Leaving No One Behind: Strengthening Access to Eye Health Programs for People With Disabilities in 6 Low- and Middle-Income Countries

Manfred Mörchen, MD, FEBO, MPH, Asahel Bush, MDevSt, Petra Kiel, MA, David Lewis, OAM, and Babar Qureshi, DOMS, DHPE, MSc

Purpose: To assess the impact of inclusive eye health programs for people with disabilities.

Design: A synthesis evaluation study.

Methods: A cross-disciplinary team of ophthalmologists, evaluation, and disability-inclusive development advisors purposively selected evaluation reports of CBM-supported inclusive eye health programs in low- and middle-income countries. Employing a change-promoting paradigm, salient achievements and challenges were narratively analyzed and results and recommendations suggested based on a previously developed framework for strengthening disability inclusion in eye health programs.

Results: Evaluations from 10 programs implemented in 6 countries (Cambodia, Egypt, Ethiopia, Indonesia, Pakistan, Vietnam) from 2011 to 2016 were identified. Training of medical staff and government officials resulted in increased awareness about disability rights and improved physical accessibility of eye health facilities. Relevant information about inclusion in eye health was incorporated in national eye health training curricula in some countries. Information, education, and communication material about eye health neglected patients with hearing and learning impairments. An overly narrow focus on disability inclusion confounded intersectoral barriers to eye health services. Collaboration of eye health staff with disability peoples organizations improved significantly but evidence of its impact was elusive. Collection of disability-disaggregated data posed significant challenges and made it difficult to demonstrate increased access to eye health programs by people with disabilities.

Conclusions: Introduction of disability inclusion in eye health systems of countries with limited resources poses significant challenges. Future programs striving to improve access to eye health services for marginalized populations including people with disabilities might consider more flexible and contextualized approaches.

Key Words: disability, inclusive eye health, access, barriers, low- and middle-income countries

The importance of access to health services for people with disabilities has been highlighted by article 25 of the United Nations Convention on the Rights of People with Disability.[1] Data from the World Health Survey suggest that people with disabilities face significantly more challenges in accessing health services than people without disabilities. For instance, 53% of men with disabilities globally reported that they could not afford a visit to health services compared with 33.5% of men without disabilities, and 17.0% of women with disabilities reported inadequacy of healthcare provider equipment compared with 9.8% of women without disabilities.[2] Differences in access seem to be aggravated in low- and middle-income countries (LMICs).[3] Results from a cross-sectional survey in North India suggest that people with disabilities are more likely to report unmet health needs compared with people without disabilities [odds ratio (OR), 5.2; 95% confidence interval (CI), 2.3–11.6], for instance.[4]

The World Report on Disability also emphasized the importance of access for people with disabilities to specialized health services and the support of community-based health services by specialist teams when necessary.[2] Programs for the prevention of avoidable visual impairment constitute such specialized services. The World Health Organization Global Action Plan 2014–2019 for universal eye health already called for the integration of eye health into wider socioeconomic policies, for instance, by introducing "disability inclusion practices."[5] Additionally, the goals of universal health care and universal eye health can be met only when "activities are inclusive of people with disabilities."[6]

The association of age and disability is likely to yield a future increase in people with overlapping impairments in addition to visual impairment. It has been suggested that 25% of people with visual impairment in Telanga State, India have an additional hearing impairment.[7] That could potentially aggravate access barriers to eye health services. For instance, results from a KAP (knowledge, attitudes, practice) eye health survey in rural Cambodia suggested that people with self-reported disabilities were less likely to be able to travel to an eye hospital independently compared with people without disabilities (64% versus 81%, $P < 0.001$).[8]

Similar to the call for inclusive health services, it has been pointed out that eye health staff "should be involved in the disability movement and advocating for the rights of the disabled."[9] The silo approach of contemporary medical disciplines with their tendency to subspecialization challenges these endeavors: "… ophthalmologists and especially subspecialists tend to focus attention on the organ or the subsection of the eye with often very little consideration to … social determinants of health."[10,11]

A few eye health programs in LMICs have started to develop services that strive to become more inclusive of people with disabilities. For instance, Takeo Eye Hospital in Cambodia implemented a holistic approach towards inclusive eye health (IEH) including improvement of physical accessibility, collaboration with community-based rehabilitation services, and collection of disability-disaggregated data.[12] At the L V Prasad Eye Institute in

India, rehabilitation constitutes an integral part of the clinical services.[13] In Kenya, Kwale District Eye Centre followed a community-centered approach and combined "western-based medicine, indigenous medicine, and community networking" with the aim of mitigating sociocultural barriers for people with disabilities.[14] Further, stratified disability-disaggregated data collection has been piloted in programs for the prevention of visual impairment in India and Tanzania.[15]

Overall, however, there is a dearth of data about the implementation and evaluation of eye health programs with a focus on marginalized populations and particularly people with disabilities in different contexts.[16] Most of the evidence is generated in high-income countries.[17,18]

CBM started to implement IEH approaches in its programs in 2008 as part of the "Avoidable Blindness Initiative" of the Australian government's "Development for All" program.[19] Since then, IEH programs have been implemented and evaluated in several LMICs, but the evaluation findings had not yet been systematically synthesized. It was suggested that there is a lack of "microlevel assessments, based on aggregations of evaluations"[20] because international nongovernmental organizations (NGOs) seldom "carry out any regular synthesis of evaluation findings."[20]

The primary purpose of this IEH synthesis evaluation is informed by an externally referential change-promoting paradigm.[21] It aims to document achievements and challenges from implemented IEH programmes in LMICs to develop informed recommendations for future IEH programs. It has also tried to answer if people with disabilities benefitted from projects where IEH had been implemented and what information was available about the collection of disability-disaggregated data.

MATERIALS AND METHODS

Employing a change-promoting paradigm, a cross-disciplinary team of 2 ophthalmologists, 1 evaluation advisor, and 2 disability-inclusive development (DID) advisors was formed to conduct a synthesis of all CBM-supported programs with a main or partial focus on IEH programs from 2011 to 2016. The programs were purposively selected based on the availability of evaluation reports and their potential to contribute to the primary purpose of documenting achievements and challenges. Final and midterm reports were included. Three team members had "significant contextual knowledge"[22] and 2 members were not involved in any stage of the programs. It was assumed that there were limited linear relationships among the outputs, outcomes, and impact of the programs because of their implementation in very diverse sociocultural contexts, along with having objectives from the fields of prevention of visual impairment, (community-based) rehabilitation, and DID. Synthesis evaluation was therefore deemed to be more applicable for answering the research questions than other methodologies (for instance, meta-evaluation or systematic review) because of the following criteria: synthesis evaluations focus predominantly on examination of broad topics, rather than on answering narrowly defined research questions and are "less likely to draw on experimental evidence and will have a less formal protocol that may not be peer-reviewed."[22] The modification in this case is due to the restriction of synthesizing "the evidence from a number of evaluations at the country level which have used a similar protocol"[22] and which were initiated and supported by CBM, without further embedding evidence from other

programs or a literature review. Based on the results, informed recommendations were developed and discussed within the team until consensus was achieved. There was no formal measurement of interrater agreement regarding the formulation of the recommendations.

A detailed description of the distinctive steps of a synthesis evaluation and their application for this study are compiled in Table 1. The findings were categorized according to 9 key practical strategies for inclusion, which were adapted and simplified from a conceptual framework for inclusive eye health based on foundational principles of the human rights model of disability: awareness, participation, comprehensive accessibility, and twin-track approach (Table 1). The research followed the tenets of the Declaration of Helsinki. Secondary data that was retrieved for this report was devoid of any identifying information and deemed not to be susceptible to institutional board review approval.

RESULTS

Altogether 12 program reports from 8 LMICs could be identified from CBM's database. Two reports were excluded from analysis (1 report from Palestine was a situational analysis instead of a program evaluation and 1 program from the Philippines did not have a specific focus on IEH). Details about the selected 10 programs from 6 LMICs are presented in Table 2.

Three evaluation reports (Egypt, Indonesia, Vietnam) provided detailed findings and elaboration regarding inclusion in eye health, whereas the report from Pakistan focused more on the description of contextual information. The report from Cambodia was part of a multistakeholder program with IEH being a comparatively minor objective and the report from Ethiopia did not provide substantial information about IEH in the program.

The documented description of the employed evaluation methodologies and analysis was very diverse and often insufficient. There was limited information about the conditions that could have had an impact on the conduct of interviews, for instance. A more detailed description of the analysis of qualitative and quantitative data was only provided by 2 evaluations (Indonesia and Vietnam). The report from Indonesia was also the only one that documented detailed information about the evaluators.

The findings and recommendations are presented following the grid of the 9 IEH key strategies. The grid was used as tool to structure the analysis and findings instead of appraising project performance against standards.

Awareness Raising and Attitude Change

Achievements

Improved awareness about disability rights and access to eye health services at different levels of eye health systems were reported in Indonesia, Vietnam, Egypt, and Pakistan. In Egypt, an inclusive approach was reported, which aimed to improve access to eye health services by addressing social, sex- and disability-related barriers including improved quality of cataract surgical services. In Cambodia and Vietnam, mitigation strategies for disability-specific barriers to eye health services were included in national eye health training curricula.

TABLE 1. Key Characteristics of a Synthesis Evaluation and Application in the IEH Review

Stage	Synthesis Evaluation: Key Characteristics	IEH Synthesis Evaluation Application
Design	"Formal design is usually developed … tailored to the needs of the review. The design is ideally expert-lead … but can be relatively informal."[22]	The design was developed by a cross-disciplinary team of 2 ophthalmologists with public health subspecialty, 1 evaluation, and 2 DID advisors: 1. Scope of the review: desk-based thematic synthesis of purposively selected IEH (midterm and final) evaluations of programs implemented from the year 2011 to 2016 2. Summary: focus on narrative summary 3. Implications: were drawn from the summary findings and elaborated by the cross-disciplinary team regarding their potential to answer the research questions; identification of evidence gaps 4. Recommendations for management and policy: findings were translated into tangible recommendations with the goal of informing future IEH programs and suggesting research needs
Sampling	"Generally includes existing studies and reports sourced through the experts and clients involved." Inclusion criteria are "guided by criteria established on the basis of the purpose of the evaluation e.g. ability to respond to evaluation questions."[22]	Existing evaluations of IEH programs implemented by CBM were listed by the cross-disciplinary team. One DID advisor screened the suggested reports for the ability to answer the research questions and selected 10 out of 12 evaluations.
Data collection	"Data is extracted from a range of different sources including programme reports, qualitative and quantitative research, grey literature and unpublished studies."[22]	Data was retrieved from CBM program evaluations (which employed mainly mixed quantitative-qualitative approaches). Findings from research retrieved from grey literature were not included in the analysis.
Analysis	More narrative "and systematically analyzed around the review questions. Analysis should include assessments of data quality."[22]	A narrative approach was employed to summarize data of the different evaluations. The analysis was informed by a previously developed conceptual framework for strengthening disability inclusion in eye health programs.* Analysis of the data was conducted deductively applying the following topics: 1. Awareness raising and attitude change 2. Participation of people with disabilities 3. Appointment of disability inclusion officer/advisor 4. Disability inclusion policy linked to gender and child safeguarding 5. Physical accessibility to eye health facilities 6. Accessibility of written and spoken communication 7. Financial barriers to eye health services 8. Referral and support networks 9. Blindness and low vision services The quality of the reports was informally assessed mainly in regard to the potential of answering the research questions and contributing to practical recommendations.

*Available at http://www.cbm.org/article/downloads/54741/Inclusion_in_Eye_Health_Guide.pdf (page 7 and 57).

TABLE 2. IEH Programs Included in the Synthesis Evaluation

Country	Project Title and Main Objective	Evaluation Type	Evaluation Methodology
Cambodia	Avoidable blindness initiative 2010–2011: To reduce the incidence of preventable blindness and improve the quality of life for people with low vision and blindness	Final; External (no details about the evaluation team documented)	Desk review, qualitative (semistructured interviews, FGDs, field visits)
Egypt	Establishing and strengthening eye health through an inclusive civil society approach in rural and marginalized communities in Egypt in due consideration of environmental aspects; 2013–2016	Midterm; External (no details about the evaluation team documented)	Desk review, qualitative (FGDs, semistructured in-depth interviews, observational field visits), limited quantitative analysis of secondary data from various sources (annual project reports)
Ethiopia	Amhara Trachoma Control Program 2014–2017: To contribute towards the elimination of trachoma by 2020, in line with the Millennium Development Goals and GET 2020 in the program's districts	Midterm; External (no details about the evaluation team documented)	Participatory approach, desk review, qualitative (FGDs, key informant interviews, field visits), limited quantitative analysis of program outputs
Indonesia	Inclusive system for effective eye care 2013–2017: To establish effective and replicable models of a disability-inclusive community eye care system reducing the main causes of avoidable blindness in 1 district in Indonesia	Midterm; Internal/External (1 community development advisor, 2 ophthalmologists specialized on public health, including 1 sign language translator)	Appreciative inquiry, desk review and literature review, qualitative (purposive sampling, FGDs, semistructured in-depth interviews using closed and open questions with key informants, data analyzed using thematic content analysis), quantitative analysis of secondary data using statistical tests for categorical data
Pakistan	Accessible health services for people with disability; 2011–2014 District medical and rehabilitation complex; 2011–2014 Inclusive education; 2011–2013	Final; External (no details about the evaluation team documented)	Qualitative (FGDs, semistructured interviews with key informants)
Vietnam	ABI East Asia Program: Nghe An inclusive eye care services 2013–2015, a sustainable provincial inclusive eye care model	Final; Internal (DID advisor, ophthalmologist specialized in public health, CBM program staff)	Desk review, quantitative (written questionnaire to key stakeholders before field visit), no detailed information about the analysis; qualitative (in-depth interviews with key informants, observational field visits, data analyzed using transcriptions and development of key themes including triangulation with additional technical input)
	Strengthening inclusive eye care services in Dien Bien Province 2014–2016: To improve the skills of health professionals that can provide good quality inclusive services To improve local awareness of quality eye care services through community health education, particularly of women and children, and all people with disabilities	Midterm; Internal (DID advisor, ophthalmologist and low Vision advisor both specialized in public health, CBM program staff)	
	Vietnam National Institute Low Vision Centre and Services Project 2013–2016: Develop low vision training and service delivery model		

ABI indicates avoidable blindness initiative; FGD, focus group discussion.

Challenges

A narrow focus of training sessions about disability in eye health—rather than highlighting a broader intersectionality of barriers—and a low number of patients with disabilities accessing eye health services, especially at the primary level, were reported in Vietnam and Indonesia. This resulted in insufficient understanding about the relevance of specific disability-related barriers to eye health services. Efforts to raise awareness failed to address entrenched negative attitudes relating to psychosocial and intellectual disabilities.

Recommendations

1. Especially at the primary eye health level, IEH projects should take a broader rather than a disability-specific approach to inclusion in eye health, highlighting that all people accessing eye health services might benefit from improved accessibility for people with disabilities. There should also be a focus on improving access to general health services, instead of focusing exclusively on access to eye health.
2. A more comprehensive and intersectional understanding of barriers to accessing eye health is important for a better understanding that disability is often aggravated by other barriers such as sex, poverty, ethnicity, education, insufficient quality of eye health services, and vice versa.
3. Disability-specific approaches are likely to be more beneficial in tertiary level eye health institutions with a higher number of eye patients with visual and additional impairments.

Participation of People With Disabilities

Achievements

Almost all programs collaborated with disability peoples organizations (DPOs) in different roles as trainers, accessibility auditors, community awareness raisers, and so on. In Indonesia and Pakistan, staff with physical and visual impairments were employed by a tertiary eye hospital. In Cambodia, awareness campaigns such as World Sight Day were regularly conducted together with DPOs.

Challenges

Mainly, DPOs were engaged in service-delivery activities and advocacy but were not involved in project planning, management, or decision-making. Evidence was lacking that the collaboration with DPOs in community screening activities yielded more patients with disabilities accessing eye health services. Employment of people with disabilities in eye hospitals was not accompanied by improvement in an accessible work environment (for instance, provision of assistive technology for staff with visual impairment employed as receptionists).

Recommendations

Collaboration between DPOs and eye health programs requires greater use of their capacities in planning phases. There needs to be close monitoring of whether advocacy activities result in more marginalized patients accessing eye health services, especially considering patients with disabilities.

Appointment of Disability Inclusion Officer/Advisor

Achievements

In Cambodia, the manager of a tertiary eye hospital was trained in disability inclusive practices at the Nossal Institute for Global Health, Australia. After the training, he was appointed as disability advisor and successfully integrated the collection of disability-disaggregated data into the hospital's health information system and improved the coordination between medical and low vision services along with schools for blind children.[12] In Pakistan, the District Medical Rehabilitation Complex in Charsadda District employed a focal person for disability.

Challenges

The appointment of an inclusion officer was often hampered by overburdened hospital staff complaining about competing responsibilities and insufficient budget allocation to implement activities.

Recommendations

The successful appointment of an inclusion officer requires investment in training combined with the development of feasible working plans that are compatible with the routine workload in busy hospitals and budget allocation.

Disability Inclusion Policy

Achievements

Several of the implementing partner organizations and health facilities had disability-related policies (for instance, the District Medical Rehabilitation Complex in Charsadda District, Pakistan).

Challenges

None of the projects reviewed included documented actions to specifically support the implementation of disability inclusion policies. Most evaluation reports referred to existing national disability policies that were often not implemented as well. For instance, policies to employ people with disabilities at health units in Pakistan were not supported by appropriate budget allocation.

Recommendations

Policies concerning disability along with gender and child protection should be introduced at a project level in a comprehensive and intersectional manner (for instance, which steps need to be implemented in an eye hospital to guarantee a high quality eye health service for a girl with Down syndrome and uncorrected refractive error?).

Physical Accessibility to Eye Health Facilities

Achievements

The physical accessibility of medical facilities was significantly improved across all programs. This worked especially well in Indonesia where accessibility is a required feature of the governmental accreditation system for health facilities. The adjustments mainly targeted people with physi-

cal impairments (building of ramps, handrails, and so on) and visual impairments (color line systems, high-contrast signage with braille, and so on). In Indonesia and Vietnam, DPOs were involved in conducting accessibility audits of medical facilities.

Challenges

Access for people with hearing or intellectual impairments to health facilities was neglected. At times, the recommended adjustments did not consider possible low-cost options. At the primary level there was a lack of understanding of the principles of universal design. For instance, ramps were perceived to improve access exclusively for patients using wheelchairs and not also for older people.

Recommendations

1. The principles of universal design should be emphasized to avoid the conception that modifications are only beneficial for people with disabilities, rather than for all patients.
2. Low-cost modifications should have priority, with expensive adjustments limited to secondary or tertiary health facilities.

Accessibility of Written and Spoken Communication

Achievements

A few programs designed accessible information, education, and communication (IEC) materials, for instance, by using plain or local languages and images of people from indigenous groups in Vietnam. There was also some training in sign language for health staff provided in Indonesia.

Challenges

Accessible IEC materials specifically addressing people with disabilities were underdeveloped. Most of the material used technical medical language and was devoid of pictographs for illiterate patients. In Indonesia, sign language training did not result in improved communication with eye patients who were hard of hearing and not using sign language. The development of IEC materials for people with learning and intellectual impairments was not documented.

Recommendations

Practical guidelines to improve communication with patients who are blind, deaf, hard of hearing, or have learning impairments are available and should be used in IEH trainings.[23,24]

Financial Barriers to Eye Health Services

Achievements

In several programs there were efforts to reduce out-of-pocket payments (such as transportation costs). The trachoma program in Ethiopia offered flexible payment options of service fees for people with disabilities.

Challenges

The mitigation of financial barriers in most programs

targeted different patient groups, including people with disabilities. The lack of disability-disaggregated data made it impossible to document how many patients with disabilities benefitted from reduced financial barriers.

Recommendations

To get a better understanding about specific financial barriers for people with disabilities, data needs to be disaggregated accordingly.

Referral and Support Networks

Achievements

Establishing networks among eye health services and local school management resulted in improved inclusion of students with visual impairment in 3 countries (Vietnam, Cambodia, Pakistan). In Egypt, primary health workers were trained to identify people with disabilities and it was reported that 2.5% of those clients who accessed eye health services were people with disabilities.

Challenges

Programs for IEH were implemented in settings with very diverse organized health systems. Establishing support networks was difficult in those systems with a strong hierarchical structure and weak referral systems.

Recommendations

1. Beyond working with governmental health departments, future IEH programs should engage more with government agencies responsible for education and social affairs.
2. Referral networks should focus more on inclusion of people with disabilities and include mainstream and disability-specific services, such as health facilities, DPOs, local civil society organizations, and so on.

Blindness and Low Vision Services

Achievements

An existing low vision unit of a tertiary eye hospital in Vietnam was significantly scaled up and disability-disaggregated data collection has improved. For instance, clinic records showed that 20% of the low vision clients were categorized as being blind, and overall 7% of the clients presented with visual and additional impairments, such as hearing difficulties.

Challenges

It was reported that there was a lack of awareness about low vision services in some countries. For instance, female health workers in Pakistan were not aware of existing services and self-help groups for low vision in their respective districts.

Recommendations

Referral linkages for people with permanent visual impairment to low vision services should be a mandatory part of IEH programs and requires improved awareness of eye health staff.

Collation of Disability-Disaggregated Data

There were a few encouraging examples of

disability-disaggregated data collection in Egypt, Vietnam, Indonesia, and Cambodia. Results indicate that people with disabilities constitute an important proportion of eye health patients at community screenings and eye hospitals. However, data were often fragmented and there was a dearth of disaggregated data of reliable quality. At the design and situation analysis stage, many projects also had to rely on preexisting data of unreliable quality and accuracy. At the monitoring and evaluation stage, projects used data either from government and institution-based health management information systems or from additionally introduced data collection tools. The main promoted tool was the Washington Group Short Set (WGSS) of questions. However, the evaluation reports did not provide sufficient details on how exactly the WGSS questions had been implemented. In those programs where additional systems were developed, the data collection was reported to be labor-intensive and the efforts were perceived more as requirements to comply with donor priorities than being of intrinsic value. The introduction of disability-disaggregated data was especially challenging in programs that had to be aligned with underdeveloped governmental health information systems. It was more successful in eye hospitals with a certain degree of independence, such as Takeo Eye Hospital in Cambodia.

DISCUSSION

The main salient finding from the synthesis evaluation of 10 IEH programs in 6 LMICs constitutes the insufficiently documented translation of IEH training and increased awareness of inclusion into more equal access to eye health services for marginalized populations, specifically people with disabilities. It was suggested that "the term 'disability' itself is confusing and conceptually elusive."[25] An overly narrow approach to IEH might therefore be confusing and could result in confounding, especially of the intersectionality of barriers. This was relevant for the mitigation of physical barriers to health facilities: instead of employing the approach of universal design, physical modifications were perceived of being beneficial only for people with disabilities. Programs for IEH might be more successfully implemented by following a broad approach, especially at the primary eye health level, and with more focused activities targeting specific groups at the secondary or tertiary level.

The collation of stratified disability-disaggregated data that is increasingly requested in the era of universal healthcare[26] was challenging for almost all projects. Consequently, it was very difficult to provide quantitative evidence about people with disabilities accessing eye health services. Possible reasons for the challenges might be that health information systems in LMICs are not yet prepared to collect stratified data[27,28] and the fact that IEH programs were implemented in countries with very diverse concepts of disability.[29]

Challenges of Intersectoral Collaboration

The simultaneous implementation of shorter-term institution- and community-based medical eye health services and longer-term inclusion goals—including collaboration with DPOs and referral to educational, low vision, and rehabilitative services—appeared as a conundrum that might be difficult to unravel for health staff being trained under the realms of a predominantly medical paradigm. Intersectoral collaboration beyond the health sector has been demanded for decades but there are still gaps in its understanding and implementation.[11] Programs for IEH require intersectoral collaboration of highly heterogeneous stakeholders, which is difficult to implement by linear and static program designs. Further, increased collaboration might be perceived as an additional burden in those programs that still struggle with the challenges of improving the quality of eye health services, especially cataract surgical services. For instance, results of a RAAB (Rapid Assessment of Avoidable Blindness) in one of the Vietnamese provinces where an IEH program had been implemented suggested that 30% of patients had a poor cataract surgical outcome (presenting visual acuity less than 6/60).[30] In such a setting, the improvement of the surgical quality might be perceived as more relevant than strengthening referral pathways to rehabilitative services.

Alternative Approaches to Implement IEH Programs

Health systems constitute unpredictable complex adaptive systems (CAS) and all interventions require a careful consideration of the social context.[31] The IEH programs were implemented in countries with very diverse sociocultural backgrounds, including religious affiliations. This could affect perceptions of health and disability by service users and providers. For instance, it was suggested that families in Muslim communities have often a faith-based obligation to care for people with disabilities at home, which could result in the rejection of institutionalized care at hospitals.[32] That might be different in Cambodia with its predominantly Buddhist population. Those "explorations of the local context"[31] were not well documented in the evaluations and should play a more salient role in future IEH programs, as suggested by the CAS framework.[31]

Strengths

The evaluation synthesis was conducted by a mixed team of specialists covering prevention of blindness, evaluation, and DID. This is deemed to be important "in the case of complex programs involving a large variety of stakeholders."[33] The contextual knowledge of some of the team members about the programs was valuable in an informal critical appraisal of the selected evaluations. It was apparent that implemented activities were not always captured in the evaluation reports (for instance, significant efforts to introduce the collection of disability-disaggregated data in the health information management system in Cambodia were not documented in the evaluation report).

Limitations

It has been suggested that NGOs most often conduct evaluations that are weak (focusing on output and outcome instead of impact) and positively biased as they are handled by the aid agencies themselves.[20] The fact that this evaluation synthesis was conducted only by CBM staff might be therefore seen as a violation of positivist evaluation theories on distance and neutrality.[33] This was mitigated by the fact that 2 members of the synthesis team were not involved in any stage of the implemented programs. Additionally, a change-promoting paradigm

was employed as framework for this evaluation synthesis with the aim to inform the practice of IEH programs. This cannot be done by completely impartial evaluators but asks for "evaluators to play the role of critical friend to their clients."[33]

In conclusion, increased awareness about more equitable outcomes for people with disabilities and other marginalized groups has been insufficiently translated into tangible benefits, for instance, in terms of an increased number of people with disabilities accessing eye health services. The introduction of IEH components in eye health systems adds significant challenges with regard to intersectoral collaboration and identification and mitigation of a confusing array of barriers for marginalized populations accessing eye health services. We suggest considering aspects of CAS in the design of IEH programs, for instance, by introducing small-scale programs with incremental changes and anticipation of unintended outcomes. There is also a need to balance long-term inclusion goals and shorter-term eye health interventions beyond the usual project cycle of 1 to 3 years only. The collection of disability-disaggregated data needs to be introduced very carefully only after fastidious analysis of the existing capacities of eye health information systems and requires a contextual approach along with provision of financial and human resources.

REFERENCES

1. United Nations. Convention on the rights of persons with disabilities and optional protocol. 2007. Available at: http://www.un.org/disabilities/documents/convention/convoptprot-e.pdf. Accessed November 12, 2017.

2. The World Bank, World Health Organization. World report on disability. 2011. Available at: http://www.who.int/disabilities/world_report/2011/report.pdf. Accessed November 12, 2017.

3. Baart J, Taaka F. Barriers to healthcare services for people with disabilities in developing countries: a literature review. *Disabil CBR Incl Dev.* 2018;28: 26–40.

4. Grills N, Singh L, Pant H, et al. Access to services and barriers faced by people with disabilities: a quantitative survey. *Disabil CBR Incl Dev.* 2017; 28:23–44.

5. World Health Organization. Universal eye health: a global action plan 2014-2019. Geneva; 2013. Available at: http://www.who.int/blindness/AP2014_19_English.pdf. Accessed October 10, 2017.

6. Hashemi G, Kuper H, Wickenden M. SDGs, inclusive health and the path to universal health coverage. *Disabil Glob South.* 2017;4:1088–1111.

7. Mactaggart I, Polack S, Murthy G, et al. A population-based survey of visual impairment and its correlates in Mahabubnagar district, Telangana State, India. *Ophthalmic Epidemiol.* 2017;6586:1–8.

8. Ormsby GM, Arnold AL, Busija L, et al. The impact of knowledge and attitudes on access to eye-care services in Cambodia. *Asia-Pac J Ophthalmol (Phila).* 2012;1:331–335.

9. Faal HB. Millennium development goals and eye health. *Indian J Ophthalmol.* 2012;60:411–415.

10. Meyer D. The value of an appreciation of clinical profiles in communities as aide-memoire when faced with difficult ophthalmic diagnoses. *Middle East Afr J Ophthalmol.* 2017;24:119–120.

11. Adeleye OA, Ofili AN. Strengthening intersectoral collaboration for primary health care in developing countries: can the health sector play broader roles? *J Environ Public Health.* 2010;2010:1–6.

12. Mörchen M, Ormsby G, Bonn TS, et al. Addressing disability in the health system at CARITAS Takeo Eye Hospital. *Community Eye Health.* 2013;26: 8–9.

13. Rao GN. The Barrie Jones Lecture-eye care for the neglected population: challenges and solutions. *Eye (Lond).* 2015;29:30–45.

14. Berman N. Negotiating local knowledge: networking disability on the community level. *Disabil Stud Q.* 2009;29.

15. Sightsavers. Everybody counts - Disability disaggregation of data pilot projects in India and Tanzania - final evaluation report. 2016. Available at: https://www.sightsavers.org/wp-content/uploads/2017/09/everybodycounts_brochure_accessible_web.pdf. Accessed October 10, 2017.

16. Ramke J, Qureshi B, Gilbert C. To realize universal eye health we must strengthen implementation research. *Middle East Afr J Ophthalmol.* 2017; 24:65–66.

17. Starling S, Willis A, Dracup M, et al. `Right to Sight´: accessing eye care for adults who are learning disabled. *J Intellect Disabil.* 2006;10:337–355.

18. Li JC, Wong K, Park AS, et al. The challenges of providing eye care for adults with intellectual disabilities. *Clin Exp Optom.* 2015;98:420–429.

19. Australian Agency for International Development. Development for all: towards a disability-inclusive Australian aid program 2009-2014. Available at: http://dfat.gov.au/about-us/publications/Documents/dev-for-all.pdf. Accessed October 10, 2017.

20. Clements P, Chianca T, Sasaki R. Reducing world poverty by improving evaluation of development aid. *Am J Eval.* 2008;29:195–214.

21. St Leger AS, Walsworth-Bell J. Change-promoting research for health services. A guide for resource managers, research and development commissioners and rsearchers. Buckingham, England; Open University Press; 1999.

22. Olsen K, O´Reilly S. Evaluation methodologies. 2011. Available at: http://www.iodparc.com/get_resource.html?resource_id=18. Accessed October 10, 2017.

23. Ellison EW. Reaching out to patients with intellectual disabilities. *Community Eye Heal J.* 2013;26:13.

24. Newton VE, Shah SR. Improving communication with patients with a hearing impairment. *Community Eye Health.* 2013;26:6–7.

25. Mitra S. Disability, health and development. New York; Palgrave Macmillan US; 2018.

26. WHO Regional Office for the Western Pacific. Sustainable development goals and universal health coverage regional monitoring framework: applications, analysis and technical information. Manila; 2017. Available at: http://iris.wpro.who.int/bitstream/handle/10665.1/13961/9789290618379-eng.pdf?sequence=1. Accessed March 23, 2018.

27. Durham J, Sychareun V, Rodney A, et al. Health information systems and disability in the Lao PDR: a qualitative study. *Int J Heal Plann Mgmt.* 2016;31:446–458.

28. McPherson A, Durham J, Richards N, et al. Strengthening health information systems for disability-related rehabilitation in LMICs. *Health Policy Plan.* 2017;32:384–394.

29. Loeb M. Disability statistics: an integral but missing (and misunderstood) component of development work. *Nord J Hum Rights.* 2013;31:306–324.

30. Ministry of Health Vietnam. National survey on avoidable blindness Vietnam. Hanoi; 2015. Available at: https://www.iapb.org/wp-content/uploads/RAAB-Vietnam-final-report-ENG.pdf. Accessed May 20, 2018.

31. Paina L, Peters DH. Understanding pathways for scaling up health services through the lens of complex adaptive systems. *Health Policy Plan.* 2012;27: 365–373.

32. Hasnain R, Shaikh LC, Shanawani H, et al. Disability and the Muslim perspective: an introduction for rehabilitation and health care providers. Ithaca, NY; Center for International Rehabilitation Research Information and Exchange; 2008.

33. Tarsilla M. Being blind in a world of multiple perspectives: the evaluator's dilemma between the hope of becoming a team player and the fear of becoming a critical friend with no friends. *J Multidiscip Eval.* 2010;6:200–205.