

## How can we promote access to assistive technology for individuals with disabilities in Low- and Middle-Income Settings?

### The question and the problem

About 800 million people live with disability in low and middle-income countries (LMICs). Only 10-15% of people with disabilities who require assistive technology have access to them, especially in LMICs settings. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) mandated the provision of assistive technology as a fundamental right of people with disabilities. However, despite the ratification of the UNCRPD by most countries including LMICs, the issue of limited access to assistive technology among people with disabilities in LMICs remains unresolved. The assistive technology delivery process typically involves multiple steps including taking initiative, assessment of needs, selecting the assistive solution, authorization, implementation, management, and follow-up in each setting. Any challenge along the delivery process could be problematic. This brief aims to identify strategies that promote access to assistive technology in LMICs.

### Recommendations

- Recommendation #1: Increase awareness about assistive technology and service delivery methods, especially among people with disabilities and their families.
- Recommendation #2: Integrate assistive technology services into the universal health system.
- Recommendation #3: Provide client-centred services and assistive technology.
- Recommendation #4: Set up robust training and assessment for assistive technology service providers.
- Recommendation #5: Provide adequate financial support to enhance affordability.
- Recommendation #6: Remove barriers and provide individual support for assistive technology use.
- Recommendation #7: Set up effective collaboration among stakeholders of assistive technology.

“If you don’t have a proper wheelchair that is when you really feel that you are disabled. But if you have a proper wheelchair, which meets your needs and suits you, you can forget about your disability.”

[Faustina, World Report on Disability, 2011]

## Challenges

### Challenge #1: Lack of awareness and knowledge about assistive technology

- There is a need to educate people with disabilities and their families about various types of assistive technologies available and what these technologies can offer for people with disabilities. Studies have shown that people with disabilities who own and use assistive technology experience better participation in social activities, greater life satisfaction, and improved overall quality of life.
- Most rehabilitation education programs in LMICs lack rigorous training on assistive technology, which is a major contributing factor to the gap in appropriate assistive technology services in LMICs. Hence, it is pertinent to provide more integrated and standardized education and training for assistive technology service providers.

### Challenge #2: Lack of affordability of services

- Assistive technology services are rarely covered by health insurance available in most LMICs. People with disabilities have to pay for such services from their pockets, which in most cases the individuals cannot afford due to high out-of-pocket costs.
- People with disabilities in LMICs are placed at a greater disadvantage, the majority of these individuals are poor, uneducated, and unemployed. Thus, it is difficult for them to afford assistive technology that will aid them in their daily activities.

### Challenge #3: Lack of user engagement

- Design and development of assistive technology are generally made in HICs, which are then imported to LMICs settings for delivery. These assistive technologies were not designed to reflect the context of different settings as well as the needs of people with disabilities in LMICs. For example in a survey of people with disabilities in India, 22% of people with quadriplegia felt that the assistive technology does not solve or address their needs. High abandonment rates were reported as a result of incongruence between the design of the assistive technology and the needs of people with disabilities in LMICs.
- The assistive technology service delivery process rarely includes people with disabilities, hence to achieve a positive outcome (for instance, increase in acceptance of assistive technology and empowerment of people with disabilities to engage in matters that affect them directly) people with disabilities need to be involved in the service delivery process.

### Challenge #4: Inadequate assessment and support

- Professionals involved in assistive technology service delivery do not provide adequate assessment and support needed by people with disabilities. It is important to train professionals involved in the delivery of assistive technology services about the relevance of pre and post-assessment for assistive technology prescription in order to recognise changes in health conditions and comorbidities among people with disabilities.
- Capacity building for users of assistive technology is necessary to provide the support required by people with disabilities on how to use and maintain their assistive technology devices. Easy-to-read pre-assessment booklets, leaflets, and questionnaires can be considered to overcome the challenges of inadequate assessment and support.

### Challenge #5: Presence of attitudinal and environmental barriers

- Stigmatization contributes to the challenges in access and use of assistive technology. A community that discourages users of assistive technology due to negative attitudes presents a serious challenge to the use of assistive technology.
- Moreover, the presence of structural and or physical environmental barriers in the community such as lack of sidewalks, ramps, access doors, or unpaved roads, further confounds the problem and prevents effective use of assistive technology.

### Challenge #6: Inadequate policy and research

- Most countries in LMICs lack robust national policy on assistive technology despite ratifying the UNCRPD and its optional protocol. The UNCRPD recommends that assistive technology should be equitably available, accessible, and affordable. The 71st World Health Assembly ([WHA.71](#)) provided specific calls for the development of policy on assistive technology.
- Governments should create room for collaboration among stakeholders locally and internationally to promote the local production of assistive technology for long-time sustainability. To promote access to assistive technology, the [WHO GATE](#) policy recommended five interlinked areas, people, policy, products, provision, and personnel.
- There is a lack of adequate funding for research needed to generate an indigenous pool of evidence on targeted design of assistive technology.

## How did we find answers

This evidence brief employed a review of reviews to examine evidence from systematic, scoping, narrative, and critical reviews on the topic of access to assistive technology for people with disabilities in low and middle-income countries. A literature search was conducted in five databases, Medline, CINAHL, Web of Science, Embase, and Global Health, from inception to 31<sup>st</sup> December 2021, using indexed mesh terms. The search yielded 243 hits, of which 68 articles qualified for full-text screened. Finally, 12 studies met the inclusion criteria. Seven studies provided data from LMICs, three provided evidence from all countries—mostly HICs, and two provided information from HICs. The studies reported on various assistive devices including mobility, hearing, perceptual, and vision. All recommendations and actions were derived from the included studies and additional references consulted.

## Evidence-informed Recommendations and Actions

Key Recommendations	Actions
<b>Increase awareness about assistive technology and service delivery methods, especially among people with disabilities and their families.</b>	<ul style="list-style-type: none"> <li>- <i>Set up educational training in communities and schools for people with disabilities, their families, and assistive technology service delivery professionals about assistive technology and its delivery processes.</i></li> <li>- <i>Existing rehabilitation education programs for people with disabilities can additionally focus on how assistive technologies could enhance their participation and promotion of their quality of life.</i></li> </ul>
<b>Integrate assistive technology services into the health system at all levels.</b>	<ul style="list-style-type: none"> <li>- <i>Expand and strengthen assistive technology services in primary, secondary, and tertiary healthcare levels e.g. by providing trained workforce and accessible services.</i></li> <li>- <i>Develop strategies to promote access to assistive technology using the <a href="#">WHO GATE</a> and <a href="#">WHA.71</a> as a guide.</i></li> </ul>
<b>Provide client-centred services and assistive technology levels.</b>	<ul style="list-style-type: none"> <li>- <i>Integrate people with disabilities as active partners in the assistive technology service delivery sector.</i></li> <li>- <i>Use a structured and systematic service delivery process with a client-centred approach, taking into consideration the type of disability, gender, and age.</i></li> <li>- <i>Involve people with disabilities in assistive technology service delivery</i></li> </ul>
<b>Set up robust training and assessment for assistive technology service providers.</b>	<ul style="list-style-type: none"> <li>- <i>Train assistive technology prescribers to always consider the preferences of people with disabilities when designing assistive technology and service delivery processes.</i></li> </ul>
<b>Provide adequate financial support to enhance affordability.</b>	<ul style="list-style-type: none"> <li>- <i>Decrease the cost of assistive technology or provide financial assistance to people with disabilities to promote affordability.</i></li> <li>- <i>Integrate assistive technology services into the universal health system to cushion the cost of extra care for people with disabilities</i></li> </ul>
<b>Remove barriers and provide individual support for assistive technology use.</b>	<ul style="list-style-type: none"> <li>- <i>Create a local advocacy group including relevant stakeholders including people with disabilities, their families, rehabilitation service providers, community members, etc., who can contribute towards the design and delivery of assistive technology services, advocate for the adoption of universal design in physical structures, and strengthen social and family support to increase empowerment of people with disabilities.</i></li> </ul>
<b>Set up effective collaboration among stakeholders of assistive technology.</b>	<ul style="list-style-type: none"> <li>- <i>Facilitate capacity building among stakeholders, develop partnership support, and provide effective management and viable business plan for private service providers.</i></li> </ul>

## Policy priorities

National policy on assistive technology is needed to address the issue of lack of funding, support local production, and mainstream assistive technology services within the health system at all levels. Hence, a clear leadership initiative from ministries of finance, social welfare, health, and science and technology is required at the national and sub-national level to coordinate activities and services for people living with disabilities.

## Conclusion

Limited access to assistive technology is exacerbated by the lack of awareness about assistive technology and what the technology can offer to people with disabilities in LMICs. Hence, to promote the participation of people with disabilities and attain inclusive development, it is pertinent to educate people with disabilities, their families, and assistive technology service providers.

## Acknowledgements

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## GAPS & RESEARCH NEEDS

Evidence presented in this review is not without some limitations. For example, article screening and data extraction were performed by a single individual, this could introduce some elements of bias. Moreover, only seven of the included studies provided data solely from LMICs, the remaining provided information mostly from HICs. Further, studies included in the individual reviews were heterogeneous and mostly included fewer studies due to the dearth of literature in LMICs. Future studies should use rigorous protocols to minimize bias. More studies are also needed from LMICs to generate a sufficient pool of evidence.