Appendix

1. Appendix 1: Databases searched March 31, 2020

	Database(s)
Ovid	MEDLINE, EMBASE, AMED, Global Health, PSYCHInfo
Global Index Medicus	African Index Medicus, Latin American and Caribbean Health Sciences Literature, Index Medicus Eastern Mediterranean Region, Index Medicus South East Asia Region, Western Pacific Region Index Medicus
	CINAHL Plus
	Cochrane Database of Systematic Reviews
	Science Direct
	OpenGrey
	Grey Literature Report

2. Appendix 2: Systematic Search String

	Parameter
	(((assistive OR accessible Or inclusive Or adaptive OR self?help) AND (tech* OR product$ OR device$ OR software))
OR	(aid OR wheelchair$ OR hearing?aid OR prosthe* OR glasses OR spectacle$ OR eyeglasses OR PDA$ OR "personal digital assistant"))
AND	(coverage OR unmet OR under?met OR need OR prevalence OR distribution OR provision or suppl* OR demand)
AND	(impair* OR disab* OR functi* limit* OR limit* functi* OR correct* OR uncorrect*)
	.ab,ti

3. Appendix 3: Full data extraction details

	Details
Publication	Authors, year of publication
Setting	Data collection dates, geography (to the smallest scale provided), WHO region
Population	N included, age range
Methodology	Study design, sampling frame, sampling strategy
Assessment	Assessment approach(es), survey/tool/dataset name (if applicable), APs included, definition(s)/threshold(s) for functional difficulty
Results	AP indicator definition provided in text, corresponding AP indicator definition in review, AP indicator value (numerator, denominator, proportion, confidence intervals, weighted), other variables stratified
Risk of Bias	Overall Joanna Briggs Institute (JBI) Score, checklist items missed

4. Appendix 4: An example of indirectly extracting AP indicators.

A study may report glasses coverage as 30%, because 30 of 100 total participants reported using glasses. By our definition, this would actually be an indicator of 'use', which is how we would extract and report it. However, if the study further specifies that of these 30, 20 had 'normal vision' when using their glasses and 10 had an outdated prescription, and of the 70 without glasses, 25 would benefit from having them prescribed, these data would indirectly inform other AP indicators. Using our terms and definitions out of the total population, we can therefore extract and report the met need for this study at 20%, the under-met need at 10%, and the unmet need at 25%. This demonstrates a total need of 55% and allows the calculation of coverage by our definition as met need (20) divided by total need (55), or 36.4%.

5. Appendix 5: Adapted Joanna Briggs Institute Checklist for Prevalence Studies & Common reasons for missing each

Checklist Item*		Common reasons for missing
1	Was the sample frame appropriate to address the target population?	The sample frame is not described; the sampling frame is not suitable to get a representative sample of the target population.

2	Were study participants sampled in an appropriate way?	The sampling strategy is not described; non-random sampling method used.
3	Was the sample size adequate?	No sample size calculation was demonstrated if presenting significance measures.
4	Were the study subjects and the setting described in detail?	Locations within a country were not provided; study dates were not provided or specified other than years; age inclusion limitations were not provided.
5	Was the data analysis conducted with sufficient coverage of the identified sample?	A substantial portion of those eligible for inclusion in the analysis were not due to incomplete data.
6	Were valid methods used for the identification of the condition?	Impairment definition unclear; threshold for classifying AP need unclear.
7	Was the condition measured in a standard, reliable way for all participants?	The assessment approach used was not validated elsewhere.
8	Was there appropriate statistical analysis?	AP indicator calculations unclear and not possible to replicate with information provided; discrepancies/errors between results reported in tables and in text.
9	Was the response rate adequate, and if not, was the low response rate managed appropriately?	The response rate was below 80% and no demographic description, follow-up of non-participants, or adjustment to the study method was undertaken.
10**	Was consent obtained from/for all participants and ethical guidelines followed?	Consent and ethics were not mentioned in the study.

**To assess the risk of bias in primary studies that used a pre-established method protocol, or secondary analyses that did not include all primary study details, the study needed to cite the original record providing full details. The score was otherwise lowered for every missing checklist item.*

*** The 10th item was added to the standard JBI list by review authors.*

6. Appendix 6: Studies excluded during full-text review

	Author(s)	Title	Publish date	Reason for excl.
1	Davis, A. and Smith, P. and Ferguson, M. and Stephens, D. and Gianopoulos, I.	Acceptability, benefit and costs of early screening for hearing disability: A study of potential screening tests and models	2007	Data collected before 2000
2	Contepomi, S.	Access to appropriate assistive technology in less-resourced settings: Argentina's case	2019	Not population-based/representative
3	Silver, E. J. and Stein, R. E.	Access to care, unmet health needs, and poverty status among children with and without chronic conditions	2001	Data collected before 2000
4	Adinanto, F. and French, A. and Rose, K. A.	Access to eye care services by schoolchildren in a longitudinal cohort	2019	Full text not available
5	Mauricio III, M; Bundoc, J; et al.	Accessible Centers for Children for Empowerment and Sustainable Services: Service delivery models for children with disabilities within 7,100 islands of the Philippine archipelago	2019	No new AP indicator
6	DeCarlo, D. K. and Swanson, M. and McGwin, G. and Visscher, K. and Owsley, C.	ADHD and Vision Problems in the National Survey of Children's Health	2016	No new AP indicator
7	TÃndel, Gunhild	Administrating disability: The case of "assistance need" registration in Norwegian health and care governance	2009	No new AP indicator
8	Al-Ghamdi, Abdulhamid S.	Adults visual impairment and blindness â€“ An overview of prevalence and causes in Saudi Arabia	2019	No new AP indicator
9	Ching, Teresa Y. C. and Oong, Ron and van Wanrooy, Emma	ages of intervention in regions with and without universal newborn hearing screening and prevalence of childhood hearing impairment in Australia	2006	Not population-based/representative
10	Carden, Susan M.	Analysis of the National Health and Nutrition Examination Survey: Prevalence of Visual Impairment in the United States, by S Vitale, MF Cotch, and RD Sperduto. JAMA 295:2158â€“63, 2006	2006	Full text not available
11	Loeb, Mitchell E. and Eide, Arne H. and Mont, Daniel	Approaching the measurement of disability prevalence: The case of Zambia	2008	No new AP indicator
12	Ramke, J. and Brian, G.	Are readymade spectacles sufficient in developing countries?	2009	Not population-based/representative
13	Pressler, K. A. and Ferraro, K. F.	Assistive device use as a dynamic acquisition process in later life	2010	No new AP indicator
14	Dimitra Panteli, Cornelia Henschke, Madelon Kroneman, Sabine Fuchs, Maximilien Hjortland, Giovanni Oliva, Ewout van Ginneken	Assistive Devices: Regulation and Coverage in five European Countries	2018	No new AP indicator
15	Nihei, M. and Sugawara, I. and Ehara, N. and Gondo, Y. and Masui, Y. and Inagaki, H. and Inoue, T. and MacLachlan, M. and McAuliffe, E.	Assistive products use among oldest-old people in Japan: Differences in personal attributes and living situation	Missing	Full text not available
16	Wallace, Joseph	Assistive technology funding in the United States	2011	Full text not available
17	Kitchener, Martin and Ng, Terence and Lee, Hyang Yuol and Harrington, Charlene	Assistive technology in Medicaid home- and community-based waiver programs	2008	Not population-based/representative
18	Orellano-ColÃn, Elsa M. and Rivero-MÃndez, Marta and Lizama, Mauricio and Jutai, Jeffrey W.	Assistive technology unmet needs of independent living older Hispanics with functional limitations	2018	Not population-based/representative
19	Claya, Shondra Loggins; Alston, Reginald;	Assistive technology use and veterans: An examination of racial differences between Whites and Blacks using the HAAT model	2016	Full text not available
20	Khandaker, G.; Karim, T.; Muhit, M.; Smitherssheedy, H.; Jones, C.; Novak, I.; Badawi, N.;	Associated impairments among children with cerebral palsy in rural Bangladesh: Findings from the Bangladesh Cerebral Palsy Register (BCPR)	2017	No new AP indicator
21	Khoury, A. J. and Hall, A. and Andresen, E. and Zhang, J. and Ward, R. and Jarjoura, C.	association between chronic disease and physical disability among female Medicaid beneficiaries 18-64 years of age	2013	Not population-based/representative
22	Nathan G Congdon, Nita Patel, Paul Esteso, Florence Chikwembani, Fiona Webber, Robert Bongi Msithini, Amy Ratcliffe	association between refractive cutoffs for spectacle provision and visual improvement among school-aged children in South Africa	2008	Not population-based/representative
23	Gajapati, C. V. and Pradeep, A. V. and Kakhandaki, A. and Praveenchandra, R. K. and Rao, S.	Awareness of presbyopia among rural female population in North Karnataka	2017	Not population-based/representative
24	Clay, S. L. and Alston, R.	benefits of assistive technology use by persons with physical conditions: An examination of difficulty levels in areas of functioning	2016	Full text not available
25	Finger, Robert P. and Bertram, Bernd and Wolfram, Christian and Holz, Frank G.	Blindness and visual impairment in Germany: a slight fall in prevalence	2012	No new AP indicator
26	Lim, M. and Jung, S.	Brief Introduction of Assistive Technology Service Delivery System in Republic of Korea	2015	Full text not available
27	Mather, H. and Kelley, A. and Bollens-Lund,	Can administrative claims be used to identify people with	2018	No new AP indicator

	E.	functional limitation? An exploration of candidate predictors in a sample of medicare beneficiaries		
28	Shah, M. and Khan, M. and Khan, M. T. and Khan, M. Y. and Saeed, N.	Causes of visual impairment in children with low vision	2011	Not population-based/representative
29	Trani, Jean-François; Bakhshi, Parul;	Challenges for assessing disability prevalence: The case of Afghanistan	2006	No new AP indicator
30	Mehrotra, R. and Srivastava, P. and Kumar, A.	Changing lives of hearing impaired patients in rural north india through concept of trained ear care workers with the vision of hearing for all by 2030	2016	Full text not available
31	Kang, M. T. and Li, S. and Congdon, N. G. and Jan, C. and Wang, N.	Characteristics of Pseudomyopia and Spectacles wearing in Chinese Children	2018	Full text not available
32	Sun, L. and Arshad, J. and Daboul, L. and Young, L. and Choi, H.	Characterizing ocular needs and distribution of corrective lenses in two Peruvian communities	2018	Full text not available
33	Dhivya Ramasamy 1 , Sanil Joseph, Vijayakumar Valaguru, Vinod P Mitta, Thulasiraj D Ravilla, Mary Frances Cotch	Cluster Randomized Trial to Compare Spectacle Delivery Systems at Outreach Eye Camps in South India	2013	No new AP indicator
34	Steven L Barnett 1 , Kelly A Matthews 2 , Erika J Sutter 2 , Lori A DeWindt 2 , Jacqueline A Pransky 2 , Amanda M O'Hearn 2 , Tamala M David 2 , Robert Q Pollard 3 , Vincent J Samar 3 , Thomas A Pearson	Collaboration With Deaf Communities to Conduct Accessible Health Surveillance	2017	No new AP indicator
35	Kasemsiri, P.; Yimtae, K.; Thanawirattananit, P.; Laoharsiriwong, S.; Siripaopradith, P.; Kingkaew, P.;	Community-Based Hearing Screening of Disabled Elders Using the Thai-FMHT: Clinical Implications and Cost-Effectiveness	2015	Full text not available
36	Seymour, N.	Community-based rehabilitation workers' role in wheelchair service provision	2019	Not population-based/representative
37	Lauer, Eric A. and Henly, Megan and Coleman, Rachel	Comparing estimates of disability prevalence using federal and international disability measures in national surveillance	2019	No new AP indicator
38	Miller, J. M. and Dobson, V. and Harvey, E. M. and Sherrill, D. L.	Comparison of preschool vision screening methods in a population with a high prevalence of astigmatism	2001	Not population-based/representative
39	Morjaria, P. and McCormick, I. and Gilbert, C.	Compliance and Predictors of Spectacle Wear in Schoolchildren and Reasons for Non-Wear: A Review of the Literature	2019	No new AP indicator
40	Evans, B. J. W.; Rowlands, G.;	Correctable visual impairment in older people: A major unmet need	2004	Not population-based/representative
41	Esteso, P. and Castanon, A. and Toledo, S. and Pereyra Rito, M. A. and Ervin, A. and Wojciechowski, R. and Congdon, N. G.	Correction of moderate myopia is associated with improvement in self-reported visual functioning among Mexican school-aged children	2007	Not population-based/representative
42	Maini, R. and Keeffe, J. and Weih, L. A. and McCarty, C. A. and Taylor, H. R.	Correction of refractie error in the Victorian population: the feasibility of "off the shelf" spectacles	2001	Data collected before 2000
43	Baltussen, R.; Abraham, V. J.; Monica, Priya; Balraj, Achamma; Job, Anand; Norman, Gift; Joseph, Abraham;	Costs and health effects of screening and delivery of hearing aids in Tamil Nadu, India: an observational study	2009	Not population-based/representative
44	Li, L. and Guan, H. J. and Zhou, J. B. and Shi, H. H. and Xun, P. C. and Gu, H. Y. and Xie, Z. G. and Chen, Q. J. and Sun, J. Q.	cross-sectional survey of blindness and low vision among adults aged 60 years and above in Xinchengqiao Blocks, Nantong	2006	Full text not available
45	Al Allaf, A. M. Y.; Ali, A.; Muneer, M.;	Deafness in children and the need for cochlear implants	2003	Full text not available
46	Delcourt, CÃcile and Le Goff, MÃlanie and von Hanno, Therese and Mirshahi, Alireza and Khawaja, Anthony P. and Verhoeven, Virginie J. M. and Hogg, Ruth E. and Anastosopoulos, Eleftherios and Cachulo, Maria Luz and HÃhn, RenÃ and Wolfram, Christian and Bron, Alain and Miotto, Stefania and CarriÃ¨re, Isabelle and Colijn, Johanna M. and Buitendijk, GabriÃlle H. S. and Evans, Jennifer and Nitsch, Dorothea and Founti, Panayiota and Yip, Jennifer L. Y. and Pfeiffer, Norbert and Creuzot-Garcher, Catherine and Silva, Rufino and Piermarocchi, Stefano and Topouzis, Fotis and Bertelsen, Geir and Foster, Paul J. and Fletcher, Astrid and Klaver, Caroline C. W. and Korobelnik, Jean-Francois and Acar, Niyazi and Anastosopoulos, Eleftherios and Azuara-Blanco, Augusto and Berendschot, Tos and Bergen, Arthur and Bertelsen, Geir and Binquet, Christine and Bird, Alan and Bobak, Martin and Boon, Camiel, et al.	Decreasing Prevalence of Nonrefractive Visual Impairment in Older Europeans: A Meta-analysis of Published and Unpublished Data	2018	No new AP indicator
47	Vignier, N. and Ravaud, J. F. and Winance, M. and Lepoutre, F. X. and Ville, I.	Demographics of wheelchair users in France: Results of national community-based handicaps-incapacites-dependance surveys	2008	Data collected before 2000

48	Clay, Shondra Loggins and Alston, Reginald	Difference in utilization of assistive technology across two racial groups in the aging population	2018	Full text not available
49	Carrasquillo, O. and Lantigua, R. A. and Shea, S.	Differences in functional status of Hispanic versus non-Hispanic White elders: Data from the medical expenditure panel survey	2000	Data collected before 2000
50	Lam, B. L.; Lee, D. J.; Zheng, D. D.; Davila, E. P.; Christ, S. L.; Arheart, K. L.;	Disparity in prevalence of self-reported visual impairment in older adults among U.S. race-ethnic subgroups	2009	No new AP indicator
51	Mann, W. C. and Goodall, S. and Justiss, M. D. and Tomita, M.	Dissatisfaction and Nontuse of Assistive Devices among Frail Elders	2002	Not population-based/representative
52	Rosen, Perth;	distribution strategy for driving product diversity and demand creation	2020	No new AP indicator
53	Bunnag, C. and Prasansuk, S. and Nakorn, A. N. and Jareoncharsri, P. and Atipas, S. and Angsuwarangsee, T. and Tansuriyawong, P. and Thongyai, M. L. and Polpathapee, S. and Siriyananda, C. and Chongkolwatana, C. and Ungkanon, K. and Chongvisal, S. and Keskool, P. and Tantinikorn, W.	Ear diseases and hearing in the Thai elderly population. Part I. A comparative study of the accuracy of diagnosis and treatment by general practitioners vs ENT specialists	2002	Full text not available
54	Lipton, B. J. and Decker, S. L.	effect of health insurance coverage on medical care utilization and health outcomes: Evidence from Medicaid adult vision benefits	2015	No new AP indicator
55	Anna T Do, Krishanmurthy Ilango, Dhivya Ramasamy, Suriya Kalidasan, Vijayakumar Balakrishnan, Robert T Chang 1	Effectiveness of low vision services in improving patient quality of life at Aravind Eye Hospital	2014	Not population-based/representative
56	Truong, L.; Briggs, B.; Weiner, L.; Mamdani, N.; Kosoko-Lasaki, O.;	Effectiveness of low-cost glasses distribution in the USA, Guatemala, Ghana, Cambodia, Peru and the Dominican Republic	2016	Full text not available
57	Uus, K. and Bamford, J.	Effectiveness of population-based newborn hearing screening in England: ages of interventions and profile of cases	2006	No new AP indicator
58	Hanne Jensen, Gitte Tubæk	Elderly people need an eye examination before entering nursing homes	2017	Not population-based/representative
59	Zhu, Z. and He, M.	Elimination of avoidable blindness and visual impairment due to refractive error: Who are our priorities in providing spectacles?	2017	Full text not available
60	Hettiarachchi, Shyamani and Subramaniam, V. and Rajah, Emil and Gowritharan, Paramaguru and Nizar, Shamra and Saleem, Shakeela	Enabling Access': A Pilot Study on Access and Use of Assistive Products in the Northern Province, Sri Lanka	2019	Not population-based/representative
61	Wang, L. and Aili, A. and Liu, Q. and Chen, Y. and Yao, H.	Epidemiological and rehabilitation analyses of patients with hearing disabilities of Uyghur and Han Chinese ethnicities in Xinjiang, China: a comparative study	2018	Not population-based/representative
62	Zou, Y. H. and Ding, J. Y. and Peng, H. and Shi, J. L. and Qu, C. Y. and Liu, X. P.	epidemiological study of visual disability and visual rehabilitation in Beijing	2009	Full text not available
63	Pan, C. W. and Chiang, P. P. and Wong, T. Y. and Zheng, Y. F. and Chew, M. and Saw, S. M. and Lamoureux, E. L. and Cheng, C. Y.	Ethnic differences in undercorrected refractive error in Asians	2014	Full text not available
64	Chen, Nancy and Hsieh, His-Pao and Tsai, Rong-Kung and Sheu, Min-Muh	Eye care services for the populations of remote districts in eastern Taiwan: a practical framework using a Mobile Vision Van Unit	2015	Not population-based/representative
65	Vela, Claudia and Samson, Elodie and Zunzunegui, Maria Victoria and Haddad, Slim and Aubin, Marie-Josee and Freeman, Ellen E.	Eye care utilization by older adults in low, middle, and high income countries	2012	No new AP indicator
66	Khalaj, Mohammad and Barikani, Ameneh and Ghasemi, Hafez	Eye disorders in old people	2012	No new AP indicator
67	Rebecca Russ; Michael Rothschild; Jinan Saaddine; Lindsay Collin; Danny Haddad	Eye health and access to eye care among migrant farmworkers in Georgia	2015	Full text not available
68	EYElliance	Eyeglasses for Global Development: Bridging the Visual Divide	2016	No new AP indicator
69	Zhou, Z. and Ma, X. and Yi, H. and Pang, X. and Shi, Y. and Meltzer, M. and He, M. and Rozelle, S. and Morgan, I. G. and Congdon, N. G.	Factors underlying large differences in myopia prevalence among primary school children in adjoining provinces of western China	2014	Full text not available
70	Donaldson, L.A; Karas, M; O'Brien, D; Woodhouse, J.M.	Findings from an opt-in eye examination service in English special schools. Is vision screening effective for this population?	2019	Not population-based/representative
71	Bisgaard, N.; Ruf, S.;	Findings From EuroTrak Surveys From 2009 to 2015: Hearing Loss Prevalence, Hearing Aid Adoption, and Benefits of Hearing Aid Use	2017	Full text not available
72	Da Silva Takitani, G. E. and Fernandes, A. and Alves, M. and De Almeida, R. C. and Nascimento, R. A. and Valdrighi, N. Y. and Takashi, C.	Frequency and causes of visual impairment in the xingu indigenous park: Preliminary findings from projeto olhos do xingu	2018	Full text not available

73	Zeb, A. and Hamid, A. and Uppal, F. and Awan, A.	Frequency of refractive error in children of district Abbottabad	2011	Full text not available
74	Ferreira, A. S. and Barbosa, E. M. S. and Raposo, N. R. B. and Gattaz, W. F.	Functional impairment prevalence in Brazilian frailty elderly	2011	Full text not available
75	Vázquez Sánchez, M. Covadonga; Gigirey Prieto, Luz M.; Del-Oro-Saez, Carlos P.; Pifieiro-Ces, Antonio; Gandoy Crego, Manuel;	Functional Vision Screening of Older Adults in Nursing Homes: A Study from Galicia (Northwest Spain)	2018	No new AP indicator
76	Patel, I.; West, S.;	Gender differences in presbyopia	2009	No new AP indicator
77	Kirtland, K. A. and Saaddine, J. B. and Geiss, L. S. and Thompson, T. J. and Cotch, M. F. and Lee, P. P.	Geographic disparity of severe vision loss - United States, 2009-2013	2015	No new AP indicator
78	Papas, E. B.; Tahhan, N.; Fricke, T. R.; Wilson, D. A.; Jong, M.; Naidoo, K. S.; Resnikoff, S.; Holden, B. A.;	Global cost-effectiveness of correcting near vision impairment due to uncorrected presbyopia	2015	Full text not available
79	Holden, B. A. and Fricke, T. R. and Ho, S. M. and Wong, R. and Schlenther, G. and Cronje, S. and Burnett, A. and Papas, E. and Naidoo, K. S. and Frick, K. D.	Global vision impairment due to uncorrected presbyopia	2008	No new AP indicator
80	Vos, Theo and Barber, Ryan M. and Bell, Brad and Bertozzi-Villa, Amelia and Biryukov, Stan and Bolliger, Ian and Charlson, Fiona and Davis, Adrian and Degenhardt, Louisa and Dicker, Daniel and Duan, Leilei and Erskine, Holly and Feigin, Valery L. and Ferrari, Alize J. and Fitzmaurice, Christina and Fleming, Thomas and Graetz, Nicholas and Guinovart, Caterina and Haagsma, Juanita and Hansen, Gillian M. and Hanson, Sarah Wulf and Heuton, Kyle R. and Higashi, Hideki and Kassebaum, Nicholas and Kyu, Hmwe and Laurie, Evan and Liang, Xiofeng and Lofgren, Katherine and Lozano, Rafael, et al.	Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990â€“2013: a systematic analysis for the Global Burden of Disease Study 2013	2015	No new AP indicator
81	Vos, Theo; Allen, Christine; Arora, Megha; Barber, Ryan M.; Bhutta, Zulfiqar A.; Brown, Alexandria; Carter, Austin; Casey, Daniel C.; Charlson, Fiona J.; Chen, Alan Z.; Coggeshall, Megan; Cornaby, Leslie; Dandona, Lalit; Dicker, Daniel J.; Dilegge, Tina; Erskine, Holly E.; Ferrari, Alize J.; Fitzmaurice, Christina; Fleming, Tom; Forouzanfar, Mohammad H.; Fullman, Nancy; Gething, Peter W.; Goldberg, Ellen M.; Graetz, Nicholas; Haagsma, Juanita A.; Hay, Simon I.; Johnson, Catherine O.; Kassebaum, Nicholas J.; Kawashima, Toana; Kemmer, Laura; Khalil, Ibrahim A.; Kinfu, Yohannes; Kyu, Hmwe H.; Leung, Janni; Liang, Xiaofeng; Lim, Stephen S.; Lopez, Alan D.; Lozano, Rafael; Marczak, Laurie; Mensah, George A.; Mokdad, Ali H.; Naghavi, Mohsen; Nguyen, Grant; Nsoesie, Elaine; Olsen, Helen; et al.	Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015	2015	No new AP indicator
82	Vos, Theo and Abajobir, Amanuel Alemu and Abate, Kalkidan Hassen and Abbafati, Cristiana and Abbas, Kaja M. and Abd-Allah, Foad and Abdulkader, Rizwan Suliankatchi and Abdulle, Abdishakur M. and Abebo, Teshome Abuka and Abera, Semaw Ferede and Aboyans, Victor and Abu-Raddad, Laith J. and Ackerman, Ilana N. and Adamu, Abdu Abdullahi and Adetokunboh, Olatunji and Afarideh, Mohsen and Afshin, Ashkan and Agarwal, Sanjay Kumar and Aggarwal, Rakesh and Agrawal, Anurag and Agrawal, Sutapa and Ahmadieh, Hamid and Ahmed, Muktar Beshir and Aichour, Miloud Taki Eddine and Aichour, Amani Nidhal and Aichour, Ibtihel and Aiyar, Sneha and Akinyemi, Rufus Olusola and Akseer, Nadia and Al Lami, Faris Hasan and Alahdab, Fares and Al-Aly, Ziyad and Alam, Khurshid and Alam, Noore	Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016	2017	No new AP indicator

	and Alam, Tahiya and Alasfoor, Deena and Alene, Kefyalew Addis and Ali, Raghib and Alizadeh-Navaei, Reza and Alkerwi, Ala'a, et al.			
83	Sujatha, S; Bapat, G.M; Dash, S.S.	GRID: a model for the development of assistive devices in developing countries	2019	Not population-based/representative
84	Palacios-CeÃa, Domingo and JimÃnez-GarcÃa, Rodrigo and HernÃ¡ndez-Barrera, ValentÃn and Alonso-Blanco, Cristina and Carrasco-Garrido, Pilar and FernÃ¡ndez-de-las-PeÃas, CÃsar	Has the Prevalence of Disability Increased Over the Past Decade (2000â€“2007) in Elderly People? A Spanish Population-based Survey	2012	No new AP indicator
85	Smith, J. L.; Mitchell, P.; Wang, J. J.; Leeder, S. R.;	health policy for hearing impairment in older Australians: What should it include?	2005	Not population-based/representative
86	Baek, Min Kwan and Kim, Young Saing and Kim, Eun Young and Kim, Ae Jin and Choi, Won-Jun	Health-Related Quality of Life in Korean Adults with Hearing Impairment: The Korea National Health and Nutrition Examination Survey 2010 to 2012	2016	No new AP indicator
87	Rosenhall, U. and Espmark, A. K.	Hearing aid rehabilitation: what do older people want, and what does the audiogram tell?	2003	Data collected before 2000
88	Cohen-Mansfield, J. and Taylor, J. W.	Hearing aid use in nursing homes, Part 1: Prevalence rates of hearing impairment and hearing aid use	2004	Not population-based/representative
89	Flynn, M. C. and Kennedy, E. J. and Johns, J. and Stanbridge, R.	Hearing and vision loss within residential care facilities -- the need for improved service delivery	2002	No new AP indicator
90	McPherson, B.	Hearing assistive technologies in developing countries: background, achievements and challenges	2014	No new AP indicator
91	Maki-Torkko, E. M. and Brorsson, B. and Davis, A. and Mair, I. W. S. and Myhre, K. I. and Parving, A. and Roine, R. P. and Rosenhall, U. and Sorri, M. J. and Stilven, S.	Hearing impairment among adults - Extent of the problem and scientific evidence on the outcome of hearing aid rehabilitation	2001	Not population-based/representative
92	Christensen, V. T. and Datta Gupta, N.	Hearing loss and disability exit: Measurement issues and coping strategies	2017	No new AP indicator
93	Schneider, J. and Gopinath, B. and Karpa, M. J. and McMahon, C. M. and Rochtchina, E. and Leeder, S. R. and Mitchell, P.	Hearing loss impacts on the use of community and informal supports	2010	No new AP indicator
94	Marmamula, S. and Barrenkala, N. R. and Challa, R. and Reddy, K. T. and Yellapragada, S. and Brahmanandam, M. S. and Friedman, D. S. and Khanna, R. C.	Hyderabad Ocular Morbidity in Elderly Study (HOMES)-Rationale, Study Design and Methodology	2020	No new AP indicator
95	Layland, B. and Holden, B. and Evans, K. and Bailey, S.	ICEE/AHMRC NSW Aboriginal Eye and Visioncare Program, Australia	2004	Not population-based/representative
96	Bapat, G.M; Sujatha, S.	Identification and analysis of knee–ankle–foot orthosis design requirements based on a feedback survey of orthosis users in India	2017	No new AP indicator
97	Patel, I. and Munoz, B. and Burke, A. G. and Kayongoya, A. and McHiwa, W. and Schwarzwalder, A. W. and West, S. K.	Impact of Presbyopia on Quality of Life in a Rural African Setting	2006	No new AP indicator
98	Pryor, W; Smith, F	Impacts of the Nippon Foundation's Investments in Prosthetics & Orthotics	2019	Not population-based/representative
99	Jaul, E.	importance of increasing awareness of hearing and vision in the elderly population	2006	Full text not available
100	Janna Lam, Kirstin Robertson, Wesley Robertson, Rebecca Bernstein	Improving Access to Vision Care for People Who are Homeless through Eyeglasses Recycling	2015	Not population-based/representative
101	Portuondo-Sao, Miriam and Cobas-Ruiz, Marcia and Zacca-PeÃ±a, Eduardo and Lantigua-Cruz, Araceli and LÃ³pez-GarcÃa, Josefina and BoligÃ¡n-JomarrÃ³n, Yosnel and Leyva-Serrano, Martiza and Herrera-Armenteros, Anorys and Morales-SuÃ¡rez, Ileana R.	Improving Disability Care in Countries of the Bolivarian Alliance for the Peoples of Our America	2016	No new AP indicator
102	Binagwaho, A. and Scott, K. and Rosewall, T. and Mackenzie, G. and Rehnborg, G. and Hannema, S. and Presente, M. and Noe, P. and Mathenge, W. and Nkurikiye, J. and Habiyaremye, F. and Dushime, T.	Improving eye care in Rwanda	2015	No new AP indicator
103	Zhaisakova, D. and Kudaibergenova, S. and Mukanova, Z. and Djarkinbekova, G. and Kaltayeva, M. and Kuzembayev, Y.	incidence and prevalence of hearing disorders in children according to the audiological screening	2017	Full text not available
104	Mahmudi, E. and Mema, V. and Burda, N. and Selimi, B. and Zhugli, S.	Incidence of the refractive errors in children 3 to 9 years of age, in the city of Tetovo, Macedonia	2013	No new AP indicator
105	Keunen, J. E. E. and Verezen, C. A. and Imhof, S. M. and Rens, G. H. M. B. van and Asselbergs, M. B. and Limburg, J. J.	Increase in the demand for eye-care services in the Netherlands 2010-2020	2011	Full text not available
106	Mohanty, S. and Jolley, E. and Mohanty, R. N. and Buttan, S. and Schmidt, E.	Integrating geospatial data and measures of disability andwealth to assess inequalities in an eye health survey: An example from the Indian sunderbans	2019	No new AP indicator

107	Visagie, S. J. and Matter, R. and Kayange, G. M. and Chiwaula, M. and Harniss, M. and Mji, G. and Scheffler, E.	Lessons from the pilot of a mobile application to map assistive technology suppliers in Africa	2018	No new AP indicator
108	Nwosu, S. N.	Low vision in persons aged 50 and above in the onchocercal endemic communities of Anambra State, Nigeria	2000	Full text not available
109	Bourne, Rupert R. A. and Flaxman, Seth R. and Braithwaite, Tasanee and Cicinelli, Maria V. and Das, Aditi and Jonas, Jost B. and Keeffe, Jill and Kempen, John H. and Leasher, Janet and Limburg, Hans and Naidoo, Kovin and Pesudovs, Konrad and Resnikoff, Serge and Silvester, Alex and Stevens, Gretchen A. and Tahhan, Nina and Wong, Tien Y. and Taylor, Hugh R. and Bourne, Rupert and Ackland, Peter and Arditi, Aries and Barkana, Yaniv and Bozkurt, Banu and Braithwaite, Tasanee and Bron, Alain and Budenz, Donald and Cai, Feng and Casson, Robert and Chakravarthy, Usha and Choi, Jaewan and Cicinelli, Maria Vittoria and Congdon, Nathan, et al.	Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: a systematic review and meta-analysis	2017	No new AP indicator
110	PEEK	Making Eye Health Visible: Community eye health in Pakistan	2020	No new AP indicator
111	Cornman, J. C. and Freedman, V. A. and Agree, E. M.	Measurement of assistive device use: Implications for estimates of device use and disability in late life	2005	No new AP indicator
112	Smith, E. M; Battistella, L. R; et al.	Measuring met and unmet assistive technology needs at the national level: Comparing national database collection tools across eight case countries	2019	No new AP indicator
113	Mhatre, A; Rosen, P; et al.	A model to standardize the procurement and quality of assistive technologies in less-resourced settings	2019	No new AP indicator
114	de Witte, L; Carter, L; et al.	Models of assistive technology service delivery in low resource settings: A literature review of different approaches and their quality and impact	2019	No new AP indicator
115	Castagno, V. D. and Fassa, A. G. and Vilela, M. A. P. and Meucci, R. D. and Resende, D. P. M.	Moderate hyperopia prevalence and associated factors among elementary school students	2015	No new AP indicator
116	Kaaren Mathias 1 , Hira Pant 2 , Manjula Marella 3 , Lawrence Singh 4 , Gvs Murthy 2 , Nathan Grills 3	Multiple barriers to participation for people with psychosocial disability in Dehradun district, North India: a cross-sectional study.	2018	No new AP indicator
117	Matheson, J. I. D. M. and Atijosan, O. and Kuper, H. and Rischewski, D. and Simms, V. and Lavy, C.	Musculoskeletal impairment of traumatic etiology in Rwanda: prevalence, causes, and service implications	2011	No new AP indicator
118	Adhikari, S.	Myopia in school children from high mountain region of Nepal	2013	Not population-based/representative
119	Cheng, C. Y. and Huang, W. and Su, K. C. and Peng, M. L. and Sun, H. Y. and Cheng, H. M.	Myopization factors affecting urban elementary school students in Taiwan	2013	No new AP indicator
120	Mathenge, Wanjiku and Bastawrous, Andrew and Foster, Allen and Kuper, Hannah	Nakuru Posterior Segment Eye Disease Study: Methods and Prevalence of Blindness and Visual Impairment in Nakuru, Kenya	2012	No new AP indicator
121	Menon, G. R. and Singh, L. and Sharma, P. and Yadav, P. and Sharma, S. and Kalaskar, S. and Singh, H. and Adinarayanan, S. and Joshua, V. and Kulothungan, V. and Yadav, J. and Watson, L. K. and Fadel, S. A. and Suraweera, W. and Rao, M. V. V. and Dhaliwal, R. S. and Begum, R. and Sati, P. and Jamison, D. T. and Jha, P.	National Burden Estimates of healthy life lost in India, 2017: an analysis using direct mortality data and indirect disability data	2019	No new AP indicator
122	Anjou, M. D. and Boudville, A. I. and Taylor, H. R.	Nationally consistent spectacle supply for Indigenous Australians	2013	No new AP indicator
123	Fuller, Spencer D. and Mudie, Lucy I. and Siordia, Carlos and Swenor, Bonnielin K. and Friedman, David S.	Nationwide Prevalence of Self-Reported Serious Sensory Impairments and Their Associations with Self-Reported Cognitive and Functional Difficulties	2018	No new AP indicator
124	Wubben, T. and Wolfe, G. and Guerrero, C. and Korcz, W. J. and Ramsey, D. J.	Near visual acuity in an inner city Hispanic community: understanding the barriers and benefits of correction	2014	Not population-based/representative
125	Eide, A. H; Mji, G; Chiwaula, M.	Need for, access to and quality of assistive technology in low- and middle-income countries	2019	No new AP indicator
126	Mranga, H.	need of category I prosthetist and orthotist in Africa	2015	Full text not available
127	Antoni, M. and Rouillon, I. and Denoyelle, F. and Garabedian, E. N. and Loundon, N.	Newborn hearing screening: Prevalence and medical and paramedical treatment of bilateral hearing loss in a neonatal series in the Ile-de-France region of France	2016	No new AP indicator
128	Lupsakko, T. A. and Kautiainen, H. J. and Sulkava, R.	non-use of hearing aids in people aged 75 years and over in the city of Kuopio in Finland	2005	Data collected before 2000

129	Ferreira, B. G. and Toenjes, R. H. F. and De Sousa, P. I. G. and De Paula Souza, V. L. and Torres, G. T. and Vieira, M. I. S. and Jammal, A. A. and Rim, P. H. H. and Alves, M.	Ophthalmological Care and Eyeglasses Distribution in Brazil's Countryside: Descriptive and Epidemiological Data of Nearly Five Thousand Patients	2019	Full text not available
130	Amirozi, Ahmad and Irfan, Mohamad and Suzana, Mansor and Mohd Khairi, Daud and Dinsuhaimi, Sidek	Outcome of a newborn hearing screening program in a tertiary hospital in Malaysia: the first five years	2011	Not population-based/representative
131	Ndife, T.I; Abdullahi, S.M; Olaniyi, S.	Outcome of vision screening of eye health workers at a tertiary eye hospital in north-western Nigeria	2017	Full text not available
132	Bourne, R. R. A. and Dineen, B. P. and Ali, S. M. and Huq, D. M. N. and Johnson, G. J.	Outcomes of cataract surgery in Bangladesh: results from a population based nationwide survey	2003	No new AP indicator
133	Baloyi, V. H. A.; Akinsola, H. A.; Mabunda, J. T.;	Pattern of distribution of refractive error among primary school children in Malamulele community of Limpopo province, South Africa	2018	Full text not available
134	Shaikh, S. P. and Aziz, T. M.	Pattern of eye diseases in children of 5-15 years at Bazzertaline area (South Karachi) Pakistan	2005	Full text not available
135	Robaei, D. and Rose, K. and Kifley, A. and Mitchell, P.	Patterns of spectacle use in young Australian school children: Findings from a population-based study	2005	No new AP indicator
136	Ning-Chia Chang 1 2 3 , Chia-Yen Dai 4 5 , Wen-Yi Lin 3 , Chen-Yu Chien 1 2 , Meng-Hsuen Hsieh 4 5 , Kuen-Yao Ho 1 6	Perception of hearing impairment and the willingness to use hearing aids in an elderly population in southern Taiwan: A community-based study	2016	Not population-based/representative
137	Kayange, Geroge;	Perspectives on a mobile application that maps assistive technology resources in Africa	2019	No new AP indicator
138	Benedict, R. E.; Baumgardner, A. M.;	population approach to understanding children's access to assistive technology	2009	Not population-based/representative
139	Ramesh, Sathyamangalam Ve; George, Ronnie; Soni, Premal M.; Palaniappan, Lakshmanan; Raju, Prema; Paul, Pradeep G.; Ramsathish, Sivarathinasami; Vijaya, Lingam;	Population norms for frequency doubling perimetry with uncorrected refractive error	2007	No new AP indicator
140	Congdon, N. G.; Yi, H.; Zhang, H.; Ma, X.; Zhang, L.; Wang, X.; Naidoo, K. S.; Minto, H.; Zou, H.; Rozelle, S.;	Population prevalence of vision impairment and spectacle wear among urban migrant children in China	2015	Full text not available
141	Davis, A.;	Population study of the ability to benefit from amplification and the provision of a hearing aid in 55-74-year-old first-time hearing aid users	2003	Data collected before 2000
142	Nirmalan, P. K.; Sannapaneni, Krishnaiah; Shamanna, B. R.; Rao, G. N.; Ravi, Thomas;	population-based assessment of presbyopia in the state of Andhra Pradesh, South India: the Andhra Pradesh eye disease study	2006	Data collected before 2000
143	Marmamula, S. and Khanna, R. C.	Population-based assessment of prevalence and causes of visual impairment in the state of Tripura, India	2017	Full text not available
144	Dandona, R. and Dandona, L. and Kovai, V. and Giridhar, P. and Prasad, M. N. and Srinivas, M.	Population-based study of spectacles use in southern India	2002	Data collected before 2000
145	Gilbert, Clare E. and Shah, S. P. and Jadoon, M. Z. and Bourne, R. and Dineen, B. and Khan, M. A. and Johnson, G. J. and Khan, M. D. and Pakistan National Eye Survey Study, Group	Poverty and blindness in Pakistan: results from the Pakistan national blindness and visual impairment survey	2008	No new AP indicator
146	Cunha, C. C.; Munoz, S.; Furtado, J. M.; Cavascan, N. N.; Berezovsky, A.; Campos, M.; Cohen, M. J.; Cohen, J. M.; Rubens, B.; Salomao, S. R.;	Presbyopia and near vision impairment in older adults from parintins: The Brazilian amazon region eye survey (bares)	2016	Full text not available
147	Patel, I.; West, S. K.;	Presbyopia: prevalence, impact, and interventions	2007	No new AP indicator
148	Maralcan, G.; Kuru, I.; Aydin, U. Y.; Altinel, L.; Bozan, M. E.; Ellidokuz, H.;	prevalance of orthopedic disabilities in the district of Cay, Afyon, Turkey	2004	No new AP indicator
149	Rajiv Khandekar 1 , Ali Jaffer Mohammed, Abdulatif Al Raisi	Prevalence and causes of blindness & low vision; before and five years after 'VISION 2020' initiatives in Oman: A review	2007	No new AP indicator
150	Ahmad, K.; Khan, M. D.; Qureshi, M. B.; Munami, S.; Shah, R. A.; Rasheed, H.; Jamali, B.; Baluch, A.; Khan, M. A.;	Prevalence and causes of blindness and low vision in a rural setting in Pakistan	2005	Data collected before 2000
151	Nakul Singh, 1 Shiva Shankar Eeda, 2 , 3 Bala Krishna Gudapati, 2 , 3 Srinivasa Reddy, 2 , 3 Pushkar Kanade, 4 Ghanshyam Palamaner Subash Shantha, 5 , 6 Padmaja Kumari Rani, 7 , 8 Subhabrata Chakrabarti, 7 and Rohit C Khanna	Prevalence and causes of blindness and visual impairment and their associated risk factors, in three tribal areas of Andhra Pradesh, India	2014	No new AP indicator
152	Taryam, M. O.; Rabiu, M. M.; Muhammad, N.; Oladigbolu, K.; Abdurrahman, H.;	Prevalence and causes of blindness and visual impairment; And cataract surgical services in Katsina state of Nigeria	2019	No new AP indicator
153	Adeoti, C. O.	Prevalence and causes of blindness in a tropical African population	2004	Data collected before 2000

154	Furtado, J. M. and Cavascan, N. N. and Munoz, S. and Berezovsky, A. and Cohen, M. J. and Vasconcelos, G. C. and Cohen, J. M. and Watanabe, S. E. S. and Belfort, R. and Salomao, S. R.	Prevalence and causes of distance vision impairment and blindness in older adults in urban and rural areas of parintins: The Brazilian amazon region eye survey	2016	Full text not available
155	Ajaiyeoba, A. I. and Isawumi, M. A. and Adeoye, A. O. and Oluleye, T. S.	Prevalence and causes of eye diseases amongst students in south-western Nigeria	2006	No new AP indicator
156	Thapa, R.; Bajimaya, S.; Paudyal, G.; Khanal, S.; Tan, S.; Thapa, S. S.; van Rens, G. H. M. B.;	Prevalence and causes of low vision and blindness in an elderly population in Nepal: the Bhaktapur retina study	2018	No new AP indicator
157	Buch, Helena and Vinding, Troels and Nielsen, Niels Vesti	Prevalence and causes of visual impairment according to World Health Organization and United States criteria in an aged, urban Scandinavian population: The Copenhagen City Eye Study1 1The authors have no financial or commercial interests in the subject matter or materials mentioned herein	2001	Data collected before 2000
158	Dhanesha, U. and Polack, S. and Bastawrous, A. and Banks, L. M.	Prevalence and causes of visual impairment among schoolchildren in Mekelle, Ethiopia	2018	Not population-based/representative
159	Buch, Helena and Vinding, Troels and la Cour, Morten and Appleyard, Merete and Jensen, Gorm B. and Vesti Nielsen, Niels	Prevalence and causes of visual impairment and blindness among 9980 Scandinavian adults: The Copenhagen City Eye Study	2004	Data collected before 2000
160	Tang, Y. and Wang, X. and Wang, J. and Huang, W. and Gao, Y. and Luo, Y. and Lu, Y.	Prevalence and Causes of Visual Impairment in a Chinese Adult Population: The Taizhou Eye Study	2015	No new AP indicator
161	Hsu, Wen-Ming and Cheng, Ching-Yu and Liu, Jorn-Hon and Tsai, Su-Ying and Chou, Pesus	Prevalence and causes of visual impairment in an elderly Chinese population in Taiwan11The authors have no proprietary interest in any aspect of the study.: The Shihpai Eye Study	2004	Data collected before 2000
162	Tarczy-Hornoch, Kristina and Cotter, Susan A. and Borchert, Mark and McKean-Cowdin, Roberta and Lin, Jesse and Wen, Ge and Kim, Jeniffer and Varma, Rohit	Prevalence and Causes of Visual Impairment in Asian and Non-Hispanic White Preschool Children: Multi-Ethnic Pediatric Eye Disease Study	2013	No new AP indicator
163	Edussuriya, Kapila and Sennanayake, Saman and Senaratne, Tissa and Marshall, Drew and Sullivan, Thomas and Selva, Dinesh and Casson, Robert J.	Prevalence and Causes of Visual Impairment in Central Sri Lanka: The Kandy Eye Study	2009	No new AP indicator
164	Hyman, Leslie and Wu, Suh-Yuh and Connell, Anthea M. S. and Schachat, Andrew and Nemesure, Barbara and Hennis, Anselm and Leske, M. Cristina	Prevalence and causes of visual impairment in the Barbados eye study	2001	Data collected before 2000
165	Theis, Kristina, and Roblin, Douglas, and Helmick, Charles, and Luo, Ruiyan	Prevalence and causes of work disability among working-age U.S. adults, 2011–2013, NHIS	2013	No new AP indicator
166	Inam, S. and Asghar, F. and Naeem, T. and Unum, A. and Ahsan, U. and Latif, A.	Prevalence and comparison of undetected refractive errors among children of age b/w 5-10 years in public & private sector schools	2018	No new AP indicator
167	Manjula Marella 1 , Nafisa L Huq 2 , Alexandra Devine 3 , Sally M Baker 4 , Md A Quaiyum 5 , Jill E Keeffe 6	Prevalence and correlates of disability in Bogra district of Bangladesh using the rapid assessment of disability survey.	2015	No new AP indicator
168	Lasisi, A. O. and Abiona, T. and Gureje, O.	prevalence and correlates of self-reported hearing impairment in the Ibadan Study of Ageing	2010	No new AP indicator
169	Erin D Bouldin 1 , Andrew Vandenberg 2 , Manan Roy 2 , Adam Hege 3 , Jennifer J Zwetsloot 3 , Jennifer S Howard 3	Prevalence and domains of disability within and outside Appalachian North Carolina: 2013–2016 Behavioral Risk Factor Surveillance System	2019	No new AP indicator
170	Ling-Lin, L. and Zheng-Zheng, W. and Dong-Feng, L. and Yin, Y.	Prevalence and influencing factors of myopia between adolescents in Chengdu and Mianyang Area	2019	Full text not available
171	Wang, W. L. and Chen, N. and Sheu, M. M. and Wang, J. H. and Hsu, W. L. and Hu, Y. J.	prevalence and risk factors of visual impairment among the elderly in Eastern Taiwan	2016	Not population-based/representative
172	Varma, Rohit and Ying-Lai, Mei and Klein, Ronald and Azen, Stanley P.	Prevalence and risk indicators of visual impairment and blindness in Latinos: the Los Angeles Latino Eye Study	2004	No new AP indicator
173	Wittich, W. and Hamalainen, A. and Pichora-Fuller, M. K. and Phillips, N. and Kolisang, L. and Guthrie, D. and Mick, P.	Prevalence and severity of dual sensory loss (vision & hearing) in the Canadian Longitudinal Study on Aging	2018	Full text not available
174	Rajavi, Z. and Sabbaghi, H. and Baghini, A. S. and Yaseri, M. and Moein, H. and Akbarian, S. and Behradfar, N. and Hosseini, S. and Rabei, H. M. and Sheibani, K.	Prevalence of amblyopia and refractive errors among primary school children	2015	No new AP indicator
175	Zhu, X. and Zhu, J. and Zou, H. and Lu, L. and Zhao, H. and Li, Q. and He, X.	Prevalence of ametropia and visual impairment in elementary school students in Baoshan District of Shanghai	2014	Full text not available
176	Rabiu, M. M. and Al-Bdour, M. D. and Ameerh, M. A. A. and Jadoon, M. Z.	Prevalence of blindness and diabetic retinopathy in northern Jordan	2015	No new AP indicator
177	Osuchukwu, N. C.	Prevalence of common visual problems among primary school children in Calabar Municipality, Nigeria	2003	Data collected before 2000
178	Ramachandra, Srikrishna Sulgodu and Allagh, Komal Preet and Kumar, Hemanth	Prevalence of disability among adults using Rapid Assessment of Disability tool in a rural district of South India	2016	No new AP indicator

	and Grills, Nathan and Marella, Manjula and Pant, Hira and Mahesh, D. and Soji, Fairlene and Mani, Srinivasan and Murthy, G. V. S.			
179	Graciani, Auxiliadora and Banegas, JosÃ© R. and LÃ³pez-GarcÄ±Ì• a, Esther and RodrÄ±Ì• guez-Artalejo, Fernando	Prevalence of disability and associated social and health-related factors among the elderly in Spain: a population-based study	2004	No new AP indicator
180	Zhao, Guixiang and Okoro, Catherine A. and Hsia, Jason and Garvin, William S. and Town, Machell	Prevalence of Disability and Disability Types by Urbanâ€“Rural County Classificationâ€”U.S., 2016	2019	No new AP indicator
181	Venkatorao, T. and Ezhil, R. and Jabbar, S. and Ramakrishnan, R.	Prevalence of disability and handicaps in geriatric population in rural south India	2005	Data collected before 2000
182	Velayutham, Banurekha and Kangusamy, Boopathi and Joshua, Vasna and Mehendale, Sanjay	prevalence of disability in elderly in India â€“ Analysis of 2011 census data	2016	No new AP indicator
183	Gupta, K. and Singh, K. and Aggarwal, A. and Gupta, A. and Bansal, P.	Prevalence of eye abnormalities in school going children in Amritsar - a study conducted by a tertiary eye care centre in an urban school	2015	Not population-based/representative
184	Collins, M. and Mudie, L. I. and Slavin, R. and Corcoran, R. and Owoeye, J. and Chang, D. S. T. and Repka, M. and Friedman, D. S.	Prevalence of eye disease and reading difficulty in an inner city elementary school population-preliminary results from the baltimore reading and eye disease study (BREDS)	2016	Full text not available
185	Ervin, R. B.	Prevalence of functional limitations among adults 60 years of age and over: United States, 1999-2002	2006	No new AP indicator
186	Ostchega, Y. and Harris, T. B. and Hirsch, R. and Parsons, V. L. and Kington, R.	prevalence of functional limitations and disability in older persons in the US: Data from The National Health and Nutrition Examination Survey III	2000	Data collected before 2000
187	Iselin Ertzgaard, Solvang and Kristin, Naalsund and Sofie, TÃ¸nder and Giske Sindberg, Hansen and Tobias Bang, Hagan and Cosmas, Mnyanyi and Tron Vedul, Tronstad and Aslam, Nkya and Jon, Ã˜ygarden	Prevalence of hearing impairment among primary school children in the Kilimanjaro region within Tanzania	2020	No new AP indicator
188	Johansson, M. S. K. and Arlinger, S. D.	Prevalence of hearing impairment in a population in Sweden	2003	Data collected before 2000
189	Schmucker, C. and Kapp, P. and Motschall, E. and Loehler, J. and Meerpohl, J. J.	Prevalence of hearing loss and use of hearing aids among children and adolescents in Germany: a systematic review	2019	No new AP indicator
190	Harvey, E. M. and Dobson, V. and Miller, J. M.	Prevalence of high astigmatism, eyeglass wear, and poor visual acuity among Native American grade school children	2006	Data collected before 2000
191	Villarreal, G. M. and Ohlsson, J. and Cavazos, H. and Abrahamsson, M. and Mohamed, J. H.	Prevalence of myopia among 12- to 13-year-old schoolchildren in Northern Mexico	2003	Data collected before 2000
192	Salomao, S. R. and Munoz, S. and Furtado, J. M. and Sacai, P. Y. and Cohen, M. J. and Cohen, J. M. and Higashi Mitsuhiro, M. R. K. and Arruda, S. B. and Belfort, R. and Berezovsky, A.	Prevalence of near vision impairment in middle-aged and older adults in an urban census sector of parintins, brazilian amazon region	2014	Full text not available
193	Dey, A. K. and Nath, A. B.	Prevalence of ocular morbidities among school children in a rural block of Cachar, Assam	2017	Not population-based/representative
194	Muhammad, R. C. and Jamda, M. A. and Langnap, L.	Prevalence of presbyopia in rural Abuja, Nigeria	2015	No new AP indicator
195	Ferdausi, N.	Prevalence of presbyopia, presbyopia correction coverage and barriers to uptake eye-care services for near-vision impairments among indigenous population in northern part of bangladesh	2017	Full text not available
196	Ismond, J. M. and Timmermans, M. A. and Ubels, J. L. and Hoogewerf, A. J.	Prevalence of refractive error and need for corrective lenses in a medically underserved population in Tijuana, Mexico	2017	Not population-based/representative
197	Al-Rowaily, M. A.	Prevalence of refractive errors among pre-school children at King Abdulaziz Medical City, Riyadh, Saudi Arabia	2010	No new AP indicator
198	Zoia, Atta and Arif, A. S. and Iftikhar, Ahmed and Umer, Farooq	Prevalence of refractive errors in Madrassa students of Haripur district	2015	No new AP indicator
199	Mayro, E. L. and Hark, L. A. and Shiuey, E. and Hill-Bennett, T. and Khanna, N. and Silverstein, M. and Tran, J. and Siraj, S. and Pond, M. and Donaghy, J. and Siam, L. and Zhan, T. T. and Murchison, A. P. and Levin, A. V.	Prevalence of refractive errors in school-aged children in the School District of Philadelphia	2017	Full text not available
200	Popov, I. and Valaskova, J. and Stefanickova, J. and Krasnik, V.	Prevalence of refractive errors in the Slovak population calculated using the Gullstrand schematic eye model	2017	Not population-based/representative
201	Mencher, G. T. and Madriz Alfaro, J. J.	Prevalence of sensorineural hearing loss in children in Costa Rica	2000	Full text not available
202	Rose, K. and Younan, C. and Morgan, I. and Mitchell, P.	Prevalence of undetected ocular conditions in a pilot sample of school children	2003	Not population-based/representative
203	Zhao, Jialiang and Xu, Xiao and Ellwein, Leon B. and Cai, Ning and Guan, Huaijin and He, Mingguang and Liu, Ping and Lv,	Prevalence of Vision Impairment in Older Adults in Rural China in 2014 and Comparisons With the 2006 China Nine-Province Survey	2018	No new AP indicator

	Jianhua and Sheng, Xunlun and Yang, Peizeng and Yi, Jinglin and Yang, Mei and Zhang, Rui and Ding, Xiaohu and Du, Liping and Li, Fengrong and Lu, Hong and Shao, Wenqiang and Wang, Junwei and Yuan, Yuansheng and Zhou, Rui and Zhuang, Wenjuan and An, Lei			
204	Xu, Liang and Cui, Tongtong and Yang, Hua and Hu, Ailian and Ma, Ke and Zheng, Yuanyuan and Sun, Baochen and Li, Jianjun and Fan, Guizhi and Jonas, Jost B.	Prevalence of Visual Impairment among Adults in China: The Beijing Eye Study	2006	No new AP indicator
205	Ndegwa, L. K. and Karimurio, J. and Okelo, R. O. and Adala, H. S.	Prevalence of visual impairment and blindness in a Nairobi urban population	2006	No new AP indicator
206	Chin, M. P. and Siong, K. H. and Chan, K. H. and Do, C. W. and Chan, H. H. and Cheong, A. M.	Prevalence of visual impairment and refractive errors among different ethnic groups in schoolchildren in Turpan, China	2015	Not population-based/representative
207	Gresset, J. and Baumgarten, M.	Prevalence of visual impairment and utilization of rehabilitation services in the visually impaired elderly population of Quebec	2002	Data collected before 2000
208	Antonelli, J. W. and Netto, A. A. and Dario, C. da S. and Ferre, L. B. and Pereira, M. C. S. R.	Prevalence of visual impairment in children from public and private schools in the city of Tubarao (Santa Catarina State)	2012	Full text not available
209	Evans, J. R. and Fletcher, A. E. and Wormald, R. P. L. and Ng, E. Siu-Woon and Stirling, S. and Smeeth, L. and Breeze, E. and Bulpitt, C. J. and Nunes, M. and Jones, D. and Tulloch, A.	Prevalence of visual impairment in people aged 75 years and older in Britain: results from the MRC trial of assessment and management of older people in the community	2002	Data collected before 2000
210	Franck, C. and Vorwerk, W. and Kohn, A. and Rismann, A. and Vorwerk, U.	Prevalence, Risk Factors and Diagnostics of Hearing Impairment in Preterm Infants	2017	Full text not available
211	Singh, N. and Khanna, R. C. and Reddy, S. and Eeda, S. S. and Gudapati, B. K. and Mettla, A. L. and Chakrabarti, S. and Kanade, P. and Shantha, G. P. S.	Prevalences, causes and risk factors of blindness and visual impairment in three tribal areas of Andhra Pradesh, India	2014	No new AP indicator
212	Ajitha, Katta and Krishna, A. K. I. and Bagavandas, M. and Anegawa, T. and Suresh, Munuswamy	Progressive disability in elderly population among tribals of Telangana: a cross sectional study	2017	No new AP indicator
213	Barton, G. and Davis, A. and Mair, I. W. S. and Parving, A. and Rosenhall, U. and Sorri, M.	Provision of hearing aid services: A comparison between the Nordic countries and the United Kingdom	2001	Data collected before 2000
214	Harkins, C. S. and McGarry, A. and Buis, A.	Provision of prosthetic and orthotic services in low-income countries: A review of the literature	2013	Not population-based/representative
215	Congdon, N. G. and Ma, X. and Zhou, Z. and Yi, H. and Pang, X. and Shi, Y. and Chen, Q. and Meltzer, M. and He, M. and Rozelle, S.	Provision of spectacles improves academic performance of primary school children in a randomized trial in China	2014	Full text not available
216	Green, G. and Young, J.	provision of wheelchairs for older people in the United Kingdom	2011	Not population-based/representative
217	Jan, C. and Kang, M. T. and Li, S. and Mitchell, P. and Rose, K. A. and Congdon, N. G. and Wang, N.	Pseudomyopia in China: Prevalence and impact of inaccurate spectacle power among Chinese children of different ages	2017	Full text not available
218	Congdon, N. and Li, L. and Zhang, M. and Yang, A. and Gao, Y. and Griffiths, S. and Wu, J. and Sharma, A. and Lam, D. S. C.	Randomized, controlled trial of an educational intervention to promote spectacle use in rural China: The see well to learn well study	2011	Not population-based/representative
219	Humanity & Inclusion	Rapid Assessment of Disability in Kurigram and Narsingdi, Bangladesh	2017	Full text not available
220	Al-Taryar, R; Humbert, T; et al.	Rapid assessment on access to assistive technology in the World Health Organization's European Region	2019	No new AP indicator
221	Khan, S.	Rapid assistive technology assessment: Survey on the use and demand for assistive products in Pakistan	2019	Full text not available
222	Hiscock, D.	rapid needs analysis for North East Syria: Key findings on age, disability and technology	2019	Not population-based/representative
223	Smeeth, L. and Fletcher, A. E. and Ng, E. S. W. and Stirling, S. and Nunes, M. and Breeze, E. and Bulpitt, C. J. and Jones, D. and Tulloch, A.	Reduced hearing, ownership, and use of hearing aids in elderly people in the UK - The MRC trial of the assessment and management of older people in the community: A cross-sectional survey	2002	Data collected before 2000
224	Nacouzi, R. P. and Baz, P.	Refractive disorders in a group of the Lebanese population of Armenian descent: A pilot study	2010	Full text not available
225	Trabucco, P. and Salomone, M. and Domanico, I. and Gerace, E. and Carnevale, C. and Vingolo, E.	Refractive error and amblyopia in A schoolchildren population of central italy	2013	Full text not available
226	Kannan, U. and Rajendiran, A. and Yeraballi, D. and Shanmugavel, K. and John, N. A. and Rene, S.	Refractive error and associated risk factors in 6-12 years schoolchildren	2016	No new AP indicator
227	Brian, G. and Pearce, M. G. and Ramke, J.	Refractive error and presbyopia among adults in fiji	2011	Full text not available

228	Jeganathan, V. S. E. and Robin, A. L. and Woodward, M. A.	Refractive error in underserved adults: Causes and potential solutions	2017	Not population-based/representative
229	Nguyen, A. and Guo, X. and Inns, A. and Kretz, A. M. and Mukherjee, M. R. and Friedman, D. S. and Repka, M. X. and Collins, M. E.	Refractive error prevalence among inner-city students receiving school-based vision screenings and eye exams	2019	Full text not available
230	Schiefer, Ulrich and Kraus, Christina and Baumbach, Peter and UngewiÃŸ, Judith and Michels, Ralf	Refractive errors	2016	Not population-based/representative
231	Nonon Saa, K. B. and Atobian, K. and Banla, M. and Redah, T. and Maneh, N. and Walser, A.	Refractive errors among schoolchildren in the central region of Togo	2013	No new AP indicator
232	Zain-Ur-Rehman, M. and Ahmad, S. R. and Mariya, Syed	Refractive errors among school-going children in Hyderabad	2017	Not population-based/representative
233	Loukil, I. and Naija, O. and Hachicha, F. and Mallouch, N. and Slim, B. and Bhiri, R. and Hijazi, A.	Refractive errors and visual impairment in Tunisian children	2011	Full text not available
234	Yingyong, P.	Refractive errors survey in primary school children (6-12 year Old) in 2 provinces: Bangkok and Nakhonpathom (one year result)	2010	Full text not available
235	Schuster, Alexander Karl-Georg and Pfeiffer, Norbert and Schulz, Andreas and Hoehn, Rene and Ponto, Katharina A. and Wild, Philipp S. and Blettner, Maria and Beutel, Manfred E. and Lackner, Karl J. and Munzel, Thomas and Mirshahi, Alireza	Refractive, corneal and ocular residual astigmatism: distribution in a German population and age-dependency - the Gutenberg health study	2017	Not population-based/representative
236	Hlayisi, V. G.; Ramma, L.;	Rehabilitation for disabling hearing loss: evaluating the need relative to provision of hearing aids in the public health care system	2019	Not population-based/representative
237	Golovanova, L. E. and Boboshko, M. Iu and Takhtaeva, N. Iu and Zhilinskaia, E. V.	Rehabilitation in elderly people with hearing loss	2014	Full text not available
238	Lynch, C. D. and Liu, X. H. and Landon, M. B.	Reproductive outcomes among women with a disability in the United States	2012	Full text not available
239	Ulusoy, S. and Ugras, H. and Cingi, C. and Yilmaz, H. B. and Muluk, N. B.	results of national newborn hearing screening (NNHS) data of 11,575 newborns from west part of Turkey	2014	Not population-based/representative
240	Daykhes, N. A. and Grigor'eva, E. A. and Nazarochkin, Yu V. and Davydov, V. M. and Kuznetsov, A. O.	results of universal audiological screening of newborn infants in the Astrakhan region]	2017	Full text not available
241	Razavi, H. and Burrow, S. and Trzesinski, A.	Review of eye health among Aboriginal and Torres Strait Islander people	2018	No new AP indicator
242	Lindgren, B.	rise in life expectancy, health trends among the elderly, and the demand for care - a selected literature review	2016	Not population-based/representative
243	Seymour, N.	role of community-based rehabilitation (CBR) in effective wheelchair service provision	2015	Full text not available
244	Gonsalves, Sarita and Ganagi, Srinivas and Vivedkanad, U.	School screening in Coastal Karnataka	2019	Not population-based/representative
245	Sharma, Abhishek and Congdon, Nathan and Patel, Mehul and Gilbert, Clare	School-based approaches to the correction of refractive error in children	2012	No new AP indicator
246	Sherwin, J. C. and Dean, W. H. and Metcalfe, N.	Screening for childhood blindness and visual impairment in a secondary school in rural Malawi	2011	Not population-based/representative
247	Frick, K. D. and Riva-Clement, L. and Shankar, M. B.	Screening for refractive error and fitting with spectacles in rural and urban India: Cost-effectiveness	2009	No new AP indicator
248	Setti, A. and Bhuachalla, B. N. and Savva, G. M. and Kenny, R. A.	Self-rated vision and cognitive function in the irish population	2012	Full text not available
249	Brennanâ€• Jones, Christopher G. and Taljaard, Dunay S. and Brennanâ€• Jones, Sophie E. F. and Bennett, Rebecca J. and Swanepoel, De Wet and Eikelboom, Robert H.	Self-reported hearing loss and manual audiometry: A rural versus urban comparison	2016	Not population-based/representative
250	Li, C. F. and Lo, J. C. and Lau, G. C. and Gordon, N. P.	Self-reported hearing loss and use of hearing aids in older adults	2019	Full text not available
251	Bazargan, M. and Baker, R. S. and Bazargan, S. H.	Sensory impairments and subjective well-being among aged African American persons	2001	Data collected before 2000
252	Ngo, G. and Trope, G. and Buys, Y. and Jin, Y. P.	Significant disparities in eyeglass insurance coverage in Canada	2018	No new AP indicator
253	Vincent, J. E.	Simple spectacles for adult refugees on the Thailand-Burma border	2006	Full text not available
254	Carlson, D. and Ehrlich, N.	Sources of payment for assistive technology: findings from a national survey of persons with disabilities	2006	Not population-based/representative
255	Mudie, L. and Huang, A. and Mukherjee, R. and Madden, N. and Slavin, R. and Oweye, J. and Friedman, D. S. and Repka, M. X. and Collins, M. E.	Spectacle correction and reading ability in a school-based vision study in inner-city baltimore	2017	Full text not available

256	Gupta, V. and Saxena, R. and Vashist, P. and Bhardwaj, A. and Pandey, R. M. and Tandon, R. and Menon, V.	Spectacle Coverage among Urban Schoolchildren with Refractive Error Provided Subsidized Spectacles in North India	2019	Full text not available
257	Marmamula, S. and Ravuri, L. V. C. S. and Boon, M. Y. and Khanna, R. C.	Spectacle coverage and spectacles use among elderly population in residential care in the south Indian state of Andhra Pradesh	2013	Not population-based/representative
258	Vasconcelos, G. C. and Cavascan, N. N. and Berezovsky, A. and Cunha, C. C. and Munoz, S. and Furtado, J. M. and Cohen, J. M. and Cohen, M. J. and Belfort, R. and Salomao, S. R.	Spectacle coverage in older adults from parintins: The Brazilian Amazon region eye survey (BARES)	2016	Full text not available
259	Aravind Eye Hospital	Spectacle dispensing for myopia at primary eye care level	2019	No new AP indicator
260	Barria Von-Bischhoffshausen, F. and Munoz, B. and Riquelme, A. and Ormeno, M. J. and Silva, J. C.	Spectacle-wear compliance in school children in Concepcion Chile	2014	Not population-based/representative
261	Salomao, S. R. and Munoz, S. and Furtado, J. M. and Ferraz, A. N. and Berezovsky, A. and Cavascan, N. N. and Sacai, P. Y. and Mitsuhiro, M. R. K. H. and Cohen, J. M. and Belfort, R.	Study design and methods for a population-based study on the prevalence and causes of distance and near vision impairment and blindness in parintins city: The Brazilian amazon region eye survey (BARES)	2016	Full text not available
262	Lin, Jin-Ding and Li, Chien-De and Lin, Lan-Ping and Hsu, Shang-Wei	study of geographic differences in the prevalence of disability among Taiwanese population	2012	No new AP indicator
263	Manasa, G. and Seran Kumar Reddy, M. and Sai Spporthy, M. and Nisar, S. and Vamsidhar and Naik, B. S.	study of prevalence of undetected refractive errors among school children in Kadapa	2012	Full text not available
264	Pannell, L; Seymour, N.	Sustainability of wheelchair service provision: Perspectives from service providers	2019	Not population-based/representative
265	Bright, T. and Wallace, S. and Kuper, H.	systematic review of access to rehabilitation for people with disabilities in low-and middle-income countries	2018	Not population-based/representative
266	PEEK	The Peek Approach to Measuring and Creating Impact	2019	No new AP indicator
267	Garcia, Y; Pearlman, J; Rosen, P.	The wheelchair user's voice: Preliminary results related to unmet need for assistive technology in Indonesia and El Salvador	2019	Not population-based/representative
268	Cheng, Yiling J. and Gregg, Edward W. and Saaddine, Jinan B. and Imperatore, Giuseppina and Zhang, Xinzhi and Albright, Ann L.	Three decade change in the prevalence of hearing impairment and its association with diabetes in the United States	2009	No new AP indicator
269	Ajith, S. and Sandhya, R.	To study the prevalence of refractory errors in school children	2015	No new AP indicator
270	Ntodie, M. and Danquah, L. and Kandel, H. and Abokyi, S.	Toward eliminating blindness due to uncorrected refractive errors: assessment of refractive services in the northern and central regions of Ghana	2014	Not population-based/representative
271	Holden, Brien A. and Tahhan, Nina and Jong, Monica and Wilson, David A. and Fricke, Timothy R. and Bourne, Rupert and Resnikoff, Serge	Towards better estimates of uncorrected presbyopia	2015	Full text not available
272	Varadaraj, V. and Frick, K. D. and Saaddine, J. B. and Friedman, D. S. and Swenor, B. K.	Trends in Eye Care Use and Eyeglasses Affordability: The US National Health Interview Survey, 2008-2016	2019	No new AP indicator
273	Lee, D. J. and Arheart, K. L. and Lam, B. L. and Zheng, D. and Christ, S. L. and McCollister, K. E. and Davila, E. P. and Caban-Martinez, A. J.	Trends in reported visual impairment in United States adults	2009	No new AP indicator
274	Lai, Der-Chung and Tseng, Yen-Cheng and Guo, How-Ran	Trends in the prevalence of childhood disability: Analysis of data from the national disability registry of Taiwan, 2000-2011	2013	No new AP indicator
275	Warkad, Vivekanand U. and Panda, Lapam and Behera, Pradeep and Das, Taraprasad and Mohanta, Bikash C. and Khanna, Rohit	Tribal Odisha Eye Disease Study (TOES) 1: prevalence and causes of visual impairment among tribal children in an urban school in Eastern India	2018	No new AP indicator
276	Giloyan, A. and Harutyunyan, T. and Petrosyan, V.	Uncorrected refractive error and associated risk factors among socially vulnerable older adult population living in Armenia	2018	Not population-based/representative
277	Ehrlich, J. R. and Laoh, A. and Kourgialis, N. and Prasetyanti, W. and Zakiyah, R. and Faillace, S. and Friedman, D. S.	Uncorrected refractive error and presbyopia among junior high school teachers in Jakarta, Indonesia	2013	Not population-based/representative
278	Uribe, J. A. and Swenor, B. K. and Munoz, B. E. and West, S. K.	Uncorrected refractive error in a latino population: Proyecto VER	2011	Data collected before 2000
279	Saw, S. M. and Foster, P. J. and Gazzard, G. and Friedman, D. and Hee, J. and Seah, S.	Undercorrected refractive error in Singaporean Chinese adults: The Tanjong Pagar survey	2004	Data collected before 2000
280	Harrington, Christina N. and Mitzner, Tracy L. and Rogers, Wendy A.	Understanding the role of technology for meeting the support needs of older adults in the USA with functional limitations	2015	No new AP indicator
281	McColl, M. A. and Jarzynowska, A. and Shortt, S. E. D.	Unmet health care needs of people with disabilities: population level evidence	2010	Data collected before 2000
282	Dusing, Stacey C. and Skinner, Asheley Cockrell and Mayer, Michelle L.	Unmet Need for Therapy Services, Assistive Devices, and Related Services: Data From the National Survey of Children	2004	No new AP indicator

		With Special Health Care Needs		
283	Abhishek, Sharma and Li, LiPing and Song, Yue and Choi, Kai and Lam, D. S. C. and Zhang, MingZhi and Zheng, MingWei and Zhou, ZhongXia and Liu, XiaoJian and Wu, Bin and Congdon, N.	Strategies to improve the accuracy of vision measurement by teachers in rural Chinese secondary schoolchildren: Xichang Pediatric Refractive Error Study (X-PRES) Report No. 6	2008	No new AP indicator
284	Mitra, M. and Bogen, K. and Long-Bellil, L. M. and Heaphy, D.	Unmet needs for home and community-based services among persons with disabilities in Massachusetts	2011	No new AP indicator
285	Emamian, M. H. and Zeraati, H. and Majdzadeh, R. and Shariati, M. and Hashemi, H. and Fotouhi, A.	Unmet refractive need and its determinants in Shahroud, Iran	2012	Full text not available
286	Clarke, N. and Shacks, J. and Kerr, A. R. E. and Bottrell, C. L. and Poulsen, M. K. and Yin, L.	Use of a noncycloplegic autorefractor to perform vision screening in preschools	2008	Not population-based/representative
287	Kwok-Tak Yeung 1 2 , Chung-Hui Lin 1 2 , Ya-Ling Teng 1 2 , Fen-Fen Chen 1 2 , Shu-Zon Lou 1 2 , Chiung-Ling Chen	Use of and Self-Perceived Need for Assistive Devices in Individuals with Disabilities in Taiwan	2016	Not population-based/representative
288	Ryskulova, A. and Klein, R. and Cotch, M. F.	Use of eye care services among U.S. Children, 2002 and 2008	2010	Full text not available
289	Hartley, D. and Rochtchina, E. and Newall, P. and Golding, M. and Mitchell, P.	Use of hearing aids and assistive listening devices in an older australian population	2010	Full text not available
290	Clarke, P. and Chan, P. and Santaguida, P. L. and Colantonio, A.	use of mobility devices among institutionalized older adults	2009	Not population-based/representative
291	Heerkens, Y. and Bougie, T. and Claus, E.	use of the ICF in the process of supplying assistive products: Discussion paper based on the experience using a general Dutch prescription guideline	2011	No new AP indicator
292	Desideri, L; Salatino, C; et al.	Using a standard procedure to assess assistive technology service delivery outcomes: A proposal from the Italian Network of Independent Assistive Technology Centres	2019	No new AP indicator
293	Duke, Roseline and Otong, Eyoawan and Iso, Maureen and Okorie, Uche and Ekwe, Asuquo and Courtright, Paul and Lewallen, Susan	Using key informants to estimate prevalence of severe visual impairment and blindness in children in Cross River State, Nigeria	2013	No new AP indicator
294	Zhang, X. and Cotch, M. F. and Ryskulova, A. and Primo, S. A. and Nair, P. and Chou, C. F. and Geiss, L. S. and Barker, L. E. and Elliott, A. F. and Crews, J. E. and Saaddine, J. B.	Vision health disparities in the United States by race/ethnicity, education, and economic status: Findings from two nationally representative surveys	2012	No new AP indicator
295	Unsal, A. and Ayranci, U. and Tozun, M.	Vision screening among children in primary schools in a district of western Turkey: An epidemiological study	2009	Not population-based/representative
296	Ketaki, Bagchi and Subhra, Nag and Tutul, Chattopadhyaya and Amit, Dan	Vision screening programme among school children - evaluation of the outcome in a selected urban locality	2008	Full text not available
297	Marcela Colussi Cypel 1 , Solange Rios Salomão 1 , Paulo Elias Correa Dantas 2 , Claudio Luiz Lottenberg 3 , Niro Kasahara 2 , Luiz Roberto Ramos 4 , Rubens Belfort Jr	Vision status, ophthalmic assessment, and quality of life in the very old	2017	Not population-based/representative
298	Solange R. Salomão; Márcia R. K. H. Mitsuhiro; Rubens Belfort Jr	Visual impairment and blindness: An overview of prevalence and causes in Brazil	2009	No new AP indicator
299	Yekta, Reyhaneh and Hashemi, Hassan and Pakzad, Reza and Jafari, Asieh and Yekta, Abbasali and Heravian, Javad and Ostadimoghaddam, Hadi and Valadkhan, Mehrnaz and Khabazkhoob, Mehdi	Visual impairment and some of ocular problem in nursing home residents	2019	Not population-based/representative
300	Guo, Yin and Liu, LiJuan and Xu, Liang and Lv, YanYun and Tang, Ping and Feng, Yi and Meng, Lei and Jonas, J. B.	Visual impairment and spectacle use in schoolchildren in rural and urban regions in Beijing	2014	Not population-based/representative
301	Wei, S. and Sun, Y. and Wang, N.	Visual impairment and spectacle use in university students in central China: The Anyang University Students Eye Study	2019	Not population-based/representative
302	Abokyi, S. and Ilechie, A. and Nsiah, P. and Darko-Takyi, C. and Abu, E. K. and Osei-Akoto, Y. J. and Youfegan-Baanam, M.	Visual impairment attributable to uncorrected refractive error and other causes in the Ghanaian youth: The University of Cape Coast Survey	2016	Not population-based/representative
303	Srinivas, Marmamula and Saggam, Narsaiah and Konegari, Shekhar and Khanna, R. C. and Rao, G. N.	Visual impairment in the South Indian state of Andhra Pradesh: Andhra Pradesh - Rapid Assessment of Visual Impairment (AP-RAVI) project	2013	No new AP indicator
304	Owsley, Cynthia; McGwin, Gerald; Scilley, Kay	visual status of older persons residing in nursing homes	2007	Not population-based/representative
305	Cox, D. L.	Wheelchair needs for children and young people: a review	2003	No new AP indicator
306	Allen, M. and Gowran, R. J. and Goldberg, M. and Pearlman, J.	Wheelchair stakeholders meeting 2018 - Developing a global wheelchair sector report with priority actions toward sustainable wheelchair provision: Appropriate wheelchairs, a global challenge	2019	Full text not available

307	Clarke, P. and Colantonio, A.	Wheelchair use among community-dwelling older adults: Prevalence and risk factors in a national sample	2005	Full text not available

Appendix 7: Hearing Aid Indicators

Citation	Tool, Survey, or Dataset	Study Design	Approaches	Ages	Participants	JBI Score	Functional Difficulty Threshold	WHO Region	Country	AP access Indicator			
										Indicator	Calculation	(%)	Denominator
Muga, 2003[16]	None	Cross-sectional	Functional; Self-report	2-9	399	4 [1, 3, 4, 7, 9, 10]	RAL	AFR	Kenya	Need	3/399	0.8%	Total participants
Rios et al, 2014[17]	Assistive Technology Banks (BAT) Client Database	Secondary cross-sectional	Clinical	0-100	839	8 [2, 10]	AP use	AMR	Colombia	Has AP	224/839	26.7%	Total participants
Vuorialho et al, 2004[18]	None	Secondary cross-sectional	Clinical	0-100	455200	7 [1, 4, 10]	HL>30dB	EUR	Finland	Has AP	1294/839	89.1%	Total with need
Nash et al, 2013[19]	Beaver Dam Offspring Study	Secondary cross-sectional	Clinical; Self-report	21-84	3130	10	HL>25dB	AMR	United States	Use	42/401	10.5%	Total with functional difficulty
Dawes et al, 2014[20]	UK Biobank Resource	Secondary cross-sectional	Functional; Single-question self-report	40-69	164770	9 [2]	AP use; Digit Triplet Test	EUR	United Kingdom	Use	3295/164770	2.0%	Total participants
Sawyer et al, 2019[21]	UK Biobank Resource	Secondary cross-sectional	Functional; Single-question self-report	40-69	18730	9 [9]	AP use; Digit Triplet Test	EUR	United Kingdom	Use	1732/18730	9.2%	Total with functional difficulty
										Unmet	16963/18730	90.6%	Total with functional difficulty
Boggs et al, 2019[22]	WGQ Child Functioning Module; WGQ Extended set	Secondary cross-sectional	Clinical; Self-report	0+	7135	8 [4, 8]	HL>41dB; RAL	AFR	Cameroon	Coverage	3/43	7.0%	Total with need
										Need	43/3572	1.2%	Total participants
										Unmet	40/43	93.0%	Total with need
										Use	3/3572	0.1%	Total participants
								SEAR	India	Coverage	5/112	4.5%	Total with need
										Need	112/3563	3.1%	Total participants
										Unmet	107/112	95.5%	Total with need
										Use	5/3563	0.1%	Total participants
Orji et al, 2020[23]	GBD; National	Secondary	Multiple	0+	N/A	10	HL>=35dB	AFR		Use	3.6/36.6*	9.8%	Total with

	Health and Nutrition Examination Survey; Multi-Country Survey Study on Health and Responsiveness; Studies on Global Ageing and Adult Health	cross-sectional	secondary sources										need
										Unmet	33/36.6*	90.2%	Total with need
								AMR		Use	9.9/59.4*	16.7%	Total with need
										Unmet	49.5/59.4*	83.3%	Total with need
								EMR		Use	3.3/21.1*	15.6%	Total with need
										Unmet	17.8/21.1*	84.4%	Total with need
								EUR		Use	12.3/545*	2.3%	Total with need
										Unmet	42.2/545*	7.7%	Total with need
								Global		Use	67.9/401.4*	16.9%	Total with need
										Unmet	333.5/401.4*	83.1%	Total with need
								SEAR		Use	15.7/102.3*	15.3%	Total with need
										Unmet	86.5/102.3*	84.6%	Total with need
								WPR		Use	22.8/125.6*	18.2%	Total with need
										Unmet	102.9/125.6*	81.9%	Total with need
Gondim et al, 2012[24]	None	Cross-sectional	Clinical; Self-report	4+	379	10	HL>25dB	AMR	Brazil	Need	18/379	4.7%	Total participants
Danquah et Brus, 2013[25]	WGQ Short set	Mixed-methods	Self-report	5+	3122	10	RAL	AMR	Haiti	Unmet	35/178	19.7%	Total with functional difficulty
										Use	8/178	4.5%	Total with functional difficulty
von Gablenz et al, 2017[26]	Aalen Survey; HÖRSTAT	Cross-sectional	Clinical; Self-report	7+	1866	9 [9]	HL>25dB	EUR	Germany	Use	162/3105	5.2%	Total participants

	Study												
Berardi et al, 2020[27]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45443	10	RAL	AMR	Canada	Unmet	237560/27561460	0.9%	Total population
										Use	314470/27561460	1.1%	Total population
Angara et Snapp, 2018[28]	National Health and Nutritional Examination Survey	Secondary cross-sectional	Clinical; Self-report	18+	3701	8 [2, 10]	HL>25dB	AMR	United States	Use	125/505	24.8%	Total with functional difficulty
Li et al, 2018[29]	Behavioral Risk Factor Surveillance System; National Health Interview Survey	Secondary cross-sectional	Functional; Self-report	18+	18391	10	RAL	AMR	United States	Use	827/41339	2.0%	Total participants
Pryor et al, 2018[30]	ATA-N, RAD, WGQ	Cross-sectional	Self-report	18+	4253	9 [4]	AP use	SEAR	Bangladesh	Use	1/112	0.9%	Total with functional difficulty and using any AP
Moon et al, 2015[31]	Korea National Health and Nutrition Examination Survey	Secondary cross-sectional	Clinical; Self-report	40+	12709	10	HL>40dB; RAL	WPR	South Korea	Has AP	94/530	17.7%	Total with functional difficulty
										Use	69/530	13.0%	Total with functional difficulty
Gopinath et al, 2011[32]	Blue Mountains Eye Study	Cross-sectional	Clinical; Self-report	55-99	1371	8 [2, 10]	HL>25dB	WPR	Australia	Has AP	147/1371	10.7%	Total participants
										Unmet	318/456	69.7%	Total with functional difficulty
										Use	103/138	74.6%	Total with AP
Corna et al, 2009[33]	Canadian Community Health Survey	Secondary cross-sectional	Self-report	50+	43168	10	RAL	AMR	Canada	Met	2461/43168	5.7%	Total participants
										Unmet	1080/43168	2.5%	Total participants
Mitchell et al, 2011[34]	Blue Mountains Hearing Study	Cohort	Clinical; Self-report	55+	1556	9 [10]	HL>25dB	WPR	Australia	Use	921/1938	47.5%	Total with functional difficulty
Kim, 2015[35]	Korean National Health and Nutrition	Secondary cross-sectional	Clinical; Self-report	60+	5447	10	HL>40dB	WPR	South Korea	Need	2680/5447	49.2%	Total participants

	Examination Survey												
										Unmet	746/2680	27.8%	Total with functional difficulty
										Use	142/2680	5.3%	Total with functional difficulty
Siti Zamratol-Mai et al, 2016[36]	Longitudinal study on neuroprotective model for healthy longevity (LRGS-TUA)	Cross-sectional	Clinical; Self-report	60+	382	8 [4, 10]	HL>25dB	WPR	Malaysia	Coverage	13/279	4.7%	Total with need
Chang et al, 2009[37]	None	Cross-sectional	Clinical; Self-report	65+	1220	10	HL>=41dB	WPR	Taiwan	Unmet	59/1220	4.8%	Total participants
										Use	26/1220	2.1%	Total participants
Lopez-Torres Hidalgo et al, 2008[38]	None	Cross-sectional	Clinical; Self-report	65+	1162	10	HL>=35dB	EUR	Spain	Need	486/1162	41.8%	Total with functional difficulty
										Use	52/1162	4.5%	Total with functional difficulty
Bainbridge et Ramachandran, 2014[39]	National Health and Nutrition Examination Survey	Secondary cross-sectional	Clinical; Self-report	70+	1636	10	HL>=35dB; RAL	AMR	United States	Need	601/1636	36.7%	Total participants
										Unmet	402/601	66.9%	Total with need
										Use	199/601	33.1%	Total with need
Dupraz et al, 2020[40]	5-Country Oldest Old Project (5-COOP)	Cross-sectional	Clinical; Self-report	100	1253	10	AP use	EUR	Denmark	Has AP	161/251	64.1%	Total participants
									France	Has AP	117/282	41.5%	Total participants
									Sweden	Has AP	150/274	54.7%	Total participants
									Switzerland	Has AP	86/170	50.6%	Total participants
								WPR	Japan	Has AP	94/346	27.2%	Total participants

ATA-N=Assistive Technology Assessment-Needs. GBD=Global Burden of Disease dataset. RAD=Rapid Assessment of Disability. WGQ=Washington Group Questions. RAL=self-reported activity limitations. HL=hearing loss.

**Results are presented in millions.*

Appendix 8: Mobility AP Indicators

AP Type	Citation	Tool, Survey, or Dataset	Study Design	Approaches	Ages	Participants	JBI Score	Functional Difficulty Threshold	WHO Region	Country	AP access Indicator			
											Indicator	Calculation	(%)	Denominator
Limb prosthetics	Rios et al, 2014[17]	Assistive Technology Banks (BAT) Client Database	Secondary cross-sectional	Clinical	0-100	839	8 [2, 10]	AP use	AMR	Colombia	Has AP	151/839	18.0%	Total participants
	Pryor et al, 2018[30]	ATA-N, RAD, WGQ	Cross-sectional	Self-report	18+	4253	9 [4]	AP use	SEAR	Bangladesh	Use	1/112	0.9%	Total with functional difficulty
Motorised wheelchairs	Berardi et al, 2020[27]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45443	10	RAL	AMR	Canada	Unmet	32220/27561460	0.1%	Total population
	Giesbrecht et al, 2017[41]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45442	10	RAL	AMR	Canada	Unmet	2531649/3775920	67.0%	Total with functional difficulty
	Smith et al, 2016[42]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45500	9 [10]	AP use	AMR	Canada	Use	150910/288800	52.3%	Total with AP
	Pryor et al, 2018[30]	ATA-N, RAD, WGQ	Cross-sectional	Self-report	18+	4253	9 [4]	AP use	SEAR	Bangladesh	Use	1/112	0.9%	Total with functional difficulty
	Gale et al, 2015[43]	English Longitudinal Study of Aging; Health Survey for England	Secondary cross-sectional	Functional; Self-report	60+	5450	9 [2]	AP use; RAL	EUR	United Kingdom	Use	14/3371	0.4%	Total with functional difficulty
	Gell et al, 2015[44]	National Health and Aging Trends Study	Secondary cross-sectional	Self-report	65+	7609	10	AP use	AMR	United States	Use	815000/35000000	2.3%	Total population

	Iwashyna et Christie, 2007[45]	Medicare Current Beneficiary Survey	Secondary cross-sectional	Self-report	65+	4687	10	RAL	AMR	United States	Use	25/835	3.0%	Total with functional difficulty
	Wolff et al, 2005[46]	Medicare Current Beneficiary Survey	Secondary cross-sectional	Clinical; Self-report	65+	12691	9 [7]	AP use	AMR	United States	Has AP	158812/30000000	0.5%	Total population
Manual or unspecified wheelchairs	Tataryn et al, 2017[47]	None	Cross-sectional	Clinical; Self-report	0-18	7220	9 [2]	RAL	AFR	Malawi	Need	87/1094	8.0%	Total with functional difficulty
	Rios et al, 2014[17]	Assistive Technology Banks (BAT) Client Database	Secondary cross-sectional	Clinical	0-100	839	8 [2, 10]	AP use	AMR	Colombia	Has AP	461/839	54.9%	Total participants
	Boggs et al, 2019[22]	WGQ Child Functioning Module; WGQ Extended set	Secondary cross-sectional	Clinical; Self-report	0+	7135	8 [4, 8]	RAL	AFR	Cameroon	Coverage	0/4	0.0%	Total with need
											Need	4/3572	0.1%	Total participants
											Unmet	4/3572	0.1%	Total participants
											Use	0/3572	0.0%	Total participants
									SEAR	India	Coverage	1/3	33.3%	Total with need
											Need	3/3563	0.1%	Total participants
											Unmet	2/3563	0.1%	Total participants
											Use	1/3563	0.0%	Total participants
	Danquah et Brus, 2013[25]	WGQ Short set	Mixed-methods	Self-report	5+	3122	10	RAL	AMR	Haiti	Need	17/178	9.7%	Total with functional difficulty

										Use	12/178	6.9%	Total with functional difficulty
	Giesbrecht et al, 2017[41]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45442	10	RAL	AMR	Canada	Under-met	28880/288800	10.0%	Total with AP
											Unmet	662552/3775920	17.5%	Total with functional difficulty
	Smith et al, 2016[42]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45500	9 [10]	AP use	AMR	Canada	Use	197560/288800	68.4%	Total with AP
	Pryor et al, 2018[30]	ATA-N, RAD, WGQ	Cross-sectional	Self-report	18+	4253	9 [4]	AP use	SEAR	Bangladesh	Use	1/112	0.9%	Total with functional difficulty and using any AP
	Theis et al, 2019[48]	Survey of Income and Program Participation	Secondary cross-sectional	Self-report	18+	66410	10	AP use; RAL	AMR	United States	Use	3.6/225.6*	1.6%	Total population
	Gale et al, 2015[43]	English Longitudinal Study of Aging; Health Survey for England	Secondary cross-sectional	Functional; Self-report	60+	5450	9 [2]	AP use; RAL	EUR	United Kingdom	Use	93/3371	2.8%	Total with functional difficulty
	Cornman et al, 2008[49]	Health and Retirement Study	Secondary cross-sectional	Self-report	65+	10101	8 [2, 10]	AP use	AMR	United States	Use	869/10101	8.6%	Total participants
	Gell et al, 2015[44]	National Health and Aging Trends Study	Secondary cross-sectional	Self-report	65+	7609	10	AP use	AMR	United States	Use	2.1/35*	6.1%	Total population
	Iwashyna et Christie,	Medicare Current Beneficiary	Secondary cross-sectional	Self-report	65+	4687	10	RAL	AMR	United States	Use	147/835	17.6%	Total with functional difficulty

	2007[45]	Survey											
	Wolff et al, 2005[46]	Medicare Current Beneficiary Survey	Secondary cross-sectional	Clinical; Self-report	65+	12691	9 [7]	AP use	AMR	United States	Has AP	776113/30000000	2.6%	Total population
	Dupraz et al, 2020[40]	5-COOP	Cross-sectional	Clinical; Self-report	100	1253	10	AP use	EUR	Denmark	Use (Indoor)	37/251	14.7%	Total participants
											Use (Outdoor)	50/251	19.9%	Total participants
									EUR	France	Use (Indoor)	67/212	31.6%	Total participants
											Use (Outdoor)	67/212	31.6%	Total participants
									EUR	Sweden	Use (Indoor)	75/274	27.4%	Total participants
											Use (Outdoor)	90/274	32.8%	Total participants
									EUR	Switzerland	Use (Indoor)	62/170	36.5%	Total participants
											Use (Outdoor)	68/170	40.0%	Total participants
									WPR	Japan	Use (Indoor)	143/346	41.3%	Total participants
											Use (Outdoor)	186/346	53.8%	Total participants

ATA-N=Assistive Technology Assessment-Needs. RAD=Rapid Assessment of Disability. WGQ=Washington Group Questions. RAL=self-reported activity limitations.

**Results are presented in millions.*

Appendix 9: Near and Distance Glasses Indicators

AP Type	Citation	Tool, Survey, or Dataset	Study Design	Approaches	Ages	Participants	JBI Score	Functional Difficulty Threshold	WHO Region	Country	AP access Indicator			
											Indicator	Calculation	(%)	Denominator
Near Glasses	Azizoglu et al, 2017[50]	None	Cross-sectional	Clinical	3-10	823	9 [2]	RE subsets	EUR	Turkey	Need	86/823	10.4%	Total participants
											Use	65/823	7.9%	Total participants
	Marmamula et al, 2013 (a)[51]	RARE	Cross-sectional	Clinical	15-49	3095	10	AP use	SEAR	India	Use	14/325	4.3%	Total with AP
	Muhit et al, 2018[52]	RARE	Cross-sectional	Clinical; Self-report	15-49	3050	10	PVA<6/18; UCNVA<N8	SEAR	Bangladesh	Coverage	28/869	3.2%	Total with need
											Met	28/869	3.2%	Total with need
											Unmet	841/869	96.8%	Total with need
	Chan et al, 2013[53]	RARE	Cross-sectional	Clinical	15-50	3171	9 [4]	UCVA<6/12	AFR	Eritrea	Coverage	39/394	9.9%	Total with need
											Met	39/394	9.9%	Total with need
											Unmet	355/394	90.1%	Total with need
	Loughman et al, 2015[54]	RARE	Cross-sectional	Clinical; Self-report	15-50	3457	9 [4]	PVA<6/12	AFR	Mozambique	Coverage	7/319	2.2%	Total with need
											Met	7/319	2.2%	Total with need
											Unmet	317/319	99.4%	Total with need
	Marmamula et al, 2009[55]	RARE	Cross-sectional	Clinical; Self-report	15-50	3203	10	PVA<6/12; UCNVA<N8	SEAR	India	Coverage	130/690	18.8%	Total with need
											Met	130/3203	4.1%	Total participants
											Need	690/3203	21.5%	Total participants
											Unmet	560/3203	17.5%	Total participants

										Use	15/371	4.0%	Total with AP
Taylor et al, 2010[56]	National Indigenous Eye Health Survey	Cross-sectional	Clinical	5-89	2883	10	VA<6/12; NVA<N8	WPR	Australia	Use	827/1325	62.4%	Total participants
Ramke et al, 2012[57]	RAAB; Timor-Leste Eye Health Survey	Cross-sectional	Clinical; Self-report	0-100	2014	10	PVA<6/18; UCNVA<N7	SEAR	Timor-Leste	Coverage	166/1057	15.7%	Total with need
										Met	166/2014	8.2%	Total participants
										Unmet	891/2014	44.2%	Total participants
Fricke et al, 2018[58]	None	Secondary cross-sectional	Multiple secondary sources	0+	N/A	10	UCVA<N8	Andean Latin America		Unmet	Not provided	51.4%	Total with functional difficulty
								Australasia		Unmet	Not provided	1.0%	Total with functional difficulty
								Caribbean		Unmet	Not provided	43.0%	Total with functional difficulty
								Central Asia		Unmet	Not provided	47.4%	Total with functional difficulty
								Central Europe		Unmet	Not provided	18.4%	Total with functional difficulty
								Central Latin America		Unmet	Not provided	47.6%	Total with functional difficulty
								Central Sub-Saharan		Unmet	Not provided	12.0%	Total with functional difficulty

	Africa				
	East Asia	Unmet	Not provided	14.5%	Total with functional difficulty
	East Sub-Saharan Africa	Unmet	Not provided	11.9%	Total with functional difficulty
	Eastern Europe	Unmet	Not provided	30.0%	Total with functional difficulty
	Global	Unmet	Not provided	45.2%	Total with functional difficulty
	HI Asia Pacific	Unmet	Not provided	1.0%	Total with functional difficulty
	HI North America	Unmet	Not provided	1.0%	Total with functional difficulty
	North Africa and Middle East	Unmet	Not provided	45.6%	Total with functional difficulty
	Oceania	Unmet	Not provided	74.2%	Total with functional difficulty
	South Asia	Unmet	Not provided	71.7%	Total with functional difficulty
	Southeast Asia	Unmet	Not provided	58.2%	Total with functional difficulty
	Southern Latin	Unmet	Not provided	24.9%	Total with functional

								America					difficulty
								Southern Sub-Saharan Africa		Unmet	Not provided	74.3%	Total with functional difficulty
								Tropical Latin America		Unmet	Not provided	40.9%	Total with functional difficulty
								West Sub-Saharan Africa		Unmet	Not provided	8.6%	Total with functional difficulty
								Western Europe		Unmet	Not provided	1.0%	Total with functional difficulty
	Casas Luque et al, 2019[59]	RARE	Cross-sectional	Clinical; Self-report	15-99	2886	9 [4]	VA<6/12	AMR	Colombia	Coverage	468/1379	33.9%	Total with need
											Met	468/1379	33.9%	Total with need
											Unmet	911/1379	66.1%	Total with need
	Robinson et al, 2013[60]	None	Cross-sectional	Clinical; Self-report	39-94	1345	10	PVA<6/12	AMR	Canada	Use	635/768	82.7%	Total participants
	Umar et al, 2015[61]	None	Cross-sectional	Clinical	40-97	650	10	PVA<6/18	AFR	Nigeria	Coverage	5/635	0.8%	Total participants
											Met	1/635	0.2%	Total participants
											Under-met	5/635	0.8%	Total participants
											Unmet	192/635	30.2%	Total participants
	Abdullah et al, 2015[62]	None	Cross-sectional	Clinical; Self-report	30+	917	9 [2]	VA<6/6	EMR	Pakistan	Use	90/528	17.0%	Total with functional difficulty
	Laitinen et al, 2005[63]	Health 2000 Survey	Cross-sectional	Clinical; Self-report	30+	7413	10	PNVA<=6/24	EUR	Finland	Has AP	4586/6667	68.8%	Total participants

	He et al, 2012[64]	None	Cross-sectional	Clinical	35+	17734	9 [4]	UCNVA<=6/12	AFR	Niger	Met	60/673	8.9%	Total with need
									AFR	Niger	Unmet	613/673	91.1%	Total with need
								UCNVA<=6/12; AP Use	AFR	Niger	Use	79/869	9.1%	Total with functional difficulty
								UCNVA<=6/12	AFR	South Africa	Met	27/1521	1.8%	Total with need
									AFR	South Africa	Unmet	1494/1521	98.2%	Total with need
								UCNVA<=6/12; AP Use	AFR	South Africa	Use	15/1687	0.9%	Total with functional difficulty
								UCNVA<=6/12	AMR	United States	Met	315/450	70.0%	Total with need
									AMR	United States	Unmet	135/450	30.0%	Total with need
								UCNVA<=6/12; AP Use	AMR	United States	Use	147/476	30.9%	Total with functional difficulty
								UCNVA<=6/12	SEAR	India	Met	92/1568	5.9%	Total with need
									SEAR	India	Unmet	1476/1568	94.1%	Total with need
								UCNVA<=6/12; AP Use	SEAR	India	Use	31/2169	1.4%	Total with functional difficulty
								UCNVA<=6/12	SEAR	Nepal	Met	56/1277	4.4%	Total with need
									SEAR	Nepal	Unmet	1221/1277	95.6%	Total with need
								UCNVA<=6/12; AP Use	SEAR	Nepal	Use	34/1448	2.3%	Total with functional difficulty
								UCNVA<=6/12	WPR	China (Guangzhou)	Met	643/948	67.8%	Total with need
									WPR	China (Guangzhou)	Unmet	305/948	32.2%	Total with need

								UCNVA<=6/12; AP Use	WPR	China (Guangzhou)	Use	657/1101	59.7%	Total with functional difficulty
								UCNVA<=6/12	WPR	China (Shunyi)	Met	3/1718	0.2%	Total with need
									WPR	China (Shunyi)	Unmet	1715/1718	99.8%	Total with need
								UCNVA<=6/12; AP Use	WPR	China (Shunyi)	Use	2/2435	0.1%	Total with functional difficulty
	He et al, 2014 (a)[65]	None	Cohort	Clinical; Self-report	35+	10553	9 [4]	UCVA<=6/12	SEAR	India	Met	175/937	18.7%	Total with functional difficulty
										Nepal	Met	122/942	13.0%	Total with functional difficulty
									WPR	China (Guangzhou)	Met	321/459	69.9%	Total with functional difficulty
										China (Shunyi)	Met	4/607	0.7%	Total with functional difficulty
	Hookway et al, 2016[66]	None	Cross-sectional	Clinical; Self-report	35+	3390	8 [4, 9]	UCVA<=6/12	AMR	Nicaragua	Uncorrected refractive error	1676/1871	89.6%	Total participants
	Naidoo et al, 2013[67]	None	Cross-sectional	Clinical; Self-report	35+	1939	9 [4]	VA<6/12	AFR	South Africa	Coverage	72/1488	4.8%	Total with need
											Met	72/1939	3.7%	Total participants
											Unmet	1416/1939	73.0%	Total participants
	Ntodie et al, 2017[68]	None	Cross-sectional	Clinical; Self-report	35+	576	10	VA<=6/18; NV<=N8	AFR	Ghana	Coverage	125/500	25.0%	Total participants
											Has AP	125/376	33.2%	Total with functional difficulty
											Met	56/500	11.2%	Total participants

										Under-met	69/500	13.8%	Total participants
										Unmet	251/500	50.2%	Total participants
	Sapkota et al, 2012[69]	None	Cross-sectional	Clinical	35+	2156	9 [4]	UCNVA<=6/12	SEAR	Nepal	Met	56/1448	3.9%	Total with functional difficulty
											Unmet	1221/1448	84.3%	Total with functional difficulty
	Uche et al, 2014[70]	None	Cross-sectional	Clinical; Self-report	35+	720	10	NVA<N8	AFR	Nigeria	Coverage	103/371	27.8%	Total need
											Met	103/585	17.6%	Total participants
											Unmet	268/585	45.8%	Total participants
	Cheng et al, 2016[71]	None	Cross-sectional	Clinical	40+	5197	10	PVA<6/12	WPR	China	Coverage	211/4144	5.1%	Total with functional difficulty
	Gupta et al, 2015[72]	RAVI	Cross-sectional	Clinical; Self-report	40+	2331	10	PVA<6/18; PNVA<N8	SEAR	India	Use	397/798	49.7%	Total with functional difficulty
	Laviers et al, 2010[73]	RAAB	Cross-sectional	Clinical; Self-report	40+	381	9 [4]	VA<6/18	AFR	Tanzania	Coverage	60/340	17.6%	Total with need
											Met	60/340	17.6%	Total with need
											Unmet	280/340	82.4%	Total with need
	Lu et al, 2011[74]	None	Cross-sectional	Clinical; Self-report	40+	1008	10	PVA<6/12	WPR	China	Coverage	343/666	51.5%	Total with need
											Met	343/666	51.5%	Total with need
											Unmet	323/666	48.5%	Total with need
	Mansberger, 2005[75]	None	Cross-sectional	Clinical	40+	288	7 [2, 4, 9]	PNVA<= Jaeger 4	AMR	United States	Uncorrected refractive error	88/288	30.6%	Total participants
	Marmamula et al, 2012[76]	RAVI	Cross-sectional	Clinical; Self-report	40+	1700	9 [4]	PVA<6/18; PNVA<N8	SEAR	India	Coverage	55/494	11.1%	Total with need

										Met	55/1094	5.0%	Total with functional difficulty
										Unmet	439/1094	40.1%	Total with functional difficulty
	Marmamula et al, 2013 (b)[77]	None	Cross-sectional	Clinical; Self-report	40+	2848	9 [4]	PVA<6/18; UCNVA<N8	SEAR	India	Coverage	654/1513	43.2%	Total with need
											Met	654/2448	26.7%	Total participants
											Under-met	78/859	9.1%	Total with functional difficulty
											Unmet	859/2448	35.1%	Total participants
	Marmamula et al, 2014[78]	None	Cross-sectional	Clinical; Self-report	40+	7378	9 [4]	VA<6/12; UCNVA<N8	SEAR	India	Coverage	939/3483	27.0%	Total with need
											Met	939/7378	12.7%	Total participants
											Unmet	2544/7378	34.5%	Total participants
	Marmamula et al, 2017 (a)[79]	RAVI	Cross-sectional	Clinical	40+	5881	10	PNVA<6/12	SEAR	India	Coverage	988/3734	26.5%	Total with need
											Met	988/5140	19.2%	Total participants
											Need	2996/5140	58.3%	Total participants
											Unmet	2746/5140	53.4%	Total participants
	Ramke et al, 2007[80]	RACSS	Cross-sectional	Clinical; Self-report	40+	1414	10	VA<N8	SEAR	Timor-Leste	Met	162/1414	11.5%	Total participants
											Unmet	457/1414	32.3%	Total participants
	Cunha et al, 2018[81]	None	Cross-sectional	Clinical	45+	2041	9 [1]	UCNVA<=6/18	AMR	Brazil	Use	229/2025	11.3%	Total participants
	Sherwin et al, 2008[82]	Nakuru District Blindness Study;	Cross-sectional	Clinical; Self-report	50+	134	8 [4, 8]	NVA<N8	AFR	Kenya	Coverage	7/111	6.3%	Total with need

		Rift Blindness Study												
											Met	7/130	5.4%	Total participants
											Under-met	2/130	1.5%	Total participants
											Unmet	102/130	78.5%	Total participants
											Use	9/130	6.9%	Total participants
	Zebardast et al, 2017[83]	National Health and Nutritional Examination Survey	Cross-sectional	Clinical; Self-report	50+	11016	9 [8]	PNVA<6/12; RAL	AMR	United States	Unmet	1476/11009	13.4%	Total with functional difficulty
											Use	9533/11009	86.6%	Total with functional difficulty
	Otte et al, 2018[84]	National Health and Aging Trends Study	Secondary cross-sectional	Self-report	65+	7497	10	RAL; AP use	AMR	United States	Under-met	1.2/37.2*	3.2%	Total with AP
Distance glasses	Kodjebacheva et al, 2011[85]	UCLA Mobile Eye Clinic Study	Cross-sectional	Clinical	5-7	11332	10	PDVA<6/12	AMR	United States	Uncorrected refractive error	858/11332	7.6%	Total participants
	Naidoo et al, 2016[86]	RARE	Cross-sectional	Self-report	15-36	1516	10	AP use	AFR	South Africa	Use	32/58	55.2%	Total with AP
	Marmamula et al, 2013 (b)[77]	RARE	Cross-sectional	Clinical	15-49	3095	9 [4]	PVA<=6/12	SEAR	India	Use	130/325	40.0%	Total with AP
	Loughman et al, 2015[54]	RARE	Cross-sectional	Clinical; Self-report	15-50	3457	9 [4]	DVA<6/12; NVA<6/12	AFR	Mozambique	Coverage	0/90	0.0%	Total with functional difficulty
											Uncorrected refractive error	90/3452	2.6%	Total participants

	Marmamula et al, 2009[55]	RARE	Cross-sectional	Clinical; Self-report	15-50	3203	10	UCVA<6/12; UCNVA<N8	SEAR	India	Coverage	58/200	29.0%	Total with need
											Met	58/3203	1.8%	Total participants
											Need	200/3203	6.2%	Total participants
											Uncorrected refractive error	96/109	88.1%	Total with functional difficulty
											Unmet	142/3203	4.4%	Total participants
											Use	142/371	38.3%	Total with AP
	Taylor et al, 2010[56]	National Indigenous Eye Health Survey	Cross-sectional	Clinical	5-89	2883	10	PVA<6/12	WPR	Australia	Use	513/3019	17.0%	Total participants
	Ramke et al, 2012[57]	RAAB; Timor-Leste Eye Health Survey	Cross-sectional	Clinical; Self-report	0-100	2014	10	PVA<6/18	SEAR	Timor-Leste	Coverage	71/291	24.4%	Total need
											Met	71/2014	3.5%	Total participants
											Unmet	220/2014	10.9%	Total participants
	Boggs et al, 2019[22]	WGQ Child Functioning Module; WGQ Extended set	Secondary cross-sectional	Clinical; Self-report	0+	7135	8 [4, 8]	VA<6/18; RAL	AFR	Cameroon	Coverage	10/27	37.0%	Total with need
											Need	27/3572	0.8%	Total participants
											Uncorrected refractive error	17/3572	0.5%	Total participants

											Unmet	17/27	63.0%	Total with need
											Use	10/3572	0.3%	Total participants
									SEAR	India	Coverage	114/131	87.0%	Total with need
											Need	131/3563	3.7%	Total participants
											Uncorrected refractive error	17/3563	0.5%	Total participants
											Unmet	17/131	13.0%	Total with need
											Use	114/3563	3.2%	Total participants
	Casas Luque et al, 2019[59]	RARE	Cross-sectional	Clinical; Self-report	15-99	2886	9 [4]	UCVA<6/12	AMR	Colombia	Coverage	288/566	50.9%	Total with need
											Met	288/566	50.9%	Total with need
											Uncorrected refractive error	360/2877	12.5%	Total participants
											Unmet	278/566	49.1%	Total with need
	Goujon et al, 2010[87]	National Indigenous Eye Health Study	Cross-sectional	Clinical; Self-report	5+	2883	8 [3, 9]	PVA<6/12; RAL	WPR	Australia	Coverage	389/467	83.3%	Total with need
											Met	389/488	79.7%	Total with functional difficulty
											Under-met	32/488	6.6%	Total with functional difficulty
											Unmet	46/488	9.4%	Total with functional difficulty
											Use	243/440	55.2%	Total with

													functional difficulty
	Vitale et al, 2006 (a)[88]	National Health and Aging Trends Study	Secondary cross-sectional	Clinical; Self-report	12+	15193	10	PVA<=6/12	AMR	United States	Use	4054/13075	31.0%	Total participants
	Malhotra et al, 2019[89]	None	Cross-sectional	Clinical; Self-report	14+	6910	9 [10]	PVA<6/12	SEAR	India	Coverage	374/1122	33.3%	Total with need
											Met	374/1122	33.3%	Total with need
											Need	1122/6910	16.2%	Total participants
											Unmet	748/6910	10.8%	Total participants
											Use	520/6910	7.5%	Total participants
	Robinson et al, 2013[60]	None	Cross-sectional	Clinical; Self-report	39-94	1345	10	PVA<6/12	AMR	Canada	Use	523/768	68.1%	Total participants
	Foreman et al, 2017 (a)[90]	National Eye Health Survey	Cross-sectional	Clinical	40-98	4836	9 [9]	PDVA<6/12	WPR	Australia	Uncorrected refractive error	243/396	61.4%	Total with functional difficulty
	Laitinen et al, 2005[63]	Health 2000 Survey	Cross-sectional	Clinical; Self-report	30+	7413	10	PVA<=6/24	EUR	Finland	Has AP	3497/6771	51.6%	Total participants
											Use	3419/3497	97.8%	Total with AP
	Shah et al, 2008[91]	National Blindness and Visual difficulty Survey	Cross-sectional	Clinical	30+	16507	10	PVA<6/12	EMR	Pakistan	Coverage	293/1936	15.1%	Total with need
											Met	293/13981	2.1%	Total participants
											Need	1936/13981	13.8%	Total participants
											Under-met	296/1148	25.8%	Total with AP

										Unmet	1347/13981	9.6%	Total participants
										Use	1148/16484	7.0%	Total participants
	Ramsewak et al, 2016[92]	National Blindness and Low Vision Prevalence Survey of Bangladesh	Cross-sectional	Clinical; Self-report	40-103	2515	10	RE subsets	AMR	Trinidad and Tobago	Uncorrected refractive error	1107/2515	44.0%	Total participants
											Use	1349/3597	37.5%	Total participants
	He et al, 2012[64]	None	Cross-sectional	Clinical	35+	17734	9 [4]	UCNVA<=6/12; AP use	AFR	Niger	Use	11/869	1.3%	Total with functional difficulty
										South Africa	Use	66/1687	3.9%	Total with functional difficulty
									AMR	United States	Use	4/476	0.8%	Total with functional difficulty
									SEAR	India	Use	8/2169	0.4%	Total with functional difficulty
										Nepal	Use	48/1448	3.3%	Total with functional difficulty
									WPR	China (Guangzhou)	Use	53/1101	4.8%	Total with functional difficulty
										China (Shunyi)	Use	23/2435	0.9%	Total with functional difficulty
	Foreman et al, 2017 (b)[93]	National Eye Health Survey	Cross-sectional	Clinical; Self-report	40+	4836	10	PVA<6/12	WPR	Australia	Met	2330/2570	90.7%	Total with need

										Need	2570/4836	53.1%	Total participants
										Uncorrected refractive error	240/4836	5.0%	Total participants
										Under-corrected refractive error	175/240	72.9%	Total with unmet need
										Unmet	240/2570	9.3%	Total with need
										Use	2505/4836	51.8%	Total participants
	Gilbert et al, 2018[94]	Sri Lanka National Survey of Blindness and Visual difficulty	Cross-sectional	Clinical; Self-report	40+	6713	8 [4, 10]	PVA<6/12	SEAR	Sri Lanka	Coverage	254/1435	17.7%	Total with need
											Met	254/1435	17.7%	Total with need
											Need	1435/5179	27.7%	Total participants
											Unmet	1181/1435	82.3%	Total with need
	Mansberger, 2005[75]	None	Cross-sectional	Clinical	40+	288	7 [2, 4, 9]	PVA<=6/12	AMR	United States	Uncorrected refractive error	52/288	18.1%	Total participants
	Marmamula et al, 2014[78]	None	Cross-sectional	Clinical; Self-report	40+	7378	9 [4]	VA<6/12; PNVA<N8	SEAR	India	Coverage	361/951	38.0%	Total with need
											Met	361/951	38.0%	Total with need
											Unmet	590/951	62.0%	Total with need
	Marmamula et al, 2016 (a)[95]	RAVI	Cross-sectional	Clinical	40+	6150	10	PVA<6/18; AP use	SEAR	India	Use	1694/5881	28.8%	Total participants
	Cunha et al, 2018[81]	None	Cross-sectional	Clinical	45+	2041	9 [1]	UCNVA<=6/18	AMR	Brazil	Use	23/2025	1.1%	Total participants

Flaxman et al, 2017[96]	None	Secondary cross-sectional	Multiple secondary sources	50+	3983541	10	PVA<6/18	Andean Latin America	Uncorrected refractive error	Not provided	46.1%	Total population
								Australasia	Uncorrected refractive error	Not provided	49.3%	Total population
								Caribbean	Uncorrected refractive error	Not provided	47.9%	Total population
								Central Asia	Uncorrected refractive error	Not provided	48.3%	Total population
								Central Europe	Uncorrected refractive error	Not provided	49.4%	Total population
								Central Latin america	Uncorrected refractive error	Not provided	47.9%	Total population
								Central Sub-Saharan Africa	Uncorrected refractive error	Not provided	46.5%	Total population
								East Asia	Uncorrected refractive error	Not provided	47.1%	Total population
								East Sub-Saharan Africa	Uncorrected refractive error	Not provided	46.8%	Total population
								Eastern Europe	Uncorrected refractive error	Not provided	48.5%	Total population
								Global	Uncorrected refractive error	Not provided	53.8%	Total population
								HI Asia Pacific	Uncorrected refractive error	Not provided	49.4%	Total population

										HI North America	Uncorrected refractive error	Not provided	49.5%	Total population
										North Africa and Middle East	Uncorrected refractive error	Not provided	44.6%	Total population
										Oceania	Uncorrected refractive error	Not provided	47.8%	Total population
										South Asia	Uncorrected refractive error	Not provided	66.4%	Total population
										Southeast Asia	Uncorrected refractive error	Not provided	46.1%	Total population
										Southern Latin America	Uncorrected refractive error	Not provided	48.2%	Total population
										Southern Sub-Saharan Africa	Uncorrected refractive error	Not provided	48.1%	Total population
										Tropical Latin America	Uncorrected refractive error	Not provided	49.3%	Total population
										West Sub-Saharan Africa	Uncorrected refractive error	Not provided	46.4%	Total population
										Western Europe	Uncorrected refractive error	Not provided	49.6%	Total population
	Malhotra et al, 2018[97]	None	Cross-sectional	Clinical	50+	1690	10	PVA<6/18	SEAR	India	Uncorrected refractive	192/386	49.7%	Total with functional

										error			difficulty
	Murthy et al, 2010[98]	None	Cross-sectional	Clinical	50+	5158	10	VA<6/9.5	SEAR	India	Use	817/4738	17.2%	Total participants
	Zebardast et al, 2017[83]	National Health and Nutritional Examination Survey	Cross-sectional	Clinical; Self-report	50+	11016	9 [8]	PVA<6/12; RAL	AMR	United States	Uncorrected refractive error	985/11016	8.9%	Total participants
	Zhao et al, 2010[99]	China Nine-Province Eye Survey	Cross-sectional	Clinical	50+	46097	10	VA<=6/12	WPR	China	Met	134/287	46.7%	Total with AP
											Need	6592/45747	14.4%	Total participants
											Unmet	6458/6592	98.0%	Total with need
											Use	287/45747	0.6%	Total participants
	Otte et al, 2018[84]	National Health and Aging Trends Study	Secondary cross-sectional	Self-report	65+	7497	10	RAL; AP use	AMR	United States	Under-met	2.7/27*	10.0%	Total with AP
	Naël et al, 2019[100]	Alienor Study	Cross-sectional	Clinical; Self-report	78+	707	9 [2]	PVA<6/12	EUR	France	Uncorrected refractive error	274/707	38.8%	Total participants
											Use	540/707	76.4%	Total participants

ATA-N=Assistive Technology Assessment-Needs. RAAB=Rapid Assessment of Avoidable Blindness. RAD=Rapid Assessment of Disability. RARE=Rapid Assessment of Refractive Error. RAVI=Rapid Assessment of Visual Impairment. WGQ=Washington Group Questions. RAL=self-reported activity limitations. RE=refractive error. VA=visual acuity. PVA=presenting visual acuity. UCVA=uncorrected visual acuity. DVA=distance visual acuity. NVA=near visual acuity. PNVA=presenting near visual acuity. UCNVA=uncorrected near visual acuity.

**Results are presented in millions.*

Appendix 10: Grouped Glasses Indicators

AP Type	Citation	Tool, Survey, or Dataset	Study Design	Approaches	Ages	Participants	JBI Score	Functional Difficulty Threshold	WHO Region	Country	AP access Indicator			
											Indicator	Calculation	(%)	Denominator
Bifocals	Marmamula et al, 2013 (a)[51]	RARE	Cross-sectional	Clinical	15-49	3095	9 [4]	PVA<=6/12	SEAR	India	Use	181/325	55.7%	Total with AP
	Marmamula et al, 2009[55]	RARE	Cross-sectional	Clinical; Self-report	15-50	3203	10	UCVA<6/12; UCNVA<N8	SEAR	India	Use	214/371	57.7%	Total with AP
	Gupta et al, 2015[72]	RAVI	Cross-sectional	Clinical; Self-report	40+	2331	10	AP use	SEAR	India	Use	314/468	67.1%	Total with AP
Glasses (General, unspecified, grouped)	Friedman et al, 2008[101]	Baltimore Pediatric Eye Disease Study	Cross-sectional	Clinical; Self-report	0-6	2546	10	VA<6/12	AMR	United States	Has AP	26/2546	1.0%	Total participants
	Giordano et al, 2009[102]	Baltimore Pediatric Eye Disease Study	Cross-sectional	Clinical	1-6	2298	8 [2, 10]	RE subsets	AMR	United States	Need	116/2298	5.0%	Total participants
											Use	29/2298	1.3%	Total participants
	Pai et al, 2011[103]	Sydney Pediatric Eye Disease Study	Cross-sectional	Clinical; Self-report	1-6	2461	10	PVA<6/12	WPR	Australia	Uncorrected refractive error	53/76	69.7%	Total with functional difficulty
	Hendler et al, 2016[104]	None	Cross-sectional	Clinical	3-5	11260	9 [2]	RE subsets	AMR	United States	Under-met	174/1007	17.3%	Total with functional difficulty
											Unmet	740/1007	73.5%	Total

													with functional difficulty
	Margines et al, 2020[105]	None	Cross-sectional	Clinical	3-5	79451	10	RE subsets	AMR	United States	Need	5883/8101	72.6%	Total with functional difficulty
	Mehravaran et al, 2016[106]	None	Cross-sectional	Clinical; Self-report	3-5	11260	9 [2]	RE subsets	AMR	United States	Use	429/489	87.7%	Total participants (at follow-up)
	Zhang et al, 2018[107]	Nanjing Eye Study	Cohort	Clinical	4-5	1986	9 [2]	UCVA<6/12	WPR	China	Uncorrected refractive error	61/78	78.2%	Total with functional difficulty
											Use	89/1961	4.5%	Total participants
	Ma et al, 2016[108]	Shanghai Children Eye Study	Cross-sectional	Clinical	3-10	8267	9 [1]	UCVA<=6/12	WPR	China	Need	2346/2517	93.2%	Total with functional difficulty
											Use	555/8196	6.8%	Total participants
	Robaei et al, 2005[109]	Sydney Myopia Study	Cross-sectional	Clinical; Self-report	5-8	1740	9 [9]	UCVA<6/12	WPR	Australia	Met	28/77	36.4%	Total with AP
											Need	77/1738	4.4%	Total participants
											Under-met	23/77	29.9%	Total with AP
											Unmet	26/1738	1.5%	Total

													participants
										Use	77/1738	4.4%	Total participants
	He et al, 2014 (b)[110]	None	Cross-sectional	Clinical; Self-report	2-12	9512	10	UCVA<6/12	WPR	China	Uncorrected refractive error	1795/2006	89.5%	Total with functional difficulty
											Under-met	81/311	26.0%	Total with AP
											Use	311/2006	15.5%	Total with functional difficulty
	Hashemi et al, 2017 (a)[111]	None	Cross-sectional	Clinical	7	4106	10	RE subsets	EMR	Iran	Coverage	56/168	33.3%	Total participants
											Met	56/4072	1.4%	Total participants
											Need	168/4072	4.1%	Total participants
											Unmet	112/4072	2.8%	Total participants
	Gursoy et al, 2013[112]	None	Cross-sectional	Clinical; Self-report	7-8	721	9 [2]	RE subsets	EUR	Turkey	Need	145/709	20.5%	Total participants
											Unmet	80/145	55.2%	Total with need
											Use	65/145	44.8%	Total with need

	Casson et al, 2012[113]	Refractive Error Study in Children	Cross-sectional	Clinical	6-11	2899	9 [8]	PVA<6/12	WPR	Laos	Uncorrected refractive error	112/2842	3.9%	Total participants
											Use	0/2869	0.0%	Total participants
	Hashim et al, 2008[114]	None	Cross-sectional	Clinical	6-12	705	10	UCVA<=6/12	WPR	Malaysia	Met	24/49	49.0%	Total with functional difficulty
											Unmet	25/49	51.0%	Total with functional difficulty
	Aldebasi, 2014[115]	None	Cross-sectional	Clinical	6-13	5176	10	RE subsets	EMR	Saudi Arabia	Met	92/5176	1.8%	Total participants
											Uncorrected refractive error	846/5176	16.3%	Total participants
											Under-corrected refractive error	25/5176	0.5%	Total participants
	Choy et al, 2020[116]	None	Cross-sectional	Clinical; Self-report	6-13	1396	8 [2, 6]	RE subsets	WPR	China	Use	247/759	32.5%	Total with functional difficulty
	Harrington et al, 2019[117]	Ireland Eye Study	Cross-sectional	Clinical; Self-report	6-13	901	10	VA<6/12	EUR	Ireland	Has AP	311/1626	19.1%	Total participants
											Use	164/1626	10.1%	Total participants

	O'Donoghue et al, 2010[118]	Northern Ireland Childhood Errors of Refraction Study	Cross-sectional	Clinical; Self-report	6-13	1053	10	VA<6/12	EUR	United Kingdom	Uncorrected refractive error	271/1051	25.8%	Total participants
											Use	217/1053	20.6%	Total participants
	Al Wadaani et al, 2012[119]	None	Cross-sectional	Clinical; Self-report	6-14	2002	9 [4]	PVA<6/18	EMR	Saudi Arabia	Use	26/274	9.5%	Total with functional difficulty
	Gupta et al, 2012[120]	None	Cross-sectional	Clinical; Self-report	5-15	2000	9 [10]	VA<6/9	SEAR	India	Uncorrected refractive error	84/2000	4.2%	Total participants
	Hameed, 2016[121]	None	Cross-sectional	Clinical	5-15	1644	9 [2]	VA<6/9	EMR	Pakistan	Use	92/1644	5.6%	Total participants
	He et al, 2004[122]	None	Cross-sectional	Clinical; Self-report	5-15	4364	10	VA<6/9.5	WPR	China	Uncorrected refractive error	1272/1364	93.3%	Total with functional difficulty
											Use	800/4364	18.3%	Total participants
	He et al, 2005[123]	None	Cross-sectional	Clinical; Self-report	5-15	5053	10	VA<=6/12	WPR	China	Coverage	684/919	(74.4)	Total with need
											Need	919/4359	(21.1)	Total participants
											Under-met	190/635	(29.9)	Total with AP
											Unmet	455/919	(50.6)	Total with

													need
	Kassa et Alene, 2003[124]	None	Cross-sectional	Clinical; Self-report	5-15	1156	9 [10]	VA<6/12	AFR	Ethiopia	Need	86/1134	7.6%	Total participants
	Hu et al, 2019[125]	None	Cross-sectional	Clinical	9-12	10234	10	UCVA<=6/12	WPR	China	Has AP	101/768	13.2%	Total with need
											Need	768/10037	7.7%	Total participants
	Kaur et al, 2016[126]	None	Cross-sectional	Clinical; Self-report	5-16	30205	8 [4, 10]	VA<6/9	SEAR	India	Need	1581/30298	5.2%	Total participants
	Dandona et al, 2002[127]	None	Cross-sectional	Clinical	7-15	4074	10	VA<6/12	SEAR	India	Has AP	23/4074	0.6%	Total participants
	Falkenberg et al, 2019[128]	None	Secondary cross-sectional	Self-report	7-15	782	9 [2]	RE subsets	EUR	Norway	Need	384/650	59.1%	Total referred
	Goh et al, 2004[129]	None	Cross-sectional	Clinical	7-15	4634	10	VA<6/9.5	WPR	Malaysia	Met	323/723	44.7%	Total with need
											Need	723/789	91.6%	Total with functional difficulty
											Unmet	400/723	55.3%	Total with need
											Use	443/4615	9.6%	Total participants
	Kedir et Girma, 2014[130]	None	Cross-sectional	Clinical	7-15	592	9 [10]	VA<=6/18	AFR	Ethiopia	Use	0/20	0.0%	Total with functional difficulty

	Pavithra et al, 2014[131]	None	Cross-sectional	Clinical	7-15	1378	9 [4]	VA<6/12	SEAR	India	Use	48/83	57.8%	Total with functional difficulty
	Wang et al, 2015[132]	None	Cross-sectional	Clinical	10-12	4376	10	RE subsets	WPR	China	Need	674/850	79.3%	Total with functional difficulty
											Use	159/674	23.6%	Total with need
	Yekta et al, 2010[133]	None	Cross-sectional	Clinical; Self-report	7-15	1872	10	VA<=6/12	EMR	Iran	Uncorrected refractive error	121/1872	6.5%	Total participants
	Zhu et al, 2019[134]	Refractive Error Study in Children	Secondary cross-sectional	Clinical	5-17	13702	10	UCVA<=6/12	WPR	China	Need	4743/12334	38.5%	Total participants
	Li et al, 2014[135]	Heilongjiang Eye Study	Cross-sectional	Clinical	5-18	1700	10	VA<6/9.5	WPR	China	Has AP	20/1675	1.2%	Total participants
	Barria et al, 2018[136]	Refractive Error Study in Children	Cross-sectional	Clinical	5-19	5412	10	VA<=6/12	AMR	Chile	Need	476/691	68.9%	Total with functional difficulty
											Use	521/5412	9.6%	Total with functional difficulty
	Robaei et al, 2006 (a)[137]	Sydney Childhood Eye Study	Cross-sectional	Clinical	11-13	2353	10	VA<6/12	WPR	Australia	Need	96/117	82.1%	Total with functional difficulty

										Under-met	8/117	6.8%	Total with functional difficulty
	Robaei et al, 2006 (b)[138]	Sydney Childhood Eye Study	Cross-sectional	Clinical; Self-report	12-12	2353	10	PVA<6/12	WPR	Australia	Met	403/2353	17.1%	Total participants
											Under-met	37/2353	1.6%	Total with AP
											Unmet	8/2353	0.3%	Total with functional difficulty
											Use	440/2353	18.7%	Total participants
	Yamamah et al, 2015[139]	None	Cross-sectional	Clinical; Self-report	7-17	2070	10	VA<6/9	EMR	Egypt	Need	218/2070	10.5%	Total participants
											Use	34/2070	1.6%	Total participants
	Mehari et al, 2013[140]	None	Cross-sectional	Clinical; Self-report	7-18	5470	10	PVA<=6/12	AFR	Ethiopia	Met	7/11	63.6%	Total with AP
											Under-met	4/11	36.4%	Total with AP
											Use	11/4238	0.3%	Total participants
	Plainis et al, 2009[141]	None	Cross-sectional	Clinical; Self-report	10-15	898	9 [2]	VA<6/12	EUR	Bulgaria	Use	27/310	8.7%	Total participants
										Greece	Use	137/588	23.3%	Total participants

	Sapkota et al, 2008[142]	None	Cross-sectional	Clinical; Self-report	10-15	4282	10	VA<6/9.5	SEAR	Nepal	Uncorrected refractive error	3483/4282	81.3%	Total participants
											Use	615/4282	14.4%	Total participants
	Salomão et al, 2008[143]	None	Cross-sectional	Clinical	11-14	2441	10	VA<=6/12	AMR	Brazil	Met	52/118	44.1%	Total with functional difficulty
											Under-met	11/118	9.3%	Total with functional difficulty
											Unmet	55/118	46.6%	Total with functional difficulty
											Use	63/118	53.4%	Total with functional difficulty
	Arafa et al, 2019[144]	None	Cross-sectional	Clinical; Self-report	12-14	472	10	VA<6/9	EMR	Egypt	Use	69/469	14.7%	Total participants
	Gao et al, 2012[145]	Refractive Error Study in Children	Cross-sectional	Clinical	12-14	5527	10	UCVA<=6/12	WPR	Cambodia	Uncorrected refractive error	181/226	80.1%	Total with functional difficulty
	Qian et al, 2018[146]	None	Cross-sectional	Clinical; Self-report	13	2346	9 [2]	UCVA<=6/12	WPR	China	Need	483/579	83.4%	Total with functional

														difficulty
											Uncorrected refractive error	579/2346	24.7%	Total participants
											Use	172/579	29.7%	Total with functional difficulty
	Ajaiyeoba et al, 2007[147]	None	Cross-sectional	Clinical	4-24	1144	8 [7, 9]	VA<6/18	AFR	Nigeria	Has AP	2/1144	0.2%	Total participants
											Need	15/1144	1.3%	Total participants
	Congdon et al, 2008 (a)[148]	None	Cross-sectional	Clinical; Self-report	11-17	1945	10	UCVA<=6/12	WPR	China	Met	414/770	53.8%	Total with functional difficulty
											Unmet	674/1892	35.6%	Total participants
											Use	500/1892	26.4%	Total participants
	Congdon et al, 2008 (b)[149]	Xichang Pediatric Refractive Error Study	Cross-sectional	Clinical; Self-report	11-17	1892	10	UCVA<=6/12	WPR	China	Has AP	647/1892	34.2%	Total participants
											Met	357/948	37.7%	Total with functional difficulty
											Need	948/1892	50.1%	Total participa

														nts
											Under-met	119/948	12.6%	Total with functional difficulty
											Unmet	368/948	38.8%	Total with functional difficulty
											Use	476/948	50.2%	Total with functional difficulty
	Li et al, 2008[150]	Xichang Pediatric Refractive Error Study	Cross-sectional	Clinical; Self-report	11-17	1892	10	UCVA<=6/12	WPR	China	Met	210/597	35.2%	Total with need
											Need	597/1892	31.6%	Total participants
											Unmet	387/597	64.8%	Total with need
	Zhang et al, 2009[151]	See Well to Learn Well Project	Cross-sectional	Clinical; Self-report	14-15	3226	9 [4]	PVA<6/12	WPR	China	Met	301/588	51.2%	Total with AP and complete data
											Under-met	287/588	48.8%	Total with AP and complete data
											Use	733/2905	25.2%	Total participa

													nts
	He et al, 2007[152]	None	Cross-sectional	Clinical; Self-report	13-17	2454	10	UCVA<6/12	WPR	China	Need	638/649	98.3%	Total with functional difficulty
											Under-met	51/638	8.0%	Total with need
											Unmet	387/638	60.7%	Total with need
											Use	302/649	46.5%	Total with functional difficulty
	Abu et al, 2015[153]	None	Cross-sectional	Clinical	9-22	1252	9 [4]	VA<=6/12	AFR	Ghana	Need	37/1029	3.6%	Total participants
											Use	7/1029	0.7%	Total participants
	Alsaqr et al, 2018[154]	None	Cross-sectional	Clinical; Self-report	12-20	1007	9 [4]	RE subsets	EMR	Saudi Arabia	Use	242/555	43.6%	Total with functional difficulty
	Zhao et al, 2020[155]	None	Cross-sectional	Clinical; Self-report	16-17	5583	9 [2]	PVA<=6/12	WPR	China	Has AP	2763/4026	68.6%	Total with functional difficulty
											Need	4026/5583	72.1%	Total participants
											Under-met	994/2763	36.0%	Total with AP

	Wu et al, 2015[156]	None	Cross-sectional	Clinical	16-18	4798	9 [4]	RE subsets	WPR	China	Unmet	740/3773	19.6%	Total with functional difficulty
											Use	1525/3773	40.4%	Total with functional difficulty
	Wedner et al, 2002[157]	None	Cross-sectional	Clinical; Self-report	11-27	2511	10	VA<=6/12	AFR	Tanzania	Met	47/154	30.5%	Total with functional difficulty
											Use	126/2511	5.0%	Total participants
	Naidoo et al, 2016[86]	RARE	Cross-sectional	Self-report	15-36	1516	10	PVA<6/12	AFR	South Africa	Coverage	17/34	50.0%	Total with need
											Met	17/34	50.0%	Total with need
											Uncorrected refractive error	23/1516	1.5%	Total participants
											Unmet	17/34	50.0%	Total with need
								AP use	AFR	South Africa	Use	6/58	10.3%	Total with AP
	Marmamula et al, 2013 (a)[51]	RARE	Cross-sectional	Clinical	15-49	3095	9 [4]	PVA<=6/12	SEAR	India	Uncorrected refractive error	111/3095	3.6%	Total participants
											Use	300/3095	9.7%	Total participa

													nts
	Muhit et al, 2018[52]	RARE	Cross-sectional	Clinical; Self-report	15-49	3050	10	PVA<6/18	SEAR	Bangladesh	Coverage	19/143	13.3%	Total with need
											Met	19/143	13.3%	Total with need
											Unmet	124/143	86.7%	Total with need
	Chan et al, 2013[53]	RARE	Cross-sectional	Clinical	15-50	3171	9 [4]	PVA<6/12	AFR	Eritrea	Coverage	45/203	22.2%	Total with need
											Met	45/203	22.2%	Total with need
											Unmet	158/203	77.8%	Total with need
	Loughman et al, 2015[54]	RARE	Cross-sectional	Clinical; Self-report	15-50	3457	9 [4]	DVA<6/12; NVA<6/12	AFR	Mozambique	Use	161/3452	4.7%	Total participants
	Marmamula et al, 2009[55]	RARE	Cross-sectional	Clinical; Self-report	15-50	3203	10	UCVA<6/12; UCNVA<N8	SEAR	India	Use	371/3203	11.6%	Total participants
	Senicato et al, 2012[158]	Campinas Municipal Health Survey	Cross-sectional	Self-report	20-59	508	8 [2, 10]	AP use	AMR	Brazil	Use	226/508	44.5%	Total participants
	Ferraz et al, 2014[159]	None	Cross-sectional	Clinical	1-90	7654	10	PVA<6/12	AMR	Brazil	Unmet	143/2193	6.5%	Total with functional difficulty
	Hashemi et al, 2015[160]	None	Cross-sectional	Clinical	1-90	2635	9 [8]	VA<6/12	EMR	Iran	Uncorrected refractive error	85/156	54.5%	Total with functional

													difficulty
	Hashemi et al, 2017 (b)[161]	None	Cross-sectional	Clinical; Self-report	1-93	3314	9 [4]	RE subsets	EMR	Iran	Met	256/3314	7.7%	Total participants
											Need	629/3314	19.0%	Total participants
											Unmet	373/3314	11.3%	Total participants
	Fotouhi et al, 2006[162]	Tehran Eye Study	Cross-sectional	Clinical; Self-report	5-95	4565	9 [9]	PVA<6/12	EMR	Iran	Coverage	416/646	64.4%	Total with need
											Met	416/4317	9.6%	Total participants
											Need	646/4317	15.0%	Total participants
											Unmet	230/4317	5.3%	Total participants
	Danermark et al, 2012[163]	National Public Health Survey	Secondary cross-sectional	Self-report	18-84	Not provided	10	RAL	EUR	Sweden	Need	N/A	50.0%	Total population
	Desalegn et al, 2016[164]	None	Cross-sectional	Self-report	18-86	780	10	AP use	AFR	Ethiopia	Use	194/780	24.9%	Total participants
	Hashemi et al, 2012[165]	None	Cohort	Clinical; Self-report	40-64	5190	10	VA<6/18	EMR	Iran	Uncorrected refractive error	45/118	38.1%	Total with functional difficulty
	Ertekin et al, 2016[166]	None	Cross-sectional	Clinical; Self-report	5-100	1938	10	VA<6/10	EUR	Turkey	Use	134/1938	6.9%	Total participants

	Latorre-Arteaga et al, 2018[167]	None	Cross-sectional	Self-report	0+	302	9 [2]	RAL	EUR	Spain	Use	22/302	7.3%	Total participants
	Sheeladevi et al, 2019[168]	None	Meta analysis	Multiple secondary sources	0+	34349	10	PVA<6/18	SEAR	India	Uncorrected refractive error	3504/34349	10.2%	Total participants
	Tahhan et al, 2009[169]	None	Cross-sectional	Clinical; Self-report	0+	14669	9 [2]	VA<6/12	SEAR	Sri Lanka	Uncorrected refractive error	11388/14699	77.5%	Total participants
	Danquah et Brus, 2013[25]	WGQ Short set	Mixed-methods	Self-report	5+	3122	10	RAL	AMR	Haiti	Unmet	40/178	22.5%	Total participants
	Resnikoff et al, 2008[170]	None	Secondary cross-sectional	Multiple secondary sources	5+	1	10	PVA<6/18	AFR	Mauritania	Uncorrected refractive error	6/640	0.9%	Total population
									AMR	Brazil; Chile; Argentina; Paraguay; Venezuela	Uncorrected refractive error	6/432	1.4%	Total population
										Guatemala; Peru	Uncorrected refractive error	1/66	1.5%	Total population
										United States	Uncorrected refractive error	6/305	2.0%	Total population
									EMR	Iran; Qatar; Oman; Lebanon	Uncorrected refractive error	3/264	1.1%	Total population

									EUR	Armenia; Turkmenistan	Uncorrected refractive error	7/431	1.6%	Total population	
										Ireland; Italy	Uncorrected refractive error	8/398	2.0%	Total population	
									Global	World	Uncorrected refractive error	153/5751	2.7%	Total population	
									SEAR	Bangladesh	Uncorrected refractive error	12/317	3.8%	Total population	
										India	Uncorrected refractive error	39/967	4.0%	Total population	
									WPR	Australia	Uncorrected refractive error	1/144	0.7%	Total population	
										China	Uncorrected refractive error	54/1229	4.4%	Total population	
										Malaysia; Singapore; Myanmar; Philippines; Cambodia; Vietnam	Uncorrected refractive error	8/554	1.4%	Total population	
	Rosman et al, 2009[171]	Singapore Malay Eye Study	Cross-sectional	Clinical; Self-report	40-79	3280	9 [10]	RE subsets	WPR	Singapore	Under-met	180/1250	14.4%	Total with AP	

										Unmet	454/3115	14.6%	Total participants
	Huang et al, 2013[172]	Singapore Malay Eye Study	Cross-sectional	Clinical; Self-report	40-80	3280	10	VA<=6/18	WPR	Singapore	Need	1758/2112	83.2%	Total with functional difficulty
											Use	1440/2112	68.2%	Total with functional difficulty
	Vitale et al, 2006 (b)[173]	National Health and Nutritional Examination Survey	Cross-sectional	Clinical; Self-report	12+	15193	9 [8]	PVA<6/15	AMR	United States	Met	992/1190	83.4%	Total with functional difficulty
											Uncorrected refractive error	703/13265	5.3%	Total participants
	Berardi et al, 2020[27]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45443	10	RAL	AMR	Canada	Unmet	72360/2710514	2.7%	Total population
											Use	3050750/2710514	112.6%	Total population
	Mashayo et al, 2014[174]	None	Cross-sectional	Clinical	15+	3230	9 [4]	PVA<6/12; PNVA<6/12	AFR	Tanzania	Coverage	4/237	1.7%	Total with need
											Met	4/237	1.7%	Total with need
											Uncorrected refractive error	237/3230	7.3%	Total participants
											Under-	51/55	92.7%	Total

										met			with AP
										Unmet	233/237	98.3%	Total with need
	Pryor et al, 2018[30]	ATA-N, RAD, WGQ	Cross-sectional	Self-report	18+	4253	9 [4]	AP use	SEAR	Bangladesh	Use	30/112	26.8%	Total with functional difficulty and using any AP
	Aljied et al, 2018[175]	Comprehensive Cohort of the Canadian Longitudinal Study on Aging	Cross-sectional	Clinical; Self-report	45-92	29666	10	PVA<6/12	AMR	Canada	Use	25543/29666	86.1%	Total participants
	Nangia et al, 2013[176]	Central India Eye and Medical Study	Cross-sectional	Clinical; Self-report	30-100	4711	9 [2]	PVA<6/12	SEAR	India	Unmet	729/1084	67.3%	Total with functional difficulty
	Abdullah et al, 2015[62]	None	Cross-sectional	Clinical; Self-report	30+	917	9 [2]	PVA<6/12	EMR	Pakistan	Uncorrected refractive error	199/917	21.7%	Total participants
	Bourne et al, 2004[177]	National Blindness and Low Vision Prevalence Survey of Bangladesh	Cross-sectional	Clinical; Self-report	30+	11624	10	VA<6/12	SEAR	Bangladesh	Coverage	282/1117	25.2%	Total with need
											Met	282/1117	25.2%	Total with need

										Unmet	835/1117	74.8%	Total with need
	Laitinen et al, 2008[178]	Health 2000 Survey	Cross-sectional	Clinical; Self-report	30+	6645	10	VA<6/24	EUR	Finland	Use	103/147	70.1%	Total with functional difficulty
	Han et al, 2019[179]	None	Cohort	Clinical	35+	1427	10	PVA<6/12	WPR	China	Coverage	139/327	42.5%	Total with need
											Met	139/327	42.5%	Total with need
											Unmet	188/327	57.5%	Total with need
	He et al, 2012[64]	None	Cross-sectional	Clinical	35+	17734	9 [4]	UCNVA<=6/12	AFR	Niger	Use	12/869	1.4%	Total with functional difficulty
										South Africa	Use	66/1687	3.9%	Total with functional difficulty
									AMR	United States	Use	243/476	51.1%	Total with functional difficulty
									SEAR	India	Use	88/2169	4.1%	Total with functional difficulty
										Nepal	Use	44/1448	3.0%	Total with

													functional difficulty
								WPR	China (Guangzhou)	Use	124/1101	11.3%	Total with functional difficulty
									China (Shunyi)	Use	10/2435	0.4%	Total with functional difficulty
	He et al, 2014 (a)[65]	None	Cohort	Clinical; Self-report	35+	10553	9 [4]	VA<=6/12	AFR	Niger	Met	23/144	16.0%	Total with functional difficulty
										South Africa	Met	170/425	40.0%	Total with functional difficulty
									AMR	United States	Met	141/147	95.9%	Total with functional difficulty
	Hookway et al, 2016[66]	None	Cross-sectional	Clinical; Self-report	35+	3390	8 [4, 9]	UCVA<=6/12	AMR	Nicaragua	Met	23/326	7.1%	Total with AP
											Uncorrected refractive error	1070/1836	58.3%	Total participants
											Use	1256/3390	37.1%	Total participants

	Budenz et al, 2012[180]	Tema Eye Survey	Cross-sectional	Clinical	40+	5603	8 [1, 7]	PVA<6/12	AFR	Ghana	Uncorrected refractive error	608/5603	10.9%	Total participants
	Casson et al, 2007[181]	Meiktila Eye Study	Cross-sectional	Clinical	40+	2076	10	PVA<6/18	SEAR	Myanmar	Uncorrected refractive error	254/1348	18.8%	Total with functional difficulty
											Use	3/2076	0.1%	Total participants
	Ezelum et al, 2011[182]	None	Cross-sectional	Clinical; Self-report	40+	13599	10	VA<6/12	AFR	Nigeria	Met	43/1279	3.4%	Total with need
											Need	1279/13599	9.4%	Total participants
											Unmet	1236/1279	96.6%	Total with need
											Use	44/1279	3.4%	Total with need
	Gupta et al, 2015[72]	RAVI	Cross-sectional	Clinical; Self-report	40+	2331	10	PVA<6/18	SEAR	India	Uncorrected refractive error	317/2331	13.6%	Total with functional difficulty
											Use	468/2331	20.1%	Total participants
	Marmamula et al, 2012[76]	RAVI	Cross-sectional	Clinical; Self-report	40+	1700	9 [4]	PVA<6/18	SEAR	India	Coverage	71/250	28.4%	Total with need
											Met	71/1560	4.6%	Total participants

											Unmet	179/1560	11.5%	Total participants
	Marmamula et al, 2014[78]	RAVI	Cross-sectional	Clinical; Self-report	40+	7378	9 [4]	UCVA<6/12	SEAR	India	Coverage	361/951	38.0%	Total with need
											Met	361/7378	4.9%	Total participants
											Under-met	1001/2174	46.0%	Total with AP
											Unmet	590/7378	8.0%	Total participants
											Use	2174/7378	29.5%	Total participants
	Marmamula et al, 2016 (a)[95]	RAVI	Cross-sectional	Clinical	40+	6150	10	PVA<6/18	SEAR	India	Uncorrected refractive error	94/741	12.7%	Total with functional difficulty
	Marmamula et al, 2016 (b)[183]	RAVI	Cross-sectional	Clinical	40+	7378	10	PVA<6/18	SEAR	India	Uncorrected refractive error	321/730	44.0%	Total with functional difficulty
	Marmamula et al, 2017 (b)[184]	None	Cross-sectional	Clinical; Self-report	40+	5881	10	PVA<6/18	SEAR	India	Coverage	271/506	53.6%	Total with need
											Met	271/5881	4.6%	Total participants
											Unmet	235/5881	4.0%	Total participants
											Use	1694/5881	28.8%	Total participa

														nts
	Marmamula et al, 2020(a)[185]	None	Cross-sectional	Clinical; Self-report	40+	10280	10	PVA<6/18	SEAR	India (Khammam)	Coverage	Not provided	26.9%	Total need (2011-12)
										India (Khammam)	Coverage	Not provided	35.6%	Total need (2017)
										India (Khammam)	Use	697/2485	28.0%	Total participants (2011-12)
										India (Khammam)	Use	945/2711	34.9%	Total participants (2017)
										India (Waranagal)	Coverage	Not provided	43.8%	Total need (2011-12)
										India (Waranagal)	Coverage	Not provided	35.7%	Total need (2017)
										India (Waranagal)	Use	793/2438	32.5%	Total participants (2011-12)
										India (Waranagal)	Use	769/2646	29.1%	Total participants (2017)
	Marmamula et al, 2020(b)[186]	RAVI; Tripura Eye Survey	Cross-sectional	Clinical	40+	4109	9 [8]	PVA<6/12	SEAR	India	Uncorrected refractive error	159/402	39.6%	Total with functional difficulty

	Prema et al, 2008[187]	Chennai Glaucoma Study	Cross-sectional	Clinical; Self-report	40+	7773	9 [1]	VA<6/12	SEAR	India	Use	2728/5651	48.3%	Total participants
	Ramke et al, 2007[80]	RACSS	Cross-sectional	Clinical; Self-report	40+	1414	10	PVA<6/18	SEAR	Timor-Leste	Met	31/1414	2.2%	Total participants
											Uncorrected refractive error	159/1414	11.2%	Total participants
											Under-met	7/1414	0.5%	Total participants
											Unmet	166/1414	11.7%	Total participants
											Use	214/1414	15.1%	Total participants
	Tafida et al, 2015[188]	Nigerian National Blindness and Visual Impairment Survey	Cross-sectional	Clinical; Self-report	40+	13591	9 [8]	PVA<6/12	AFR	Nigeria	Coverage	12/374	3.2%	Total with functional difficulty
	Zheng et al, 2011[189]	Singapore Malay Eye Study	Cross-sectional	Clinical	40+	3400	8 [4, 9]	PVA<6/12	WPR	Singapore	Under-corrected refractive error	328/565	58.1%	Total with functional difficulty
	Pan et al, 2016[190]	Weitang Geriatric Diseases Study	Cross-sectional	Clinical; Self-report	60-93	4611	9 [2]	PVA<6/18	WPR	China	Uncorrected refractive error	224/481	46.6%	Total with functional difficulty
	Cunha et al, 2018[81]	None	Cross-sectional	Clinical	45+	2041	9 [1]	UCNVA<=6/18	AMR	Brazil	Use	480/2025	23.7%	Total participants

	Furtado et al, 2019[191]	Brazilian Amazon Region Eye Survey	Cross-sectional	Clinical	45+	2041	10	VA<6/9.5	AMR	Brazil	Need	1384/1963	70.5%	Total with functional difficulty
	Bastawrous et al, 2013[192]	RAAB	Cross-sectional	Clinical; Self-report	50+	4414	10	PVA<6/12	AFR	Kenya	Coverage	122/478	25.5%	Total with functional difficulty
											Met	122/478	25.5%	Total with functional difficulty
											Unmet	356/478	74.5%	Total with functional difficulty
	Gallarreta et al, 2014[193]	RAAB	Cross-sectional	Clinical	50+	3729	9 [4]	PVA<6/18	AMR	Uruguay	Uncorrected refractive error	177/3729	4.7%	Total participants
	Lee et al, 2019[194]	RAAB	Cross-sectional	Clinical; Self-report	50+	5000	9 [4]	VA<6/12	WPR	Papua New Guinea	Uncorrected refractive error	207/284	72.9%	Total with functional difficulty
	Marmamula et al, 2013(c)[195]	Rapid Assessment of Visual Impairment	Cross-sectional	Clinical	50+	494	10	PVA<6/18	SEAR	India	Uncorrected refractive error	74/280	26.4%	Total with functional difficulty
	Neena et al, 2008[196]	RAAB	Cross-sectional	Clinical	50+	40447	9 [4]	PVA<6/12	SEAR	India	Uncorrected refractive error	2233/6786	32.9%	Total with functional difficulty

	Nirmalan et al, 2002[197]	None	Cross-sectional	Clinical	50+	5795	10	PVA<6/18	SEAR	India	Uncorrected refractive error	348/1768	19.7%	Total with functional difficulty
											Use	536/54111	1.0%	Total participants
	Patil et al, 2014[198]	RAAB	Cross-sectional	Clinical; Self-report	50+	2747	9 [4]	PVA<6/12	SEAR	India	Use	1284/2737	46.9%	Total participants
	Dwarakanathan et al, 2019[199]	None	Cross-sectional	Clinical; Self-report	60+	555	9 [4]	PVA<6/18	SEAR	India	Uncorrected refractive error	50/136	36.8%	Total with functional difficulty
	Zhu et al, 2013[200]	BaoShan Eye Study	Cross-sectional	Clinical; Self-report	60+	4545	9 [4]	PVA<6/12	WPR	China	Coverage	473/1072	44.1%	Total with need
											Met	473/4545	10.4%	Total participants
											Under-corrected refractive error	1129/4545	24.8%	Total participants
											Under-met	98/599	16.4%	Total with functional difficulty
											Unmet	599/4545	13.2%	Total participants
	Choi et al, 2018[201]	National Health Interview Survey	Secondary cross-sectional	Single-question self-report	65+	3058	10	RAL	AMR	United States	Use	812/3058	26.6%	Total with functional difficulty

	Kuang et al, 2007[202]	Shihpai Eye Study	Cross-sectional	Clinical	65+	1361	10	VA<=6/12	WPR	Taiwan	Met	314/1330	23.6%	Total participants
											Under-met	13/1330	1.0%	Total participants
											Unmet	114/1330	8.6%	Total participants
	Otte et al, 2018[84]	National Health and Aging Trends Study	Secondary cross-sectional	Self-report	65+	7497	10	RAL; AP Use	AMR	United States	Use	40500000/43900000	92.3%	Total population
	Dupraz et al, 2020[40]	5-COOP	Cross-sectional	Clinical; Self-report	100	1253	10	AP use	EUR	Denmark	Has AP	196/251	78.1%	Total participants
										France	Has AP	247/282	87.6%	Total participants
										Sweden	Has AP	233/274	85.0%	Total participants
										Switzerland	Has AP	124/170	72.9%	Total participants
									WPR	Japan	Has AP	226/346	65.3%	Total participants

ATA-N=Assistive Technology Assessment-Needs. RAAB=Rapid Assessment of Avoidable Blindness. RAD=Rapid Assessment of Disability. RACSS=Rapid Assessment of Cataract Surgical Services. RARE=Rapid Assessment of Refractive Error. RAVI=Rapid Assessment of Visual Impairment. WGQ=Washington Group Questions. RAL=self-reported activity limitations. RE=refractive error. VA=visual acuity. PVA=presenting visual acuity. UCVA=uncorrected visual acuity. DVA=distance visual acuity. NVA=near visual acuity. PNVA=presenting near visual acuity. UCNVA=uncorrected near visual acuity.

**Results are presented in millions*

Appendix 11: Grouped and Cognitive AP Indicators

AP Type	Citation	Tool, Survey, or Dataset	Study Design	Approaches	Ages	Participants	JBI Score	Functional Difficulty Threshold	WHO Region	Country	AP access Indicator			
											Indicator	Calculation	(%)	Denominator
Personal Digital Assistants (PDAs)	Lindsay et Tsybina, 2010[203]	Participation and Activity Limitation Survey	Secondary cross-sectional	Self-report	15-24	15817	10	RAL	AMR	Canada	Unmet	2305/15817	14.6%	Total with functional difficulty
											Use	1323/15817	8.4%	Total with functional difficulty
Grouped APs	Lindsay et Tsybina, 2010[203]	Participation and Activity Limitation Survey	Secondary cross-sectional	Self-report	15-24	15817	10	RAL	AMR	Canada	Unmet	4710/15817	29.8%	Total with functional difficulty
											Use	14494/15817	91.6%	Total with functional difficulty
	Rios et al, 2014[17]	Assistive Technology Banks (BAT) Client Database	Secondary cross-sectional	Clinical	0-100	839	8 [2, 10]	AP use	AMR	Colombia	Has AP	245/839	29.2%	Total participants
	Eide et al, 2003 (a)[204]	Living Conditions Studies	Cross-sectional	Self-report	0+	12323	10	RAL	AFR	Zimbabwe	Use	506/1961	25.8%	Total with functional difficulty
	Eide et al, 2003 (b)[205]	Living Conditions Studies	Cross-sectional	Self-report	0+	16429	9 [8]	RAL	AFR	Namibia	Use	446/2537	17.6%	Total with functional difficulty
	Eide et Loeb, 2006[206]	WGQ Short set; Living Conditions Studies	Cross-sectional	Self-report	0+	28189	9 (4)	RAL	AFR	Zambia	Use	372/2856	13.0%	Total with functional difficulty
	Eide et al, 2016[207]	WGQ Short set; Living Conditions Studies	Cross-sectional	Self-report	0+	4123	8 [2, 4]	RAL	SEAR	Nepal	Use	234/2000	11.7%	Total with functional difficulty

	Eide et Munthali, 2018[208]	WGQ Short set; Living Conditions Studies	Cross-sectional	Self-report	0+	129988	9 [4]	RAL	AFR	Malawi	Use	196/4350	4.5%	Total with functional difficulty
	Eide et Jele, 2011[209]	Living Conditions Studies	Cross-sectional	Self-report	0+	8734	9 [4]	RAL	AFR	Swaziland	Use	186/866	21.5%	Total with functional difficulty
	Eide et Kamaleri, 2009[210]	Living Conditions Studies	Cross-sectional	Self-report	0+	11401	9 [4]	RAL	AFR	Mozambique	Use	107/537	19.9%	Total with functional difficulty
	Eide et Mmatli, 2016[211]	WGQ Short set; Living Conditions Studies	Cross-sectional	Self-report	0+	9904	9 [4]	RAL	AFR	Botswana	Use	348/955	36.4%	Total with functional difficulty
	Kamaleri et Eide, 2011[212]	WGQ Short set; Living Conditions Studies	Cross-sectional	Self-report	0+	5894	9 [4]	RAL	AFR	Lesotho	Use	86/619	13.9%	Total with functional difficulty
	Loeb et Eide, 2004[213]	Living Conditions Studies	Cross-sectional	Self-report	0+	15364	10	RAL	AFR	Malawi	Use	304/1550	19.6%	Total with functional difficulty
	Maart et Jelsma 2013[214]	WGQ Short set	Cross-sectional	Self-report	0+	3464	8 [4, 8]	RAL	AFR	South Africa	Need	110/3464	3.2%	Total participants
											Unmet	38/110	34.5%	Total with need
	Smith, 2011[215]	None	Cross-sectional	Self-report	0+	1093	7 [2, 4, 7]	RAL	AFR	Nigeria	Has AP	403/1093	37.0%	Total with functional difficulty
											Use	260/1093	23.8%	Total with functional difficulty
	Eide et al, 2018[216]	WGQ Child Functioning Module; WGQ Short set; Living Conditions Studies;	Cross-sectional	Self-report	2+	9190	9 [8]	RAL	AFR	Zambia	Use	459/2294	20.0%	Total with functional difficulty

		National Disability Survey												
	Danquah et Brus, 2013[25]	WGQ Short set	Mixed-methods	Self-report	5+	3122	10	RAL	AMR	Haiti	Need	54/178	30.3%	Total with functional difficulty
											Unmet	37/178	20.8%	Total with functional difficulty
											Use	17/178	9.6%	Total with functional difficulty
	Visagie et al, 2017[217]	WGQ Short set	Cross-sectional	Self-report	5+	4388	8 [4, 8]	RAL	AFR	Malawi	Use	42/1496	2.8%	Total with functional difficulty
										Namibia	Use	331/1118	29.6%	Total with functional difficulty
										South Africa	Use	199/1050	19.0%	Total with functional difficulty
									EMR	Sudan	Use	142/724	19.6%	Total with functional difficulty
	Loggins et al, 2013[218]	National Behavioral Risk Factor Surveillance System	Secondary cross-sectional	Self-report	18-99	393949	8 [4, 10]	AP use	AMR	United States	Use	38499/393949	9.8%	Total participants
	Marella et al, 2016[219]	RAD	Cross-sectional	Clinical; Self-report	18-100	2139	10	AP use	WPR	Philippines	Met	120/265	45.3%	Total with functional difficulty
											Unmet	51/265	19.2%	Total with functional difficulty
	Berardi et al, 2020[27]	Canadian Survey on Disability	Secondary cross-sectional	Self-report	15+	45443	10	RAL	AMR	Canada	Unmet	1.0/3.8*	26.6%	Total with functional difficulty

										Use	3.6/3.8*	94.8%	Total with functional difficulty
	Matter et Eide, 2018[220]	WGQ Short set; Living Conditions Studies	Secondary cross-sectional	Self-report	15+	818	7 [2, 3, 9]	RAL	AFR	Botswana	Met	272/486	56.0%	Total with need
											Unmet	214/486	44.0%	Total with need
										Swaziland	Met	104/332	31.3%	Total with need
											Unmet	222/332	66.9%	Total with need
	Pryor et al, 2018[30]	ATA-N, RAD, WGQ	Cross-sectional	Self-report	18+	4253	9 [4]	RAL	SEAR	Bangladesh	Met	227/302	75.2%	Total with AP
											Under-met	75/1356	5.5%	Total with functional difficulty
											Unmet	1013/1356	74.7%	Total with functional difficulty
											Use	302/4250	7.1%	Total participants
	Goins et al, 2010[221]	Native Elder Care Study	Cross-sectional	Functional; Self-report	55+	505	9 [4]	RAL	AMR	United States	Use	127/505	25.1%	Total participants
	Frochen et Mehdizadeh, 2017[222]	National Health and Aging Trends Study	Secondary cross-sectional	Self-report	65+	7521	10	RAL	AMR	United States	Use (Indoor)	489/7521	6.5%	Total participants

ATA-N=Assistive Technology Assessment-Needs. RAD=Rapid Assessment of Disability. WGQ=Washington Group Questions. RAL=self-reported activity limitations.

**Results are presented in millions.*

Appendix 12: Need Indicators: Grouped/Unspecified Glasses