associated with a lower availability of more complex APs and increased difficulties in providing more complex products in contexts where there are no occupational or speech therapists to aid the prescription and training.
The most common recommendation from users was for the wait time for APs to be reduced. The situation deteriorated due to the COVID-19 pandemic, which made waiting times even longer. This is a justified concern, given that the CCSS AP prescription process is very complex.

There is an uneven presence of providers across the national territory, and each provider offers different products. Most of the providers are in the Central Valley, so there are fewer APs in the periphery, which explains the recommendation given by users of reducing travel distance. Currently, users have to travel long distances, with the sacrifice of time and money that this entails. This also explains why there is an increment in unmet needs as people have to travel longer distances to obtain the AP.

Product availability was also suggested as a potential improvement. CCSS’s product list is focused mainly on mobility items, followed by some vision and hearing products with little to no access for communication, cognition and selfcare products. These products are usually paid out-of-pocket or provided through NGOs. This could be a reason for why users are requesting financial assistance to pay for their APs.

Further recommendations include the need of more information about the use and availability of APs and the need of guidance services regarding APs, where the user could be introduced to different products.

5 Conclusions

Rehabilitation services in Costa Rica cover multiple types of disability, therefore a high prevalence of usage is expected. Despite having the possibility to prescribe within the system and provide subsidized products, there is still a high rate of unmet need, with most products needing the user to pay for them and affordability remaining the greatest challenge.

Barriers concerning travel distances to obtain an assistive product, regardless of an urban or rural setting, also represent a gap in access to assistive products.

References