



THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

Uganda rapid Assistive Technology Assessment



2023



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Uganda rapid Assistive Technology Assessment 2023

The Uganda rapid Assistive Technology Assessment (rATA) was implemented by the Ministry of Health. The funding for the rATA was provided by the United States Agency for International Development (USAID) through the Learning, Acting, and Building for Rehabilitation in Health Systems (ReLAB-HS) Activity. The process was guided by the National Rehabilitation and Assistive Technology Technical Working Group under the leadership of the Ministry of Health. The Uganda Bureau of Statistics (UBOS) provided technical assistance in generating the sample of the 50 study districts and the respective enumeration areas.

Additional information about the rATA may be obtained from the Disability and Rehabilitation Division, Department of Community Health, Uganda Ministry of Health: Plot 6, Lourdel Road, Nakasero, P.O Box 7272, Kampala, Uganda; Telephone: Email: info@health.go.ug; website: www.health.go.ug

Information about ReLAB-HS may be obtained from the ReLAB-HS country office:
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Cover photo: Minister of Health, Rt Hon. Dr. Acheng Ruth Ocerro with recipients of assistive products in Lira City.

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Abbreviations

AP	Assistive Product
AT	Assistive Technology
EA	Enumeration Area
LCI	Local Council I
LMIC	Low- and Middle-Income Country
MoH	(Uganda) Ministry of Health
MakSPH	Makerere University School of Public Health
NDC	National Data Coordinator
NGO	Non-Governmental Organisation
USAID	United States Agency for International Development
ReLAB-HS	Learning, Acting, Building for Rehabilitation in Health Systems
rATA	rapid Assistive Technology Assessment
VHTs	Village Health Teams
WHO	World Health Organization
UBOS	Uganda Bureau of Statistics
UNCST	Uganda National Council on Science and Technology



Foreword

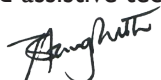
The Government of Uganda is committed to strengthening rehabilitation in the health systems in accordance with the Seventy-sixth World Health Assembly (WHA) unanimous resolution on strengthening rehabilitation in health systems by ensuring implementation of the Rehabilitation 2030 call for action recommendations. Uganda has notably taken considerable steps to improve access to rehabilitation and assistive technology (AT) services by implementing World Health Organization (WHO) guide to action recommendations for establishing rehabilitation and AT services as an important component of quality health services within the framework of universal health coverage and increasing the number of rehabilitation professionals at national, regional, and district levels.



The current Government efforts are focusing on improving rehabilitation and assistive technology services at all levels of health system, which calls for a timely response towards the growing demographic and health trends that point to an increasing unmet need for rehabilitation as a result of population ageing, the increasing prevalence in noncommunicable diseases (NCDs) and injuries, which is expected to grow exponentially if no action is taken by government.

Uganda recognizes that strengthening health systems to provide rehabilitation is crucial for addressing unmet needs. Additionally, Uganda ratified the UN Convention on the Rights of Persons with Disabilities (UNCROD) in 2008, and during the second global disability summit (2022), the government of Uganda, affirmed its commitment towards among others, inclusive health (including rehabilitation and assistive technologies for persons with disabilities). Therefore the Rehabilitation 2030 initiative recommendations are well aligned with Government Uganda efforts to increase access to rehabilitation and assistive technology services as a human right and recognizes that strengthening rehabilitation and assistive technology services as an essential health service is crucial for achieving universal health coverage and SDG-3.

Recognizing the importance of the 76th WHA resolution on strengthening rehabilitation in health systems and the Rehabilitation 2030 call for action, MOH in collaboration with development partners WHO and the USAID Learning, Acting and Building for rehabilitation in health systems (ReLAB-HS) conducted a rapid assistive technology assessment (rATA) as part of the process to develop the first national rehabilitation and assistive technology strategic plan as well as to guide the development of the national assistive product priority list (APL). The key findings in this report present the country's context-specific needs and recommendations that will inform the rehabilitation and assistive technology agenda and strategic direction in Uganda.


Hon. Jane Ruth Aceng Ocero
Minister of Health

Preface

Integrating rehabilitation and assistive technology services into health system is key for addressing the unmet rehabilitation and assistive technology needs of the population across the lifespan.

The government is gradually prioritizing rehabilitation and assistive technology services in health system as an essential healthcare service that is integral in the attainment of the universal health coverage goal of leave no one behind and sustainable development Goal 3.

The government of Uganda, recognizes the importance of the 76th WHA resolution on strengthening rehabilitation in health system and WHO rehabilitation 2030 call for action and is focusing on integrating rehabilitation into the health sector and strengthening inter-sectoral links to effectively and efficiently meet population needs.

The findings and recommendations from the Uganda rapid assistive technology assessment (rATA) report will guide the development of the first national rehabilitation and assistive technology strategic plan and the first assistive technology priority list (APL) which will help to streamline the rehabilitation and assistive technology agenda in Uganda. The strategic plan and APL once ready will be implemented following a sequential approach based on resource envelop available to government.



A handwritten signature in black ink, appearing to be 'D. Atwine'.

Dr Diana Atwine
Permanent Secretary

Acknowledgements

The Uganda rapid assistive technology assessment (rATA) report has been developed by the ministry of health with technical assistance from WHO and financial support from

USAID ReLAB-HS activity that is strengthening rehabilitation and assistive technology (AT) in the health system in Uganda.

Our sincere appreciation goes to the interim rehabilitation technical working group (RTWG) chaired by the Director Public Health for guiding the process of conducting the rATA as well as providing technical support during the writing of the report and the leadership of Uganda Bureau of Statistics (UBOS) for providing technical guidance on sampling, including providing sampling maps during the process of undertaking this activity



Especially, the Ministry of Health (MOH) wishes to acknowledge World Health Organization (WHO) for their technical support, and Learning, Acting, and Building for Rehabilitation in Health Systems (ReLAB-HS) activity funded by USAID for financial support towards the realization of this report.

The ministry of health also wishes to recognise the role to the Commissioner Community Health department, Dr. George Upenyho and the Assistant Commissioner Division of Disability and Rehabilitation Mr. Mubangizi Andrew and his counterpart Dr. Jimmy Ochorin for providing the necessary leadership, guidance and during the implementation of the assessment.

Our special gratitude goes to the Consultant Dr. Moses Oketch for leading the process of data collection and Mr. Gerald Okello and Mr. Wesley Pryor for supporting the analysis. Synthesis and writing of the rATA report.

A handwritten signature in black ink, appearing to read 'Henry G. Mwebesa', written over a horizontal line.

DR. Henry G. Mwebesa
Director General of Health Services



I. Executive summary

I.1 The rapid Assistive Technology Assessment (rATA) in Uganda

The Ministry of Health (MoH) of the Republic of Uganda, with support from Learning, Acting, and Building for Rehabilitation in Health Systems (ReLAB-HS) and the United States Agency for International Development (USAID), implemented the Uganda rapid Assistive Technology Assessment (rATA) 2023. Utilizing the World Health Organization’s (WHO) rapid Assistive Technology Assessment tool (rATA), which was developed to understand access to assistive products (AP),¹ the MoH surveyed a nationally representative sample of households about current access to assistive technology (AT) and supply among the Ugandan population aged 5 years and older. By capturing current and accurate information, results from this assessment are intended to inform the design of policy and programming that will strengthen access to AP and related services. Specifically, the survey aimed to:

- Identify the met and unmet needs for AT in Uganda.
- Identify barriers to accessing AT in Uganda.
- Determine user satisfaction with AT in Uganda.

The Uganda Bureau of Statistics (UBOS) oversaw the sampling process of the rATA. The survey covered 50 randomly selected districts from 15 sub-regions, capturing inputs from 16,736 people in 3,188 unique households; it was carried out by teams of trained enumerators under the expert supervision of epidemiologists and rehabilitation/AT professionals. Results from this survey can be read alongside global results from the WHO’s *Global Report on Assistive Technology*.²

I.2 Results

Population functioning

- **Sex:** In total, 8,941 females (53.4%) and 7,794 males (46.6%) were surveyed.
- **Age:** The mean age of interviewees was 25 years (confidence interval [CI] 25.8 – 26.3).

Overall functional difficulties: Overall, 10.7% of the population reported functional difficulties using the Washington Group definition:³ 9.6% reported ‘A lot of difficulty’ and 1.1% reported ‘Cannot do at all’ in at least one domain.

Types of functional difficulties: The most common difficulties reported were seeing and mobility, with 5.12% and 4.12% of the population reporting ‘A lot of difficulty,’ respectively.

Demand and use of assistive products in Uganda

¹ Zhang, W.; Eide, A.H.; Pryor, W.; Khasnabis, C.; Borg, J. Measuring Self-Reported Access to Assistive Technology Using the WHO Rapid Assistive Technology Assessment (rATA) Questionnaire: Protocol for a Multi-Country Study. *Int. J. Environ. Res. Public Health* 2021, 18, 13336. <https://doi.org/10.3390/ijerph182413336>.

² World Health Organization and UNICEF. *Global report on assistive technology*. Geneva: World Health Organization and UNICEF, 2022. Licence: CC BY-NC-SA 3.0 IGO

³ A ‘disability’ is recorded if a respondent self-identifies ‘A lot of difficulty’ or ‘Cannot do at all’ in at least one functional domain.



- Total use: 4.5% of the total population (4.3% of females and 4.8% of males) over the age of 5 currently use an assistive product (AP).
- The proportion of people using APs was higher among people with difficulties with self-care (31.1%), seeing (19.5%), and mobility (18.2%) than among people with other functional difficulties.
- Products for vision and mobility accounted for almost all the products used in the population.
- Product use is associated with increasing age: 13.3% of people between the ages of 50 and 60 and 28.8% of people over the age of 60 use any APs.
- Most products were accessed from non-governmental organizations (NGOs) (27.2% of all products), self-made (24.5%), or sourced from friends and family (19.4%).
- Most products were paid for by the user (32.5%) or family and friends (29.5%).
- While most people who could access APs (approximately 75%) had service access within 25 km from home, 25% of people had to travel more than 25 km for APs.
- A modest range of products is available. Most products in use are simple and low-cost.
- There are high unmet needs for products that appear to be unavailable or difficult to access.

Unmet needs

- Overall, 21% of the population reported an unmet need for any AP.
- Only 4% reported their AP needs are met.
- Unmet needs are high for all functional domains. The highest unmet need is among self-care difficulties (78.2% of unmet needs).
- Unmet needs are slightly higher for females (22.3%) than males (19.5%).
- Unmet needs increase with age.
- Unmet needs increase relative to the severity of functional difficulties.

Satisfaction

- Overall satisfaction: 64.9% of AP users were satisfied with their AP. Satisfaction appears consistent between functional difficulty types, sex, and severity of difficulty, despite differences noted elsewhere.
- Pain (56.5%) and fitting (33.8%) were the most common reasons for dissatisfaction with products.
- Costs and quality of care were the most common reasons for dissatisfaction with AP services.
- Quality, distance to services, costs, and the types of procedures used were common reasons for dissatisfaction with AP assessment and training.
- Unavailability of training and poor-quality products were also common reasons for being dissatisfied with AP training.

1.3 Implications

Access to APs in Uganda

The need to implement solutions for increasing the volume and range of APs and for improving access to APs is clear. This implies focusing on:

- Scaling up access to products overall, suited to local conditions.
- Widening the range of available products for functional difficulties experienced by the population.
- Protecting consumers from low-quality products and high out-of-pocket costs

Current APs and AP services

These findings highlight the importance of APs to Ugandans, and the importance of ensuring appropriate, accessible products are available. Specifically:

- Increasing access to APs and services makes a difference in the lives of Ugandans who report high satisfaction with the products they have, indicating the potential for those with limited access.
- When products are available, it is necessary to focus on their quality, including fit, durability, and comfort.
- How services are provided is an important consideration: costs, quality, and procedures to get products were common concerns among people dissatisfied with AP services.

High overall needs and high unmet needs affect a large proportion of the population, regardless of sex, age, and location.

Response strategies will require actions from multiple stakeholders at all levels, from macro-level policy to micro-level service arrangement and demand generation.

Future responses

Findings underscore the value of current, planned, and future efforts to:

- Catalyse and stimulate the supply of APs from national to local services.
- Strengthen the supply systems for all APs.
- Strengthen the workforce involved in the provision of AT and products.
- Strengthen safeguards including minimum product standards and professional standards for AT providers.
- Allocate new budget for APs.
- Implement existing policies and reflect necessary reforms in new policies.

2. Introduction and survey method

2.1 Background

Assistive technology (AT) refers to the broad set of systems and services related to supporting people with difficulty functioning. Assistive products (APs), such as wheelchairs, prostheses (artificial limbs), canes, crutches, spectacles, hearing aids, memory devices, supportive mobile applications, and pressure management products, are important for nearly everyone at some point in their life. These products are used to manage short-term injuries or other difficulties, or to assist people with long-term disabilities or chronic health conditions.

Globally, the need for AP is growing alongside the rise in non-communicable diseases and an ageing population. However, many people who need APs do not have access to them. For example, 200 million people with low vision do not have access to APs for low vision, only 5% - 15% of 75 million people who need a wheelchair have access to one, and over 75% of low- and middle-income countries (LMICs) have no prosthetics and orthotics training programs.⁴

In many countries, access to APs in the public sector is poor or non-existent. APs are often rationed—provided in one-off donations or not included within the health and welfare systems, leading to high out-of-pocket payments by users and families. There is a lack of public funding, nationwide service delivery systems, user-centred research and development, procurement systems, quality and safety standards, and context-appropriate product design.

In many LMICs, AP service delivery is not well coordinated or regulated nationally, and service provision varies between regions and is mostly inadequate. Those who can afford APs often buy them directly from a pharmacy, private clinic, workshops, or other private sources. People from the poorer sectors of society sometimes depend on erratic donations or charity services, which often deliver large quantities of low-quality or used products that can be inappropriate for the user or the context and lack mechanisms for repair and follow-up.⁵

According to the 2014 National Population and Housing Census Report, 12.5% (4.61 million) of Uganda's population aged 2 years and above have a disability.⁶ The 2016 Uganda Demographic and Health Survey found that 19.8% of the respondents reported 'Some difficulty' in at least one functional domain, 5.8% reported 'A lot of difficulty' in at least one functional domain, while 0.6% reported 'Cannot do at all' in at least one functional domain.

While anyone can need an AP at some stage of their lives, the high proportion of people with some or a lot of difficulty in functioning (25.6%) are among the most in need of APs. Based on global estimates, around 7 million Ugandans could need APs. However, little was known about current access to APs among Ugandans.

The WHO has developed the rATA as a survey tool to be used by countries to identify the need and unmet need for AT, barriers to accessing AT, and user satisfaction with AT.⁷ The rATA has been deployed in more than 30 countries, and the evidence gathered is described in the *Global*

⁴ WHO and UNICEF (2022) Global report on assistive technology, 978-92-4-004945-1

⁵ Ibid.

⁶ Uganda Bureau of Statistics 2016, The National Population and Housing Census 2014 – Main Report, Kampala, Uganda [available at [UBOS.org](https://ubos.org); accessed Sept 2023]

⁷ Zhang, et al., Measuring Self-Reported Access to Assistive Technology Using the WHO Rapid Assistive Technology Assessment (rATA) Questionnaire: Protocol for a Multi-Country Study. *Int. J. Environ. Res. Public Health* 2021, 18, 13336. <https://doi.org/10.3390/ijerph182413336>



Report on Assistive Technology, bringing further global attention to AT and related services.⁸ It was therefore timely to use rATA in Uganda.

2.2 Survey objectives

The objectives of the rATA Uganda 2023 were to:

- Identify the met need and unmet need for AT in Uganda.
- Identify barriers to accessing AT in Uganda.
- Determine user satisfaction with AT in Uganda.

2.3 Method

Figure 1 - Map of the sampled sub-regions in Uganda



Study site and population

A national household survey was conducted in Uganda. Uganda is comprised of 145 districts and 11 cities with a population of approximately 45 million people and an average household of five members. Uganda is in East Africa, bordering Kenya from the east, Tanzania from the south, Rwanda and the Democratic Republic of Congo from the west, and South Sudan from the north. The

⁸ WHO and UNICEF (2022) Global report on assistive technology, 978-92-4-004945-1



country is divided into four major regions—Central, Eastern, Northern, and Western—and the regions are further sub-divided into 15 sub-regions: Kampala, Busoga, Acholi, Ankole, Bunyoro, Bugisu, Bukedi, Toro, Kigezi, Lango, Teso, Karamoja, West Nile, Buganda South, and Buganda North⁹. The survey was conducted among Ugandans aged 5 years and above, and the study unit was the household. For the survey, a household was defined as a group of persons who normally live and eat together.¹⁰

Study design

This was a quantitative, descriptive, cross-sectional household survey, using the WHO rATA survey tool. The rATA is an interviewer-administered, population-based survey tool, divided into seven sections designed to gather basic information on demographics, needs, demand and supply, user satisfaction, and recommendations.

Sample design

The sampling frame used for the rATA was the frame of the Uganda National Population and Housing Census (NPHC), conducted in 2014; UBOS provided the sampling frame and performed the sampling. The census frame is a complete list of all census enumeration areas (EAs) created for the 2014 NPHC and contains information about EA location, type of residence (urban or rural), and the estimated number of residential households.


The rATA included the following 50 districts from the 15 sub-regions:

- **Acholi:** Gulu, Lamwo, and Omoro
- **Ankole:** Buhweju, Isingiro, Mbarara, and Rubirizi
- **Buganda North:** Buikwe, Kayunga, Luwero, and Mukono
- **Buganda South:** Kalungu, Lwengo, Masaka, Rakai, and Kyotera
- **Bukedi:** Busia, Butebo, and Tororo
- **Bunyoro:** Hoima, Kibaale, and Masindi
- **Busoga:** Bugiri, Bugweri, Jinja, Kamuli, and Namayingo
- **Elgon:** Bulambuli, Mbale, and Sironko
- **Kampala:** Kampala
- **Karamoja:** Kaabong, Moroto, and Napak
- **Kigezi:** Kabale and Kisoro
- **Lango:** Apac, Kwanja, Lira, and Oyam
- **Teso:** Kaberamaido, Katakwi, and Soroti
- **Tooro:** Kabarole, Kamwenge, and Ntoroko
- **West Nile:** Adjumani, Arua, Moyo, and Pakwach

The rATA sample was stratified and selected in two stages. In the first stage, 301 EAs were selected from the 2014 Uganda NPHC. Households constituted the second stage of sampling. The data

⁹ Uganda Bureau of Statistics (UBOS).

¹⁰ Ibid.



enumerators, in collaboration with the local government unit, known as a Local Council I (LCI), and village health teams (VHTs) (community health workers), compiled household listings for each of the 301 selected EAs by using the maps drawn for each of the sampled clusters and all the listed households. The listing excluded institutional living arrangements such as army barracks, hospitals, police camps, and boarding schools. To minimise the task of household listing, each large EA (i.e., more than 300 households) selected was segmented. Only one segment was selected for the survey with probability proportional to segment size, and the household listing was conducted only in the selected segment. In total, a representative sample of 3,188 households was randomly selected. The 3,188 selected households resulted in 16,736 respondents successfully interviewed. All household members aged 5 years and above who were permanent residents of the selected households were eligible to be interviewed.

Questionnaire

The full questionnaire is reproduced in [Annex 6.1](#). The survey used the WHO rATA survey tool, which was contextualised and adapted to Uganda and pre-tested before initiating data collection. Modifications included matching likely sources of APs and barriers to AP access to known issues in Uganda, re-ordering products into functional and logical groups, and removing products that were not likely to be found in Uganda (leaving the option of indicating them as ‘other’). Contextually relevant images of APs were added to assist enumerators. Enumerator details and the sampled geographic locations were added as selectable options. The questionnaire was translated by native speakers into the main languages of sampled locations—specifically Luo, Luganda, Lusoga, Runyakitara, Ateso, and Lugbara—before review by a second native speaker and resolution of disagreements. The questionnaire was digitised using the KoboCollect tool and the ‘KoboToolbox’ platform¹¹ and deployed using handheld devices and back-up paper-based questionnaires.

The tool is an interviewer-administered, population-based survey tool. It comprises a household section for recording survey administrative information, household size, and setting up individual surveys for consenting participants in the household (Part A), followed by individual surveys (Parts B-G), as detailed below:

- A. Preliminary information and survey administrative data (household level): data, enumeration area, geolocation, unique allocated household number, household size
- B. Background characteristics: consent, age, sex
- C. Functioning (Washington Group Short Set¹²): difficulty with mobility, seeing, hearing, communicating, remembering, self-care
- D. Demand/use and unmet needs for AP and sources: current products used, sources of products, payers of products, distance to AP source, unmet needs, reasons for unmet needs
- E. Satisfaction with AP: comfort, weight, fit; assessment and training; repair and maintenance; overall usefulness of products
- F. Recommendations / other information: open-ended comments from participants (not analysed)
- G. Survey administrative information: interviewer follow-up notes, survey time, enumerator acknowledgment, and checklist

¹¹ <https://eu.kobotoolbox.org/>

¹² Washington Group on Disability Statistics. WG Short Set on Functioning (WG-SS). Available from <https://www.washingtongroup-disability.com/question-sets/wg-short-set-on-functioning-wg-ss/>

Training of field staff

In consultation with ReLAB-HS and the National Rehabilitation and AT Technical Working Group, along with inputs from global technical experts, the National Data Coordinator (NDC) organised and facilitated the enumerator and supervisor training. Using an adapted training resource package based on the WHO's rATA training resources, a four-day training was conducted. The fourth day included supervised data collection followed by corrective steps and refreshers on observed issues during either the interview or subsequent data checking.

Field testing of survey and testing data flow

After the training, overseen by the team supervisor, trainees tested procedures for locating and approaching households in one EA within the capital city that was not sampled for the survey. Each enumerator moved with at least one other peer and conducted supervised data collection in at least two households. After the data collection of 50 individuals was complete, the NDC and a designated ReLAB-HS advisor with rATA experience summarised the data, conducted verification checks, and provided feedback to enumerators who reported difficulties with data collection.

Field work

The data collection process took place between the 3rd - 21st of July 2023. Enumerators were divided into four groups, and each group was assigned a region (Eastern, Central, Northern, and Western). The teams were led by a supervisor and each team was assigned a technical expert (rehabilitation professional). Further supervision was provided by ReLAB-HS and the NDC. The Eastern team covered the sub-regions of Karamoja, Teso, Elgon, Bukedi, and part of Busoga; the Central team covered Buganda North, Buganda South, Kampala, and part of Busoga; the Northern team covered Lango, Acholi, and West-Nile; and the Western team covered the Ankole, Kigezi, Tooro, and Bunyoro sub-regions.

Data processing and analysis

Data was uploaded after survey coordinators verified the correct household and completed data checks, and it was backed up routinely by one of the investigators. Data was stored on KoboToolbox's cloud server.

At least every three days, a summary report was provided to the field team, which included:

- Verification checks for completeness (missing variables).
- Skip logic (verification of survey functioning).
- Internal logic checks.
- Variables by enumerator (number of surveys collected, list of EAs and households, outlier variables—i.e., any enumerators with unexpected frequencies of major variables, such as product use or functional difficulties).

Variations were discussed with field teams and enumerators and resolved before revising survey data as required. Data cleaning included re-coding any open-ended questions into survey options, manual revision of enumerator areas that were not entered correctly at the time of the survey based on enumerator notes and Global Positioning System (GPS) data, verification of unexpected data with survey teams, and manual entry of product names based on images in instances when enumerators were unsure of product names. Descriptive analysis was performed to generate proportions on the



prevalence of functional limitations, the need and unmet need for AP, and user satisfaction and barriers to accessing AT. STATA 14.0 was used to perform analysis.

Ethical considerations

The Makerere University School of Public Health (MakSPH) Institutional Review Board and the Uganda National Council on Science and Technology (UNCST) provided approval for the survey. Additionally, the MoH provided an introduction letter and informed the respective local government administrators about the survey. The data collection team obtained oral informed consent for interviews from each of the respondents.



3. Results

3.1 Population profile

Key findings

- **Households:** 3,188 unique households were surveyed.
- **Individuals:** 16,736 individuals were surveyed.
- **Sex:** Sampled individuals comprised 8,941 females (53.4%) and 7,794 males (46.6%).
- **Age:** The mean age of interviewees was 25 years (95% CI 25.8 – 26.3).

Participant characteristics

A total of 16,736 individuals from 3,188 unique households were interviewed. Slightly more than half (53.4%) of the individuals were female, while 46.6% were male. The average age of the individuals was 25 years: the majority of individuals belonged to the age group of 5-9 years (17.0%), 10-14 years (17.8%), and 20-29 years (17.4%), while fewer were aged 50-59 years (5.7%) and over 60 (7.9%). The profile of the population interviewed is presented in Table 1, and Figure 2 shows the population age distribution.

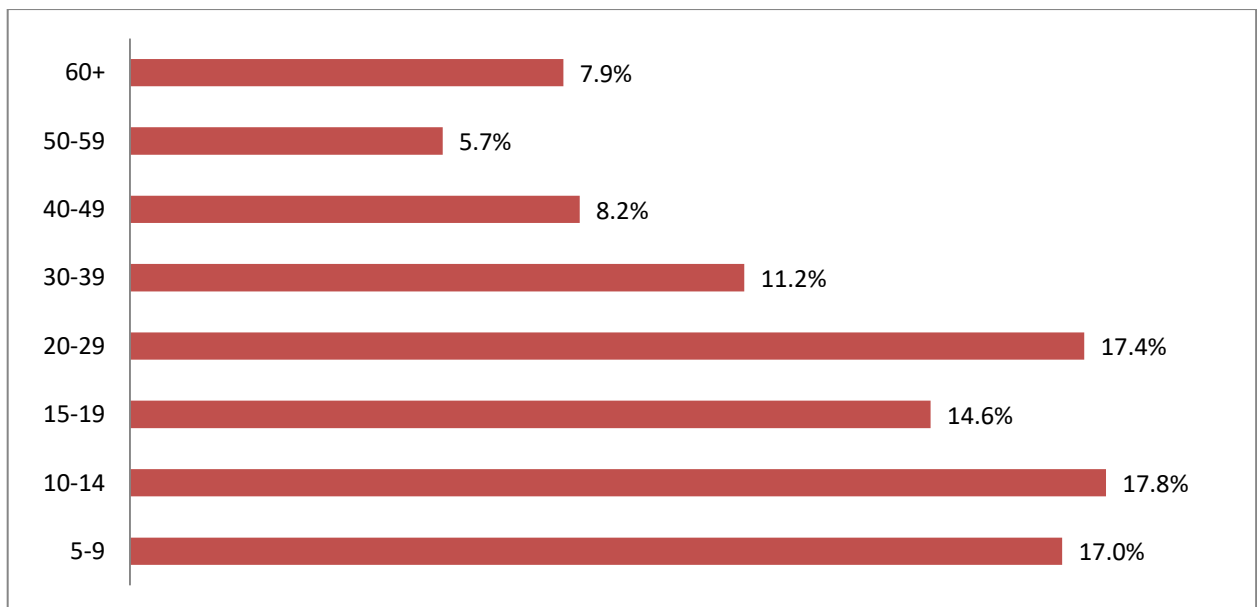
Table 1 - The distribution of the population by background characteristics

Demographic characteristics	Frequency (n)	Percent (%)
Sex		
Female	8,941	53.4
Male	7,794	46.6
Age Group (Years)		
5 - 9	2,844	17.0
10 - 14	2,984	17.8
15 - 19	2,444	14.6
20 - 29	2,911	17.4
30 - 39	1,882	11.2
40 - 49	1,380	8.2
50 - 59	960	5.7
60+	1,331	7.9
Mean age (Years)	25.1, 95%CI (25.8 – 26.3)	
Sub-regions		
Acholi	1,007	6.1
Ankole	1,094	6.6
Buganda North	1,278	7.7
Buganda South	1,309	7.9
Bukedi	1,017	6.1



Bunyoro	1,203	7.2
Busoga	1,381	8.3
Elgon	932	5.6
Kampala	700	4.2
Karamoja	795	4.8
Kigezi	802	4.8
Lango	1,431	8.6
Teso	1,094	6.6
Tooro	1,192	7.2
West Nile	1,353	8.2
Total	16,736	100%

Figure 2 - Population age distribution



3.2 Functional difficulties

Key findings

Overall, in at least one functional domain (mobility, visual, hearing, communication, remembering, and self-care):

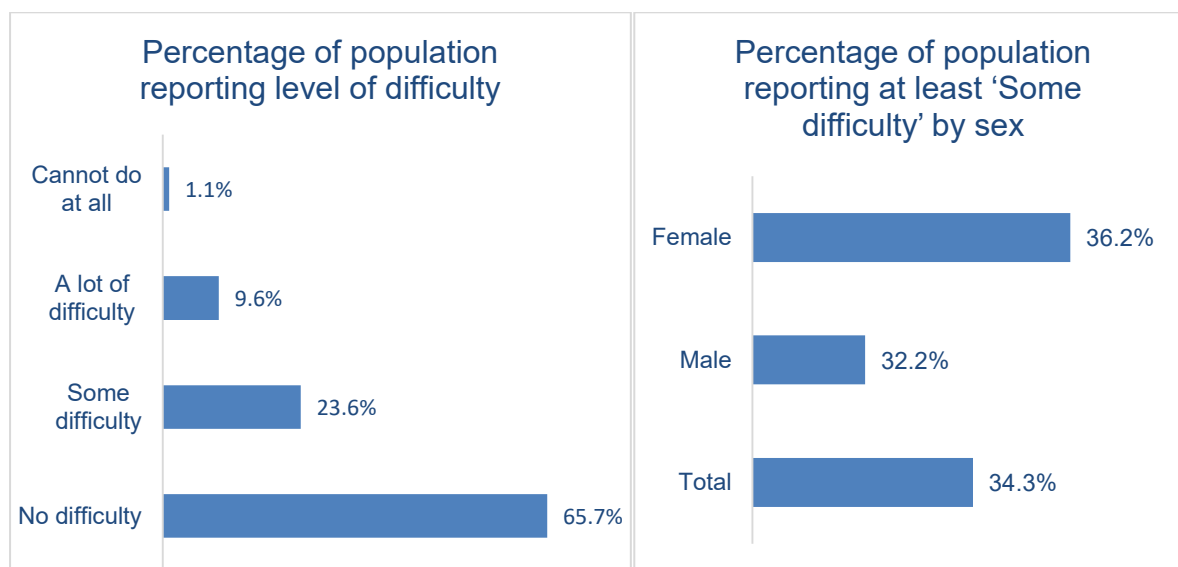
- **65.7%** of the population surveyed reported no functional difficulty.
- **23.6%** of the population surveyed reported some functional difficulty.
- **9.6%** of the population reported a lot of functional difficulty.
- **1.1%** of the population reported ‘cannot do at all’ in at least one domain.
- **10.7%** of the population reported functional difficulty using the Washington Group definition (‘A lot of difficulty’ or ‘Cannot do at all’) in at least one domain.



- **36.2%** of females and 32.2% of males reported ‘a lot’ or higher functional difficulty.
- **17.9%** and **17.4%** of individuals reported any functional difficulty in the mobility and visual domains, respectively.

Using the Washington Group definition in which ‘disability’¹³ is recorded for anyone reporting ‘A lot of difficulty’ or ‘Cannot do at all’ in any one or more domains, 10.7% of the sample reported a disability (9.6% reported ‘A lot of difficulty’ and 1.1% reported ‘Cannot do at all’) in at least one domain. Overall, 34.3% of the individuals reported having functional difficulty in at least one domain; more females (36.2%) reported functional difficulties compared to males (32.2%). Reported functional difficulty increased with age, with 89.1% of individuals aged 60+ years reporting having functional difficulty compared with 15.1% among those aged 5 – 9 years. The majority of individuals reported functional difficulty in the mobility (17.1%) and visual (17.4%) functional domains, while a small percentage of the individuals reported functional difficulties in the communication (2.9%) and self-care domains (4.1%). At the sub-region level, the Acholi (15.9%) and Lango (15.3%) sub-regions reported a high prevalence of disability (‘A lot of difficulty’ or ‘Cannot do at all’), while Bukedi (6.5%) and Elgon (6.4%) sub-regions reported the lowest prevalence of disability. **Table 2** shows the percentage of individuals reporting different levels of functional difficulty by background characteristics.

Figure 3 – Percentage of individuals reporting functional difficulty



¹³ While the Washington Group approach is intended to estimate ‘disability’ in a population, ‘disability’ arises from interactions between multiple factors, including functioning and the environment. These questions record self-identified functioning difficulties, which are considered a practical proxy for ‘disability.’ This approach also recognises the importance of self-identification of difficulty and allows for a screening of difficulties in the main functional domains, which is useful to understand which types of difficulties are common and how AP need and use relate to different functions.

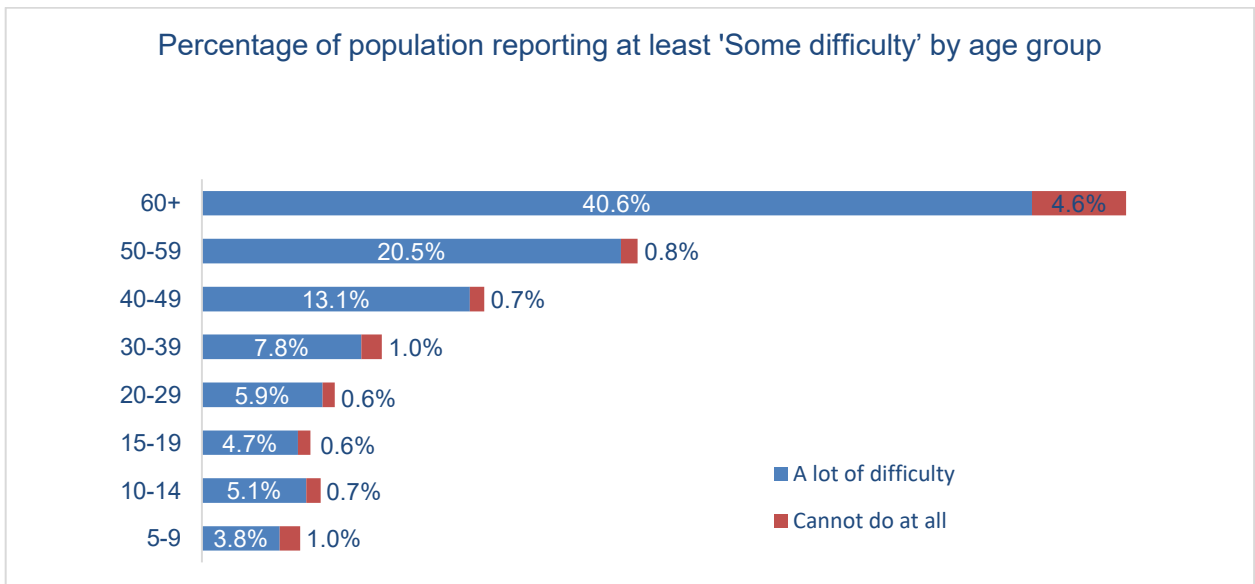
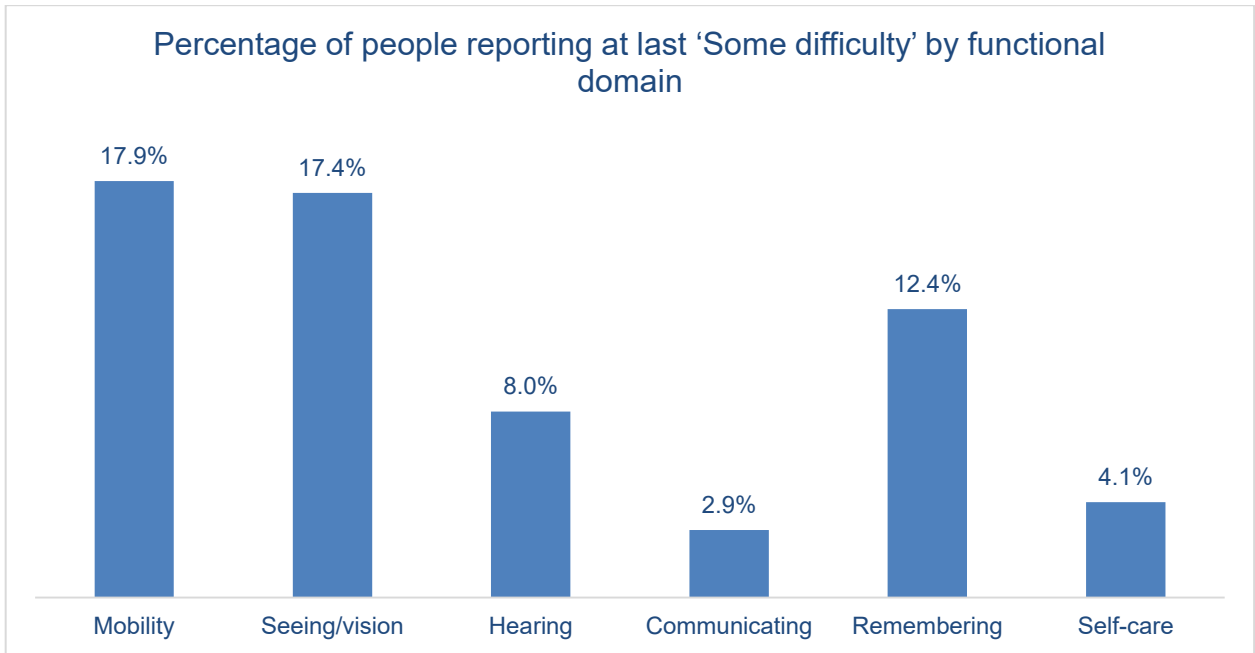


Table 2 - Functional difficulty by background characteristics*Percentage of individuals reporting different levels of difficulty*

	Level of difficulty				Total	A lot of difficulty or cannot at all	Number of persons
	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all			
Functional Domain							
Mobility	82.1	12.8	4.5	0.6	100	5.1	16,736
Seeing/vision	82.6	13.3	3.9	0.2	100	4.1	16,736
Hearing	91.9	6.1	1.7	0.2	100	1.9	16,736
Communicating	97.1	2.0	0.6	0.3	100	0.9	16,736
Remembering	87.6	9.8	2.5	0.1	100	2.6	16,736
Self-caring	95.9	2.6	1.1	0.4	100	1.5	16,736
Sex							
Female	63.8	25.2	9.9	1.1	100	11.0	8,941
Male	67.8	21.8	9.3	1.1	100	10.3	7,794
Age Group (Years)							
5 - 9	84.9	10.3	3.8	1.0	100	4.8	2,844
10 - 14	80.4	13.8	5.1	0.7	100	5.8	2,984
15 - 19	79.5	15.3	4.7	0.6	100	5.3	2,444
20 - 29	73.2	20.3	5.9	0.6	100	6.6	2,911
30 - 39	59.2	32.0	7.8	1.0	100	8.8	1,882
40 - 49	42.3	43.8	13.1	0.7	100	13.8	1,380
50 - 59	27.2	51.5	20.5	0.8	100	21.3	960
60+	10.8	43.9	40.6	4.6	100	45.2	1,331
Sub-regions							
`	62.9	21.2	13.7	2.2	100	15.9	1,007
Ankole	72.3	20.6	6.5	0.5	100	7.0	1,094
Buganda North	65.2	21.8	12.0	1.0	100	13.0	1,278
Buganda South	68.3	17.3	13.3	0.9	100	14.2	1,309
Bukedi	68.3	25.2	5.2	1.3	100	6.5	1,017
Bunyoro	74.5	18.3	6.7	0.5	100	7.2	1,203
Busoga	66.0	24.0	9.1	0.7	100	9.8	1,381
Elgon	71.1	22.5	5.4	1.0	100	6.4	932
Kampala	59.1	31.6	8.5	0.6	100	9.1	700
Karamoja	70.4	19.4	8.6	1.6	100	10.6	795
Kigezi	65.7	24.6	9.1	0.6	100	9.7	802
Lango	52.6	32.1	13.4	1.9	100	15.3	1,431
Teso	64.8	25.0	8.7	1.5	100	10.2	1,094
Tooro	70.4	21.0	7.8	0.8	100	8.6	1,192
West Nile	56.9	29.6	12.5	1.0	100	13.5	1,353
Overall	65.7	23.6	9.6	1.1	100	10.7	16,736

*Mobility; (sitting, standing, walking, climbing steps) Combined total of 'A lot of difficulty' or 'Cannot do' in at least one domain is the Washington Group definition of 'disability.'



3.3 AP use, demand, and supply

Key findings

- 4.5% of the total population over 5 years old surveyed currently use an AP.
- 4.3% of female and 4.8% of male respondents currently use APs.
- The use of APs is high among people reporting difficulties in self-care (31.1%), seeing (19.5%), and mobility (18.2%).
- The use of AP is highest in the Kigezi sub-region (8.1%) and lowest in the Busoga and Bukedi sub-regions (2.8%)
- Products for vision and mobility accounted for almost all the products used in the population.
- The use of AP was highest among those aged 60+ years (28.8%) and 50-60 years (13.3%).
- Most products were accessed from NGOs (27.2%), self-made (24.5%), or sourced from friends and family (19.4%).
- Most products were paid for by the user (32.5%) or family/friends (29.5%)

Overall reported use of APs

Overall, only 4.5% of the individuals reported using one or more APs, males reported higher use of APs (4.8%) compared with females (4.3%). The use of APs increases with age, with 28.8% of those aged 60+ years reporting use of APs compared to 0.3% among those aged 5-9 years. At the functional domain, individuals who reported functional difficulties in self-care reported high use of APs (31.1%), followed by those with visual (19.5%) and mobility (18.3%) functional difficulties, and those with communication limitations reported less use of APs (10.6%). By region, use of APs was high in Kigezi region (8.1%) and very low in Busoga and Bukedi regions (2.8%). Table 3 shows the percentage of individuals reporting use of APs by background characteristics.



Figure 4 – Percentage of individuals reporting use of APs

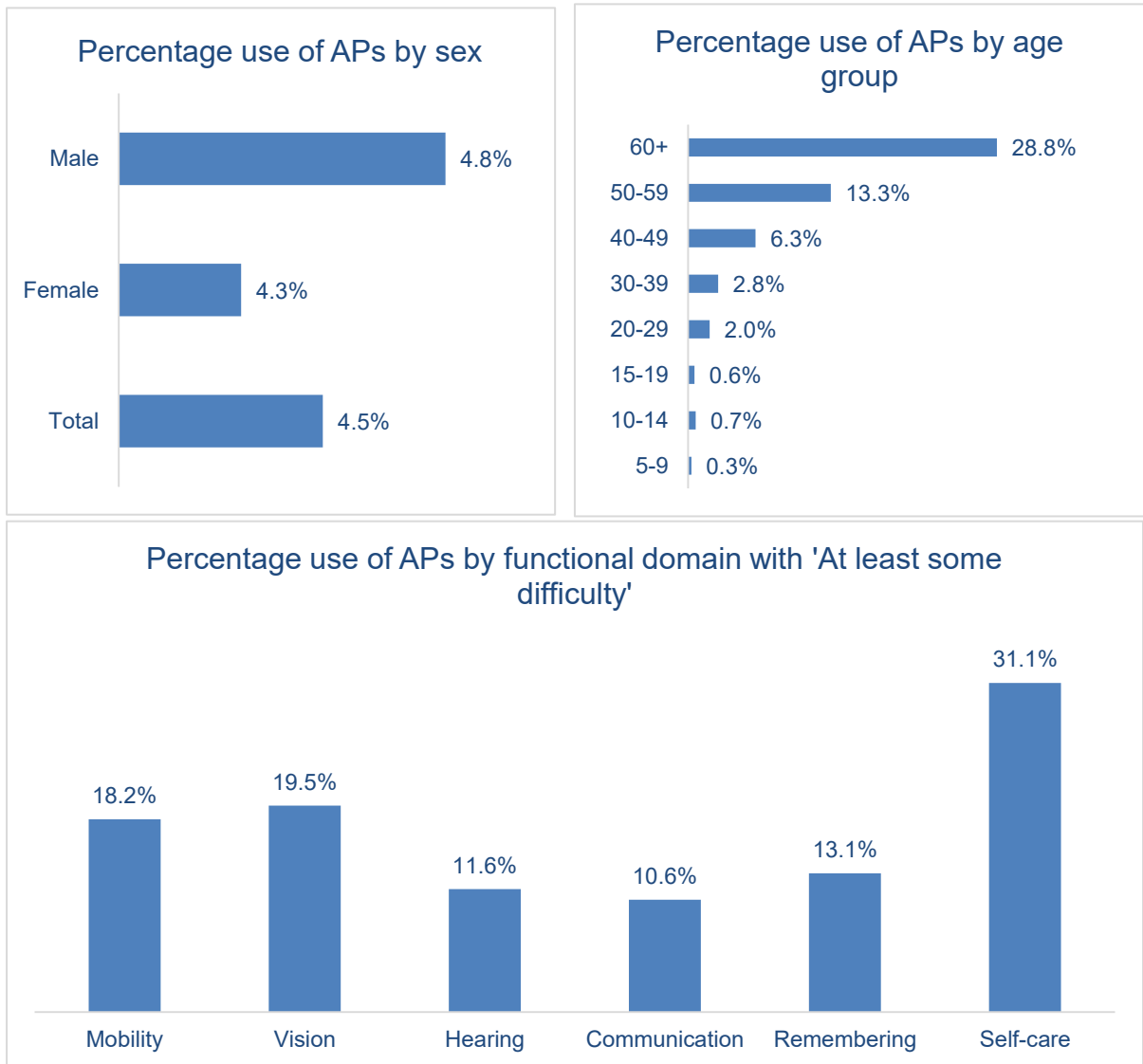




Figure 5 - Heatmap of met need by sub-district of Uganda

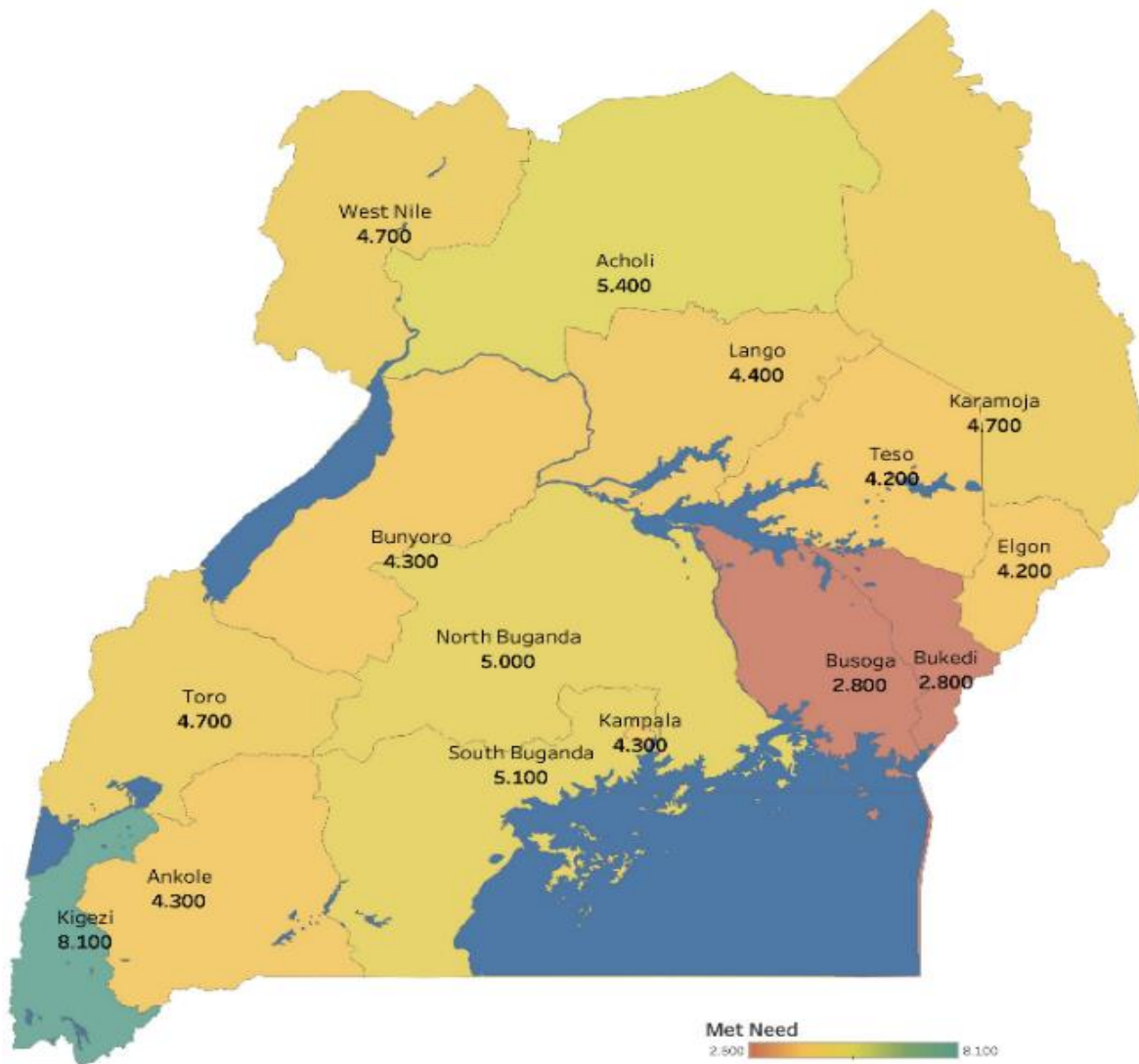


Table 3 - Use of APs among respondents by background characteristic

	Among total population	Level of functional difficulty				Total number of persons
		No difficulty	Some difficulty	A lot of difficulty	Cannot do at all	
Sex						
Female	4.3	0.0	6.4	23.8	30.6	8,941
Male	4.8	0.1	10.1	23.8	30.1	7,794
Functional Domain						
Mobility	18.2	1.5	10.1	30.6	39.4	2,997
Seeing/vision	19.5	1.4	13.4	29.8	42.3	2,909
Hearing	11.6	3.9	5.1	19.6	24.7	1,349
Communicating	10.6	4.3	2.8	17.8	14.4	492
Remembering	13.1	3.3	6.8	21.9	26.3	2,075



Self-caring	31.1	3.4	12.3	39.8	36.4	688
Age Group						
5-9	0.3	0.0	0.7	4.8	10.0	2,844
10-14	0.7	0.0	1.2	8.6	14.3	2,984
15-19	0.6	0.0	1.6	8.7	0.0	2,444
20-29	2.0	0.1	5.4	13.3	16.7	2,911
30-39	2.8	0.0	5.2	11.6	26.3	1,882
40-49	6.3	0.2	7.3	21.5	30.0	1,380
50-59	13.3	0.0	14.6	26.9	37.5	960
60+	28.8	0.7	21.0	41.4	57.4	1,331
Region						
Acholi	5.4	0.0	8.4	19.6	40.9	1,008
Ankole	4.3	0.1	10.9	27.4	33.3	1,118
Buganda North	5.0	0.0	7.1	27.1	23.1	1,289
Buganda South	5.1	0.2	9.1	22.0	46.1	1,328
Bukedi	2.8	0.1	6.6	18.9	7.7	1,017
Bunyoro	4.3	0.0	9.4	34.1	50.0	1,219
Busoga	2.8	0.0	6.0	12.6	30.0	1,391
Elgon	4.2	0.0	9.5	31.4	33.3	935
Kampala	4.3	0.0	9.0	13.1	50.0	705
Karamoja	4.7	0.0	10.8	26.1	23.1	807
Kigezi	8.1	0.0	15.4	43.2	60.0	816
Lango	4.4	0.0	4.6	17.7	28.6	1,436
Teso	4.2	0.0	7.6	21.9	25.0	1,099
Tooro	4.7	0.0	8.7	35.1	20.0	1,209
West Nile	4.7	0.0	5.2	23.5	23.1	1,359
Total	4.5	0.5	41.6	50.7	7.3	16,736

Types of APs used

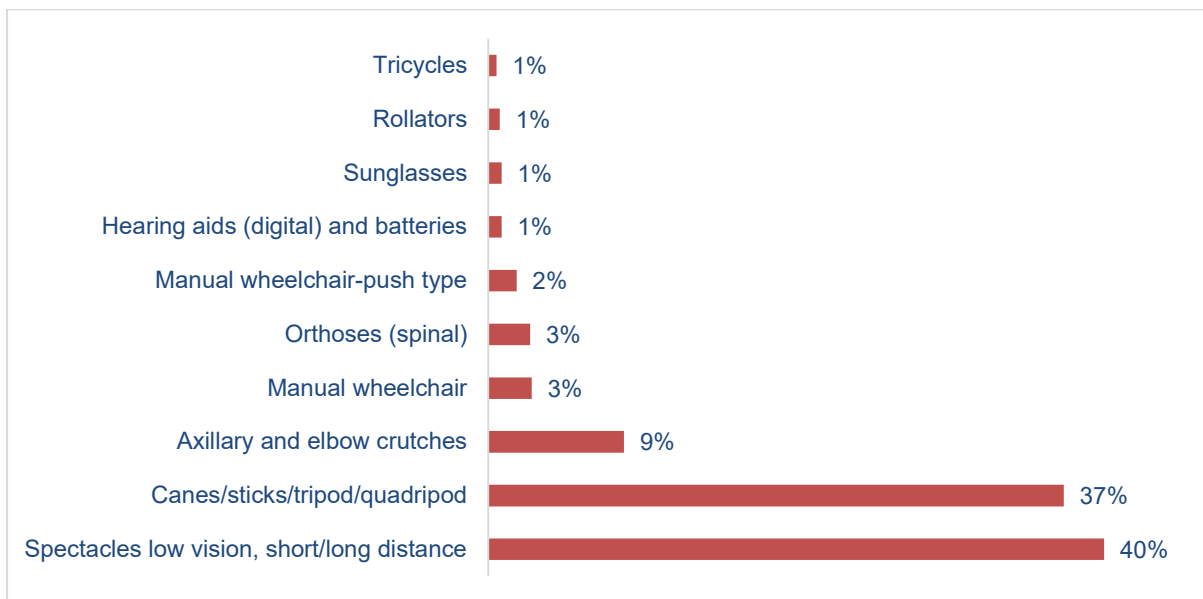
People who report any AP use were asked about the type of products used. The most used APs were spectacles for low vision (40%)¹⁴ and a mix of products for mobility difficulties (excluding wheelchairs). Specifically, canes, sticks, tripods, and quadripods accounted for 37% of all products used. Axillary and elbow crutches are closely related and account for another 9%. Other commonly used APs reported were user-propelled manual wheelchairs (3%), spinal orthoses¹⁵ (3%), push-type manual wheelchairs (2%), hearing aids (1%), sunglasses¹⁶ (1%), rollators (1%) and tricycles (1%). Figure 6 shows the percentage of reported APs used.

Figure 6 - 10 most reported APs used

¹⁴ Non-prescription spectacles account for 24% of all products used, and prescription spectacles account for 16%.

¹⁵ This includes prescription, custom, and off-the-shelf, all varieties.

¹⁶ Sunglasses were not on the list of products but were reported as 'other AP' among people with a range of eye/vision difficulties (excluding use for fashion or general use unrelated to difficulties).



Source of APs

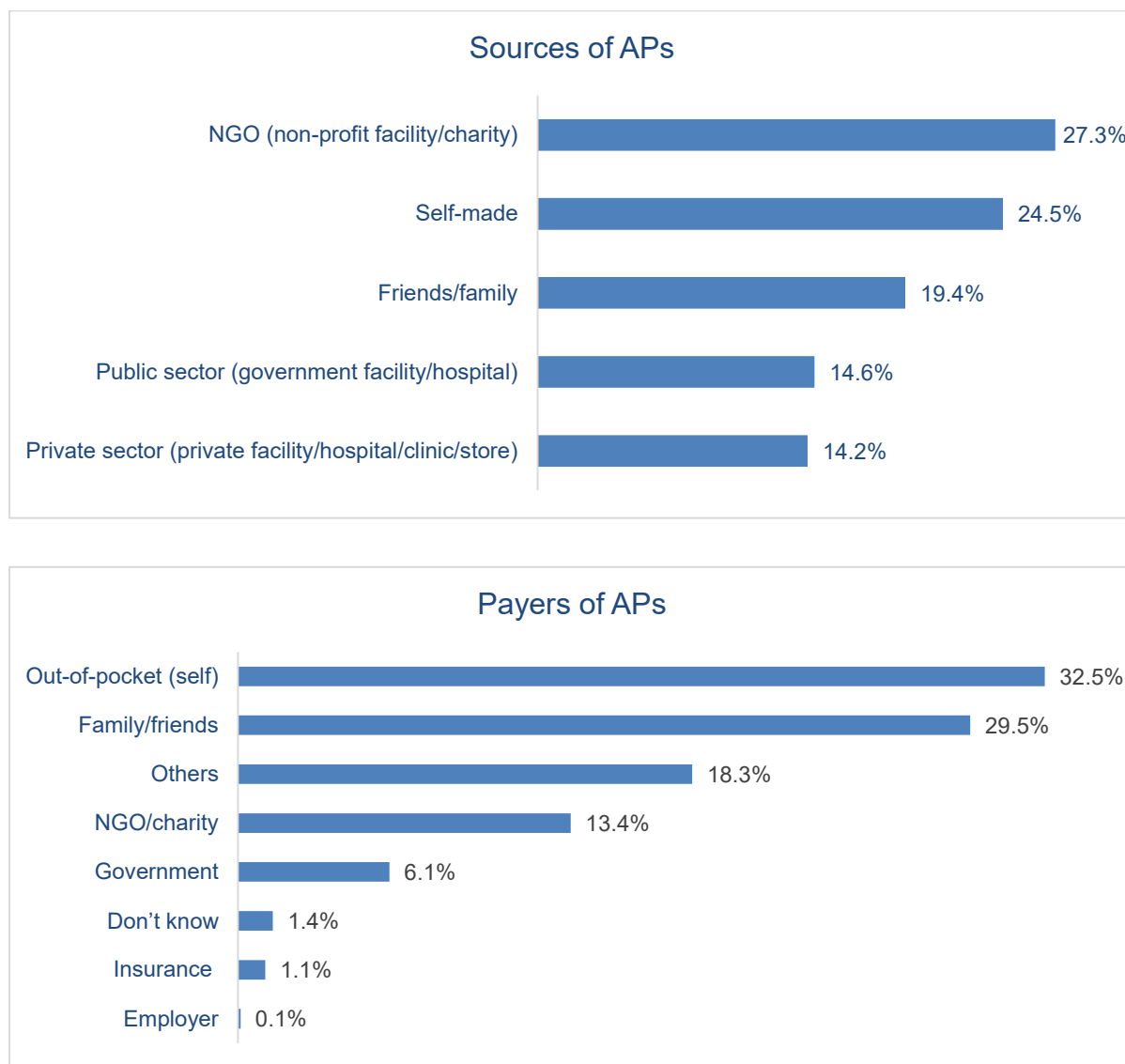
Respondents who reported AP use were then asked a series of further questions concerning the source, distance to the source, costs, payers, satisfaction, and suitability of products.

Most assistive products were provided by non-government sources or made by individual users or their friends and family. The most common reported source of APs was NGOs (27.3%), defined as non-profit services including a range of charities, faith-based organisations, and national and international non-government organisations; 24.3% of the APs were self-made; 19.4% were sourced from friends or family; and 14.6% and 14.2% were obtained from public services and private sector sources, respectively (Figure 7).

Payers of APs

These findings are also reflected in payers of products, shown in Figure 7. Of all products procured, 32.5% were paid for by the user (out-of-pocket costs), 29.5% by family and friends, 18% by other sources not including government or insurers, while 13.4% were paid for by charities. Government sources reportedly paid for 6.1% of APs, and insurance paid for only 1%.

Figure 7 – Sources and payers of APs



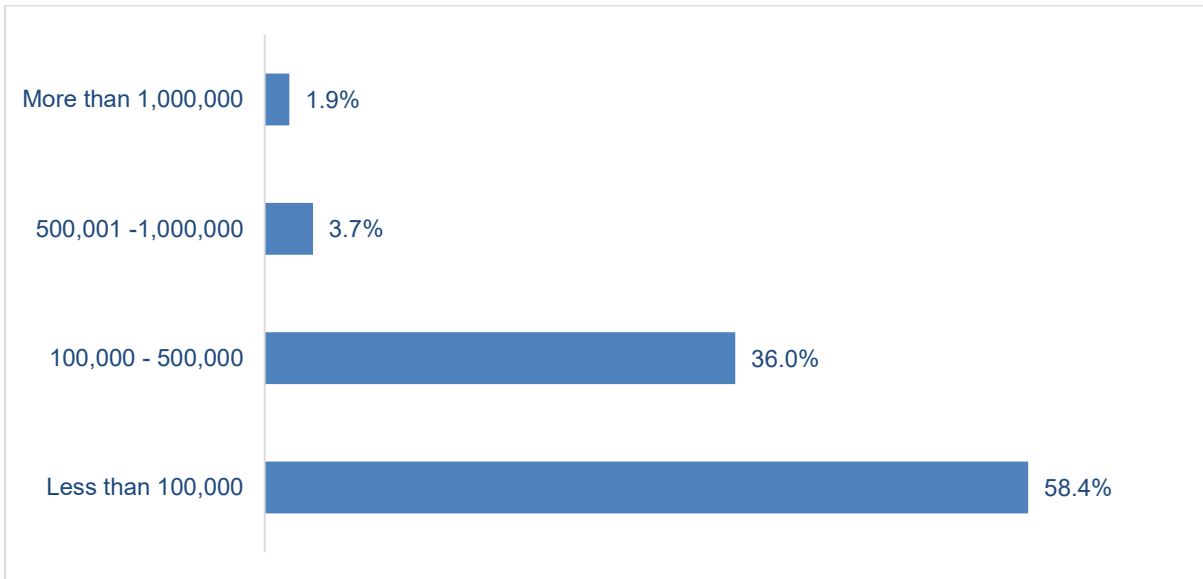
Out-of-pocket costs of APs

Individuals who reported using at least one product were asked to estimate the total out-of-pocket cost of all products combined, over the last 12 months. On average, AP users spent 175,965 UGX¹⁷ (95%CI 133,619.1-218,311.6, range 1,000-6,000,000 UGX). More than half (58.4%) of the AP users spent less than 100,000 UGX (26.85 USD), while 36% paid between 100,000 and 500,000 UGX. Only 1.9% paid over 1 million UGX. These findings reflect the high frequency of free, homemade products (e.g., sticks from local trees) and free services from NGOs, as well as limited availability of, and capacity to pay for, more sophisticated and complex products (Figure 8).

¹⁷ 100,000 UGX was approximately 26 USD in September 2023.



Figure 8 – Estimated out-of-pocket costs of APs

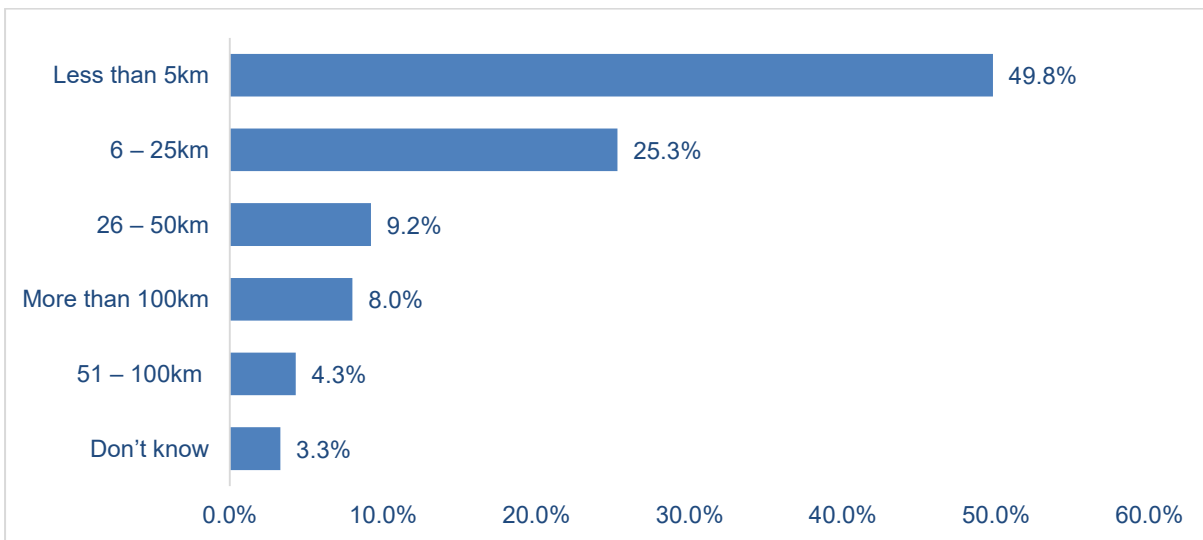


**In the previous 12 months, by user, for all products combined*

Distance to sources of APs

AP users were asked to estimate the distance from their usual home to the source of each product. Around half (49.5%) of all the AP users needed to travel less than 5 km to access the products, and a quarter (25.3%) needed to travel between 6 and 25 km. Others (17.2%) needed to travel more than 25 km, but less than 100 km, while 8% travelled more than 100 km to access the products (Figure 9).

Figure 9 - Distance travelled to access AP sources



3.4 Unmet needs for APs

Key findings

- Overall, 21% of the population reported an unmet need for any APs.



- Only 4.5% reported that their AP needs are met.
- Unmet needs are high for all functional domains. The highest unmet need is among users with self-care difficulties (78.2% unmet needs).
- Unmet needs are slightly higher for females (22.3%) than males (19.5%).
- Unmet needs increase with age.
- Unmet needs increase relative to the severity of functional difficulties.
- The most common reason for an unmet need was affordability (86.7%).

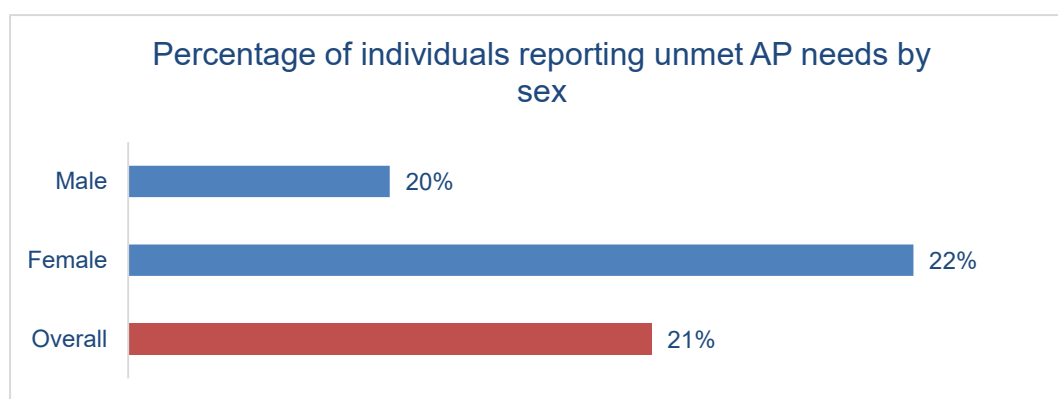
Unmet needs for APs

All participants were asked whether they needed any AP that they did not have. Overall, 21% of the population reported an unmet need for any AP, while only 4.5% reported their AP needs are met. 'Met' need is comprised of respondents who have an AP and reported no other needs for APs, while unmet need is the proportion of people who answered 'yes' when asked if they need any AP they do not have. By sex, the unmet need is slightly higher for females (22.3%) than males (19.5%) (Figure 10).

Overall, unmet need is high for all functional domains. The lowest unmet need is among people reporting remembering difficulties (57.4%), and the highest unmet need is among people reporting self-care difficulties (78.2%). Unmet needs increase with age: only 8.6% of individuals aged 5-9 years reported an unmet need for AP, while 68.8% of individuals aged over 60 years reported unmet needs. At the sub-regional level, the unmet need was highest in the Lango region (31.7%) and the West Nile region (29.4%) and lowest in Kampala (12.5%) and Bunyoro (14.1%) (Figure 10).

Unmet needs for APs are associated with more severe difficulties (**Table 4**). Among those who reported 'Cannot do at all' in any domain, 83.7% of females and 84% of males reported unmet needs for products. In contrast, unmet needs were lower for individuals who reported 'Some difficulty' or 'A lot of difficulty.'

Figure 10 - Unmet needs for AP



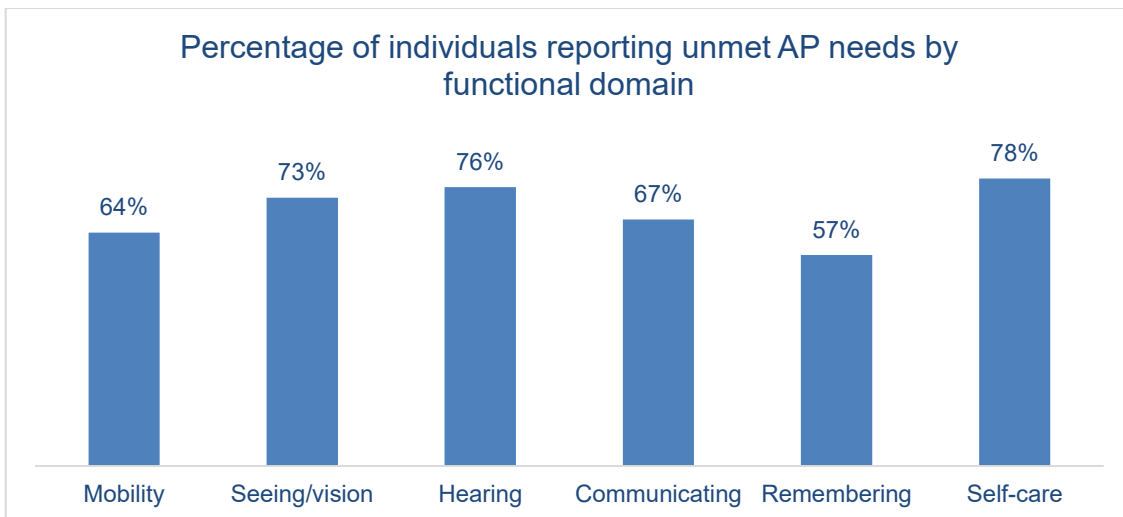
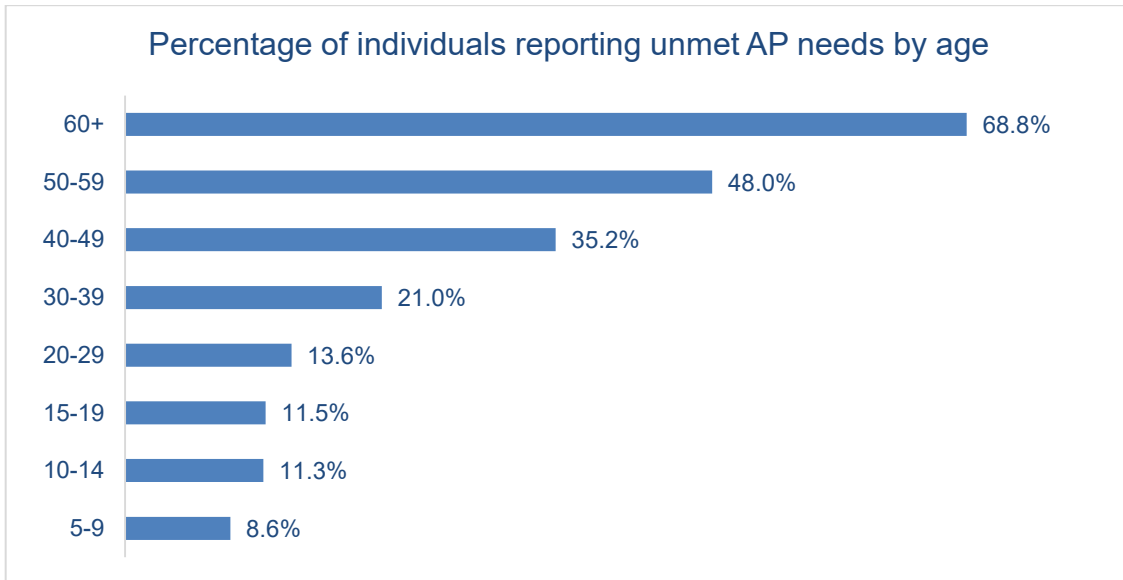
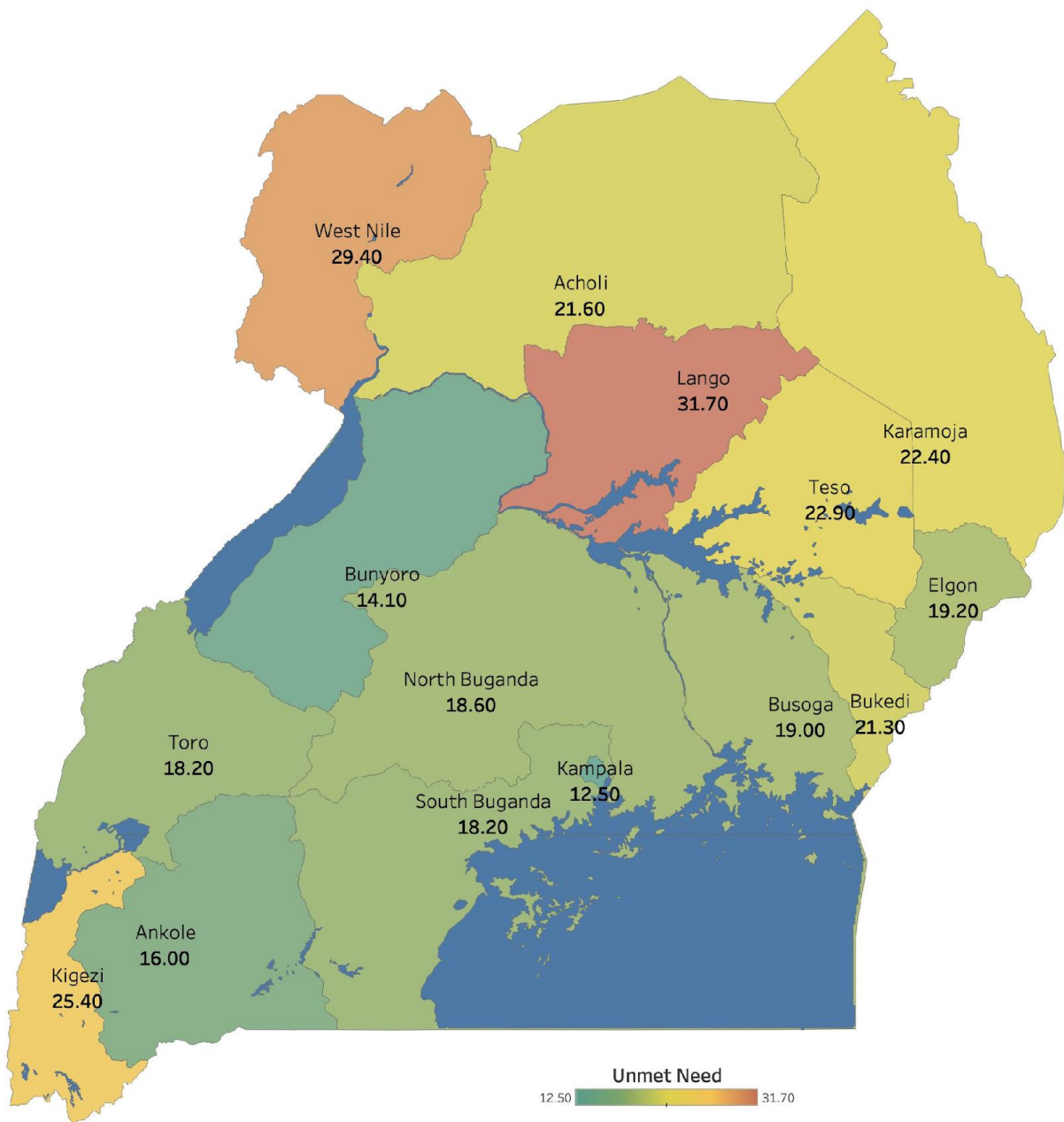


Figure 11 - Heat map of percentage of unmet needs for APs by sub-district*



*Percentage of surveyed population expressing an unmet need for APs

Table 4 - Met and unmet need for AP by demographic characteristics

Percentage of individuals reporting unmet and met need (currently using AP)

	Need and Demand											Total demand			
	Unmet AP need						Met AP need (currently using AP)						Total population	Total n persons	
	Total population	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all	Total population	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all					
Sex															
Female	22.3	0.5	52.8	77.9	83.7	4.3	0.0	6.4	23.8	30.6	26.6	8,941			
Male	19.5	0.5	51.2	76.3	84.3	4.8	0.0	10.1	23.8	30.1	24.3	7,794			
Functional Domains															
Mobility	63.5	11.7	56.9	79.0	87.1	18.2	1.5	11.9	33.1	44.1	81.7	2,997			
Seeing/vision	73.0	10.1	69.7	83.2	89.3	19.5	1.4	16.0	30.4	39.3	92.5	2,909			
Hearing	75.9	16.2	71.9	89.5	80.6	11.6	3.9	10.9	15.0	5.6	87.5	1,349			
Communicating	67.1	19.6	61.1	75.2	86.2	10.6	4.3	11.5	11.4	3.4	77.7	492			
Remembering	57.4	15.8	53.9	69.9	81.8	13.1	3.3	11.8	18.3	4.5	70.5	2,075			
Self-caring	78.2	18.5	73.4	85.8	80.2	31.1	3.4	26.1	46.4	21.3	109.3	688			
Age Group (years)															
5-9	8.6	0.2	45.9	73.8	83.3	0.3	0.0	0.7	4.7	10.0	8.9	2,844			
10-14	11.3	0.2	48.1	76.2	90.5	0.7	0.0	1.2	8.6	14.3	12.0	2,984			
15-19	11.5	0.3	49.6	68.7	78.6	0.6	0.0	1.6	8.7	0.0	12.1	2,444			
20-29	13.6	0.3	42.7	72.2	66.7	2.0	0.0	5.4	13.3	16.7	15.6	2,911			
30-39	21.0	1.6	44.5	65.3	73.7	2.8	0.0	5.1	11.6	26.3	23.8	1,882			
40-49	35.2	2.0	54.4	75.7	80.0	6.3	0.2	7.3	21.5	30.0	41.5	1,380			
50-59	48.0	2.7	58.5	79.7	100.0	13.3	0.0	14.6	26.9	37.5	61.3	960			
60+	68.8	0.7	69.1	84.3	90.2	28.8	0.7	21.0	41.4	57.4	97.6	1,331			

(Continued)

Need and Demand												
Region	Unmet AP need				Met AP need (currently using AP)				Total demand			
	Total population	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all	Total population	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all	Total population	Total n persons
Acholi	21.6	0.2	48.6	67.4	90.0	5.4	0.0	8.4	19.6	40.9	27.0	1,008
Ankole	16.0	0.0	55.6	64.4	66.7	4.3	0.1	10.9	27.4	33.3	20.3	1,118
Buganda North	18.6	0.7	39.1	72.3	92.3	5.0	0.0	7.1	27.1	23.1	23.6	1,289
Buganda South	18.2	0.8	43.0	71.2	76.9	5.1	0.2	9.1	22.0	46.1	23.3	1,328
Bukedi	21.3	0.6	62.1	84.9	69.2	2.8	0.1	6.6	18.9	7.7	24.1	1,017
Bunyoro	14.1	0.4	47.1	73.2	50.0	4.3	0.0	9.4	34.1	50.0	18.4	1,219
Busoga	19.0	0.5	45.1	77.9	90.0	2.8	0.0	6.0	12.6	30.0	21.8	1,391
Elgon	19.2	0.9	60.0	80.4	77.8	4.2	0.0	9.5	31.4	33.3	23.4	935
Kampala	12.5	0.7	16.6	72.1	100.0	4.3	0.0	8.9	13.1	50.0	16.8	705
Karamoja	22.4	0.0	68.1	89.9	92.3	4.7	0.0	10.8	26.1	23.1	27.1	807
Kigezi	25.4	0.4	68.2	86.5	80.0	8.1	0.0	15.4	43.2	60.0	33.5	816



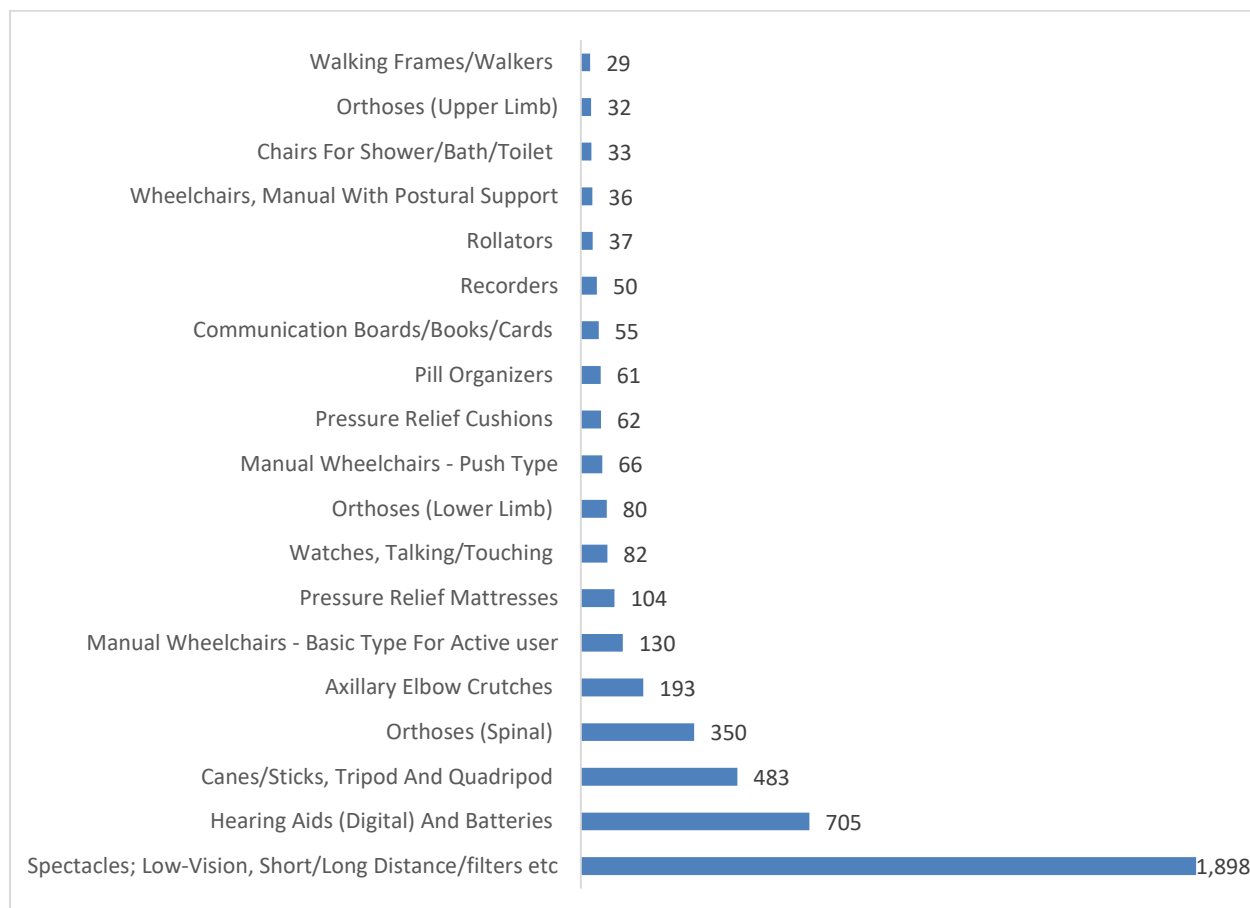
Lango	31.7	0.9	58.1	80.7	89.3	4.4	0.0	4.6	17.7	28.6	36.1	1,436
Teso	22.9	0.8	56.4	82.3	75.0	4.2	0.0	7.6	21.9	25.0	27.1	1,099
Tooro	18.2	0.6	52.4	78.7	80.0	4.7	0.0	8.7	35.1	20.0	22.9	1,209
West Nile	29.4	0.5	59.5	84.1	100.0	4.7	0.0	5.2	23.5	23.1	34.1	1,359
Total (N)	21.0	0.5	52.1	77.2	84.0	4.5	0.0	8.0	23.8	30.4	25.5	16,736



Top 20 APs needed

The respondents were asked to report the products that they need but have limited access to. The most needed products were spectacles, hearing aids, canes/sticks, orthoses (spinal), axillary and elbow crutches, and manual wheelchairs (basic type for active users), among others (Figure 12). A list of all the needed APs is in [Annex 6.3](#).

Figure 12 - Top 20 APs most needed by individuals

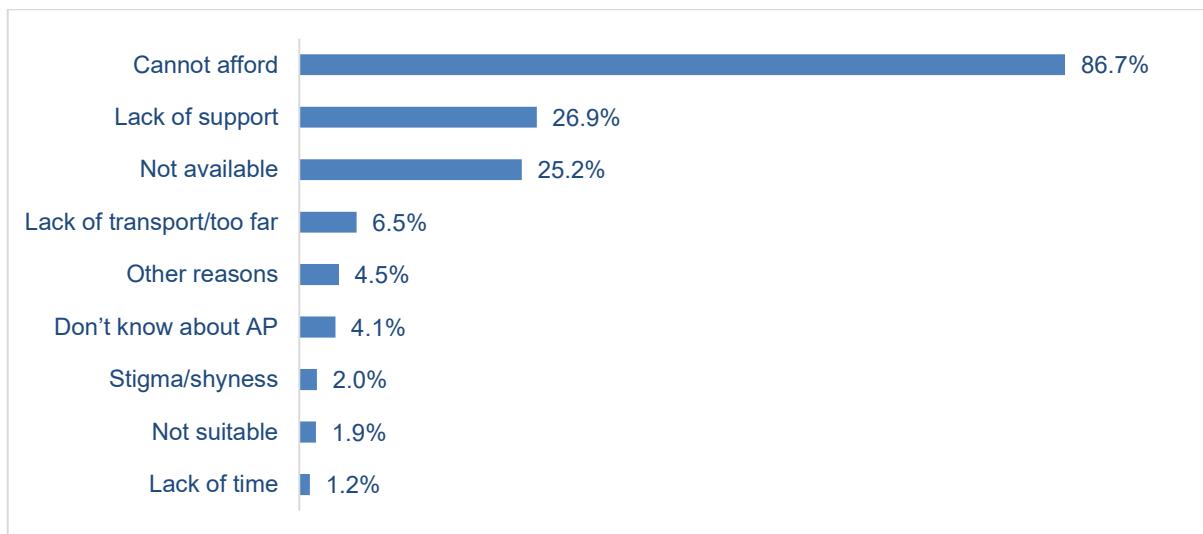


Barriers to accessing APs

The respondents were asked to report barriers to accessing APs. The most frequent reason reported was 'Cannot afford' (86.7%), followed by 'Lack of support' (26.9%), and 'Not available' (25.2%). 'Other' reasons reported (that were not options in the survey) were a lack of knowledge or that they could not/did not get a prescription for the products (Figure 13).



Figure 13 - Barriers to accessing APs



3.5 Satisfaction with APs

Key findings

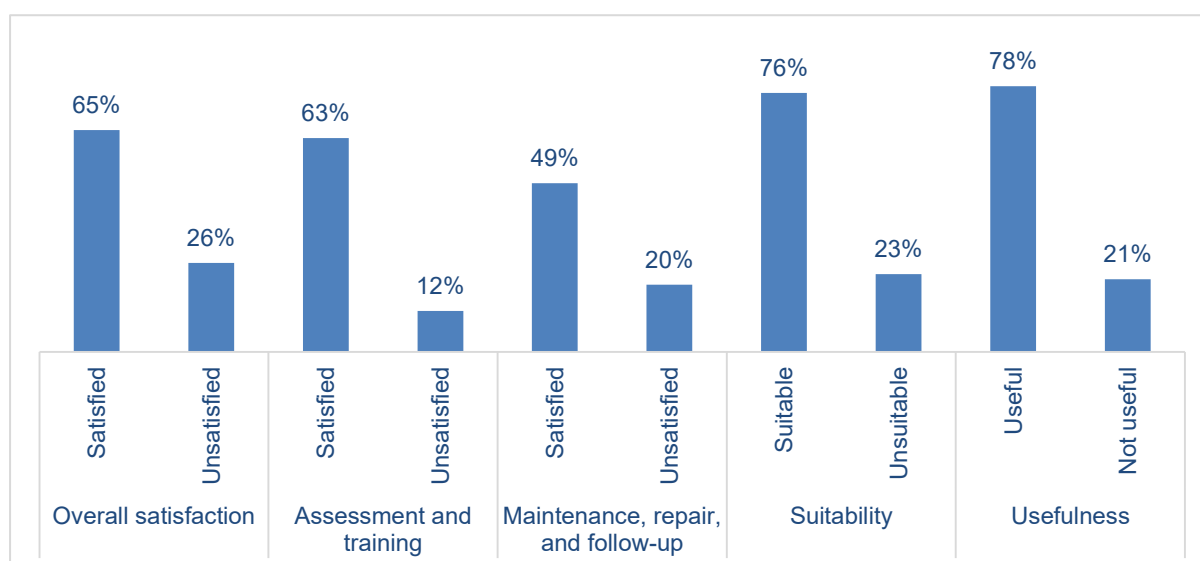
- Overall satisfaction: 64.9% of all products used were satisfactory.
- Satisfaction appears consistent between functional difficulty types, sex, and severity of difficulty, despite differences noted elsewhere.
- Pain (56.5%) and fitting (33.8%) were the most common reasons for dissatisfaction with products.
- Costs and quality of care were the most common reasons for dissatisfaction with AP services.
- Quality, distance to services, costs, and the types of procedures used were common reasons for dissatisfaction with AP assessment and training.
- Unavailability of training and poor-quality products were also common reasons for being dissatisfied with AP training.

Overall satisfaction, and satisfaction with AP services

The AP users were asked to rate their level of satisfaction with 1) APs; 2) AP assessment and training; 3) AP maintenance, repair, and follow-up; 4) suitability of the AP; and 5) AP usefulness. About two-thirds (64.9%) reported overall satisfaction with their APs (67.1% male and 62.7% female); 62.6% were satisfied with the AP assessment and training; and nearly half (49.5%) were satisfied with repair, maintenance, and follow-up. Three-quarters of users reported that their APs were suitable (75.6%) and useful (77.8%). However, around a quarter of the AP users were not satisfied with their APs (26.0%); AP assessment and training (12.0%); AP maintenance, repair, and follow-up (19.7%). Of these users, 22.8% reported that the AP was not suitable, and 21.3% reported that the AP was not useful (Figure 14). Table 5 shows the different levels of satisfaction with AP service provision aspects, suitability, and usefulness by background characteristics.



Figure 14 - AP user satisfaction



Reasons for dissatisfaction

Those who were not satisfied with any of the above-mentioned aspects of AP service provision and usefulness were asked to provide reasons.

- **Dissatisfaction with AP**

Figure 15 charts reasons for dissatisfaction with APs. Pain (56.5%) and fitting (33.8%) were the most common reasons for dissatisfaction with APs. Other reasons were durability issues (26.5%), safety (17.6%), appearance (11.8%), and weight (8.3%). Users also reported products being broken or worn out as reasons for dissatisfaction with APs.

- **Dissatisfaction with AP assessment and training**

Figure 16 charts reasons for dissatisfaction with assessment and training. The main reasons were quality of care (34.1%), procedure (27.5%), cost (25.3%), and distance/time (23.1%). Other reasons were waiting time, users' rights not being respected, staff attitudes, pain experienced, no training received, and poor quality of the product.

- **Non-usefulness of AP**

Figure 17 charts the reasons why APs are perceived as not useful. The main reported reasons were pain/discomfort (58.0%). Others reported fit/size/shape (28.4%), durability (25.3%), accessibility at home (16.0%), safety (14.8%), and road/transport accessibility (10.5%) as barriers to a product's usefulness.



Figure 15 - Reasons for dissatisfaction with APs

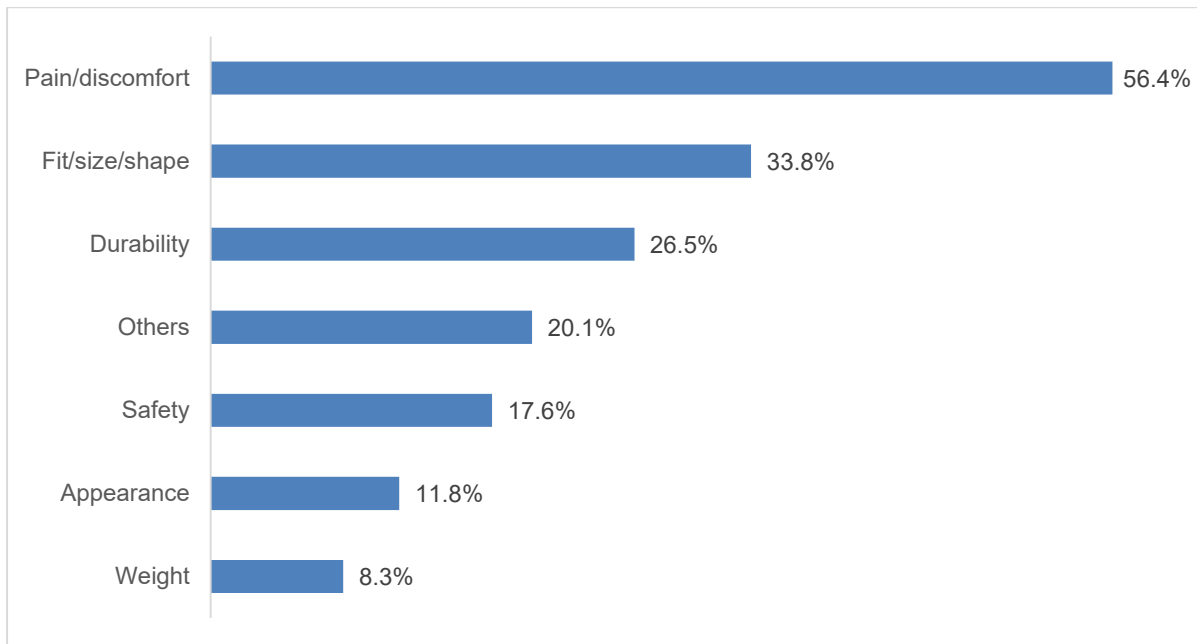


Figure 16 - Reasons for dissatisfaction with AP assessment and training

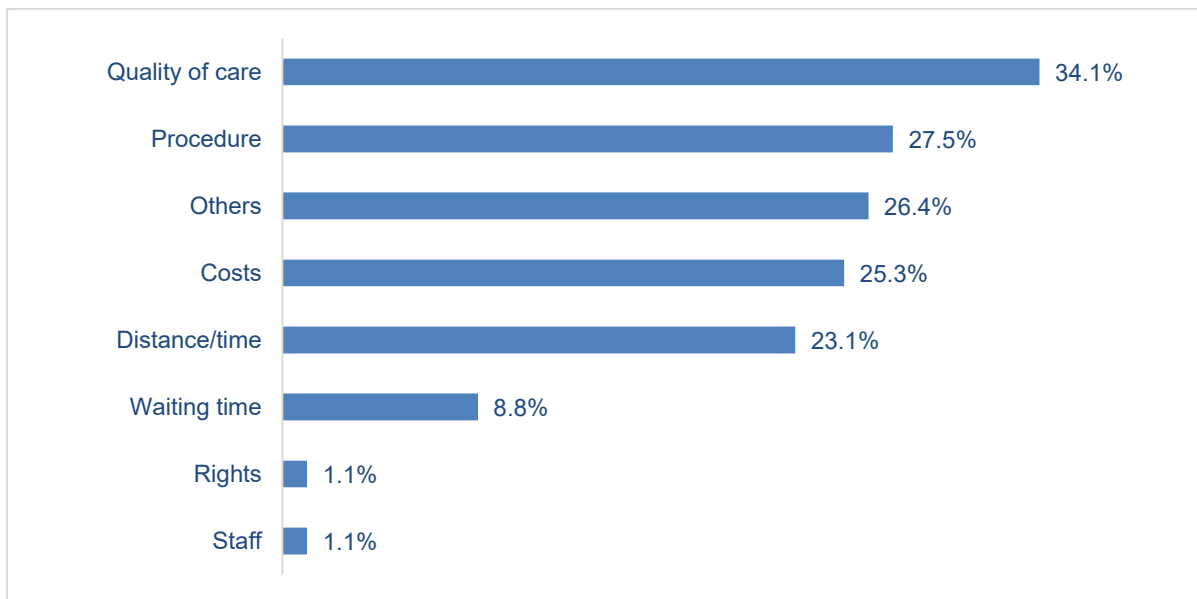


Figure 17 - Reasons for non-usefulness of APs

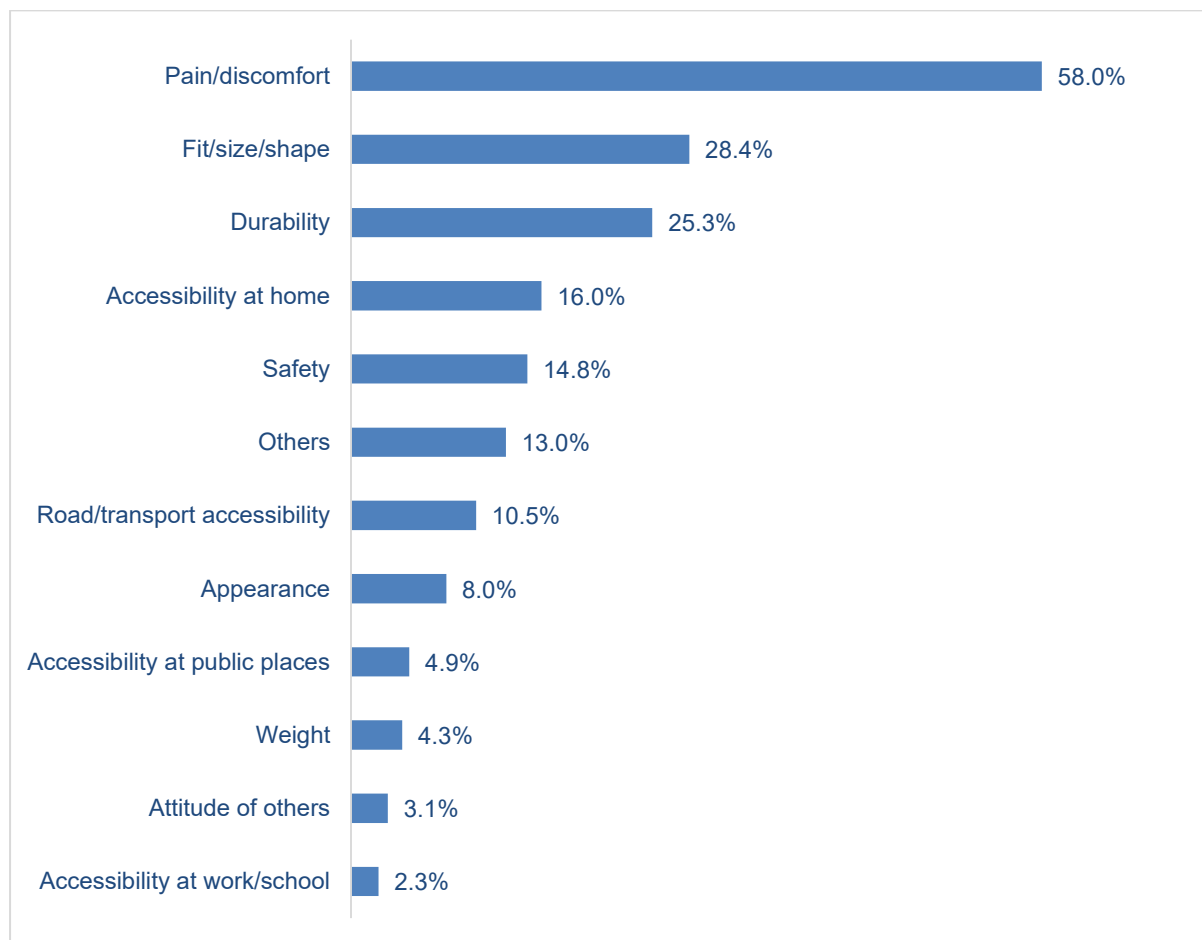


Table 5 - Satisfaction with AP by background characteristics

Percentage of individuals reporting satisfaction

	Satisfaction										Number of persons		
	Overall		Assessment and Training		Repair, Maintenance, and Follow-up		Suitability		Usefulness		Useful	Not useful	
	Satisfied	Dissatisfied	Satisfied	Dissatisfied	Satisfied	Dissatisfied	Suitable	Unsuitable	Useful	Not useful			
Sex													
Female	62.7	27.6	64.6	13.7	48.8	21.9	72.9	25.7	74.5	25.2	424		
Male	67.1	24.4	60.5	10.2	50.0	17.3	78.5	19.7	81.2	17.3	410		
Functional domains													
Mobility	63.3	27.6	60.9	12.3	60.9	20.1	75.6	23.7	76.3	23.2	616		
Seeing/vision	65.5	24.7	64.4	11.7	64.4	20.2	75.0	23.4	78.5	20.4	632		
Hearing	58.6	28.7	60.8	14.9	60.8	24.3	71.8	26.5	67.9	32.0	181		
Communicating	51.6	39.1	65.6	12.5	65.6	29.7	54.7	39.1	70.3	29.7	64		
Remembering	62.9	27.5	64.5	13.1	64.5	21.4	73.5	24.9	75.1	24.3	313		
Self-care	54.2	36.2	56.6	17.1	56.6	27.9	68.5	31.1	67.7	31.9	251		
Age (years)													
5-9	90.0	10.0	80.0	0.0	70.0	10.0	70.0	20.0	80.0	20.0	10		
10-14	56.5	34.8	63.6	4.5	65.2	4.3	82.6	17.4	78.3	21.7	23		
15-19	76.5	17.6	76.5	6.2	64.7	11.8	94.1	0.0	94.1	5.9	17		
20-29	72.1	21.3	67.2	6.8	54.1	14.7	88.5	9.8	85.2	13.1	61		
30-39	57.9	31.6	61.4	17.5	54.4	22.8	70.2	29.8	73.7	26.3	57		
40-49	63.8	31.9	68.1	10.6	45.7	23.4	71.3	26.6	75.5	24.5	94		
50-59	65.9	25.4	68.8	12.3	49.3	18.8	72.5	26.1	76.8	21.0	138		
60+	64.0	25.1	58.1	13.4	47.0	20.7	76.0	23.0	77.4	21.9	434		



4. Implications

4.1 Global context

The Uganda rATA 2023 is the first national survey of access to AT in Uganda, and among the first in Africa.¹⁸ The population characteristics were within expected ranges, suggesting the sample was a robust estimate of the overall population.

Uganda’s prevalence of functional difficulties is around the mean of 29 nationally representative surveys conducted for the *Global Report*.¹⁹ Among the respondents in this survey, 8.0% reported a lot or more difficulty hearing, compared with 4.8% in the *Global Report*, but was well within the global range of 2.7%-11.5%. All other domains were within a few percent of the global mean, and well within the global range. The estimate of disability prevalence using the Washington Group approach was 10.7%, lower than the 12.5% (among people older than 2 years) reported in the 2014 National Population and Housing Census Report.²⁰

Despite the prevalence of functional difficulties being within expected ranges compared with global data, both needs and unmet needs for APs tend to be higher in Uganda, even compared to seven other low-income countries. In Uganda, 21% of the population reported an unmet need for APs, compared with 14.4% (range 9.9%-27.2%) in the *Global Report*. Only 4.5% of Ugandans report their needs are met, which includes people using unsatisfactory products that represent the ‘under-met need.’ This is lower than 10.7% (range 2.6-17.1%) among seven other low-income countries.

4.2 Access to APs in Uganda

There is high overall need for APs and related services in Uganda, and the needs are mostly unmet. Among the population over 5 years old, 4.5% currently use APs, 21% report an unmet need for APs, and nearly a quarter (23.6%) experience at least some functional difficulties.

Needs are higher among older people, people with greater functional difficulties, and for certain functional domains; but needs are substantial and mostly unmet across sexes, ages, difficulty types, and regions.

Among those who have APs, the vast majority use products that are simple, homemade, low-cost devices. People with more complex needs, who require specialised products, are the least able to access them due to high costs, distance to services, limited availability of products, and limited knowledge about where to go and what solutions are available. Non-government sources and out-of-pocket payments are the most common ways of acquiring APs. High costs, limited availability, and lack of social support to access existing services are the most cited reasons for low access.


These findings illustrate a concerning lack of access to APs; but these challenges are shared with countries with similar economic conditions. There are high unmet needs, but reasonable levels of

¹⁸ Nationally representative surveys have been completed in Burkina Faso, Djibouti, Kenya, Liberia, Rwanda, and Togo (for a full list of countries, see ‘Global Report on Assistive Technology 2022’. Sub-national surveys (focusing on a specific sub-population) have been completed in Sierra Leone and Tanzania.

¹⁹ WHO and UNICEF (2022) Global report on assistive technology, 978-92-4-004945-1

²⁰ Uganda Bureau of Statistics 2016, The National Population and Housing Census 2014 – Main Report, Kampala, Uganda [available at UBOS.org; accessed Sept 2023]





satisfaction with existing products among those who currently have access to them. Findings confirm that public services account for only a very small proportion, with users more commonly relying on self-made products or those provided by private suppliers, such as NGOs and faith-based organisations, most of which are purchased out of pocket. This leaves an alarming gap between available products and those that are needed, where people with greater functional difficulties, more complex needs, or less resources are the most at risk of being deprived on the APs they need.

Overall, the need to implement solutions for increasing the volume and range and to improve access to APs is clear. This implies focusing on:

- Scaling up access to products overall, suited to local conditions.
- Widening the range of products for functional difficulties experienced by the population.
- Protecting consumers from low-quality products and high out-of-pocket costs.

4.3 Current APs and AP services

Among those who could access products, results suggest that living close to services, or requiring APs that can be made locally at low cost, increase access. Despite the tendency towards low-cost, homemade products, overall, satisfaction was reasonably high. Two-thirds of products were satisfactory. In other words, APs make a difference in people's lives. Half of products were associated with satisfactory services and follow-up. This implies that while products are useful, the services to provide and maintain APs present challenges. For over a quarter (26%) of people, products were unsatisfactory, and for one in five (21%), the AP they had was not useful. Pain and discomfort, associated with the fit or shape of the product, and their failure, were the main causes for low satisfaction. Low quality of care, the procedures for accessing services, costs, and distance to services were common causes of low satisfaction with services.

These findings highlight the importance of APs to Ugandans, and the importance of ensuring appropriate, accessible products. Specifically:

- Increasing access to APs makes a difference to the lives of Ugandans who report high satisfaction with the products they have. This suggests high potential to impact the lives of those who do not have access to products.
- Even when products are available, it is necessary to focus on their quality, including fit, durability, and comfort.
- How services are provided is an important consideration: costs, quality of services, and procedures to get products were common concerns among people dissatisfied with AP services.

Taken together, findings reveal that high overall need and high unmet needs affect a large proportion of the population, regardless of sex, age, and location.

Response strategies will require actions from multiple stakeholders at all levels, from macro-level policy to micro-level service arrangement and demand generation.

Findings underscore the importance and strategic value of current, planned, and future efforts to:

- Catalyse and stimulate the supply of APs from national to local services.



- Strengthen AP supply systems.
- Strengthen the workforce supporting AT services
- Strengthen safeguards including minimum product standards and professional standards for AT providers.
- Allocate new budget for AP.
- Implement existing policies and reflect necessary reforms in new policies.



5. Annexes

5.1 Questionnaire: rapid Assistive Technology Assessment tool (rATA)

Includes adaptations for ReLAB-HS / MoH Uganda

A. Preliminary Information / Administrative Survey Data

LABEL	NAME	QUESTION	OPTIONS / FIELD
INTID	a.1	Interviewer's ID:	<input type="checkbox"/> 01 = Enumerator 1 (02, 03, 04 ...)
LOC1	a.2	Sub-region	<input type="checkbox"/> List of sampled subregions
LOC2	a.3	District	<input type="checkbox"/> List of sampled districts
LOC3	a.4	County	<input type="checkbox"/> List of sampled counties
LOC4	a.5	Parish	<input type="checkbox"/> List of sampled parishes
LOC5	a.6	Village	<input type="checkbox"/> List of sampled villages
idhh	a.5	Household number	Integer (>0), enumerator entered
idind	a.6	Individual number Sequential in household	<input type="checkbox"/> 01 = Household member 1 (02, 03, 04 ...) ...
IID	a.7	Respondent's ID: Entered manually in running sheet as a de-identified unique code	Automatically generated, concatenates: {LOC1, LOC2, LOC3, idhh, idind}
DATE	a.8	Date Pre-generated by device	YYYY/MM/DD
TIMES	a.9	Time interview started (record now)	00:00 (24HR)
GEO	a.10	Optional geolocation (GPS) 100m accuracy (to avoid precise location recording)	GPS coordinate

Start repeating section***

B. Demographics

AGE	b.1	How old are you?	Age (years)
SEX	b.2	What is your gender?	<input type="checkbox"/> 1 = Male
		Do not read options	<input type="checkbox"/> 2 = Female <input type="checkbox"/> 88 = Not disclosed (do not read) <input type="checkbox"/>



C. Need

READ ALOUD: (The next questions ask about difficulties you may have doing certain activities because of a HEALTH CONDITION.)

MOBILITY	c.1	Without assistance or support from any people or equipment, do you have difficulty sitting, standing, walking or climbing steps? Would you say you have [read options]? (e.g. sitting without support, standing up from a chair, walking independently inside or outside the house, or climbing steps)	<input type="checkbox"/> 0 = No difficulty <input type="checkbox"/> 1 = Some difficulty <input type="checkbox"/> 2 = A lot of difficulty <input type="checkbox"/> 3 = Cannot do at all <input type="checkbox"/> 88 = Not disclosed (do not read)
SEEING	c.2	Do you have difficulty seeing, without using any devices? (e.g. reading books, newspapers, smart phone or signs, or identifying people across the road)	<input type="checkbox"/> 0 = No difficulty <input type="checkbox"/> 1 = Some difficulty <input type="checkbox"/> 2 = A lot of difficulty <input type="checkbox"/> 3 = Cannot do at all <input type="checkbox"/> 88 = Not disclosed (do not read)
HEARING	c.3	Do you have difficulty hearing, without using any products? (e.g. hearing when others talk or when answering the phone)	<input type="checkbox"/> 0 = No difficulty <input type="checkbox"/> 1 = Some difficulty <input type="checkbox"/> 2 = A lot of difficulty <input type="checkbox"/> 3 = Cannot do at all <input type="checkbox"/> 88 = Not disclosed (do not read)
COMM	c.4	Do you have difficulty speaking or communicating without the use of any products? (e.g. understanding others or being understood)	<input type="checkbox"/> 0 = No difficulty <input type="checkbox"/> 1 = Some difficulty <input type="checkbox"/> 2 = A lot of difficulty <input type="checkbox"/> 3 = Cannot do at all <input type="checkbox"/> 88 = Not disclosed (do not read)
REMEMB	c.5	Do you have difficulty remembering or concentrating without the use of any products? (e.g. forgetting appointments or medication, losing track of time, or difficulty finding places)	<input type="checkbox"/> 0 = No difficulty <input type="checkbox"/> 1 = Some difficulty <input type="checkbox"/> 2 = A lot of difficulty <input type="checkbox"/> 3 = Cannot do at all <input type="checkbox"/> 88 = Not disclosed (do not read)
SELFCARE	c.6	Do you have difficulty with your self-care without the use of any products? (e.g. eating, dressing, bathing or toileting)	<input type="checkbox"/> 0 = No difficulty <input type="checkbox"/> 1 = Some difficulty <input type="checkbox"/> 2 = A lot of difficulty <input type="checkbox"/> 3 = Cannot do at all <input type="checkbox"/> 88 = Not disclosed (do not read)

*Questions c.4, c.5, and c.6 are applicable for respondents with ages older than or equal to 5 years.



D. Demand and Supply

PRODUSE	d.1	Do you currently use any assistive product(s)?	<input type="checkbox"/> 0 = NO -> Go to d.9 <input type="checkbox"/> 1 = YES
PRODS	d.2	Which products do you use? (If "yes", tick the ones being used) (Show the poster or GIF file – read and/or describe the images to person with visual impairment)	USE SHOWCARDS/ POSTER/IMAGEBOOK AND SELECT ALL THAT APPLY FROM d.2 PRODUCT LIST
Mobility	<input type="checkbox"/> 101 = Axillary / Elbow crutches <input type="checkbox"/> 102 = Canes/sticks, tripod, quadripod <input type="checkbox"/> 103 = Club foot braces <input type="checkbox"/> 104 = Manual wheelchairs - basic type for active users <input type="checkbox"/> 105 = Wheelchairs, manual with postural support <input type="checkbox"/> 106 = Manual wheelchairs - push type <input type="checkbox"/> 107 = Wheelchairs, electrically powered <input type="checkbox"/> 108 = Orthoses (upper limb) <input type="checkbox"/> 109 = Orthoses (lower limb) <input type="checkbox"/> 110 = Orthoses (spinal) <input type="checkbox"/> 111 = Pressure relief cushions <input type="checkbox"/> 112 = Pressure relief mattresses <input type="checkbox"/> 113 = Prostheses (lower limb) <input type="checkbox"/> 114 = Prostheses (upper limb) <input type="checkbox"/> 115 = Rollators <input type="checkbox"/> 116 = walking frames/walkers <input type="checkbox"/> 117 = Therapeutic footwear (diabetic, neuropathic, orthopedic) <input type="checkbox"/> 118 = Fall detectors <input type="checkbox"/> 119 = Standing frames, adjustable <input type="checkbox"/> 120 = tricycles	Seeing	<input type="checkbox"/> 201 = Audio-players with DAISY capability <input type="checkbox"/> 202 = Braille displays (note takers) <input type="checkbox"/> 203 = Braille writing equipment/ brailers <input type="checkbox"/> 204 = Magnifiers, digital handheld <input type="checkbox"/> 205 = Magnifiers, optical <input type="checkbox"/> 206 = Spectacles; low-vision, short/ long distance/filters, etc. <input type="checkbox"/> 207 = Watches, talking/touching <input type="checkbox"/> 208 = White canes <input type="checkbox"/> 209 = Smart phones/tablets/PDA <input type="checkbox"/> 210 = Deafblind communicators <input type="checkbox"/> 211 = Gesture to voice technology



Hearing	<input type="checkbox"/> 301 = Alarm signalers with light/sound/ vibration <input type="checkbox"/> 302 = Hearing aids (digital) and batteries <input type="checkbox"/> 303 = Closed captioning displays <input type="checkbox"/> 304 = Smart phones/tablets/PDA <input type="checkbox"/> 305 = Deafblind communicators <input type="checkbox"/> 306 = Hearing loops/FM systems <input type="checkbox"/> 307 = Video communication devices	<input type="checkbox"/> Communicating	<input type="checkbox"/> 401 = Smart phones/tablets/PDA <input type="checkbox"/> 402 = Communication boards/ books/cards <input type="checkbox"/> 403 = Communication software <input type="checkbox"/> 404 = Recorders
Remembering	<input type="checkbox"/> 502 = Smart phones/tablets/PDA <input type="checkbox"/> 503 = Global Positioning System (GPS) locators <input type="checkbox"/> 504 = Personal emergency alarm systems <input type="checkbox"/> 505 = Simplified mobile phones <input type="checkbox"/> 506 = Time management products <input type="checkbox"/> 507 = Travel aids, portable	<input type="checkbox"/> Self-care	<input type="checkbox"/> 601 = Chairs for shower/bath/toilet <input type="checkbox"/> 602 = Grab-bars / Hand rails <input type="checkbox"/> 603 = Incontinence products, absorbent <input type="checkbox"/> 604 = Ramps, portable <input type="checkbox"/> 605 = Keyboard and mouse emulation software <input type="checkbox"/> 606 = Screen readers

Other Products Not on Core List

OTHPROD	d.3	If selected '87' in d.2 How many other products do you use?	Integer
-	-	If d.3 >3 Please consider the three other products you consider to be the most important to you.	PROMPT ONLY
OTHPR1	d.3n.1	If d.3 >0 What is the name of your first other product? If the respondent doesn't know the name, offer assistance. If not known/uncertain, describe in words 'i.e., modified spoon with rubber, used for eating'	[71=text]
OTHPR1i	d.3p.1	Can I take a picture of your [OTHPR1]? If yes -> take picture	IMAGE
OTHPR2	d.3n.2	If d.3 >1 What is the name of your second other product?	[72=text]



OTHPR2i	d.3p.2	Can I take a picture of your [OTHPR2]? If yes -> take picture	IMAGE
OTHPR3	d.3n.3	If d.3 >2 What is the name of your third other product?	[73=text]
OTHPR3i	d.3p.3	Can I take a picture of your [OTHPR3]? If yes -> take picture	IMAGE
PRODSUM	d.4	Calculates number of products used	Calculation Sum count- selected (d.2) + d.3
PRODIMP	d.5	If d.4 >3 Considering all the products you used, please select the 3 most important products	Generate option list from d.2 and d.3n.1, d3n.2, d3n.3 <input type="checkbox"/> PROD1 <input type="checkbox"/> PROD2 <input type="checkbox"/> PROD3

Sources of AP

SOURCE1	d.6.1	Where did you get your [PROD1] from? Select all that apply	<input type="checkbox"/> 1 = Public sector: Government facility, public hospital <input type="checkbox"/> 2 = NGO sector: Non-profit facility <input type="checkbox"/> 3 = Private sector: private facility/ hospital/clinic/shop/store <input type="checkbox"/> 4 = Friends/family <input type="checkbox"/> 5 = Self-made <input type="checkbox"/> 87 = Other <input type="checkbox"/> 88 = Don't know
SOURCE1o (optional)	d.6.1o	If d.6.1 = 87 Specify other source of [PROD1]	Text
SOURCE2	d.6.2	If d.4 >1 Where did you get your [PROD2] from? Select all that apply	See d.6.1
SOURCE2o (optional)	d.6.2o	If d.6.2 = 87 Specify other source of [PROD2]	Text
SOURCE3	d.6.3	If d.4 >2 Where did you get your [PROD3] from? Select all that apply	See d.6.1
SOURCE3o (optional)	d.6.3o	If d.6.3 = 87 Specify other source of [PROD3]	Text
TSOURCES	d.6.4	Calculates any product source selected by individual	



Payers of AP

PAYER1	d.7.1	Who paid for your [PROD1]? Select all that apply *Note: the most frequent answers are different from the most important.	<input type="checkbox"/> 1 = Government <input type="checkbox"/> 2 = NGO/Charity <input type="checkbox"/> 3 = Employer/School <input type="checkbox"/> 4 = Insurance <input type="checkbox"/> 5 = Paid out of pocket (self) <input type="checkbox"/> 6 = Family / friends <input type="checkbox"/> 87 = Other <input type="checkbox"/> 88 = Don't know
PAYER1o (optional)	d7.1o	If d.7.1 = 87 Specify other payer of [PROD1]	Text
PAYER1	d.7.2	If d.4 >1 Who paid for your [PROD2]?	See d.7.1
PAYER1o (optional)	d7.2o	If d.7.2 = 87 Specify other payer of [PROD2]	Text
PAYER1	d.7.3	If d.4 >2 Who paid for your [PROD3]?	See d.7.1
PAYER1o (optional)	d7.3o	If d.7.3 = 87 Specify other payer of [PROD3]	Text
OOP	d.7.4	Can you estimate the amount you paid for assistive products in the last 12 months? Individual or immediate family only: not other payers	Integer in local currency

Distance to AP Facility

DISTKM1	d.8.1	How far did you have to travel to get your [PROD1]?	<input type="checkbox"/> 1 = Less than 5km <input type="checkbox"/> 2 = 6-25km <input type="checkbox"/> 3 = 26-50km <input type="checkbox"/> 4 = 51-100km <input type="checkbox"/> 5 = More than 100km <input type="checkbox"/> 88 = Don't know
DISTKM2	d.8.2	If d.4 >1 How far did you have to travel to get your [PROD2]?	See d.8.1
DISTKM3	d.8.3	If d.4 >2 How far did you have to travel to get your [PROD3]?	See d.8.1



Unmet Needs

UNMET	d.9	Do you think you need any assistive product(s) that you do not currently use, or you currently use but it needs to be replaced?	<input type="checkbox"/> 0 = NO -> Go to e.1.1 <input type="checkbox"/> 1 = YES
UMPRODS	d.10	Which products do you think you need? (Tick the ones identified) (Show the poster or GIF file – read and/or describe the images to person with visual impairment)	USE SHOWCARDS AND SELECT ALL THAT APPLY FROM d.2 PRODUCT LIST

Barriers to Access

BARRIER	d.11	Why don't you have the assistive product(s) you need? Select all that apply	<input type="checkbox"/> 1 = Not available <input type="checkbox"/> 2 = Not suitable <input type="checkbox"/> 3 = Lack of transport / too far <input type="checkbox"/> 4 = Lack of time <input type="checkbox"/> 5 = Lack of support <input type="checkbox"/> 6 = Cannot afford <input type="checkbox"/> 7 = Stigma/ shyness <input type="checkbox"/> 87 = Other <input type="checkbox"/> 88 = Do not know about AP
BARRIERo (optional)	d.11o	If selected "87" in d.11 Specify other barrier	Text

Satisfaction

SATPR2	e.1.2	If d.4 > 1 Over the last month, how satisfied are you with your [PROD2]?	See e.1.1
SATPR3	e.1.3	If d.4 > 2 Over the last month, how satisfied are you with your [PROD3]?	See e.1.1
DSATPR (optional)	e.1.4	If selected "1" or "2" in e.1.1 or e.1.2 or e.1.3 You mentioned you were dissatisfied with a product. What are the reasons?	<input type="checkbox"/> 1 = Fit / size / shape <input type="checkbox"/> 2 = Pain / discomfort <input type="checkbox"/> 3 = Weight <input type="checkbox"/> 4 = Appearance <input type="checkbox"/> 5 = Safety <input type="checkbox"/> 6 = Durability <input type="checkbox"/> 87 = Other
DSATPRo (optional)	e.1.4o	If selected "87" in e.1.4 Specify other reasons for dissatisfaction	TEXT



SVCPR1	e.2.1	Thinking about your [PROD1], how satisfied are you with the assessment and training you received?	<input type="checkbox"/> 1 = Very dissatisfied <input type="checkbox"/> 2 = Dissatisfied <input type="checkbox"/> 3 = Neither satisfied nor dissatisfied <input type="checkbox"/> 4 = Quite satisfied <input type="checkbox"/> 5 = Very satisfied <input type="checkbox"/> 6 = Not applicable (Do not read) ((assessment/training not needed) <input type="checkbox"/> 88 = refused / don't know (Do not read)
SVCPR2	e.2.2	If d.4 > 1 Thinking about your [PROD2], how satisfied are you with the assessment and training you received?	See e.2.1
SVCPR3	e.2.3	If d.4 > 2 Thinking about your [PROD3], how satisfied are you with the assessment and training you received?	See e.2.1
DSATSVC (optional)	e.2.4	If selected "1" or "2" in e.1.1 or e.1.2 or e.1.3 You mentioned you were dissatisfied with services, what were the reasons?	<input type="checkbox"/> 1 = Procedure <input type="checkbox"/> 2 = Waiting time <input type="checkbox"/> 3 = Quality of care <input type="checkbox"/> 4 = Staff <input type="checkbox"/> 5 = Rights <input type="checkbox"/> 6 = Distance / time <input type="checkbox"/> 7 = Costs <input type="checkbox"/> 87 = Other
DSATSVCo (optional)	e.2.4o	If selected "87" in e.2.4 Specify other reasons for dissatisfaction	TEXT
SATFUI	e.3.1	Please think about your [PROD1]. How satisfied are you with the repair, maintenance and follow-up services based on your last experience?	<input type="checkbox"/> 1 = Very dissatisfied <input type="checkbox"/> 2 = Dissatisfied <input type="checkbox"/> 3 = Neither satisfied nor dissatisfied <input type="checkbox"/> 4 = Quite satisfied <input type="checkbox"/> 5 = Very satisfied <input type="checkbox"/> 6 = Not applicable (have not needed follow up) – (Do not read) <input type="checkbox"/> 88 = Refused / don't know (Do not read)
SATFU2	e.3.2	If d.4 > 1 Please think about your [PROD2]. How satisfied are you with the repair, maintenance and follow-up services based on your last experience?	See e.3.1



SATFU3	e.3.3	If d.4 >2 Please think about your [PROD3]. How satisfied are you with the repair, maintenance and follow-up services based on your last experience?	See e.3.1
SUITPRI	e.4.1	Is your [PROD1] suitable for your home and surroundings?	<input type="checkbox"/> 1 = Not at all <input type="checkbox"/> 2 = Not much <input type="checkbox"/> 3 = Moderately <input type="checkbox"/> 4 = Mostly <input type="checkbox"/> 5 = Completely <input type="checkbox"/> 88 = Refused / don't know (Do not read)
SUITPR2	e.4.2	If d.4 >1 Is your [PROD2] suitable for your home and surroundings?	See e.4.1
SUITPR3	e.4.3	If d.4 >2 Is your [PROD3] suitable for your home and surroundings?	See e.4.1
UTILPRI	e.5.1	To what extent does your [PROD1] help you to do what you want? (In terms of doing household activities, self-care, going to school, college or work, visiting friends or neighbors or going for leisure and recreation)	<input type="checkbox"/> 1 = Not at all <input type="checkbox"/> 2 = Not much <input type="checkbox"/> 3 = Moderately <input type="checkbox"/> 4 = Mostly <input type="checkbox"/> 5 = Completely <input type="checkbox"/> 88 = Refused / don't know Do not read
UTILPR2	e.5.2	If d.4 >1 To what extent does your [PROD2] help you to do what you want?	See e.5.1
UTILPR3	e.5.3	If d.4 >2 To what extent does your [PROD3] help you to do what you want?	See e.5.1
DUTIL	e.5.4	If selected "1" or "2" in e.5.1 or e.5.2 or e.5.3 You mentioned that your products do not always help you do what you want. What are the reasons?	<input type="checkbox"/> 1 = Fit / size / shape <input type="checkbox"/> 2 = Pain / discomfort <input type="checkbox"/> 3 = Weight <input type="checkbox"/> 4 = Appearance <input type="checkbox"/> 5 = Safety <input type="checkbox"/> 6 = Durability <input type="checkbox"/> 7 = Road / transport accessibility <input type="checkbox"/> 8 = Accessibility at home <input type="checkbox"/> 9 = Accessibility at work/school <input type="checkbox"/> 10 = Accessibility public facilities <input type="checkbox"/> 11 = Attitudes of other people <input type="checkbox"/> 87 = Other -> go to e.5.4o



DUTILo	e.5.4o	If selected “87” in e.5.4 Specify other reasons you cannot do what you want	text
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ENVBARI	e.6.1	Thinking about the places you need to visit like schools, workplaces, public spaces, can use [PRODI] as much as you want in those places? Enumerator: prompt to ask what the problem is. Discuss that this question is asking about the place/environment/barriers, not the person or the product.	<input type="checkbox"/> 1 = Not at all like <input type="checkbox"/> 2 = Not much you <input type="checkbox"/> 3 = Moderately <input type="checkbox"/> 4 =A lot <input type="checkbox"/> 5 = Completely <input type="checkbox"/> 6 = Not applicable (Do not read) <input type="checkbox"/> 88 = Refused/Don't know (Did not read)
ENVBARI	e.6.2		
ENVBARI	e.6.3		

E. Recommendations (optional) and end of survey

RESCOM (optional)	f.1	Do you have any comments regarding any aspects on improving access to assistive product(s) in your country? (Skip if no. Please write up to three action points.)	Text
CLOSE	f.2	READ: The survey is now completed. Thank you for your participation.	<input type="checkbox"/> Acknowledge
TIMEE	f.3	Time interview ended (record at the time of hitting “Acknowledge”)	00:00 (24HR)

F. Surveyor’s comments & post-survey administration

PROXY	g.1	Proxy interview: If any part of the interview completed by proxy	<input type="checkbox"/> 0 = No <input type="checkbox"/> 1 = Yes
SURVRV	g.2	Interviewer: Should this data be checked, verified, discussed by survey coordinators? Due to any issues in the questions, options, respondent’s understanding, or any other reason	<input type="checkbox"/> 0 = No -> End the survey <input type="checkbox"/> 1 = Yes
ENUMCOM	g.3	If G.2 = 1 Please describe issues or points for follow up End the survey after entering text.	TEXT

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5.2 List of assistive products used

S/No.	Assistive Products	Frequency	Percent
1	Canes/sticks/tripod/quadripod	343	37%
2	Spectacles low vision, short/long distance	219	24%
3	Spectacles prescription	148	16%
4	Axillary elbow crutches	81	9%
5	Manual wheelchair	26	3%
6	Orthoses (spinal)	25	3%
7	Manual wheelchair-push type	17	2%
8	Hearing aids (digital) and batteries	8	1%
9	Sunglasses	8	1%
10	Rollators	7	1%
11	Tricycles	5	1%
12	Wheelchair manual with postural support	4	0%
13	White cane	4	0%
14	Prostheses (upper limb)	3	0%
15	Orthoses (lower limb)	3	0%
16	Orthoses (upper limb)	2	0%
17	Prostheses (lower limb)	2	0%
18	Walking frames/walkers	2	0%
19	Communication software	2	0%
20	Chairs for shower/bath/toilet	2	0%
21	Adapted toilet	2	0%
22	Therapeutic footwear	2	0%
23	Clubfoot braces	1	0%
24	Standing frame, adjustable	1	0%
25	Magnifiers, optical	1	0%
26	Communication board/books/cards	1	0%
27	Grab bars, handrails	1	0%
28	Adapted chair	1	0%
		921	

5.3 List of assistive products needed

S/No	Assistive Products	Frequency (N)	%	S/No	Assistive Products	Frequency (N)	%
1	Spectacles; Low-Vision, Short/Long Distance/filters etc.	1,898	35.7	25	Tricycles	19	0.6
2	Hearing Aids (Digital) And Batteries	705	20.7	26	Hearing Loops/FM Systems	18	0.5
3	Canes/Sticks, Tripod and Quadripod	483	12.7	27	White Canes	17	0.5
4	Orthoses (Spinal)	350	10.3	28	Smart Phones/Tablets/PDA	16	0.5
5	Axillary Elbow Crutches	193	5.7	29	Wheelchairs, Electrically Powered	16	0.5
6	Manual Wheelchairs - Basic Type for Active user	130	3.8	30	Club Foot Braces	15	0.4
7	Pressure Relief Mattresses	104	3.1	31	Prostheses (Lower Limb)	14	0.4
8	Watches, Talking/Touching	82	2.4	32	Standing Frames, Adjustable	13	0.4
9	Orthoses (Lower Limb)	80	2.3	33	Magnifiers, Digital Handheld	12	0.3
10	Manual Wheelchairs - Push Type	66	1.9	34	Grab-Bars Handrails	10	0.3
11	Pressure Relief Cushions	62	1.8	35	Gesture To Voice Technology	9	0.3
12	Pill Organizers	61	1.8	36	Personal Emergency Alarm Systems	8	0.2

13	Communication Boards/Books/Cards	55	1.6	37	Deafblind Communicators	7	0.2
14	Recorders	50	1.5	38	Time Management Products	5	0.1
15	Rollators	37	1.1	39	Alarm signalers with light/sound/vibration	5	0.1
16	Wheelchairs, Manual with Postural Support	36	1.1	40	Braille Displays (Note Takers)	4	0.1
17	Chairs For Shower/Bath/Toilet	33	1	41	Travel Aids, Portable	4	0.1
18	Orthoses (Upper Limb)	32	0.9	42	Closed Captioning Displays	3	0.1
19	Walking Frames/Walkers	29	0.8	43	Fall Detectors	3	0.1
20	Communication Software	24	0.7	44	Screen Readers	3	0.1
21	Magnifiers, Optical	24	0.7	45	Incontinence Products, Absorbent	2	0.1
22	Prostheses (Upper Limb) *	22	0.6	46	Video Communication Devices	2	0.1
23	Therapeutic Footwear (Diabetic, Neuropathic, Orthopaedic)	21	0.6	47	audio players with DAISY capacity	2	0.1
24	Braille Writing Equipment/Braillers	20	0.6	48	Keyboard And Mouse Emulation Software	1	0



5.4 Sample size calculations

Overall recommendation/s / parameters

- **Proportion of target population:** The rATA is for a total population-based survey. So, the proportion is 100% of a country population.
- **Estimate of key indicator of study:** The key indicator for rATA outcomes in the *Global Report on Assistive Technology* is to estimate the prevalence of need and unmet need for AT in the country's population. Based on the WHO estimate – 1 billion people need AT and only 10% of those in need have access to it – current access is approximately 1% of the population. So, it is estimated as 1%.
- **Estimate of non-responsive rate:** The non-responsive rate is calculated as 10%.
- **Critical value for confidence level of statistics:** 95% confidence for the estimated key indicated is used.
- **Relative error of the key indicator:** Acceptable error of the key indicator is 30%.
- **Design effect:** A value of 2 is used.
- **Average household size:** By the end of 2020, the average household size was 3.58.

Sample size should be calculated with following formula:

$$n = \frac{4 * r(1 - r) * deff}{(RME * r)^2 * pb * \underline{n} * RR}$$

n – Needed sample size

4 – Value to reach to 95% confidence

r – percentage of key indicators

$deff$ – impact of sample design or variation ratio

RME –Assumed relative error in 95% confidence

pb –percentage of population of key indicators to total populations

\underline{n} –average household

RR – response rate



5.5 Sample size parameters used to draw rATA sample

Parameters	Values	Comments
Proportion of target population	1	Target survey population in proportion to the whole population in your country; suggest 100% ~ 1 for rATA
Estimate of key indicator of study	0.01	Key indicator for rATA study; suggest 1% ~ 0.01 (current AT access based on estimate of 10% need of AT and only 10% of those have access to AT)
Estimate of non-response rate	0.2	Please select a value of anticipated non-response rate in your country; suggest 10% ~ 0.1
Critical value for confidence level of statistics	1.96	Critical value; suggest using value 1.96 (95% confidence level)
Margin of error	0.0025	Automatically calculated by multiplying the relative error and the estimated prevalence
Relative error	0.25	Value of the percentage of error allowed relative to the key indicator; suggest 25% ~ 0.25 for rATA key indicator estimated between 0.75% - 1.25%
Design effect	2	Design effect due to the complex multiple stage sampling applied, design effect of a value 2 is recommended to be used
Average household size	4.6 ²¹	Average number of residents in one household in the covered population (total Uganda average)
Sample size (nr households)	3175	
Sample size (nr persons)	14605	

²¹ Uganda National Household Survey Report 2019/2020.



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