ICCHP-AAATE 2022 Open Access Compendium "Assistive Technology, Accessibility and (e)Inclusion" Part I

Assistive Technology Needs, Use and Experiences among Adults in Sweden Based on a Nationally Representative Survey

Borg, Johan
Linz, 2022

Persistent Link: https://doi.org/10.35011/icchp-aaate22-p2-14

urn:nbn:at:at-ubl:3-13358
Assistive Technology Needs, Use and Experiences among Adults in Sweden Based on a Representative Survey

Johan Borg[0000-0003-4432-5256], and Wei Zhang[0000-0002-6022-6832]

1 Dalarna University, Falun, Sweden
2 World Health Organization, Geneva, Switzerland

jog@du.se

Abstract. The objective of the study was to estimate the prevalence of needs for and use of assistive products, and experiences of assistive technology among adults under COVID-19 pandemic circumstances in Sweden. Mainly during June 2021, a nationally representative telephone survey was conducted to collect data through an adapted version of the WHO rapid Assistive Technology Assessment (rATA) questionnaire. Including spectacles, the prevalence of needing at least one assistive product was 68.9% and the prevalence of using at least one assistive product was 68.1%. Excluding spectacles, these prevalence rates were 17.1% and 15.8%, respectively. The access rate was 89.7% including spectacles and 83.2% excluding spectacles. The impact of the pandemic on assistive technology provision appeared to be relatively small.

Keywords: Assistive Technology, COVID-19, Prevalence of Need, Prevalence of Use, Sweden, User Experience.

1 Introduction

In response to the World Health Assembly Resolution 71.8 on improving access to assistive technology [1], the World Health Organization (WHO) has developed the Global Report on Assistive Technology (GReAT) [2] in partnership with UNICEF. GReAT is informed by surveys on current needs for and use of assistive technology undertaken in countries located in each of the six WHO regions of the world. Being one of these surveys, the objective of the Swedish Assistive Technology Survey (SATS) was to estimate the prevalence of needs for and use of assistive products, and experiences of assistive technology, in the population in Sweden aged 18 years and older under pandemic circumstances.
2 Methods

2.1 Study Design
SATS was a representative cross-sectional national telephone survey among the adult population in Sweden. With few exceptions related to the age group of the population, the sample size, the data collection method and the questionnaire, SATS followed the protocol reported in [3].

2.2 Sample and Sampling
The general population in Sweden aged 18 years and older constituted the study population. The sampling frame was a compiled list of all telephone numbers from all operators in Sweden that matched individuals in the concerned age group in the public register of the Swedish Tax Agency.

Calculation of the required sample size was based on an estimation formula for household surveys recommended by UN Department of Social Affairs [4], which is simplified in Formula 1 below:

\[ n = \frac{(z^2)(r)(1-r)(f)(k)}{(p)(e^2)} \]  

(1)

where \( n \) is the sample size, \( z \) is the statistic that defines the level of confidence desired, \( r \) is the prevalence of access to any assistive product in the target population, \( f \) is the sample design effect, \( k \) is a multiplier that accounts for non-response, \( p \) is the proportion of the total population accounted for by the target population, and \( e \) is the margin of error to be attained. With \( r=4\% \) (assumed prevalence of access), \( z=1.96 \) (95% confidence that \( r \) is between 3\% and 5\%), \( f=1 \) (no sample design effect with simple random sampling), \( k=1 \) (respondents are recruited until the full sample size is achieved), \( p=1 \) (the target population is the same as the total population), and \( e=0.25r \) (with a level of precision at 25\%, the margin of error is 1\%), the minimum sample size \( n=1476 \), which was rounded up to 1,500. The prevalence of access \( (r) \) was higher in this study than in the protocol [3], which is justified by a relatively high prevalence of use of assistive products in Sweden (for example, in the population 16 years and older, 5.1\% used hearing aids and 68.7\% used spectacles or contact lenses in 2016 [5]).

The sample was drawn from records comprised of the adult (18 years and above) population matched with a phone number and complemented with extra sampling for under-represented age groups. Two measures were taken to secure representative data: i) quota setup on age and gender; and ii) weighing data on age, gender and NUTS 2 region.

2.3 Data Collection Instrument
The data collection instrument used in SATS included most of the items of the standardized individual-level questionnaire rapid Assistive Technology Assessment tool (rATA) developed by WHO [6]. It covers the respondents’ characteristics, functioning, and use of, needs for and satisfaction with assistive products and related services, as
well as sources of, costs for and traveling to get assistive products. In addition, the questionnaire collected data on the use of assistive products and related services under pandemic circumstances.

Given that rATA is designed for face-to-face interviewing under non-pandemic conditions, rATA was first adapted to facilitate telephone interviewing. This was followed by the addition of four questions related to the pandemic. The adaptation of the rATA survey for the purpose of SATS was carried out in close collaboration with WHO and SINTEF, Norway.

The SATS questionnaire was translated into Swedish in consultation with six assistive technology experts to ensure correct terminology. The translated questionnaire was then reviewed by two academic researchers and two additional experts on assistive technology. Following a revision to accommodate the feedback of the reviewers, the questionnaire was tested among eight assistive technology users (35-85 years old; 5 women and 3 men) before finalization.

2.4 Data Collection and Analyses

Data were collected between 8 June and 2 July 2021 through computer-assisted telephone interviewing by experienced interviewers at a data collection agency in Sweden. The median interview time was 4:48 minutes.

Using descriptive statistics, weighted data were analyzed according to the protocol reported in [3] with the addition of descriptive statistical analyses of data related to the pandemic. Definitions of key indicators are given below [2].

Prevalence of use. The proportion of a population using assistive products
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.

As spectacles constitute a large proportion of the needed and used assistive products, summarized data are provided with and without spectacles.

2.5 Ethics

The study was approved by the Swedish Ethical Review Authority (Dnr 2021-01453). Only eligible individuals that consented to participation were included. The data collection agency delivered pseudonymized data, which were anonymized after three months.
3 Results

Characteristics of the study participants are given in Table 1.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Gender (n)</th>
<th>Age (years)</th>
<th>At least some difficulty with… (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Range</td>
</tr>
<tr>
<td>Gender (n)</td>
<td></td>
<td>49.5 (SD: 18.9)</td>
<td>18-98</td>
</tr>
<tr>
<td>Female</td>
<td>751</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>746</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other/No response</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>49.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>18-98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least some difficulty with…</td>
<td>Mobility</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seeing</td>
<td>64.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hearing</td>
<td>9.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remembering</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self-care</td>
<td>3.2</td>
<td></td>
</tr>
</tbody>
</table>

Data on prevalence of need, access and prevalence of use including and excluding spectacles are summarized in Table 2.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Including spectacles</th>
<th>Excluding spectacles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of need: ≥1 assistive product</td>
<td>68.9%</td>
<td>17.1%</td>
</tr>
<tr>
<td>Access</td>
<td>89.7%</td>
<td>83.2%</td>
</tr>
<tr>
<td>Prevalence of use: ≥1 assistive product</td>
<td>68.1%</td>
<td>15.8%</td>
</tr>
<tr>
<td>Prevalence of use: ≥2 assistive product</td>
<td>13.2%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Prevalence of use: ≥3 assistive product</td>
<td>3.3%</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

Proportionally more women than men used assistive products including spectacles (74.1% vs. 61.9%) and excluding spectacles (18.3% vs. 13.1%), as well as expressed a need for assistive products including spectacles (74.6% vs. 63.2%) and excluding spectacles (20.0% vs. 13.9%). Proportionally less women than men reported access to assistive products, both including spectacles (88.7% vs. 90.7%) and excluding spectacles (80.0% vs. 86.5%).

Among 57 specified types of assistive products, the highest prevalence rates of use were found for spectacles (64.6%), hearing aids (5.4%), pill organizers (4.4%),
continence pads (1.7%), self-propelled manual wheelchairs (1.3%), crutches (1.2%), canes (1.1%) and rollators (1.1%).

A large majority of the users were quite or very satisfied with their main assistive product (87.4%), found it mostly or completely suitable for their home and surroundings (95.4%) and in public spaces (94.4%), reported that it mostly or completely helped them to do what they wanted (74.2%), and were satisfied with related assessment and training (91.5%), and repair, maintenance and follow-up (87.7%).

The two commonest sources of a respondent’s most important assistive product were the private health sector (83.3%) and public assistive technology sector (13.9%). Most of the users had paid for their most important assistive product out-of-pocket (84.2%); other payers included the public (7.4%) and employers (6.9%).

Among respondents using or needing assistive products, 10.4% needed a new or to replace an assistive product. Reasons for these unmet needs included lack of motivation (18.9%), time (14.2%) and affordability (8.5%), and pandemic circumstances or delays (7.5%).

Compared to before the pandemic, a large majority (85.7%) used their assistive products equally much during the pandemic. Among those that used their assistive products less (5.0%), common reasons were: choosing to stay at home (25.0%), studying or working from home (17.5%), and doing other activities than before (12.2%). And among those that used their assistive products more (7.7%), the most frequent reasons were the same, i.e.: studying or working from home (23.6%), doing other activities than before (11.8%), and choosing to stay at home (11.1%). Other reasons for changes in the use of assistive products were deteriorating health, keeping distance and others.

During the pandemic, 13.1% of those using or needing assistive products had got or were supposed to get at least one assistive product, and 9.9% of them thought that the assistive product was delayed because of the pandemic. Similarly, 8.8% of those using or needing assistive products had got or were supposed to get their assistive product serviced or repaired, and 15.9% of them thought that the service or repair had been delayed because of the pandemic.

4 Discussion

Including spectacles, the prevalence of need for assistive products in Sweden was 68.9%, the access was 89.7%, and the prevalence of use was 68.1%. Excluding spectacles, the corresponding rates were 17.1%, 83.2% and 15.8%, respectively. These rates were among the highest in the WHO multi-country survey, which was completed in 2021 [2]. A larger proportion of women than men reported needing and using assistive products while a larger proportion of men had access to assistive products, which calls for further investigation.

The prevalence of use of spectacles and hearing aids are similar to the rates obtained in a survey in 2016 using a larger sample of the population in Sweden aged 16 years or older (n=5,778), which found that 68.7% (margin of error ±1.1%) used spectacles or contact lenses, and 5.1% (±0.5%) used hearing aids [5].
Compared to other countries in the WHO survey, the users in Sweden scored among the highest regarding satisfaction with their assistive products and related services, as well as being able to use their assistive products in different settings [5].

In Sweden, most people pay for their spectacles themselves, which partly explains why most people pay out-of-pocket for their assistive products. However, a majority of the other types of assistive products are provided free of cost, while others require a nominal fee [7]. The latter may have been considered by some respondents to be out-of-pocket payment when it in fact was mainly paid for by the public. Reasons for unmet need often relate to personal issues rather than affordability.

Less than 15% of the users changed their use of assistive products during the COVID-19 pandemic. The reasons for changes were largely the same irrespective of whether their use increased or decreased. Less than 1.5% of those using or needing assistive products attributed delay in delivery of products or services to the pandemic. Thus, the impact of the COVID-19 pandemic on assistive technology provision in Sweden was relatively low at group level. This finding contrasts with studies during the pandemic using non-representative samples, which reported that access barriers to assistive products and services, such as training and repair, were exacerbated worldwide due to disruption of supply chains, social distancing requirements, and strains placed on health care, education and other economic and social systems [8-10].

References

5. SCB Statistical Database. Disability by indicator, study domain and sex. www.statistikdata-basen.scb.se, last accessed 2022/04/05.