

The prevalence and opportunity cost of disability in South Africa

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Disability hampers individuals from participating fully in society, and thus carries great potential individual, social and economic costs. This paper estimates disability prevalence for South Africa using data from the 2011 Census, and estimates some of the opportunity costs of disability to individuals and households. The paper identifies disability both in terms of individual activity domains and also on aggregate, using the UN Washington Indicator on Disability. The paper shows that 6.8 million people or 17.2 percent of South Africa's population have one or more moderate disability, while 1.6 million people have severe disabilities. The data also show that disability prevalence varies greatly with age.

The paper uses multivariate analysis to estimate some of the opportunity costs of disability to individuals and their households, focusing on education and employment status. Children with disability are significantly less likely to attend school, with the lowest attendance occurring amongst children with severe walking or communicating difficulties. There also appear to be long-term educational impacts, as adults with disability have completed significantly fewer years of schooling than those without disability. Multinomial logit analysis indicates that adults with all impairment types are less likely to be employed, and more likely to be economically inactive, than those without disability. Adults with most impairment types are also less likely to want to work. Amongst economically active adults, those with severe disability are significantly less likely to be employed. The presence of a person with disability in the household decreases the likelihood of other household members being employed, but raises their likelihood of wanting to work. The paper therefore suggests that disability lowers educational attendance and attainment, and decreases labour market access. These opportunity costs arise not only for the person with disability: a household member having a disability hampers other individuals from searching for and finding employment.

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Introduction

- Disability is defined and understood in many different ways.
- The UN Convention on the Rights of Persons with Disabilities (CRPD) defines disability as resulting from “the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others”.
- Since the passing of the CRPD in 2008 many countries have agreed to promote the inclusion and equality of people with disabilities in all aspects of life.
- Essential to have accurate statistics on the prevalence of disability.
- This paper aims to estimate prevalence in South Africa using recent Census data, and start to assess its opportunity costs.

Motivation for the economic study of disability

- International Labour Office (ILO) 2009 review on the cost of exclusion of people with disabilities in the workplace.
- For African countries, estimated at 3-7% of the GDP:
 - people with disabilities are not included in the labour market to the same extent as people without disabilities.
- For South Africa this equates to a loss of GDP of US\$ 17.8 billion in 2006.
- But: previous estimates of disability prevalence for SA have been produced using problematic sets of questions and/or small sample sizes.
- Need better prevalence statistics:
 - For comparability across countries and time.
 - For accurate estimates of economic and social costs.

Concepts of disability

- Substantial changes in conceptualisation and measurement of disability over time.
- Medical approach (pre-1960s):
 - Disability is an individual problem; caused by disease, injury, etc.
- Social approach (1960s – 1980s):
 - Disability is a social construct; persons with disability face barriers to perform roles and activities in society.
- Interactional approaches:
 - Synthesise useful parts of medical and social models.
 - Disability: negative aspects of interaction between individual's health condition, and environmental and personal factors.

Measures of disability

- Self-identification as disabled
- Diagnosable conditions:
 - E.g. paralysis, epilepsy, diabetes
- Activities of daily living:
 - Task-based (e.g. dressing, bathing, feeding oneself)
- Instrumental activities of daily living:
 - Higher order tasks (e.g. managing money, shopping for groceries)
- Participation:
 - Having a condition that hampers a social role (such as attending school or working)

DISABILITY

(P-13)

Does (the person) have any serious disability that prevents his/her full participation in life activities (such as education, work, social life)?

Mark any that apply.

0 = None

1 = Sight (blind/severe visual limitation)

2 = Hearing (deaf, profoundly hard of hearing)

3 = Communication (speech impairment)

4 = Physical (e.g. needs wheelchair, crutches or prosthesis; limb, hand usage limitations)

5 = Intellectual (serious difficulties in learning)

6 = Emotional (behavioural, psychological)

SA's 2001 Census

Improvement from 1996 Census: defines disability.

But:

- Use of the term “serious disability” (stigma, etc.): typically results in under-reporting.
- Cannot distinguish degree of disability.
- Does not indicate whether respondent should take into account using glasses or hearing aid.
- Estimated disability prevalence of 5% (2.3 million people).

Washington Group disability questions

- UN Statistical Commission set up the Washington Group on Disability Statistics
- Goal: develop a general census measure of disability for international use, to:
 - Identify persons who might require services or assistance
 - Monitor the level of functioning in a population
 - Assess inclusion and equalisation of opportunities in an internationally-comparable way.
- Six questions, developed and tested internationally, adopted in 2004.

Data: Census 2011

Frequency	Decennial
Target Population	All individuals in South Africa on census night (9/10 October 2011)
Sample Size	1 321 920 Households 4 418 595 Individuals

- General Household Survey also contains questions on disability, but has a sample size of 25 000 households.
- Disability is relatively rare in the population, so to get accurate estimates it is useful to have a very large sample size.
- Using Census, can link disability to a limited range of socioeconomic outcomes (e.g. education, employment).

Disability question in the Census

Does (*name*) have difficulty in the following:

- A. Seeing, even if wearing glasses?
- B. Hearing, even if using a hearing aid?
- C. Communicating in his/her language (i.e. understanding others or being understood by others)?
- D. Walking or climbing steps?
- E. Remembering or concentrating?
- F. With self-care such as washing all over, dressing or feeding?

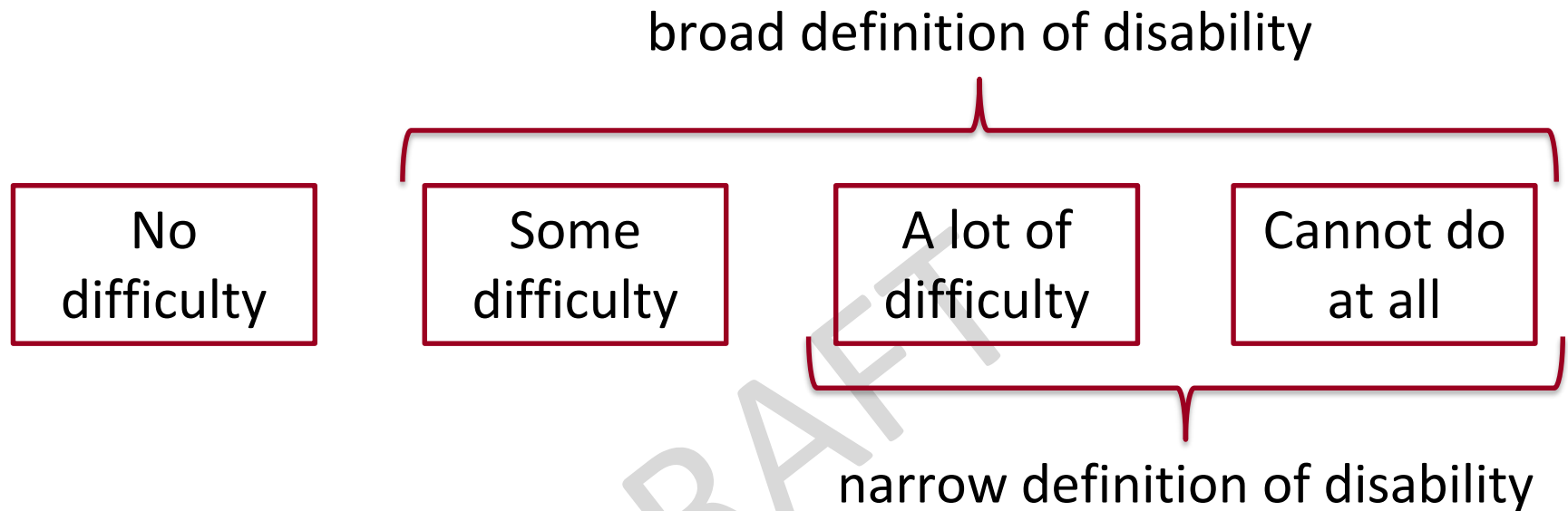
Response Options:

- 1. No difficulty
- 2. Some difficulty
- 3. A lot of difficulty
- 4. Cannot do at all
- 5. Do not know
- 6. Cannot yet be determined

Limitations of these questions

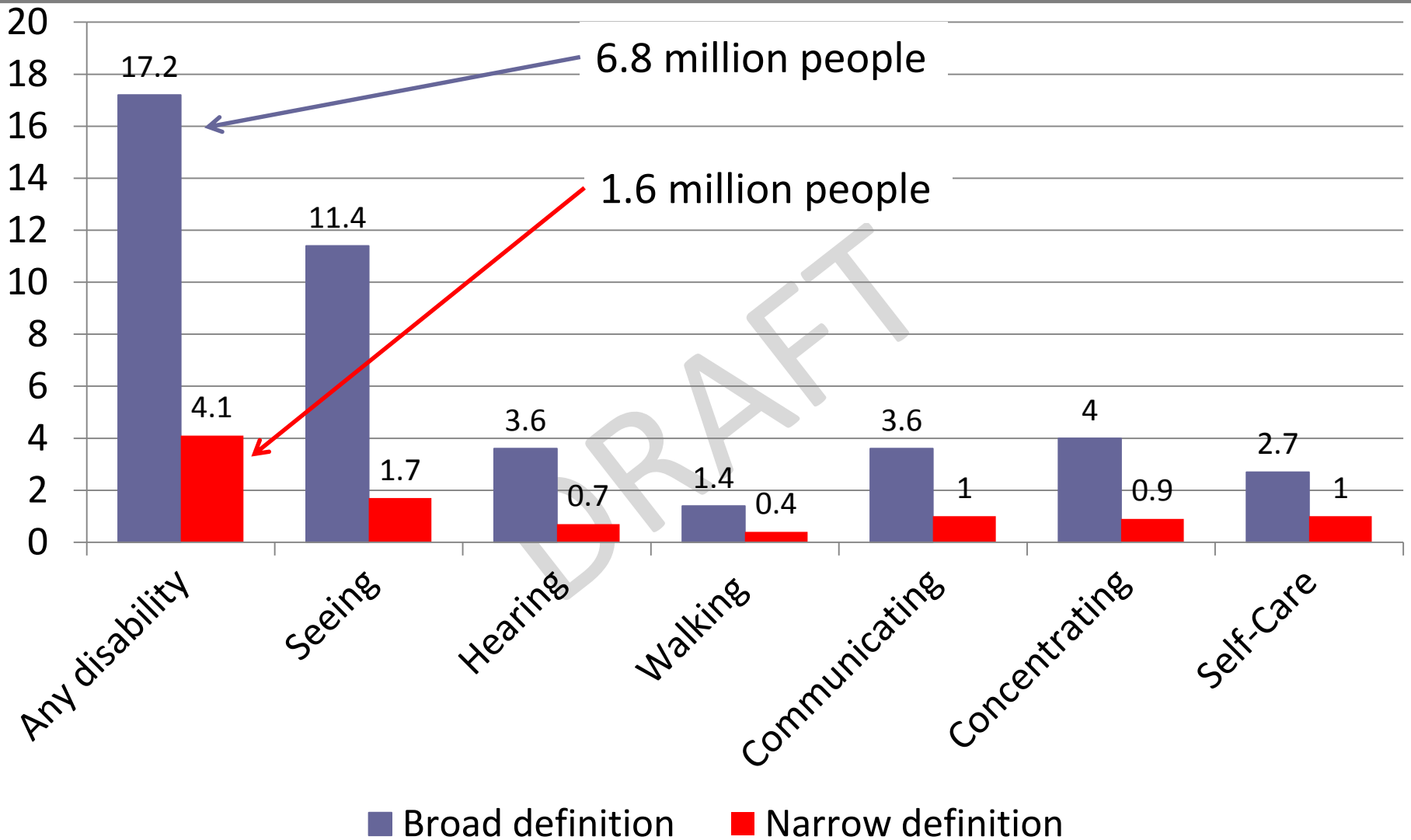
- Although this set of questions is internationally recommended and tested, it is not exhaustive.
- Not representative for people with:
 - psychosocial challenges
 - specific conditions such as epilepsy
 - people with intellectual disabilities are not directly measured (they may be captured under the domains of remembering and concentrating)
- Questions in their current form are not sensitive enough to measure disability in children below the age of five.

Creating a disability indicator



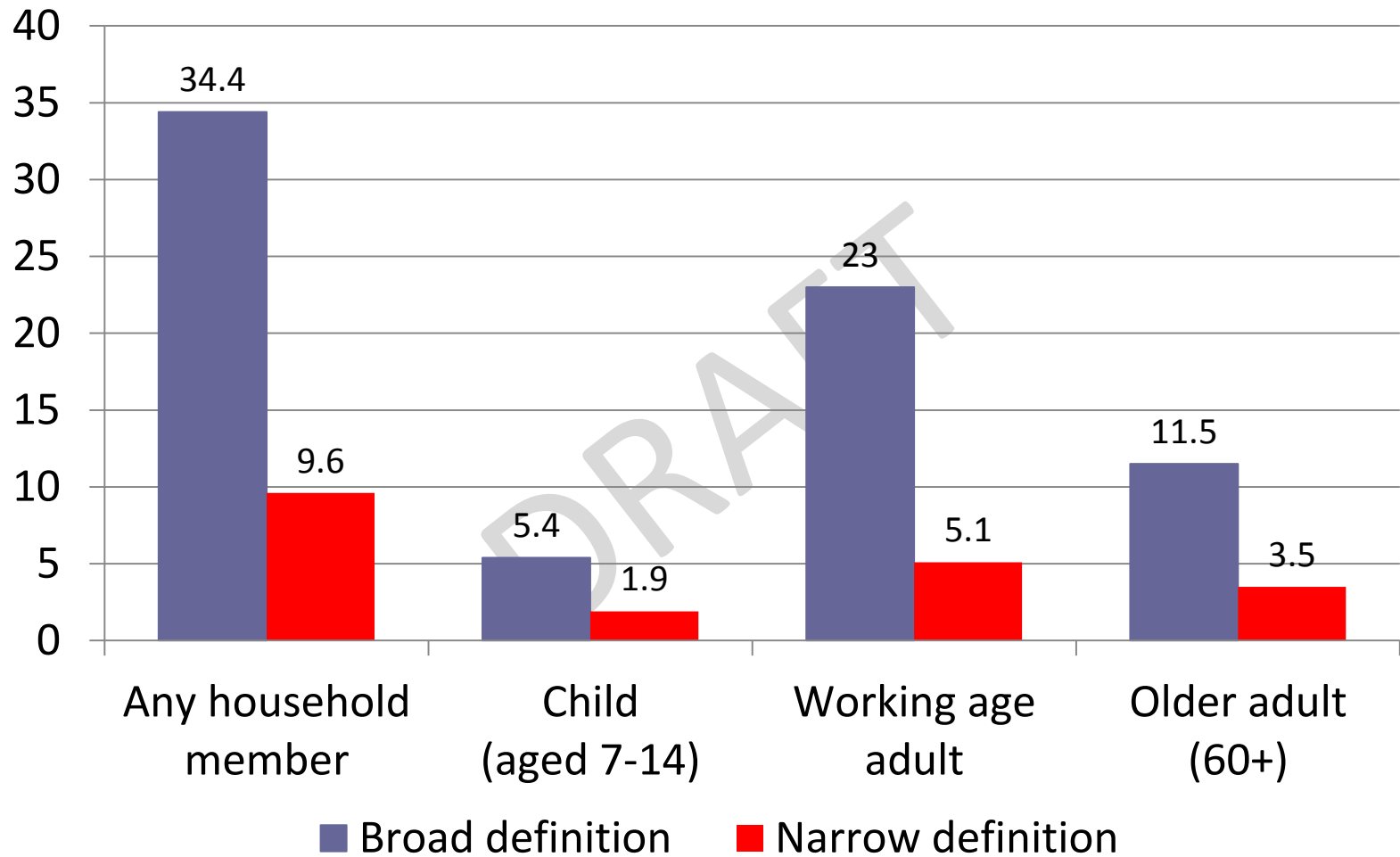
- Disability can be defined:
 - For each limitation/domain individually; and
 - Overall (if the respondent reported difficulty with one or more of the activities)
- This results in several prevalence estimates rather than one.

Prevalence rates for South Africa

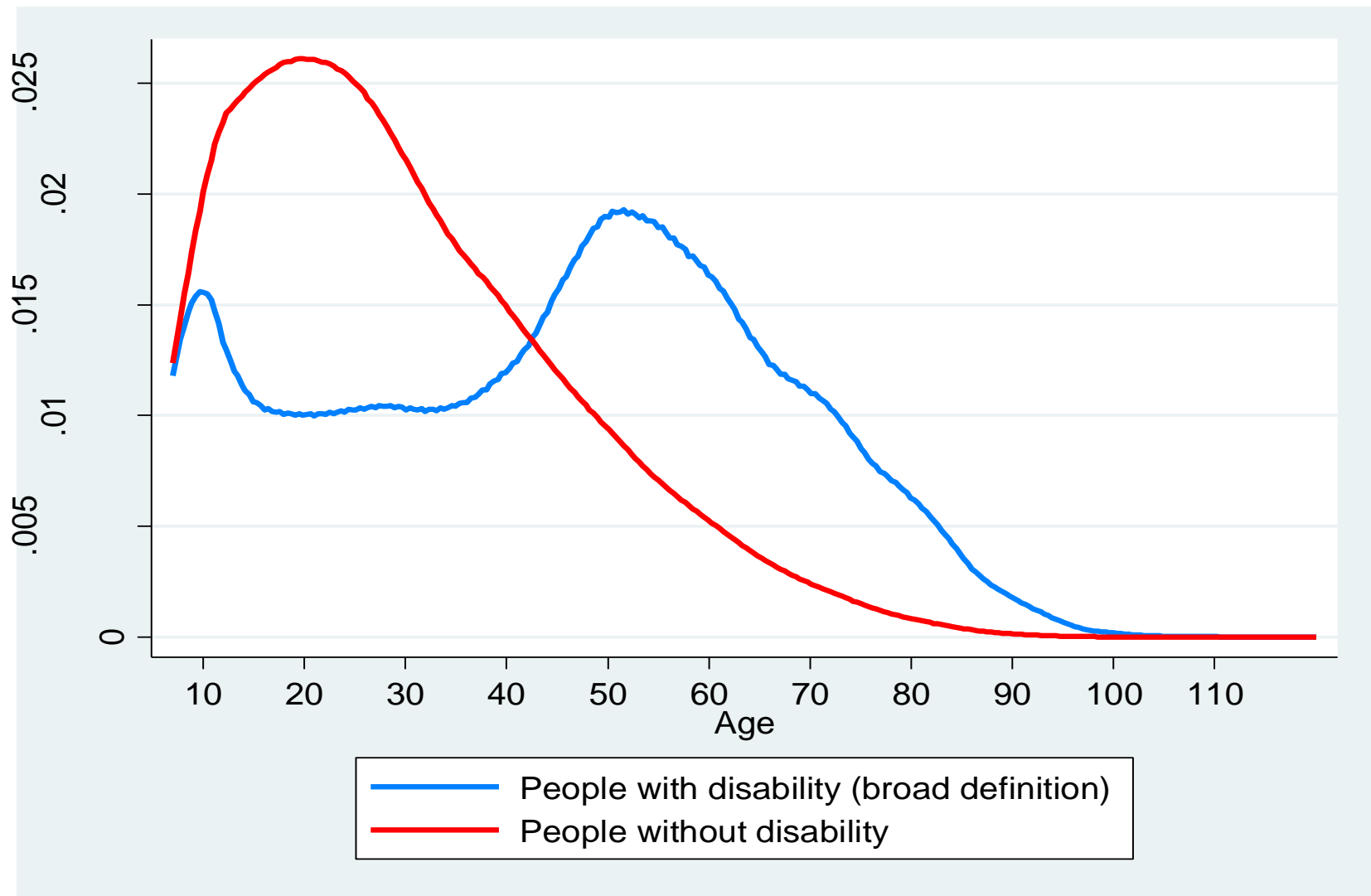


Note: Ages 7 and older

Prevalence at the household level



The age distribution of people with and without disability



Note: Ages 7 and older

Who has a disability?

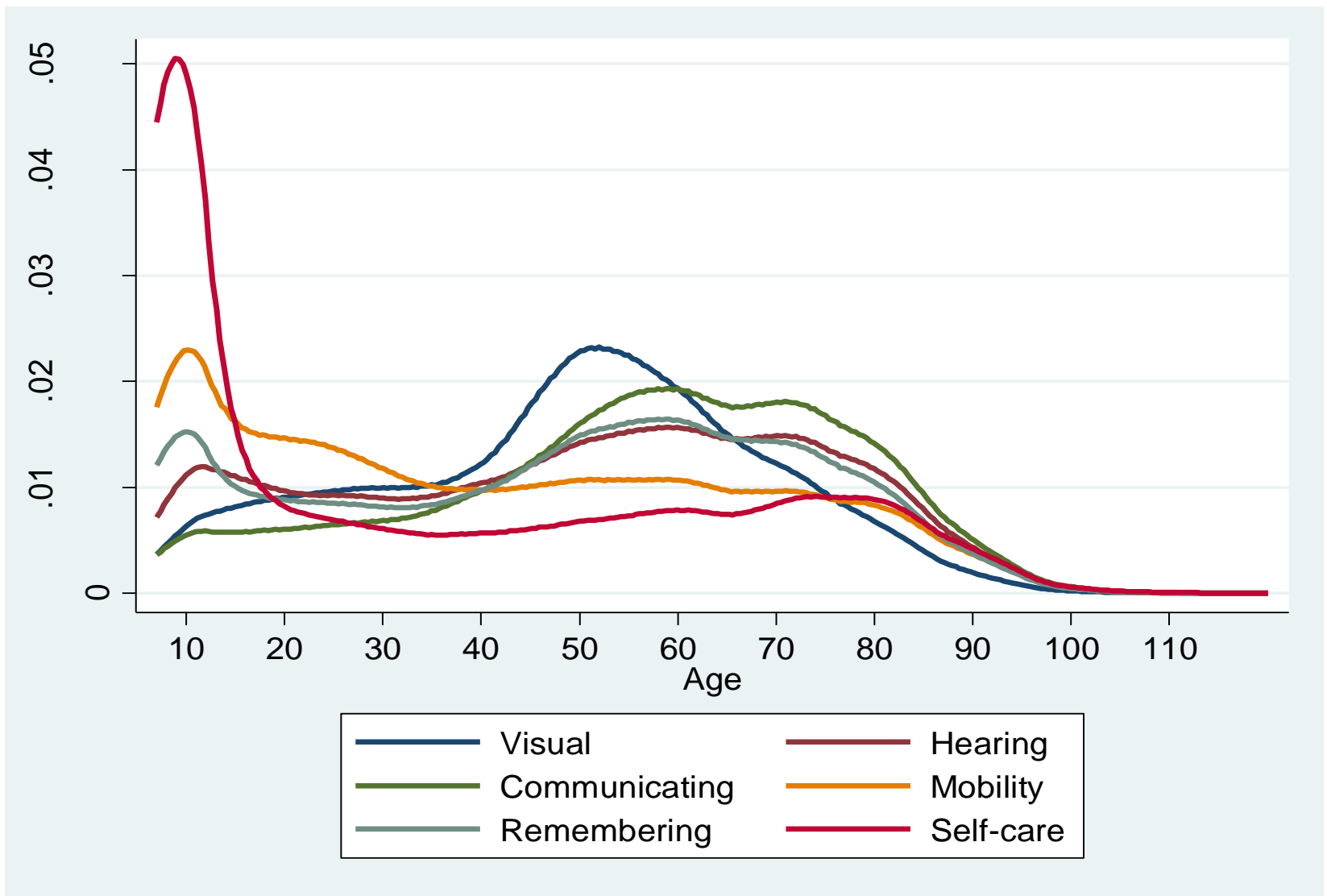
(1) Demographic characteristics

	People without disability	People with broad disability	People with narrow disability
Age	30.0	44.6	45.2
Female	50.5	58.0	57.5
African	78.4	79.7	82.6
Coloured	9.3	8.0	8.5
Indian	2.6	2.8	2.0
White	9.7	9.5	6.9
Urban	64.6	60.8	54.7
Poorest 20%	21.5	16.6	15.1
Quintile 2	17.8	17.4	20.1
Quintile 3	18.9	23.8	28.3
Quintile 4	22.0	25.5	25.3
Richest 20%	19.8	16.7	11.1
Sample	3 111 307	622 026	148 950
Population	36 521 194	7 223 600	1 718 826

(2) Economic characteristics (of adults age 25-59)

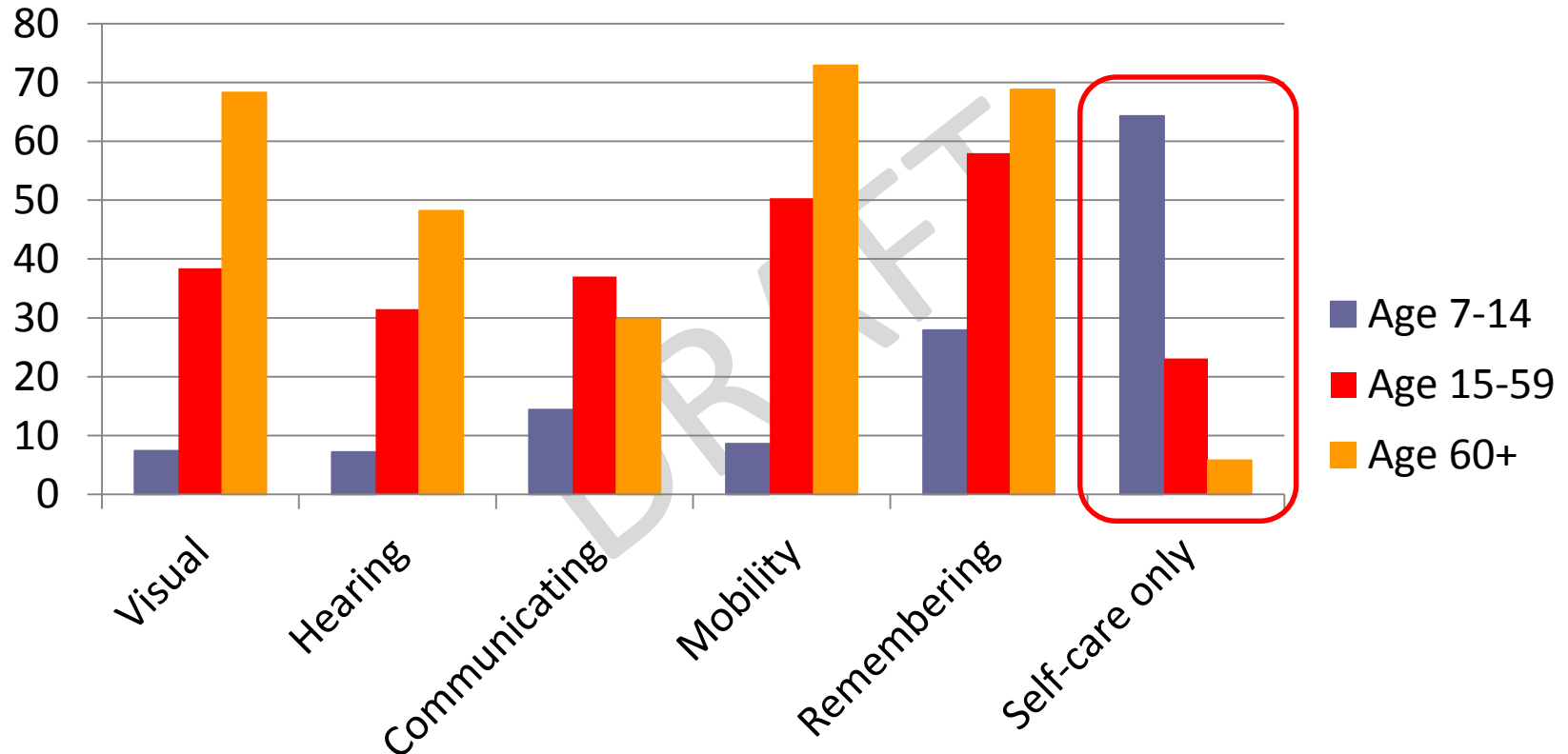
	Adults without disability	Adults with broad disability	Adults with narrow disability
No schooling	6.1	11.3	16.3
Primary	15.0	25.6	30.1
Incomplete secondary	33.7	32.3	31.3
Matric	31.1	20.1	15.9
Tertiary	14.1	10.8	6.4
Employed	52.5	44.9	33.1
Unemployed searching	17.6	14.3	13.9
Unemployed non-searching	5.7	5.2	5.2
Inactive	24.2	35.5	47.8
Sample	1 505 727	308 816	59 640
Population	18 036 823	3 641 649	702 186

Disability type (age distribution, broad)



Limitations of the data for children: self-care disability across age groups

Percentage of individuals with self-care disability who also have another limitation



- A similar pattern exists for the narrow definition, but almost 80% of children with a self-care disability have no other limitation.

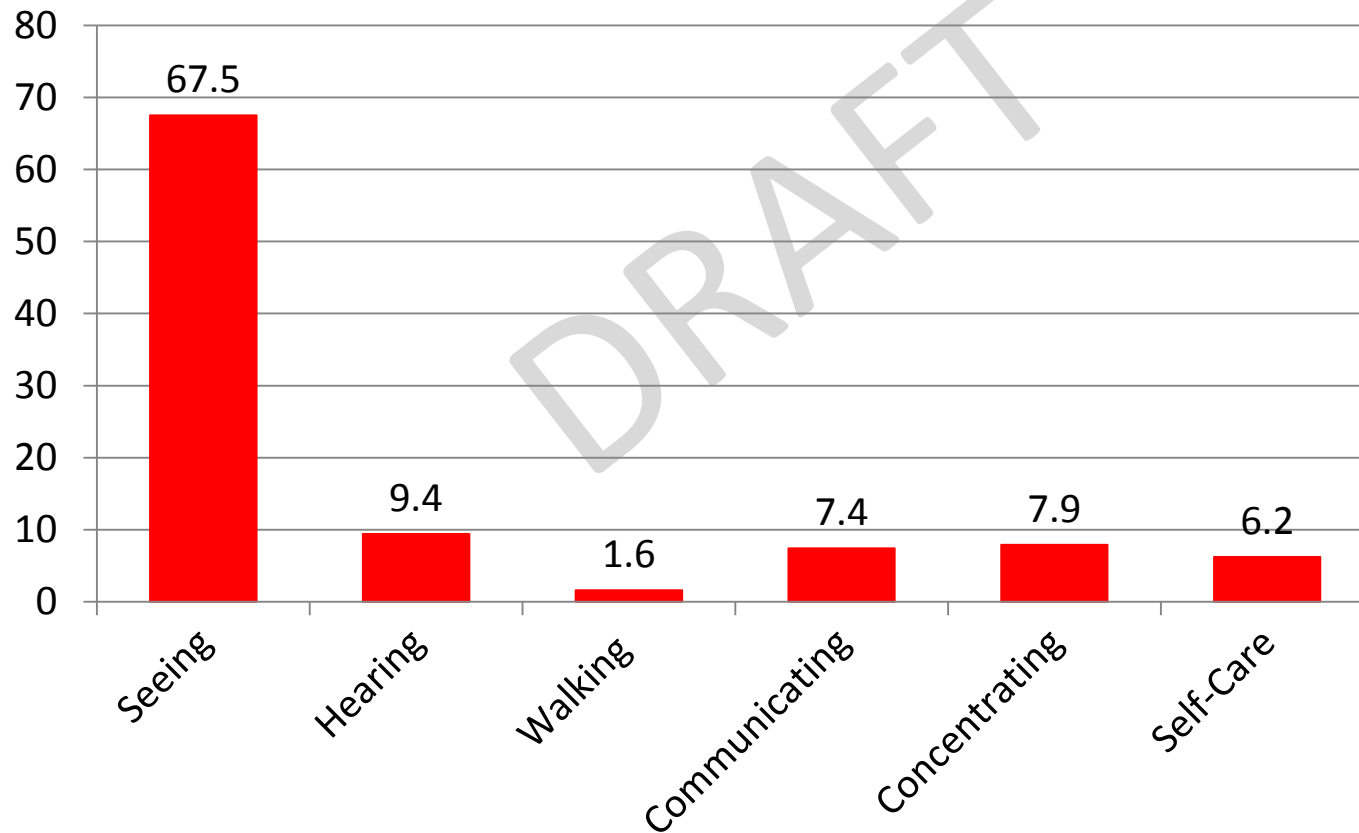
Percentage of children who have a self-care disability, by age

Age	Broad definition	Narrow definition
7	15.3	6.8
8	12.2	5.0
9	9.5	3.7
10	6.8	2.7
11	4.8	1.8
12	3.2	1.1
13	2.5	0.9
14	1.9	0.6
Sample	613 492	613 492
Population	6 959 918	6 959 918

- The prevalence of self-care disability declines with age in children.
- Potential explanations:
 - Reporting errors (e.g. unrealistic parental expectations)
 - Children with disabilities take longer to master activities related to self-care

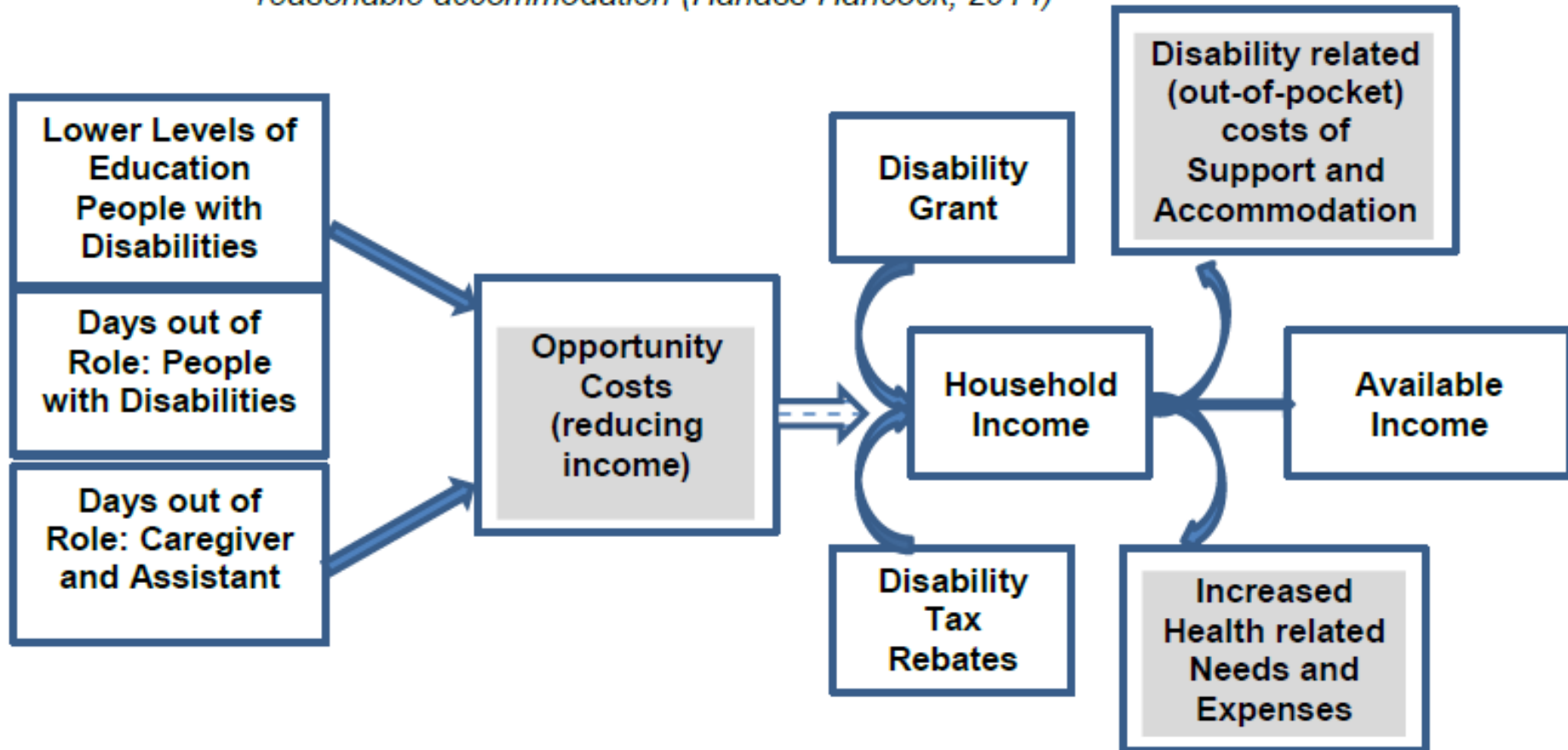
Comparison of disability measures

- Combined index removes problems with potential misreporting across one domain.
- But who does this combined index exclude?



Framework of economic vulnerability

Figure 1: Household related financial and economic costs of disability in the absence of reasonable accommodation (Hanass-Hancock, 2014)



Educational attendance (children 7-15)

Logit model for likelihood of attending school (individuals aged 7 - 15)		1	2	3
Disability	moderate	-0.056***	-0.100***	
	severe	-0.808***	-0.879***	
Seeing	moderate			0.156***
	severe			0.174**
Hearing	moderate			0.128***
	severe			0.239***
Communicating	moderate			-0.677***
	severe			-1.181***
Walking	moderate			-0.629***
	severe			-1.398***
Remembering	moderate			-0.156***
	severe			-0.576***
Self-care	moderate			0.087***
	severe			-0.366***
Other controls		No	Yes	Yes
Sample		659 408	657 894	655 555
Population		7 487 617	7 465 432	7 439 142

Source: Census 2011

Notes: The estimates are weighted. The sample consists of all children aged 7 to 15.

*** p<0.01, ** p<0.05, * p<0.1

Educational attainment (adults 25 and older)

OLS regression of educational attainment of adults by age cohort (individuals aged 25 and older)

		25-34	35-44	45-54	55-64	65+
Disability	moderate	-0.226*** (0.016)	-0.459*** (0.018)	-0.260*** (0.016)	-0.142*** (0.018)	-0.243*** (0.018)
	severe	-1.654*** (0.038)	-1.675*** (0.037)	-1.203*** (0.030)	-0.864*** (0.029)	-0.746*** (0.023)
Age		-0.036*** (0.001)	-0.136*** (0.002)	-0.166*** (0.002)	-0.142*** (0.003)	-0.058*** (0.001)
Male		-0.280*** (0.008)	-0.013 (0.011)	0.304*** (0.013)	0.413*** (0.016)	0.485*** (0.017)
Coloured		-0.359*** (0.025)	-0.266*** (0.033)	-0.181*** (0.043)	-0.176*** (0.057)	-0.388*** (0.067)
Indian		0.817*** (0.029)	1.203*** (0.036)	1.573*** (0.050)	1.509*** (0.066)	0.392*** (0.080)
White		1.800*** (0.023)	2.446*** (0.029)	3.616*** (0.038)	4.378*** (0.052)	4.605*** (0.060)
Other controls	Yes		Yes	Yes	Yes	Yes
Constant		11.789*** (0.044)	14.723*** (0.078)	15.586*** (0.121)	14.050*** (0.171)	8.598*** (0.097)
R-squared		0.090	0.135	0.211	0.339	0.484

Source: Census 2011

Notes: The estimates are weighted. The sample consists of all adults aged 25 and older. Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Employment status (adults 25-59)

Multinomial logit regression of employment status of adults (aged 25-59)

	Employed	Unemployed searching	Unemployed non-searching
Individual disability			
moderate	-0.040***	-0.208***	-0.194***
severe	-0.637***	-0.605***	-0.665***
Disability in household			
moderate	-0.098***	0.117***	0.136***
severe	-0.111***	0.129***	0.183***
Age	0.218***	0.127***	0.128***
Age squared (/100)	-0.273***	-0.206***	-0.204***
Male	0.756***	0.261***	0.133***
Coloured	-0.012	-0.592***	-0.444***
Indian	-0.233***	-1.306***	-1.331***
White	0.187***	-1.326***	-1.350***
Grade 1-7	0.347***	0.431***	0.360***
Grade 8-11	0.677***	0.731***	0.509***
Matric	1.215***	0.712***	0.402***
Tertiary	2.090***	0.534***	-0.055**
Urban	0.241***	0.397***	-0.032***
Local unemployment rate	-3.439***	-1.001***	1.356***
Other controls	Yes	Yes	Yes
Constant	-3.165***	-2.485***	-4.192***

Source: Census 2011

Notes: The reference category is economically inactive. *** p<0.01, ** p<0.05, * p<0.1

Summary

- Disability prevalence estimated at between 4% and 17%.
- Rates vary depending on severity and number of limitations.
- Large proportion of SA households affected by disability.
- Opportunity costs:
 - Children with disability are less likely to attend school
 - Adults with disability have attained less education
 - Adults with disability are less likely to be employed
 - Having a person with disability in the household decreases labour market access for other household members
- Suggests that caregiving is a significant burden.