



## Brief Report

## Towards Universal Eye Health: Hospital-based disability-disaggregated data collection in Takeo province, Cambodia



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## ABSTRACT

**Background:** Universal access and equity are salient principles of the World Health Organization global action plan 'Towards Universal Eye Health'. However, collection of disability-disaggregated data to measure access to eye hospitals in low- and middle income countries, including referral to rehabilitative services, are not routinely integrated into Health Management Information Systems.

**Objective:** This report presents secondary-data analysis of disability-disaggregated data collection that was introduced at a tertiary eye hospital in a rural province in Cambodia.

**Methods:** A modified version of the Washington Group Short Set of Questions was used to count the number of eye patients with self-reported difficulties. The number of referrals of patients with unavoidable visual impairment to low vision services as well as referral to rehabilitative services was also counted.

**Results:** From 2011 to 2016, out of 182,327 patients overall 4981 (2.7%; 95% CI 2.66–2.81) reported difficulties with hearing, moving or communicating in addition to visual or other eye-related problems. Most of the difficulties were reported in the age group of patients aged 50 years and older (89.8% [95% CI 88.9–90.6]). All together 901 (0.5%; 95% CI 0.46–0.53) patients were treated at the low vision unit and 652 (0.36%; 95% CI 0.33–0.39) patients were referred to rehabilitation services. The number of referrals to rehabilitation declined annually from the year 2013–2016.

**Conclusions:** Patients with self-reported impairments constitute a significant proportion of the eye hospital's population. A modified version of the Washington Group Short Set of Questions enabled routine disability-disaggregated data collection but resulted also in possible under-reporting of difficulties.

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The seminal World Report on Disability highlighted that “people with disabilities encounter a range of barriers when they attempt to access health care services”.<sup>1,2</sup> Disability-disaggregated data that informs health service providers about the access of people with disabilities to health services is still elusive, particularly in low and middle income countries (LMICs). People with disabilities were therefore suggested to be categorized as an “unrecognized health disparity population”.<sup>3,4</sup>

Disability status is slowly gaining attention in programs focusing

on the reduction of avoidable visual impairment in LMICs<sup>5–12</sup> but it is still not yet common to monitor inequity related to disability in regional or national eye health programs.<sup>13</sup>

Blindness and visual impairment are closely associated with age and it is conceivable that a significant proportion of eye patients present not only with disabling visual impairment, but also other age-related acquired disabilities.<sup>14</sup> A recent cross-sectional survey from Telanga State, India, suggested for instance that a significant number of people with visual impairment had also either a moderate/severe hearing or physical impairment (25% respectively 15%).<sup>15</sup> The identification of people with multiple impairments and measurement of their access to health services are imperative for the reduction of disability-related barriers.<sup>16</sup> The WHO defined therefore universal access and equity as important cross-cutting principles of its global

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action plan 'Universal Eye Health' (2014–2019).<sup>17</sup>

In the lower-middle income country Cambodia, multiple barriers impair the access to health services for people with disabilities as well.<sup>18</sup> Findings from a cross-sectional KAP (knowledge, attitudes, practices) eye health survey suggested that participants with a self-reported disability were more likely to be unable to travel to eye health services on their own, compared to participants without disability (81 versus 64%,  $p < 0.001$ ).<sup>19</sup> Also, referral pathways for patients with unavoidable visual impairment from medical eye health to low vision services and rehabilitation or educational institutions were suggested to be insufficient.<sup>20</sup>

In Cambodia, the monitoring of programs focusing on improved accessibility of eye health services is impaired by a lack of disability-disaggregated data. The integration of "indicators for measuring disability responses"<sup>21</sup> into Cambodia's monitoring and evaluation system is part of the 'National Disability Strategic Plan 2014–2018'. This is however challenging in the eye health sector because of its "lack of [a] standardized eye health monitoring system".<sup>20</sup>

The Caritas Takeo Eye Hospital (CTEH) is one of the main teaching eye hospitals, located in the rural province Takeo in southern Cambodia.<sup>22</sup> Takeo had a population of 923,000 in the year 2013 with 16.0% aged 50 years and older.<sup>23</sup> The life expectancy was estimated to be 68.5 years in 2015.<sup>24,25</sup> The disability prevalence of 6.5% in Takeo province was estimated to be much higher compared to the national average of 2.06%. Almost 2% of women with disabilities in Takeo province reported multiple disabilities.<sup>26</sup>

Since the year 2008 the hospital has implemented a multi-pronged approach to more comprehensive and inclusive eye health services. The physical accessibility of the hospital was improved and the collaboration with a local community-based rehabilitation (CBR) organization was intensified by organizing joint community-based outreach services and mutual referral of patients. A low vision unit within the CTEH was implemented and four experienced eye health nurses were trained in providing low vision services, long-term support and training for patients with permanent visual impairment. The unit and the referral links to community-based rehabilitation services and special schools for children with visual impairment were essential in improving the services for children and adults with disabilities at the CTEH.<sup>27</sup> Routine disability-disaggregated data collection was integrated in the CTEH's Health Management Information System (HMIS) as clinical audit in order to estimate the rate of patients with self-reported temporary or permanent impairment presenting at the hospital and who might benefit from provision of assistive devices and/or referral to further services.<sup>8</sup>

The purpose of this report is to discuss the results of the disability-disaggregated data collection as clinical audit at the CTEH from the year 2011 until 2016, including referrals to rehabilitative and low vision services.

**Methods**

In the year 2011 a modified version of the 'Washington Group Short Set (WGSS) of Questions on Disability'<sup>28</sup> was integrated into the HMIS and the routine paper-based patient files. The original questions were shortened in order to enable their application in a busy tertiary eye hospital with on average 150 to 200 patients daily. The questions and answers were translated into Khmer by administrative staff of the CTEH with excellent command of Khmer and English (Table 1). Additional translations were not provided because speakers of indigenous languages constitute only 2.3% of the overall Cambodian population.<sup>23</sup>

Patients of all age groups presenting at the out-patient department (OPD) were asked to self-report difficulties with hearing, moving or communicating/understanding additional to their visual or other eye-related problems. Proxy respondents (for example, parents or caretaker) were asked to answer the questions in case of children or adults who were unable to reply, but this was not specifically marked in the HMIS. It was possible to report multiple difficulties. Questions about visual difficulties were part of the routine management of all patients and data regarding visual impairment are not included in this report. The WGSS questions four and five (difficulties with 'remembering' and 'washing all over') were deemed to be too sensitive to be routinely asked in a hospital within the socio-cultural context of rural Cambodia. The questions were asked verbally by administrative staff during the routine registration process and the answers were entered into the HMIS immediately. Eye health nurses and ophthalmologists could mark previously unreported difficulties in the patient files later if they became obvious during the medical examination. Instead of the WGSS ordinal response options (no/some/a lot of difficulties/cannot do at all) a binary option (yes/no) was introduced in order to reduce the amount of time needed for the responses. Additional assistance to facilitate communication with patients with specific difficulties was not available, for example with patients using sign language. There was no clinical verification of any reported additional impairment. A clause that would enable the separation of permanent or temporary difficulties was also not introduced.<sup>29</sup> Inception training on the use of the questions was conducted in 2011.

Additional to the WGSS questions the staff documented referral to a CBR organization for those patients with unavoidable visual as well as other impairments, who could potentially benefit from rehabilitative services. Referrals to further medical treatment were documented in the patient files but not counted and analyzed separately.

Administrative staff conducted simple monthly analysis of the data by extracting them from the HMIS and copying into an Excel file. The data were categorized into four age groups. The age group of people aged 50 years and older was truncated because of the

**Table 1**  
Adjusted Washington Group Short Set questions and answers (English and Khmer version).

1	Do you have difficulty with hearing? Yes/No តើអ្នកមានការពិបាកក្នុងការស្តាប់ឬទេ? បាទ/ទេ
2	Do you have difficulty moving (walking or climbing steps)? Yes/No តើអ្នកពិបាកក្នុងការលាស់ទីឬទេ(ដើរ ឡើងកាំជណ្តើរ)? បាទ/ទេ
3	Using your usual (customary) language, do you have difficulty communicating, for example understanding or being understood? Yes/No ដោយប្រើភាសាប្រពៃណីធម្មតា តើអ្នកមានការពិបាកក្នុងការទំនាក់ទំនងឬទេ? ឧទាហរណ៍ការយល់ដឹងឬត្រូវបានយល់ដឹង? បាទ/ទេ

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