SKILLS FOR LIFE
Students with Disabilities (SwD)

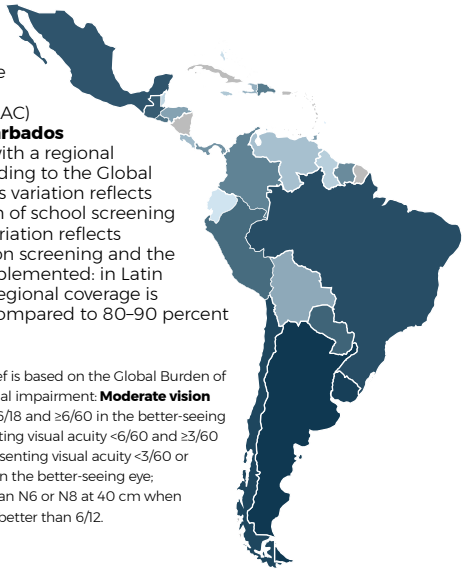
VISION LOSS AND BLINDNESS IN SCHOOL AGE CHILDREN IN LAC

By Emma Näslund-Hadley, Jorge Coelho, Beatriz Guimarães Almeida and Gabriela Gambi

IDB

Regional variation in prevalence (5–19 years)

Blindness and vision loss prevalence, among school-age children (5–19 years) in Latin America and the Caribbean (LAC) ranges from **0.4 percent in Barbados to 1.1 percent in Argentina**, with a regional average of **0.8 percent**, according to the Global Burden of Disease (GBD)[1]. This variation reflects differences in implementation of school screening and eyeglass provision: This variation reflects differences in how school vision screening and the provision of eyeglasses are implemented: in Latin America and the Caribbean, regional coverage is estimated at 25–35 percent, compared to 80–90 percent in OECD countries.



0.42% Barbados
0.55% Ecuador
0.60% Bahamas
0.60% Belize
0.60% Guyana
0.61% Jamaica
0.62% Venezuela
0.63% Costa Rica
0.63% Haiti
0.64% Bolivia
0.65% Honduras
0.65% Trinidad and Tobago
0.66% Panama
0.66% Suriname
0.68% Colombia
0.72% Dominican Republic
0.75% El Salvador
0.75% Peru
0.79% Paraguay
0.80% Guatemala
0.95% Mexico
0.97% Brazil
1.04% Chile
1.05% Uruguay
1.15% Argentina

Note: The analysis presented in this brief is based on the Global Burden of Disease definition of blindness and visual impairment: **Moderate vision impairment:** presenting visual acuity <6/18 and ≥6/60 in the better-seeing eye; **Severe vision impairment:** presenting visual acuity <6/60 and ≥3/60 in the better-seeing eye; **Blindness**: presenting visual acuity <3/60 or visual field <10° around central fixation in the better-seeing eye; **Presbyopia**: near visual acuity worse than N6 or N8 at 40 cm when best-corrected distance visual acuity is better than 6/12.

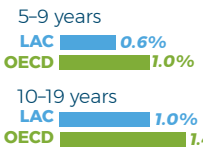
Source: *Elaborated based on the Global Burden of Disease database, 2023.*

From Primary to Secondary Education: Vision Loss and Blindness Increases 60 percent

The prevalence of vision loss and blindness rises with age in LAC: 0.6 percent at 5–9 years to 1 percent at 10–19 years—a **60 percent increase** between primary and secondary school age children. This rise is driven by uncorrected refractive errors, which account for approximately 70 percent of vision cases in the region. A 2014 analysis reports that the need for corrective glasses increases as students move from primary to secondary education (Ma et al., 2014)[5]. Weak referral pathways to eye care in many communities compound the problem. Without timely correction, adolescents face higher rates of vision loss. Untreated refractive errors, sequelae of prematurity, and eye trauma during adolescence also contribute to the higher prevalence. Vision correction in early school years is associated with improved academic outcomes (Glewwe et al., 2018)[6].

1.3 million students have vision loss and blindness

Approximately 1.3 million school-age children (ages 5–19 years) in LAC have vision loss or blindness. Vision loss is less prevalent in LAC than in OECD countries: 0.6 percent vs. 1.0 percent among primary school-age children, and 1.0 percent vs. 1.4 percent among secondary school-age children. These differences should be interpreted with caution: countries with more developed health systems have greater detection capacity, while LAC shows significant underreporting due to limited access to ophthalmological services and school-based screening (Latorre-Arteaga et al., 2016; WHO, 2019)[2]. Robust health registries in OECD countries facilitate case identification that often remains undiagnosed in LAC (PAHO, 2014)[3]. Limited access to ophthalmologists, prohibitive costs for glasses, and weaker health infrastructure contribute to systematic detection gaps in LAC (Polack et al., 2012)[4].



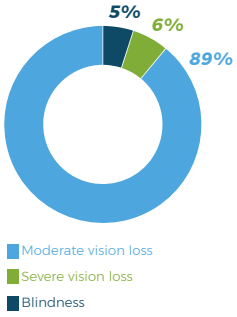
5–9 years
LAC 0.6%
OECD 1.0%

10–19 years
LAC 1.0%
OECD 1.4%

Source: *Elaborated based on the Global Burden of Disease database, 2023.*

1.1 million (89 percent) have correctable visual impairments

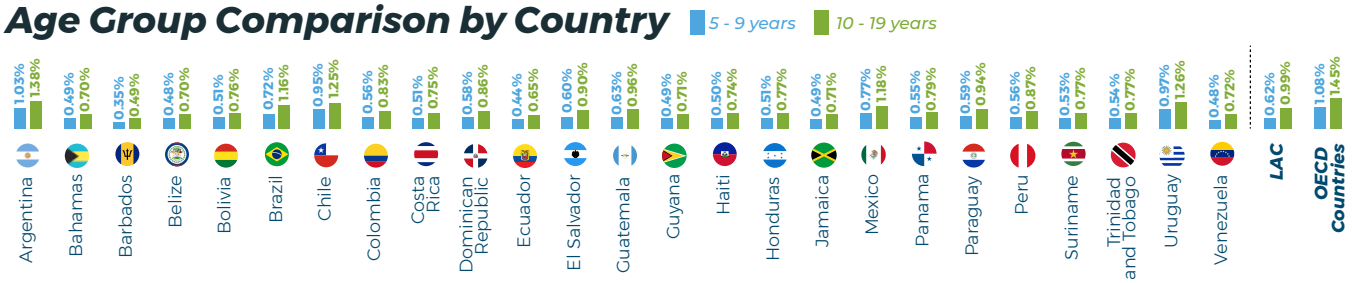
Severity data indicate that approximately **89 percent of children have moderate vision loss** (treatable with glasses), **6 percent have severe vision loss**, and **5 percent have blindness** - requiring specialized rehabilitation and assistive technologies.



5%
6%
89%
Moderate vision loss
Severe vision loss
Blindness

Source: *From GBD, 2023.*

Age Group Comparison by Country



5 - 9 years | 10 - 19 years

	5–9 years	10–19 years
Argentina	1.03%	1.38%
Bahamas	0.49%	0.70%
Barbados	0.35%	0.49%
Belize	0.48%	0.70%
Bolivia	0.51%	0.76%
Brazil	0.72%	1.16%
Chile	0.95%	1.25%
Colombia	0.56%	0.83%
Costa Rica	0.51%	0.75%
Dominican Republic	0.58%	0.86%
Ecuador	0.44%	0.65%
El Salvador	0.60%	0.90%
Guatemala	0.63%	0.96%
Guyana	0.49%	0.71%
Haiti	0.50%	0.74%
Honduras	0.51%	0.77%
Jamaica	0.49%	0.71%
Mexico	0.77%	1.18%
Panama	0.55%	0.79%
Paraguay	0.59%	0.94%
Peru	0.56%	0.87%
Suriname	0.53%	0.77%
Trinidad and Tobago	0.54%	0.77%
Uruguay	0.97%	1.26%
Venezuela	0.48%	0.72%
LAC	0.62%	0.99%
OECD Countries	1.08%	1.45%

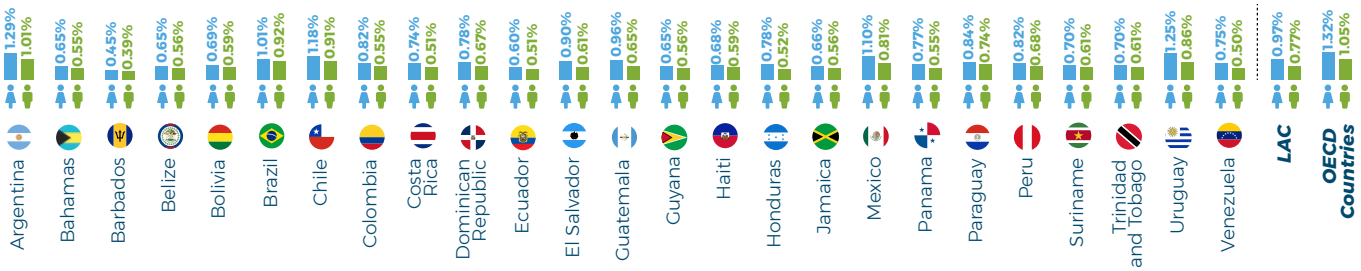
Source: *Elaborated based on the Global Burden of Disease database, 2023.*

Vision loss and blindness is 25 percent more prevalent among girls

In LAC, vision loss prevalence is higher among girls **(0.9 percent) than boys (0.7 percent)**, a female-to-male ratio of **1.25:1**[1]. The female-to-male difference increases with age and is highest at 10–19 years (1.1 percent vs 0.8 percent), corresponding to a ratio of 1.29:1 in this age group.

This pattern is consistent with global evidence showing that sex differences in myopia prevalence emerge at approximately 9 years of age and become more pronounced through adolescence. By 18 years of age, girls are approximately twice as likely as boys to be myopic (Rudnicka et al., 2016)[7]. In resource-limited settings, unequal access to optical correction can compound gender disparities.

Sex Disparities by Country



Female | Male

	Female	Male
Argentina	1.29%	1.01%
Bahamas	0.65%	0.55%
Barbados	0.45%	0.39%
Belize	0.65%	0.56%
Bolivia	0.69%	0.59%
Brazil	1.01%	0.92%
Chile	1.18%	0.91%
Colombia	0.82%	0.55%
Costa Rica	0.74%	0.51%
Dominican Republic	0.78%	0.67%
Ecuador	0.60%	0.51%
El Salvador	0.90%	0.61%
Guatemala	0.96%	0.65%
Guyana	0.65%	0.56%
Haiti	0.68%	0.59%
Honduras	0.78%	0.52%
Jamaica	0.66%	0.56%
Mexico	1.10%	0.81%
Panama	0.77%	0.55%
Paraguay	0.84%	0.74%
Peru	0.82%	0.68%
Suriname	0.70%	0.61%
Trinidad and Tobago	0.70%	0.61%
Uruguay	1.25%	0.86%
Venezuela	0.75%	0.50%
LAC	0.97%	0.77%
OECD Countries	1.32%	1.05%

Source: *Elaborated based on the Global Burden of Disease database, 2023.*

Vision loss and blindness among school-age children in LAC

Prevalence of Blindness and Vision Loss: Primary and Secondary Levels of Education, by country and sex.

		Primary education *(5-9 years)*		**Secondary education** *(10-19 years)*	
Blindness and vision loss		Prevalence		Prevalence	
Countries	***Sex***	***%***	***Number***	***%***	***Number***
Argentina	*Both*	1.03	31,121	1.37	95,348
	Female	1.19	18,041	1.48	52,102
	Male	0.87	13,080	1.26	43,246
Bahamas	*Both*	0.48	112	0.69	464
	Female	0.50	57	0.75	254
	Male	0.46	55	0.64	210
Barbados	*Both*	0.35	46	0.48	165
	Female	0.36	23	0.52	88
	Male	0.34	23	0.45	77
Belize	*Both*	0.48	183	0.70	567
	Female	0.49	93	0.76	305
	Male	0.46	90	0.64	262
Bolivia	*Both*	0.50	5,413	0.76	15,732
	Female	0.52	2,740	0.82	8,494
	Male	0.49	2,673	0.69	7,238
Brazil	*Both*	0.72	96,118	1.16	320,559
	Female	0.72	47,581	1.20	166,375
	Male	0.72	48,537	1.11	154,184
Chile	*Both*	0.94	10,215	1.24	30,004
	Female	1.10	5,893	1.35	16,269
	Male	0.79	4,322	1.13	13,735
Colombia	*Both*	0.56	18,692	0.83	60,824
	Female	0.59	10,056	0.98	36,419
	Male	0.52	8,636	0.67	24,405
Costa Rica	*Both*	0.51	1,674	0.75	5,542
	Female	0.55	925	0.89	3,327
	Male	0.47	749	0.60	2,215
Dominican Republic	*Both*	0.58	5,322	0.85	15,836
	Female	0.59	2,717	0.92	8,734
	Male	0.56	2,605	0.78	7,102
Ecuador	*Both*	0.44	6,060	0.64	19,876
	Female	0.45	3,069	0.69	10,714
	Male	0.43	2,991	0.59	9,162
El Salvador	*Both*	0.59	2,774	0.90	9,348
	Female	0.64	1,489	1.08	5,595
	Male	0.55	1,285	0.72	3,753
Guatemala	*Both*	0.63	10,442	0.96	30,771
	Female	0.68	5,643	1.15	18,719
	Male	0.58	4,799	0.76	12,052

Guyana	Both	0.49	335	0.71	953
	Female	0.50	171	0.76	515
	Male	0.47	164	0.65	438
Haiti	Both	0.50	7,321	0.73	19,612
	Female	0.52	3,725	0.79	10,595
	Male	0.48	3,596	0.67	9,017
Honduras	Both	0.50	5,615	0.77	16,278
	Female	0.55	3,052	0.93	9,936
	Male	0.46	2,563	0.60	6,342
Jamaica	Both	0.48	875	0.71	3,043
	Female	0.50	447	0.76	1,635
	Male	0.47	428	0.65	1,408
Mexico	Both	0.76	69,439	1.17	244,179
	Female	0.80	36,593	1.34	142,143
	Male	0.73	32,846	1.00	102,036
Panama	Both	0.54	1,795	0.79	5,263
	Female	0.58	954	0.93	3,097
	Male	0.51	841	0.65	2,166
Paraguay	Both	0.58	3,115	0.93	10,276
	Female	0.59	1,588	0.99	5,576
	Male	0.57	1,527	0.87	4,700
Peru	Both	0.55	16,557	0.86	51,494
	Female	0.58	8,460	0.95	28,121
	Male	0.53	8,097	0.77	23,373
Suriname	Both	0.53	244	0.77	726
	Female	0.54	122	0.82	381
	Male	0.52	122	0.72	345
Trinidad and Tobago	Both	0.53	434	0.77	1,402
	Female	0.55	220	0.82	749
	Male	0.52	214	0.71	653
Uruguay	Both	0.96	1,879	1.26	5,484
	Female	1.17	1,130	1.44	3,157
	Male	0.76	749	1.07	2,327
Venezuela	Both	0.48	8,818	0.72	30,233
	Female	0.52	4,788	0.87	18,510
	Male	0.43	4,030	0.56	11,723
LAC	**Both**	**0.62**	**304,626**	**0.99**	**994,005**
	Female	**0.66**	**159,591**	**1.11**	**551,823**
	Male	**0.58**	**145,035**	**0.86**	**442,182**
OECD Countries	**Both**	**1.07**	**710,355**	**1.44**	**2,242,794**
	Female	**1.22**	**403,902**	**1.54**	**1,206,122**
	Male	**0.92**	**306,453**	**1.34**	**1,036,672**

Source: *Elaborated based on the Global Burden of Disease database, 2023.*

Public Policy Recommendations

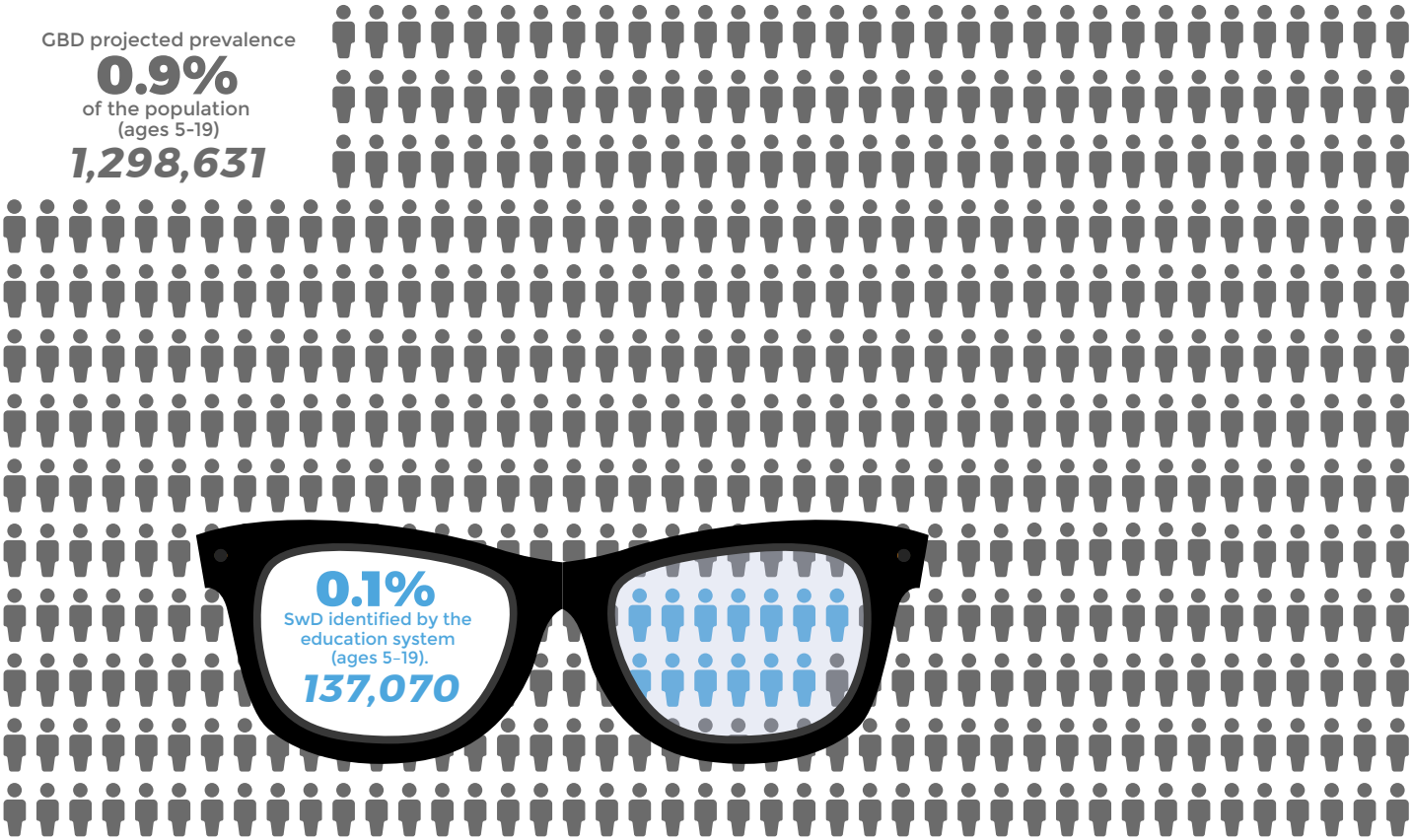
1. School-Based Prevention Programs
Screen for visual disabilities using tools like the Child Functioning Module – Teacher Version (CFM-TV), and establish referral pathways for assessment and eyeglass provision.

2. Equitable Access to Learning Materials
Ensure that schools provide adapted learning materials (large-print books, screen-reader compatible digital content, high contrast visuals) and make classroom facilities more inclusive through adequate lighting, and seating arrangements.

3. Professional Training
Train teachers to (a) identify early signs of visual impairment, (b) use adaptable teaching tools, and (c) apply inclusive strategies so students with vision disabilities fully participate in class.

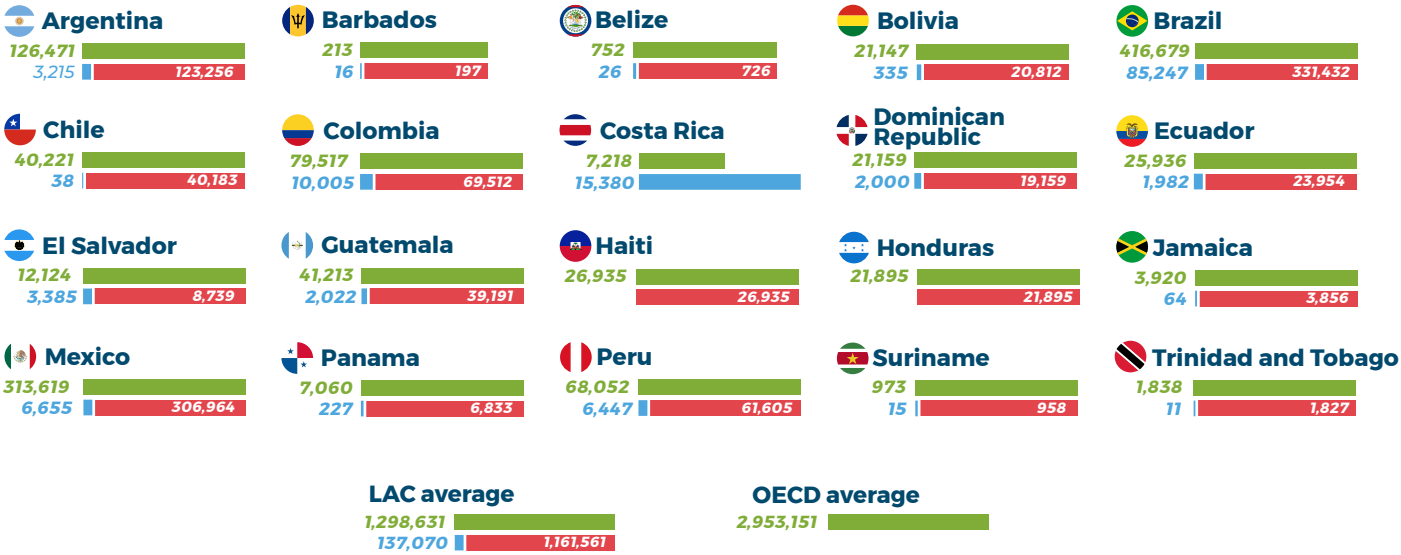
4. System Integration for Inclusion
Coordinate with the Ministry of Health, social protection agencies, and relevant partners (e.g., NGOs) to ensure effective referral pathways across health and social services.

Source: *The calculation was made based on data from these sources (World Health Organization, 2019; Ma et al., 2014; Glewwe, Park, & Zhao, 2016).* [2,5,8]



The Hidden Numbers: Underreported Vision Loss Among School-Age Children in LAC

Contrasting education administrative data on SwD with GBD prevalence rates.



Source: *Elaborated based on the Global Burden of Disease database and education administrative data, 2023.*

Why school vision programs matter?

School-based vision screening and eyeglass provision are not only highly cost-effective interventions, but also powerful tools for advancing equity. In LAC, approximately **70 percent of childhood vision loss** is caused by uncorrected refractive errors that are preventable or treatable with corrective glasses, cataract surgery, or early control of retinopathy of prematurity.

Uncorrected vision undermines educational attainment, lowering primary and secondary completion rates. Children from Afro-descendant, Indigenous, rural, and low-income backgrounds, and especially girls, face **higher prevalence and lower access to correction**, compounding education inequalities (Furtado et al., 2023) [9]. Implementing culturally sensitive, gender-responsive, universally subsidized school vision programs can help close these gaps and support upward social mobility for millions of children.

Methodological Note: The prevalence estimates presented in this brief are derived from the Global Burden of Disease (GBD) 2023, which uses statistical modeling (DisMod-MR) to generate country-specific estimates. While GBD represents the most comprehensive available source for global health estimates, primary survey data on vision loss and blindness for ages 5–19 are sparse in Latin America and the Caribbean. Country-specific estimates should be interpreted as model-derived predictions informed by available regional data, not as direct prevalence measurements from national surveys.

References: [1] Compiled by the Global Burden of Disease (GBD) study from population-based surveys, censuses, vital statistics, and related databases using standardized modeling methods, widely considered the most comprehensive source of global health estimates (GBD, 2023). GBD 2023 Disease and Injury Incidence and Prevalence Collaborators. (2023). Global Burden of Disease Study 2023 results. Institute for Health Metrics and Evaluation. [2] Latorre-Arteaga, S., Gilman, R. H., Meza, B., Silva, J. C., & Gagnon, M. (2016). Visual health screening by schoolteachers in remote communities of Peru: Implementation research. Bulletin of the World Health Organization, 94(9), 652–659. and World Health Organization. (2019). World report on vision. WHO. [3] Pan American Health Organization. (2014). Plan of action for the prevention of blindness and visual impairment. PAHO. [4] Polack, S., Yorston, D., López-Rubio, S., Polack, A., & Foster, A. (2012). Rapid assessment of avoidable blindness and diabetic retinopathy in Chiapas, Mexico. Ophthalmology, 119(5), 1033–1040. [5] Ma, X., Zhou, Z., Yi, H., Pang, X., Shi, Y., Chen, Q., Meltzer, M., LeCuyer, N., Zhang, L., & Rozelle, S. (2014). Effect of providing free glasses on children's educational outcomes in China: Cluster randomized controlled trial. BMJ, 349, g5740. https://doi.org/10.1136/bmj.g5740 [6] Glewwe, P., Hannemann, A., & West, J. (2018). The impact of providing vision screening and free eyeglasses on academic outcomes: Evidence from a randomized trial in Title I elementary schools in Florida. Journal of Policy Analysis and Management, 37(2), 265–300. https://doi.org/10.1002/pam.22043 [7]Rudnicka, A. R., Kapetanakis, V. V., Wathern, A. K., Logan, N. S., Gilmartin, B., Whincup, P. H., Cook, D. G., & Owen, C. G. (2016). Global variations and time trends in the prevalence of childhood myopia: A systematic review and quantitative meta-analysis. British Journal of Ophthalmology, 100(7), 882–890. https://doi.org/10.1136/bjophthalmol-2015-307724 [8]Glewwe, P., Park, A., & Zhao, M. (2016). A better vision for development: Eyeglasses and academic performance in rural primary schools in China. Journal of Development Economics, 122, 170–182. https://doi.org/10.1016/j.jdeveco.2016.05.007 [9] Furtado, J. M., Lansingh, V. C., Carter, M. J., Milanés, F., Peña, B. N., Ghersi, H. A., López, E., Morgan, I. G., & Silva, J. C. (2012). Causes of blindness and visual impairment in Latin America. Survey of Ophthalmology, 57(2), 149–177. https://doi.org/10.1016/j.survophthal.2011.07.002