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REPOA POLICY RESEARCH FOR DEVELOPMENT

Applied research concerning inclusion of persons with disabilities in systems of social protection

Quantitative Research Report, Tanzania

Contents

Cover photo: School children in Kilimanjaro Region carrying a fellow school mate in a wheelchair down the stairs.

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Abstract

Introduction: Persons with disabilities are more vulnerable to poverty and exclusion from key services such as health and education. Consequently, they may be particularly likely to benefit from social protection, yet may have difficulties accessing these schemes as a result of multiple barriers. The overall aim of this study was to assess the need for and inclusion in social protection among persons with disabilities compared to those without, within three districts in Tanzania.

Methods: A population-based prevalence survey of disability was undertaken in 2014 across three districts in Tanzania Nachingwea (Lindi Region), Muheza (Tanga Region) and Mbeya District Council (Mbeya Region). Forty-five clusters of 100 persons aged 5 + years were selected with probability proportionate to size sampling and screened for disability (Washington Group short set questionnaire). A case-control study was undertaken, nested within the survey, matching cases with disabilities to controls by age, gender and cluster. Information was collected on: socioeconomic status, education, health and rehabilitation needs and social protection participation. Two households who were members of the Community Health Fund (CHF) health insurance scheme were selected per cluster and interviewed about poverty, disability and their satisfaction with the programme.

Results: The prevalence of disability was 3.2% (2.7-3.8%) across 4475 eligible individuals. Disability was more common with increasing age, and among poorer households. Adults with disabilities were less likely to be literate or have attended school, and children with disabilities were less likely to be currently enrolled at school compared to controls. Persons with disabilities were substantially more likely to report a serious health condition than controls, and had higher disability scores. Awareness and use of rehabilitation services and assistive devices was very low among persons with disabilities. Enrolment in social protection programmes was low overall, and was unrelated to disability. Households enrolled in CHF were significantly less poor than households in the general population, and had a lower overall prevalence of disability.

Conclusion: The need for health insurance and other social protection schemes was higher among persons with disabilities compared to the general population, but this was not matched by higher enrolment. Expanding health insurance and other schemes to be inclusive of persons with disabilities may be an important step towards achieving Universal Health Coverage.

1 Introduction

The head of the nursing services department at CCBRT hospital taking care of women recovering from fistula surgery, providing comfort and support as well as helping them learn how to knit.

Social protection is an umbrella term that covers schemes to address risk, alleviate poverty and enhance living conditions. There are three main types of social protection instruments [1]. The first are labour market interventions, which aim to promote employment and protect workers. These schemes include labour standards, minimum wage legislation and other labour market policies and programmes. The second focuses on social insurance to mitigate risk, such as health insurance. The third group covers social assistance, where transfers (in cash or in kind) are made to particular vulnerable groups, such as single parent households. Social protection programmes of all kinds often aim to promote access to basic services, including education, employment and health care.

It is important to consider the inclusion of persons with disabilities within social protection programmes. The World Report on Disability estimated that there are over one billion persons with disabilities, corresponding to 15% of the world's population. [2] Disability is closely linked to poverty, [3] and persons with disabilities face reduced access to education, employment and health care. [2] This means that persons with disabilities are more likely to need and benefit from social protection. Furthermore, the United Nations Conventions on the Rights of Persons with Disabilities (UNCRPD) calls upon all countries to respect and ensure the equal rights and participation of persons with disabilities, including in social protection. [4] The design and implementation of inclusive social protection systems is therefore important, both in a development context and from a human rights perspective. However, there is a lack of research or evidence addressing this issue.

The implementation of social protection programmes is becoming an increasingly common strategy across Africa to alleviate poverty, strengthen livelihoods and promote longer-term human capital development. [5] One such example is the Community Health Fund (CHF), a health insurance programme which is implemented in Tanzania. Households pay an annual contribution to join the scheme which covers services at district level health facilities. CHF is run by local authorities but the national government – through the National Health Insurance Fund - provides a 'matching grant' for every household that joins. It is unclear, however, to what extent persons with disabilities are included within this programme. Furthermore, there are important knowledge gaps on the impact of disability on access to wider services within Tanzania, such as health, rehabilitation and education, which will impact on the need for social protection.

The overall aim of this study was to assess the need for and inclusion in social protection among persons with disabilities compared to those without, within three districts in Tanzania.

2 Methods

76-year-old woman with a cataract being examined with the slit lamp before surgery on her right eye.

2.1 Study design

There were three components to the study:

- Population-based survey of disability across three districts in Tanzania;
- Case-control study nested within the survey to compare persons with disabilities identified in the survey (cases) and age-sex-cluster matched controls without disabilities;
- Survey of households known to be members of CHF across three districts in Tanzania.

2.2 Population-based survey

A population-based prevalence survey of disability was undertaken to estimate the prevalence of disability, inclusion in social protection, and relationship with socio-economic status. The survey was conducted in three districts in Tanzania: Nachingwea (Lindi Region), Muheza (Tanga Region) and Mbeya District Council (Mbeya Region) between August and September 2014.

We conservatively estimated that the prevalence of disability among people over 5 years old was 5% based on global estimates [2] and the national survey which estimated the prevalence of disability at 7.8%. [6] A sample size of 4,500 people (15 clusters of 100 people per district) was sufficient to estimate the prevalence with a precision of 20%, 95% confidence, a design effect of 1.4 and 20% non-response.

Forty-five clusters were selected through probability-proportionate to size sampling using the 2012 Population and Housing Census as the sampling frame. Households within clusters were selected through compact segment sampling, [7] whereby one segment of a cluster was selected at random and all the households were visited door-to-door, with all eligible people (i.e. residents at least 3 months) included until the sample size of 100 people aged ≥5 was reached.

On arriving at the household, an adult informant from the selected household was interviewed about household characteristics (e.g. household composition, asset ownership) and inclusion in social protection programmes.

All household participants aged 5 years and above were screened for disability using the Washington Group (WG) short set questions. [1] [8] Using this tool, which measures the activity limitation component of disability, we asked the household head or person primarily responsible for the household if people living within the household experienced difficulties with any of 6 activities (seeing, hearing, walking or climbing stairs, remembering or concentrating, self-care, communicating) as a result of a health problem/impairment that lasted at least 6 months or was permanent. These were rated by the responder ("no difficulty", "some difficulty", "a lot of difficulty", "unable"). Disability was defined as reporting "some" difficulty with at least two activities or "a lot of difficulty/unable" to do any one activity above [9]. In addition, based on the East African context, we asked about the presence of albinism and included this in the definition of disability.

2.3 Nested case-control study

A case-control study was undertaken nested within the survey to compare persons with disabilities (cases) to those without disabilities (controls) in order to assess the association of disability with need for and inclusion in social protection programmes.

All persons with disabilities (cases) identified in the survey were included within the case-control study. If a household member who was identified by the household head as having a disability was absent then an attempt was made to revisit the house later in the day. For each case, we selected one control who had been screened during the survey and found not to be a person with disabilities. The control selected was from the same cluster as the case, of the same gender, and matched by age (within the same

[1] Further details and resources on the Washington Group can be found on: http://www.cdc.gov/nchs/washington_group.htm

5 year age band). The potential cases and controls were screened again using the Washington Group questions to verify that they had a disability (case) or did not (controls).

Based on previous studies' estimates, we estimated that we would identify approximately 180 cases and 180 controls through the survey, and that this would give us the necessary sample size to accurately measure the impact of disability on poverty. For example, the sample size would be sufficient to detect an Odds Ratio of 1.9 for the association between poverty and disability, with 80% power and 5% alpha risk, assuming that 25% of the controls were in the lowest quartile for poverty.

All consenting cases and controls underwent detailed interviews. The interviews included questions on: socioeconomic status (SES), educational level achieved, current school enrolment (children<16), health, rehabilitation, and social protection. In addition, participants were asked the WHODAS 12 questionnaire to assess difficulties in functioning.[2][10] Respondents were asked to state the level of difficulty experienced performing an activity during the previous 30 days using a five-point scale (none = 1, mild = 2, moderate = 3, severe = 4, extreme/cannot do = 5) across five domains (communication, physical mobility, self-care, interpersonal interaction, life activities and social participation). These were summed to produce an overall score.

2.4 CHF questionnaire

A list of all households who were members of CHF was obtained for each cluster selected in the survey. We randomly selected two households per cluster. The head of household was interviewed about household characteristics (asset ownership and disability status of household members) and about CHF participation (duration, use, satisfaction).

[2] Tools and resources on the WHO Disability Assessment Schedule can be found on http://www.who.int/classifications/icf/whodasii/en/

2.5 Training and translation

The questionnaires used in the survey, case-control study and CHF survey were assessed for local relevance and appropriateness through discussion with local disabled people's organizations, other experts and through pilot testing. The questionnaires and survey tools were translated into Swahili and back-translated by independent translators, who were asked to comment on the appropriateness of language used for the target population. A review was held to discuss differences in the translations and to modify them accordingly and finalise the questionnaires. Training for the fieldwork in Tanzania lasted one week. There were 3 survey teams, each consisting of one field supervisor and 2 interviewers. There was one overall fieldwork supervisor.

2.6 Analysis of data

Data were entered into a specifically designed mobile data entry form on a Google Nexus tablet. Data entry was pre-coded with in-built consistency checks. The data were uploaded to a central server each day, and were further checked manually for errors. Quantitative data were analysed using STATA and SAS.

Household survey data: We calculated the prevalence of disability and types of disability. We undertook multivariable logistic regression analyses to estimate the relationship between prevalence of disability and SES characteristics, including age, gender, household characteristics, poverty markers and inclusion in social protection programmes. These analyses were adjusted for mean household age, proportion of female household members and household size. We constructed a poverty score through principal component analysis (PCA) of household assets.[11] This poverty score was then divided into quartiles, based on the distribution across the population.

Case-control data: We undertook multivariable logistic and linear regression analyses to identify dif-

ferences between cases and controls in health, inclusion and functioning. Conditional logistic regression was not attempted since matching was not complete, and so analyses were adjusted by the matching variables of age and gender.

CHF survey data: We calculated the prevalence of disability among the CHF household participants. We undertook multivariable logistic regression analyses to assess the differences between households in the general population (Household survey) and who were members of CHF (CHF survey) with respect to disability, household characteristics and poverty markers. These analyses were adjusted for mean household age, % female and household size.

2.7 Ethics

Ethical approval for the study was obtained from the London School of Hygiene & Tropical Medicine (LSHTM) and the National Institute for Medical Research in Tanzania. Informed oral consent was obtained from the head of household for the population survey and the CHF survey, after explanation of the interview content. Informed written consent was obtained from all participants in the case-control study. For children (<16) or persons with intellectual impairments consent was sought from a family member, who was present during all interviews. Persons with disabilities requiring services were referred as appropriate.

3 Results

95 year old widow back home after a successful cataract operation being visited by the field worker who enabled the operation after discovering the cataract a year earlier.

3.1 Population-based survey and CHF survey

We listed 1,170 households across the 45 clusters from 3 different districts in Tanzania. Among the 4,475 eligible individuals aged 5+ living in these households, 140 were identified as having a disability as per the study criteria, to give an overall prevalence of 3.2% (2.7-3.8%). A higher proportion of participants reported "some difficulty" or more in any domain – 13.0% (12.0-14.0%). Overall, 126 of 1,170 households included at least one person with a disability to give a household prevalence of disability of 10.8% (9.1-12.7%). The most commonly reported difficulties were with vision (seeing - 6%) and mobility (walking - 4%), while difficulties with cognition (remembering/concentrating -2%), hearing (2%) self-care (1%) and communication (1%) or albinism (0.1%) were less common. The prevalence of disability was low in children<16 years (0.7%, 0.4-1.3%), and increased in adults 16-59 (2.7%, 2.1-3.3%) and was highest in adults aged 60+ (16.3%, 12.9-20.5%). The prevalence was similar among females (3.0%, 2.4-3.8%) and males (3.3%, 2.6-4.1%).

Households including a person with disabilities were significantly larger and included more older people than households without members with disabilities (Table 1). They were also poorer on average, when assessed through mean poverty score or the proportion of households in the lowest quartile of poverty. Enrolment in social protection programmes was low overall, covering only one in five households. Households including a member with disabilities were not more likely to be included in a social protection programme, except potentially the Tanzania Social Action Fund (TASAF) programme (though numbers were very small).

There were 804 people enumerated across 181 households enrolled in CHF. Of these, there were 19 persons with disabilities, to give a prevalence of 2.4% (1.5-3.7%). Among the 181 households enrolled in CHF, 17 (9.4% of households) included at least one person with disabilities. The prevalence of disability was therefore lower among the CHF sample than the general population at both the individual and household levels, but these differences were not statistically significant (p=0.24, p=0.58 respectively). Households enrolled in CHF were slightly larger and included substantially more children than households in the general population. They were also significantly less poor, whether measured through income, meals eaten per day or overall poverty score.

The CHF members were generally well satisfied with the scheme (Table 2). The vast majority reported that the cost was reasonable, and that the health insurance was frequently used. At least one third reported that there had been an improvement in waiting time, quality of healthcare and friendliness of staff since joining the health insurance scheme. Nine out of ten reported that CHF is a good way to help solve health expenditure (93%) and that they would encourage others to join CHF (88%). A quarter reported that payments were still requested for services when using the CHF card, which was mostly used for drugs.

3.2 Nested case-control study

We included 119 adults (age >=16) with disabilities (cases) and 120 adults without disabilities (controls) in the nested case-control study, as per the study's definition of disability as "some" difficulty in at least two domains or "a lot/unable" in any one domain (Table 3). The prevalence of disability was low in children, and consequently only 8 children with disabilities and 7 controls were identified for the case-control study. Matching was achieved in terms of gender and age. Almost all the cases (105, 83%) considered themselves to have a disability, but none of the controls self-identified as being a person with a disability. Persons with disabilities were significantly less likely to be the household head. Adults with disabilities were significantly more likely to have never married and to not have children. They were also substantially less likely to have ever attended school, and were six times more likely to be illiterate, compared to controls without disabilities. Among the children, 6 out of the 7 controls were enrolled in school, while none of the 8 children with disabilities included were currently enrolled (p=0.0007).

Persons with disabilities had significantly higher Disability Scores than persons without disabilities, as measured by WHODAS (Table 4). This remained true whether this was assessed for the population overall or restricted by gender or age group. Persons with disabilities were almost three times more likely to report having experienced a serious illness in the last year (OR=2.8, 1.6-4.9). Only 3 cases and 1 control did not seek treatment when ill, and so it was not possible to assess the link between health seeking behaviour and disability. However, cases with disabilities were somewhat more likely to seek treatment from a hospital than another health facility. There was no difference between cases and controls as to whether they paid for treatment. However, the amount paid was almost twice as high among cases compared to controls, although this did not reach statistical significance.

Fewer than half of persons with disabilities had heard of different types of rehabilitation services, with the exception of traditional/faith healers (Figure 1).

Very few people expressed a need for any of these services, or reported that they had ever or were currently using these services, despite screening positive for a disability. Similarly, expressed need for particular assistive devices was very low among persons with disabilities (Figure 2). Very few persons with disabilities reported currently using an assistive device, even when they expressed a need for one.

Enrolment in social protection schemes was very low among cases and controls (Table 5). Enrolment was not higher among cases, despite their overall higher levels of poverty and greater health needs. Indeed, cases were half as likely to be enrolled in CHF or any other health insurance scheme compared to controls. Among people enrolled in a health insurance scheme, there was no difference between cases and controls in whether they had paid for the insurance, the amount paid, or use of the scheme. Lack of awareness was the most commonly reported reason for not enrolling in social protection programmes among both cases and controls.

4 Discussion

10-year-old girl with Cerebral Palsy (Athetoid) in her new wheelchair. A community worker of CCBRT visits her regulary.

The population-based survey showed that the overall prevalence of disability was 3.2% across these three districts in Tanzania, but that one in ten households included a person with disabilities. Households including a member with disabilities were on average poorer and older than households without a member with disabilities, but were not more likely to be included in social protection programmes. By comparison, households enrolled in CHF (a health insurance programme) were much less likely to be poor, and slightly less likely to include a member with disabilities, than households in the general population. This implies that health insurance programmes were less accessible to poorer households or those with a member with disabilities. The comparison of cases with disabilities to controls without disabilities demonstrated a greater need for social protection programmes among the cases, as they were less likely to be educated, had higher disability scores, and were more likely to report a serious illness. There was also very low coverage of rehabilitation services or assistive devices among cases with disabilities. Although most people needing health care sought care, cases paid almost twice as much for health services than controls, despite the fact that they came from poorer households. Enrolment in social protection schemes was very low overall, but was not higher among cases with disabilities than controls despite their overall higher levels of poverty and greater health needs. Indeed, cases were half as likely to be enrolled in CHF or any other health insurance scheme compared to controls.

Our findings are consistent with the general literature which demonstrates that persons with disabilities are more vulnerable to poverty.[3] Our findings also support the general evidence that persons with disabilities often have higher health care needs. The World Health Surveys included data from 51 countries and showed that persons with disabilities were significantly more likely to seek inpatient and outpatient care.[2] This is confirmed in other studies.[12,13] The vulnerability to ill health among persons with disabilities may be due to the underlying impairment, or because of higher risk of chronic conditions and other diseases.[14] Another explanation is that older people are both more likely to have impairments and experience ill health. Lack of ability to afford necessary health services may further lead to or exacerbate disability, continuing the cyclical relationship between poverty and disability.[15]

The World Health Surveys showed that men and women with disabilities were significantly more likely to not receive health care when needed, which contrasts with our findings.[2] Other studies support our findings presented here that uptake of health services does not differ between persons with and without disabilities.[12,13,16] What is clear, however, is that persons with disabilities face significantly more frequent serious health problems,[17,18] and so these data may not reflect the difficulties experienced in accessing services or further barriers once the person has arrived at a service centre for treatment (such as communication). Other studies have reported that the cost of seeking health care may be higher among persons with disabilities, potentially leading to catastrophic health expenditure,[19] and there is some support for this trend in our findings. Persons with disabilities also regularly need rehabilitation services or assistive technology, yet coverage of these services is often very low among persons with disabilities.[2] Taken together, this evidence suggests that Universal Health Coverage is unlikely to be achieved without specific inclusion of persons with disabilities as they make up a large group and are more vulnerable to ill health. Furthermore, provision of rehabilitation services and assistive devices should be considered a key component of Universal Health Coverage, due to the high need for these services among persons with disabilities, and their importance in facilitating full participation of persons with disabilities. Consequently, improving access to health and rehabilitation services among persons with disabilities is a dominant aim of the World Health Organisation's Global Disability Action Plan 2014-2021.[20]

Enrolment in health insurance, such as CHF, may be one way to support the move towards Universal Health Coverage. However, our data from Tanzania shows that enrolment in health insurance schemes was very low overall, and that those who were enrolled were generally better off and less likely to have disabilities than those not enrolled. Improving

health insurance coverage among persons with disabilities may therefore necessitate specific targets, such as providing subsidies or awareness raising of the benefits of the scheme.

4.1 Strengths and limitations

There were a number of limitations to the study. We were under-powered to investigate some of the outcomes given the low participation in social protection programmes and our lower than expected prevalence of disability (3.2%). However, the national survey in Tanzania estimated that the prevalence of "some form of activity limitation" based on the Washington Group short set of questions was 7.8% (with regional variations from 2-7-13.2%) and our estimate of 13.0% using the same threshold therefore fits within this variation. We used the Washington Group questions for all people above the age of 5, although the tool was not specifically designed for use in children, which may also explain to a degree the low prevalence estimate. Several psychological functions are also not represented in the short set tool, including anxiety and depression. The screening for disability was based upon the response by a proxy for the most part, though verified for individual cases, and their reported disabilities are not confirmed with a clinical evaluation. Other items in the questionnaire (e.g. access to services) were subject to recall. There were also a number of strengths. We used standardised data collection instruments, allowing comparison with other studies. The study was population-based to improve the generalisability of results, and we assessed inclusion in social protection programmes in multiple ways.

4.2 Conclusion

There is a higher need for inclusion in social protection programmes, including health insurance schemes, for persons with disabilities in Tanzania, given their higher health care needs and higher levels of poverty. However, this is not currently reflected in higher levels of participation in these schemes, which seem to favour those not in the poorest groups. The promotion of persons with disabilities in health insurance schemes may be required for reasons of equity and to facilitate achievement of Universal Health Coverage.

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4.4 Declaration of Interest

None.

5 References

Girl at an eye examination after surgery in order to get glasses.

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Table 1: Comparison of Household Characteristics and Disability for the Household Survey and CHF survey

	Household survey			CHF survey	
	Households with members with disabilities N=126	Households without members with disabilities N=1044	Adjusted p-value* [1]	CHF survey N=181	Adjusted p-value* [2]
Household structure					
Average household size	4.4 (2.2)	3.8 (1.9)	<0.001	4.4 (1.8)	<0.0001
% female	56.7%	53.9%	0.61	53.8%	0.92
Average age	38.2 (13.8)	29.9 (12.8)	<0.001	30.9 (10.9)	0.12
Average children (<16)	1.3 (1.2)	1.3 (1.3)	0.04	1.7 (1.4)	0.05
Average adults (16-59)	2.3 (1.6)	2.2 (1.2)	0.27	2.4 (1.2)	0.05
Average older adults (60+)	0.8 (0.9)	0.3 (0.5)	<0.0001	0.4 (0.7)	0.61
Poverty markers					
Income					
1	95 (75%)	741 (71%)	0.18	109 (60%)	0.01
2+	31 (25%)	303 (29%)		72 (40%)	
Meals per day					
1/2	56 (44%)	378 (36%)	0.15	55 (30%)	0.12
3	77 (56%)	666 (64%)		126 (70%)	
Average poverty score	-0.4 (2.3)	-0.07 (1.9)	0.03	0.70 (1.9)	<0.0001
Poverty quartile					
1 (lowest)	46 (37%)	278 (27%)	0.01	20 (11%)	<0.0001
2	33 (26%)	267 (26%)		43 (24%)	
3	22 (17%)	253 (24%)		53 (29%)	
4 (highest)	25 (20%)	246 (24%)		65 (36%)	
Social protection inclusion					
NHIF	8 (6%)	33 (3%)	0.34		
CHF	11 (9%)	128 (12%)	0.33		
TASAF	6 (5%)	7 (0.7%)	0.02		
Any social protection	26 (21%)	175 (17%)	0.51		

*Adjusted for household size, mean age, % female.
[1] Households with versus without household member with disabilities.
[2] Households from survey versus households from CHF.

Table 2: Enrolment and use characteristics among CHF members

Characteristic		N (%)
Paid for CHF membership		
	No	8 (4%)
	Yes	172 (95%)
If yes, amount paid per month		£4.08 (SD=£3.44)
Costs considered:		
	Low	45 (26%)
	OK	104 (60%)
	High	22 (13%)
Anyone insured sought health service in last month		
	No	69 (39%)
	Yes	112 (62%)
Waiting time changed after joining insurance		
	Improved	57 (32%)
	Stayed the same	113 (63%)
	Worsened	8 (4%)
Quality of healthcare changed after joining insurance		
	Improved	74 (41%)
	Stayed the same	101 (56%)
	Worsened	6 (3%)
Friendliness of staff change after joining insurance		
	Improved	58 (33%)
	Stayed the same	110 (62%)
	Worsened	10 (6%)
CHF considered good way to manage health expenditure		
	No	11 (6%)
	Yes	170 (93%)
Would encourage others to join CHF		
	No	21 (12%)
	Yes	160 (88%)
Payments requested when using CHF card		
	No	142 (78%)
	Yes	39 (22%)

Table 3: Socio-demographic characteristics of persons with disabilities (cases) and controls (Nested Case-Control Study)

	Cases (n=127)	Controls (n=127)	Age-sex adjusted OR
Sex			
Male	57 (52%)	53 (42%)	1.1 (0.7-1.9)
Female	70 (55%)	74 (58%)	Baseline
Age			
0-15	8 (6%)	7 (6%)	1.1 (0.4-3.3)
16-59	61 (48%)	64 (50%)	0.9 (0.6-1.5)
60+	58 (46%)	56 (44%)	Baseline
Head of household			
Yes	53 (42%)	77 (61%)	0.3 (0.2-0.6)
No	74 (58%)	50 (39%)	Baseline
Anyone insured sought health service in last month			
No			69 (39%)
Yes			112 (62%)
Adults only	**Cases (n=119)**	**Controls (n=120)**	
Marital status			
Married/cohabiting	49 (42%)	74 (63%)	Baseline
Divorced/separated	15 (13%)	11 (9%)	2.2 (0.9-5.2)
Widowed	24 (21%)	26 (22%)	1.0 (0.5-2.3)
Never married	29 (25%)	6 (5%)	9.4 (3.5-25.1)
Have children			
Yes	88 (75%)	103 (89%)	Baseline
No	29 (25%)	13 (11%)	2.8 (1.3-6.0)
Able to read			
Well	36 (31%)	73 (62%)	Baseline
A little	22 (19%)	17 (15%)	3.2 (1.5-7.0)
No	59 (50%)	27 (23%)	6.1 (3.1-12.2)
Ever attended school			
No	41 (44%)	28 (24%)	3.0 (1.6-5.5)
Yes	66 (56%)	89 (76%)	Baseline

Table 4: Functioning and health among persons with disabilities (cases) and controls (Nested Case-Control Study)

	Cases (n=127)	Controls (n=127)	Age-sex adjusted p-value
WHODAS score			
Overall	17.7 (13.0)	1.8 (4.6)	<0.0001
Overall (no zeros)	20.1 (12.0)	5.6 (6.9)	<0.0001
Males	17.1 (12.8)	1.0 (2.3)	<0.0001
Females	18.2 (13.3)	2.3 (5.8)	<0.0001
Adults (16-59)	17.3 (13.3)	0.4 (1.1)	<0.0001
Older adults (60+)	18.2 (12.8)	3.3 (6.4)	<0.0001
			Age- sex adjusted OR (95% CI)
Serious illness			
No	75 (59%)	101 (80%)	Baseline
Yes	52 (41%)	26 (20%)	2.8 (1.6-4.9)
Where sought treatment*			
Hospital	20 (83%)	35 (71%)	2.4 (0.7-8.7)
Other	4 (17%)	14 (29%)	Baseline
Paid for treatment			
Self	29 (59%)	15 (63%)	0.9 (0.3-2.4)
Insurance/free	20 (41%)	9 (37%)	Baseline
Mean amount paid	£9.50 (SD=£11.52)	£4.81 (SD=£3.69)	P=0.17

*Only 3 cases and 1 control did not seek treatment when ill.

Table 5: Social protection enrolment among persons with disabilities (cases) and controls (Nested Case-Control Study)

	Cases (n=127)	Controls (n=127)	Age- sex adjusted OR (95% CI)
Enrolled in any scheme			
Yes	13 (10%)	15 (12%)	0.8 (0.4-1.9)
No	114 (90%)	112 (88%)	Baseline
Enrolled in CHF			
Yes	6 (5%)	14 (11%)	0.4 (0.1-1.1)
No	121(95%)	113 (89%)	Baseline
Have health insurance			
Yes	13 (10%)	24 (19%)	0.5 (0.2-1.0)
No	114 (90%)	103 (81%)	Baseline
If yes, paid for insurance			
Yes	7 (54%)	15 (63%)	0.9 (0.2-3.9)
No	6 (46%)	9 (38%)	Baseline
Amount paid per month	£2.81 (SD=£3.08)	£10.30 (SD=£24.57)	P=0.26
If yes, used in last year			
0	3 (23%)	11 (46%)	P=0.13
1	4 (31%)	5 (21%)	
>1	6 (46%)	8 (33%)	
Health insurance convenient			
Yes	9 (69%)	12 (50%)	2.7 (0.6-11.7)
Partially/No	4 (31%)	12 (50%)	Baseline
Why not enrolled in social protection			
Do not qualify	9 (8%)	8 (8%)	P=0.43
Do not need	12 (11%)	16 (16%)	
Do not know about it	75 (66%)	69 (68%)	
Other	17 (15%)	9 (9%)	

Figure 1: Coverage of rehabilitation services among persons with disabilities

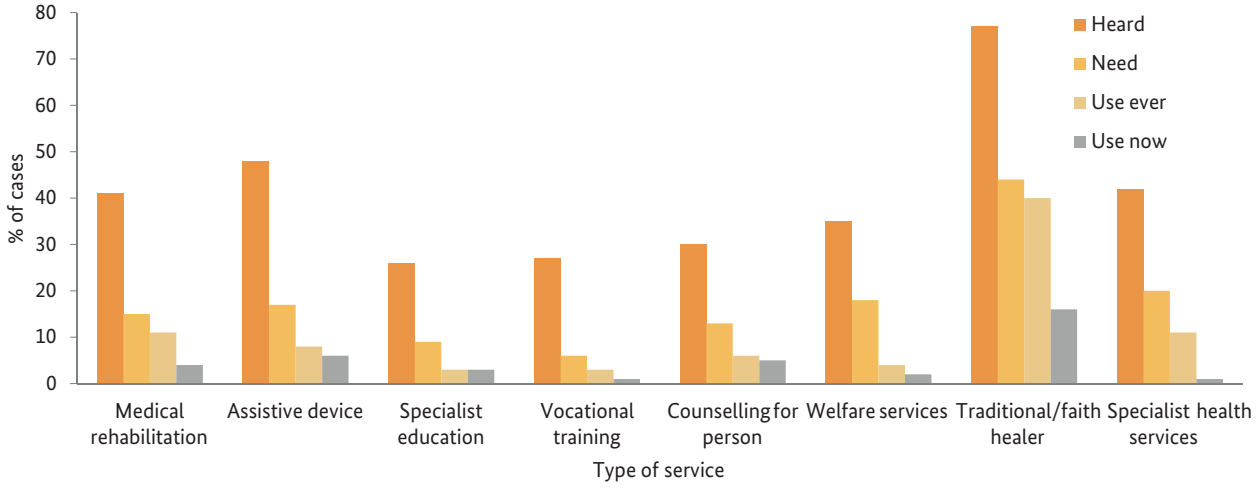
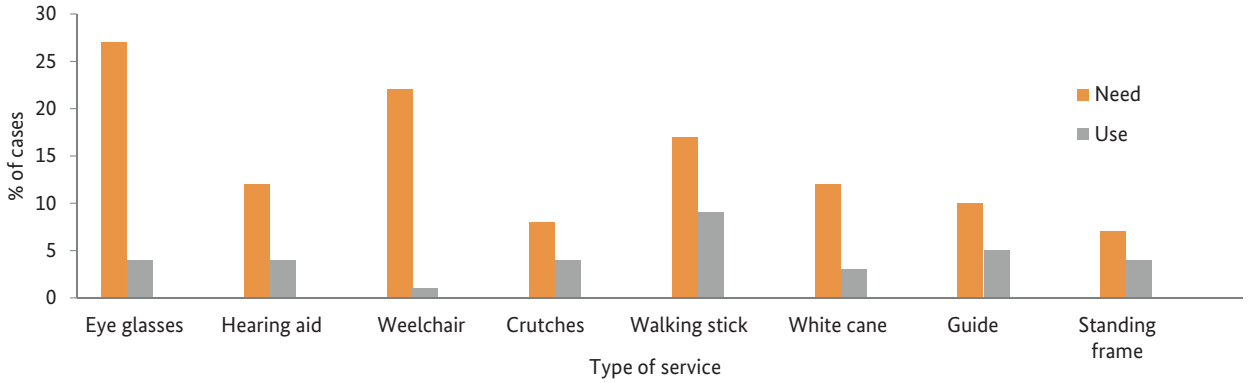


Figure 2: Coverage of assistive devices among persons with disabilities



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