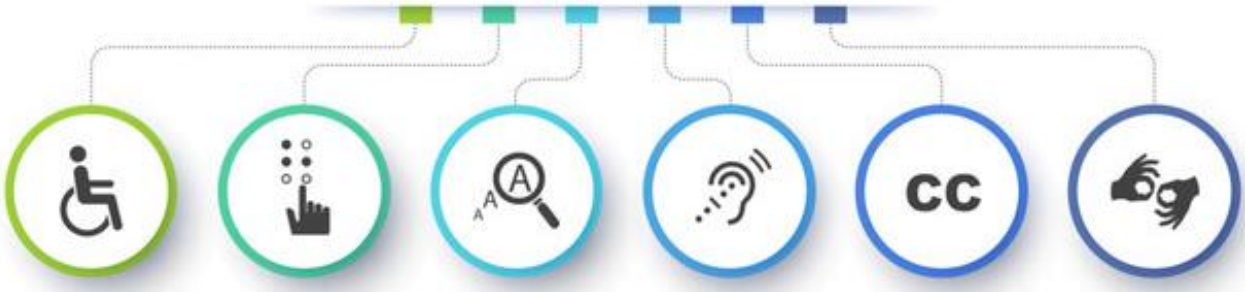
Measuring access to assistive technology in Nepal

A Country Report



Nepal Health Research Council

Government of Nepal
Ministry of Health and Population

Measuring access to assistive technology in Nepal

A Country Report

Authors

Krishna Prasad Paudel, Pradip Gyanwali, Sitasnu Dahal, Bihungum Bista, Rabindra Baskota, Chuman Lal Das, Rudra Prasad Marasini, Phanindra Prasad Baral, Prashnna Napit, Nistha Shrestha, Umesh Raj Aryal, Prakriti Koirala, Kedar Marahatta, Sunil Pokhrel, Anuradha Shrestha, Meghnath Dhimal.

**KPP and PG are joint Primary investigators and have contributed equally*.

Suggested Citation

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Ministry of Health & Population
Ramshahpath, Kathmandu
Nepal
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Ref: .....

Date : .....

Foreword

Ministry of Health and Population (MOHP) affirms its dedication to ensuring the quality and affordability of health services for its citizens. The healthcare services of Nepal have recognized assistive products as interventions to prevent the disabling consequences of health conditions and promote functioning. Assistive technology enables people to lead healthy, productive, independent, and dignified lives. It also enables equal participation in education, the labor market, and better quality family and social life. Assistive technology is required by a diverse spectrum of the population, including people with chronic health conditions, persons with disabilities, older adults and any person who experiences temporary or lifelong impairment or functional decline throughout their lives.

The importance of assistive technology is paramount, and MOHP took the initiative in last 2021 to conduct Rapid Assistive Technology Assessment (rATA). The initiative aims to assess the national and provincial requirement, unmet needs, demands, supply availability, barriers, and user satisfaction of assistive products. I extend my congratulate to the team of the Epidemiology and Diseases Control Division and Nepal Health Research Council for successfully completing this survey.

I would like to acknowledge the support provided by the World Health Organization-Nepal. The guidance of the technical committee and experts during different phases of the survey was crucial for its success. From MOHP, I would like to extend my sincere gratitude to all the households and individuals who participated as respondents in this survey. I recommend that the MOHP and Department of Health Services entities, along with provincial and local health systems, integrate assistive technology into their policies, plans, and activities guided by the evidence generated by this survey.

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Dr. Roshan Pokhrel

Secretary

Government of Nepal
Ministry of Health and Population
Department of Health Service
..... Division

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Pachali, Teku
Kathmandu, Nepa

Ref No.:-

Foreword

I am delighted to present the report on Rapid Assistive Technology Assessment (rATA) survey, the first-ever nationwide study conducted by Ministry of Health and Population, to assess the prevalence, need, access and barriers related to assistive products at the population level.

This Survey document is collection of empirical evidences to guide policy development and program design on assistive technology. I am confident that the findings from the report will help the Government of Nepal and other stakeholders to design and implement related programs.

The Epidemiology and Diseases Control Division (EDCD) and Leprosy Control and Disability Management Section (LCDMS) have achieved noteworthy progress in the field of assistive technology, including the allocation of conditional grants to facilitate public-private partnerships in assistive product service provision, development of the National Standard on Assistive Technology (NSAT), and in creation of the Priority Assistive Product List (PAPL).

I believe that the findings from the rATA will provide further justification and confidence in accelerating progress within the assistive technology sector. The data obtained from the rATA will serve as a strategic guide for federal, provincial, and local governments for investing in Nepal's assistive technology sector.

I would like to congratulate the teams at EDCD, LCDMS and the Nepal Health Research Council (NHRC) for successfully conducting this survey. I would also like to thank the WHO for extending their support and assistance in developing rATA.

.....
Dr. Sangeeta Kaushal Mishra
Director General

Director General

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Government of Nepal
Ministry of Health and Population
Ramshahpath, Kathmandu

Date : 7th Sep.2023

Preface

The World Health Assembly has recognized the need for improving access to assistive technology across the world and has commissioned World Health Organization to prepare a comprehensive global report on effective access to assistive technology. In this pursuit, the Nepal Health Research Council in collaboration with the Epidemiology and Disease Control Division conducted a rapid Assistive Technology Assessment (rATA). This initiative contributed to the development of the Global Report on Assistive Technology (GReAT) while simultaneously working to improve access to assistive technology within Nepal.

The survey is also led by Steering Committee Members and Technical Working Group Members who are representatives from Ministry of Health and Population and Department of Health Services, and also includes stakeholders from related organizations of Nepal.

This nationally representative survey has generated evidence regarding the utilization and unmet need of assistive technology in Nepal. It has highlighted the disparities in access to assistive technology across different geographic and demographic distributions.

The provincial estimates also give findings on the status of assistive technology across different provinces. It is well recognized that the need for assistive technologies is high, but demand is low, and supply is even lower in Nepal. This mismatch between need and demand itself presents a challenge to improving access. There is also a significant unmet need for assistive technologies. At all levels – policymakers, care providers and potential beneficiaries – there is a lack of understanding about the benefits of assistive technologies and a lack of information about what devices are available. It is critically important to understand and address the mismatches between high need and low demand, to devise policies to improve access to and use of assistive technologies. Therefore, this study provides necessary evidence-based research findings for the government and policy-makers to devise and implement Assistive Technology related programs and policies. Finally, I extend my congratulations to the research team of NHRC and EDCD for completing this survey.

7 Sept 2023

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Dr. Krishna Paudel

Chief, Policy, Planning and Monitoring Division

Government of Nepal

Nepal Health Research Council (NHRC)

Estd. 1991

Ref. No.: 364

Acknowledgment

I would like to express my gratitude to Ms. Dev Kumari Guragain, Secretary, Ministry of Health and Population (MOHP), Dr. Roshan Pokhrel, Secretary, MOHP, Dr. Sangeeta Kaushal Mishra, Director General of Department of Health Services, Dr. Dipendra Raman Singh, then Director General of Department of Health Services, Dr. Kirshna Prasad Paudel, Chief, Planning, Policy and Monitoring Division, Dr. Rudra Prasad Marasini, Director of Epidemiology and Disease Control Division (EDCD). I would also like to thank Chief of the Leprosy Control and Disability Management Section at EDCD. Their unwavering support was instrumental from the conception to the successful completion of this survey.

The rATA survey was carried out under the expert guidance and supervision of Dr. Meghnath Dhimal, Chief, Research Section, Nepal Health Research Council (NHRC). Throughout the study, we witnessed sincere dedication and competence from the NHRC team, including Dr. Umesh Raj Aryal, Consultant Biostatistician; Mr. Bihungum Bista, Senior Research Officer; Ms. Sitasnu Dahal, Research Officer; Ms. Prakriti Koirala, Assistant Research Officer; and Ms. Sarina Gyawali, Research Assistant at NHRC.

We received invaluable technical assistance for the project implementation from the rATA team members representing WHO-HQ, WHO SEARO, WHO Nepal, and Dr. Wesley Pryor from the Nossal Institute for Global Health at the University of Melbourne, Australia. The rATA Steering Committee Members, rATA Technical Working Group Members, and rATA Reference Group Members played pivotal roles in survey deployment, as well as in reviewing and approving this report.

This survey would not have been possible without the immense efforts of our field researchers who conducted nationwide data collection and the survey participants who generously shared their responses and valuable time. I extend my appreciation to all the NHRC and EDCD's staff who coordinated and provided support to ensure the timely completion of this survey.

The Nepal rATA survey in 2021 and the subsequent report publication were made achievable through the generous support provided by WHO.

.....

Dr. Pradip Gyanwali

Member Secretary

Government of Nepal
Ministry of Health and Population
Department of Health Services
Epidemiology and Disease Control Division

Phone No. 5352421
Fax No. 5352375
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Date: 4th September, 2023

Preface

The Epidemiology and Disease Control Division (EDCD) is gradually integrating assistive product services within the health system of Nepal. In this context, EDCD intends to deploy Rapid Assistive Technology Assessment (rATA) through the Nepal Health Research Council (NHRC), aiming for significant future strides in this field. While our Leprosy Control and Disability Management Section (LCDMS) is dedicated to developing this sector, we understand that there are still numerous barriers to access assistive products in terms of service availability and affordability. Therefore, EDCD's main objective is to gain a comprehensive understanding of the precise extent of the needs, availability, and barriers by conducting this nationwide population-based survey.

In 2018, EDCD developed the Priority Assistive Product List (PAPL) of Nepal. Nepal became the second country in the world to establish such a list. This initiative underscores EDCD's responsiveness in strengthening the provision of assistive products. The PAPL functions similarly to an essential list of medicines that should be easily accessible and affordable. However, we recognize the limited availability of assistive product services in our hospitals, highlighting the need for investment to address the supply issue of assistive products in our health system.

To make the investment more precise and strategic, we need reliable data. The rATA survey has provided us with the data to refine our priorities and investments. The evidence generated by rATA holds relevance for all three levels of government, assistive product users, professionals, and external development partners. We all need to consolidate our efforts and work together to develop this sector in our country. We extend our gratitude to non-governmental organizations and private organizations for their invaluable support for provision of assistive products in Nepal.

EDCD would like to extend its gratitude to NHRC and its team for conducting this nationwide survey. I also extend my sincere appreciation to all the respondents, provincial, and local authorities for making this survey possible. The World Health Organization Nepal's support is commendable and we would like to thank you for your generous assistance in the rATA survey program in Nepal.

.....

Dr. Rudra Prasad Marasini
Director

Government of Nepal
Ministry of Health and Population
Department of Health Service
Teku, Kathmandu

World Health Organization

Nepal

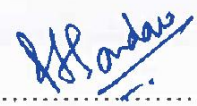
Message from WHO Country Office for Nepal

Functioning is critical for healthy living, well-being, and dignified life. Assistive technology (AT) and products promotes functioning, prevents the adverse consequences of health conditions, and alleviates the environmental barriers. It amplifies the health outcomes and bolsters the participation of a person in society. In the wake of mounting non-communicable diseases and ageing, there is a collective realization that the countries need focused approaches to provide responsive services for rehabilitation and AT.

WHO-Nepal congratulates the Ministry of Health and Population on successfully conducting the Rapid Assistive Technology Assessment (rATA) survey in Nepal. rATA derives the national facts and figures to guide and improvise the functioning status of the population through the provision of appropriate assistive products. rATA provides the need, unmet need, demands, supply and satisfaction related national as well as provincial data on AT. We believe that the finding of rATA could provide a rational basis to inform the strategic reform on AT - it's coverage, quality, and affordability. WHO-Nepal also expresses appreciation to United Nations Partnership on the Rights of Persons with Disabilities (UNPRPD) for their support in conducting the rATA survey, recognizing its significance in providing comprehensive data on assistive technology.

Likewise, WHO Nepal commends the efforts from MoHP on establishing AT as the commitment in health and gradually translating those into the actions. The development of Priority Assistive Product List (PAPL) through WHO-Nepal assistance in 2018, provision of grants to foster public-private partnership in AT with Civil Society Organizations, training on assistive products including through disability management and rehabilitation primary care training package and covering assistive products within National Health Insurance Package are praiseworthy beginnings. These initiatives are also aligned with Article 20(Personal Mobility), Article 25(Health) and Article 26(Habilitation and Rehabilitation) of the United Nation Convention on the Rights of Persons with Disability (UNCRPD), which was ratified by the Government of Nepal in 2010.

WHO-Nepal will continue to offer its swift, decisive and evidence informed actions in AT, fostering the collaboration among MoHP entities, users' group, experts, service providers, professional associations, and external development partners. Working together we can collectively establish the value of AT and build stronger and healthier communities.



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Dr. Rajesh Sambhajirao Pandav
Representative, World Health Organization-Nepal

CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATION

AP	Assistive Products
ArcGIS	Aeronautical Reconnaissance Coverage Geographic Information System
AT	Assistive Technology
DoHS	Department of Health Services
EDCD	Epidemiology and Disease Control Division
GNI	Gross National Income
GPS	Global Positioning System
HDI	Human Development Index
ID	Identity Document
LCD	Leprosy Control Division
LCDMS	Leprosy Control and Disability Management Section
LMIC	Low- and Middle-Income Countries
MoFA	Ministry of Foreign Affairs
MoHP	Ministry of Health and Population
NASPIR	National Association of Services Providers in Rehabilitation
NCD	Non-Communicable Diseases
NHRC	Nepal Health Research Council
NPC	National Planning Commission
PAPL	Priority Assistive Product List
rATA	rapid Assistive Technology Assessment
SPSS	Statistical Package for the Social Sciences
STATA	Statistical Software of Data Science
UN	United Nations
UNDP	United Nations Development Program
USD	United State Dollar
WG-SS	Washington Group Short Set of Questions
WHO-HQ	World Health Organization Headquarters

EXECUTIVE SUMMARY

Background

Evidence based research findings on the use, need and unmet need is a key metric for planning and improving access to Assistive Products (AP). It is estimated that only 5-15% of people in low- and middle-income countries (LMICs) who need assistive technology (AT) have access to them with few availabilities, affordability and trained personnel. In Nepal, accurate data on the needs of AP is still not yet known. With a growing population of older age, increasing prevalence of non-communicable diseases in Nepal, the number of people needing AT is certain to rise. Therefore, the study aims to measure access to AT in Nepal.

Methods

A nationwide population-based household survey was conducted from 7 December 2021 to 27 December 2021 using the WHO rapid Assistive Technology Assessment (rATA) questionnaire. Two-stage cluster sampling technique process was used to select 2970 households and the total number of participants interviewed was 11, 230. Participants included all the family members of the selected household. Complex survey analysis was performed using SPSS version 21 and the data was presented using frequency and percentage (weighted).

Key Findings

- The mean age of the total participants was 34±21.5 year. More than half of the participants (52.6%) were female. Majority of the sampled population (55.3%) were from rural areas.
- Majority of the participants (57.9%) had no difficulty followed by 28.4% of the participants who had some level of difficulty in doing certain activities because of a health condition. At least some level of difficulty was seen highest in seeing/vision domain (32%) followed by mobility (16.9%). Overall functional difficulties increased with increase in age. Almost half of the participants (46.4%) aged >65 years had some level of difficulty. Participants living in urban areas had more difficulty level (42.4%) as compared to the ones living in rural areas (34.8%). Majority of the participants living in

Bagmati province (42.8%) had at least some level of difficulty as compared to other provinces.

- The prevalence of use of any AP currently was found to be 27.7%. Among the participants who could not do any activities without assistance, more than half of them (51.6%) used any AP. Use of AP increased with increase in age: half of the participants aged >65 years (50.6%) used any AP. The use of AP was seen higher in urban areas (28.2%) as compared to rural areas (15.1%). The use of AP was seen highest in Bagmati province (28.9%) as compared to other provinces.
- The prevalence of unmet need was reported to be 19.7%. Unmet need increased with increase in level of functional difficulties: 70.9% of the participants who could not do any activities without assistance had unmet needs of AP. Almost eighteen percent (17.6%) of the male participants and more than one-fifth (21.4%) of the female participants had unmet needs of AP. Unmet needs also increased with increase in age: more than half of the participants aged >65 years (51.7%) had unmet needs of AP. Participants living in rural areas have more unmet needs of AP (21.3%) as compared to participants living in rural areas (19.6%). The prevalence of unmet needs was seen highest in Madhesh province (21%) followed by Sudurpaschim province (20.1%) and Province 1 (20%).
- The prevalence of use of spectacles was seen highest (22.3%) among the total sampled population followed by canes/sticks (3.3%) and spinal orthoses (1.8%). In all seven provinces, the most commonly used assistive product was spectacles.
- Among the total sampled population, the unmet need of AP was seen highest in spectacles (10.1%) followed by spinal orthoses (4.8%) and hearing aids (3.4%). In all seven provinces, the unmet need of AP was highest for spectacles.
- Among the participants who use any AP, the AP were predominantly sourced from private sector (64.3%) followed by public sector (22.0%).
- More than half of the participants (57.1%) obtained their AP through out-of-pocket expenditure followed by friends/family (38.9%) who paid for their AP.
- Among the participants who use any AP, most of them (62.8%) travelled <5km followed by one-fifth of the participants (24.7%) who travelled 6-25km to get their AP. Nearly two-third (63.6%) of the participants living in urban areas had to travel <5km to obtain their AP whereas majority of the participants living in rural areas (32.4%) had to travel 6-25km.

- Among the participants who had unmet needs of AP, majority of them reported that they did not have enough support (41.5%) followed by unaffordability (39.2%) and lack of time (36.2%) for not having the product needed. Majority of the participants living in urban areas reported lack of support (42.1%) as the reasons for not having AP whereas participants living in rural areas reported unaffordability (59.3%) as the reasons for not having AP.
- Among the participants who use any AP, more than ninety percent (91.2%) reported that they are satisfied with respect to the products they use, nearly three-fourth (70.6%) reported that they are satisfied with the assessment and training they had received, and more than three-fourth (78.1%) reported that they are satisfied with respect to repair, maintenance, and follow-up services.
- Nearly two-fifth (39.3%) of the participants who use any AP reported that the AP was mostly suitable for their home and surroundings. Majority of the participants (34.9%) reported that the AP completely helped individuals to do what they want (usability).
- Among the participants who use any AP, majority of them (42.4%) reported that the AP could be completely used as much as they wanted in places; they needed to visit such as schools, workplaces, and public spaces.

Conclusion

The nationwide rATA survey has demonstrated clear gaps in access to assistive products in Nepal with high prevalence of use and unmet needs. It is transparent from the findings of the survey that functional difficulties, use and unmet needs of AP is seen higher in older age group. Functional difficulties and use of AP is seen higher in participants living in urban areas, however, the unmet need of AP is seen higher in rural areas. Lack of support, unaffordability and lack of time remains the main barrier to access AP. Therefore, the survey calls for creative solutions to improve access to assistive products that can be easily sourced, is accessible and affordable and suitable to be used.

Keywords

Assistive Products, Use, Need, Unmet needs

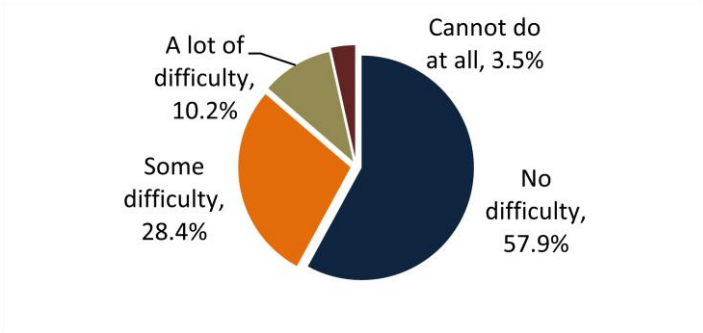
FACT SHEETS

- National
- Koshi Province
- Madhesh Province
- Bagmati Province
- Gandaki Province
- Lumbini Province
- Karnali Province
- Sudurpaschim Province

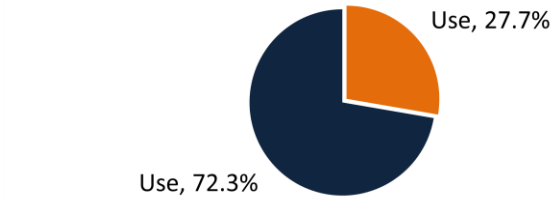
FACT SHEET
NATIONAL

This survey was a population-based household survey which was carried out in Nepal from 7th December to 27th December 2021 using the WHO rapid Assistive Technology Assessment (rATA) Tool. Two stage cluster random sampling technique was used to select 2970 households and a total of 11 230 participants were interviewed. Complex survey analysis was carried out to find out the weighted percentage.

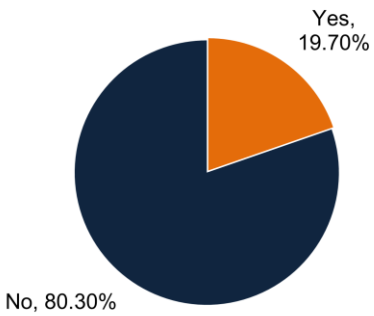
Functional difficulties (n=11230)



Use of AP (n=11230)



Unmet need of AP (n=11230)



Geography

Demography

Total population	11230
Sex	
Male	5319 (47.4%)
Female	5911 (52.6%)
Settlement	
Urban	5021 (44.7%)
Rural	6029 (55.3%)
Age group	
<5 years	689 (6.1%)
5-17 years	2415 (21.5%)
V 18-65 years	7104 (63.3%)
>65 years	1022 (9.1%)

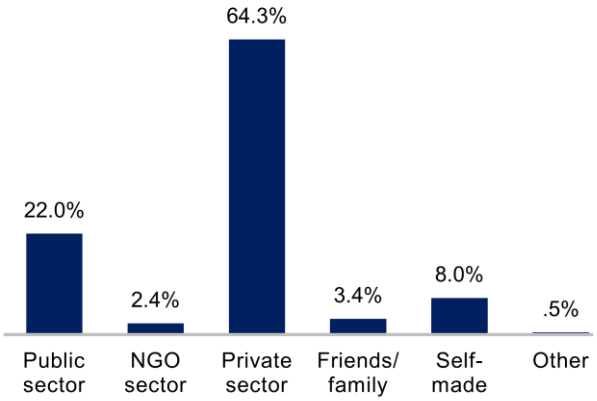
Indicators

Prevalence of **use**
Proportion of a population using assistive products.

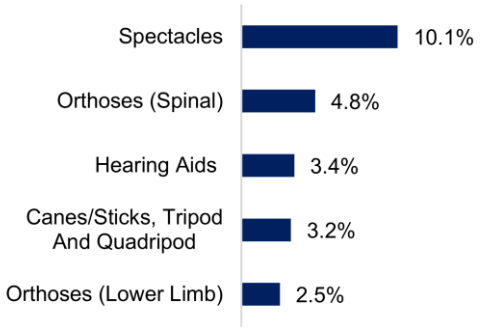
Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

FACT SHEET
NATIONAL

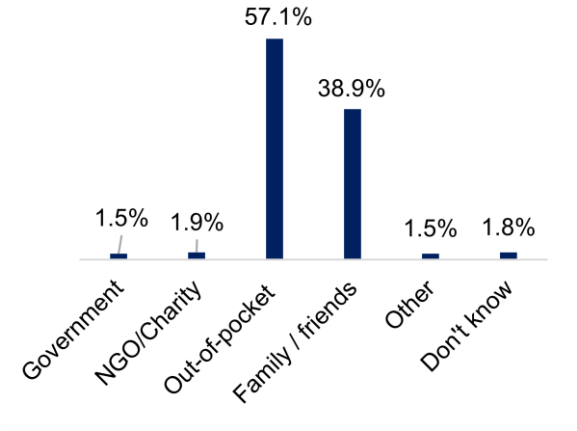
Sources of AP



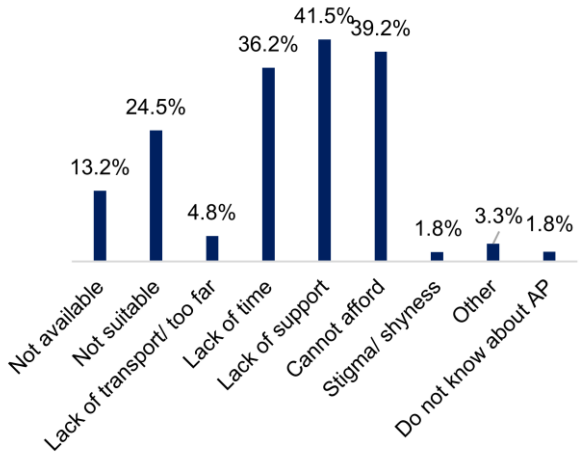
Top 5 unmet need of AP



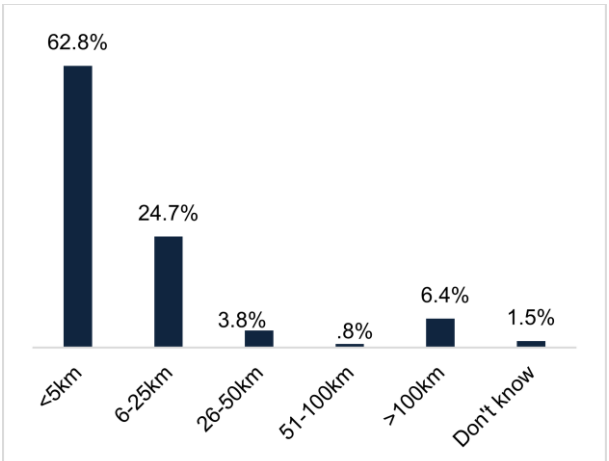
Payers of AP



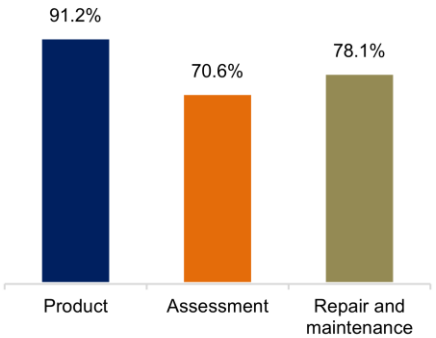
Barriers to access AP



Distance for getting AP



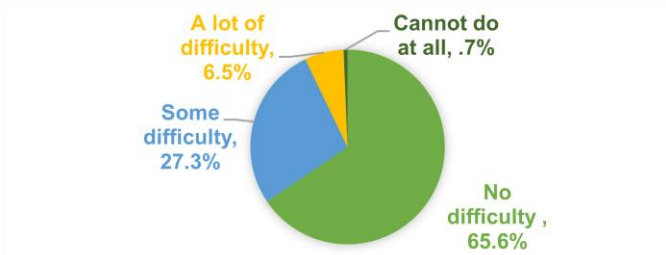
Satisfaction of AP



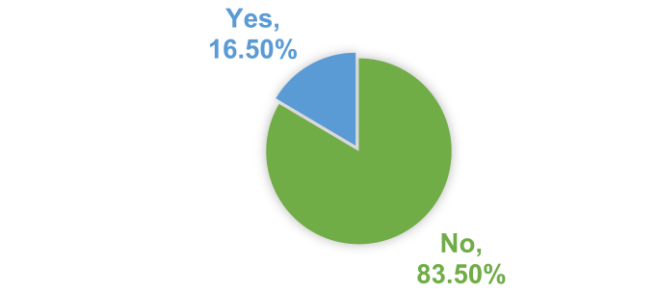
FACT SHEET
KOSHI PROVINCE

This population-based household survey collected 1890 samples from 17 clusters of Koshi province; urban: 6 and rural 11; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

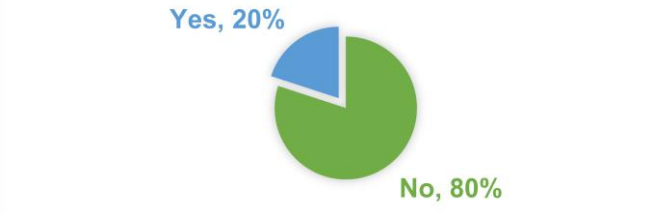
Functional difficulties (n=1890)



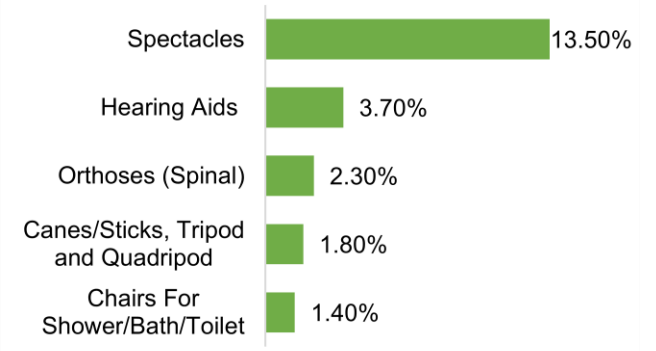
Use of AP (n=1890)



Unmet need of AP (n=1890)



Top 5 unmet need of AP products



Geography

Demography

Total population	1890
Sex	
Male	907 (48%)
Female	983 (52%)
Settlement	
Urban	651 (34.4%)
Rural	1239 (65.6%)
Age group	
<5 years	116 (6.10%)
5-17 years	397 (21%)
18-65 years	1232 (65.2%)
>65 years	145 (7.7%)

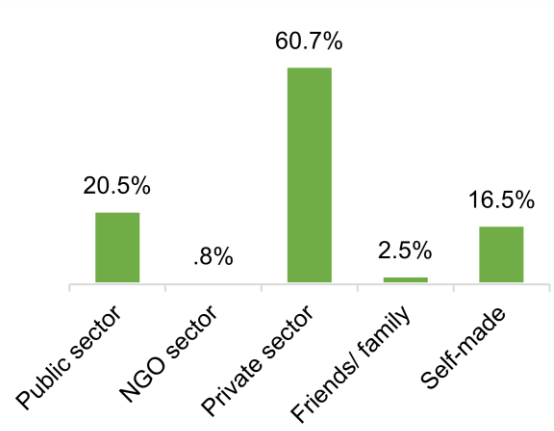
Indicators

Prevalence of **use**
Proportion of a population using assistive products.

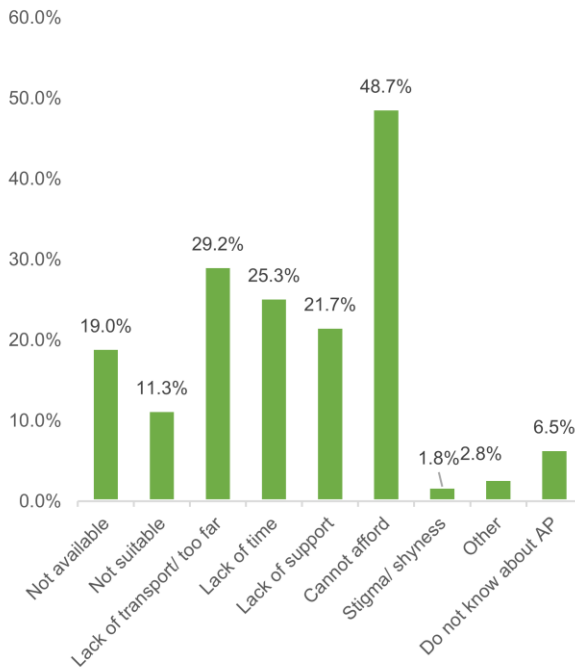
Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

FACT SHEET
KOSHI PROVINCE

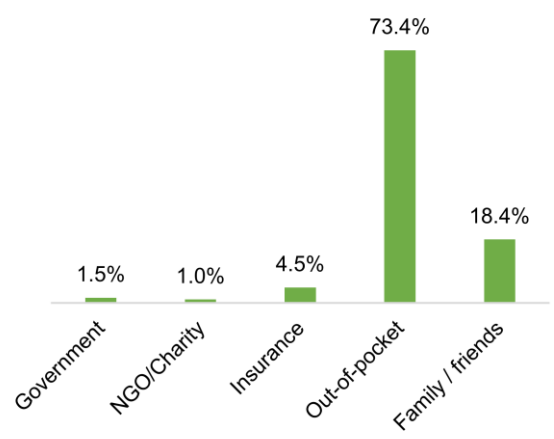
Sources of AP



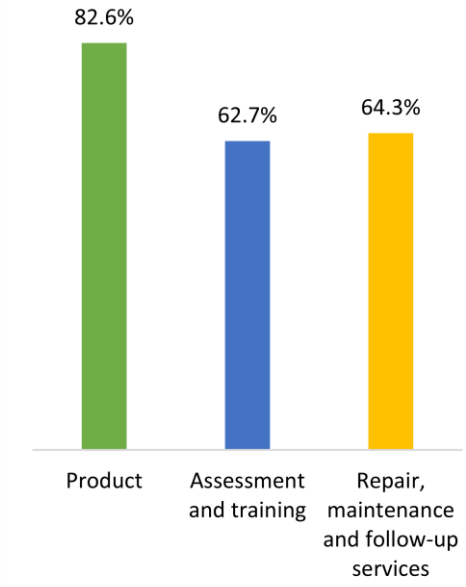
Barriers to access AP



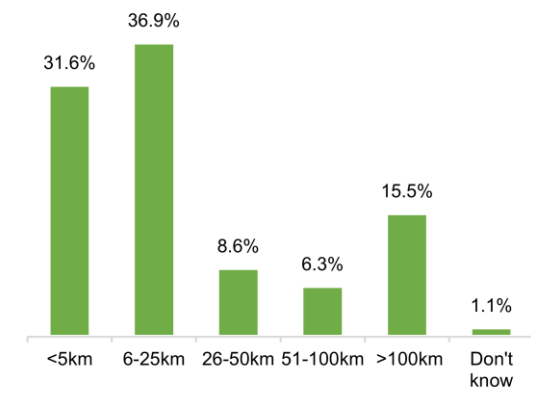
Payers of AP



Satisfaction of AP



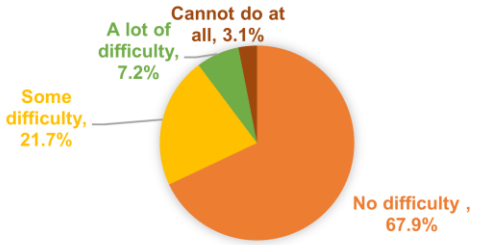
Distance for getting AP



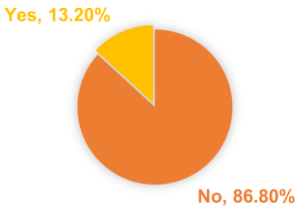
FACT SHEET
MADHESH PROVINCE

This population-based household survey collected 2478 samples from 19 clusters of Madhesh province; urban: 13 and rural 6; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

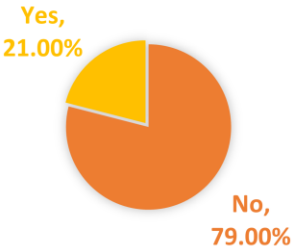
Functional difficulties (n=2478)



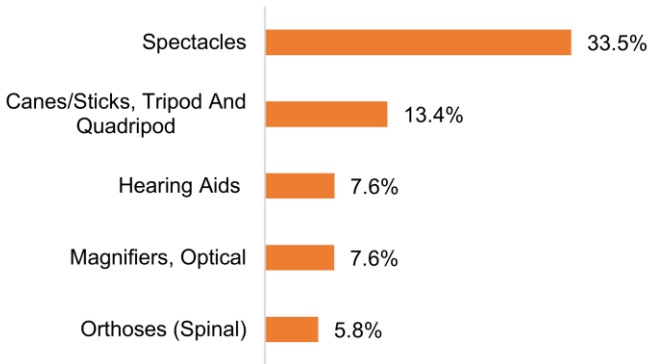
Use of AP (n=2478)



Unmet need of AP (n=2478)



Top 5 unmet need of AP products (n=2478)



Geography

Demography

Total population	2478
Sex	
Male	1201 (48.5%)
Female	1277 (51.5%)
Settlement	
Urban	1714 (69.2%)
Rural	764 (30.8%)
Age group	
<5 years	168 (6.8%)
5-17 years	529 (21.3%)
18-65 years	1562 (63.1%)
>65 years	219 (8.8%)

Indicators

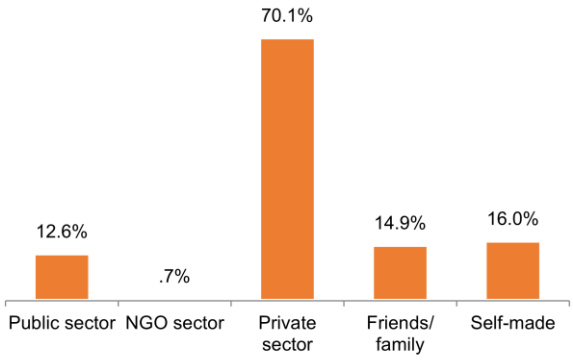
Prevalence of **use**
Proportion of a population using assistive products.

Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

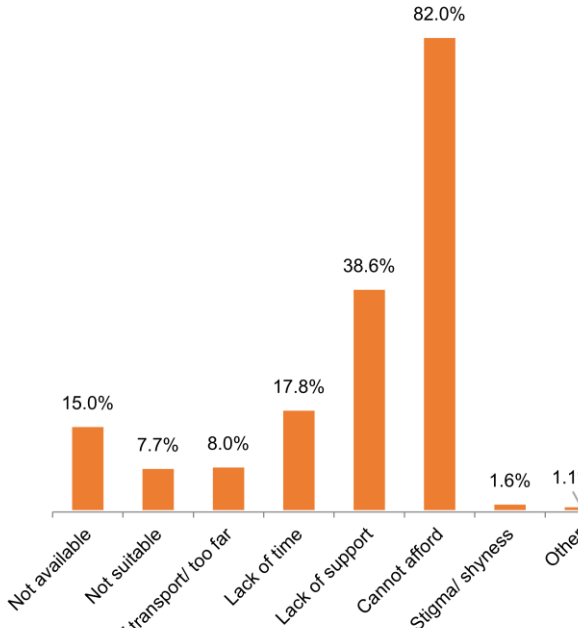
FACT SHEET

MADHESH PROVINCE

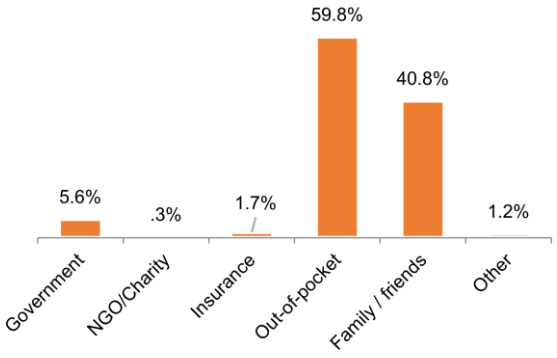
Sources of AP



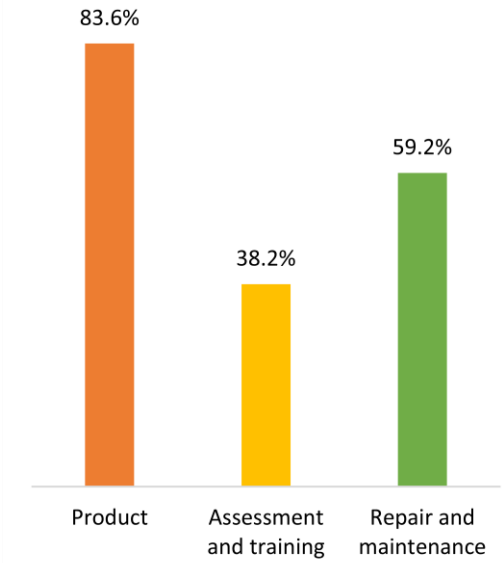
Barriers to access AP



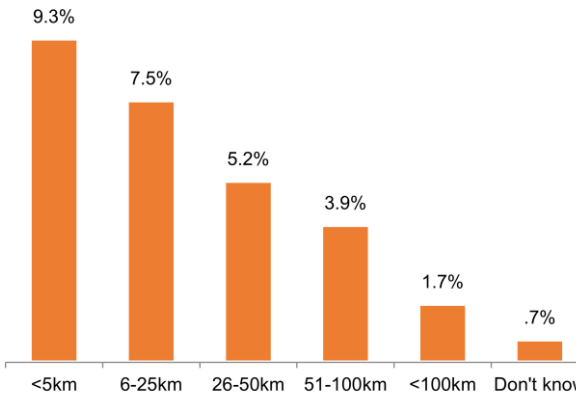
Payers of AP



Satisfaction of AP



Distance for getting AP

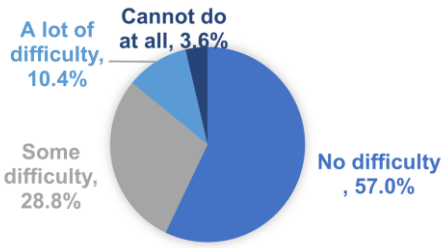


FACT SHEET

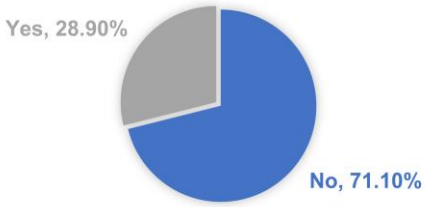
BAGMATI PROVINCE

This population-based household survey collected 1715 samples from 17 clusters of Bagmati province; urban: 7 and rural 10; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

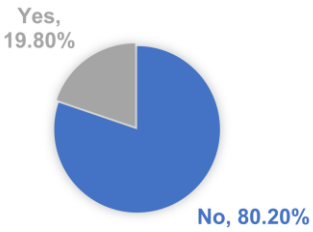
Functional difficulties (n=1715)



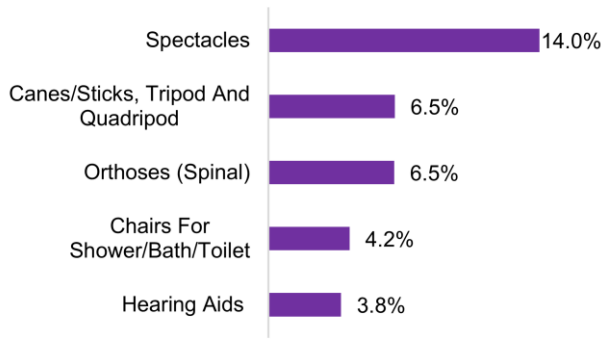
Use of AP (n=1715)



Unmet need of AP (n=1715)



Top 5 unmet need of AP products



Geography

Demography

Total population	1715
Sex	
Male	813 (47.4%)
Female	902 (52.65%)
Settlement	
Urban	739 (43.1%)
Rural	976 (56.9%)
Age group	
<5 years	72 (4.2%)
5-17 years	262 (15.3%)
18-65 years	1160 (67.6%)

Indicators

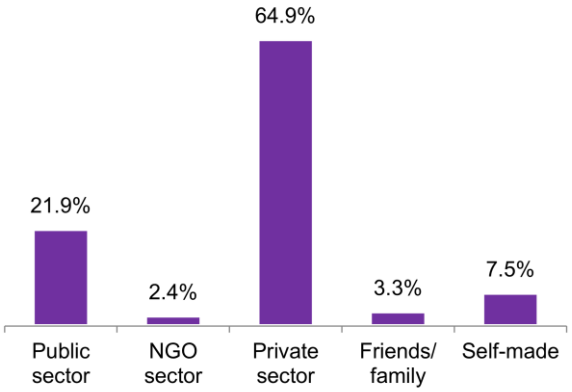
Prevalence of **use**
Proportion of a population using assistive products.

Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

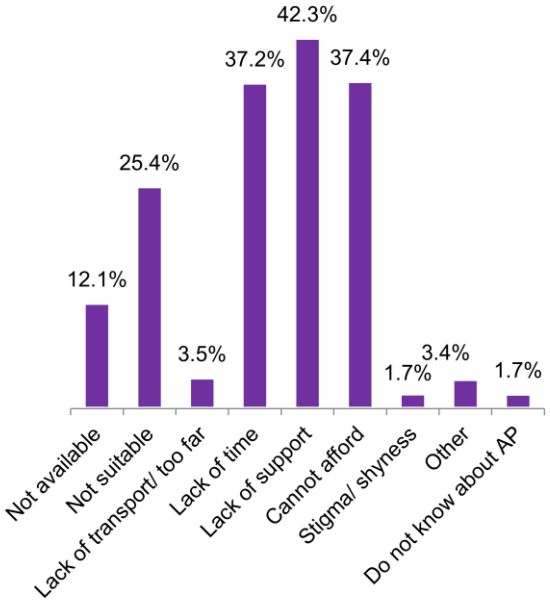
FACT SHEET

BAGMATI PROVINCE

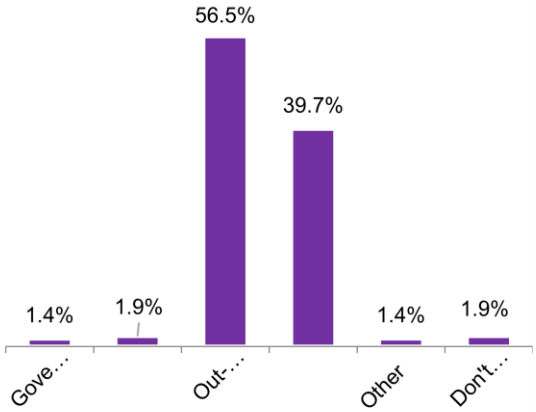
Sources of AP



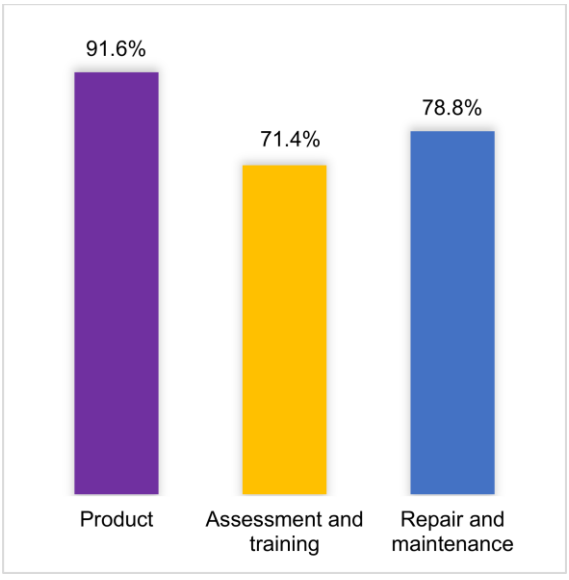
Barriers to access AP



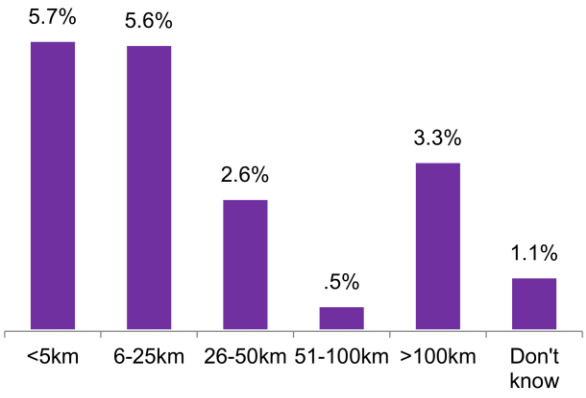
Payers of AP



Satisfaction of AP



Distance for getting AP



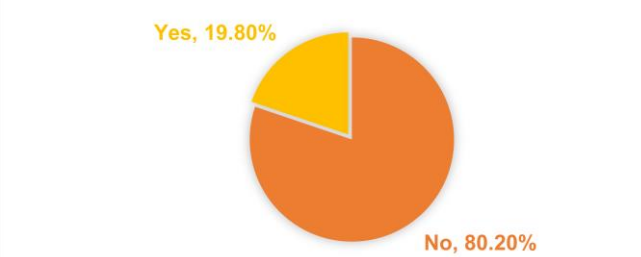
FACT SHEET

GANDAKI PROVINCE

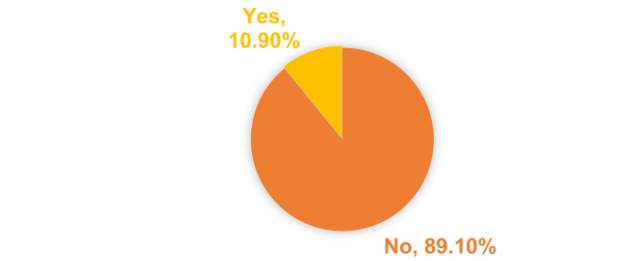
This population-based household survey collected 1060 samples from 12 clusters of Gandaki province; urban: 5 and rural 7; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

Functional difficulties (n=1060)

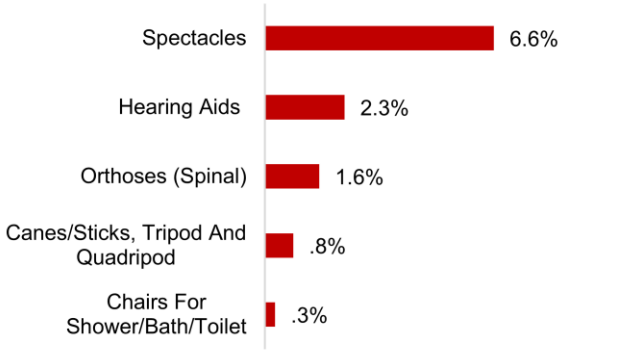
Use of AP (n=1060)



Unmet need of AP (n=1060)



Top 5 unmet need of AP products



Geography

Demography

Total population	1060
Sex	
Male	492 (46.4%)
Female	568 (53.6%)
Settlement	
Urban	432 (40.8%)
Rural	628 (59.2%)
Age group	
<5 years	49 (4.6%)
5-17 years	167 (15.8%)
18-65 years	726 (68.5%)
>65 years	118 (11.1%)

Indicators

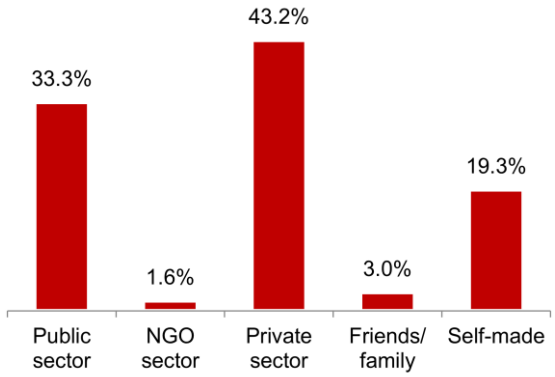
Prevalence of **use**
Proportion of a population using assistive products.

Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

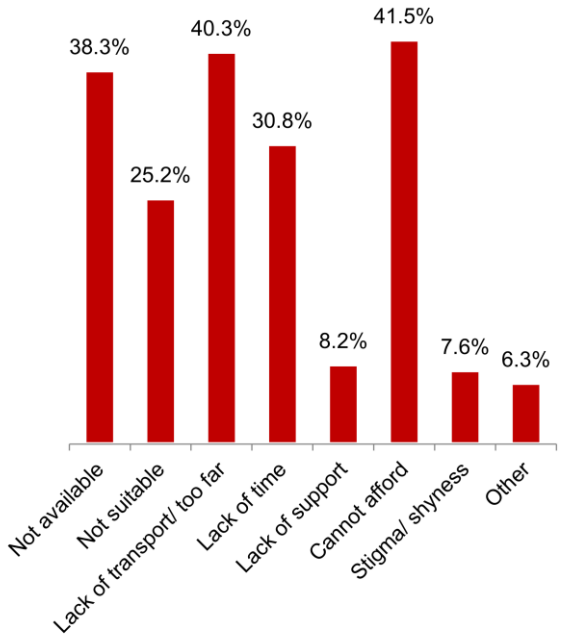
FACT SHEET

GANDAKI PROVINCE

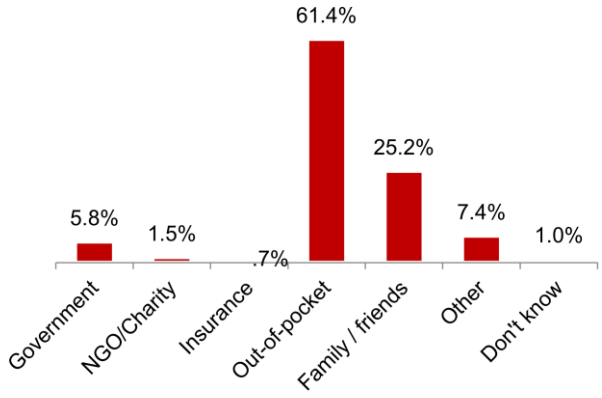
Sources of AP



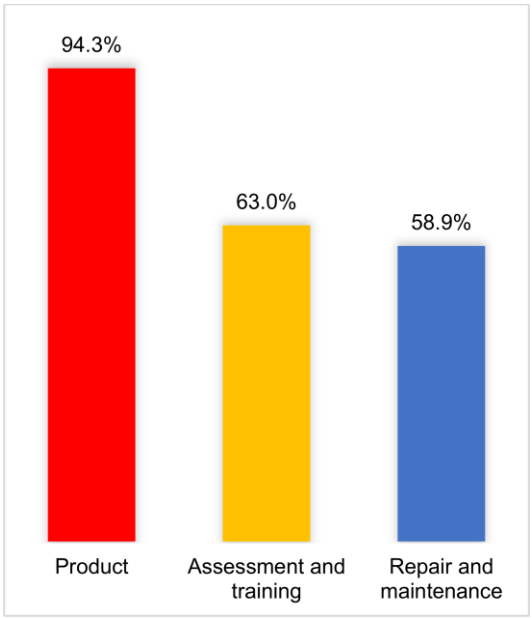
Barriers to access AP



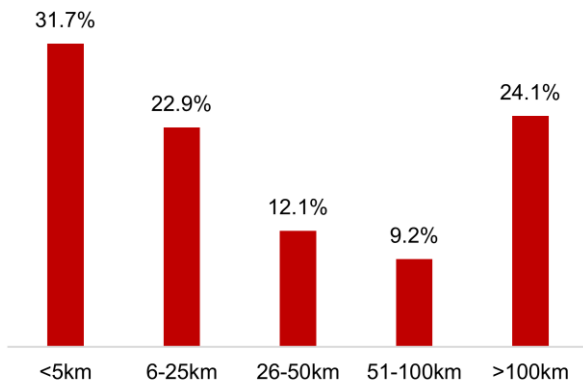
Payers of AP



Satisfaction of AP



Distance for getting AP

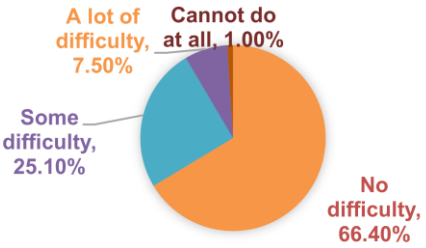


FACT SHEET

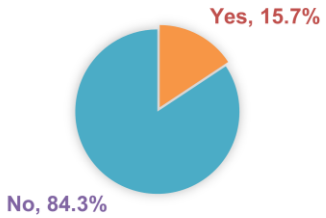
LUMBINI PROVINCE

This population-based household survey collected 1748 samples from 15 clusters of Lumbini province; urban: 5 and rural 10; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

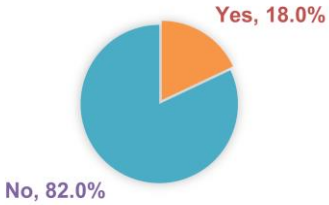
Functional difficulties (n=1748)



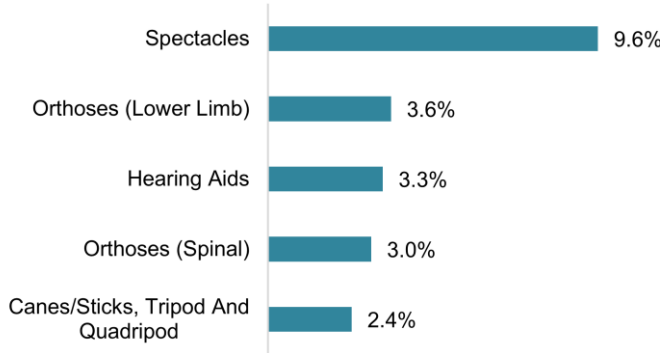
Use of AP (n=1748)



Unmet need of AP (n=1748)



Top 5 unmet need of AP products (n=1748)



Geography

Demography

Total population	1748
Sex	
Male	809 (46.3%)
Female	939 (53.7%)
Settlement	
Urban	666 (38.1%)
Rural	1082 (61.9%)
Age group	
<5 years	117 (6.7%)
5-17 years	408 (23.3%)
18-65 years	1088 (62.2%)
>65 years	135 (7.7%)

Indicators

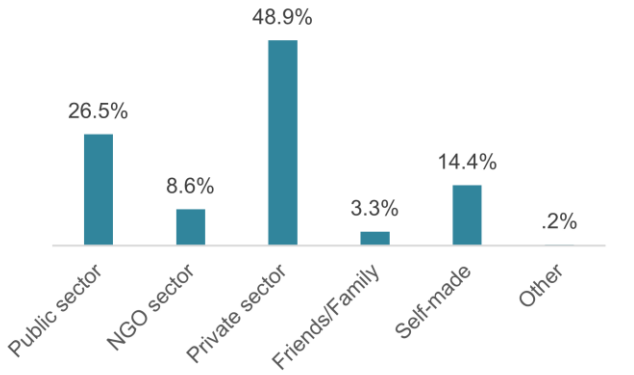
Prevalence of **use**
Proportion of a population using assistive products.

Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

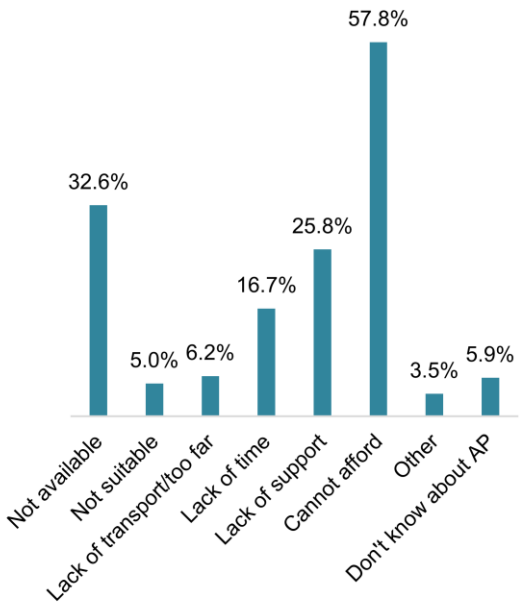
FACT SHEET

LUMBINI PROVINCE

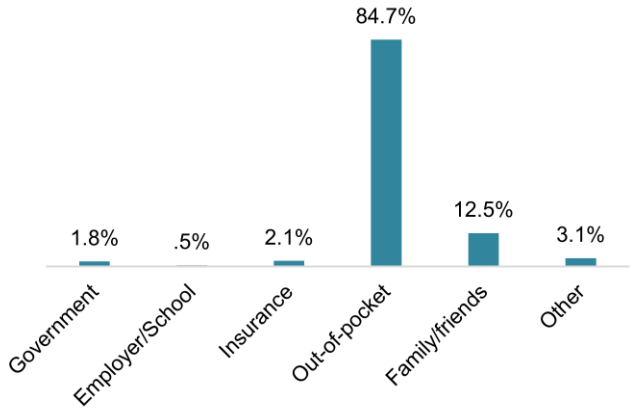
Sources of AP



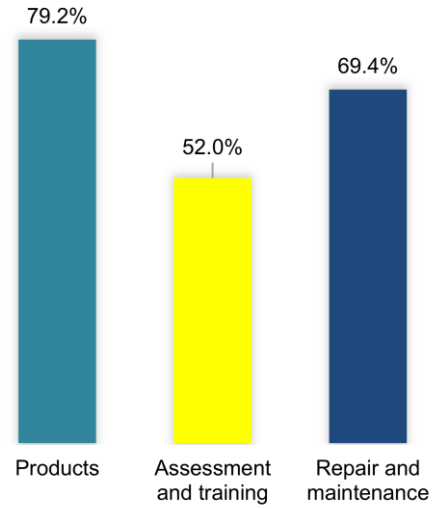
Barriers to access AP



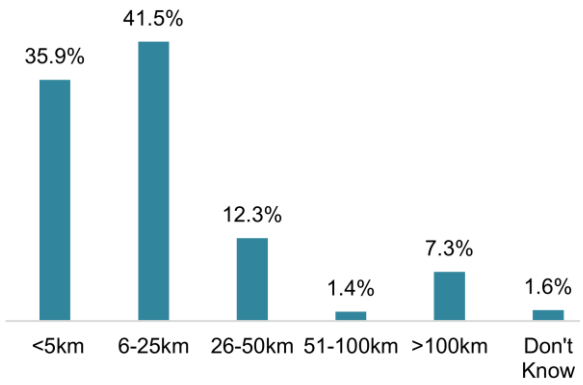
Payers of AP



Satisfaction of AP



Distance for getting AP

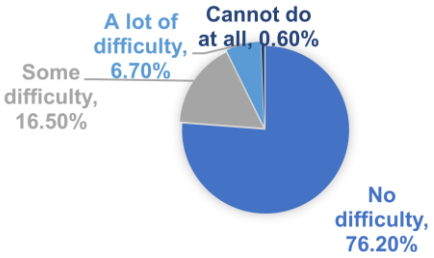


FACT SHEET

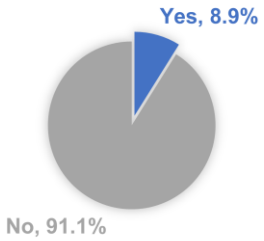
KARNALI PROVINCE

This population-based household survey collected 1078 samples from 9 clusters of Karnali province; urban:3 and rural 6; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

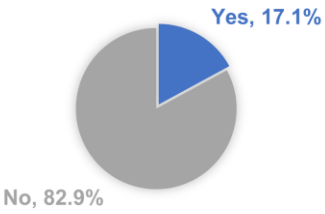
Functional difficulties (n=1748)



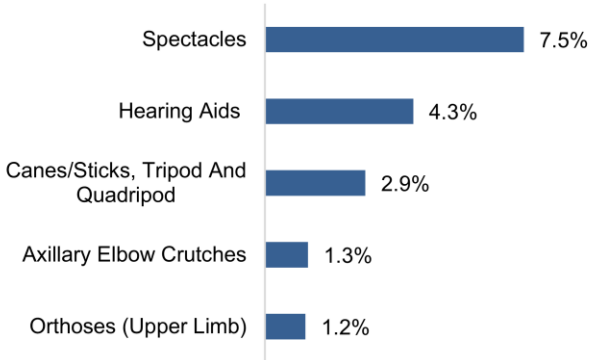
Use of AP (n=1748)



Unmet need of AP (n=1748)



Top 5 unmet need of AP products



Geography

Demography

Total population	1078
Sex	
Male	512 (47.5%)
Female	566 (52.5%)
Settlement	
Urban	355 (32.9%)
Rural	723 (67.1%)
Age group	
<5 years	85 (7.9%)
5-17 years	286 (26.5%)
18-65 years	631 (58.5%)
>65 years	76 (7.1%)

Indicators

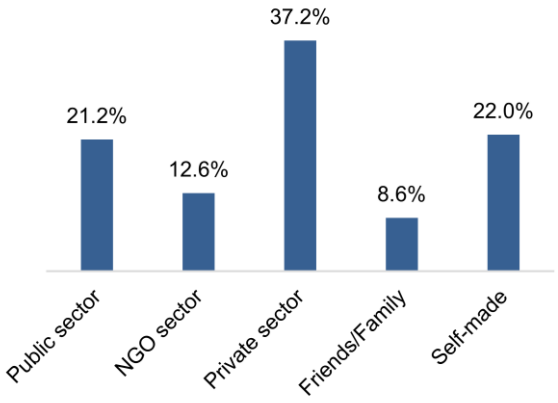
Prevalence of **use**
Proportion of a population using assistive products.

Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

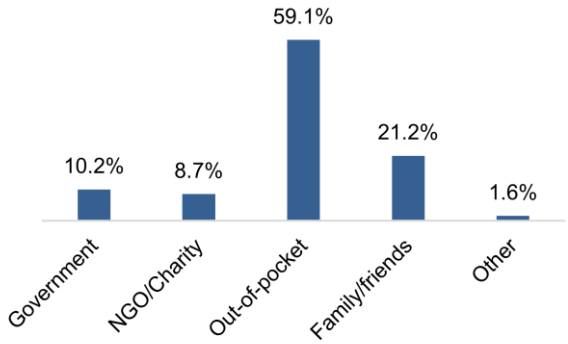
FACT SHEET

KARNALI PROVINCE

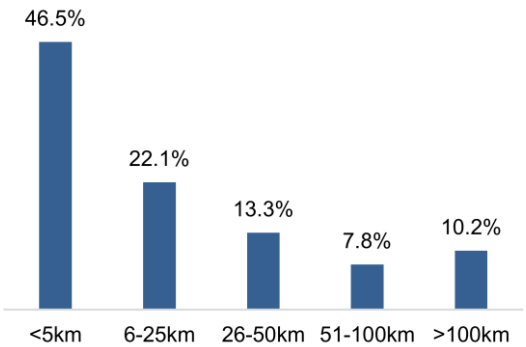
Sources of AP



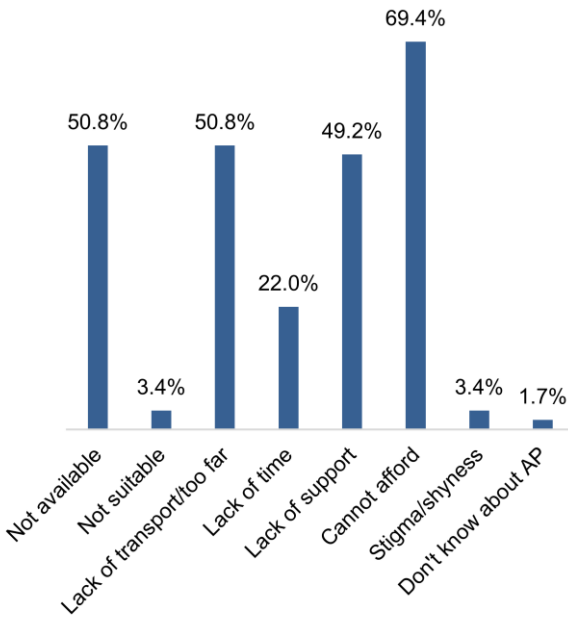
Payers of AP



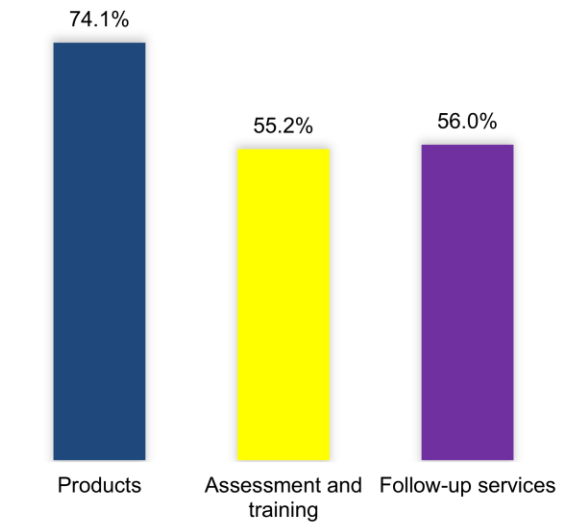
Distance for getting AP



Barriers to access AP



Satisfaction of AP

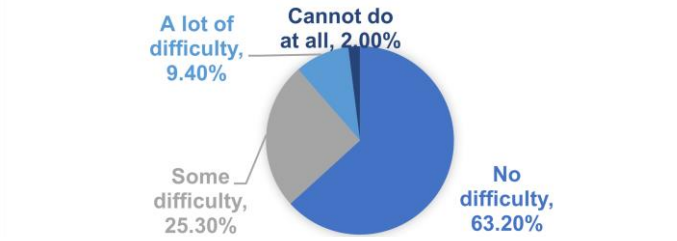


FACT SHEET

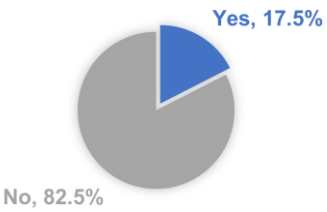
SUDURPASCHIM PROVINCE

This population-based household survey collected 1261 samples from 10 clusters of Sudurpaschim province; urban: 4 and rural 6; using the WHO rATA Tool. Complex survey analysis was carried out to find out the weighted percentage.

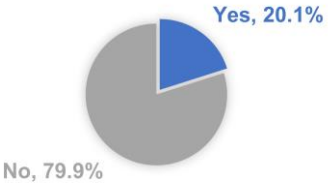
Functional difficulties (n=1261)



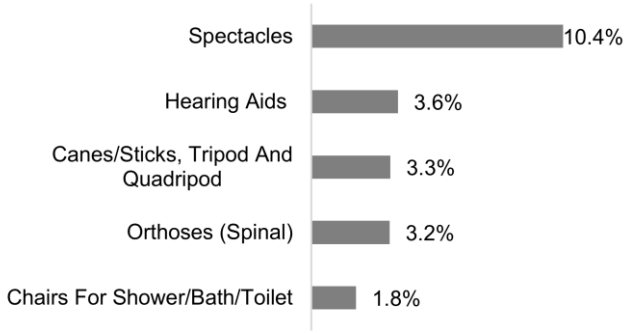
Use of AP (n=1261)



Unmet need of AP (n=1261)



Top 5 unmet need of AP products (n=1261)



Geography

Demography

Total population	1261
Sex	
Male	585 (45.8%)
Female	676 (54.2%)
Settlement	
Urban	464 (57.3%)
Rural	797 (42.7%)
Age group	
<5 years	82 (6.1%)
5-17 years	366 (28%)
18-65 years	705 (57.6%)

Indicators

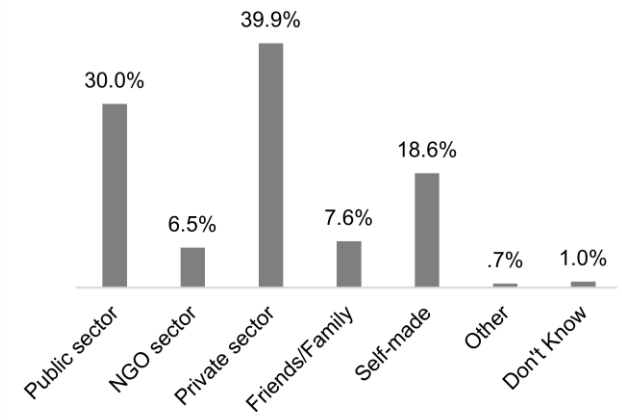
Prevalence of **use**
Proportion of a population using assistive products.

Prevalence of **unmet need** Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not.

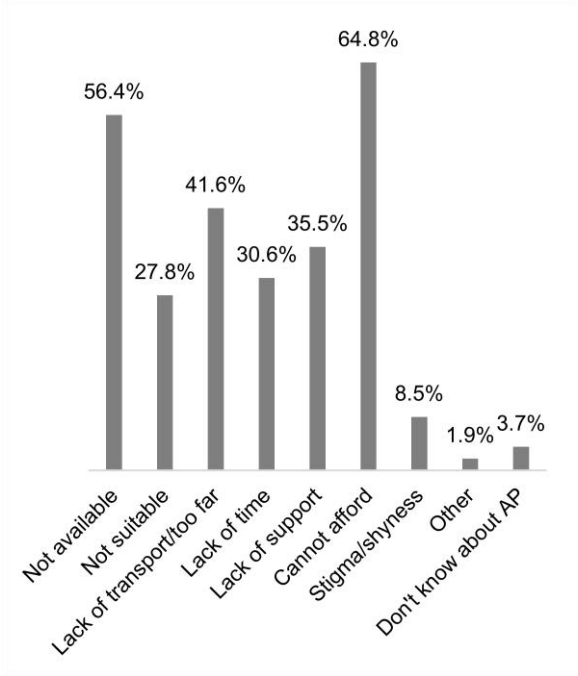
FACT SHEET

SUDURPASCHIM PROVINCE

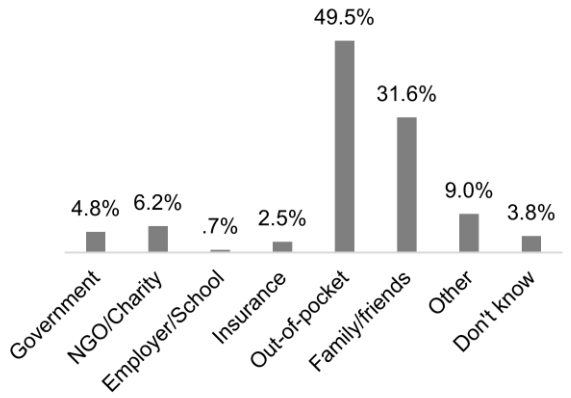
Sources of AP



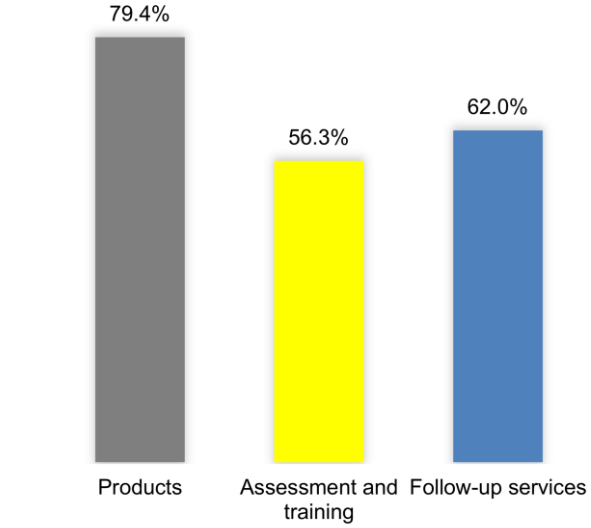
Barriers to access AP



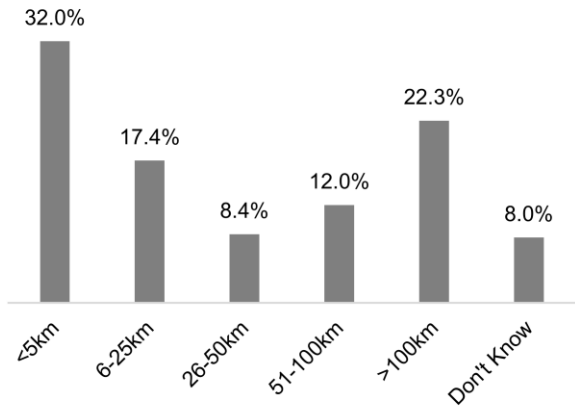
Payers of AP



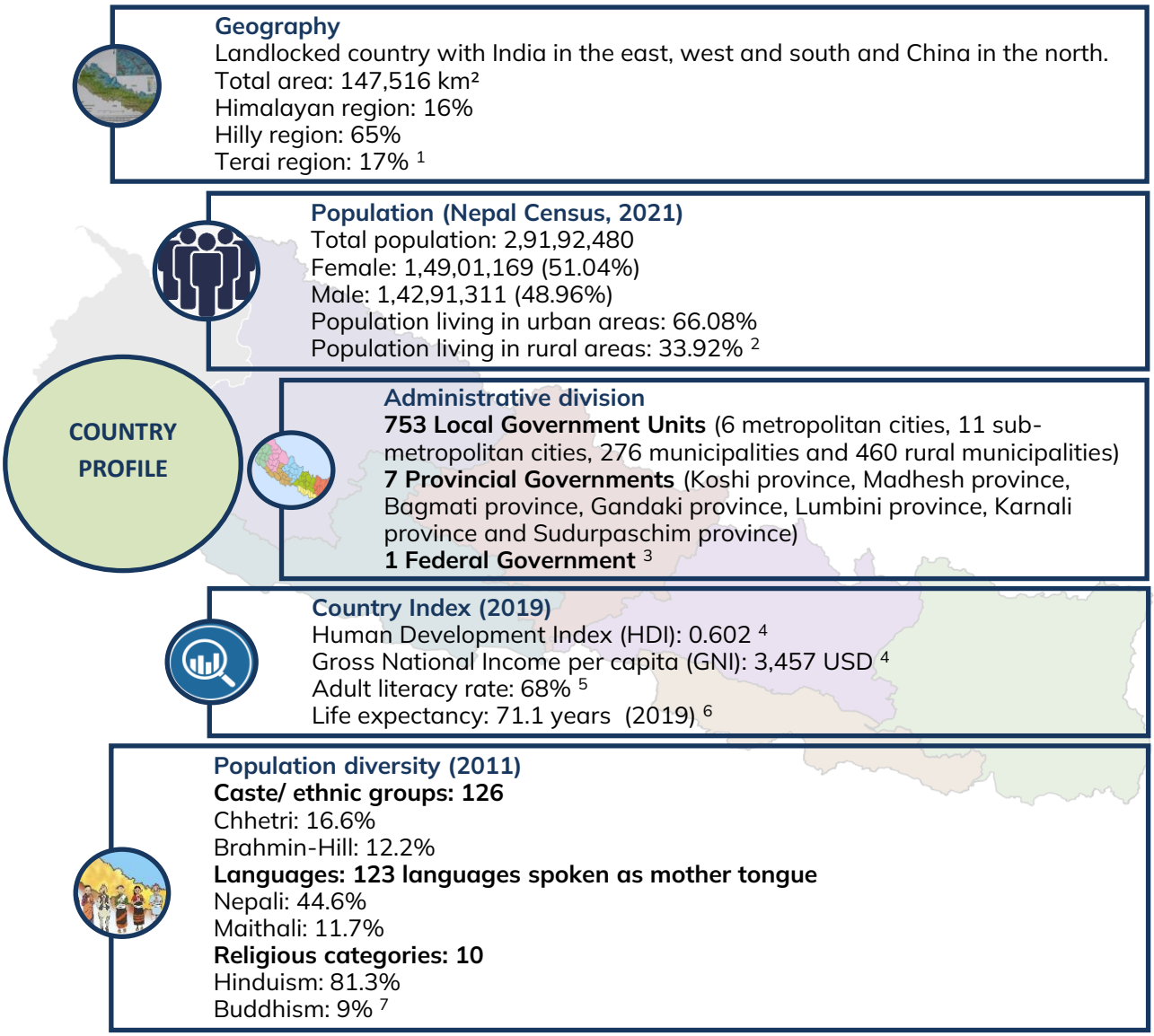
Satisfaction of AP



Distance for getting AP



Country Profile



[1] Geography of Nepal. Government of Nepal MoFA.

[2] Nepal Census 2021 Preliminary Findings. Government of Nepal National Planning Commission Central Bureau of Statistics;2021

[3] The Constitution of Nepal;2015.

[4] Human Development Report, Nepal: UNDP;2020.

[5] Literacy rate. Nepal: The World Bank;2019

[6] Nepal Burden of Disease 2019: Nepal Health Research Council;2021.

[7] Nepal Census 2011: Government of Nepal National Planning Commission Central Bureau of Statistics;2011

CHAPTER 1

Introduction

1.1. Background

Assistive technology (AT), a sub-set of health technology, is defined as "the development and implementation of organized knowledge, skills, processes, and policies related to the provision, use, and assessment of assistive products (AP)."[8] In broad, AT encompasses 5 core pillars; product, policy, provision, personel and person. Assistive products (AP) are external devices that promote functioning and preventing the disabling consequences of health conditions. AP are pre-condition for dignified life, healthy living and well-being (Sustinable Development Goal 3). All the population group may benefit from the use of AP such as persons with disability, elderly, people with non-communicable diseases and to any people who experience a functional decline during their life course.[9,10] AP covers the spectrum of products, equipment, instruments and software across six core domains; mobility, vision, hearing, communication, cognition and environment. Spectacles, wheelchairs, hearing aids, white canes, pill organizers, text-to-speech software and incontinence pads are some of the examples of AP which might be required to anyone throughout the lifetime. These products bring unequivocal returns in health, education, social inclusion and economic return, as illimunitaed by the fact that 1$ investment in AT yields the 9 $ in returns.[11] The Global Report on Assistive Technology 2022 has estimated 1 in 3 or 2.5 million atleast need one AP globally. With the increasing trend of non-communicable diseases and ageing, it is further speculated to raise upto 3.5 billion by 2050.[12] Likewise, the same report presented 3% to 90% access to assistive products, with this band influenced by country's socioeconomic development.[13]

[8] Khasnabis C, Mirza Z, MacLachlan M. Opening the GATE to inclusion for people with disabilities. The Lancet. 2015;386(10010):2229–30

[9] AT Resources. USA: Assistive Technology Industry Association.

[10] Assistive Technology. Geneva: World Health Organization; 2018.

[11] ATscale.The case for Investing in Assitive Technology. https://atscalepartnership.org/investment-case

[12] Global Report on Assitive Technology. Geneva: World Health Organization; 2022.

[13] Assistive Technology Factsheet, Geneva: World Health Organization; 2018. Available from who.int/news-room/fact-sheets/detail/assistive-technology

The gap on access (72.5% service gap) is also highlighted by the Living Condition Among People with Disabilities Report in Nepal 2016. Therefore, provision of appropriate and affordable AP will become a key global metric for achieving Universal Health Coverage, implementing UN Convention on the Rights of Person with Disabilities (UNCRPD) and ensuring "no one will be left behind" in attaining Sustainable Development Goals. Nepal ratified the UNCRPD in 2010 of which article 20 (personal mobility) clearly explains Government of Nepal's commitment to *'Facilitating access by persons with disabilities to quality* ***mobility aids, devices, assistive technologies*** *and forms of live assistance and intermediaries, including by making them available at affordable cost".*

It is estimated that only 5-15% of people in low- and middle-income countries (LMICs) who need assistive technology have access to them with few availability, affordability and trained personnel.[11] Furthermore, a scoping review carried out within LMICs and other resourced limited environments have concluded that evidence on AT is limited in quality and quantity, and not evenly distributed across types of AT.[14] The National Census 2011 conducted by Government of Nepal reported prevalence of disability as 1.94% (2.18% of males; 1.71% of females). The National Living Standards Survey (2011) showed prevalence of disability as 3.6%. Both of these figures are significantly lower than the WHO's estimate of worldwide prevalence of disabilities which is roughly 15% among the general population.[15] However, Multiple Indicator Cluster Survey of Nepal, 2019 have found that the prevalence of functional limitation, administering the Wasginton group questions, in children (2-17years) is 10.6%[16] which is closer to the projection of WHO on prevalence of disability. It is widely suspected that prevalence of disability in Nepal is under-reported. A comprehensive study carried out in Nepal, India and Bangladesh on access to AT for persons with disabilities found that AT provisions are poorly developed in all three countries and have concluded that lack of accessibility, eligibility, reachability and affordability are the main barriers to access AT services for persons with disabilities in these countries.[17]

[14] Matter R, Harniss M, Oderud T, Borg J, Eide AH. Assistive technology in resource-limited environments: a scoping review. Disabil Rehabil Assist Technol. 2017;12(2):105–14.
[15] World Report on Disability. Geneva: World Health Organization;2011.
[16] Multiple Indicator Cluster Survey 2019. Nepal: Government of Nepal National Planning Commission Central Bureau of Statistics United Nations Children's Fund; 2021.
[17] Karki J, Rushton S, Bhattarai S, Witte LD. Access to assistive technology for persons with disabilities: a critical review from Nepal, India and Bangladesh. Disability Rehabilitation Assistive Technology. 2021;0(0): 1–9.

A technical report on living conditions among people with disability in Nepal using the Washington Group on Disability, 2016 found the prevalence of severe disability across core domains: difficulty in walking or climbing steps was 21.8%, followed by self- care (17.5%), communicating (16.1%), hearing (13.6%), remembering/ concentrating (9.1%), and seeing (7.2%). Additionally, the survey found that, of participants with a disability, 11.7% reported that they use an assistive device. It was also shown that more males have access to such devices than females, and more urban have access than rural dwellers. Of those who confirmed that they used an assistive device, most reported using household items (56.7%) (flashing light on doorbell, amplified telephone, vibrating alarm clock). A total of 55.7% used information device (eyeglasses, hearing aids, magnifying glass, telescopic lenses/glasses, enlarged print, Braille), while 48.4% used devices for handling products and goods (gripping tongues, aids for opening containers, tools for gardening), and 34.6% used devices for personal mobility (wheelchairs, crutches, walking sticks, white cane, guide, standing frame).[18]

In Nepal, assistive products are mostly obtained through the support of donors from local and international non-governmental organizations. With a growing population of older age, increasing prevalence of non-communicable diseases in Nepal, the number of people needing assistive technology is certain to rise. Leprosy Control and Disability Management Section (LCDMS) of Epidemilogy and Diseases Control Division (EDCD), Department of Health Services, Ministry of Health and Population (MoHP) is spearheading the development of AT considering its scope for all the population group of Nepal since 2015. Likewise, Ministry of Women Children and Senior Citizen (MWCSC) also allocates yealy conditional grant tn AT for service provision and runs National Disabled Fund that manages AP services. LCDMS in 2018 had set out a Priority Assistive Product List (PAPL) of Nepal,[19] followed by the yearly allocations of conditional grants to service providers to deliver the priority products through palikas and province government. Furthermore, the health insurance benefit package has covered the 21 assistive products of which 7 belongs from PAPL. Likewise, there is a 10-year policy, strategy, and action plan on disability[20] and disability inclusive health service national guideline 2019 with

[18] Eide A, Neupane S, Hem K. Living conditions among people with disability in Nepal. Norway: SINTEF; 2016.
[19] Priority Assistive Product List of Nepal. Nepal: Government of Nepal Ministry of Health & Population Department of Health Services Leprosy Control Division Disability Focal Unit; 2018.
[20] Policy, Strategy & 10 years Action Plan on Disability Management. Nepal: Government of Nepal, Ministry of Health & Population, Leprosy Control Division Disability; 2018.

commitments to strengthen the AT sector of Nepal. In 2021, LCDMS in coordination with Integrated Health Management Information Section has integrated the reporting and recording of rehabilitation and AP service in Health Management Information System and trainings are on-going to the service providers to establish this practice.

This survey finding will 1) obtain data and evidence on access to AT; 2) provide rationales to advocate and raise awareness to governments and civil society about the importance of AT; 3) advance research and development in AT and 4) support in design, planning or prioritizing AT programs or interventions for National Health Sector Strategic Planning 2022-2030 and annual working plans. Also, the findings will support the implementation of previous commitments on AT by the government of Nepal. Therefore, the study aims to measure access to assistive technology through the use of rapid Assistive Technology Assessment (rATA) Tool in Nepal.

1.2. Objectives of the study

General Objectives

- To measure access to assistive technology in Nepal using the rapid Assistive Technology Assessment (rATA) Tool in Nepal.

Specific Objectives

- To understand characteristics of Assistive products (AP) users, self-reported needs and unmet needs for AP, and current patterns of access to AP in the population.
- To highlight the demand and supply of assistive technology.
- To outline good practices for innovation and recommendations to improve access.

Chapter 2

Survey Methodology

2.1. Study design and Participants

A cross-sectional, population-based household survey was employed. The data collection was done over a course of 3 weeks (7-27 December 2021). Participants included all the family members of the selected households of the selected clusters regardless of their age. Particpants who did not consent for the study and the family members who could not be contacted despite 3 visits were excluded from the study.

2.2. Sample size

For sample size calculation, following parameters value were used:

- Proportion of target population: 1
- Estimate of key indicator of study: 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. Hence, 0.01 is taken.
- Estimate of non-response rate: 10%
- Critical value for confidence level of statistics: 95%
- Relative error of the key indicator: 0.25
- Margin of error: 0.0025
- Design effect: 2
- Average household size: According to Annual Household Survey 2015/2016 in Nepal, the average size of family in Nepal is 4.6;[21] therefore, average number of residents in a house is taken as 5.

[21] Annual Household Survey 2015/2016. Nepal: Government of Nepal National Planning Commission Central Bureau of Statistics; 2016.

Using the simple online tool available to estimate the required sample size for rATA data collection,[22] the estimated number of households to be interviewed was 2,678 and the estimated number of persons to be interviewed was 13,390 based on the average number of five people per household. However, the total number of participants interviewed was 11 230 from 2970 households. 77 of the participants did not give consent. Cases excluded in the Global Report on Assistive Technology, Nepal Factsheet has been included in the national report following the National Ethical Guidelines of Nepal, 2019.[23]

2.3. Sampling technique

2.3.1. Sampling of primary sampling units (clusters):

The national representative sample was selected through a two-stage cluster sampling technique process. All seven provinces of Nepal were included in the study. In each province, the place of residence was divided into 4 administrative categories by the Federal Government i.e., metropolitan, sub-metropolitan, municipalities, and rural municipalities. The administrative regions were divided into 2 strata: urban which included metropolitan, sub-metropolitan, municipalities and rural which included rural municipalities. In each stratum, wards were defined as a cluster/Primary Sampling Unit (PSU). The required number of clusters in each province was selected using probability proportional to size. Further, the number of clusters per stratum was selected according to proportion to size from the sampling frame. The sampling frame consists of the distribution of old wards as mentioned in census 2011. The old adminstrative wards were then compared to the Nepalese government's current classification of four administrative categories mentioned above, which was updated in each Province.

2.3.2. Sampling of households and individuals from clusters

The household listing and mapping were carried out in the selected cluster. If the sampled cluster were large, i.e., if the population exceeded 300, cluster was divided into enumeration areas and the selection was done randomly.

As a trade-off between survey costs and reducing the standard error, it was decided to survey 100 clusters and from each cluster, 30 households was to be selected through

[22] Measuring access to assistive technology using the rapid Assistive Technology Assessment (rATA), Global Deployment Plan. Geneva: World Health Organization.

[23] National Ethical Guidelines for Health Research in Nepal. Nepal Health Research Council;2019.

systematic sampling technique. Due to unfavorable weather conditions, one cluster was dropped. Therefore 2970 households were surveyed from 99 clusters and the total number of participants interviewed was 11 230. All family members were interviewed from the selected household from 07/12/2021 to 27/12/2021.

2.3.3. Sampling Weight

The sampling weight for this survey was carried out in two stages. In the first stage, the probability of cluster was computed using the following formula:
Probability (P1) = (Household Size* cluster size)/ Total Household Size

In the second stage, the probability of selecting a household was computed using the following formula:

Probability (P2) = (Required no of households/Total household size per cluster)

Weight (W) = 1/(p1*p2)

2.4. Data collection sites and number of participants

Data was collected from all the 7 provinces and the total number of households interviewed was 2970 covering 11 230 participants. The table below follows the in-detail description of data collection sites.

2.4.1. List of data collection sites

Table 1: List of data collection sites

District	No. of clusters	Number of households	Number of participants
Koshi Province			
Bhojpur	1	30	122
Dhankuta	1	30	80
Ilam	1	30	77
Jhapa	3	90	354
Khotang	1	30	119
Morang	4	120	450
Panchthar	1	30	105
Solukhumbu	1	30	139
Sunsari	2	60	238
Terhathum	1	30	126
Udayapur	1	30	80
Madhesh Province			
Bara	3	90	462
Dhanusa	3	90	385
Mahottari	1	30	116
Parsa	3	90	387
Rautahat	2	60	324
Saptari	3	90	319
Sarlahi	4	120	485
Bagmati Province			
Chitwan	1	30	82
Dhading	1	30	82
Dolakha	2	60	226
Kathmandu	3	90	327
Kavrepalanchok	1	30	143
Lalitpur	2	60	246
Makwanpur	1	30	76
Nuwakot	1	30	84
Ramechhap	1	30	59
Sindhuli	2	60	182
Sindhupalchok	2	60	208
Gandaki Province			
Baglung	1	30	97
Gorkha	3	60	238
Kaski	2	60	192

District	No. of clusters	Number of households	Number of participants
Lamjung	1	30	75
Parbat	1	30	76
Syangja	2	60	202
Tanahu	2	60	180
Lumbini Province			
Arghakhanchi	1	30	104
Banke	2	60	265
Dang	2	60	214
Gulmi	2	60	190
Kapilbastu	1	30	148
Nawalparasi	2	60	231
Palpa	1	30	106
Pyuthan	1	30	105
Rolpa	1	30	115
Rupandehi	2	60	270
Karnali Province			
Dailekh	2	60	232
Humla	1	30	139
Jumla	1	30	115
Mugu	1	30	101
Rukum	2	60	265
Salyan	1	30	106
Surkhet	1	30	120
Sudurpaschim Province			
Achham	2	60	191
Baitadi	1	30	134
Bajhang	1	30	154
Dadeldhura	2	60	264
Doti	1	30	117
Kailali	2	60	271
Kanchanpur	1	30	130

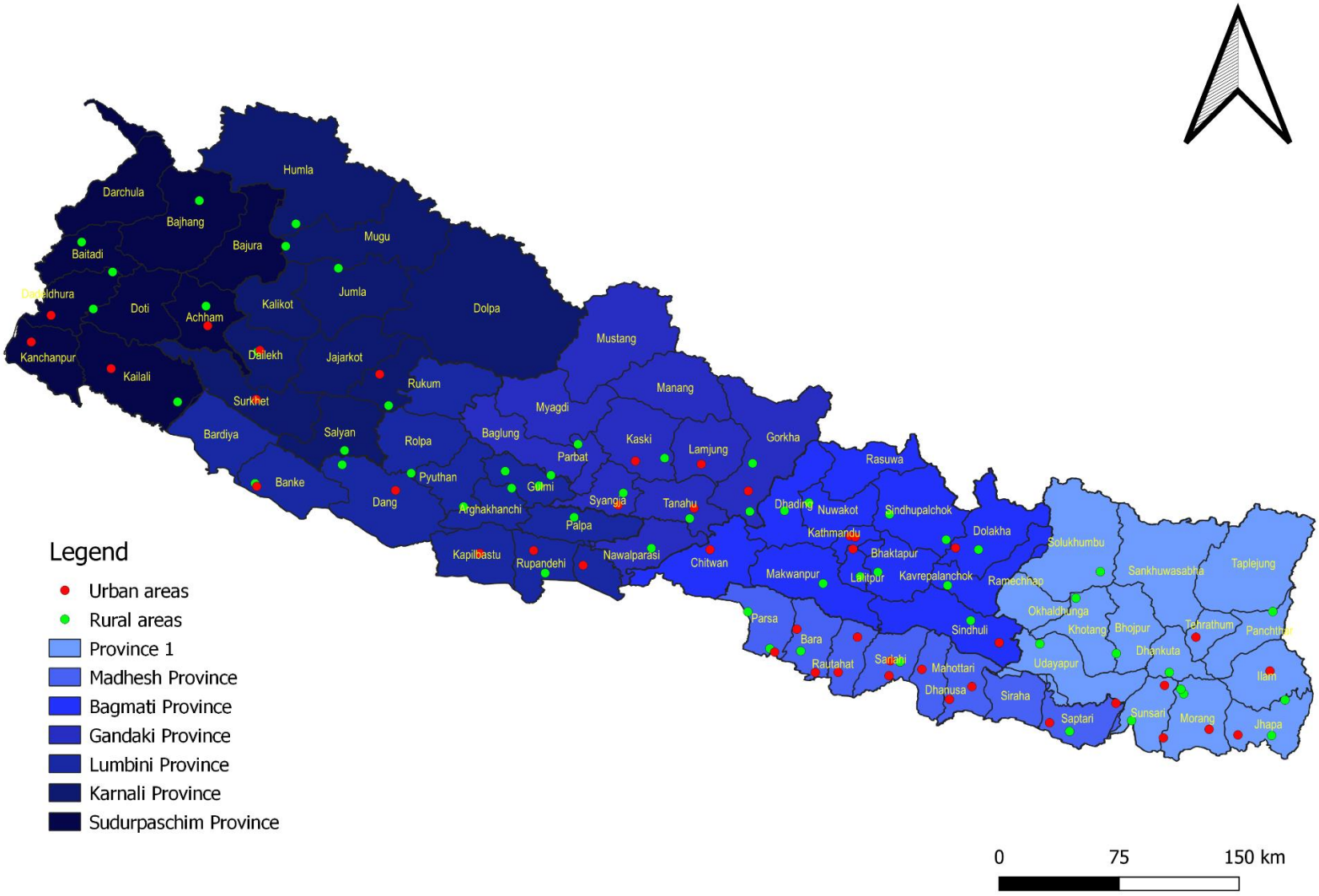


Figure 1: Data collection sites of rATA survey

2.5. Data collection tool and procedure

2.5.1. Instruments

A semi-structured WHO rapid Assistive Technology Assessment (rATA) questionnaire was used and the data collection procedure followed the rATA Manual.[24] It is an interviewer-administered, population-based survey tool, divided into seven sections designed to gather basic information on factors such as demographics; use and coverage; needs and unmet needs; demand and supply; user satisfaction; barriers; functional difficulties and recommendations.

2.5.2. Measures

Preliminary information / administrative survey data: It includes survey information: enumerator details, date, time, GPS information (location) etc.
Demographic information: It includes verification of consent, individual survey ID for each participant, sex/gender of participant, and age of participant.

Need, unmet need, and functioning: Questions C1–C6 collect information on individual functioning. This section is based on the Washington Group Short Set of Questions on disability (WG-SS) with minor modifications to account for the focus on AT in the rATA.

Demand and supply: Questions D1-D2 explore: current use of AT (question D2 is a list of 50 priority assistive products, plus “other” option) – D3 identifies any other products used not on the core list – D4 is used to calculate the number of assistive products used – D5 nominates 3 important products if >3 is used – D6 is about sources of products – D7 asks who pays for products – D8 is about distance to facilities – D9 asks about unmet needs – D10 determines reasons for unmet needs.

Satisfaction: Questions E1-E6 explore satisfaction with: - current products - service quality - follow up - suitability of products - effectiveness of products - overall satisfaction with health and wellbeing.

Recommendations: Solicits respondent expertise and feedback about priority measures to improve AT services, quality and access.

[24] Pryor W, Nguyen L. The rapid Assistive Technology Assessment (rATA) Tool for national representative survey enumeration: a manual. Geneva: World Health Organization.

Surveyor's comments & post survey administration: Questions G1–G3 record information about the interview: - whether the interview was conducted by proxy or not - highlight a need to check, verify information - highlight any issues for follow up with the respondent.

2.5.3. Tool Translation

Since the rATA survey instrument (questionnaire) is available in standard UN languages only and being Nepali as the national language, which is spoken by the country's nationals, the English version of questionnaire was translated into Nepali language. The linguistic validation of the questionnaire was done with forward translation by two independent translators, reconciliation, and again backward translated by two independent translators who were blind to the original questionnaire format. The WHO English-language version and the back-translated version were then compared for accuracy. Any inconsistencies were sorted out. Therefore, Nepali version of the questionnaire was used which was also supplemented by the English version.

2.5.4. Procedure

Field staffs

Sixty field researchers from the background of bachelor's degree in public health and nursing were mobilized for data collection. The field researchers participated in a 3-day training workshop at Nepal Health Research Council (NHRC).

Field work

The field work was carried out between 7 December, 2021 to 27 December, 2021. As part of enumerator training, trainees were required to carry out a small number of interviews in selected households to test procedures for entering households, introducing the rATA, conducting the rATA questionnaire, using referral procedures where necessary, and using the digital data entry tool. Approximate total number of interviews (with 60 enumerators) was 120. Following this exercise, enumerators discussed the experiences and problems to the supervisors.

60 trained data enumerators formed thirty data collection teams, covered an average of seven households per data collection teams per day, which is a total of 210 households

per day, and implemented the data collection in 14 days. However, due to the restrictions caused by the COVID-19 pandemic, travel distance, concentration of population, level of infrastructure, instances for illness, unexpected events; data collection was done over a period of 21 days.

A letter from the NHRC was issued to the selected ward office outlining the project details. A copy of the signed letter was given to each participant so they can show it to any relevant official in case of need. Each team members were given 3 or 4 clusters based on the geographical terrain. Data collection was done using android tablets, with prior installation and testing of software of rATA tools from Survey 123 app. Data was uploaded on a real-time basis. In case of internet connectivity issues, the team collected data offline and saved it in the outbox and later sent from the places where they had internet access. In addition to the mobile app, each team members were provided with a flipchart for displaying list and pictures of assistive products and referral centers names where the needed participants could access AT services for convenience of respondents. Each team were provided with a power bank to ensure the functionality of the mobile battery. In addition to this, they were issued prepaid internet cards so they may not lack internet access due to insufficient funds for mobile data in the field. A Viber group was created for monitoring as well as interaction of group members in case anyone needed an update or has any query in the field. All enumerators, supervisors, project coordinators were added to the Viber group, so that survey management team would be able to track activity of each district and province. In addition to Viber group, a call system was also used to monitor, where teams were called randomly on the day to ask about their progress and work done so far. Moreover, field visits by the supervisors were done to see the data collection activities.

Data was automatically transferred from the data collection devices to the server at NHRC. The supervisor made sure that guidance on input of region, enumeration area, respondent, household and enumerator ID numbers, and sample weights were followed. Detailed instructions on using the digital data collection tool for data input was provided in the master training for enumerators.

2.6. Data management and statistical analysis

2.6.1. Data management

The backend data was accessed daily by study team at NHRC. The quality and number of data collected from each team were tracked daily to ensure that the field researchers act according to the instructions and expectancies. Any inconsistencies in data were sorted accordingly and the field researchers were guided throughout the data collection procedure. Each step of rATA manual has been taken into account for the validity of the study.

2.6.2. Data handling and coding

The data from ArcGIS Survey123 application was exported to excel where data cleaning was done. All the analysis were conducted using STATA and SPSS version 22.0.

2.6.3. Statistical methods employed

Geographic and demographic distributions were presented using frequency and percentage (unadjusted to weights). Complex survey analysis was performed for functional difficulties, use, unmet need, sources, payers of AP, distance to access AP, barriers and satisfaction, and the data was presented using frequency and percentage (weighted). Broad themes were generated from the recommendations given by the partcipants on improving access to assistive technology and were presented using descriptive analysis. Graphical representation of data was done using pie charts and bar graphs where necessary. Data analysis and report writing was done by NHRC team members with technical support of WHO-HQ.

2.7. Operational definition

Prevalence of Use

Proportion of a population using assistive products

Prevalence of Unmet need

Proportion of a population that needs new or additional assistive products regardless of whether they are already using assistive products or not

Overall functional difficulty

Questions were asked about difficulties you may have doing certain activities because of a HEALTH CONDITION on six different domains: Mobility, seeing, hearing, communication, remembering and self-care. Each domain was categorized as 0 = No difficulty, 1 = Some difficulty, 2 = A lot of difficulty, 3 = Cannot do at all.

Then, the level of difficulty was categorized into:

- 0- Mobility through Self-care=0, 0= No difficulty
- 1- any of Mobility through Self-care, but not 2 or 3, 1= Some difficulty
- 2- any of Mobility through Self-care =2, but not 3, 2= A lot of difficulty
- 3- any of Mobility through Self-care =3, 3= Cannot do at all

Satisfaction

Participants who use any AP and who reported as being quite satisfied or very satisfied with respect to product, assessment and training, and repair, maintenance and follow-up services were categorized as being satisfied.

2.8. Ethical clearance

It was obtained from Ethical Review Board of NHRC. Participants were informed of their right to withdraw from the survey at any time without any penalty and issues concerning confidentiality and consent was upheld in accordance with ethical research standards. Written informed consent were signed from the participants and assent form were signed from parents/guardians of participants who were aged <18years. Furthermore, participants with any need of AP were given information of referral centers where AP could be accessed.

FINDINGS

Chapter 3

Geographic and demographic distribution

3.1. Geographic Distribution

The 2021 rATA survey interviewed 11 230 participants from 2970 households over the period of 3 weeks. Majority of the participants (22.1%) were from Province 2 followed by Province 1 (16.8%). More than half of the participants (55.3%) were from rural regions.

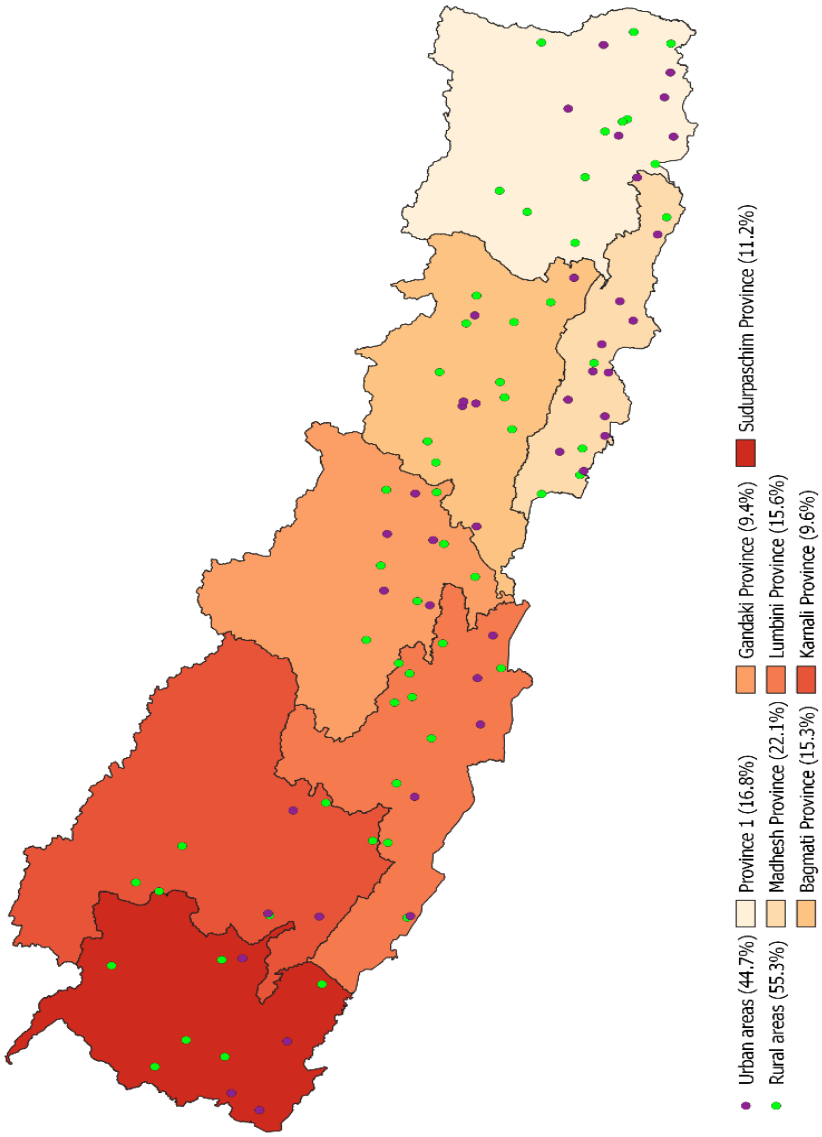


Figure 2: Geographical distribution of the participants (n= 11 230)

3.2. Demographic Distribution

The mean years of the total participants was 34 ± 21.5 years. More than half of the participants (52.6%) were female. Majority of the male participants (9.5%) were from age group 10-14 years and majority of the female participants (9.4%) were from age groups 20-24 years.

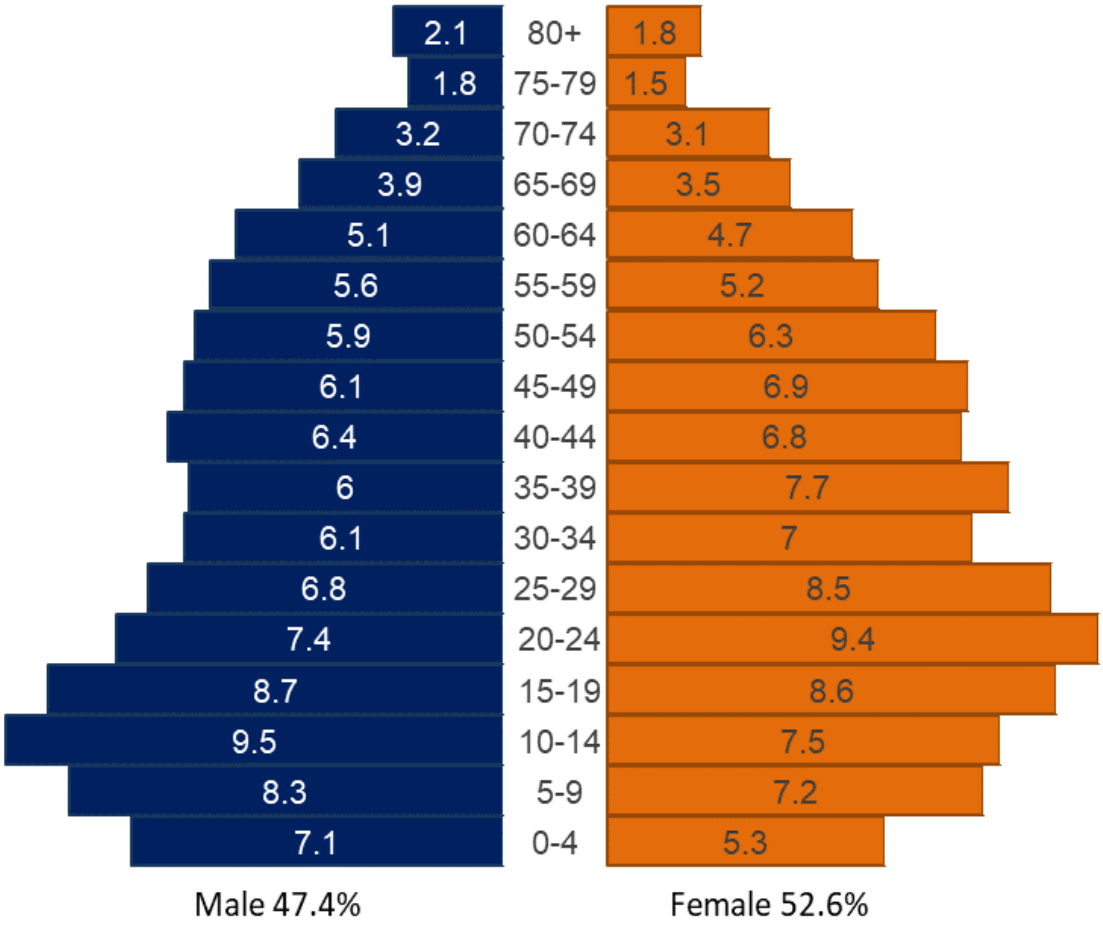


Figure 3: Demographic distribution of the participants (n=11 230)

3.3 Age group of the participants

Majority of the partcipants were from age group 17-65years (66.9%) followed by 5-17years (17.5%).

Table 2: Age group of the participants (n=11230)

Age Category	n (%)
<5years	382 (3.4)
5-17years	1969 (17.5)
17-65years	7510 (66.9)
>65years	1369 (12.2)

Chapter 4

Functional Difficulties

4.1. Overall functional difficulties

Majority of the participants (57.9%) had no difficulty followed by 28.4% of the participants who had some difficulty in doing certain activities because of a health condition. The prevalence of functional limitation was found to be 13.8%. It is calculated considering at least one functional domain with a lot of difficulty or cannot do at all, as recommended by the Washington group for the estimation of functional limitation/difficulties.[25]

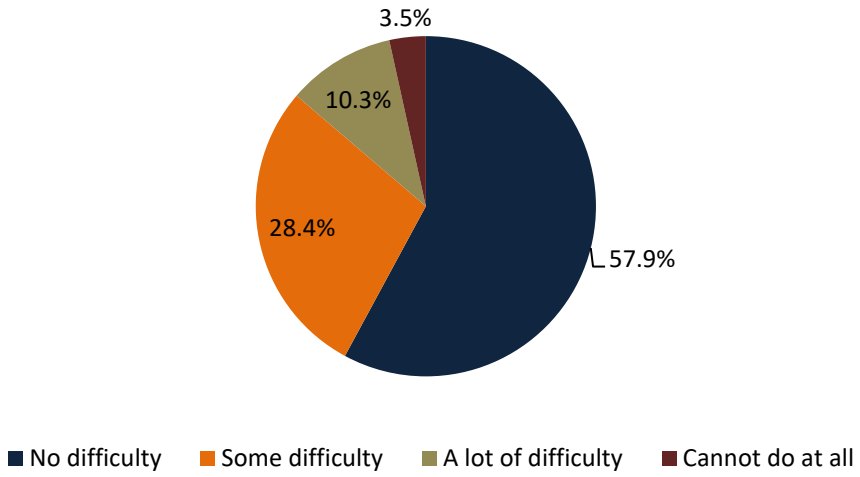


Figure 4. Distribution of functional difficulties among the participants (n=11 230)

[25] An Introduction to the Washington Group on Disability Statistics Question Sets. The Washington Group Primer. https://www.washingtongroupdisability.com/fileadmin/uploads/wg/The_Washington_Group_Primer_-_English.pdf

4.2. Functional difficulties across different domains

- More than eighty percent of the participants (83%) had no difficulty while sitting, standing, walking or climbing steps while 10.1% had some difficulty, 4.8% had a lot of difficulty and 2.0% could not do any activities without assistance or support from any people or equipment.
- More than two-third of the participants (68.0%) had no difficulty seeing, without using any devices while 25% had some difficulty, 6.6% had a lot of difficulty and 0.4% could not do any activities without assistance or support from any people or equipment.
- More than ninety percent of the participants (93.3%) had no difficulty hearing, without using any devices while 4.4% had some difficulty, 1.6% had a lot of difficulty and 0.5% could not do any activities without assistance or support from any people or equipment.
- Almost cent percent of the participants (97.6%) had no difficulty communicating, without using any devices.
- More than ninety-five percent of the participants (95.1%) had no difficulty remembering, without using any devices while 3.7% had some difficulty, 1% had a lot of difficulty and 0.3% could not do any activities without assistance or support from any people or equipment.
- More than ninety percent of the participants (93.4%) had no difficulty in selfcare, without using any devices while 3.2% had some difficulty, 2.1% had a lot of difficulty and 1.3% could not do any activities without assistance or support from any people or equipment.

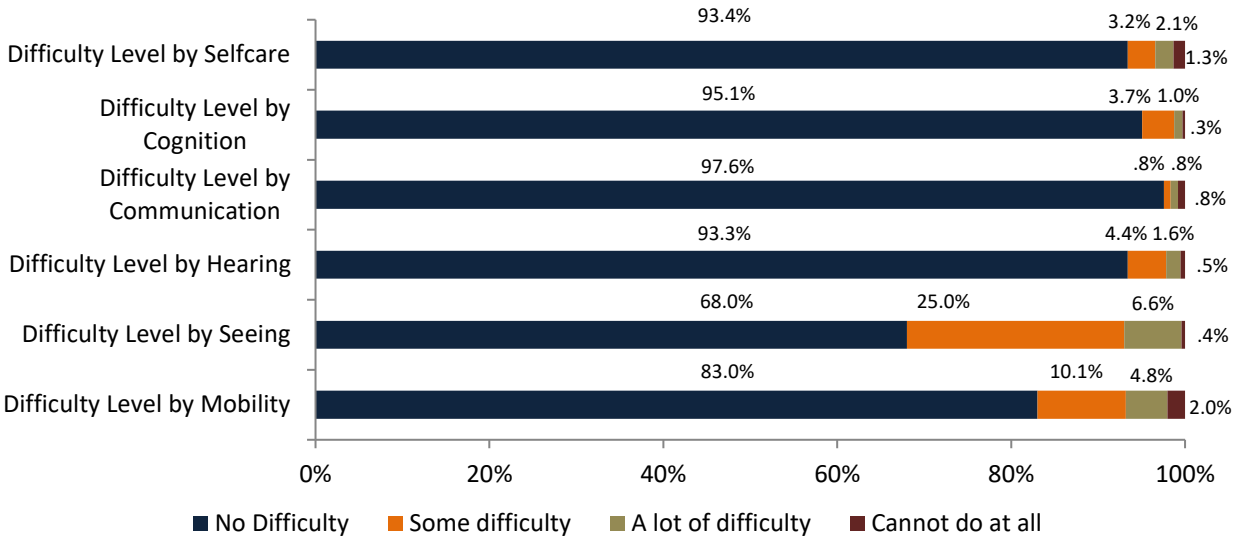


Figure 5: Distribution of functional difficulties by different domains among the participants (n=11 230)

4.3. Functional difficulties by sex

Majority of both male (61.1%) and female (55.1%) participants had no difficulty followed by 25.7% of the male participants and 30.6% of the participants having some difficulty. Only 3.6% of the male participants and 3.3% of the female participants could not do any activities without assistance or support from any people or equipment.

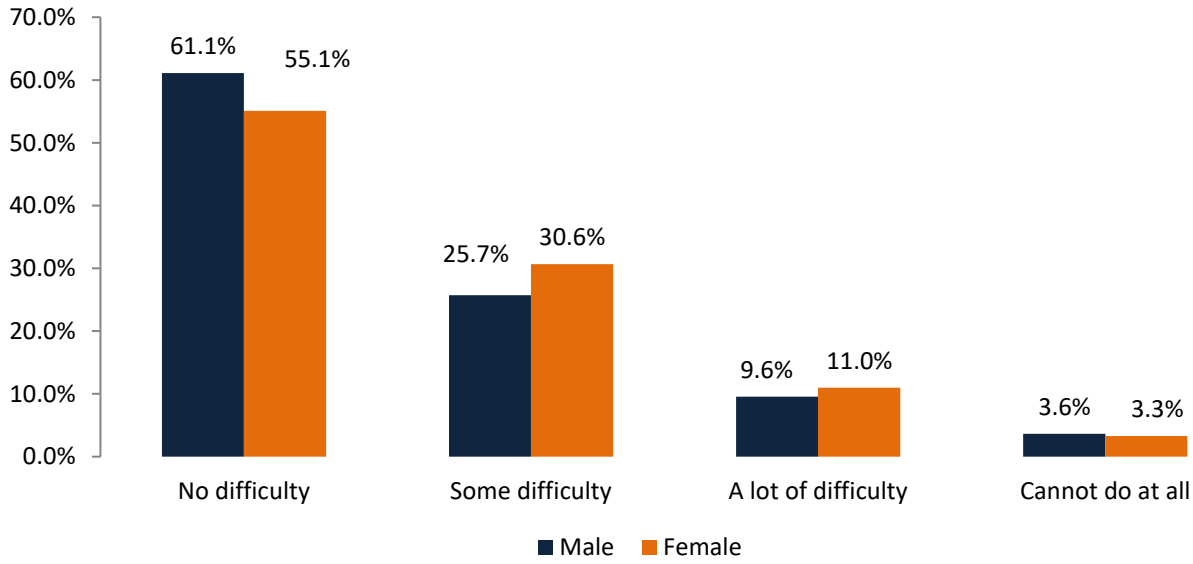


Figure 6: Distribution of functional difficulties by sex (n=11 230)

4.4. Functional difficulties by age group

- Functional difficulties increased with an increase in age. Almost cent percent of the participants <5 years (99.3%) had no difficulty.
- Majority of the participants (86.1%) between age groups 5-17 years had no difficulty followed by 7.7% of the participants with some difficulty.
- More than half of the participants (56.5%) had no difficulty followed by 31.9% of the participants who had some level of difficulty and 8.9% of the participants who had a lot of difficulty.
- Almost half of the participants (46.4%) aged >65 years had some difficulty followed by nearly one-third of the participants (27.1%) who had some difficulty and 13.4% of them could do any activities without assistance or support from any people or equipment. Only 13% of the participants aged >65 years had no difficulty.

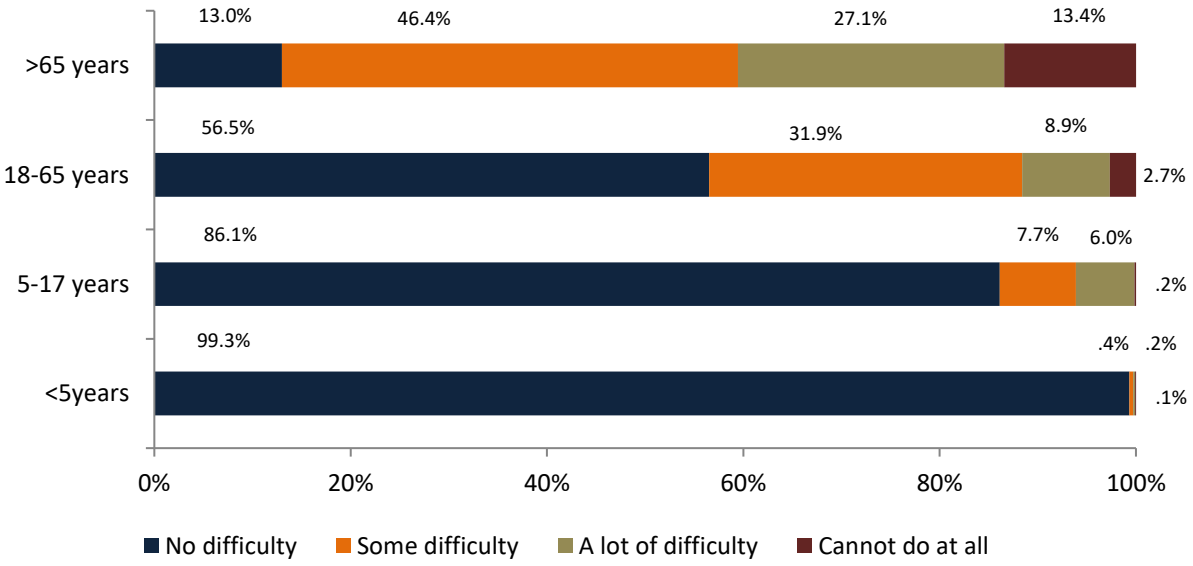


Figure 7: Distribution of functional difficulties by age group (n=11 230)

4.5. Functional difficulties by settlement

- Participants living in urban areas had more difficulty level as compared to the ones living in rural areas.
- Nearly two-third of the participants (65.1%) living in rural areas had no difficulty whereas 57.6% of the participants living in the urban areas no difficulty.
- 28.6% of the participants living in urban areas and 23.3% of the participants living in rural areas had some level of difficulty.
- Only 3.5% of the participants living in urban areas and only 1.5% of the participants living in rural areas could do any activities without assistance or support from any people or equipment.

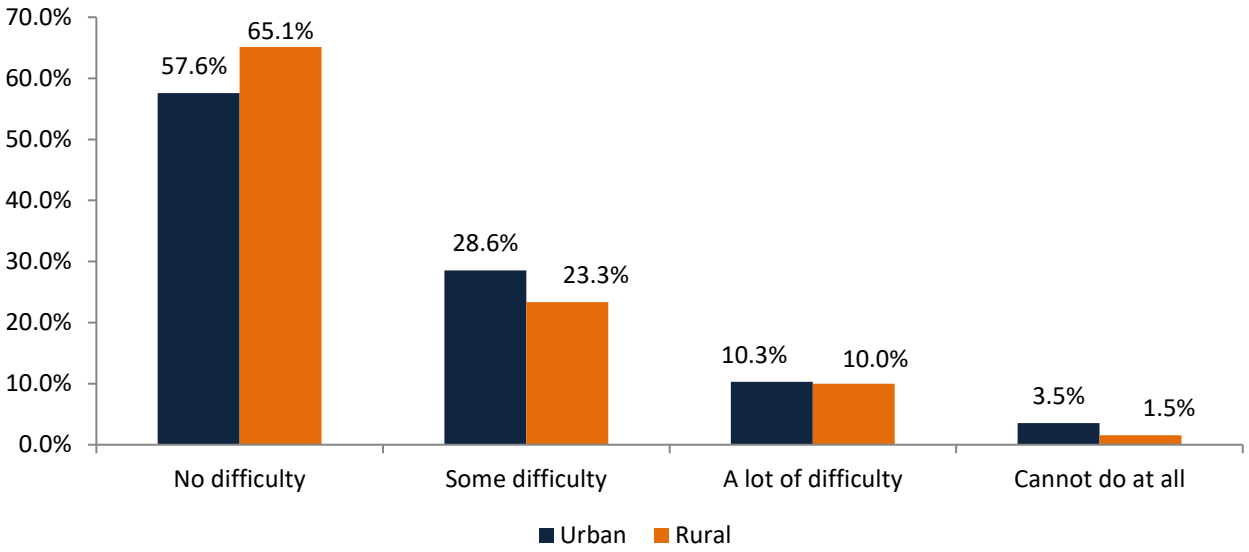


Figure 8: Distribution of functional difficulties among the participants by settlement (n=11 230)

Chapter 5

Use of Assistive Products

5.1. Use

More than one-fourth of the participants (27.7%) currently used any kind of assistive products.

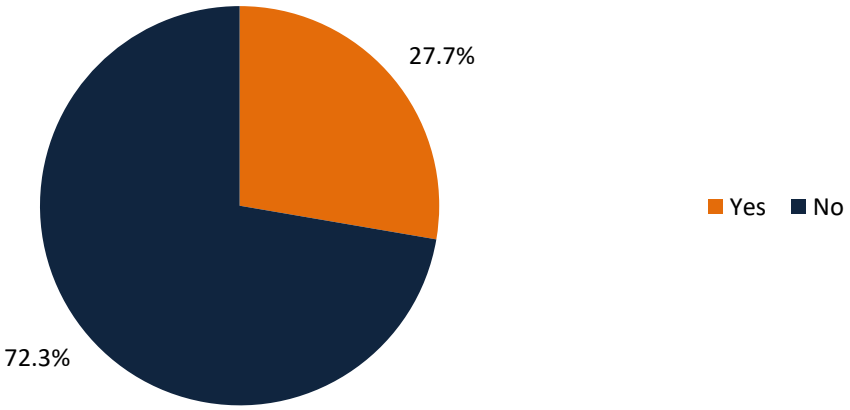


Figure 9: Prevalence of use of Assistive Products (n=11 230)

5.2. Use of AP by functional difficulties

- More than half of the participants (51.6%) who could not do any activities without assistance used any AP.
- Almost two-third of the participants who had a lot of difficulty (64.1%) and who had some difficulty (65.3%) used any AP.
- Only 1.3% who did not have any difficulty used any AP.

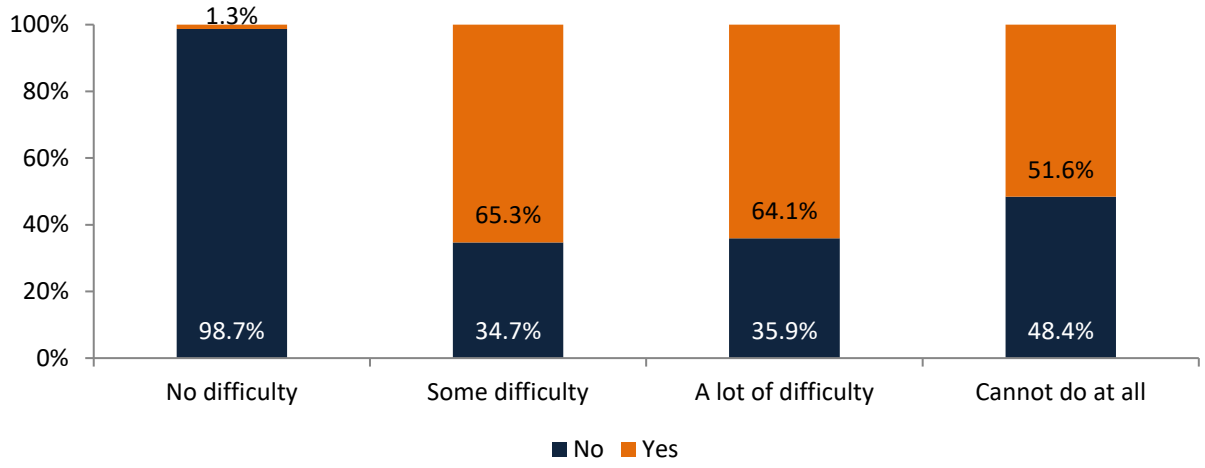


Figure 10: Distribution of use of AP by functional difficulties (n=11 230)

5.3. Use of AP by sex

There was no difference seen in use of any AP across sex (male versus female: 27.6% versus 27.8%).

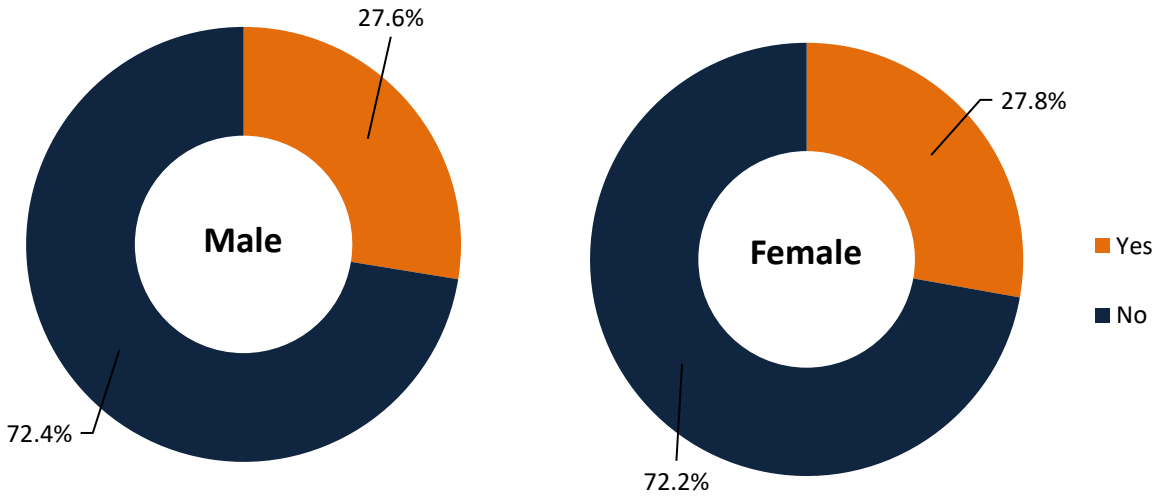


Figure 11: Distribution of use of AP by sex (n=11 230)

5.4. Use of AP by age group

Use of AP increased with increase in age. More than half (50.6%) of the older age grouped participants used any AP. Almost one-third (29.9%) of the participants aged 18-65 years used any AP and only 8.6% of the participants aged 5-17 years used AP.

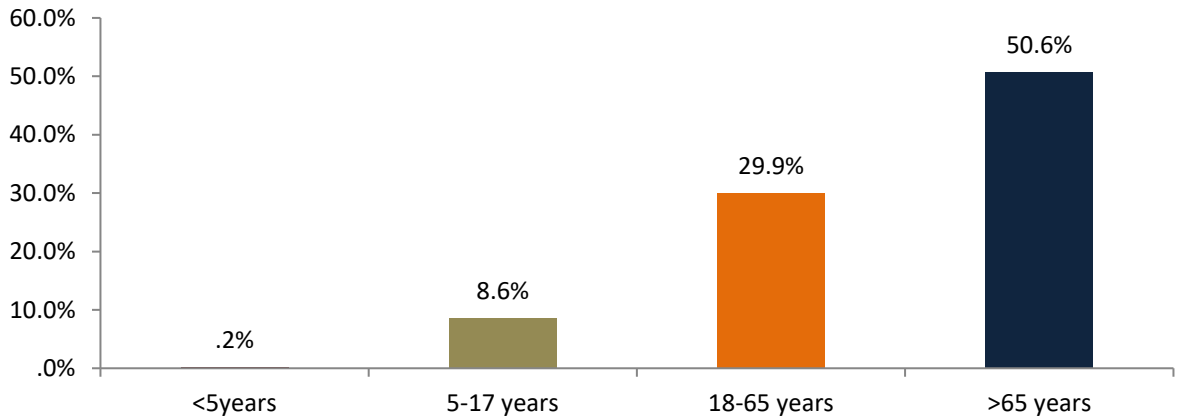


Figure 12: Distribution of use of AP by age group (n= 11 230)

5.5. Use of AP by settlement

Participants living in urban areas used more AP (28.2%) as compared to the participants living in rural areas (15.1%).

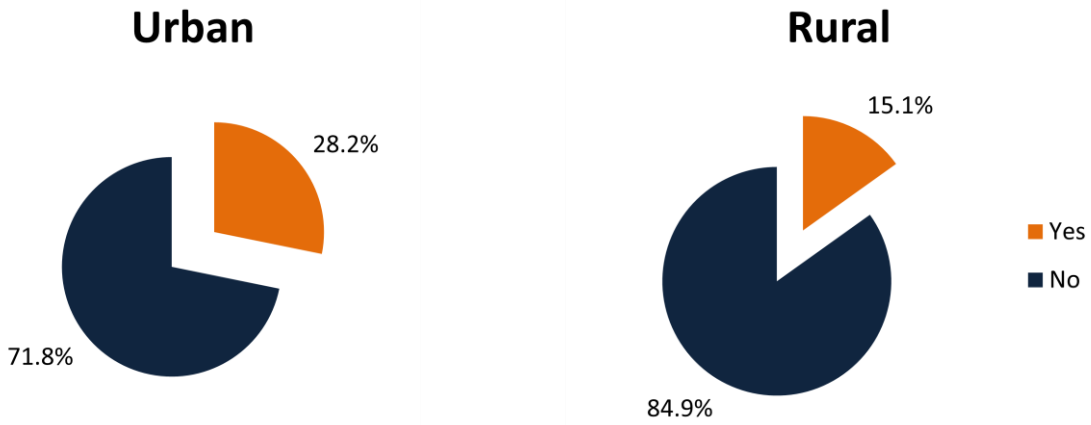


Figure 13: Distribution of use of AP by settlement (n= 11 230)

Chapter 6

Demand of Assistive Products

6.1. Unmet need of AP

Almost one-fifth of the participants (19.7%) had unmet need of AP; any AP that they do not currently use, or they currently use but it needs to be replaced.

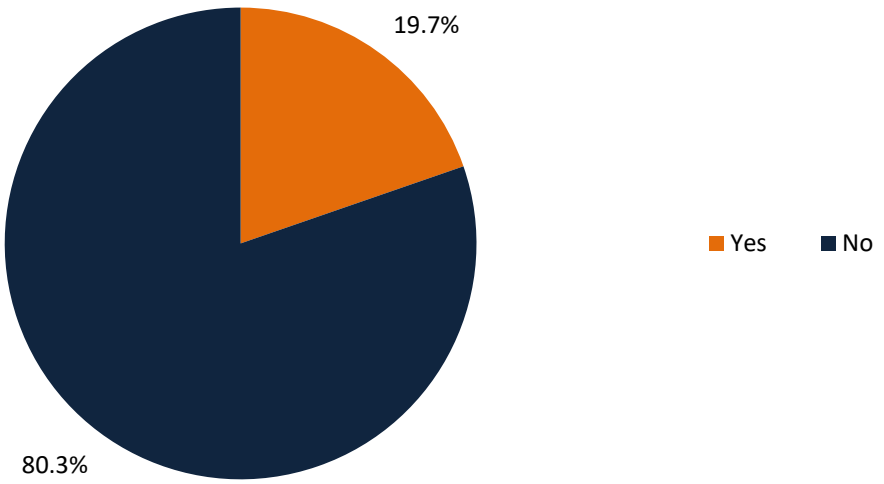


Figure 14: Proportion of unmet needs of AP among the participants (n= 11 230)

6.2. Unmet need by functional difficulties

- Unmet need increased with increase in difficulty level.
- Among participants who could not do any activities without assistance, almost three-fourth (70.9%) had unmet needs for AP.

- More than half of the participants (58.2%) having a lot of difficulty and 36.6% of the participants having some level of difficulty had unmet needs of AP.

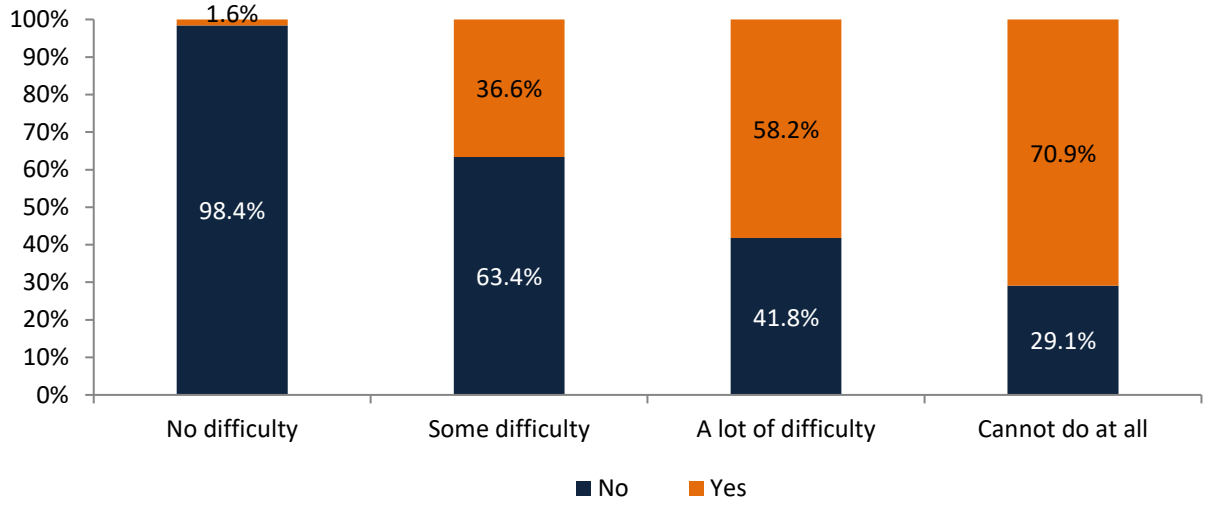


Figure 15: Distribution of unmet needs by functional difficulties (n=11 230)

6.3. Unmet needs by sex

Almost eighteen percent (17.6%) of the male participants and more than one-fifth (21.4%) of the female participants had unmet needs of AP.

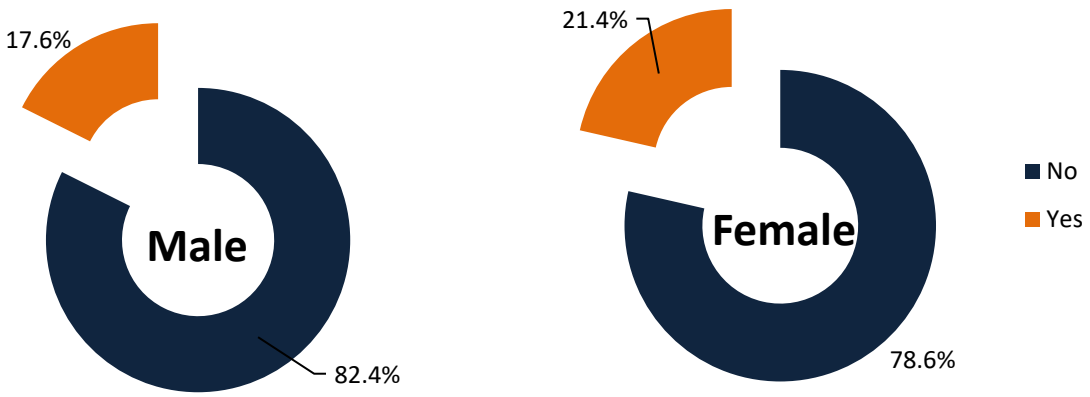


Figure 16: Distribution of unmet needs by sex among the participants (n= 11 230)

6.4. Unmet needs by age group

- Unmet needs increased with increase in age.
- More than half of the participants (51.7%) with age >65 years had unmet need of AP.
- Almost one-fifth of the participants (19%) aged 18-65 years and 3.6% of the participants 5-17 years had unmet needs of AP.

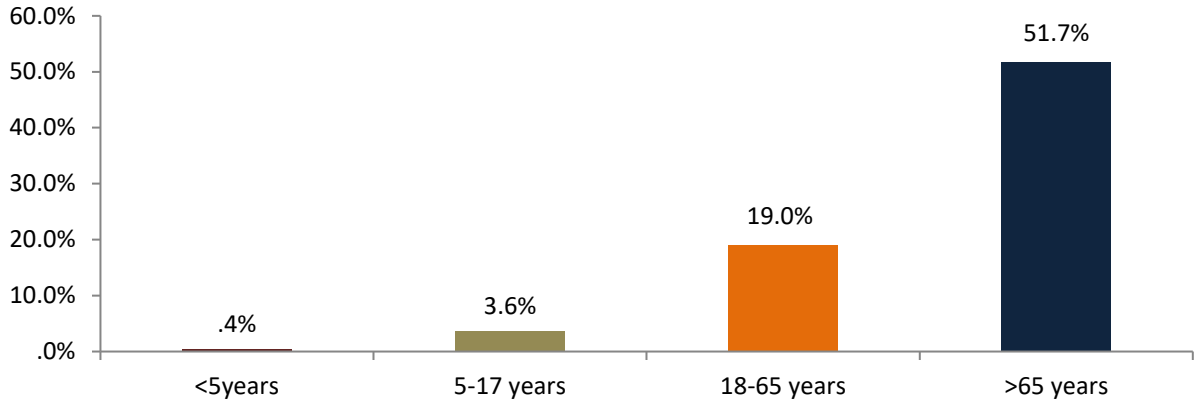


Figure 17: Distribution of unmet needs by age group among the participants (n=11 230)

6.5. Unmet needs by settlement

Participants living in rural areas have more unmet needs of AP (21.3%) as compared to participants living in rural areas (19.6%).

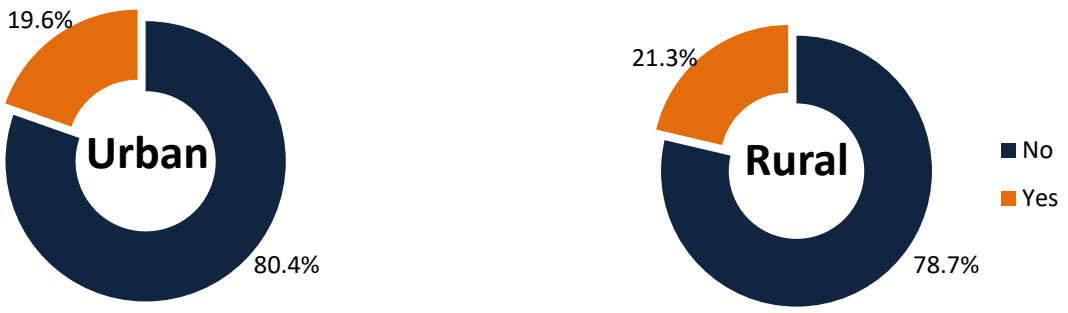


Figure 18: Distribution of unmet needs by settlement (n= 11 230)

Chapter 7

Assistive Products

7.1. List of all AP

The table below presents the prevalence of use and prevalence of unmet need of 50 different assistive products among the total participants. Although there is no use of some AP, but there still is unmet need of those APs.

Table 3: Prevalence of use and unmet need of different Assistive Products (n= 11 230)

SN	Assistive Products	% of use of AP	% of unmet need of AP
	Mobility Products		
101	Axillary Elbow Crutches	.8%	.9%
102	Canes/Sticks, Tripod And Quadripod	3.3%	3.2%
103	Club Foot Braces	.0%	.3%
104	Manual Wheelchairs - Basic Type For Active Users	.0%	.8%
105	Wheelchairs, Manual With Postural Support	.4%	.9%
106	Manual Wheelchairs - Push Type	.4%	.2%
107	Wheelchairs, Electrically Powered	.1%	.1%
108	Orthoses (Upper Limb)	.4%	.6%
109	Orthoses (Lower Limb)	.8%	2.5%
110	Orthoses (Spinal)	1.8%	4.8%
111	Pressure Relief Cushions	.0%	.0%
112	Pressure Relief Mattresses	.1%	.0%
113	Prostheses (Lower Limb)	.1%	.5%
114	Prostheses (Upper Limb)*	.1%	.6%
115	Rollators	.0%	.0%
116	Walking Frames/Walkers	.5%	.3%
117	Therapeutic Footwear (Diabetic, Neuropathic, Orthopedic)	.1%	.5%
118	Fall Detectors	.0%	.0%
119	Standing Frames, Adjustable	.0%	.0%
120	Tricycles	.0%	.1%

Seeing Products			
201	Audio-Players With DAISY Capability	.0%	.1%
202	Braille Displays (Note Takers)	.0%	.0%
203	Braille Writing Equipment/Braillers	.0%	.0%
204	Magnifiers, Digital Handheld	.1%	.0%
205	Magnifiers, Optical	.7%	.1%
206	Spectacles; Low-Vision, Short/Long Distance/Filters Etc	22.3%	10.1%
207	Watches, Talking/Touching	.0%	.0%
SN	**Assistive Products**	**% of use of AP**	**% of unmet need of AP**
208	White Canes	.0%	.0%
209	Smart Phones/Tablets/PDA	.0%	.1%
210	Deafblind Communicators	.0%	.0%
211	Gesture To Voice Technology	.0%	.0%
Hearing Products			
301	Alarm Signalers With Light/Sound/Vibration	.0%	.0%
302	Hearing Aids (Digital) And Batteries	.5%	3.4%
303	Closed Captioning Displays	.0%	.0%
304	Smart Phones/Tablets/PDA	.0%	.0%
305	Deafblind Communicators	.0%	.0%
306	Hearing Loops/FM Systems	.1%	.2%
307	Video Communication Devices	.0%	.1%
Communication Products			
401	Smart Phones/Tablets/PDA	.0%	.8%
402	Communication Boards/Books/Cards	.0%	.4%
403	Communication Software	.0%	.1%
404	Recorders	.0%	.0%
Cognition Products			
501	Pill Organizers	.0%	.5%
502	Smart Phones/Tablets/PDA	.0%	.9%
503	Global Positioning System (GPS)	.0%	.0%
504	Personal Emergency Alarm Systems	.0%	.0%
505	Simplified Mobile Phones	.0%	.3%
506	Time Management Products	.0%	.1%
507	Travel Aids, Portable	.0%	.3%
Self-care Products			
601	Chairs For Shower/Bath/Toilet	.9%	1.8%
602	Grab-Bars Hand Rails	.2%	.3%
603	Incontinence Products, Absorbent	.4%	.0%
604	Ramps, Portable	.0%	.4%
605	Keyboard And Mouse Emulation Software	.0%	.0%

606	Screen Readers	.0%	.0%
	Other Products		
701	Assistive Bed	.2%	
702	Dentures	.2%	
703	Pacemaker	.1%	

7.2. Top 10 AP in use

Among the total sampled population, the use of AP was seen highest in spectacles (22.3%) followed by canes/sticks (3.3%) and spinal orthoses (1.8%).

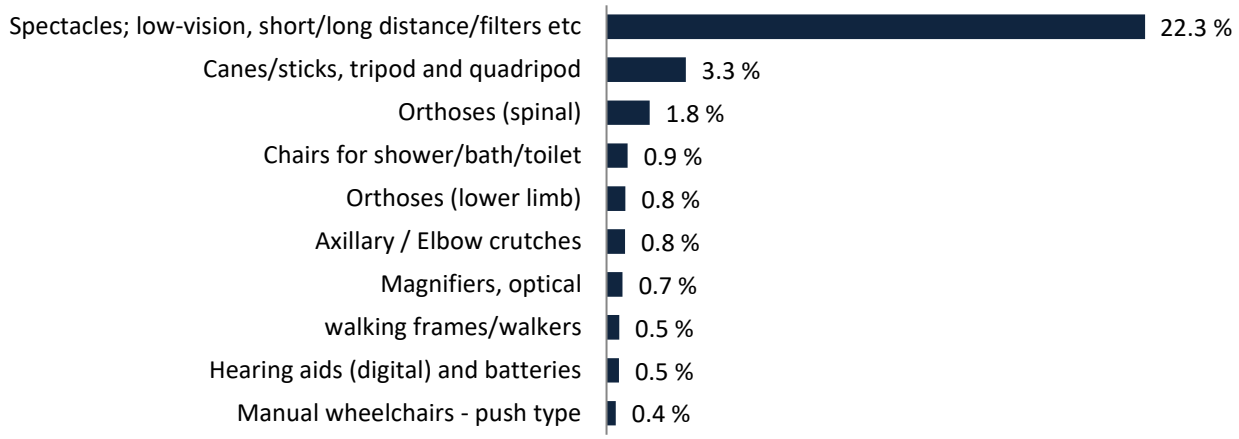


Figure 19: Top 10 uses of Assistive Products (n= 11 230)

7.3. Top 10 Unmet need of AP

Among the total sampled population, the use of AP was seen highest in spectacles (10.1%) followed by spinal orthoses (4.8%) and hearing aids (3.4%).

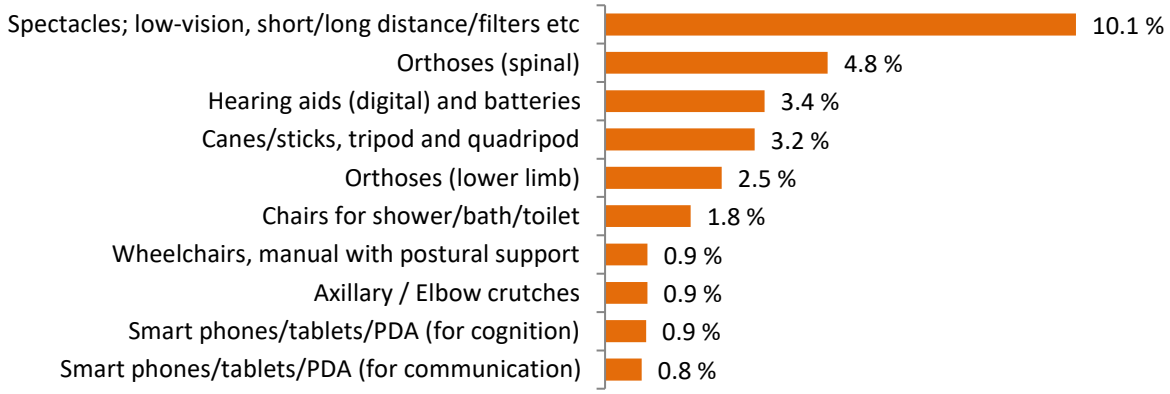


Figure 20: Top 10 unmet need of Assistive Products (n= 11 230)

7.4. Most important AP considered by participants who use any AP

The following analysis is carried out among the participants who use any AP currently. The most important products considered by the participants who use any AP were spectacles (74.8%), canes/sticks (10.3%), spinal orthoses (2.4%) and optical magnifiers (2.3%).

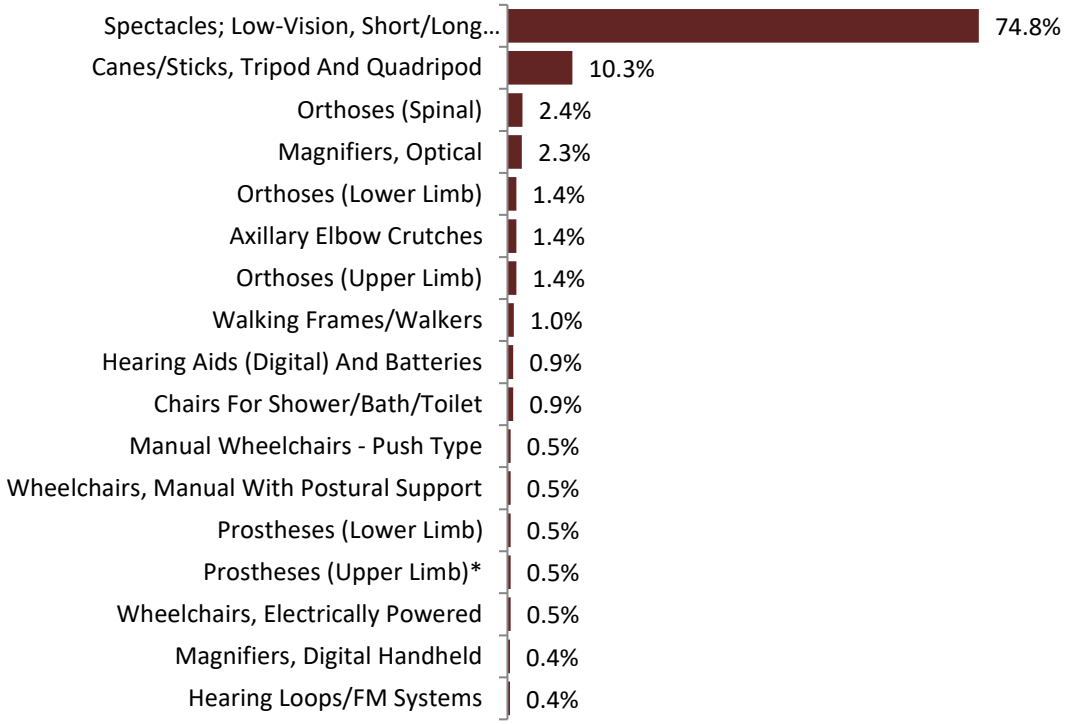


Figure 21: Most important products considered by the participants who use any AP (n= 3 110)

7.5. Total number of AP used

Among the participants who used any AP currently, majority of the participants (84.5%) used one assistive product followed by 10.5% of the participants who used two AP.

Figure 22: Number of AP used by the participants (n=3110)

Chapter 8

Sources of Assistive Products

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, the sources of AP relate to the most important assistive products as considered by the participants who use any AP. The answer categories were from multiple-response questions.

8.1. Different sources of AP

Majority of the participants (64.3%) who use any AP currently obtained their AP from private sector such as private facility/ hospital/clinic/shop/store followed by public sector (22%) such as government facility/public hospital and 8% of the participants self-made their AP.

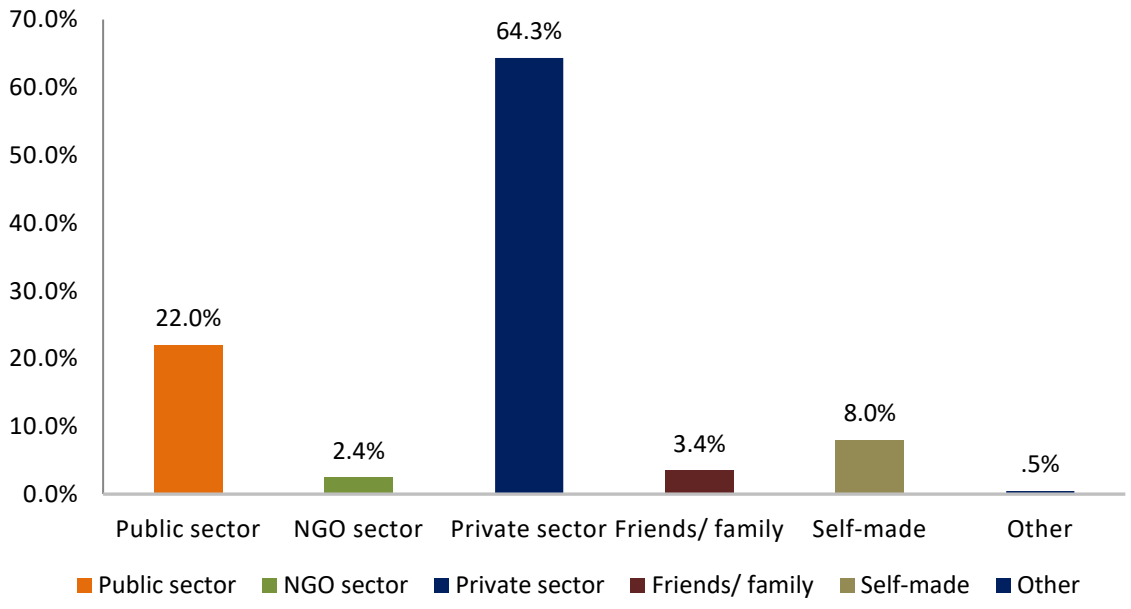


Figure 23: Sources of assistive products (n= 3110)

8.2. Sources of AP by settlement

More participants living in urban areas (64.7%) obtained their AP from private sectors as compared to participants living in rural areas (45.9%). More than one-fifth of the participants living in rural areas (21.6%) self-made their AP whereas only 7.7% of the participants living in urban areas made their AP by themselves.

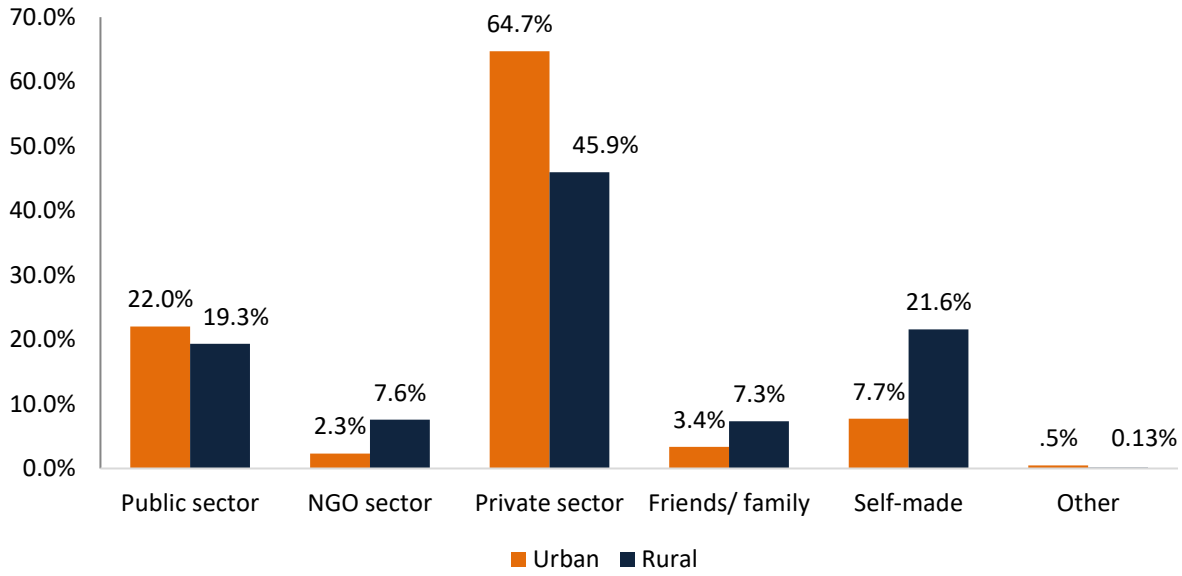


Figure 24: Distribution of assistive products by settlement (n=3110)

CHAPTER 9

Payers of AP

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, the payers of AP relate to the most important assistive products as considered by the participants who use any AP. The answer categories were from multiple-response questions.

9.1. Funding sources of AP

Among the participants who use any AP currently, majority of them (57.1%) obtained their AP through out-of-pocket expenditure followed by friends/family who paid for their AP.

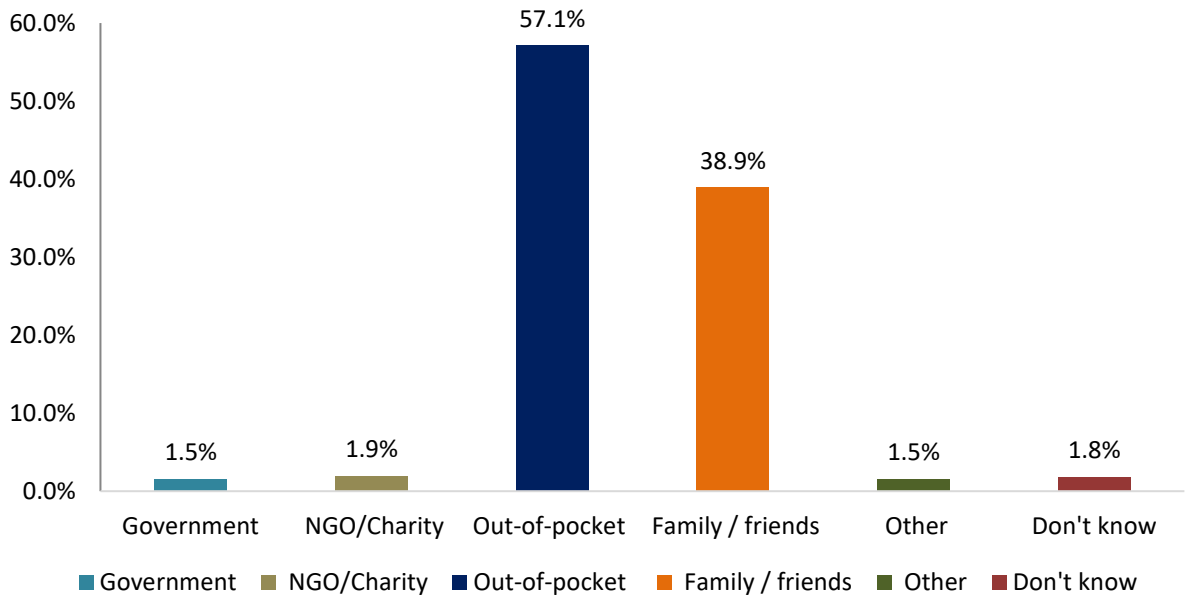


Figure 25: Distribution of different funding sources of AP (n=3110)

9.2. Funding sources by sex

Among the participants who used any AP, more males (65.5%) paid through out-of-pocket as compared to females (50.0%) whereas more females (45.5%) obtained their AP from friends and families as compared to males (31.1%).

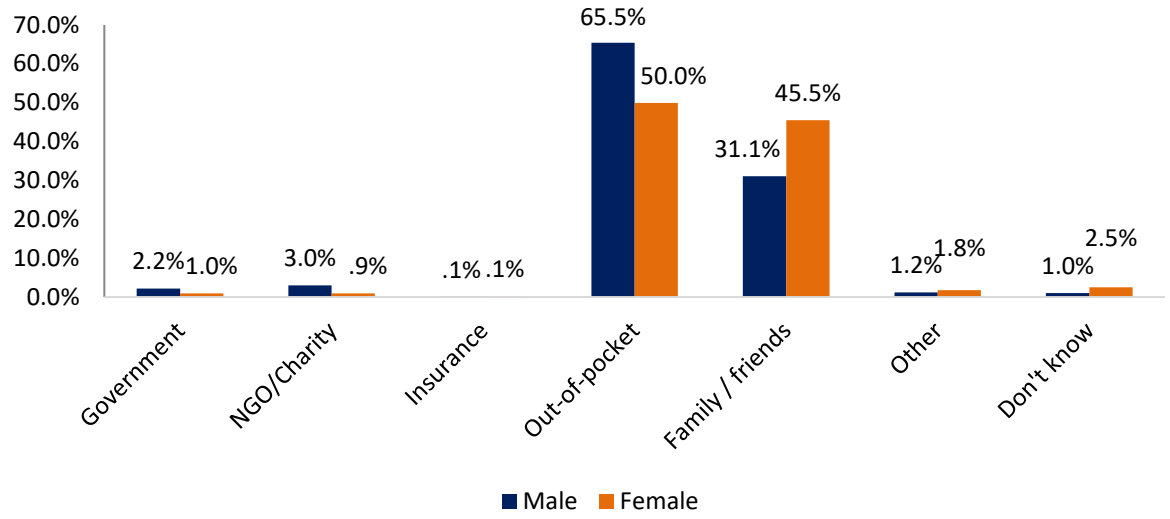


Figure 26: Distribution of different funding sources by sex (n=3110)

9.3. Funding sources by age groups

Majority of the funding sources were friends/family for age groups <5years (74.5%), 5-17years (73.5%) and >65 years (59.6%), however, for the age group 18-65 years, the major funding source was out-of-pocket expenditure.

Table 4: Distribution of different funding sources by age group (n=3110)

Sources of funding	Age Groups			
Categories	**<5 years (%)**	**5-17 years (%)**	**18-65 years (%)**	**>65 years (%)**
Government	0	0.3	2	0.2
NGO/ Charity	15.6	0.2	0.7	6.1
Employer	0	0.1	0	0
Insurance	0	0.2	0.1	0.2
Out-of-pocket	0	25.8	67.4	31.5
Family/ friends	74.5	73.5	29.9	59.6
Other	0	0.1	0.1	6.5
Don't know	17.8	0	2.5	0.1

9.4. Funding sources of AP by settlement

Majority of the sources of funding was out-of-pocket expenditure for both the participants living in rural (64.2%) and urban areas (56.9%) followed by friends/family.

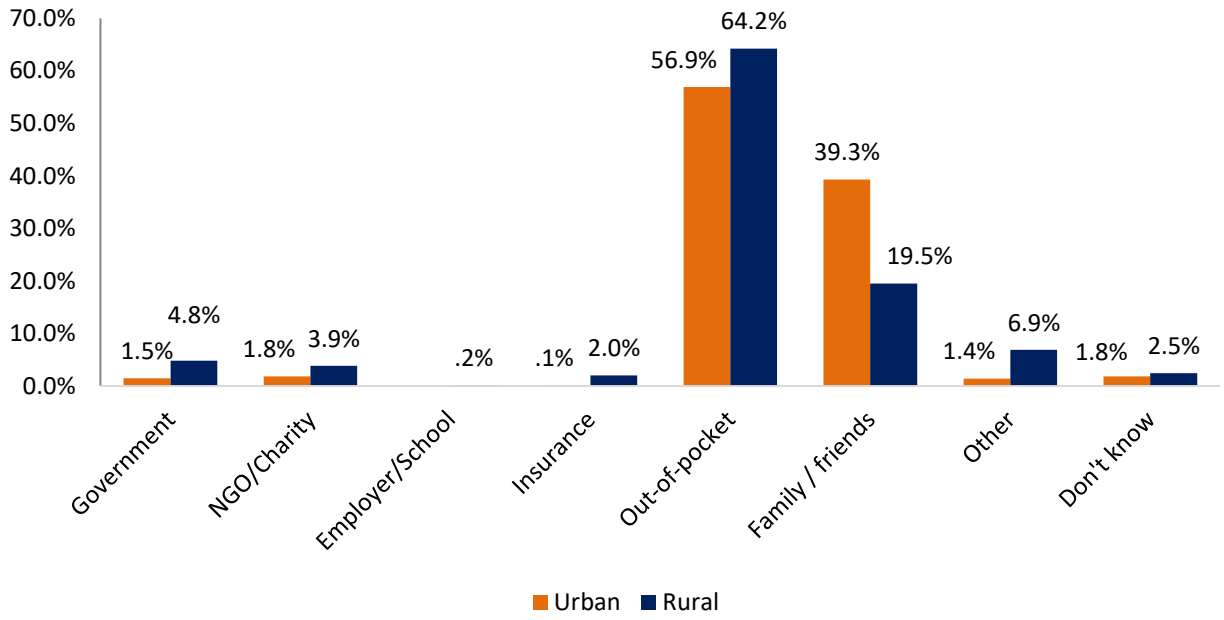


Figure 27: Distribution of different funding sources by settlement (n=3110)

Chapter 10

Distance to AP Facility

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, the distance to AP facility relates to the most important assistive products as considered by the participants who use any AP.

10.1. Travel distance to get AP

Among the participants who use any AP, most of them (62.8%) travelled <5km followed by one-fifth of the participants (24.7%) who travelled 6-25km to get their AP.

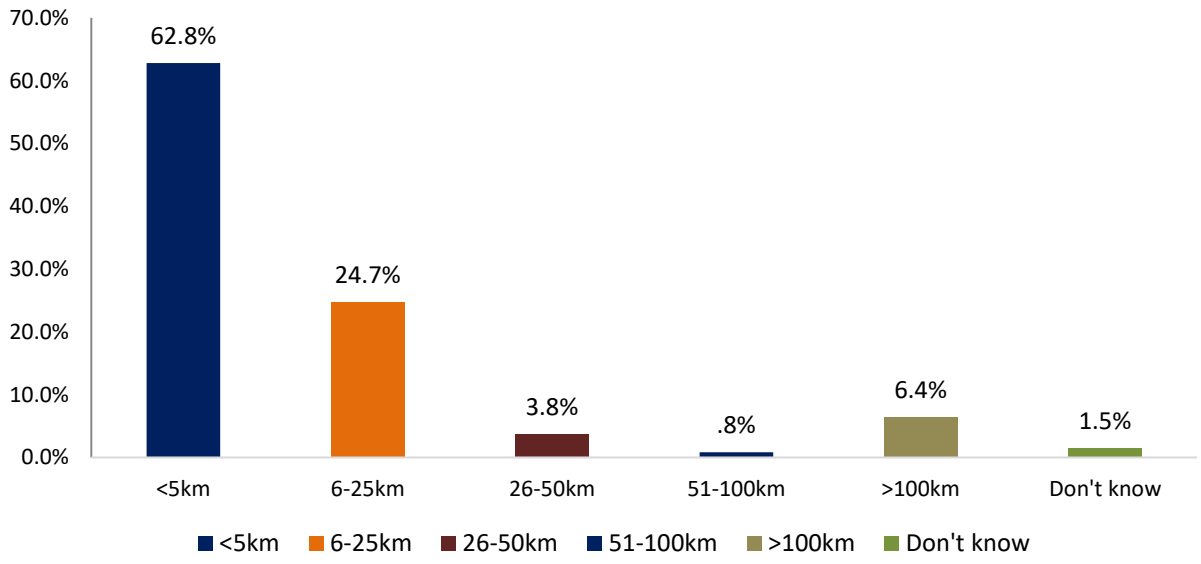


Figure 28: Travel distance to get the product (n=3110)

10.2. Travel distance by province

- In Koshi province, majority of the participants who use any AP had to travel 6-25km (37.8%) followed by <5km (32.4%) to obtain their AP.
- In Madhesh province, more than one-third of the participants who use any AP had to travel 6-25km (34.4%) followed by <5km (31.3%) to obtain their AP.
- In Bagmati province, almost two-third of the participants who use any AP had to travel <5km (64.3%) followed by 6-25km (24.3%) to obtain their AP.
- In Gandaki province, one-third of the participants who use any AP had to travel <5km (33.3%) followed by 6-25km (22.2%) and >100km (22.2%) to obtain their AP.
- In Lumbini province, more than one-third of the participants had to travel 6-25km (39.5%) and <5km (34.2%) to obtain their AP.
- In Karnali province, nearly half of the participants (42.9%) had to travel <5km and each of 14.3% of the participants had to travel 6-25km, 26-50km, 51-100km and >100km respectively.
- In Sudurpaschim province, majority of the participants (30%) had to travel <5km followed by one-fifth of the participants who had to travel >100km.

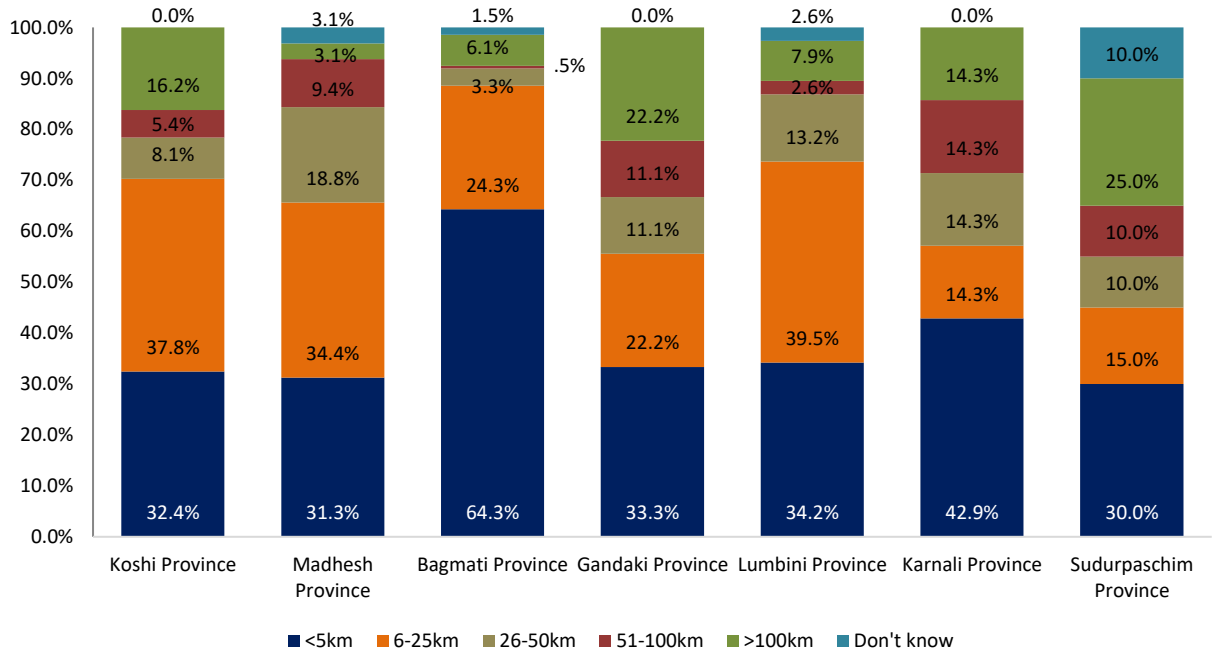


Figure 29: Distribution of travel distance by province (n=3110)

10.3. Travel distance by settlement

Nearly two-third (63.6%) of the participants living in urban areas had to travel <5km to obtain their AP whereas majority of the participants living in rural areas (32.4%) had to travel 6-25km.

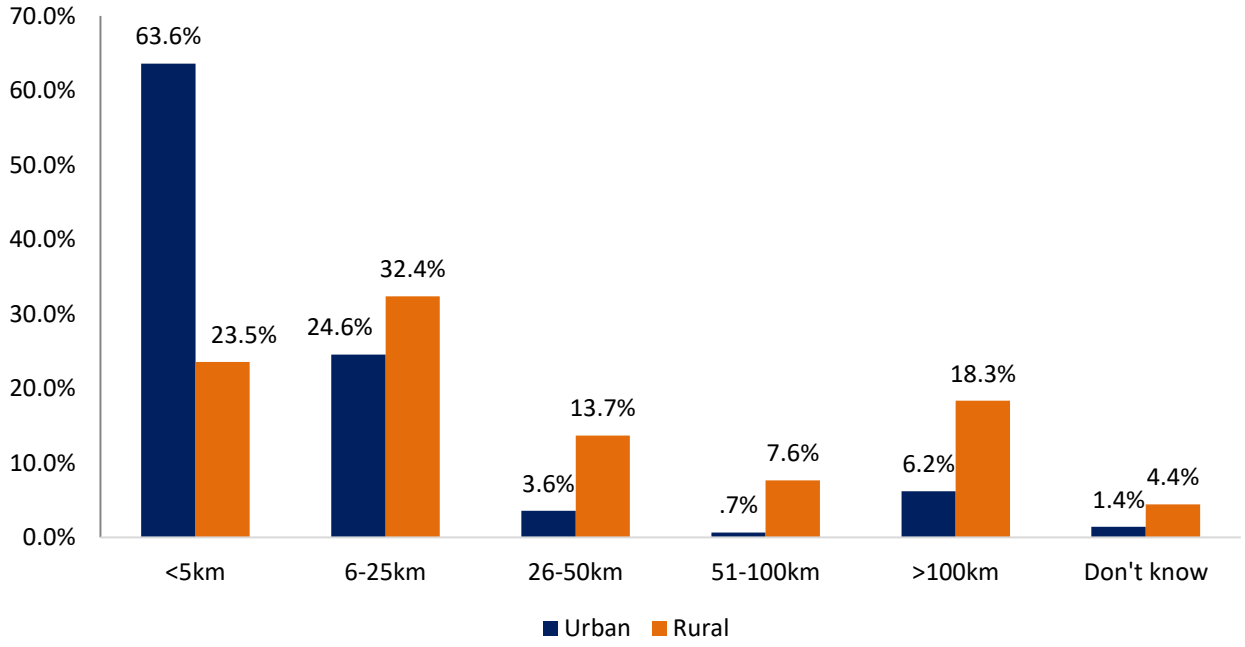


Figure 30: Distribution of travel distance by settlement (n=3110)

Chapter 11

Barriers to Access AP

In this chapter, the analysis is carried out among the participants who have unmet needs of AP i.e. anyone who need any AP that they do not currently use, or they currently use but it needs to be replaced. The answer categories were from multiple response questions.

11.1. Reasons for not having the product needed

Among the participants who had unmet needs of AP, majority of them reported that they did not have enough support (41.5%) followed by unaffordability (39.2%) and lack of time (36.2%) for not having the product needed.

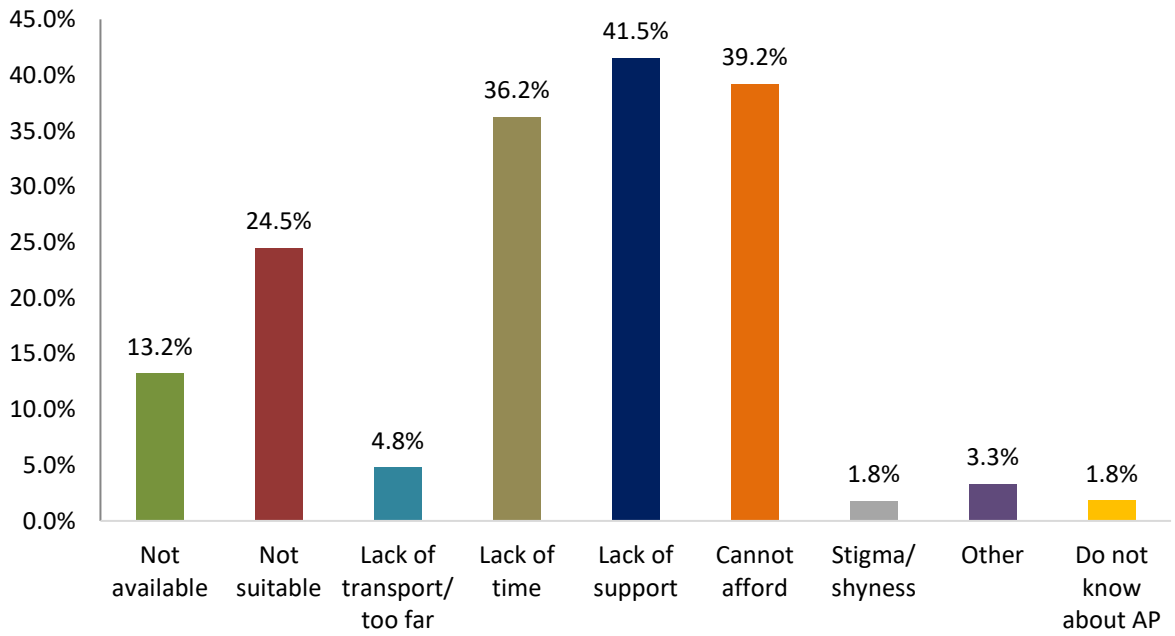


Figure 31: Reasons for not having the product needed (n=2209)

11.2. Barriers to access AP by sex

- Among the male participants who had unmet needs of AP, majority of them reported lack of support (44.6%) as the reason for not having the product needed followed by unaffordability (36.2%).
- Among the female participants who had unmet needs of AP, majority of them reported lack of time (44.3%) as the reason for not having the product needed followed by unaffordability (41.2%).

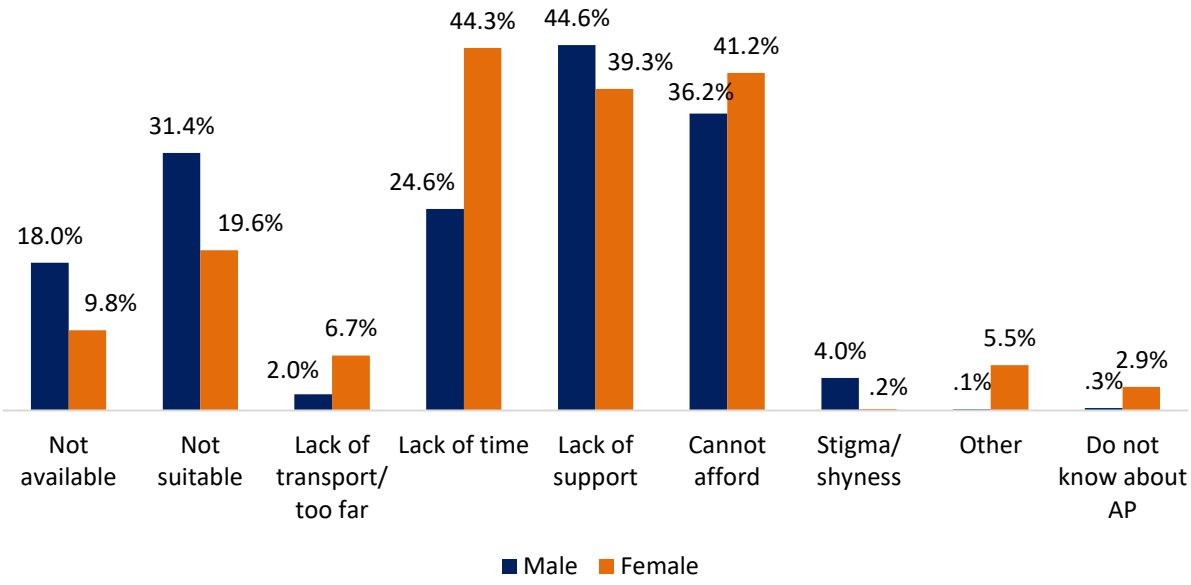


Figure 32: Distribution of barriers by sex (n=2209)

11.3. Barriers to access AP by age groups

- Among <5years age group participants who had unmet needs of AP, cent percent of them reported unsuitability of AP as the reasons for not having AP.
- Among participants who were between 5-17 years and who had unmet needs of AP, majority of them (82.8%) reported unaffordability as the reasons for not having AP.
- Among participants who were between 18-65 years and who had unmet needs of AP, majority of them (41%) reported lack of time as the reasons for not having AP.
- Among participants who were >65 years and who had unmet needs of AP, nearly half of them (49.7%) reported unaffordability as the reasons for not having AP.

Table 5: Distribution of barriers by age groups (n=2209)

Barriers to access AP	Age groups			
Categories	**<5 years %**	**5-17 years %**	**18-65 years %**	**>65years %**
Not available	0	27.1	14.2	11.4
Not suitable	100	13.7	23.1	27
Lack of transport/ too far	0	15.3	3.9	6.3
Lack of time	0	59.8	41	27.4
Lack of support	0	47.9	38.7	46.3
Cannot afford	0	82.8	33.2	49.7
Stigma/ shyness	0	5.1	2.6	0.2
Other	0	0	5.1	0.1
Do not know about AP	0	0	0.2	4.6

11.4. Barriers to access to AP by settlement

- Among the participants who had unmet needs of AP and who were living in urban areas, majority of them reported lack of support (42.1%) as the reasons for not having AP.
- Among the participants who had unmet needs of AP and who were living in rural areas, majority of them reported unaffordability (59.3%) as the reasons for not having AP.

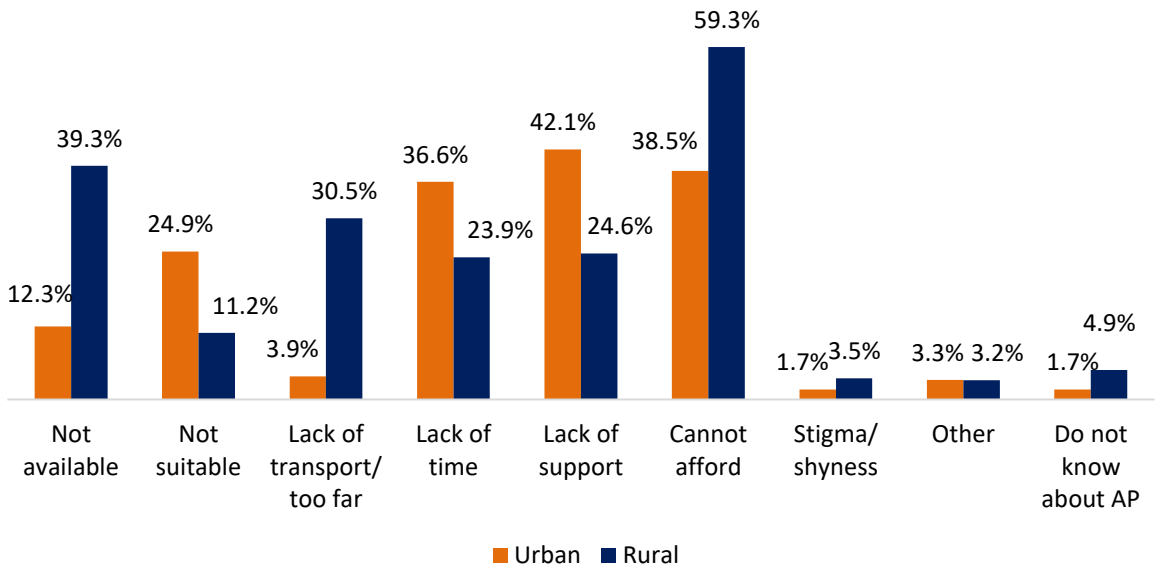


Figure 33: Distribution of barriers by settlement (n=2209)

Chapter 12

Satisfaction

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, satisfaction relates to the most important assistive products as considered by the participants who use any AP.

12.1. Satisfaction with AP

Among the participants who use any AP, more than ninety percent (91.2%) reported that they are satisfied with respect to the products they use, nearly three-fourth (70.6%) reported that they are satisfied with the assessment and training they had received and more than three-fourth (78.1%) reported that they are satisfied with respect to repair, maintenance and follow-up services.

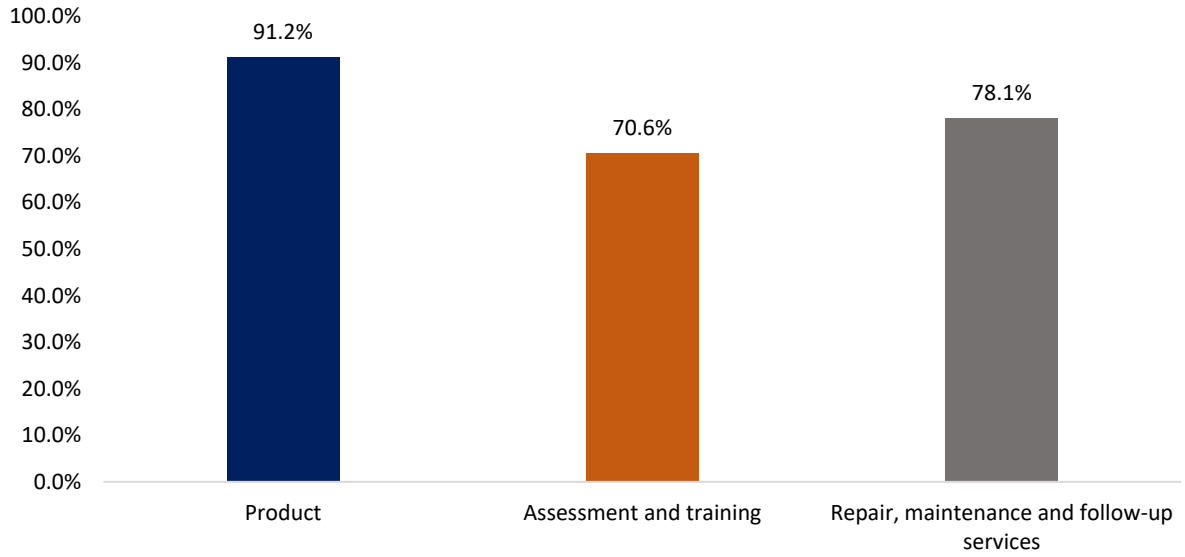


Figure 34: Satisfaction with assistive products (n=3110)

12.2 Satisfaction of AP by sex

Only a slight variation is observed with satisfaction level with respect to products, assessment and training, repair, maintenance, and follow-up services across sex.

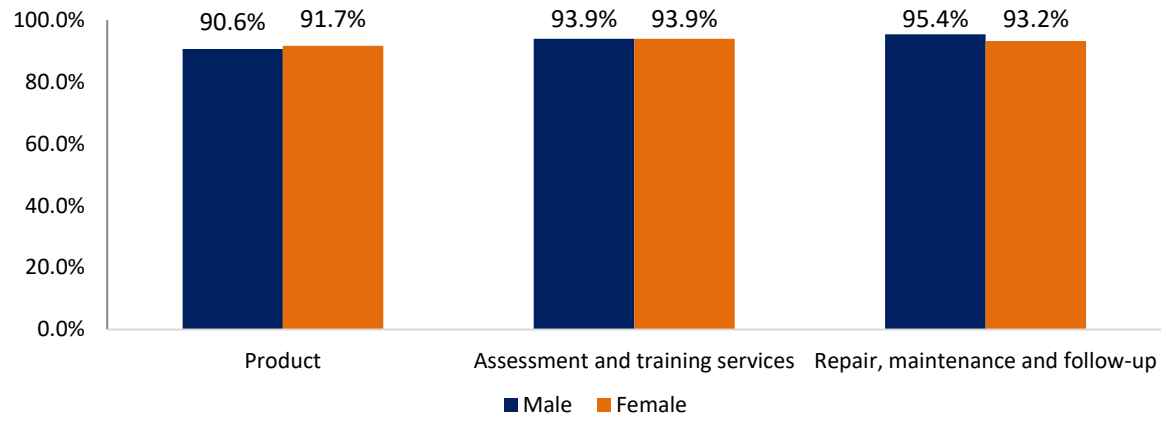


Figure 35: Distribution of satisfaction level by sex (n=3110)

12.3. Satisfaction of AP by age group

Among the participants who use any AP, more than ninety percent of the participants aged <5years, 5-17years, 18-65years and >65years reported satisfaction with respect to products, assessment and training, repair, maintenance, and follow-up services.

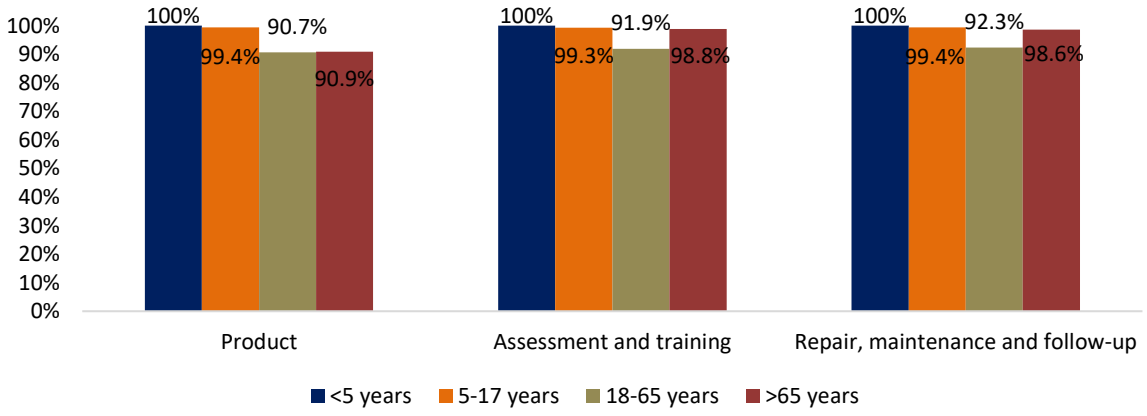


Figure 29: Distribution of satisfaction level by age groups (n=3110)

12.4. Satisfaction of AP by settlement

Among the participants who use any AP, those living in urban areas were more satisfied with respect to products (91.4%), assessment and training (94.2%), repair, maintenance and follow-up services (94.6%) as compared to participants living rural areas.

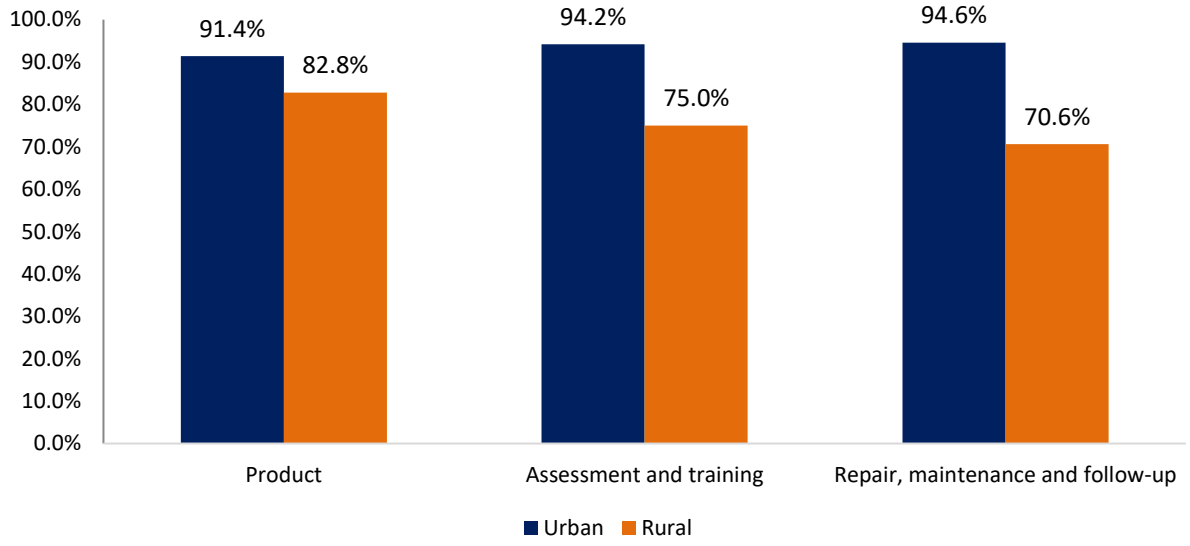


Figure 37: Distribution of satisfaction level by settlement (n=3110)

Chapter 13

Suitability

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, suitability relates to the most important assistive products as considered by the participants who use any AP.

13.1. Suitability for home and surroundings

Among the participants who use any AP, 39.3% of them have reported that the AP is suitable for home and surroundings followed by 30.6% of the participants reported that the AP is completely suitable.

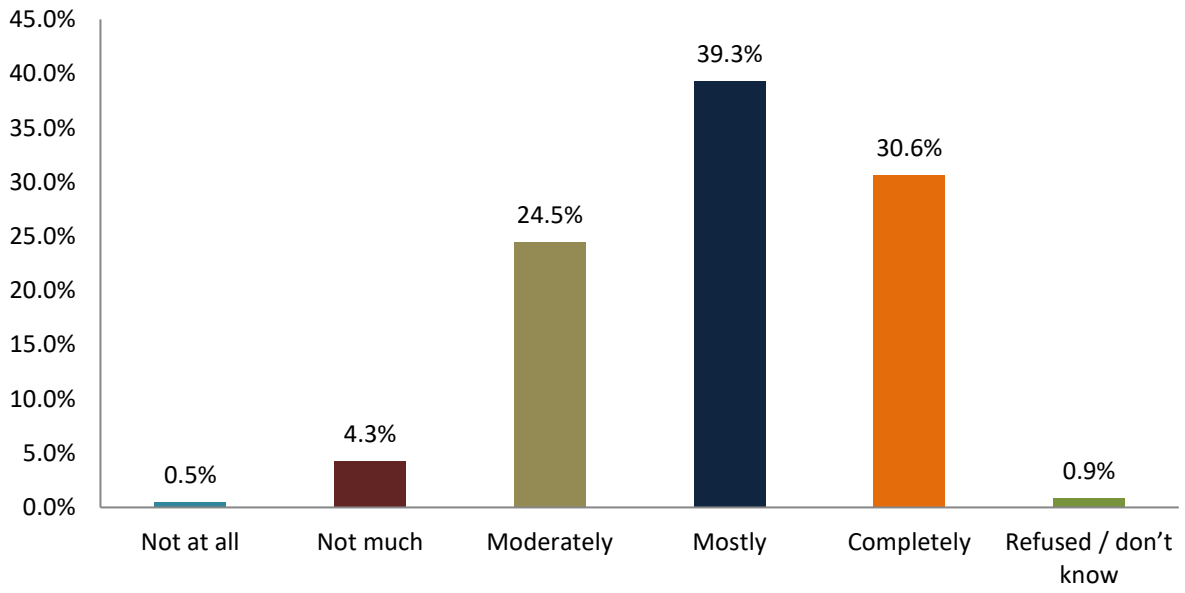


Figure 30: Suitability of assistive products for home and surrounding (n=3110)

13.2. Suitability of AP by sex

Among the participants who use any AP, majority of males (38.4%) and females (40.0%) reported that the AP was mostly suitable in their home and surroundings.

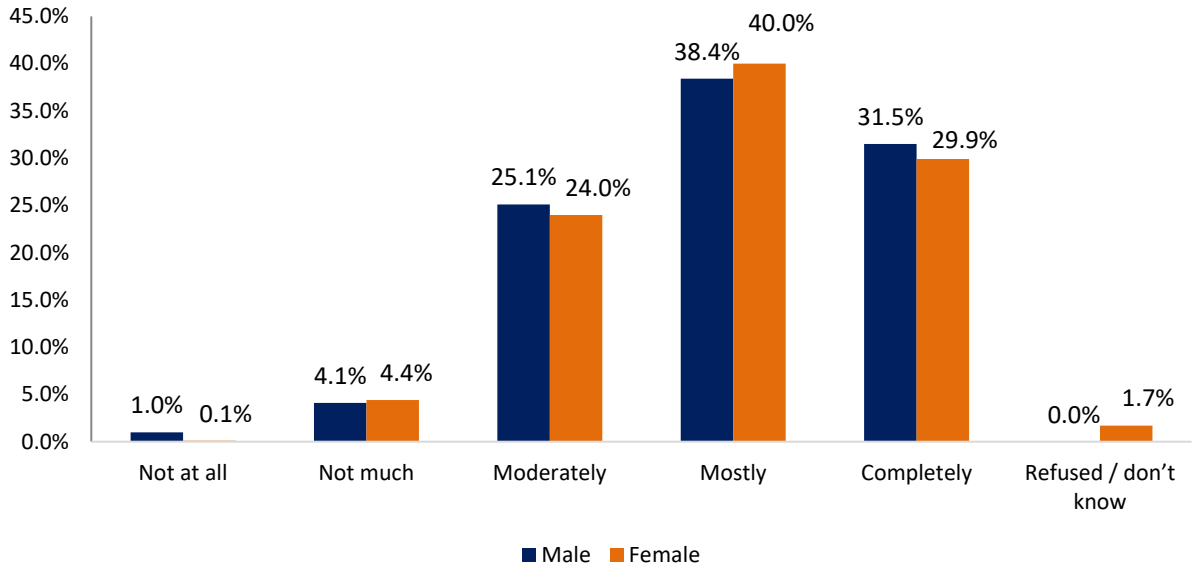


Figure 39: Distribution of levels of suitability by sex (n=3110)

13.3. Suitability of AP by age group

- Among the participants who use any AP and who were <5years, cent percent reported that the AP was suitable in their home and surroundings.
- Among the participants who use any AP and who were 5-17 years, 18-65 years and >65 years, majority of them reported that the AP was suitable in their home and surroundings.

Table 6: Distribution of levels of suitability by age groups (n=3110)

Levels of suitability	Age groups			
Categories	**<5 years (%)**	**5-17 years (%)**	**18-65 years (%)**	**>65 years (%)**
Not at all	0	0	0.6	0
Not much	0	0	4	6.2
Moderately	0	16.5	23.6	29.3
Mostly	100	58.2	36.8	42.8
Completely	0	25.3	35	17.6
Refused / don't know	0	0	0	4.0

13.4. Suitability of AP by settlement

Among the participants who use any AP, majority of the participants living in urban areas (39.1%) and rural areas (46.9%) reported that the AP was mostly suitable in their home and surroundings.

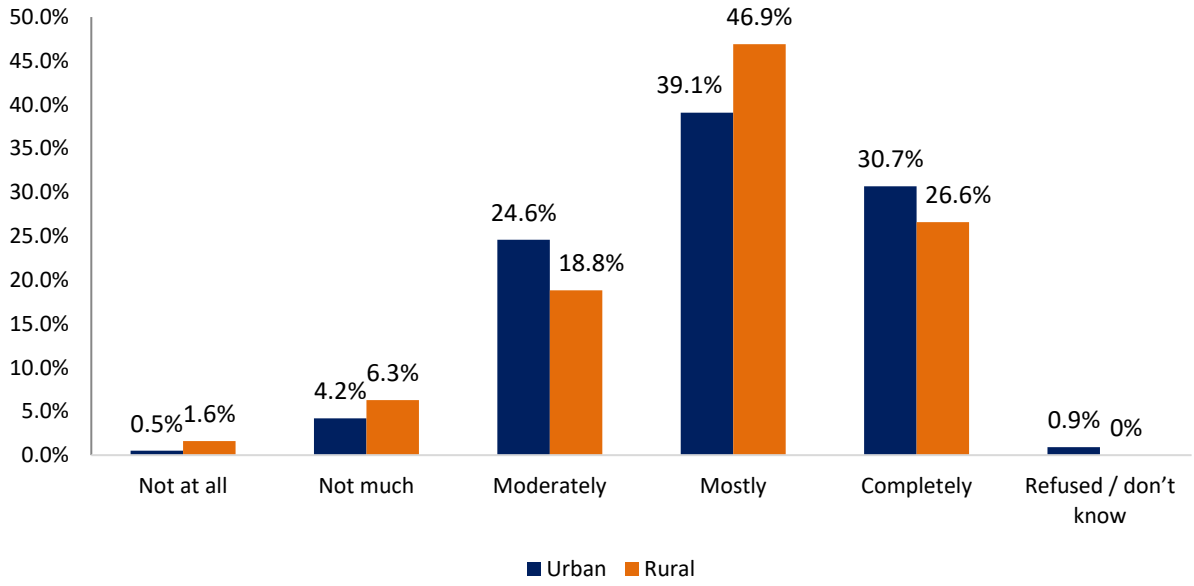


Figure 40: Distribution of levels of suitability by settlement (n=3110)

Chapter 14

Usability

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, usability relates to the most important assistive products as considered by the participants who use any AP.

14.1. Usability of AP

Among the participants who use any AP, majority of them (34.9%) reported that the AP completely helps individuals to do what they want.

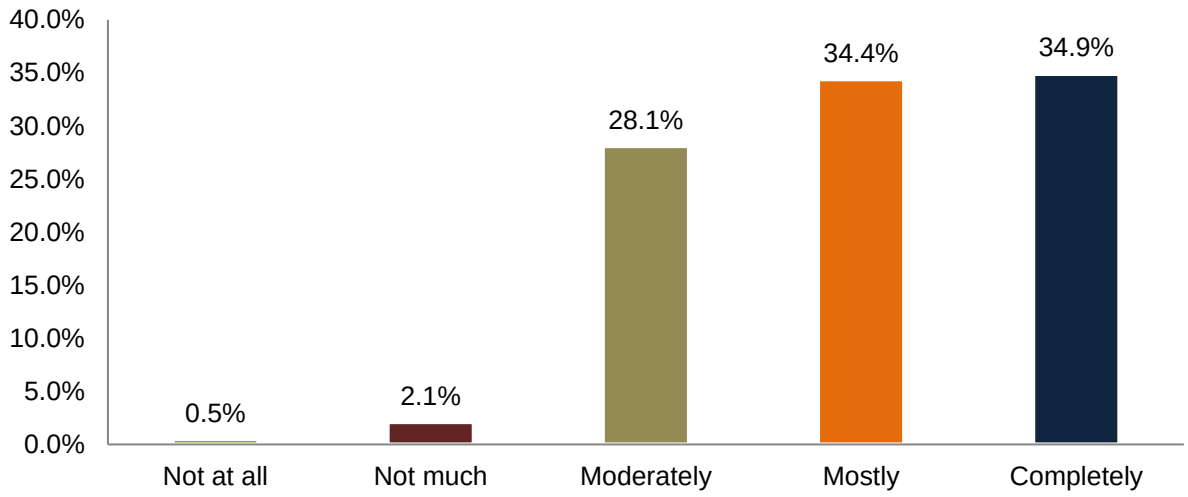


Figure 41: Usability of AP (n=3110)

14.2. Usability of AP by sex

Among the participants who use any AP, majority of the male participants (36.1%) reported that the AP was completely usable whereas majority of the female participants (35.1%) reported that the AP was mostly usable.

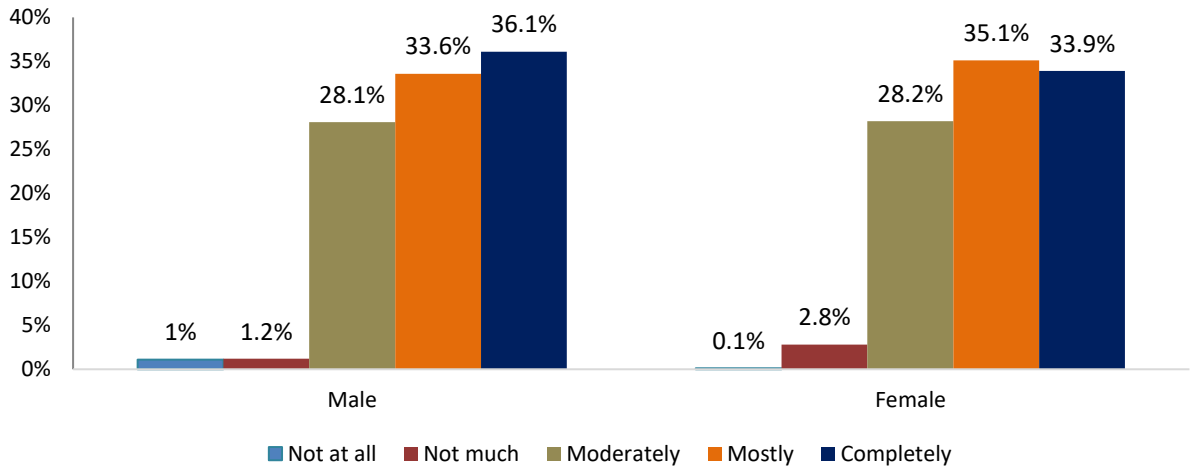


Figure 42: Distribution of levels of usability by sex (n=3110)

14.3. Usability of AP by settlement

Among the participants who use any AP, majority of the participants living in urban areas (35.2%) reported that the AP was completely usable whereas majority of the participants living in rural areas (49.2%) reported that the AP was mostly usable.

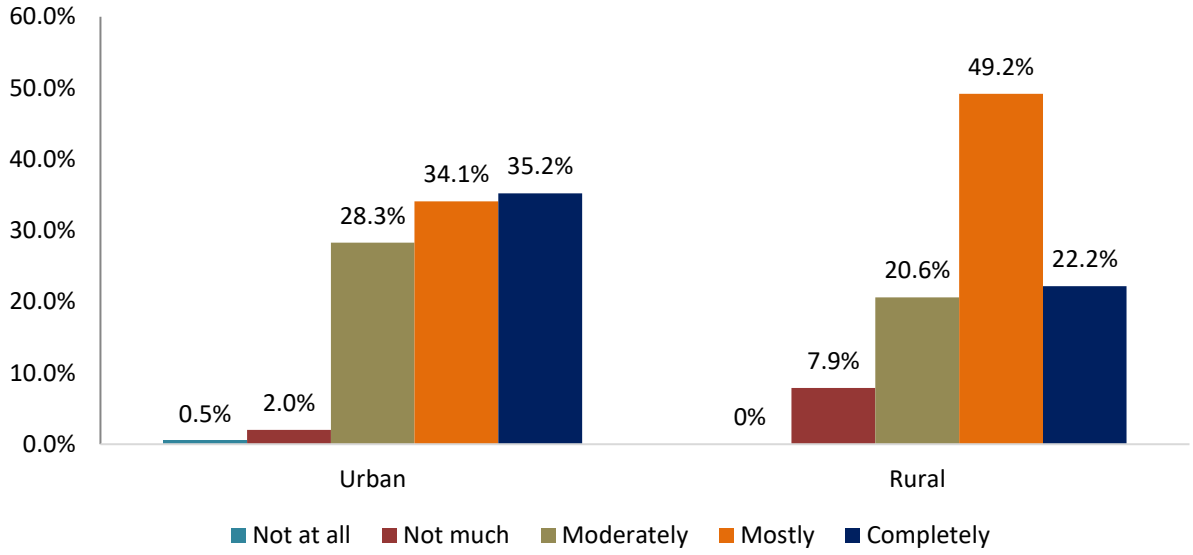


Figure 43: Distribution of levels of usability by settlement (n=3110)

Chapter 15

Environmental barriers

In this chapter, the analysis is carried out among the participants who use any AP currently. Furthermore, environmental barriers relate to the most important assistive products as considered by the participants who use any AP.

15.1. Environmental barriers of AP

Among the participants who use any AP, majority of them (42.4%) reported that the AP could be completely used as much as they wanted in places, they needed to visit such as schools, workplaces and public spaces.

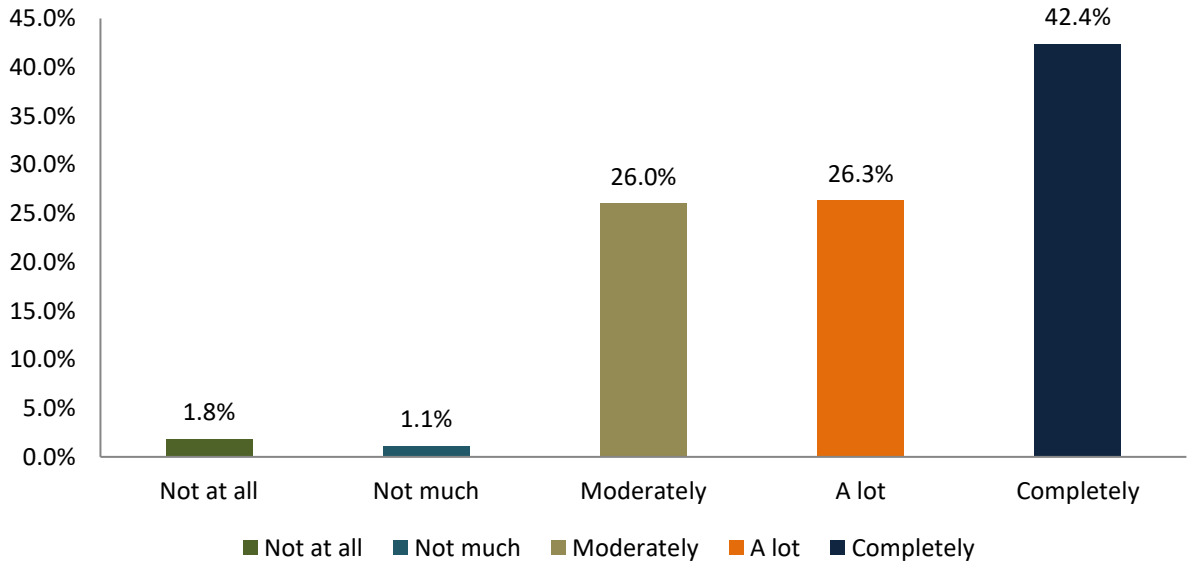


Figure 44: Environmental barriers of AP (n=3110)

15.2. Environmental barriers of AP by sex

Among the participants who use any AP, majority of both the male participants (42.7%) and female participants (42.2%) reported that the AP could be completely used as much as they wanted in places, they needed to visit such as schools, workplaces and public spaces.

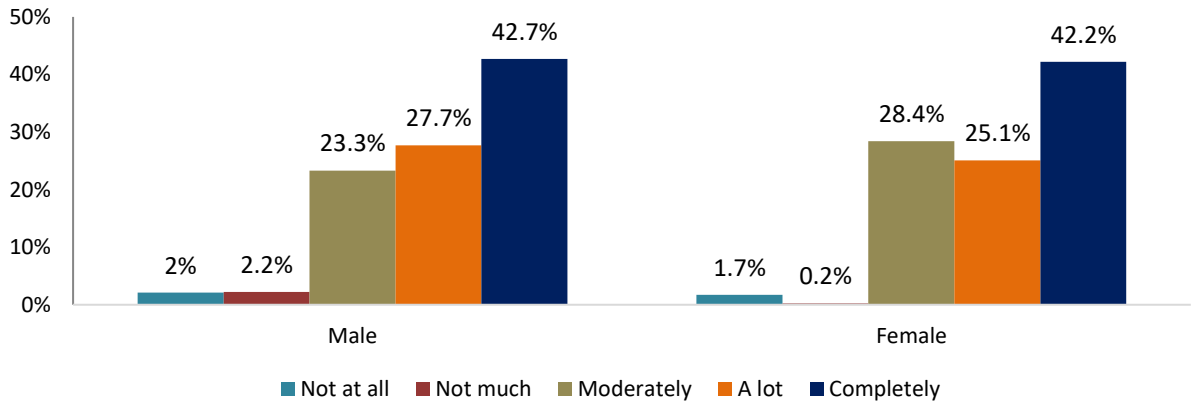


Figure 45: Distribution of levels of environmental barriers by sex (n=3110)

15.3. Environmental barriers of AP by settlement

Among the participants who use any AP, majority of the participants living in urban areas (42.5%) and the participants living in rural areas (38.1%) reported that the AP could be completely used as much as they wanted in places they needed to visit such as schools, workplaces and public spaces.

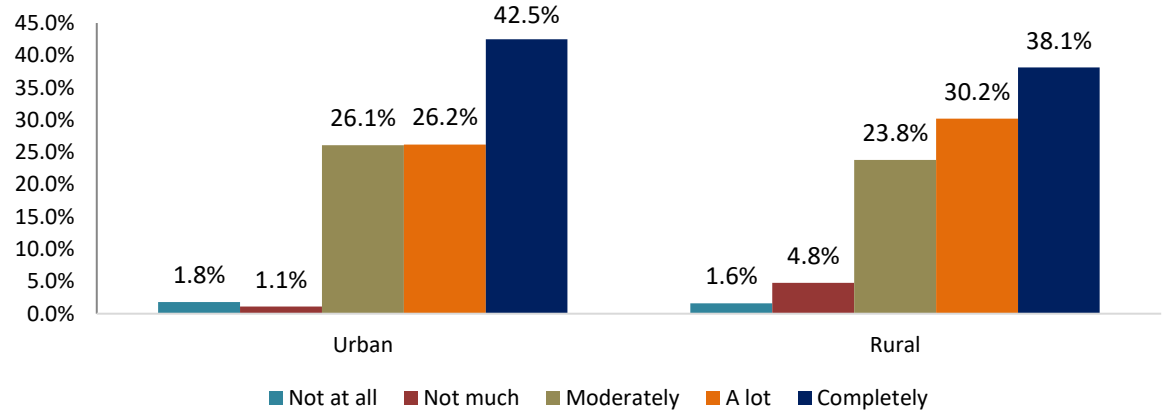


Figure 46: Distribution of levels of environmntal barriers by settlement (n=3110)

Chapter 16

Sub-national analysis

16.1. Demographic distirbution

In all provinces more than half of the population were female with highest percentage of female (54.2%) in Sudurpaschim province. Majority of the participants in all province were of age group 18-65 years.

Table 7: Sex of participants by province

Sex	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Male	48	48.5	47.4	46.4	46.3	47.5	45.8
Female	52	51.5	52.65	53.6	53.7	52.5	54.2

Table 8: Age group of participants by province

Age groups	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
<5 years	6.1	6.8	4.2	4.6	6.7	7.9	6.1
5-17 years	21	21.3	15.3	15.8	23.3	26.5	28
18-65 years	65.2	63	67.6	68.5	62.2	58.5	57.6
>65 years	7.7	8.8	12.9	11.1	7.7	7.1	8.3

16.2. Geographic distribution

In all provinces, except Madhesh and Sudurpaschim province, more than half of the participants resided in the rural regions. In Madhesh province 69.2% of people resided in the urban region.

Table 9: Settlement of participants by province

Settlement	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Urban	34.4	69.2	43.1	40.8	38.1	32.9	57.3
Rural	65.6	30.8	56.9	59.2	61.9	67.1	42.7

16.3. Overall functional difficulties

In all provinces, majority of the participants did not have any functional difficulty. The highest percentage of participants with no difficulty were from Karnali province (76.2%). Gandaki province had highest number of participants with a lot of difficulty (11.8%). Similarly, 3.6% of people from Bagmati province could not do anything at all which was the highest among all provinces.

Table 10: Distribution of functional difficulties by province

Functional difficulties	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
No difficulty	65.6	67.9	57	64.5	66.4	76.2	63.2
Some difficulty	27.3	21.7	28.8	23	25.1	16.5	25.3
A lot of difficulty	6.5	7.2	10.4	11.8	7.5	6.7	9.4
Cannot do at all	0.7	3.1	3.6	0.7	1	0.6	2

16.4. Use of Assistive Products

Highest percentage of people who used any kind of assistive product were from Bagmati province (28.9%) followed by Gandaki province (19.8%). Only 8.9% of people from Karnali Province used assistive products which was the lowest.

Table 11: Distribution of use of AP by province

Product use	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Yes	16.5	13.2	28.9	19.8	15.7	8.9	17.5
No	83.5	86.8	71.1	80.2	84.3	91.1	82.5

16.5. Unmet need of AP

Madhesh province had the highest percentage of unmet need of AP (21%) whereas Gandaki province had only 10.9% of unmet need.

Table 12: Distribution of unmet need of AP by province

Unmet need	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Yes	20	21	19.8	10.9	18	17.1	20.1
No	80	79	80.2	89.1	82	82.9	79.9

16.6. Top 5 AP in use

In all seven provinces, the most commonly used assistive product was Spectacles. The second most commonly used AP across seven provinces was Canes/Sticks, Tripod and Quadripod. Other commonly used assistive products included: orthoses (spinal) and orthoses (lower limb).

Table 13: Top 5 AP use by province

Top 5 Assistive Products	% of use of AP
Koshi Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	13.0%
Canes/Sticks, Tripod and Quadripod	3.8%
Orthoses (Lower Limb)	.5%
Orthoses (Spinal)	.5%
Hearing Aids (Digital) And Batteries	.3%
Madhesh Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	77.7%
Canes/Sticks, Tripod and Quadripod	18.9%
Magnifiers, Optical	5.8%
Smart Phones/Tablets/PDA	2.7%
Axillary Elbow Crutches	2.4%
Bagmati Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	80.7%
Canes/Sticks, Tripod and Quadripod	11.3%
Orthoses (Spinal)	6.5%
Chairs For Shower/Bath/Toilet	3.3%
Orthoses (Lower Limb)	2.8%
Gandaki Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	14.4%
Canes/Sticks, Tripod and Quadripod	5.4%
Orthoses (Spinal)	2.0%
Manual Wheelchairs - Basic Type for Active Users	.4%
Orthoses (Lower Limb)	.3%
Lumbini Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	12.6%
Canes/Sticks, Tripod and Quadripod	2.2%
Walking Frames/Walkers	.8%
Orthoses (Spinal)	.7%
Orthoses (Lower Limb)	.7%
Karnali Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	4.7%
Canes/Sticks, Tripod and Quadripod	3.0%
Orthoses (Spinal)	.9%
Axillary Elbow Crutches	.5%
Orthoses (Upper Limb)	.2%

Sudurpaschim Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	10.8%
Canes/Sticks, Tripod and Quadripod	5.8%
Magnifiers, Optical	2.2%
Orthoses (Spinal)	1.0%
Axillary Elbow Crutches	.3%

16.7. Top 5 unmet need of Assistive Products

The unmet need of AP was highest for Spectacles; Low-Vision, Short/Long Distance/Filters, etc. Similarly, hearing aids, canes/sticks were also among the top 5 unmet need of AP across seven provinces.

Table 14: Top 5 unmet need of AP by province

Top 5 Unmet Need of Assistive Products	% of unmet need of AP
Koshi Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	13.5
Hearing Aids (Digital) and Batteries	3.7
Orthoses (Spinal)	2.3
Canes/Sticks, Tripod and Quadripod	1.8
Chairs For Shower/Bath/Toilet	1.4
Madhesh Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	33.5
Canes/Sticks, Tripod and Quadripod	13.4
Hearing Aids (Digital) and Batteries	7.6
Magnifiers, Optical	7.6
Orthoses (Spinal)	5.8
Bagmati Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	14.0
Canes/Sticks, Tripod and Quadripod	6.5
Orthoses (Spinal)	6.5
Chairs For Shower/Bath/Toilet	4.2
Hearing Aids (Digital) and Batteries	3.8
Gandaki Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	6.6
Hearing Aids (Digital) and Batteries	2.3
Orthoses (Spinal)	1.6
Canes/Sticks, Tripod and Quadripod	.8
Chairs For Shower/Bath/Toilet	.3

Lumbini Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	9.6
Orthoses (Lower Limb)	3.6
Hearing Aids (Digital) and Batteries	3.3
Orthoses (Spinal)	3.0
Canes/Sticks, Tripod and Quadripod	2.4
Karnali Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	7.5
Hearing Aids (Digital) and Batteries	4.3
Canes/Sticks, Tripod and Quadripod	2.9
Axillary Elbow Crutches	1.3
Orthoses (Upper Limb)	1.2
Sudurpaschim Province	
Spectacles; Low-Vision, Short/Long Distance/Filters, etc.	10.4
Hearing Aids (Digital) and Batteries	3.6
Canes/Sticks, Tripod and Quadripod	3.3
Orthoses (Spinal)	3.2
Chairs For Shower/Bath/Toilet	1.8

16.8. Sources of Assistive Products

The private facilities like hospitals, clinics, shops were the major source for obtaining APs across all provinces followed by public sector, while some made their APs themselves.

Table 15: Distribution of sources of AP by province

Sources of AP	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Public sector	20.5	12.6	21.9	33.3	26.5	21.2	30
NGO sector	0.8	0.7	2.4	1.6	8.6	12.6	6.5
Private sector	60.7	70.1	64.9	43.2	48.9	37.2	39.9
Friends/ family	2.5	14.9	3.3	3.0	3.3	8.6	7.6
Self-made	16.5	16	7.5	19.3	14.4	22.0	18.6
Other	-	-	-	-	0.2	-	0.7
Don't know	-	-	-	-	-	-	1

16.9. Payers of AP

The major source of funding of AP was out-of-pocket. Lumbini province had the highest percentage of out-of-pocket expenditure (84.7%). In Karnali province, 10.2% of funding came from government sources.

Table 16: Distribution of funding sources for AP by province

Sources of funding	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Government	1.5	5.6	1.4	5.8	1.8	10.2	4.8
NGO/ charity	1	0.3	1.9	1.5	-	8.7	6.2
Insurance	4.5	1.7	-	0.7	2.1	-	2.5
Out-of-pocket	73.4	59.8	56.5	61.4	84.7	59.1	49.5
Family/ friends	18.4	40.8	39.7	25.2	12.5	21.2	31.6
Employer/school	-	-	-	-	0.5	-	0.7
Other	-	1.2	1.4	7.4	3.1	1.6	9
Don't know	-	-	1.9	1.0	-	-	3.8

16.10. Barriers to access AP

Major barrier to access AP was the inability of the participants to afford AP. In Madhesh province, 82% of the participants could not afford AP. Another significant barrier was lack of support and lack of time. High percentage (>30%) of participants in Gandaki, Lumbini, Karnali and Sudurpascim province reported the unavailability of AP as a barrier. Lack of transport played the role of major barrier in Gandaki, Karnali and Sudurpachim provinces (>40%).

Table 17: Distribution of barriers to access AP by province

Barriers	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Not available	19	15	12.1	38.3	32.6	50.8	56.4
Not suitable	11.3	7.7	25.4	25.2	5.0	3.4	27.8
Lack of transport/ too far	29.2	8	3.5	40.3	6.2	50.8	41.6
Lack of time	25.3	17.8	37.2	30.8	16.7	22.0	30.6
Lack of support	21.7	38.6	42.3	8.2	25.8	49.2	35.5
Cannot afford	48.7	82	37.4	41.5	57.8	69.4	64.8
Stigma/ shyness	1.8	1.6	1.7	7.6	-	3.4	8.5
Other	2.8	1.1	3.4	6.3	3.5	-	1.9
Do not know about AP	6.5	-	1.7	-	5.9	1.7	3.7

16.11. Satisfaction

Among the participants using AP, most of the participants from all seven provinces said that they were satisfied with their AP.

Table 18: Distribution of satisfaction by province

Satisfaction	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Product	82.6	83.6	91.6	94.3	79.2	74.1	79.4
Assessment and training	62.7	38.2	71.4	63	52.0	55.2	56.3
Repair, maintenance and follow-up	64.3	59.2	78.8	58.9	69.4	56	62

16.12. Suitability for home and surroundings

Majority of the participants from all provinces reported that their AP was suitable for home and surroundings. The suitability was highest in Gandaki province followed by Madhesh and Sudurpaschim province.

Table 19: Distribution of levels of suitability by province

Suitability	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Not at all	0.8	0.3	0.5	1.2	0.2	0.8	1.2
Not much	8.1	3.3	3.3	3.4	4.8	13.4	3.5
Moderately	17.7	14.3	25.3	13.7	27.4	37.8	15.3
Mostly	51.8	46.2	39.8	42.5	41.7	39.4	56.1
Completely	21.4	34.9	30.1	39.2	25.9	7.8	23.9
Refused/ don't know	0.2	1	1	-	-	0.8	-

16.13. Usability

Majority of the participants from all provinces reported that most of them could use their AP to do what they want. The usuability was high in Koshi province and Gandaki province while it was low in Karnali province.

Table 20: Distribution of levels of usability by province

Usability	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Not at all	0.6	0.3	0.5	0.3	0.2	0	0.9
Not much	8.1	2.4	1.9	5.2	6.8	10.2	3.6
Moderately	18.5	18.1	28.2	12.8	27.7	38.6	21.4
Mostly	49.2	44.0	33.1	51.7	40.7	45.7	56.6
Completely	23.2	34.0	36.3	29.9	24.5	4.7	17.5
Refused/ don't know	0.4	1.2	0	-	-	0.8	-

16.14. Environmental barriers

The presence of environmental barriers was highest in Gandaki province (79.3%) followd by Madhesh Province (73.3%). The province with lowest environmental barrier was Karnali province (47.3%).

Table 21: Distribution of levels of environmental barriers by province

Environmental barriers	Koshi Province (%)	Madhesh Province (%)	Bagmati Province (%)	Gandaki Province (%)	Lumbini Province (%)	Karnali Province (%)	Sudurpaschim Province (%)
Not at all	0.2	1.2	1.9	0.9	0.5	0.8	0.9
Not much	4.6	2.9	1.0	3.1	6.4	12.6	3.3
Moderately	18.8	17.7	26.8	16.7	32.5	39.3	28.0
A lot	42.3	27.7	26.8	23.9	18.2	37.1	25.4
Completely	33.1	45.6	43.5	55.4	42.4	10.2	42.1
Refused/ don't know	1	1	0	-	-	-	0.3

Key suggestions from participants

This was an optional module in the questionnaire. 984 partcipants gave recommendations on improving access to Assitive Technology in Nepal.

55.6% of the participants advocated for increase in availability and accessibility of AP services in Nepal.

- The surveyed participants voiced for decentralized provision of AP services.
- The participants demand services that are reachable at their local areas since many of the participants who need AP did not have it because of the unavailability of AP services in their nearby health facilities.

42.5% of the participants advocated for subsidy on AP and provision of AP free of cost for economically challenged people.

- The participants emphasized the need of government's increased inclination towards affordable AP services.
- People from low socio-economic background, persons with disabilities need AP free of cost so that no one is left behind in accessing AP.

3.7% of the participants advocated for effective implementation of AT policies, including social awareness about the AP.

- The participants had indicated a need of awareness program on information regarding availability of AP services and where to access them.

0.8% of the participants advocated for research/projects on AT in Nepal that carries out actual assessment of the need of AP.

- The surveyed participants had expressed a need of door-to-door survey to find out the real needs of AP.

Conclusion

With the increase in ageing population, increase in prevalence of non-communicable diseases (NCDs), NCDs risk factors, and person living with disabilities, the use, need and unmet need of AP in Nepal is almost certain to rise. Access to assistive technology becomes a vital component in health as these products are pre-condition to promote functionality, healthy living and well-being thereby it supports the participation and social inclusion. AT is conduit to enhanced outcome in health, education, income generation and equity, therefore, it's role on the overall Sustainable Development Goals is paramount. The findings of the survey provide useful insights into the current situation of access to assistive products in Nepal and delivers evidence to inform the development of AT sector in Nepal.

The high prevalence of use, need and unmet needs and barriers of AP provides clear evidence of gap in access to AP. Functional difficulties was seen highest in seeing/vision domain followed by mobility. Use, unmet need and functional difficulties of AP increased with increase in age. Functional difficulties and use of AP were seen higher in participants living in urban areas, however, the unmet needs of AP were seen higher in rural areas clearly illumutating the need to expand the coverage of AT through primary health care. The most commonly used AP reportedly were spectacles followed by canes/sticks and spinal orthoses. The unmet needs of AP were seen highest in spectacles, spinal orthoses and hearing aids. AP were predominantly sourced from private facility such as hospitals, clinic, shops followed by government facilities and public hospital. Out-of-pocket expenditure was the main source of funding for AP followed by friends/family being the payers of AP, exposing users to financial hardship. The main barriers for accessing AP were reportedly lack of support i.e., the services in accessing AP were poor/insufficient and unaffordability.

The survey findings demand a creative solution from the key stakeholders to develop a prioritized plan of action on improving access to AP given the status of the key indicators

from the rATA survey. Decentralized provision of AP and provision of affordable services from qualified health professionals are paramount. Furthermore, there should be strategic planning and robust implementation for public as well as private and non-for-profit sector. Nontheless, the users of AT such as person with disabilities, senior citizens, people living with non-communicable diseases and senior citizens should be at the center of AT planning and implementation. Nepal is prone country to sessimic and hydro-metrological hazards, therefore in an after math of disasters, as experienced during Nepal earthquake 2015 and Bara-Parsa strom 2019, the demand for AT can be enhanced to rehabilitate the injured survivor. Therefore, in context of Nepal, AT should be integrated across the disaster management cycle; form prepadeness, response to the recovery.

Recommendations

The rapid Assistive Technology Assessment Survey, Nepal is a fundamental step in improving access to assistive technology in Nepal. The survey has following recommendations:

Pillars of AT	Recommendations
Policy	Integrate AT in National Health Sector Strategic Planning 2022-2030. • On the upcoming iteration of the national health policy, AT should be identified as the cross-cutting health intervention for promotion, prevention, curative intervention, rehabilitation and palliative care. The national procurement and supply chain mechansim should integrate AP and ease its logistical supply. • MoHP should take stewardship and collaborate with other ministries and stakeholders to develop and implement the unified approach on AT. • All types of AT services should be recorded and reported through exisiting HMIS rehabilitation service DHIS2 form. • Strengthen the capacity of EDCD/LCDMS on leadership and governace of AT.
Product	• Research, development and AT design processes considering the environmental, social and resource factors that facilitate the adoption of AP. • Promote the national/local production, innovation and facilitate the enabling environment of AP market landscaping in Nepal.
People	• Develop and strengthen AT policy, product and provision keeping users at the centre.

	• Ensure the quality service provision based on user's satisfaction and suitability of the AP to the users.
Provision	The exisiting benefit packages offered by the health system should integrate AP comprehensively. The existing list of health insurance should be diversified and ensure that all the product listed in PAPL are covered by health insurance package. List of AP to be integrated within the Basic Health Care package should be identified. The next iteration of the Basic Health Care Package should integrate this list, as household out-of-pocket payment for these services is a major barrier for unmet need of AP. • Integration of AP services within the current health system, specially at primary health care level. • Promote the coverage of specialized AP service provision in public hospitals as well as through public-private partnership with non-government service providers. • Cross fertilize AT with other public health programs such as rehabilitation, geriatric care, non-communicable diseases, trauma management and early child development. • Decentralized provision of AT service to provincial and local bodies. • Develop and foster the implementation of national standard on AT. • Develop the supervision mechanism based on the standards and protocols.
Personel	• Capacity building of health workers, both formal and informal, through in-service education and trainings. Collaborate with universities and academia to produce human resources for AP and provision of government scholarship to incentivize the production of more human resource.

Annexes

Annex 1: rATA Steering Committee Members

Secretary, Ministry of Health and Population – Coordinator

Chief, Health Coordination Division, MoHP – Member

Chief, Policy, Planning and Monitoring Division, MoHP – Member

Chief, Quality Standard and Regulation Division, MoHP – Member

Director General, Department of Health Services – Member

Representative, WHO Nepal – Member

Representative, Ministry of Women, Children and Senior Citizen – Member

Executive Chief, NHRC – Member Secretary

Annex 2: rATA Technical Working Group Members

Executive Chief, NHRC – Coordinator

Director, Epidemiology and Disease Control Division, DOHS – Member

Director, Nursing and Social Security Division, DOHS – Member

National Association of Physical Disabled, Nepal – Member

Nepal Physiotherapy Association – Member

WHO Nepal– Member

NCD & Mental Health Section, EDCD – Member

Leprosy Control and Disability Management Section, EDCD – Member

Policy, Planning and Monitoring Division, MOHP – Member

Research Section, NHRC – Member Secretary

Annex 3: rATA Reference Group Members

Mr. Kapil Prasad Pokharel, Executive Director, Prerana

Mr. Pravin Kumar Yadav, Unit Chief Physiotherapy Department, National Trauma Centre

Mr. Maheshwor Ghimire, Rehabilitation Policy Expert, Sabalikaran Sewa

Mr. Prakash Lal Das, Disability Policy Expert, Community Workers' Society

Mr. Yam Nath Mainali, President, NASPIR

Annex 4: rATA Survey Field Researchers

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9	Arun K.C
10	Asmita Neupane
11	Avina Devkota
12	Bhim Prasad Neupane
13	Bibisha Thakuri
14	Chungnima Senehang
15	Deepak Belbase
16	Devi Dutta Budha
17	Diksha Gauli
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26	Kajol Dahal
27	Kala Bhandari
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29	Lila Kumar Mahato
30	Madhu Thakur
31	Manisha Basnet
32	Manisha Karki
33	Milan Marasini
34	Monika Joshi
35	Neeru Yadav
36	Rabindra Pal
37	Rajnandi Kumari Das
38	Rewash Thapa Magar
39	Sabnam Karki
40	Samiksha Koirala
41	Sandeep Acharya
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45	Saroj Kumar Yadav
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48	Shrijana Napit
49	Shristi Subedi
50	Sima Das
51	Srijana Acharya
52	Subas Dharel
53	Sulekha Shrestha
54	Sumi Shah
55	Sumina Shrestha
56	Suraj Sujan Bohara
57	Sushma Rayamajhi
58	Usha Khanal Bhattarai
59	Yasawi Karki

Annex 5: Information sheet

जानकारी पत्र

हामी हाम्रो देशमा सहायक प्रविधिको पहुँचबारे सर्वेक्षण गदछौं। सहायक प्रविधिहरुमा सामान्य उपकरणहरु पर्दछन् जस्तै ह्वीलचेयर, चश्मा, हियरिंग एड, साथै स्मार्ट फोन एपहरू जस्ता डिजिटल क्यालेन्डर जसले संज्ञानात्मक समस्या भएका व्यक्तिको कठिनाईहरूलाई सहयोग गर्दछ।

म तपाईंलाई यस सर्वेक्षणबारे जानकारी दिनेछु र तपाईंलाई यसमा भाग लिन आमन्त्रित गर्दछु । तपाईंले भाग लिने निर्णय गर्नु अघि तपाईंले सर्वेक्षणको बारेमा आफूलाई सहज महसुस हुने जो कोहीसँग कुरा गर्न सक्नुहुन्छ। मैले दिन लागेको जानकारीमा तपाईंले नबुझेका शब्दहरू हुन सक्छन्। नबुझेको खण्डमा कृपया सोध्नुहोस् र म तपाईंलाई बुझाउने कोसिस गर्छु ।

हामीले तपाईंको घरमा बस्ने सबैलाई यस सर्वेक्षणका प्रश्नहरु सोध्नेछौं । यो सर्वेक्षण आमने सामने अन्तर्वार्ताको रुपमा लिइने छ र प्रश्नावली भर्नको लागि प्रति व्यक्तिसँग लगभग १०-३० मिनेट लाग्नेछ।

हाम्रो जनसंख्यामा सहायक प्रविधिको पहुँचको प्रतिनिधित्व गर्ने गरि यस सर्वेक्षणमा भाग लिन हाम्रो देशबाट लगभग १३,३९० सहभागीहरू चयन गरिएका छन् र तपाई यस क्लस्टरबाट छनिएको सहभागीहरू मध्ये एक हुनुहुन्छ।

यदि तपाई चाहनुहुन्न भने सहभागी नहुन सक्नुहुन्छ र यसले तपाईंलाई भविष्यमा कुनै असर गर्ने छैन।

यस सर्वेक्षणमा तपाईंले केही व्यक्तिगत कुराहरु खुलाउनु पर्ने हुनसक्छ वा केही विषयहरूको बारेमा कुरा गर्न असहज महसुस गर्न सक्नुहुने जोखिम छ। यदि तपाईंलाई प्रश्न(हरू) धेरै व्यक्तिगत हो वा तिनीहरूको बारेमा कुरा गर्दा तपाईंलाई असहज महसुस हुन्छ भने तपाईंले कुनै पनि प्रश्नको जवाफ नदिए हुन्छ वा सर्वेक्षणमा भाग नलिन सक्नुहुन्छ।

यस सर्वेक्षणबाट तत्काल कुनै प्रत्यक्ष लाभ नभएपनि तपाईंको सहभागिताले हामीलाई भविष्यमा तपाईं, तपाईंको परिवार र तपाईंको समुदायको लागि सहयोगी प्रविधिमा पहुँच कसरी सुधार गर्न सक्छौं भन्ने जानकारी प्राप्त गर्न मद्दत गर्नेछ। यस सर्वेक्षणले समुदायको ध्यान आकर्षण गर्न सक्छ र यदि तपाईं सहभागी हुनुभयो भने तपाईंलाई समुदायका अन्य व्यक्तिहरूले प्रश्नहरू सोध्न सक्छन्। हामी सर्वेक्षण टोली भन्दा बाहिर कसैलाई तपाईंले दिएको जानकारी सार्वजनिक गर्दैनौ । हामीले यस सर्वेक्षणबाट सङ्कलन गरेका जानकारी गोप्य राख्नेछौ । तपाईंले दिएको जानकारीमा नामको सट्टा नम्बर राखिने छ । तपाईंको नम्बर के हो भनेर सर्वेक्षण टोलीललाई मात्र थाहा हुनेछ र हामी त्यो जानकारीलाई गोप्य राख्नेछौ। यो कसैसँग वा कसैलाई सार्वजनिक गरिने छैन।

के तपाईंका कुनै प्रश्नहरु छन्? के म सर्वेक्षण सुरु गर्न सक्छु?

Annex 6: Informed consent

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Annex 7: rATA Questionnaire

World Health Organization

rapid Assistive Technology Assessment tool (rATA)

(This population-based survey tool should be used only for rapid mapping of need, demand, supply and user satisfaction with Assistive Technology)

A. PRELIMINARY INFORMATION / ADMINISTRATIVE SURVEY DATA

LABEL	NAME	QUESTION	OPTIONS / FIELD
INTID	a.1	Interviewer's ID:	☐ 01 = Enumerator 1 .... (02, 03, 04 ...) ... ☐ nn = Last enumerator nn ☐ 87 = Temporary/test enumerator
LOC1	a.2	Province	☐ 001 = Province 1 .... (02, 03, 04 ...) ... ☐ nnn = Last province nnn
LOC2	a.3	District	☐ 001 = District 1 .... (02, 03, 04 ...) ... ☐ nnn = Last district nnn
LOC3	a.4	Village	☐ 001 = Village 1 .... (02, 03, 04 ...) ... ☐ nnn = Last village nnn
idhh	a.5	Household number	☐ 001 = HH 1 .... (02, 03, 04 ...) ... ☐ nnn = Last HH nnn
idind	a.6	Individual number Sequential in household	☐ 01 = Household member 1 .... (02, 03, 04 ...) ... ☐ nn = Last HH member nn
IID	a.7	Respondent's ID: May be required to include in administrative/ running sheet	LOC1,LOC2,LOC3,idhh,idind
DATE	a.8	Date	YYYY/MM/DD
TIMES	a.9	Time interview started (record now)	00:00 (24HR)
GEO	a.10	Optional geolocation (GPS)	GPS coordinate

B. DEMOGRAPHICS

AGE	b.1	How old are you?	Age (years)
SEX	b.2	What is your gender? Do not read options	☐ 1 = Male ☐ 2 = Female ☐ 3 = Non-binary, intersex, other not specified ☐ 88 = Not disclosed (do not read)

C. NEED[1]

(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)	☐ 0 = No difficulty ☐ 1 = Some difficulty ☐ 2 = A lot of difficulty ☐ 3 = Cannot do at all ☐ 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)	☐ 0 = No difficulty ☐ 1 = Some difficulty ☐ 2 = A lot of difficulty ☐ 3 = Cannot do at all ☐ 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)	☐ 0 = No difficulty ☐ 1 = Some difficulty ☐ 2 = A lot of difficulty ☐ 3 = Cannot do at all ☐ 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)	☐ 0 = No difficulty ☐ 1 = Some difficulty ☐ 2 = A lot of difficulty ☐ 3 = Cannot do at all ☐ 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)	☐ 0 = No difficulty ☐ 1 = Some difficulty ☐ 2 = A lot of difficulty ☐ 3 = Cannot do at all ☐ 88 = Not disclosed (do not read)

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

SELFCARE	c.6	Do you have difficulty with your self-care without the use of any products? (e.g. eating, dressing, bathing or toileting)	☐ 0 = No difficulty ☐ 1 = Some difficulty ☐ 2 = A lot of difficulty ☐ 3 = Cannot do at all ☐ 88 = Not disclosed (do not read)

D. DEMAND AND SUPPLY

PRODUSE	d.1	Do you currently use any assistive product(s)?	☐ 0 = NO -> Go to d.9 ☐ 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

PRODUCT LIST

Mobility products	☐ 101 = Axillary / Elbow crutches ☐ 102 = Canes/sticks, tripod and quadripod ☐ 103 = Club foot braces ☐ 104 = Manual wheelchairs - basic type for active users ☐ 105 = Wheelchairs, manual with postural support ☐ 106 = Manual wheelchairs - push type ☐ 107 = Wheelchairs, electrically powered ☐ 108 = Orthoses (upper limb) ☐ 109 = Orthoses (lower limb) ☐ 110 = Orthoses (spinal) ☐ 111 = Pressure relief cushions ☐ 112 = Pressure relief mattresses ☐ 113 = Prostheses (lower limb) ☐ 114 = Prostheses (upper limb)* ☐ 115 = Rollators ☐ 116 = walking frames/walkers ☐ 117 = Therapeutic footwear (diabetic, neuropathic, orthopedic) ☐ 118 = Fall detectors ☐ 119 = Standing frames, adjustable ☐ 120 = tricycles	Seeing/vision products	☐ 201 = Audio-players with DAISY capability ☐ 202 = Braille displays (note takers) ☐ 203 = Braille writing equipment/ braillers ☐ 204 = Magnifiers, digital handheld ☐ 205 = Magnifiers, optical ☐ 206 = Spectacles; low-vision, short/ long distance/filters etc ☐ 207= Watches, talking/touching ☐ 208 = White canes ☐ 209 = Smart phones/tablets/PDA ☐ 210 = Deafblind communicators ☐ 211 = Gesture to voice technology
Hearing products	☐ 301 = Alarm signalers with light/sound/ vibration ☐ 302 = Hearing aids (digital) and batteries ☐ 303 = Closed captioning displays ☐ 304 = Smart phones/tablets/PDA ☐ 305 = Deafblind communicators ☐ 306 = Hearing loops/FM systems ☐ 307 = Video communication devices	Communication	☐ 401 = Smart phones/tablets/PDA ☐ 402 = Communication boards/ books/cards ☐ 403 = communication software ☐ 404 = Recorders

Cognition	☐ 501 = Pill organizers ☐ 502 = Smart phones/tablets/PDA ☐ 503 = Global Positioning System (GPS) locators ☐ 504 = Personal emergency alarm systems ☐ 505 = Simplified mobile phones ☐ 506 = Time management products ☐ 507 = Travel aids, portable	Self-care and environment	☐ 601 = Chairs for shower/bath/toilet ☐ 602 = Grab-bars / Hand rails ☐ 603 = Incontinence products, absorbent ☐ 604 = Ramps, portable ☐ 605 = Keyboard and mouse emulation software ☐ 606 = Screen readers
Other products not listed	☐ 87 = Other products (not listed above)		

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 PROD1 _____ PROD2 _____ PROD3 _____

SOURCES OF AP

SOURCE1	d.6.1	Where did you get your [PROD1] from? Select all that apply	☐ 1 = Public sector: Government facility, public hospital ☐ 2 = NGO sector: Non-profit facility ☐ 3 = Private sector: private facility/ hospital/clinic/shop/store ☐ 4 = Friends/family ☐ 5 = Self-made ☐ 87 = Other ☐ 88 = Don't know
SOURC1o (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
SOURC2o (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
SOURC3o (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. Optionally, add 'what is the most important' if multiple options are selected, or restrict to one most important choice.	☐ 1 = Government ☐ 2 = NGO/Charity ☐ 3 = Employer/School ☐ 4 = Insurance ☐ 5 = Paid out-of-pocket (self) ☐ 6 = Family / friends ☐ 87 = Other ☐ 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 (optional)	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]?	☐ 1 = Less than 5km ☐ 2 = 6-25km ☐ 3 = 26-50km ☐ 4 = 51-100km ☐ 5 = More than 100km ☐ 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?	☐ 0 = NO -> Go to e.1.1 ☐ 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	d11	Why don't you have the assistive product(s) you need? Select all that apply	☐ 1 = Not available ☐ 2 = Not suitable ☐ 3 = Lack of transport / too far ☐ 4 = Lack of time ☐ 5 = Lack of support ☐ 6 = Cannot afford ☐ 7 = Stigma/ shyness ☐ 87 = Other ☐ 88 = Do not know about AP
BARRIERo (optional)	d.11o	If selected "87" in d11 Specify other barrier	Text

E. SATISFACTION

SATPR1	e.1.1	If d.1 = 0 -> Go to f.1 If d.1 = 1 Over the last month, how satisfied are you with your [PROD1]?	☐ 1 = Very dissatisfied ☐ 2 = Dissatisfied ☐ 3 = Neither satisfied nor dissatisfied ☐ 4 = Quite satisfied ☐ 5 = Very satisfied ☐ 88 = Refused / don't know (Do not read)

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?	☐ 1 = Fit / size / shape ☐ 2 = Pain / discomfort ☐ 3 = Weight ☐ 4 = Appearance ☐ 5 = Safety ☐ 6 = Durability ☐ 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?	☐ 1 = Very dissatisfied ☐ 2 = Dissatisfied ☐ 3 = Neither satisfied nor dissatisfied ☐ 4 = Quite satisfied ☐ 5 = Very satisfied ☐ 6 = Not applicable (Do not read) ((assessment/training not needed) ☐ 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?	☐ 1 = Procedure ☐ 2 = Waiting time ☐ 3 = Quality of care ☐ 4 = Staff ☐ 5 = Rights ☐ 6 = Distance / time ☐ 7 = Costs ☐ 87 = Other
DSATSVCo (optional)	e.2.4o	If selected "87" in e.2.4 Specify other reasons for dissatisfaction	TEXT
SATFU1	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?	☐ 1 = Very dissatisfied ☐ 2 = Dissatisfied ☐ 3 = Neither satisfied nor dissatisfied ☐ 4 = Quite satisfied ☐ 5 = Very satisfied ☐ 6 = Not applicable (have not needed follow up) - (Do not read) ☐ 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
SUITPR1	e.4.1	Is your [PROD1] suitable for your home and surroundings?	☐ 1 = Not at all ☐ 2 = Not much ☐ 3 = Moderately ☐ 4 = Mostly ☐ 5 = Completely ☐ 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
UTILPR1	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)	☐ 1 = Not at all ☐ 2 = Not much ☐ 3 = Moderately ☐ 4 = Mostly ☐ 5 = Completely ☐ 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 (optional)	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?	☐ 1 = Fit / size / shape ☐ 2 = Pain / discomfort ☐ 3 = Weight ☐ 4 = Appearance ☐ 5 = Safety ☐ 6 = Durability ☐ 7 = Road / transport accessibility ☐ 8 = Accessibility at home ☐ 9 = Accessibility at work/school ☐ 10 = Accessibility public facilities ☐ 11 = Attitudes of other people ☐ 87 = Other -> go to e.5.4o
DUTILo (optional)	e.5.4o	If selected "87" in e.5.4 Specify other reasons you cannot do what you want	text

ENVBAR1	e.6.1	Thinking about the places you need to visit like schools, workplaces, public spaces, can you use [PROD1] 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.	☐ 1 = Not at all ☐ 2 = Not much ☐ 3 = Moderately ☐ 4 = A lot ☐ 5 = Completely ☐ 6 = Not applicable (Do not read) ☐ 88 = Refused / don't know (Do not read)
ENVBAR1	e.6.2	If d.4 > 1 Thinking about the places you need to visit like schools, workplaces, public spaces, can you use [PROD2] as much as you want? 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.	See e.6.1
ENVBAR1	e.6.3	If d.4 > 2 Thinking about the places you need to visit like schools, workplaces, public spaces, can you use [PROD3] as much as you want? 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.	See e.6.1

F. 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.	☐ Acknowledge
TIMEE	f.3	Time interview ended (record at the time of hitting "Acknowledge")	00:00 (24HR)

G. Surveyor's comments & post-survey administration

PROXY	g.1	Proxy interview: If any part of the interview completed by proxy	☐ 0 = No ☐ 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	☐ 0 = No -> End the survey ☐ 1 = Yes
ENUMCOM	g.3	If G.2 = 1 Please describe issues or points for follow up End the survey after entering text.	TEXT

X - Summary variables

These variables can be pre-calculated in the digital survey to help with survey verification and monitoring.

AGEGR	x.1	Calculates age group	1 = <3 2 = 3-4 3 = 5-12 4 = 13-17 5 = 18+
RUR	x.2	Calculates rural or urban based on known information from a.2-a.5	1 = Urban 2 = Peri-urban 3 = Rural
DIFFLEV	x.3	Calculates difficulty level into single variable 3 - any of c.1 through c.6 = 3 2 - any of c.1 through c.6 = 2, but not 3 1 - any of c.1 through c.6 = 1, but not 2 or 3 0 - c.1 through c.6 = 0	0 = No difficulty 1 = Some difficulty 2 = A lot of difficulty 3 = Cannot do at all
NEED1	x.4	Calculates 1 if SOME difficulty reported in any domain (but no higher levels)	If x.3 = 1 -> 1
NEED2	x.5	Calculates 1 if at least A LOT or CANNOT DO difficulty in any domain	If x.3 = 2 or 3 -> 1
USE	x.6	Calculates 1 if ANY product/s USED	If d.2 = any selected -> 1
UNMET	x.7	Calculates 1 if any unmet need expressed	If d.9 = 1 -> 1, else 0
DEMAND	x.8	Calculates 1 if any USE or expressed unmet need	If d.2 = 1 OR d.9 = '1' -> 1 else 0
UNDER	x.9	Calculates 1 if any product used unsatisfactory or not appropriate OR unmet need among people currently using a product	If d.2 = 1 AND d.9 = 1 -> 1 OR If d.2 = 1 AND any of e.1.1, e.4, e.5 < 3 -> 1
DISTKMT	x.10	Returns 1 if no product required more than 25KM travel	Any product distance >25, 0, else 1

Annex 8: Assistive Products List

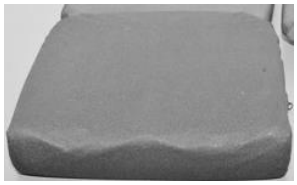
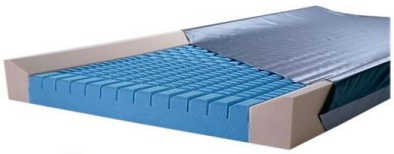
Assistive Products Pictures

सहायक सामग्रीको तस्बिरहरु

MOBILITY PRODUCTS

	 	
101. Axillary / Elbow crutches	102. Canes/Sticks, tripod and quadripod	103. Club foot braces
१०१. बैसाखी, काखि/कुइनाको सहायतामा चलाउने	१०२.छडी, ३ खुट्टे/४ खुट्टे	१०३. मोडिएको खुट्टाका लागि ब्रेसेस
 	 	 
104. Manual wheelchairs - basic type for active users	105. Wheelchairs, manual with postural support	106. Manual wheelchairs- push type
१०४. हातले ठेल्ने(म्यानुअल)व्हीलचियर - सक्रिय प्रयोगकर्ताहरूका लागि	१०५. हातले ठेल्ने (म्यानुअल), अडेस लाग्ने व्हीलचियर	१०६. धकेल्न(म्यानुअल) व्हीलचियर

MOBILITY PRODUCTS

	 	
107. Wheelchairs, electrically powered	108. Orthoses (Upper limb)	109. Orthoses (lower limb)
१०७. विधुतिय व्हीलचियर	१०८. अर्थोसिस (हाथ)	१०९. अर्थोसिस (खुट्टा)
 	   	 
110. Orthoses (spinal)	111. Pressure relief cushions	112. Pressure relief mattresses
११०. अर्थोसिस (मेरुदण्ड)	१११. दबाब/प्रेसरलाई राहत दिने विशेष किसिमको चकटी	११२. दबाब/प्रेसरलाई राहत दिने विशेष किसिमको गद्दा/डसनाहरू

MOBILITY PRODUCTS

 	 	 
113. Prostheses (lower limb)	114. Prostheses (Upper limb)	115. Rollators
११३. कृत्रिम (खुट्टे)	११४. कृत्रिम (हात)	११५. गुडाउने वाकर
	  	 
116. Walking frames/ walkers	117. Therapeutic footwear (diabetic, neuropathic, orthopedic)	118. Fall detectors
११६. हिड्नलाई सहयोग पुर्याउने फ्रेम	११७. उपचारात्मक जुत्ता चप्पल (विशेस गरि मधुमेह, न्यूरोपैथिक, हाडजोर्नी सम्बन्धि रोगहरुका लागि)	११८. लडेको/खसेको पत्ता लगाउने यन्त्र

MOBILITY PRODUCTS

	 
119. Standing frames, adjustable	120. Tricycles
११९. उभिने ठाडो फ्रेम, मिलाउन सकिने	१२०. तिन पांग्रे साइकल

SEEING/VISION PRODUCTS

		
201. Audio-players with DAISY capability	202. Braille displays (note takers)	203. Braille writing equipment/ braillers
२०१. श्रव्य यन्त्र, डेजी	२०२. ब्रेललिपि (नोट लिनेहरू)	२०३. ब्रेल लेखन सामग्री/ब्रेलरहरू

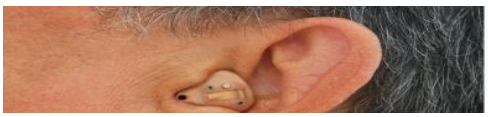
SEEING/VISION PRODUCTS

 	 	 
204. Magnifiers, digital handheld	205. Magnifiers, optical	206. Spectacles; low-vision, short/long distance/filters etc
२०४. ठुलो देखाउने ग्लास (म्याग्निफायर), डिजिटल हातले चलाउने	२०५. म्याग्निफायर, अप्टिकल(चश्मा)	२०६. चश्मा; कम दृष्टि, छोटो/लामो दूरी/फिल्टरहरू आदि
 		 
207. Watches, talking/touching	208. White canes	209. Smart phones/tablets/PDA
२०७. घडीहरू, कुरा गर्न मिल्ने /छुने स्क्रीन	२०८. सेतो छडी	२०९. स्मार्ट फोन/ट्याब्लेट/पीडीए

SEEING/VISION PRODUCTS

	
210. Standing frames, adjustable	211. Tricycles
२१०. उभिने ठाडो फ्रेम, मिलाउन सकिने	२११. तिन पांग्रे साइकल

HEARING PRODUCTS

  	 	
301. Alarm signalers with light/sound/ vibration	302. Hearing aids (digital) and batteries	303. Closed captioning displays
३०१. आवाज, उज्यालो वा कम्पनको मद्दतले संकेत गरिने अलार्म	३०२. श्रवण सामग्री (डिजिटल) र ब्याट्रीहरू	३०३. भिडियोमा आएको आवाजलाई लेखाइमा प्रदर्शन (शीर्षानुलेख) गर्नु

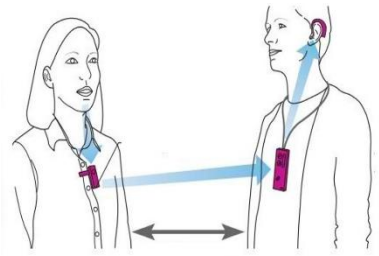
HEARING PRODUCTS

304. Smart phones/ tablets/ PDA

३०४. स्मार्ट फोन/ट्याब्लेट/पीडीए

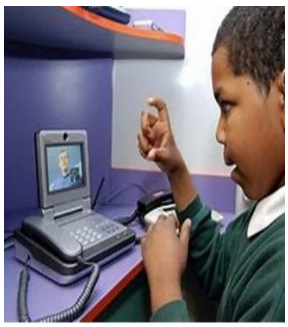
305. Deafblind communicators

३०५. कम्युनिकेटरहरू ब्लाइन्ड डेफ



306. Hearing loops/FM systems

३०६. विशेष किसिमको आवाज पहिचान गर्ने श्रवण यन्त्र/ एफएम प्रणालीहरू



307. Video communication devices

३०७. दृश्य संचार सामग्रीहरू

COMMUNICATION

401. Smart phones/ tablets/ PDA

४०१. स्मार्ट फोन/ट्याब्लेट/पीडीए

402. Communication boards/books/cards

४०२. सञ्चार बोर्डहरू/पुस्तकहरू/कार्डहरू

403. Communication software

४०३. सञ्चार सफ्टवेयर

404. Recorders

४०४. रेकर्डरहरू

COGNITION

501. Pill organizers

५०१. पिल अर्गनाईजर

502. Smart phones/ tablets/ PDA

५०२. स्मार्ट फोन/ट्याब्लेट/पीडीए

503. Global Positioning System (GPS) locators

५०३. ग्लोबल पोजिसनिङ सिस्टम

504. Personal emergency alarm systems

५०४. व्यक्तिगत आपतकालीन अलार्म प्रणाली

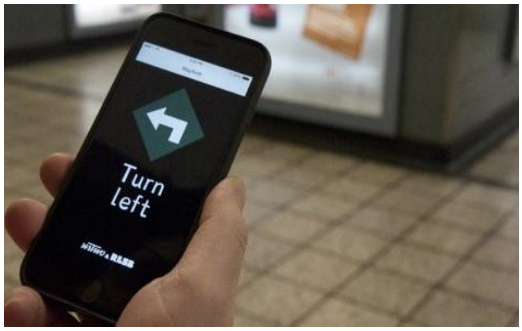
505. Simplified mobile phones

५०५. सरलीकृत मोबाइल फोनहरू

506. Time management products

५०६. समय व्यवस्थापन उत्पादनहरू

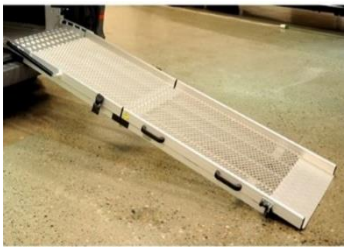
COGNITION



507. Travel aids, portable

५०७. यात्रामा उपयोगी सामानहरु, बोकेर हिन्न सकिने (पोर्टेबल)

SELF CARE AND ENVIRONMENT

  	 	 
601. Chairs for shower/ bath/ toilet	602. Grab-bars / Hand rails	603. Incontinence products, absorbent
६०१. नुहाउने / शौचालयको लागि कुर्सीहरू	६०२. समाउने बार ,रेलिङ्ग	६०३. असंयम उत्पादनहरू, शोषक(डाइपर, क्याथेटर)
 		
604. Ramps, portable	605. Keyboard and mouse emulation software	606. Screen reader
६०४. च्याम्प (व्हिलचिअर हिन्ने बाटो), पोर्टेबल	५. किबोर्ड र माउस इमुलेशन सफ्टवेयर	६०६. स्क्रिन रिडरहरू

Annex 9: Mapping of Referral Centers

प्रेषण केन्द्रहरूको नक्साङ्कन

क्र. स.	अस्पतालको नाम	ठेगाना र सम्पर्क न.	उपलब्ध सेवा
प्रदेश १			
१	कोशी अस्पताल	रंगेली रोड, बिराटनगर ०२१ -५७०१०३	फिजियोथेरापी
२	बि. पी. कोइराला स्वास्थ्य बिज्ञान प्रतिष्ठान	धरान , ०२५ -५२५५५५	फिजियोथेरापी, प्रोस्थेसिस र अर्थोसिस
३	समुदायमा आधारित पुनर्स्थापना केन्द्र विराटनगर (सि बि आर विराटनगर)	ईश्वर मार्ग, विराटनगर ०२१-५३१५९४	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर
प्रदेश २			
१	नारायणी अस्पताल	छपकैया ३ , बिरगंज ०५१ - ५२१९९३	फिजियोथेरापी
२	प्रादेशिक अस्पताल , जनकपुर	जनकपुर धाम , धनुषा ०४१ -५२०१३३	फिजियोथेरापी
३	सिरहा अस्पताल	सिरहा , ०३३ -५२००६५	फिजियोथेरापी
४	प्रेरणा सर्लाही	मलंगवा सर्लाही ०४६-५२०४४२	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर
५	लालगढ अस्पताल	लालगढ, धनुषा ०४१-६२०१८२	सुधारात्मक शल्यक्रिया फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर
प्रदेश ३			
१	भरतपुर अस्पताल	भरतपुर, चितवन , ०५६ - ५२४०९०	फिजियोथेरापी
२	चिकित्सा विज्ञान राष्ट्रिय प्रतिष्ठान, बीर अस्पताल	कान्तिपथ, काठमाण्डौ, ०१-४२२१११९	फिजियोथेरापी, स्पीच थेरापी
३	चिकित्सा बिज्ञान राष्ट्रिय प्रतिष्ठान , राष्ट्रिय ट्रमा सेन्टर	महांकाल , काठमाण्डौ, ०१ - ४२२६९३४	फिजियोथेरापी
४	कान्ति बाल अस्पताल	महाराजगंज , काठमाण्डौ, ०१ - ४४११५५०	फिजियोथेरापी
५	शुक्रराज ट्रपिकल तथा सरुवा रोग अस्पताल	टेकु , काठमाण्डौ, ०१ -४२५३३९६	फिजियोथेरापी
६	सहिद धर्मभक्त मानव अंग	भक्तपुर , ०१ -६६१४७०९	फिजियोथेरापी

	प्रत्यारोपण केन्द्र		
७	शहिद गंगालाल राष्ट्रिय हृदय रोग केन्द्र	बाँसबारी , काठमाण्डौ ०१ -४३७१३२२	फिजियोथेरापी
८	त्रिभुवन विश्वबिद्यालय शिक्षण अस्पताल	महाराजगंज , काठमाण्डौ ०१ -४४१२३०३	फिजियोथेरापी, स्पीच थेरापी
९	पाटन स्वास्थ्य विज्ञान प्रतिष्ठान	लगनखेल , ०१ -५५२२२९५	फिजियोथेरापी, स्पीच थेरापी
१०	नेपाल प्रहरी अस्पताल	पानीपोखरी, ०१ -४४१२४३०	फिजियोथेरापी
११	नेपाल सशस्त्र प्रहरी अस्पताल	चन्द्रागिरी, ९८५-१२७२००८	फिजियोथेरापी
१२	वीरेन्द्र सैनिक अस्पताल	छाउनी , ०१ -४२७४०१९	फिजियोथेरापी
१३	त्रि. वि. मनमोहन कार्डियोथोरासिक भास्कुलर तथा ट्रान्स्प्लाण्ट सेन्टर	महाराजगंज , काठमाण्डौ ०१ -४४१८८२२	फिजियोथेरापी
१४	निजामती कर्मचारी अस्पताल	मिनभवन , काठमाण्डौ, ०१ -४१०७०००	फिजियोथेरापी
१५	बि. पी. कोइराला मेमोरियल क्यान्सर अस्पताल	भरतपुर, ०५६ -५२४५०१	फिजियोथेरापी
१६	भक्तपुर अस्पताल	भक्तपुर, ०१ -६६१०७९८	फिजियोथेरापी
१७	हेटौडा अस्पताल	हेटौडा , ०५७ -५२०३०५	फिजियोथेरापी
१८	त्रिशुली अस्पताल	नुवाकोट , ०१० -५६०१८८	फिजियोथेरापी
१९	धादिंग अस्पताल	निलकण्ठ , धादिंग , ०१० -५२०१३०	फिजियोथेरापी
२०	जिल्ला आयुर्वेद स्वास्थ्य केन्द्र	निलकण्ठ , धादिंग, ०१० -५२०२७८	फिजियोथेरापी
२१	जिल्ला आयुर्वेद स्वास्थ्य केन्द्र,	रामेछाप	
२२	नारायणी अञ्चल आयुर्वेद औषधालय	हेटौडा, ०५७ - ५२०६८१	
२३	रसुवा अस्पताल	धुन्चे , रसुवा , ०१० -५४०२४५	फिजियोथेरापी
२४	चौतारा अस्पताल सिन्धुपाल्चोक	चौतारा, ०११ -६२००९२	फिजियोथेरापी
२५	जिरी अस्पताल	जिरी , दोलखा , ०४९ -६९०२७९	फिजियोथेरापी
२६	चरिकोट अस्पताल	भिमेश्वर नगरपालिका, दोलखा	फिजियोथेरापी
२७	स्पाईनल इन्जुरी पुनर्स्थापना केन्द्र,	साँगा, काभ्रे ०११-६६०८४७, ६६०८४८	फिजियोथेरापी, स्पीच थेरापी, अकुपेसनल थेरापी, प्रोस्थेटिक र अर्थोटिक, मनोबैज्ञानिक परामर्श, पुनर्स्थापना नर्सिङ्ग, पुनर्स्थापना चिकित्सा, ब्यबसायिक तालिम

			टेली-रिह्याब(Tele rehabilitation)
२८	अपाङ्ग बाल तथा पुनर्स्थापना केन्द्र	जनागल काभ्रे ०११-६६१६६६, ६६१८८८	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक, सुधारात्मक शल्यक्रिया घुम्ती सिविर
२९	शारीरिक पुनर्स्थापना केन्द्र , राष्ट्रिय अपांग कोष	भृकुटी मण्डप काठमाण्डौ ०१-४२२४९६८, ४२३९५८६	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर
३०	आनन्दवन अस्पताल, दि लेप्रोसी मिसन नेपाल ललितपुर	सातदोबाटो क्लिनिक ०१-५१५१३७१ आनन्द वन अस्पताल ०१-६२१८३९८	सुधारात्मक शल्यक्रिया, फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर
३१	विशेष विद्यालय तथा पुनर्स्थापना केन्द्र पेप्सीकोला काठमाण्डौ (अटिज्म भएका बालबालिकाहरूको)	पेप्सीकोला , ०१ -४९९०५३४	थेरापी सेवाहरू तथा शिक्षा कार्यक्रम
३२	नेपाली सेना पुनर्स्थापना केन्द्र	भण्डारखाल	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक
३३	शेल्फ हेल्प ग्रुप फोर सेरेब्रल पाल्सी	धापाखेल , ०१ -५५७३६९९	फिजियोथेरापी, स्पीच थेरापी, अकुपेसनल थेरापी
३४	बिशेष शिक्षा तथा पुनर्स्थापना केन्द्र ,	चापागाऊँ, ९८५ -१०६४००२	फिजियोथेरापी, स्पीच थेरापी, अकुपेसनल थेरापी
३५	डाउन सिन्ड्रोम संघ नेपाल	बानेश्वर, ९८५ -१०६५८९५	
प्रदेश ४			
१	पोखरा स्वास्थ्य बिज्ञान प्रतिष्ठान	पोखरा , ०६१ -५२०४६१	फिजियोथेरापी
२	गोरखा अस्पताल	गोरखा , ०६४ -४२०२०८	फिजियोथेरापी
३	धौलागिरी अस्पताल	बाग्लुंग , ०६८ -५२०१८८	फिजियोथेरापी
४	हरियो खर्क अस्पताल	हरियो खर्क पोखरा ०६१- ४३११६२, ४३०३४२	फिजियोथेरापी, अकुपेशनल थेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर
प्रदेश ५			
१	भेरी अस्पताल	नेपालगंज, ०८१ -५२०१२०	फिजियोथेरापी
२	राप्ती स्वास्थ्य बिज्ञान प्रतिष्ठान	घोराही, दाङ्ग, ०८२ -५६२३६५	फिजियोथेरापी

३	लुम्बिनी प्रादेशिक अस्पताल	बुटवल , रुपन्देही , ०७१ -५४०२००	फिजियोथेरापी
४	प्युठान अस्पताल	प्युठान , ०८६ -४६००१०	फिजियोथेरापी
५	बर्दिया अस्पताल	गुलरिया , ०८४ -४२११७७	फिजियोथेरापी
६	रामपुर अस्पताल	रामपुर , पाल्पा , ९८०१५४७००५	फिजियोथेरापी
७	रोल्पा अस्पताल		फिजियोथेरापी
८	कपिलवस्तु अस्पताल	तौलिहवा , ०७६ -५६०२००	फिजियोथेरापी
९	भीम अस्पताल	सिद्धार्थनगर , ०७१ -५२०१९३	फिजियोथेरापी
१०	पृथ्वी चन्द्र अस्पताल		फिजियोथेरापी
११	पाल्पा अस्पताल	तानसेन , पाल्पा , ०७५-५२०१५४	फिजियोथेरापी
१२	अर्घाखाँची अस्पताल	सन्धिखर्क , अर्घाखाँची	फिजियोथेरापी
१३	नेपालगन्ज मेडिकल कलेज पुनर्स्थापना केन्द्र कोहलपुर	कोहलपुर बाँके ०८१ – ५२१५७२	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक
प्रदेश ६			
१	कर्णाली स्वास्थ्य बिज्ञान प्रतिष्ठान	जुम्ला , ०८७ -५२०३५५	फिजियोथेरापी
२	कर्णाली प्रादेशिक अस्पताल	बिरेन्द्रनगर ,सुर्खेत , ०८३ -५२०२००	फिजियोथेरापी
३	जाजरकोट अस्पताल	खलंगा , जाजरकोट, ०८९ -४३०१८८	फिजियोथेरापी
४	कालिकोट अस्पताल	कालिकोट	फिजियोथेरापी
५	दैलेख अस्पताल	दैलेख	फिजियोथेरापी
६	सल्यान अस्पताल	सल्यान , ०८८ -५२००५४	फिजियोथेरापी
७	मुगु अस्पताल	मुगु , ०८७ -४६०१६१	फिजियोथेरापी
८	डोल्पा अस्पताल	०८७ -५५०११०	फिजियोथेरापी
प्रदेश ७			
१	डडेल्धुरा अस्पताल	अमरगढी,डडेल्धुरा , ०९६ -४२०१६१	फिजियोथेरापी
२	बझांग अस्पताल	बझांग	फिजियोथेरापी
३	टिकापुर अस्पताल	टिकापुर , ०९१ -५६०१५०	फिजियोथेरापी
४	सेती प्रादेशिक अस्पताल	धनगढी, ०९१ -५२१२७१	फिजियोथेरापी
५	महाकाली अस्पताल	महेन्द्रनगर , ०९९ -५२११११	फिजियोथेरापी

६	नेपाल राष्ट्रिय समाज कल्याण संघ कञ्चनपुर	महेन्द्र नगर कञ्चनपुर ०९९-५२२१८२	फिजियोथेरापी, प्रोस्थेटिक र अर्थोटिक घुम्ती सिविर

नोट – उपरोक्त तालिकामा भएका अस्पताल संघ संस्थाहरूको उपलब्ध सेवाको विवरण पुनर्स्थापना सेवा उपलब्ध छ भन्ने आधारभूत जानकारी गराउने उद्देश्यले मात्र राखिएको छ। थप विवरण र उल्लेखित सेवा निरन्तर भए नभएको अद्यावधिक जानकारीका लागि सम्बन्धित संस्थामा सम्पर्क गर्नुहोला।

Status of Assistive Technology in Nepal

Functional difficulties (N=11230)

1.1 Level of difficulties (N=11230)

- No difficulty- 57.9%
- Some difficulty- 28.4%
- A lot of difficulty- 10.3%
- Cannot do at all- 3.5%

1.2 Prevalence of functional difficulties (N=11230): 13.8%

1.3 Sex wise (N=11230)

	Male	Female
Some difficulty:	25.7%	30.6%
A lot of difficulty:	9.6%	11%
Cannot do at all:	3.6%	3.3%

Use (prevalence) of AP (n=11230)

- Use of any AP currently- 27.7%
- AP not in use- 72.3%

- Use of AP in Urban area- 28.2%
- Use of AP in Rural area- 15.1%

Use of AP by participants who couldn't do any activities without assistance: 51.6%

Use of AP by participants aged >65 years- 50.6%

Product use in different Provinces

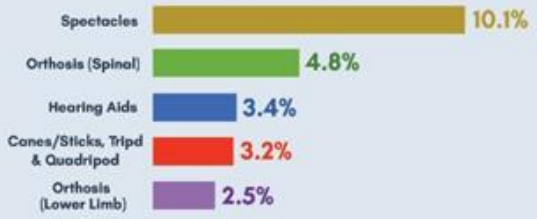
Province 1	Madhesh Province	Bagmati Province	Gandaki Province	Lumbini Province	Karnali Province	Sudurpaschim Province
16.5%	13.2%	28.9%	19.8%	15.7%	8.9%	17.5%

Sources of AP

Most used Assistive Products (AP)

- Spectacles 22.3%
- Canes/Sticks 3.3%
- Spinal Orthoses 1.8%

Top 5 unmet need of AP



Need of AP (n=11230)

- Met need 80.3%
- Unmet need 19.7%

Unmet need of participants who couldn't do any activities without assistance: 70.9%

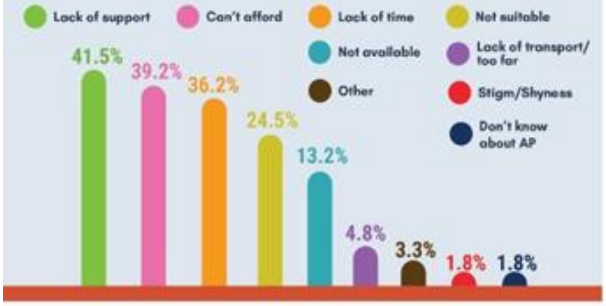
Unmet need of AP among aged >65 years- 51.7%

- Unmet need in male- 17.6%
- Unmet need in female- 21.4%
- Unmet need in Urban area- 19.6%
- Unmet need in Rural area- 21.3%

Payers of AP

- Out of Pocket 57.1%
- Family/friends 38.9%
- NGO/Charity 1.9%
- Government 1.5%
- Others 1.5%
- Don't know 1.8%

Barriers to access AP



Key Actions

- **POLICY:** Prioritized and decentralized action plan
- **PRODUCT:** Appropriate and easily available
- **PERSONNEL:** Strengthen the capacity of health professionals
- **PROVISION:** Integration in all tiers
- **PEOPLE:** User' centric