



## The North West Cameroon Disability Study Summary Report



The full report is available at <http://disabilitycentre.lshtm.ac.uk>

**Project Investigators:** Islay Mactaggart<sup>1</sup>, Sarah Polack<sup>1</sup>, Hannah Kuper<sup>1</sup>, Violette Tamo<sup>2</sup>, Joseph Oye<sup>3</sup>

<sup>1</sup>International Centre for Evidence in Disability, London School of Hygiene and Tropical Medicine

<sup>2</sup>National Centre for Good Practices in Research, Cameroon

<sup>3</sup>Sightsavers Cameroon

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## Study Background

Few robust quantitative data on the magnitude and impact of disability on people's lives are available globally. Even amongst the limited evidence base that exists, different methodologies used in defining disability make comparison between countries and over time extremely difficult. These data are urgently needed to estimate the prevalence and impact of disability on people's lives, so as to plan appropriate, disability inclusive programmes, policies and societies.

Figure 1 presents the International Classification of Functioning, Disability and Health (ICF) Model. This model views disability as the interaction between health conditions and/or impairments in body function and structure, activity limitations caused by the impairment/health condition and the impact on the individual's participation. The relationship between these components is mediated by environmental, personal and contextual factors. The ICF is the accepted global reference for disability.

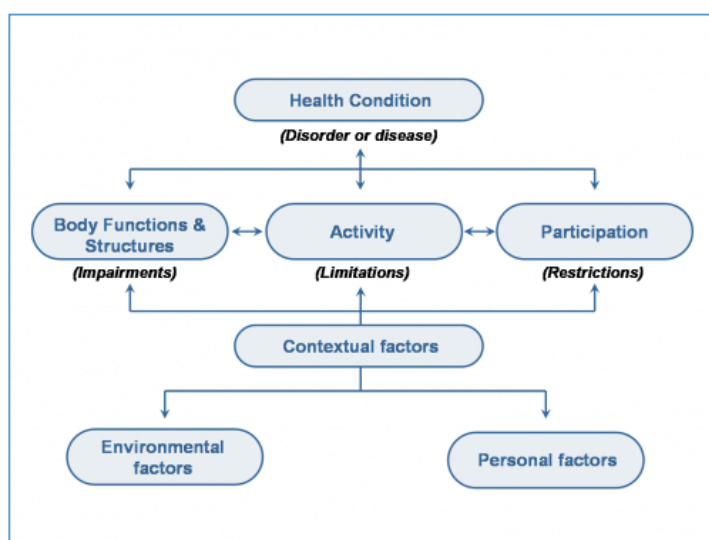


Fig 1: ICF Framework of disability

Measurement of disability tend to focus on a particular component within the ICF (e.g self-report only, or impairment measurement only). This project aimed to address this gap through development of a new comprehensive disability survey methodology that included self-reported measures, impairment measures and participation measures of disability. The project used this methodology to assess the magnitude and impact of disability on people's lives in North West Cameroon.

**Study Aim:** To develop and test a best-practice population-based survey methodology to estimate the prevalence of disability in children and adults in Cameroon, and to compare the extent to which people with and without disabilities access key mainstream services and opportunities including health, education and livelihoods in North West Cameroon.

### Study Objectives:

1. Develop a population-based survey methodology to assess prevalence of i)visual, hearing, musculoskeletal impairment and depression; and ii)Self-reported Disability
2. In North West Cameroon:
  - i) Estimate the prevalence of disability (impairments and activity limitations)
  - ii) Explore the extent to which people with disabilities (PWD) access mainstream health, education, employment and livelihood opportunities in comparison to non-disabled peers and their experiences of participation
  - iii) Identify factors that predict access to health, education, employment and livelihood amongst persons with disabilities
  - iv) Identify barriers and facilitators which mediate access to services

## Study Design:

The study consisted of an all-age population-based random sample, with nested case-control and a qualitative component.

1. All-age population-based survey of disability (n=4080) in North West Cameroon, measuring:
  - a. Self-reported functional limitations
  - b. Clinical screening for visual impairment, hearing impairment, musculoskeletal impairment and clinical depression (18+ only)

All participants aged  $\geq 5$  years who screened positive to either self-reported functional limitations or clinical impairments ('cases') were invited to participate in the nested case-control study alongside one age, gender and cluster matched control.

An additional one adult and two children with disabilities per cluster were identified via case-finding to ensure that the sample size was sufficient.

2. Nested case-control study of people with and without disabilities, assessing:
  - a. Impact of disability on access to health, education, livelihoods, participation
  - b. Availability of rehabilitation, inclusive education and assistive devices

3. Qualitative study:

30 participants identified with disabilities from the population-based sample and the nested case control, plus 14 key informants, were interviewed using a semi-structured questionnaire for the qualitative component. The results of this component of the study are reported separately.

## Study setting:

The study was conducted in Fundong Health District of the North-West Region, Cameroon (estimated population size: 125,604).

The study setting was decided based on ethical considerations concerning conducting the study in an area where onward referrals for un-met health and rehabilitative needs were available.

The study teams worked in partnership with service providers, policy makers and research institutes including the Cameroon Baptist Church and Socio-Economic Empowerment for People with Disabilities (SEEPD) Cameroon – both of which provide services and raise awareness about disability in NW Cameroon.



## Referrals and Follow Up:

Medical and rehabilitative referral services (including community-based rehabilitative services) available in the region were mapped pre-emptively and contacted to guarantee support. Clinical team members provided referrals to partner organisations as appropriate. All identified cases in the study, regardless of health or other need, were given information about the local Community-Based Rehabilitation program (SEEPD) for additional support in education, livelihoods, benefits etc.

Follow up support was provided at the end of the study, with field teams re-contacting all participants who had been offered referrals to provide additional information and offer logistical support.

### Definitions:

Screening criteria used to identify persons with disabilities were based on international recommendations:

- Self-reported Activity Limitations: reporting “a lot of difficulty” or “cannot do” any basic activity domain
- Vision Impairment: Presenting vision in better eye of  $<6/18$
- Hearing Impairment: Presenting hearing loss in better ear of  $>40$  dBA (adults) or  $>35$ dBa (children)
- Musculoskeletal Impairment (MSI): Structure impairment with moderate effect on the musculoskeletal system’s overall ability to function as a whole lower than 25-49%
- Epilepsy: 3 or more tonic clonic seizures in the past 12 months
- Depression: score of 20 or above on the Patient Health Questionnaire (PHQ-9)

### Key Findings:

- 4,080 people (51 clusters of 80 people) enumerated for the population-based survey, of whom 3,567 were screened (response rate 87%)
- Overall prevalence of disability in the North West Region, Cameroon is estimated at 10.5% (95% CI 9.0-12.2), with a slightly higher prevalence amongst women (10.8 vs. 9.9%).
- Prevalence is strongly associated with age, ranging from 4.7% of children under 18, to 6.8% of adults aged 18-49 and 33.6% of adults aged 50+.
- Overall prevalence of clinical impairments and/or disabling health conditions is 8.4% (95% CI 7.5-9.4), with significant increase by age (3.5% of children under 18, 5.1% of adults 18-49 and 28.3% of adults 50+).
- Overall prevalence of blindness (VA $<3/60$  in the better eye) was 0.6% (95% CI 0.3-1.0), increasing to 2.4% (1.5-3.8) in the population 50+



Photo: A child with a disability, and her sibling

- Physical impairments (1.3%) and hearing impairments (1.1%) were the most common impairments/health conditions in children, followed by Epilepsy (0.6%) and vision (0.4%).
- Physical impairments (2.9%), Epilepsy (1.1%) and hearing impairments (1.1%) were most common amongst adults 18-49, followed by vision (0.5%) and depression (0.4%).
- In adults aged 50+, prevalence of hearing impairment was 15.0%, followed by vision impairment (10.9%), physical impairment (10.8%), depression (0.5%) and epilepsy (0.3%).
- Prevalence of reported significant activity limitations was 5.9% (95% CI 4.7-7.4), and also increased significantly with age from 2.6% of children 2-17, to 3.9% of adults 18-49 and 18.1% of adults 50+.
- 46% of participants identified as having a disability did not self-report significant functional limitations. Participants were more likely to report severe clinical impairments and physical impairments
- Adults with disabilities were 3.6 times more likely never to have married, 3.7 times more likely not to have worked in the previous 7 days, and twice as likely to have had a serious health problem in the last 12 months than adults without disabilities
- Adults with disabilities aged 18-49 were nearly 3 times more likely to be in the poorest quartile than adults without disabilities, whilst there is no relationship between poverty and disability amongst adults aged 50+<sup>1</sup>
- Children with disabilities were almost 20 times less likely to be in school compared to children without disabilities and amongst those enrolled, almost 3 times more likely to have repeated a grade. Also twice as likely to have experienced a serious health condition in the last 12 months.
- Significant participation restrictions and environmental barriers were experienced by children and adults with disabilities of all ages compared to those without disabilities, but the difference between means lessened with age, suggesting participation restrictions are experienced by people with and without disabilities aged 50+
- Awareness of and access to rehabilitation and assistive devices amongst people with disabilities was very low, with 3% having ever previously received any medical rehabilitation and 5% having received an assistive device.

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<sup>1</sup> Socio-economic status (SES) scores created using Principal Component Analysis (PCA). PCA index includes asset variables such as household size, construction, toilet source, and durables.

**Table 1: Overall Prevalence of Disability**

	Total		0-17 years*		18-49 years		50+ years		Male		Female	
	n	% (95% CI)	n	% (95% CI)	N	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
<b>Any disability</b>	<b>373</b>	<b>10.5 (9.0-12.2)</b>	<b>91</b>	<b>4.7 (3.7-5.9)</b>	<b>68</b>	<b>6.9 (5.3-9.1)</b>	<b>214</b>	<b>33.6 (28.8-38.9)</b>	<b>144</b>	<b>9.9 (8.3-11.7)</b>	<b>22</b>	<b>10.8 (9.0-13.0)</b>
<b>Self Reported Limitation</b>	197	5.9 (4.7-7.4)	44	2.6 (1.8-3.6)	38	3.9 (2.7-5.6)	115	18.1 (13.9-23.1)	81	6.1 (4.8-7.6)	11	5.8 (4.4-7.7)
<b>Any impairment or health condition</b>	294	8.4 (7.5-9.4)	67	3.5 (2.7-4.4)	49	5.1 (3.7-6.5)	178	28.3 (24.8-31.9)	113	7.9 (6.5-9.3)	18	8.8 (7.6-10.0)
<b>Vision impairment</b>	82	2.3 (1.8-3.0)	8	0.4 (0.2-0.96)	5	0.5 (0.2-1.5)	69	10.9 (8.3-14.3)	36	2.5 (1.7-3.8)	46	2.2 (1.6-3.0)
<b>Hearing impairment</b>	127	3.6 (2.8-4.6)	22	1.1 (0.7-1.8)	11	1.1 (0.5-2.6)	94	15.0 (11.70-19.1)	44	3.1 (2.2-4.2)	83	4.0 (2.9-5.4)
<b>Physical impairment</b>	123	3.4 (2.7-4.4)	26	1.3 (0.8-2.3)	28	2.9 (1.9-4.3)	69	10.8 (8.3-14.0)	42	2.9 (2.1-4.0)	81	3.8 (3.0-4.9)
<b>Epilepsy</b>	25	0.7 (0.5-1.0)	12	0.6 (0.4-1.0)	11	1.1 (0.6-1.9)	2	0.3 (0.08-1.3)	9	0.6 (0.3-1.1)	16	0.8 (0.5-1.2)
<b>Depression</b>	7	0.2 (0.09-0.4)	-	-	4	0.4 (0.2-1.1)	3	0.5 (0.2-1.5)	4	0.3 (0.1-0.7)	3	0.1 (0.04-0.4)
<b>Multiple impairments<sup>+</sup></b>	<b>59</b>	<b>1.7 (1.2-2.1)</b>	<b>1</b>	<b>0.05 (0-0.2)</b>	<b>8</b>	<b>0.8 (0.3-1.4)</b>	<b>50</b>	<b>7.9 (5.8-10.0)</b>	<b>19</b>	<b>1.3 (0.7-1.9)</b>	<b>40</b>	<b>1.9 (1.3-2.5)</b>

\* Self-reported activity limitations aged 2-17 only

<sup>+</sup> Multiple as one or more in: vision, hearing, physical, epilepsy and depression

**Table 2: Severity of Impairments**

	Total		0-17 years*		18-49 years		50+ years	
	N	% (95% CI)	N	% (95% CI)	N	% (95% CI)	N	% (95% CI)
<b>Any clinical impairment/ disabling health condition</b>	294	8.4 (7.5-9.4)	67	3.5 (2.7-4.4)	49	5.1 (3.7-6.5)	178	28.3 (24.8-31.9)
<b>Vision impairment</b>	82	2.3 (1.8-3.0)	8	0.4 (0.2-0.96)	5	0.5 (0.2-1.5)	69	10.9 (8.3-14.3)
Moderate	55	1.9 (1.3-2.6)	6	0.4 (0.2-0.1.1)	3	0.3 (0.07-1.3)	46	7.2 (5.1-10.2)
Severe	10	0.3 (0.2-0.6)	2	0.1 (0.04-0.6)	0	0	8	1.3 (0.6-2.7)
Blind	17	0.6 (0.3-1.0)	0	0	3	0.2 (0.05-0.8)	14	2.4 (1.5-3.8)
<b>Hearing impairment</b>	127	3.6 (2.8-4.6)	22	1.1 (0.7-1.8)	11	1.1 (0.5-2.6)	94	15.0 (11.70-19.1)
Moderate	76	2.5 (1.9-3.2)	4~	0.3 (0.1-0.6)	2	0.2 (0.05-0.8)	70	11.0 (8.3-14.5)
Severe	15	0.5 (0.3-0.8)	0	0	0	0	15	2.4 (1.4-4.0)
Profound	9	0.3 (0.1-0.6)	3~	0.2 (0.07-0.6)	1	0.1 (0.01-0.8)	5	0.8 (0.3-1.8)
<b>Physical impairment</b>	123	3.4 (2.7-4.4)	26	1.3 (0.8-2.3)	28	2.9 (1.9-4.3)	69	10.8 (8.3-14.0)
Moderate	113	3.2 (2.5-4.0)	24	1.2 (0.7-2.1)	24	2.4 (1.6-3.8)	65	10.2 (7.8-13.3)
Severe	10	0.3 (0.2-0.5)	2	0.1 (0.03-0.4)	4	0.4 (0.2-1.1)	4	0.6 (0.2-1.7)

Table 3: Impact of disability on adults (18+)					
	Cases		Controls		Age/Sex Adj OR (95% CI)
	n	%	n	%	
<b>Marital Status</b>					
Married or living together	170	54	116	63	(baseline)
Divorced/ Separated	7	2	7	4	0.7 (0.2-2.1)
Widowed	73	23	31	17	1.2 (0.7-2.1)
Never Married/Living together	62	20	29	16	3.6 (1.7-6.9)
<b>Work in the last 7 days</b>					
No	167	54	39	22	3.7 (2.4-5.6)
Yes	145	46	142	78	(baseline)
<b>Serious Health Problem Past 12m</b>					
No	166	53	127	70	(baseline)
Yes	149	47	55	30	1.9 (1.3-2.8)

Table 4: Impact of disability children (5-17)					
	Cases		Controls		Age/Sex Adj OR (95% CI)
	n	%	n	%	
<b>Currently Enrolled</b>					
No	46	40	3	3	19.8 (5.9-66.8)
Yes	68	60	86	97	(baseline)
<b>Ever Repeated a Grade</b>					
No	20	44	31	55	(baseline)
Yes	45	36	69	45	2.8 (1.4-5.5)
<b>Serious Health Problem Past 12m</b>					
No	251	59	204	75	(baseline)
Yes	178	42	68	25	1.9 (1.4-2.7)

### Conclusions:

The study has shown that the prevalence of disability in North West Cameroon is much higher than previous studies have estimated (such as Cockburn 2014, using a self-reported measure only). The figures suggest that disability is strongly associated with ageing but that the prevalence amongst children and younger adults is also important in terms of the levels of restrictions this creates to education, livelihoods and participation. Moreover, the impact of disability is particularly strong amongst children and young adults. People with disabilities of all ages are at greater risk of serious health problems, and awareness of and access to rehabilitative services and assistive devices is low.

It is also important to note that the study setting was in a part of the country with disproportionate levels of health and rehabilitative services focused on disability. It is plausible that the prevalence of, and impact of, disability in other parts of the country may be even higher and further work is needed in this area.

### Recommendations for Cameroon Disability Inclusion:

The following use of the study findings is recommended to policy makers, service providers and other disability advocates and stakeholders:

1. To raise awareness of the prevalence of disability in North West Region and Cameroon in general, and specifically the large prevalence of disability and multiple impairments amongst adults aged 50+
2. To advocate strongly for greater inclusion of children with disabilities in education in North West Cameroon and particularly to ensuring appropriate methods of education that allow disabled children to progress through school
3. To advocate for better access to health and rehabilitative services amongst children and adults with disabilities in North West Cameroon, including linking people with disabilities to

available services (including SEEPD programme and Mbingo Baptist Church) and greater community outreach and support

4. To intensify efforts and advocacy for inclusive societies and services that alleviate the restrictions in participation felt by people with disabilities, including barriers to education and livelihoods, and to maximise functioning
5. To understand the differences in estimates derived from different methodologies of disability measurement, and the most appropriate measures for programs and surveys



Photo: Performing a hearing test on a participant in her home

#### **Practical Recommendations on disability data collection:**

1. Self-Reported tools that measure activity limitation are the most appropriate and resource efficient way to measure disability in a population or within a program or project.

2. Moderate clinical impairments may not be captured using this method, so we recommend that all participants who report even “some” limitation in a particular domain should also undergo a simple clinical screen

3. Measures of participation should also be

included to fully capture disability.

#### **References:**

Cockburn, L., S. Cleaver, and E. Benuh, *The Prevalence of Impairments and Disabilities in the North West Region, Cameroon*. HEALTH SCIENCES AND DISEASE, 2014. **15**(2).

Corresponding Author: [islay.mactaggart@lshtm.ac.uk](mailto:islay.mactaggart@lshtm.ac.uk)

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**For full and summary country reports for India and Cameroon respectively, and for further resources related to this study, visit <http://disabilitycentre.lshtm.ac.uk>**

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