NATIONAL ASSISTIVE TECHNOLOGY REPORT IN IRAQ

April 2023

This report was prepared in collaboration between the World Health Organization (WHO) and the Iraqi Ministry of Health (MOH).

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List of abbreviations

rATA=rapid Assistive Technology Assessment

AP=Assistive Product

Contents

The WHO Assistive product (rATA) survey in Iraq.

Source: Biostatistics Department, MOH 2021

Who this report is for ?

This report is primarily directed at policymakers, bilateral and multilateral organizations, donors and funding agencies, providers of assistive technology, as well as industry leaders. It is also aimed at: users and potential users of assistive technology and their families or caregivers; organizations representing people with disabilities, older people or people living with chronic conditions; health and social care professionals and their associations; designers and engineers; manufacturers; suppliers; academic institutions; communities; local authorities; public services; the private sector (including information and communication technology (ICT) companies); investors; media organizations; nongovernmental or faith-based organizations; and development organizations (The World Health Organization, 2022).

Rapid Assistive Technology Assessment (rATA)1

In 2021, The WHO Assistive Technology Access team provided Iraqi MOH with a rapid Assistive Technology Assessment (rATA) questionnaire to collect data on self-reported access to AT. The rATA is an interviewer-administered household survey tool to assess six areas related to AP: use, source, funding, satisfaction, supply, need, unmet need and barriers to AP access (The World Health Organization, 2022). The rATA is designed as a stand-alone survey. The tool is simple to administer and non-technical. Hence, it can be used by enumerators from varied backgrounds and experiences and across cultures and contexts. The rATA aims to 1) obtain data on access to assistive product (AP) in the population of the country; 2) support in planning, developing and strengthening national AP program or interventions; and 3) advocate and raise awareness among policy makers, service providers, civil societies including organizations of disabled or older people and society at large about the need for and benefit of AP. Obtaining data on need and unmet need of AP in the population of the country, through a national representative sample (WHO, 2021b).

The key indicators of the rATA survey are:

Prevalence of need: the sum of the prevalence of met need and the prevalence of unmet need, where: *Prevalence of met need*: the proportion of a population using assistive products that do not need new or additional assistive products. *Prevalence of unmet need:* the proportion of a population that need new or additional assistive products regardless of whether they are already using assistive products. *Access:* the ratio of prevalence of met need to prevalence of need(The World Health Organization, 2022). By December 2021, data collection using the rATA survey

was completed in 35 countries (including Iraq), comprising nearly 330,000 people (The World Health Organization, 2022).

Picture Source: Duaa Yusef: raise your voice

Pictures source: The Directorate of Operational and Emergency Medical Services, Iraqi MOH

INTRODUCTION

The introduction summarizes global and regional pictures of APs, efforts to improve access to AP including, Global Report on AT, rATA survey, the WHO people-centered 5P framework, AP progressive indicators, AP regulations in Iraq, national status of APs and executive summary of Ninewa Governorate Report.

Background

Assistive product (AP) is an umbrella term for assistive products. The global market for AP products was valued at more than US$ 14 billion in 2015 and is expected to be nearly twice as large (US$ 27 billion) by 2024 (R. O. f. E. M. WHO, 2020). Today, more than 2.5 billion people require one or more assistive products, which is expected to grow to over 3.5 billion by 2050, but only 1 in 10 people globally have access to the AP they need (The World Health Organization, 2022). Access to AP is essential for many people to maintain and improve function, health, and well-being, and to participate in education, work, and social activities. Among the people who commonly need AP are older people, people with disabilities and people living with chronic conditions. The need for assistive technology also increases in most humanitarian disasters (The World Health Organization, 2022).

Assistive technology can promote performance in all essential functional domains including vision, physical mobility, hearing, cognition, communication, and self-care. Assistive products can be physical products (wheelchairs, spectacles, hearing aids, prostheses, orthoses, walking devices or continence pads) or they can be digital (software and apps that support communication, monitoring, and other functions). They can also be accommodation to the physical environment, such as portable ramps or grab-rails (The World Health Organization, 2022).

Access to AP is a human right, and a precondition for equal opportunities and participation. While the need for it is rising, most people who would benefit from it do not have sufficient access (The World Health Organization, 2022). Yet everyone is likely to need assistive technology during their lifetime, especially as they age.

In the Eastern Mediterranean Region, an estimated 10% of the people needing assistive products currently have access to and use the assistive products they need. To address the limited access to assistive technology in the Region, the sixty-third WHO Eastern Mediterranean Regional Committee adopted resolution EM/RC63/R.3 on "Improving access to assistive technology". To operationalize this resolution, a rapid assessment of AP needs, and provision was done in 17 Member States in the Region in 2017. Iraq reported an overall favourable situation of AP systems in the country compared to other countries in the region. Nevertheless, several potential issues that need to be addressed were highlighted in order to improve the system.

Regional strategic action framework to improve access to assistive technology in the WHO Eastern Mediterranean Region

In May 2018, a draft Regional Framework on Improving Access to Assistive Technology was developed in consultation with Member States. The current version of the framework is updated based on the feedback received from member states and is guided by gradual implementation of the following principles (R. O. f. E. M. WHO, 2020):

- Everyone is entitled to the full and equal enjoyment of all human rights and fundamental freedoms.
- No one should have additional costs because of functional limitations.
- Everyone should have equal opportunities to access assistive technology.
- Everyone should have seamless access to assistive technology across all ages and areas of life.
- All assistive products should be safe and effective.
- The Sustainable Development Goals should be considered in the manufacturing, supply, use, maintenance, and repair of assistive products, and in training on and services for their provision.

Following the development of the draft Regional Framework on Improving Access to Assistive Technology, it was decided to use the regional framework to develop national action plans in countries in the Eastern Mediterranean Region including Iraq(R. O. f. E. M. WHO, 2020).

The WHO people-centered 5P Model

Ensuring access to assistive technology is central to progressing towards universal assistive technology coverage, which means that everywhere everyone receives the assistive technology they need without financial hardship. To achieve this, efforts are required in all five areas related to an effective assistive technology ecosystem. The assistive technology sector consists of five interlinked blocks that are known as the "5 Ps": People-centred, Policy, Provision, Products and Personnel. The assistive technology building blocks alone do not constitute a system. It is the ecosystem; multiple relationships and interactions among the blocks – how one affects and influences the others and is in turn affected that convert these blocks into an ecosystem. As such, the assistive technology ecosystem may be understood through the arrangement and interaction of its parts, and how they enable the system to achieve the purpose for which it was designed. This framework is designed to build up on these 'five P's', drawing on people-centred policy which keeps "People" needing assistive technology at the centre, since a user-centred approach is crucial to the successful application of assistive technology (The World Health Organization, 2022).

Figure 1, on the right illustrates this approach, where "People" needing assistive technology are at the centre of the 'five P's' and that Policy defines the space in which the other three P's can operate.

Figure 1: The 5 Ps people-centered assistive technology model (The World Health Organization, 2022)

Methodology for measuring system preparedness for providing assistive technology

The WHO generated a set of indicators to measure Member States' progress in enhancing access to AP up to 2030. The progress indicators measure the domains of system preparedness including governance, legislation, public budget, financing mechanisms, regulations and standards, collaborations and initiatives, service provision coverage, workforce availability, and training. Thereafter, the WHO called for all Member States to provide data for these progress indicators through an online survey in April 2021. By December 2021, 70 member States had completed the survey through the focal points in ministries of health or other relevant ministries (The World Health Organization, 2022).

The Regulations of AP Need Estimation and Procurement in the MOH

The MOH estimates the need of the APs and tries to procure them. The first step is to estimate the need of AP by rehabilitation centers. There are 21 rehabilitation centers across 16 provinces: 6 centers in Baghdad, 3 centers in Kurdistan Region, and 12 centers in other 12 provinces. Then, they send the required numbers and types of AP to the Pharmacy Department at the related health directorate in their districts. Thereafter, the regional Pharmacy Departments will send the need details to the Need Estimation Department (NED), the Directorate of Technical affairs at the Ministry of Health (MOH) headquarter to conduct their calculation and sum up all the need from all the health directorates across the country provinces. The NED consults the experts and clinicians in the Consulting Committees' Department (at the MOH) about the numbers and types they received. The next step will be sending back the final numbers to the Pharmacy Department at regional health directorate to verify and confirm them. After getting the confirmation from the regional directorate, the NED will send the final numbers and types of needed AP to the KIMADIA to procure them.

Finally, the KIMADIA procures AP according to the available fund and send those AP to the regional directorate to distribute them to the rehabilitation centers. Unfortunately, due to the limited budget of KIMADIA, there is possibility of not securing all the needed AP. According to the Directorate of Operational and Emergency Medical Services (MOH), 33,542 of AP were distributed via the public rehabilitation centers across the country in 2021. Almost all (33, 360) the AP products were from the MOH (KIMADIA) in addition to 182 active folding wheelchairs were provided by the Red Cross. Most of these AP products included axillary / elbow crutches, chairs for shower/bath/toilet, canes/sticks, tripod and quadripod and manual wheelchairs for adults and children.

In Mosul City and due to the conflict between 2014 and 2017, there were over 300 cases of amputation and more than 5000 disabled people. According to a physiotherapist in the Mosul Rehabilitation Centre indicated, there were 19,000 requests for prosthetics in the province. Thus, the WHO in collaboration with the Government of Italy supported access to APs for people with physical disabilities in Mosul in April 2018. Additionally, local and international donors provided about 40,000 wheelchairs to Ninewa, Anbar, Salah Aldin and Kirkuk (WHO, 2018).

Iraq healthcare system receive inadequate funds from the federal government which has negative impact on the procurement of essential medicines and medical appliances to public sector facilities (Al-Jumaili, 2020). In line with the regional and global resolutions (EM/RC63/R.3 and WHA71.8) on improving access to assistive technology, the WHO developed a new model of AP service provision bringing services closer to people supported by a Training on Assistive Products (TAP). This model is less reliant on tertiary level, centralized services; and capitalizes on existing health system infrastructure, technology advancement and task sharing.

TAP is a WHO tool for building workforce capacity to provide simple assistive products through community and primary healthcare services, through a blended learning programme that includes online modules and in-country mentor support. The programme's specific objective is to build capacity for community-level AP service provision supported by a remote-support model.

Iraq Situation

It is widely known that Iraq has experienced wars and conflicts for more than four decades and that resulted in large number of disabled people in addition to the negative impact on its healthcare system. There are several departments at the Ministry of Health (MOH) dealing with disabled people such as the Department of Emergency Medical Services that has the Section for Prevention and Rehabilitation from Disability. This section oversees 21 disability rehabilitation centres and 24 artificial limbs' centers across the nation. Budget allocation to procure essential medicines and medical appliances were lower than in the Gulf countries. Thus, Iraq public healthcare setting have been experiencing a shortage in essential medicines in the last two decades (Al-Jumaili, 2020).

There are three ministries dealing with people in need for AP, in Iraq. First, the MOH as the main governmental stakeholder, who is in charge of policy, products and procurement, personnel and, in service provision. Second, the Ministry of Labour and Social Affairs (MoLSA) is responsible for the management of institutes providing services and training for disabled and senior people. Third, the Ministry of Higher Education (MoHE) who oversee the training of professionals involved in AP.

Luckily, there has been fruitful collaboration between the WHO and the MOH to assess the need to AP. Iraq was one of the countries worldwide where the TAP programme was piloted by the Ninawa Directorate of Health in collaboration with Humanity and Inclusion, with WHO support

(see next section). Due to the close connection with the community, primary healthcare (PHC) centres were involved in identifying potential users.

SOURCE: WHO. IRAQ SURVEY, BABEL CITY 2021

EXECUTIVE SUMMARY OF IRAQ NATIONAL REPORT

According to the Technical Affairs Directorate, Need Assessment Department, Medical Supplies Division, there are challenges facing the regulations and need estimation of assistive product (AP). They include absent of electronic patient registration, lack of accurate statistics for patients benefiting from AP.

The main results of the rATA survey in Iraq (2021):

- A total of 16.4% of the representative sample (nearly 1 out of 5) reported use of AP and 22.8% reported in need for AP.
- The met need of AP was reported by 10.1% of the participants while 12.7% had unmet need of AP.
- Among AP users, 51.4% reported some functional difficulties and 68.7% reported a lot of difficulties in their daily activities because of a health condition.
- Among people reported at least some functional difficulties, 38.2% reported met need while 28.7% reported unmet need of at least one AP.
- The AP access rate (met need/ need) was 44.3%.
- Among people with a lot of functional difficulty or totally dependent on AP-in-one or more functional domains, the unmet needs of AP were 54.4% and 88.6% respectively.
- The most common APs were spectacles (63.9%) among all reported products in use, axillary / elbow crutches (14.2%), chairs for shower/bath/toilet (11.3%), magnifiers, optical (9.3%), canes/sticks, tripod and quadripod walking stick (8.8%), manual wheelchairs - push type (7%), manual wheelchairs - basic type for active users (4.1%), hearing aids (digital) and batteries (3.9%), wheelchairs, electrically powered (3.1%), pill organizers (3.0%), and grab-bars / hand rails (2.3%).
- About two-thirds (67.7%) of APs in use were obtained from the private sector and 24.7% were from family and friends, while public sector contributed to 6.6% and non-governmental organizations contributed to 2.6%.
- Two-thirds of APs in use (64.8%) were paid out-of-pocket and 29.8% were paid by friends and family.
- Most AP users were satisfied with their products (68.3%), assessment and training (53.4%), and maintenance and repair (78%).

- Most AP users felt that their products were suitable with their home environment (60.3%), participation in activities (61.2%) and public environment (52.3%).

EXECUTIVE SUMMARY OF NINEWA GOVERNORATE REPORT

In the "Framework for action on advancing universal health coverage[1] (UHC) in the Eastern Mediterranean Region"(WHO, 2016) , countries are called to take actions to strengthen the health system to achieve UHC, which includes improving access to assistive product (AP). Ensuring access to assistive technology is central to progressing towards universal assistive technology coverage, which means that everywhere everyone receives the assistive technology they need without financial hardship. While originally plan for Mosul city, the overall process of piloting the Regional strategic action framework, was extended to cover the entire Ninawa Governorate.

The AT capacity assessment in Ninawa Governorate (Iraq) was done by two (2) consultants, in collaboration with the Iraqi Ministry of Health and with the support of WHO. The overall process of started on July 9th (launching the Assistive Technology Capacity Assessment (ATA-C) in Ninewa Governorate) and ended on December 20th, 2019. The aim of the AP capacity assessment was to assess the current state of the assistive technology in Ninewa Governorate. The assessment findings could be used to guide the authorities, in building out systems for AP financing, procurement and provision in Ninewa Governorate, by mapping and identifying gaps in the current provision.

The main findings of the assistive technology capacity assessment in Ninewa Governorate are:

- In Ninewa Governorate, the lack of statistics, data and the absence of a comprehensive information system on assistive technology within the governorate, hamper the development of appropriate solutions to improve access to assistive products.
- The absence of a coordinating government body or committee with oversight over assistive technology activities hampers the development of the sector. Provision of different types of assistive products is shared among different department of the Directorate of Health (DoH) and among different government institutions (Department of Labor and Social Affairs, Ninewa Governorate Provincial Council), with some products not being covered (i.e. vision assistive products) and with no clear demarcation of the roles and responsibilities of each;

[1] Universal health coverage means that all people have access to the health services they need, when and where they need them, without financial hardship. It includes the full range of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care(WHO, 2022).

- Residents of rural areas need to travel to Mosul to obtain the disability card (and to obtain assistive products) which not only limit access to services but increase financial burden (transport cost) for those needed services.
- In Ninewa Governorate availability of products rely strongly of donations from non-government not-for-profit organizations.
- Several needed priority assistive products are not available in the governorate.
- The lack of trained specialists and rehabilitation professionals is one of the main challenges in accessing quality assistive products and its related services in Ninewa Governorate.
- Several factors limit both access to and the provision of assistive products in Ninewa Governorate including the centralization of service provision in Mosul, the lack of appropriate infrastructures and equipment within these infrastructures, the lack of products, and the lack of referral system.

Assistive Technology Capacity Assessment (ATA-C) in Ninewa Governorate

The assessment looks at four of the five "Ps": Policy, Products, Personnel and Provision and try to estimate the needs according to information available. To progress towards universal AP coverage within Ninewa Governorate, meaning that everywhere everyone receives the assistive technology they need without financial hardship, efforts are required in the four interlinked blocks. Based on the four strategic objectives of the "Regional Framework on Improving Access to Assistive Technology in the WHO Eastern Mediterranean Region"(Mediterranean, 2022) and the findings of the assistive technology capacity assessment (ATA-C) in Ninewa Governorate, the Ninewa report proposes an action plan which includes a series of actions and activities.

Proposed Action Plan to Improve access to assistive technology in Ninewa Governorate, Iraq, 17 December 2019

The vision of the strategic action framework is that all people living in the Region have access to all the assistive products they need to fully enjoy all human rights and fundamental freedoms, while the goal is to improve access to safe, effective, and affordable priority assistive products in the countries of the Region.

The proposed Action Plan was discussed and finalized during a "Consultative Workshop on the Action Plan to Improve Access to Assistive Technology in Ninewa" which was held on December 16 and 17, 2019. The workshop brought together 25 participants representing the Ministry of Health (Baghdad), the Ninewa Directorate of Health, the Special Needs Care Department, the private service providers, and the non-governmental organizations.

During the workshop, the participants discussed the different actions and activities proposed, amended them when necessary and proposed who should hold the main responsibility in ensuring the implementation of the activities and who could contribute to implementation. In addition, the participants proposed a timetable for the implementation of the activities and prioritized the actions.

The strategic action framework identifies four strategic objectives as key for improving access to AP.

Proposed Actions

- Strategic Objective 1-Policy: Advancing the policy framework for the progressive realization of universal assistive technology coverage.
- Strategic Objective 2-Products: Increasing the supply of high-quality, safe, effective, and affordable assistive products.
- Strategic Objective 3-Personnel: Improve the availability of qualified personnel at all levels.
- Strategic Objective 4-Provision: Expand the coverage of services for the provision of assistive products (AP) in Ninewa Governorate.

Source: The WHO. Iraq rATA survey, 2021

Source: The Directorate of Operational and Emergency Medical Services, Iraqi MOH

Objectives of rATA in Iraq

The main objectives of the current report were to present the rATA findings, Progress Indicators results and provide some recommendations based on these outcomes.

The rATA was implemented in a nationwide and representative AP survey in Iraq in 2021.

The objectives of the rATA survey were to 1) assess the use, sources, payers, satisfaction, need and unmet need of AP in the population of Iraq, and 2) to identify the barriers to access AP in the country. Other objectives included 3) planning of a national AP program and 4) raise the awareness of society and local communities about the significance of AP.

Pictures source: The Directorate of Operational and Emergency Medical Services, Iraqi MOH

METHODOLOGY

Rapid Assistive Technology Assessment (rATA)

The WHO has developed a household survey to support countries in obtaining data to understand the need, unmet need, and the barriers to accessing AP in the population. To meet the objective of obtaining data on need and unmet need for AP in a country's population, a national representative sample was collected (WHO, 2021a).

Survey context

Six governorates including 36 cities/districts were involved in the survey which represent all the regions of the country: Basra in the south of Iraq, Baghdad (the capital) and Babylon in the middle, Ninewa and Kirkuk in the north in addition to one governorate from Kurdistan (Erbil)(Table 2). The total population of these governorates is about 53% from the total population of Iraq. The number of enumerators (surveyors) involved in the rATA survey in Iraq was 124.

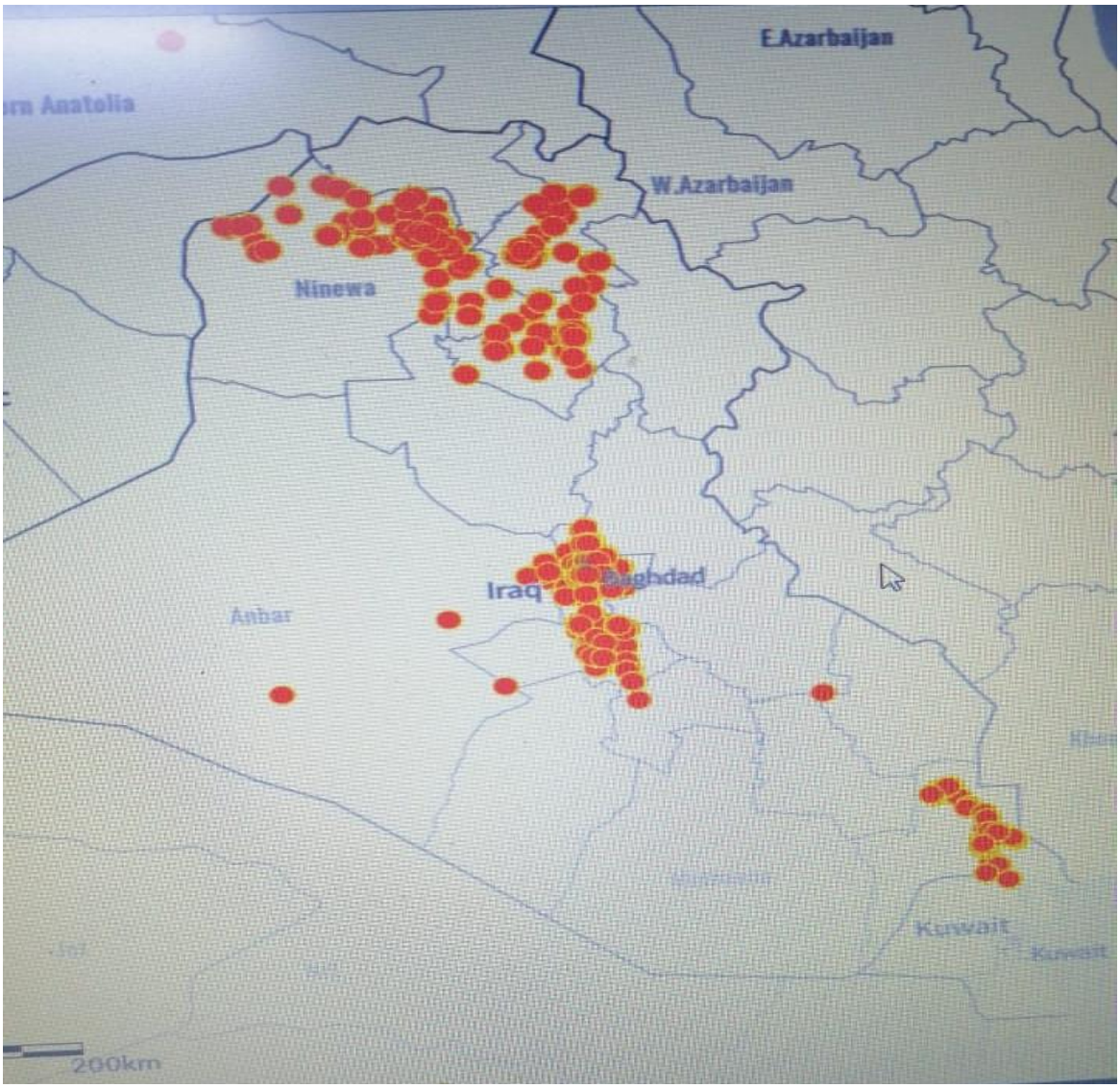
Sample size

The sampling of the geographical areas was random to be nationally representative. The selection of families within each area was also according to random sampling. All members of the selected households were interviewed. The sample size was 13,400 (267 clusters, each cluster ≥50 people). The clusters were selected randomly (Table 1). The Iraqi rATA survey committee (Biostatistics Department, MOH) decided the distribution of the sample across the governorates (provinces), districts, villages according to the population size there. The assumption of a probability of the need for AP was 50% in the population of each district with the confidence level of 95% and the precision of 10%. The survey tool was tested in the field between June 30 and July 1, 2021. The data was collected between July 4 and July 8, 2021.

Table 1: Sample size from the participating provinces

Governorate/ District	No. of surveys	No. of Enumerators	No. of days	No. of Surveys per each enumerator
1.**Babel**/ City Center	550	6	5	35
Mahawell	231	2	4	29
AlHashmia	312	3	3	35
AL-Musaib	257	3	3	29
Total	1350	12	5	128
2. Erbil/ Center	574	4	5	29
Shaqlaw	290	4	2	36
Dashti Hawler	212	3	2	35
Kuisanjak	205	2	3	35
Suran	139	4	1	35
Total	1420	17	5	170
3. **Baghdad**/ Al-Rusafa Center	1179	9	5	30
Al-Adhamia	641	4	5	32
Second-Sader	328	3	4	28
First-Sader	461	4	4	29
Madaan	300	3	4	25
Al-Zuhoor	575	4	5	29
Total	3484	27	5	173
Baghdad/ Al-Karkh Center	1038	9	5	30
Al-Mahmodia	315	3	3	35
Abo-AlGareb	214	2	4	27
Al-Tarmia	95	1	3	32
Al-kathamia	154	1	5	31
Total	1816	16	5	155
4. **Ninewa**/City center	1241	8	5	36
Al-Hamdania	205	2	3	35
Talkif	189	2	3	32
Makhmoor	253	3	3	29
Sinjar	212	3	3	36
Talhafar	330	3	4	28
Total	2430	21	5	196
5 **.Kirkuk**/City Center	712	7	5	29
Haweja	184	2	3	31
Daqkak	60	2	1	30

Dabis	44	2	1	23
Total	1000	13	5	113
6 . **Basrah**/City Center	835	6	5	34
Abi-Alkhaseeb	146	2	2	37
Al-Zubir	334	3	4	28
Al-Qarna	117	2	2	30
Shat-AlArab	209	2	3	35
Al-Madina	259	3	3	29
Total	1900	18	5	193
Grand Total	13400	124		



The six Iraqi provinces included in the Assisted Technology Survey, 2021

Survey planning and data

Collection process

Obtaining data on need and unmet need of AP in the population of the country, through a national representative sample, is a prerequisite for developing a national AP programme, benefitting everyone, everywhere. Validated Arabic version (2021) of the survey was used (WHO, 2021b).

According to Iraq Deployment Plan, the data collection exercise being conducted during 2020–2021 has provided the baseline understanding of AP access that contributed to the development of the Global Report on Assistive Technology (GReAT). The data collection is being done using WHO's rATA survey tool (WHO, 2021b). A digital data collection tool for mobile devices has been developed to support field data collection.

Deploying rATA: The steps was following the national deployment plan which was built on the rATA global deployment guide and was as following:

Engage with key actors:

The WHO country offices (WCO), regional offices (RO) and WHO Headquarters (WHO HQ) have worked closely with MOH-Iraq to provide technical guidance and support throughout the process. The MOH had appointed a National Data Coordinator (NDC) selected from within the MOH based on TOR shared by the WHO. The NDC attended a master training was organized by WHO HQ in the period from (8-10/2/2021) (WHO, 2021a).

Establish work procedures

The NDC conducted regular meetings with group of experts (11 members) that established steering committee to advice and support in the planning for implementing rATA survey in Iraq.

Recruit or subcontract the research group or agency

The practical implementation of the data collection was conducted by MOH-Iraq through Health and vital Statistics Department by nominating qualified staffs from DOHs in each governorate that was surveyed to be trained and supported.

Translate rATA questionnaire

The rATA survey instrument (questionnaire) was available in Arabic, which is the official language of Iraq.

Data handling

Data was automatically transferred from the data collection devices to the server at WHO HQ. The NDC made sure that guidance on input of region, 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 *rATA manual* and in the master training for NDCs. The WHO HQ has analysed the data to be presented in the GReAT (Zhang, Eide, Pryor, Khasnabis, & Borg, 2021).

Data analyses

To meet the objectives of the survey, the following indicators were extracted from the data.

1) The current use of AP in the population; 2) The need, met and unmet need of AP in the population; 3) The rank of APs in use and with unmet need; 4) The source and funding to obtain APs in the country; 5) Users' satisfaction about their products and related services (Zhang et al., 2021).

The data analyses estimated percentages of respondents that reported currently using APs and that reported unmet need of APs among all the respondents and among the respondents that reported having functional difficulties. The need of AP was the sum of the met and unmet need of AP. The met need of AP was estimated by the percentage of respondents reporting use of at least one AP and not reporting unmet need of any AP. However, the unmet need of AP was estimated by the percentage of respondents reporting unmet need of any AP. Further analyses investigated the current use and unmet need of AP per age group, gender and living environment. The analyses also presented the rank of APs in use and with unmet need by the respondents. The distribution of providers and funding sources of APs; the distribution of reasons for not having the APs needed and the distribution of satisfaction of products and services reported by the respondents that currently use Aps (HSA, 2021).

Picture Source: Ali Qais, Raise Your Voice

RESULTS AND DISCUSSION

The Results of Progressive Indicators of AP in Iraq, 2021

Table 2 shows the responses of the focal point from Iraqi Ministry of Health (MOH), Department of Biostatistics regarding the progress indicators of AP products in 2021. It was confirmed that there is a separate national legislation on AP in place that helps improve access to AP for people in need. People with difficulties in hearing and mobility are partially covered by the national legislation on AP. No finances for AP in the latest public budgets at the Defense or other ministries (except the MOH). KIMADIA at the MOH procures APs as part of the medical appliances. In other words, no fixed budget is allocated for procuring APs; hence, the supply of APs varies from year to year. The MOH and Ministry of Defense are responsible for ensuring or improving access to AT in Iraq. Hearing and mobility AP services in Iraq have an adequate number of trained human resources at all levels of health and social service delivery. Additionally, there is education or training covering the assessment, fitting and user training of hearing and mobility AP products in Iraq. Public healthcare sector at national level fully or partly covers users' costs for accessing AP. Iraq has national regulations, standards, guidelines, or protocols in place in the following areas: Safety of AP products, procurement of AP products, delivery of AP services, and qualifications of AP providers. Finally, the AP-related areas Iraq currently promotes, facilitates, supports, or invests in at national level including the followings: Product affordability, product development, product procurement, service delivery capacity, collection of data on population-based needs for products, information to users and their families, participation of users in planning and monitoring services and international collaboration on manufacturing, procurement or supply of AP products.

Table 2: The results of progressive indicators of AP in Iraq, 2021

Main section	Sub questions	Answers
Q1 - Does your country have one or more national legislations in place that ensure or help improve access to assistive technology for people in need?	Region	EMRO
	What is your Country?	Iraq
	A separate legislation on assistive technology	Yes
	Have at least one legislation on AP?	Yes
Q2 - Who is covered by the national or other legislation(s) marked in response to Question 1?	People with difficulties in Hearing	yes
	People with difficulties in Mobility	Yes
	Coverage proportion	Partial coverage
Q3 - Were finances in the latest public budgets at national level allocated for the provision of assistive technology?	In the budget for defense (or similar)	No
	In other budgets	No
Q4 – Which ministries/authorities are responsible for ensuring or improving access to assistive technology?	Health (or similar)	Yes
	Social (or similar)	No
	Education (or similar)	No
	Labor (or similar)	No
	Defense (or similar)	Yes
	Have at least one responsible ministry/authority for AP?	Yes
Q6 - For what assistive technology services does your country have an adequate number of trained human resources at all levels of health and social service delivery?	Hearing	Yes
	Mobility	Yes
	Coverage proportion	Partial coverage
Q7 - Is there education or training covering the assessment, fitting and user training of assistive products in your country?	Hearing	Yes
	Mobility	Yes
	Coverage proportion	Partial coverage
Q8 - Which of the following measures does your country have in place at national level to fully or partly cover users' costs for accessing assistive technology?	Public (insurance) schemes	Yes
	Have at least one financial coverage measure?	Yes
Q9 - In which of the following areas does your country have national regulations, standards, guidelines or protocols in place?	Safety of assistive products	Yes
	Procurement of assistive products	Yes
	Delivery of assistive technology services	Yes
	Qualifications of assistive products providers	Yes

	Have at least one standard/regulation on AP?	Yes
Q10 -Which of the following assistive technology-related areas does your country currently promote, facilitate, support or invest in at national level?	Product affordability	Yes
	Product development	No
	Product procurement	No
	Service delivery capacity	Yes
	Collection of data on population-based needs for products	Yes
	Information to users and their families	Yes
	Participation of users in planning and monitoring services	Yes
	International collaboration on manufacturing, procurement or supply of products	Yes
	Have at least one initiative in AP related areas?	yes

The rATA Survey Results and Discussion

In total, 13,400 respondents were interviewed, out of which, 12,021 respondents' data were included in the data analysis. The participants were from six (mostly highly populated) provinces: Baghdad (Al-Rusafa and Al-Karkh), Nineveh, Basra, Erbil, Kirkuk, and Babel (Table 1). More than half of the participants were young people particularly 18-29 years (N=3,349), 30-39 years (N=2,070) and 5-17 years (N=2,042) from urban areas (Figure 2). It was accounted for the cultural sensitivity by training female enumerators and making sure that teams were composed of male and female enumerators.

Thus, there were comparable percentages of the participants from both genders (52% men vs 48% women) (Figure 3).

Some participants (ranging from 3.6-19%) had sort of limitations in their daily functions. The highest limitation was in seeing (19%), followed by mobility limitation (15.5%), while the lowest limitation was in communicating 3.6% (Figure 4).

A total of 16.4% of the representative sample reported use of AP and 22.8% reported in need for AP. The met need of AP was reported by 10.1% of the participants while 12.7% had unmet need of AP. The percent (≈ 10%) of met need of AP in Iraq is similar to that in the Global and Regional WHO reports. The AP access rate (met need/ need) was 44.3% among the participants. In other words, more than one-fifth of the participants needed AP products while less than half had access to them. The main barriers to access could be at governmental level (KIMADIA, MOH) and affordability at personal level. The KIMADIA has a limited budget of ≤ US $ 1.0 billion a year to procure essential medicines and medical appliances including AP products for public healthcare settings across the 18 provinces (Ali Azeez Al-Jumaili, 2021; The Ministry of Health, 2022).

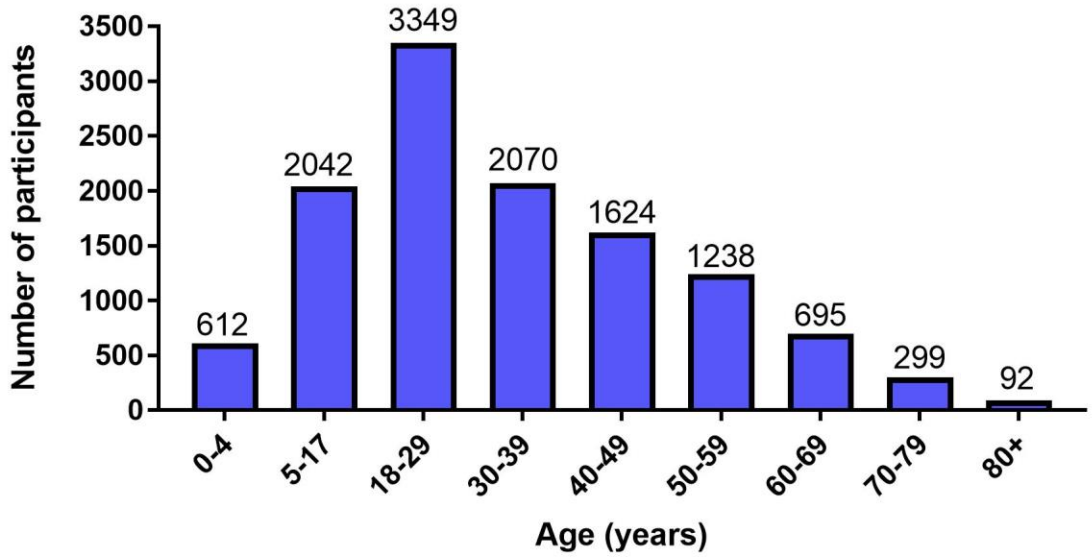


Figure 2: The age distribution of the survey participants in years

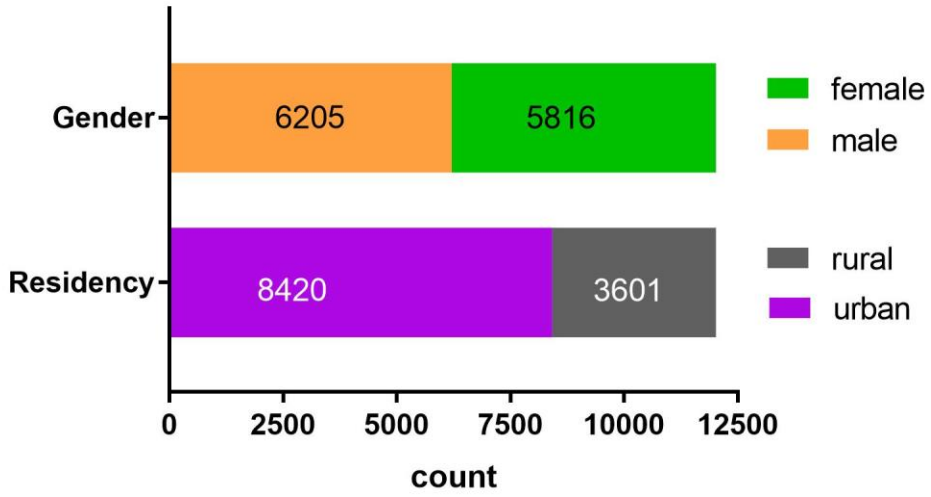


Figure 3: The distribution of the participants according to their gender and residential areas.

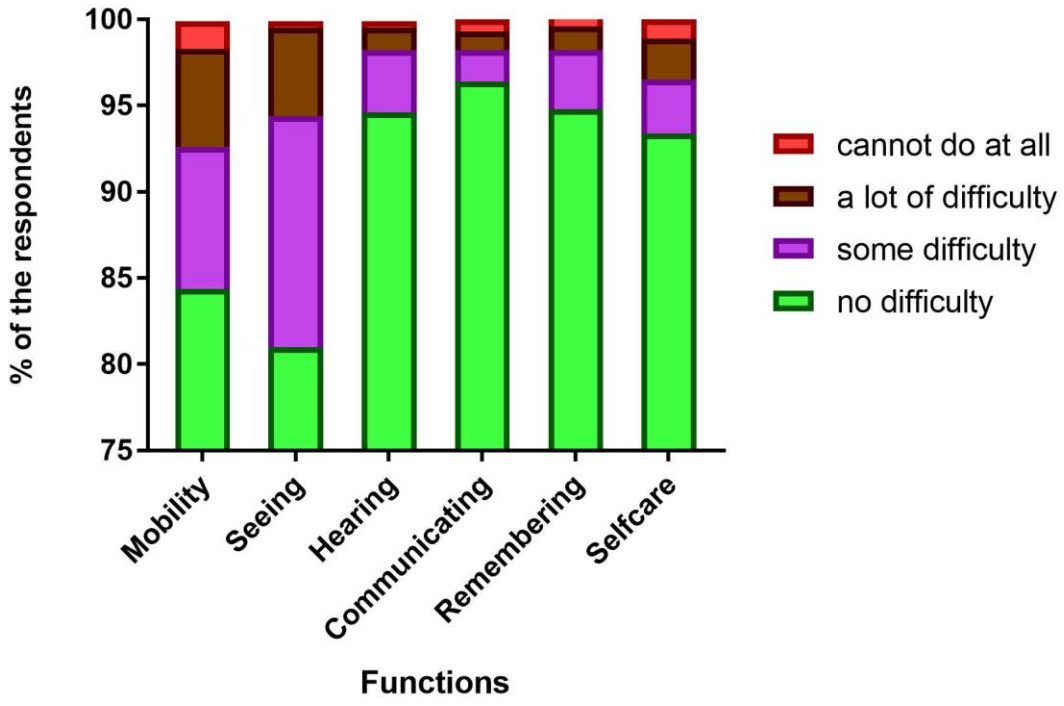


Figure 4: The percents of limitations in daily functions among the participants

The key indicators of the rATA survey are:

The prevalence of AP need is the sum of the prevalence of met and unmet needs; where the prevalence of met need is the proportion of a population using APs that do not need new or additional APs. The prevalence of unmet need is the proportion of a population that need new or additional APs regardless of whether they are already using APs (The World Health Organization, 2022).

Among AP users, 51.4% reported at least some functional difficulty (47.25- 68.7%) without the use of any APs (because of a health condition). On the other hand, among those who were in need, 91.9% had at least some functional difficulty (67-95.5%) without the use of any APs. The limitation in daily functions (cannot do at all) were the highest among those in need of AP (95.5%) and those with unmet need (88.6%) (Figure 5-A). Figure 5-B shows the prevalence of use, need, met need, and unmet need for APs by function limitation without spectacles. The percentages of these AP need, use, and met need are lower in after excluding spectacles since

spectacles represent the highest AP in use, need and met need. This confirms that people who need AP suffer from significant limitations in their functional activities when they do not have the required AP.

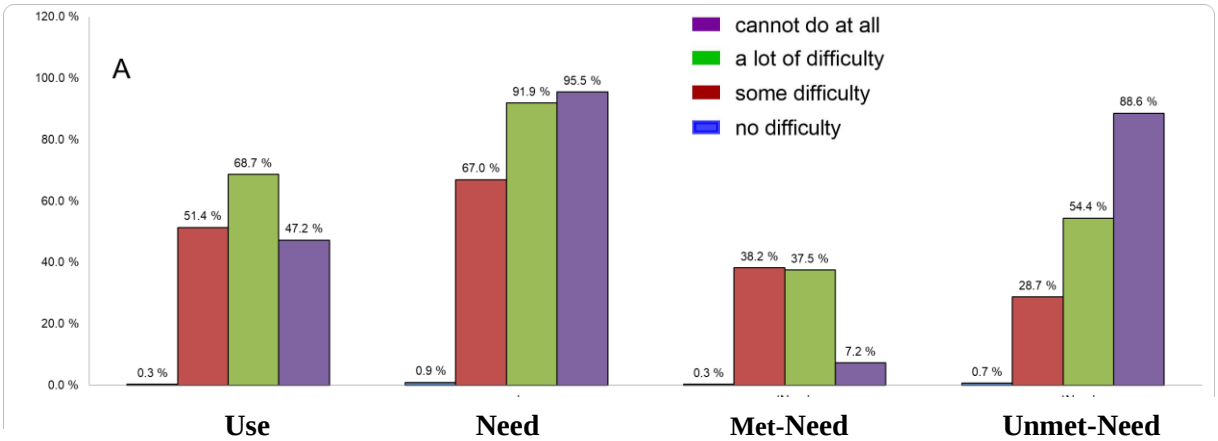


Figure 5-A: The prevalence of use, need, met need, and unmet need for assistive products by function limitation with spectacles

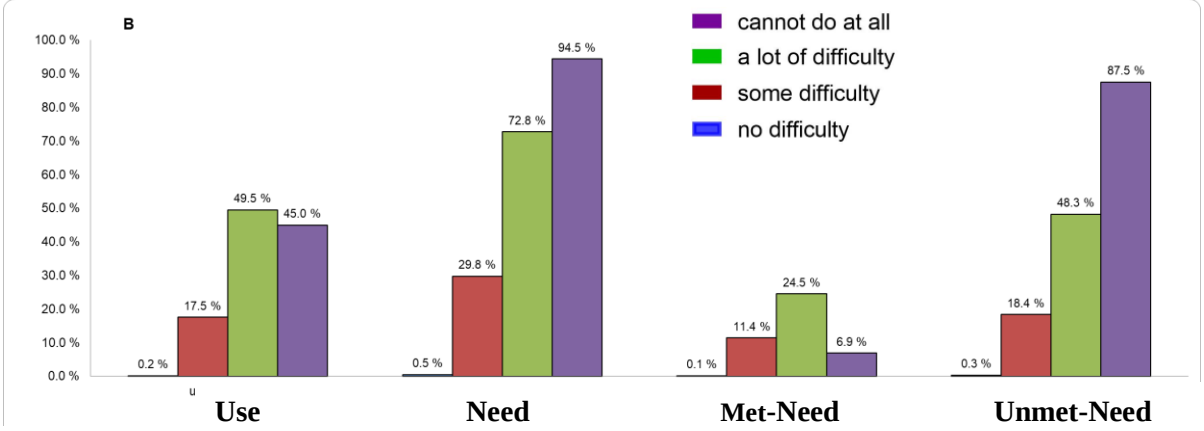


Figure 5-B: The prevalence of use, need, met need, and unmet need for assistive products by function limitation without spectacles

The participants from urban areas had higher prevelance of AP use, need and met need compared to the participants from rural areas. On the other hand, the rural area participants had higher prevelance of unmet need (13.3%) compared to urban area participants (12.4%) (Figure 6-A). Figure 6-B shows the prevalence of use, need, met need, and unmet need for assistive products in populations living in urban and rural areas after excluding spectacles. The percentages of these AP need, use, met need and unmet need are lower in after excluding spectacles since spectacles represent the highest AP in use, need, met need and unmet need.

In other words, rural areas had larger shortage in AP supplys compared to urban areas. Addiitonally, the people in rural areas have lower access rate compared to people living in urban areas (Figure 6-C). This may be due to the rehabilitation and artificial limb centers which are responsible for distibuting AP products are usually located in the cities. For example, Baghdad (the capital) has more than 7.0 million people conaining six rehabilitaion centers (two in Al-Karkh side and four in Al-Rusafa side) and four centers for artificial lims (one in Al-Karkh side and three in Al-Rusafa side). Ninewa with more than 3.0 million people contains only one rehabilitation center and one artificial limb center (Directorate of Operations and Medical Services, MOH).

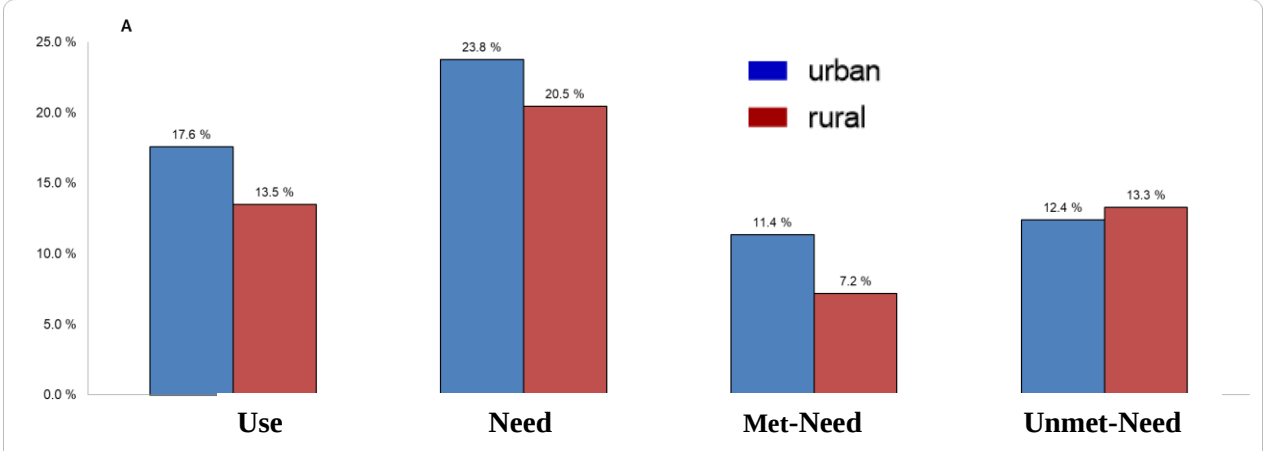


Figure 6-A: Prevalence of use, need, met need, and unmet need for assistive products in populations living in urban and rural areas with spectacles

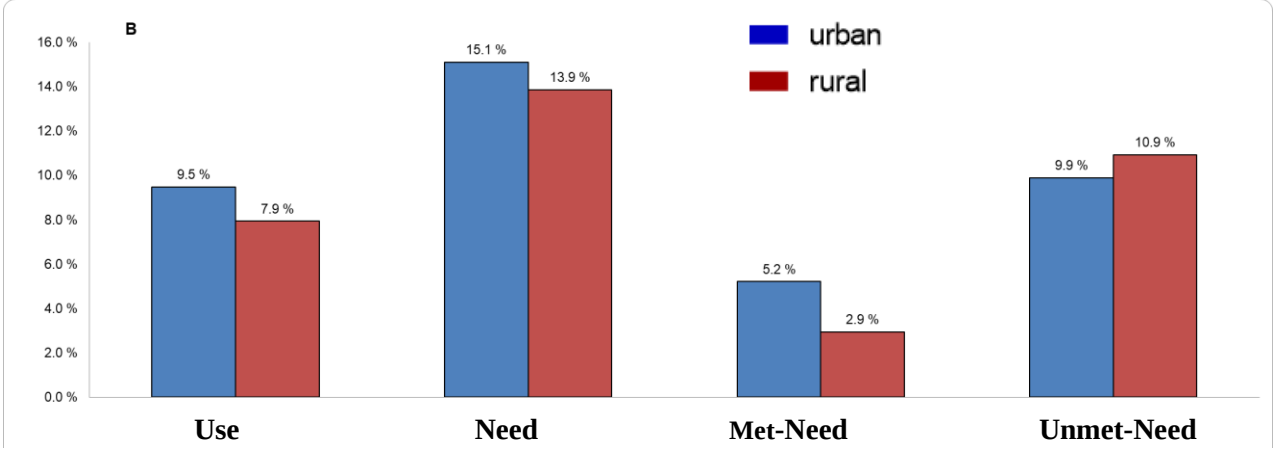


Figure 6-B: Prevalence of use, need, met need, and unmet need for assistive products in populations living in urban and rural areas without spectacles

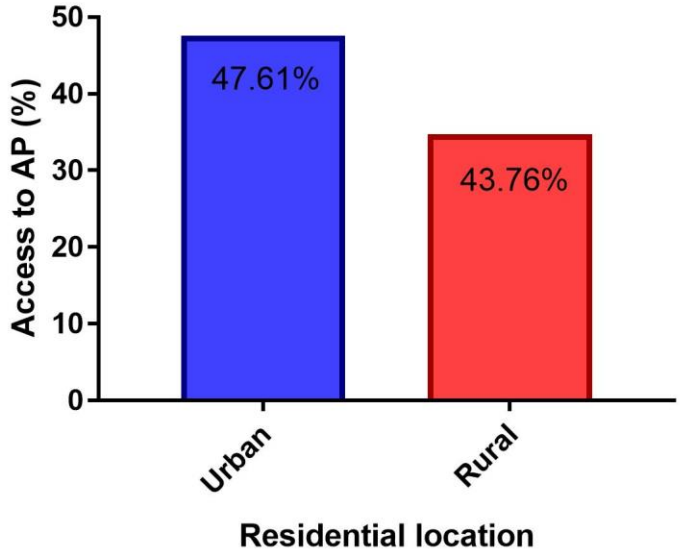


Figure 6-C: The access rate (%) to assistive devices according to the participants' residential location

In general, the prevelance of use, need, met and unmet need to APs have been increasing after the age of 40 years old. The age of 70 years and elder had the highest percentages of AP users (60.8-66.4%%). More than half (50.5-93.8%) of those with 50 years and elder were in need to APs. Approximately one-third (33.7%-38.3%) of those between 60 and 79 years old had unmet need of APs (Figure 7-A). Figure 7-B shows the prevalence of use, need, met need, and unmet

for APs per age group after excluding spectacles. In other words, senior people are more in need to APs; thus, they are more vulnerable to unmet need of APs which negatively impact their daily activities and quality of life. Similar results have been reported by the Baseline Survey in Pakistan (HSA, 2021). Regarding to the APs access, children four years and lower have the lowest access rate (9.1%) and the participants between 5 and 40 years also have low access rate to APs (30.4% -40.5%). Likewise, elderly 80 years and above also have low access to APs (31.5%) (Figure 7-C).

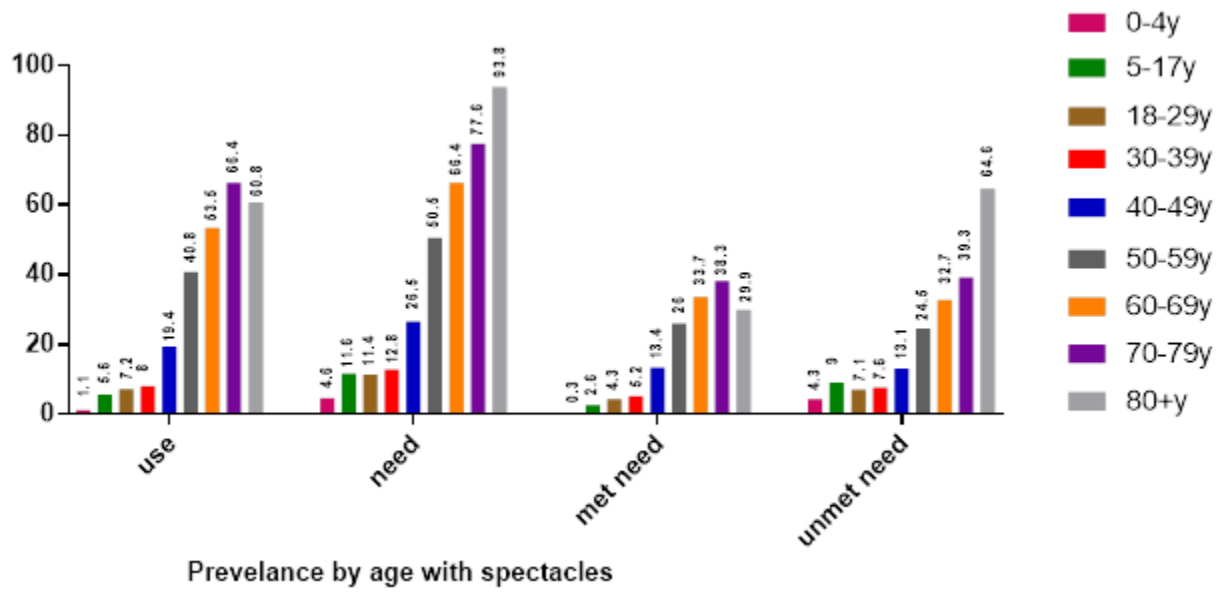


Figure 7-A: Prevalence of use, need, met need, and unmet for assistive products per age group with spectacles

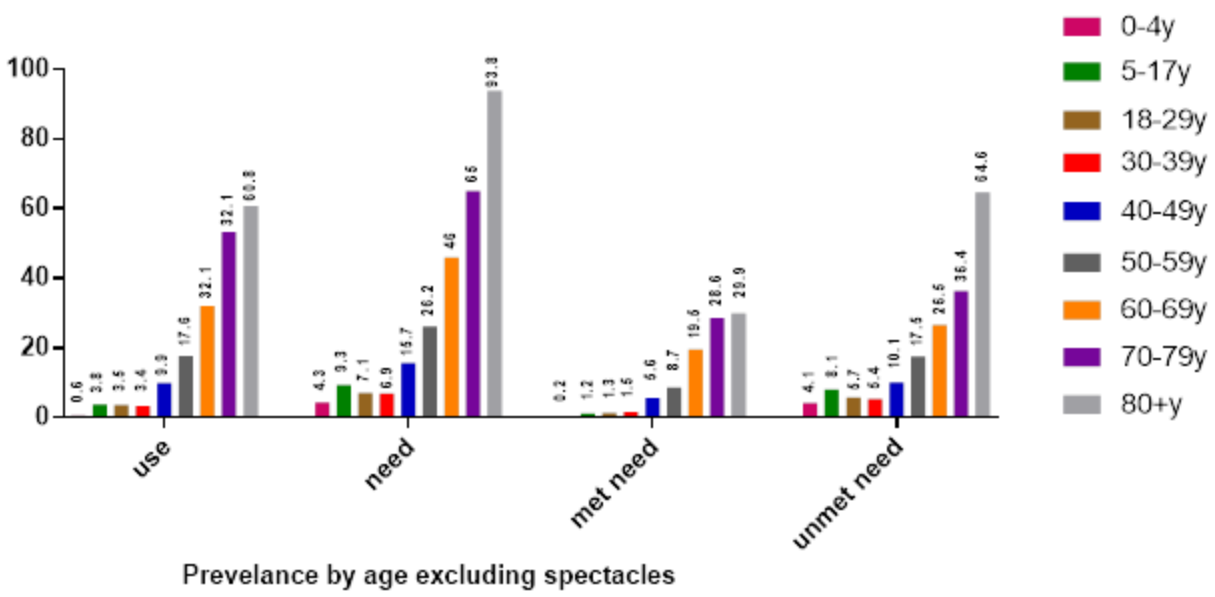


Figure 7-B: Prevalence of use, need, met need, and unmet for assistive products per age group without spectacles

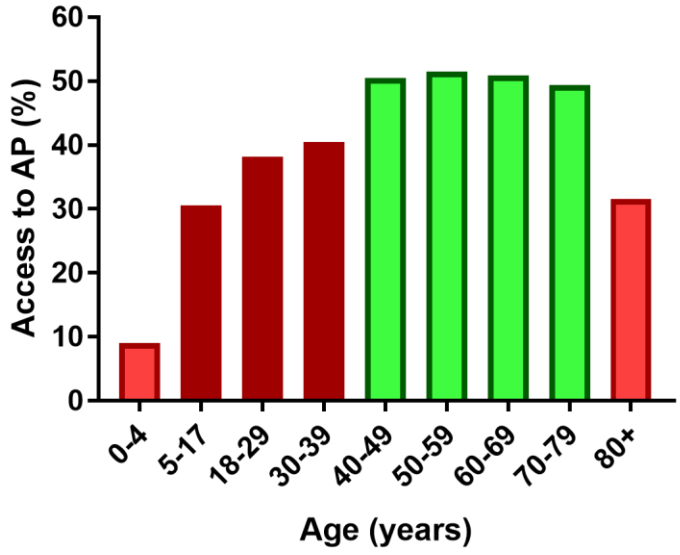


Figure 7-C: The access rate (%) to assistive devices according to the participants' age categories

The percentages of AP use, need, met need and unmet need were higher in male compared to female participants. For example, 18.7% of male used APs compared to 13.9% female. One-quarter (25%) of male and 20.5% of female were in need to APs while 13.8 % of male had unmet need compared to 11.5% female (Figure 8-A). Figure 8-B shows the prevalence of use, need, met need, and unmet need for assistive products by gender after excluding spectacles. The percentages of these AP need, use, met need and unmet need are lower in after excluding spectacles since spectacles represent the highest AP in use, need, met need and unmet need. More men are need of APs may be because there was higher percent of disabled among men who may represent the majority of conflict and explosion victims (Alaa AlAlwan, 2019). In contrast, Pakistan has higher percent of women in need to APs compared to men (HSA, 2021). In fact, both genders in Iraq have comparable access rate to APs (Figure 8-C).

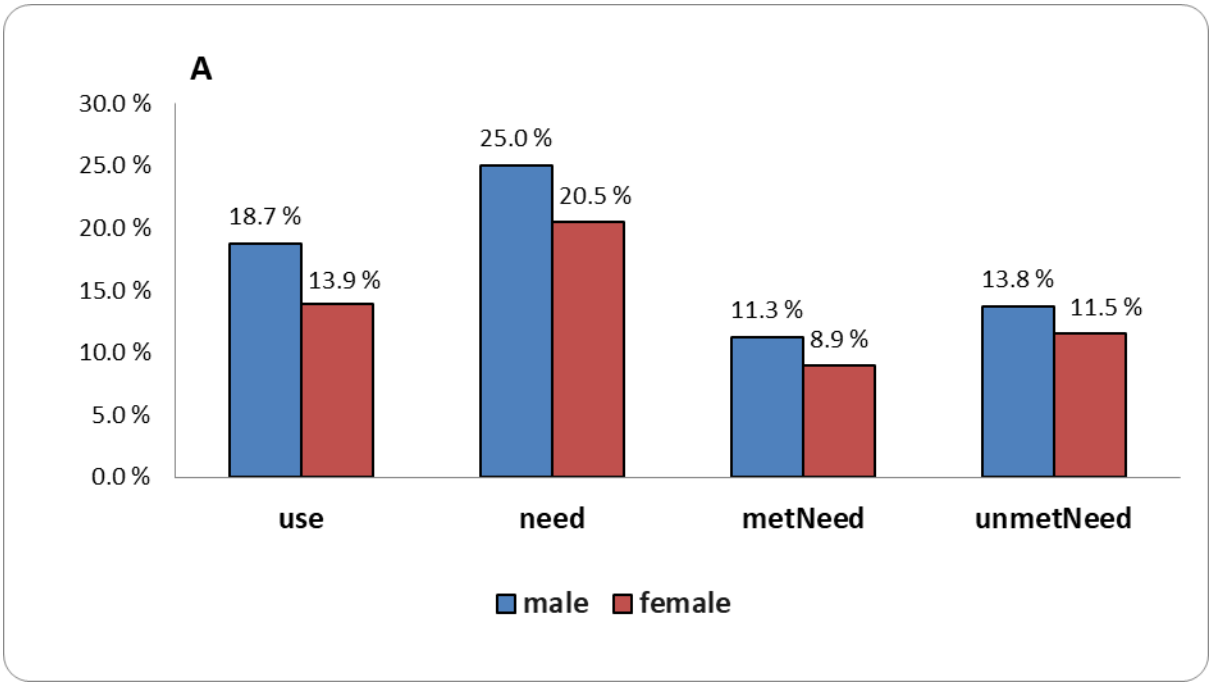


Figure 8-A: Prevalence of use, need, met need, and unmet need for assistive products by gender with spectacles

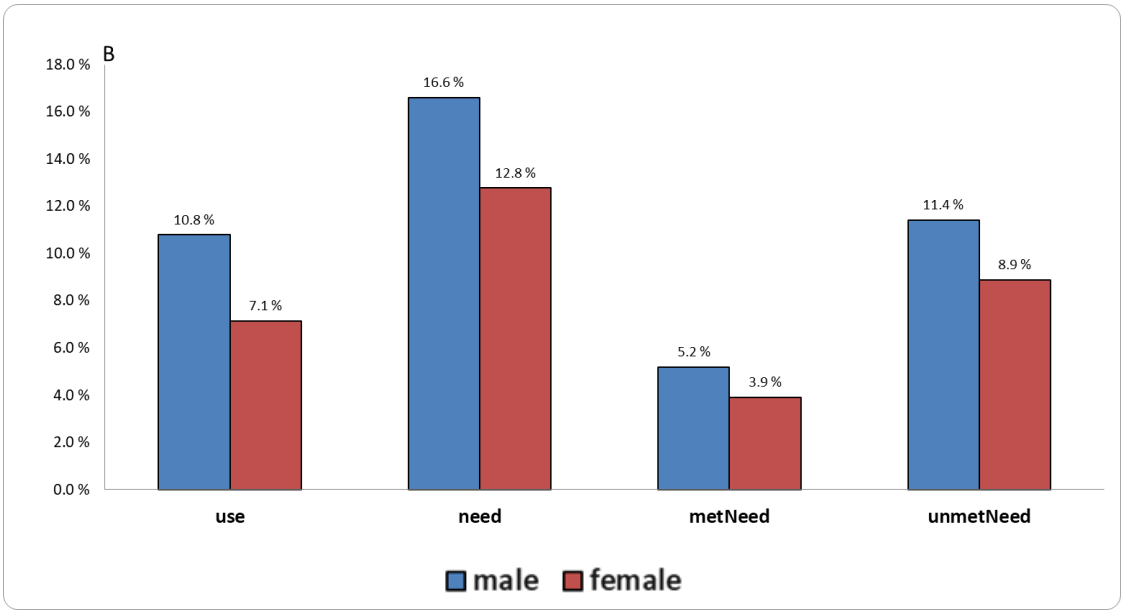


Figure 8-B: Prevalence of use, need, met need, and unmet need for assistive products by gender without spectacles

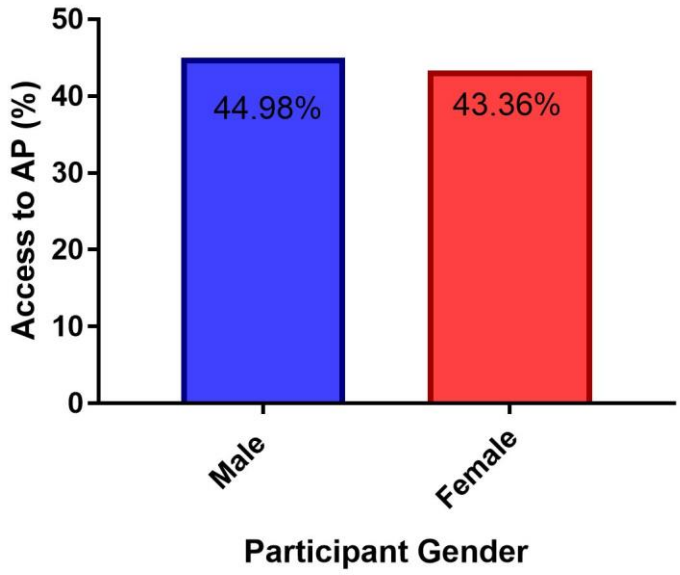


Figure 8-C: The access rate (%) to assistive products (met need/total need) according to the participants' gender

Including spectacles, 64.8% of APs in use were paid out-of-pocket and 29.8% were paid by friends and family while the government and NGO paid for 5.4% and 2.5% of them respectively. Excluding spectacles, the main source of funding was also out-of-pocket (57.6%) followed by friends and family (31.2%), governmental (10.1%) and NGO (4.8%)(Figure 9). The majority of APs were paid out-of-pocket because the shortage in the supply via governmental settings. It is worth mentioning that spectacles are not provided by the MOH settings. Again, KIMADIA with a limited budget is responsible for procuring APs. For example, KIMADIA was able to secure 60% of the essential medicines due to inadequate federal fund in 2019 (Al-Jumaili, 2020). Lack of private and public health insurance systems also force people in need of AP to pay out-of-pocket.

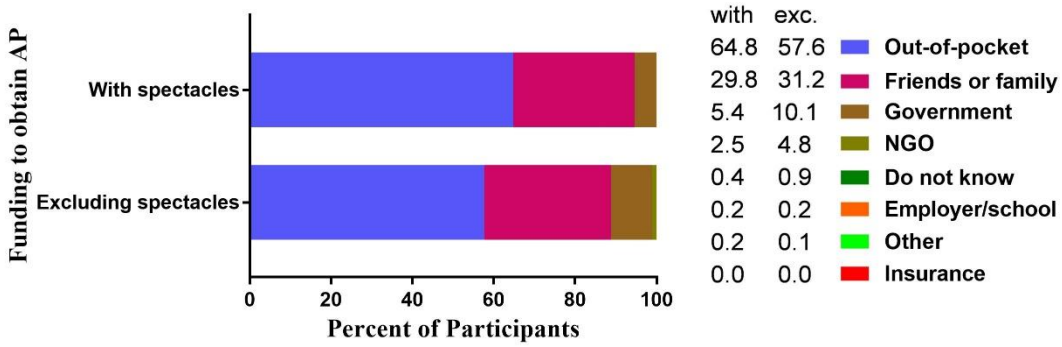


Figure 9: Funding for obtaining assistive products

About 68% of used APs including spectacles were obtained from the private sector and 24.7% were from family and friends, while public sector contributed to 6.6% and non-governmental organizations contributed to 2.6%. Regarding APs excluding spectacles, 58%, 27.3% and 12.2% were obtained from the private sector, friends and family and the public sector respectively (Figure 10). More than half of people in need of APs purchase them from private medical appliances' stores since they are unavailable in public (governmental) sector. People in need may prefer to purchase AP, particularly those with affordable costs such as crutches from the private sector rather than waiting months to get them from the MOH for free. However, they may wait longer to get more expensive AP such wheelchairs. It is worth mentioning that the private sector does not subsidize the cost of these APs and people in need must pay full amount in cash to get them.

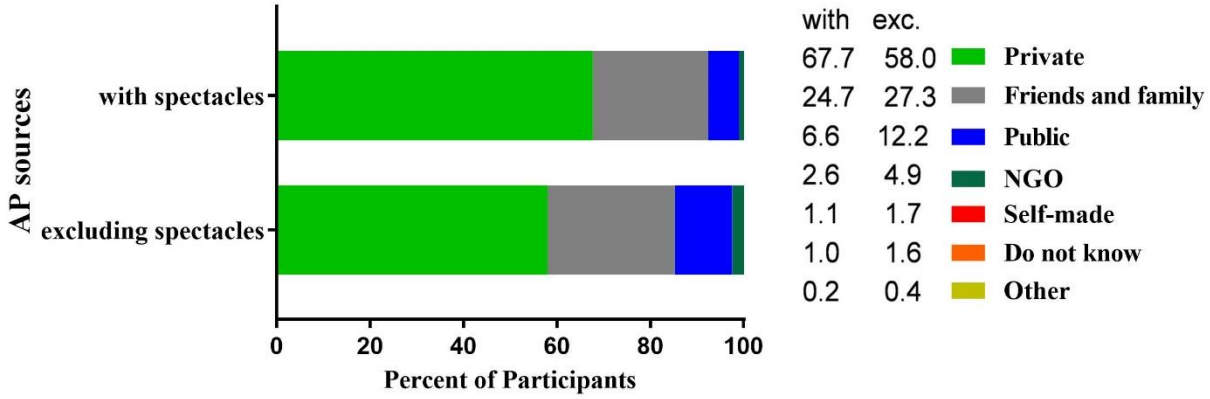


Figure 10: The sources of assistive products according to the participants

More than two-thirds (72.1%) of the participants needed to travel less than 25 kilometres (Km) to obtain APs including spectacles. Some participants (15.9%) needed to travel 26-50 km and small percent (4.5%) had to travel 51-100 km to obtain APs. Likewise, 36% and 32.7% needed to travel 6-25 km and less than 5 km, respectively to obtain APs excluding spectacles. Lower percent (18.6%) of participants needed to travel longer distance (26-50 km) to obtain APs excluding spectacles (Figure 11). Short distance travel is needed to get APs because most of them are available in the private sector within the cities and public rehabilitation centers are also located inside the cities given that most people in AP need live in urban areas.

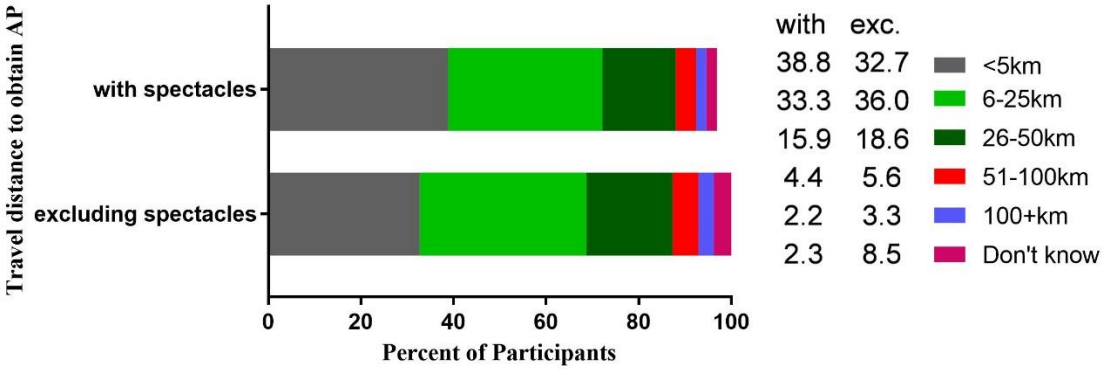


Figure 11: The travel distance required to get the assistive products

The main barriers facing people in need to obtain ATs including spectacles were inability to afford ATs (31%), no support (17.4%), unavailability of ATs (8.2%), no time (4.4%) and stigma (4%). Similarly, the main barriers facing people in need of getting APs excluding spectacles were inability to afford (43.6%), no support (22.3%), unavailability of APs (11.5%), stigma (4.6%) and no time available (3.5%)(Figure 12). The main barrier facing people to access APs was affordability since APs in the private sector are not subsidized by the government, and there is no health insurance to cover them.

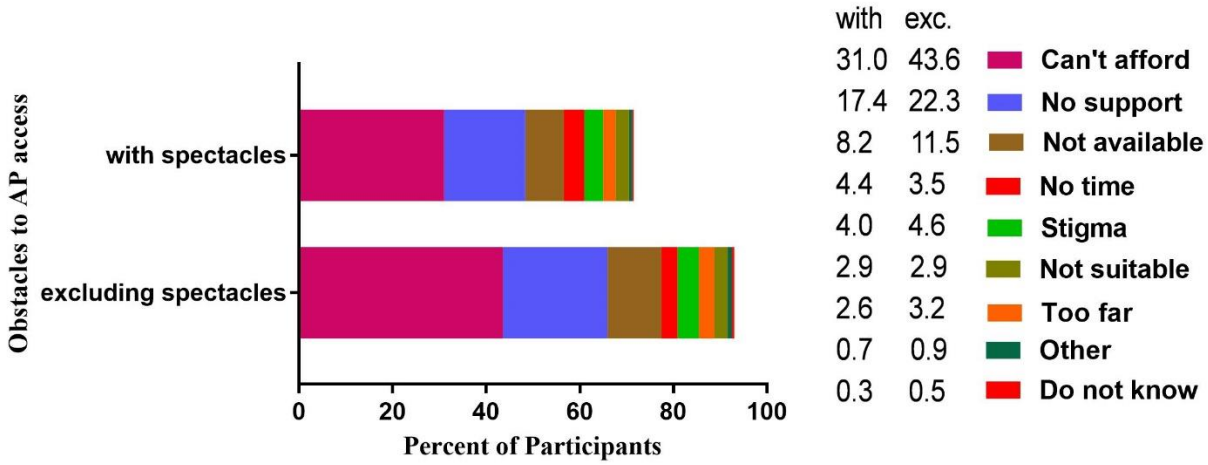


Figure 12: The obstacles facing obtaining assistive products

More than 60% of the users believed that APs including spectacles were mostly or completely suitable with the participation in activities (61.2%), home environment (60.2%) and public environment (62.6%). On the other hand, APs without spectacles had lower suitability rate compared to APs with spectacles. The suitability (mostly and completely) of APs (excluding spectacles) with the participation in activities, home environment and public environment were 50.8%, 49.9% and 41.8% respectively (Figure 13). Suitability of APs with public environment is still inadequate such as our sidewalks, transportations and public buildings are not prepared for people with wheelchair. Unfortunately, not all public buildings include elevators. Thus, more work is needed in terms of accommodation of public environment to people with APs.

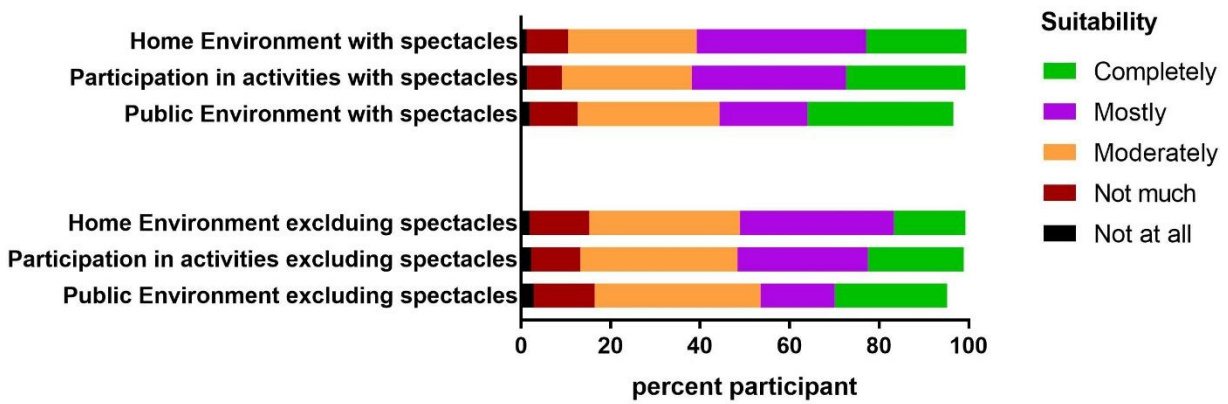


Figure 13: The suitability of assistive devices with home and public environments and participation in activities

In terms of prevalence, the most common APs used by the participants were spectacles (10.47%), axillary / elbow crutches (2.33%), chairs for shower/bath/toilet (1.85%), magnifiers, optical (1.85%), canes/sticks, tripod and quadripod (1.45%), manual wheelchairs - push type (1.15%), manual wheelchairs - basic type for active users (0.68%), hearing aids (digital) and batteries (0.64%), wheelchairs, electrically powered (0.51%), pill organizers (0.49%), and grab-bars / hand rails (0.37%) (Figure 14).

- Iraq results were comparable to Pakistani AP Report as both demonstrate that spectacles are the most common used AP. However, axillary / elbow crutches were the second most used APs in Iraq while canes/sticks, tripod and quadripod were the fifth more commonly used APs. In contrast, in Pakistan canes/sticks, tripod and quadripod were more commonly used than elbow crutches. Canes/sticks, tripod and quadripod are often used by senior people.

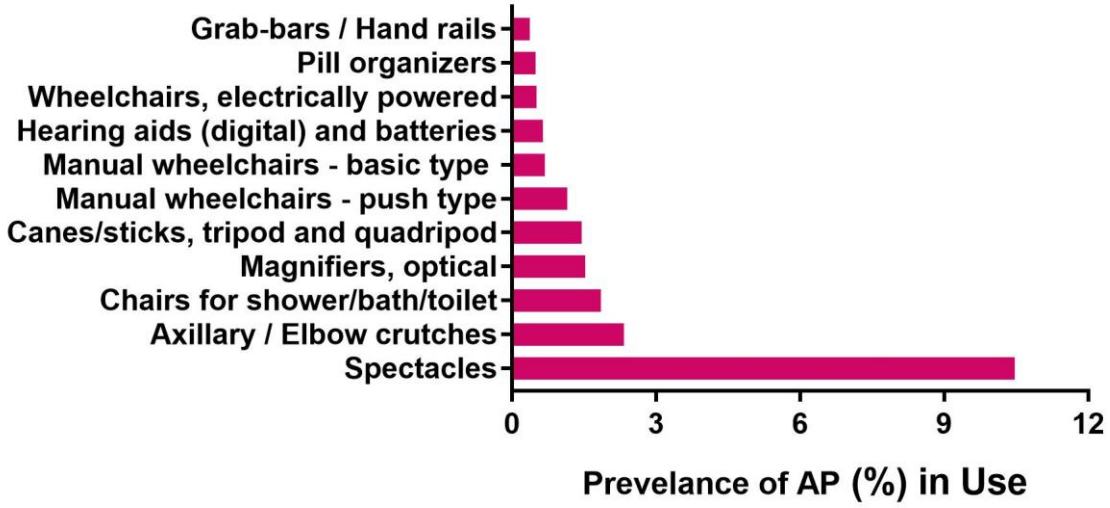


Figure 14: The prevalence of the most common APs used by the participants

More than half (54.6%) of the users were quite satisfied, 20.7% were neutral and 13.5% were very satisfied with AP products including spectacles. In contrast, only 8.1% and 2.7% were dissatisfied and very dissatisfied with APs, respectively. Likewise, 31.6% and 18.1% were quite and very satisfied while 26.1% were neutral with the maintenance and repairing of APs including spectacles. On the other hand, 47.3%, 25.8% and 10.3% were quite satisfied, neutral and very satisfied with AP products excluding spectacles respectively. The dissatisfaction rates were higher regarding APs without spectacles (11.8%) and their maintenance (12.7%) compared to AP products with spectacles (8.1%) and their maintenance (9.8%)(Figure 15). It seems that people are satisfied with their APs as they improve their quality of life (QoL) and their daily activities. Therefore, it is the government responsibility to provide them with needed APs particularly for low-income people who cannot afford purchasing APs from the private sector.

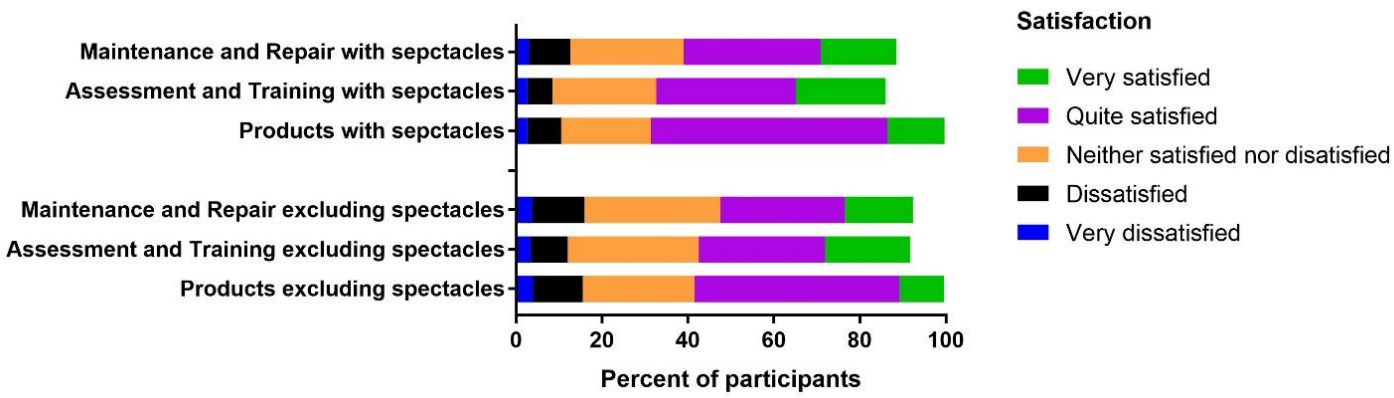


Figure 15: The users' satisfaction with assistive devices and their maintenance and assessment

PICTURE SOURCE: SADAA MAGAZINE

CONCLUSIONS AND RECOMMENDATIONS

Iraq has large number of people in need of assistive product (AP). Some of the population have lower access to APs including children and adolescents (≤17 years), seniors above the age of 80 years and people living in rural areas. It is collaborative responsibilities of different national and international institutions to meet their AP need and enhance their quality of life. It is government responsibility to provide suitable sidewalks, transportations and public buildings that are friendly to people in need of AP products such as wheelchair and crutches. It is pivotal to increase the federal fund to the MOH and other related ministries to enhance the procurement and accessibility to AP products. Additionally, there should be adequate allocated budget by the KIMADIA to secure the APs for people in need. Paper system is hard to be retrieved, while adoption of electronic system will facilitate the registration of people who need APs. It is better to conduct the rATA survey every three to four years in order to update the data.

Additionally, recommendations of the Global Report and the Regional (Eastern Mediterranean Region) framework (Mediterranean, 2022) on AP are essential to enhance the AP accessibility in Iraq.

1) Improve access to AP particularly for population with disproportionally low access to AP (children, adolescents, seniors above 80 years and people with disabilities). Everyone should have seamless access to AP across all ages and different geographical areas.
2) Increase the supply of high-quality, safe, effective and affordable APs. As the government provides ≤10% of the needed APs and the majority of people in need obtain their APs from the private sector, the government (e.g the Ministry of Trade and the Ministry of Industry) should facilitate the importation APs to the private sector such as granting tax-free and tariff exception to those products. Additionally, the MOH puts providing AP in its top proprity list.
3) Identifying barriers to AP and trying to address them. The rATA survey identified several barriers facing people in need including affordability and AP availability.
4) Improve the availability of qualified personnel at all AP providing and managing levels. More training and experts in AP producing and accomodation are needed.

5) Develop and invest in enabling environments in homes and society. Currently, Iraqi streets, trnsportation and public buidlings are not wheel-chair friendly.
6) Provide technical and economic assistance through international cooperation (the WHO, Red Cross) to support national efforts in the MOH and other ministeries.
7) Increase public awareness, and combat stigma surrounding AP use through awareness compaign by the MOH using social media, radio and TV channels.
8) Invest in data and evidence-based policy such rATA survey. The Biostatistics Department, MOH recommends conducting rATA survey regularly (e.g. every four years).
9) Establish associations actively involve users of AP, their families and advocates. This can be long-term goal.
10) Support the MOH to establish a higher committee for APs with the coordination/supervision of the Department of Medical Rehabilitation, the MOH and involve representatives from other related ministries and national, and international organization including the Ministry of Social Affairs, the Ministry of Trade, the Ministry of Industry, the WHO, the International Red Cross and Red Crescent Movement (ICRC), the Department of Biostatistics, MOH and national organization(s) representing the people in need of APs and people with disabilities.

Adoption of Regional Strategic Action Framework to Improve Access to Assistive Products in Iraq

We can adopt the WHO Regional Framework to improve the access to AP in Iraq. Gradual implementation of the following principles is essential:

Policy

Actions related to policy are pivotal to enhance access to safe, effective and affordable APs. Enhancing the policy at the MOH level seems the most influential action since the MOH is the main ministry responsible for procuring and securing APs for people in need. It is also essential to expand the collaboration with international organization to get the required help in terms of AP provision and training of the staff at AP centres in Iraq. It is essential to adopt the AT system policy development and implementation, governance and regulation, AT research, human resources development, AT education and training, service delivery and financing at national/governmental level in Iraq (Mediterranean, 2022).

Products

As Iraq has large number of people in need of APs, it is critical to enhance the access to safe, reliable, and affordable APs through supplying them in adequate quantities and subsidized costs. The range of supplied APs by the MOH varies, but a first target may be to develop a national list of priority APs based on a selection of or all the types listed in the WHO Priority Assistive Products List according to national need and available resources. It is important that the APs initially meet the needs and requirements of people of all age groups, men and women, and in urban and rural areas. Procurement can be coordinated centrally at the KIMADIA (MOH Headquarter) level, and at decentral level such as provincial health directorates. In case of the KIMADIA is unable to secure certain types of the needed APs, provincial institutions/directorate should procure them by contracting directly with scientific buraus. In the last several years, the lack of financial resources may not allow KIMADIA to purchase all needed APs in sustainable way (Al-Jumaili, 2020). Pharmacoeconomics studies are needed to procure the most cost-effectiveness APs by the MOH. The quality of APs purchased by KIMADIA is ensured by the existing national technical specifications and standards of products. However, the quality of products available in the private sector may be substandard as they may not follow the national technical specifications and standards.

Because of non-sustainable supply of APs by the KIMADIA, it is better to adopt procuring models relying on both centralized and decentralized procurement. Currently, most APs in Iraq are imported; therefore, we need to enhance the national manufacturing of APs such as artificial limbs and wheelchairs inside Iraq. Furthermore, implementation of post-market surveillance systems will help manufacturers and importers to identify issues with their APs and withdraw them if they are unsafe. Follow-up on maintenance and technical support for APs is required, including repair and refurbishment to maintain and enhance the quality of products. (Mediterranean, 2022).

Personnel

There are 21 rehabilitation centres, and 24 limb artificial centres across the country. Additionally, there are and two specialized hospitals (in Baghdad and Salāh Ad-Dīn) to provide AP. Therefore, qualified personnel need to be available to provide services at various levels and enhance access to APs. This requires identifying the needs for personnel of the AP service

provision system and the providing workshops, training materials, and sessions to train personnel. It is necessary to provide AP users and other personnel such as schoolteachers, family members, and caregivers with specific training programmes to engage them in service provision. Creating peer support programmes for people with AP to share their knowledge and to support each other within their local communities would raise their health benefits. Relevant training on disability should also be integrated into curricula and accreditation programmes of health science colleges. Additionally, community-based rehabilitation (CBR) programmes can assist people with disabilities and their families to overcome access barriers (Mediterranean, 2022).

Provision

To improve access to APs, the coverage of services for their provision needs to be expanded by the MOH in terms of geographic coverage, variety, and the quantity of APs. This can be achieved by decentralizing services across the country. The services and their facilities need to be physically and cognitively accessible. Implementation of the prospective national health insurance could cover some of these APs and make them more affordable to people in need (Hayder N Sameer, 2022). Every Iraqi in any province should receive the AP they need without financial hardship. Affordability relates not only to the direct costs for the AP and the service, but also relates to direct non-medical costs (costs for travelling, accommodation and food), and indirect cost (loss of income). Additionally, improvements of services for follow-up of users, maintenance and repair of APs are required. Finally, awareness about AP among people in need and their families also needs to be raised (Mediterranean, 2022).

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