

Needs Assessment, Persons with Disabilities, Rakhine State, Myanmar



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Abstract

A needs assessment study was conducted, including the participation of over 400 persons, in three districts of Rakhine State, Myanmar. The study was composed of a representative quantitative survey of 334 persons with disabilities, a qualitative study including eight focus group discussions with 58 persons with disabilities, and 20 key informant in-depth interviews. Persons with disabilities were identified through snowball sampling stratified by age and sex using a reference population with disabilities. No study had ever been conducted on persons with disabilities in Rakhine State.

A majority (55%) of the respondents had a severe functional impairment (could 'not do at all') and 99% 'had a lot of difficulties' to do at least one of the six categories of the Washington Group short set of questions to assess the type and the severity of the disability. The most frequent severe functional impairment was mobility (36%). Higher psychological distress scores were detected in respondents under 50 years old, from Sittwe and having no access to bathroom facilities. Despite primary health service coverage of 69%, the proportion of persons with disabilities who reported unmet needs in medical services was 75% (95%CI 69%-81%) and related to a lack of financial resources, expensive medical services, availability and distance. The persons with the most recent onset of disabilities and severe hearing impairment were the most at risks for not receiving appropriate medical care. In persons with some mobility impairment, 78% were not using any assistive device.

In respondents aged of 15 years old or more, the unemployment rate was 78% and higher in females, persons with severe functional impairment, and from Myauk-U district. Only 3% received a vocational training and they were 4 times more likely to currently work compared to other persons with disabilities. Only 3% of the persons with disabilities were receiving a pension, principally males over 50 years old. Overall, 81% (95%CI 77%-85%) of the respondents did not receive any assistance or social service within the last two years in particular in Myauk-U and Thandwe districts. The most frequent assistive devices or services needed to improve the function of the respondent were related to mobility (46%), physiotherapy, glasses, and hearing aids. The highest priorities reported for improving the living conditions were engaging in business, micro-credit, employment, physical rehabilitation and medication.

In a context of extreme poverty and high unmet social needs and where females were the most vulnerable, forthcoming interventions should focus on persons with the most recent onset of disabilities as they have the most acute health and rehabilitation needs, access to bathrooms and clean water, food aid, inclusive vocational training programs and livelihood opportunities.

Executive summary

Rakhine State is believed to be one of the poorest regions of the Republic of the Union of Myanmar (Myanmar) and is marked by historical and ethno-political tensions. The development of Rakhine State has long lagged behind much of the rest of the country, leading to a situation in which both the local Rakhine and other ethnic minority communities have considerable unaddressed health and socio-economic needs. The 2012 inter-communal violence, resulting in the segregation between the Rakhine and Muslim communities, has an ongoing negative impact on the local political and economic situation and has aggravated the condition of the most vulnerable populations particularly persons with disabilities.

The needs assessment study of persons with disabilities in Rakhine State, Myanmar, used a representative sample stratified on sex and age using snowball sampling technique to identify persons with disabilities for a sample of over 400 persons (including both quantitative and qualitative surveys). The study was composed of a representative quantitative survey of 334 persons with disabilities, a qualitative study including eight focus group discussions with 58 persons with disabilities, and 20 key informant in-depth interviews.

The overall aim of the study was to assess the situation of persons with disabilities, their needs in basic services and to identify barriers to the uptake of these services in selected districts of the Rakhine State. No study had ever been conducted on people with disabilities in this State. Thus, there is a lack of advocacy initiatives addressed to policy makers, international donors, and humanitarian and development agencies to develop inclusive policies and programs for persons with disabilities in humanitarian and development actions. As a result of this lack of initiatives the high unmet needs in health and social services and unemployment rates indicated that the persons with disabilities are prone to extreme poverty in Rakhine State. Overall, awareness raising on the study results and subsequent training on disability inclusive development, with State level authorities (district, township and village) is recommended, especially as it relates to livelihoods and access and inclusion of persons with disabilities in educational and health programs.

The development of an inclusive action plan focusing on improving the overall quality of life through fostering inclusive initiatives, based on study results, should be implemented. The with Department of Social Welfare (DSW) together with disabled people's organizations (DPO), and community based organizations (CBO) need to improve the identification and the needs of the most recently impaired persons, improve access to health services through a more efficient

medical service response, and improve the overall coordination at state, district, township and village level. Additional workshops with local authorities, non-governmental organization (NGO), DPO, and CBO, on target interventions identified by the study, should be implemented.

Mapping of available services within the State and region is recommended. Information campaigns on access to services would be an asset for persons with disabilities to promote access to health, rehabilitation, economic, and education services.

General characteristics of persons with disabilities

Using an anthropological approach (snowball sampling) and the Washington Group short set of questions (CDC 2010) has enabled to identify 99% of persons with disabilities with a least 'a lot of difficulties' for one functional impairment and a majority of persons (55%) with severe disabilities ('cannot do at all'). Using snowball sampling, under age and sex controls, to ensure the representativeness of the sample enabled detection of persons with different functional impairments, notably persons with intellectual impairment (16% had 'a lot of difficulties' and 5% 'cannot do at all'). The most frequent severe impairment was walking impairment (36%). The walking impairment was more frequent in persons with a disability due to specific sicknesses (mainly poliomyelitis). Snowball sampling stratified by age and sex is recommended to investigate the needs of the persons with disabilities.

Higher risk for illiteracy in persons with congenital disabilities and severe hearing impairment revealed that children were not adequately included in educational programs. Distance, access to a bathroom at school, lack of self-confidence, discrimination associated with the financial difficulties of the parents to pay for school costs were the main difficulties faced by the families to send their children to school. In terms of educational programs, awareness raising on the study results and subsequent training on disability inclusive development and the principles of inclusive education are recommended, especially as it relates to the access and inclusion of persons with disabilities. Training teachers in sign language or other accessible communication formats is also recommended.

Extreme poverty

The livelihood score of the persons with disabilities and an average income per person of 8 USD a month revealed very low living conditions associated with irregular wages (casual work). Poverty was associated with no access to clean water (31%) or a bathroom (51%) and no hygiene facilities (40%). The study showed that business, micro-credit and/or employment are the first priorities for the persons with disabilities from Rakhine State.

Most of the persons with disabilities (75%) were staying at the family's house and 78% were not currently working. Only 3% received a vocational training while these latter were 4 times more likely to currently work. The large proportions of respondents, of both sexes, answering questions about cooking, cleaning and washing clothes showed that persons with disabilities usually stay at home.

Sanitation strategies should be implemented with a focus on females and respondents living in Myauk-U district. Additionally, toilet, water points, and bathing areas must be physically accessible for persons with disabilities, especially those persons with mobility issues, assistive devices, and visual impairments. Regarding food aid for persons with severe food shortage (15%), interventions should focus on children (under 15 years old) and persons with a severe disability.

Forthcoming interventions should focus on awareness raising and inclusive policies for persons with disabilities in vocational training programs in particular those with a severe disability, female, and residing in Myauk-U district where the employment rate was the lowest.

Assistance and psychological support

A large majority of the persons with disabilities (81%) did not receive any assistance or social service within the last two years, in particular female, those living in Myauk-U or Thandwe as well as persons with moderate compared to those with severe disability. One hundred percent (100%) of the persons from the IDP camp received assistance. Ninety-four percent (94%) of the respondents have never received any psychological support to deal with their current life situation and mostly relied on their family (51%) for support. Psychological support intervention strategies should focus on persons with disabilities with a psychological impairment, in particular persons under 50 years old, living in Sittwe, and who have no access to a bathroom.

Access to services

Over two thirds (68%) of the persons with disabilities in the Rakhine State had difficulty in seeking health services (general practitioner, specialist, medication, physiotherapist, prostheses, and traditional healer). The barriers in accessing health services were related to the unavailability of the service (45%), lack financial resources (27%) and distance (19%). In order to improve this, provision of information on available health services and interventions to decrease the financial barriers to access any health services should focus on females and persons living in the IDP camp or Sittwe. Inclusive strategies, regarding the availability of the

medical services, should focus particularly on persons with congenital disabilities and persons with disabilities aged of 25 years old or more and living in Sittwe.

In Rakhine State, the unmet needs rate in health services for persons with disabilities was 75%. The persons most in need or not receiving appropriate medical care were those with a recent onset of disability and with severe hearing impairment. Trainings for DSW workers on identification of persons with disabilities and those with a recent onset of impairment, in particular disabilities starting within the last 3 years (independently of the age of the person) are suggested as these persons have the most acute health and rehabilitation needs.

Rehabilitation

Only a few persons with disabilities (17%) used an assisted device (cane, crutches) essentially for their mobility impairment. Most of these devices were homemade or purchased by the family and almost everyone self-repaired the device. Twenty-three percent (23%) of the persons with disabilities using an assisted device reported they had a good mobility. Interventions on persons with walking impairment should focus on persons not using any assistive device, especially females, aged below 50 years old, and persons living in Myauk-U or Thandwe districts. Persons with the greatest need for devices were related to mobility were male, aged of 25 years old or more, and respondents from Muslim villages (any district).

Community participation

Over a quarter of the persons with disabilities never attended any community event (family visits, festivities, market and worshipping places). Overall, 16% of the persons with disabilities ever had a leadership role in the community however females and persons with congenital disabilities were less likely to have had any role.

The creation and strengthening of self-help groups (SHG) should be applied to increase social cohesion and inclusion and by organizing events including persons with disabilities. Awareness meeting should be organized for persons with disabilities, with a focus on persons 25 years old or more, females, or with severe disabilities to provide an opportunity to meet and discuss their difficulties and needs. Additionally the SHG and awareness meetings can be used to increase dissemination of information and promote awareness-raising on the rights of persons with disabilities.

Male, 41:

I would like to receive a capacity building training and participate in disability awareness raising activities.

The recent increase in the proportion of members from an organization for persons with disabilities was a direct result of the study design. This increase indicates a high desire to engage with one's peers and participate in a social organization. Emphasis on creating greater social opportunities for persons with disabilities is recommended.

To improve the living conditions of the persons with disabilities, interventions in terms of micro-credit should focus on persons 15 years old or more and social protection interventions; interventions related to rehabilitation and medication should focus on persons with a chronic disease; and interventions related to education should focus on persons under 25 years old.

Community differences

The mean age of persons with disabilities in the IDP camp was significantly lower than people with disabilities outside of the IDP camps. Further studies should be conducted to explain this difference.

Persons with disabilities from the IDP camp had a lower livelihood condition compared to others, however, they had better access to clean water, toilet facilities, and food aid compared to other persons with disabilities in the Rakhine State.

Muslim communities were at higher risk for illiteracy and Muslims from the villages had a higher need for mobility assistive devices.

Study limitations

Despite randomization using age and sex controls, the snowball sampling technique might have detection limits for people with sensorial and intellectual impairments. Without any robust population reference distribution, by type of disability, it is difficult to distinguish whether the technique used underestimated some types of disabilities or not. Therefore, the snowball sampling technique might be influenced by the community perception of disability in identify persons with disabilities. Physical impairment, related to mobility, might have been over reported compared to sensorial and intellectual impairments. Further analysis on the

distribution, by type of impairment, should be conducted to define the population with disabilities according to age, sex, and the local environment.

Study context

Rakhine State is believed to be one of the poorest regions of the Republic of the Union of Myanmar (Myanmar) and is marked by historical and ethno-political tensions. The development of Rakhine State has long lagged behind much of the rest of the country, leading to a situation in which both the local Rakhine and other ethnic minority communities have considerable unaddressed health and socio-economic needs. The 2012 inter-communal violence, resulting in the segregation between the Rakhine and Muslim communities, has an ongoing negative impact on the local political and economic situation and has aggravated the condition of the most vulnerable populations particularly persons with disabilities.

During the census conducted in Myanmar in 2014, the estimated prevalence rate of people with disabilities in Rakhine State was 5.3%, greater than the national average of 4.6%. However, a considerable segment of the population was not enumerated because of ethno-political tensions as well as the demand of many local people to self-identify as Rohingya (UN, 2015).

So far, no study, assessment, or situational analysis had ever been conducted on persons with disabilities in Rakhine State. The limited knowledge about their situation and needs have prevented the implementation of inclusive interventions and/or targeted services.

As a result, there is a lack of advocacy initiative addressed to policy makers, international donors, and humanitarian and development agencies to develop inclusive policies and programs for persons with disabilities in humanitarian and development actions.

Moreover, there is a very limited understanding of the protection risks that are faced by girls, boys, women, and men with disabilities in Rakhine State, especially due to its unique socio-political situation. Therefore a needs assessment study on persons with disabilities in Rakhine State was required.

Objectives

The overall aim of the study was to assess the situation of persons with disabilities, their needs in basic services, and to identify barriers to the uptake of these services in selected districts of the Rakhine State.

Methods

Sampling methodology and case finding

The needs assessment of persons with disabilities in Rakhine State was achieved by conducting a quantitative and qualitative population based assessment study. Given the large size of the State, 5% of the country's population (Figure 1), snowball sampling, an anthropological and technically non-probabilistic approach, was used for participant identification (Zwang and Garenne, 2008). This technique enabled exploration of a network of relationships from one local community contact. Once the person with disabilities was identified in the field, the quantitative questionnaire was administered. As in the Myanmar Census 2014 (Department of Population Ministry of Immigration and Population, May 2015), the Washington Group (WG) short set of questions was used to identify and to assess the type and severity of the functional limitations of the respondent (CDC, 2010).

Sampling for the eight focus discussion groups and the 20 key informant in-depth interviews, using four different tools, were made from a network of community based organizations (CBO). Opting to use CBOs was appropriate insofar as these organizations play a mediation and information sharing role for person with disabilities. The interviews were carried out in Burmese, Rakhine, and local languages used by the Muslim population, recorded and transcribed verbatim. In order to ensure the representativeness of the quantitative survey, a randomized sample stratified by age and sex, using a reference population, was employed. An age profile analysis on 4 million persons with disabilities, using census data from five ASEAN countries (Cambodia, Indonesia, Malaysia, Philippines and Vietnam), with disability data, (IPUMS international) was conducted to define the age and sex profile of the population to be surveyed. The Myanmar census 2014 disability prevalence rates were used to select the districts to be surveyed.

Data quality control protocol

To ensure the validity of the study and to guarantee the representativeness of the results, a pre-defined age and sex profile of the entire population with disabilities from the Rakhine State, was created using population census data on person with disabilities.

The representativeness of our sample of 334 persons with disabilities was based on an age and sex profile from five ASEAN countries censuses (Cambodia, Indonesia, Malaysia, Philippines and Vietnam) representing over 4,519,037 million person with disabilities (IPUMS international),

using the short set of questions from the WG, and the Myanmar census 2014 prevalence rates breakdown by district. To ensure the representativeness of the sample, age and sex descriptive analyses were conducted and compared to the age and sex profile of the reference population with disabilities from the five ASEAN censuses.

Validated questionnaires and guidelines which were appropriately pilot tested were used. The principal investigator trained staff and volunteers for qualitative and quantitative interviews techniques using an interviewer manual guideline. The principal investigator performed routine supervision of the enumerator teams and daily monitoring of data quality (sample representativeness and questionnaire completeness).

Statistical analysis

Continuous data were reported as mean (standard deviation) or median with range (minimum, maximum) for non-normally distributed data and compared with a Student or a Mann-Whitney test, as appropriate. Categorical data were compared using the chi-square or the Fisher exact test as appropriate. The risks of the persons with disabilities were analyzed using multivariate logistic regression presented as adjusted risks (AOR). Multivariate linear regression was used for analyzing continuous variables. Additionally, the risks of the persons with disabilities were analyzed using multivariate logistic regression models (for binary data) or multivariate linear regression models (for continuous data). These multivariate analysis stratified by district were conducted to identify the groups of persons with disability most at risks to be in need in health, vocational services, or any other relevant criteria according to their personal background: age (continuous, in years), sex (binary), illiteracy (binary), district (categorical), types of disability (categorical), severity of the disability (binary), onset of disability (categorical), score of items owned (continuous), score of psychological or community participation situation (continuous) and any other relevant characteristics according to the different aspects of the analysis to be conducted.

Confidence intervals (CI) were calculated at 95% (95%CI) and comparisons considered significant when $p < 0.05$. Data were analyzed using Stata v13 (Stata corp.).

Ethics

Ethical approval for the study was sought and obtained from Handicap International Technical Department. Informed oral consent was obtained from all survey participants. Informed oral consent was obtained after explanation of the interview content. For people under 16 years old

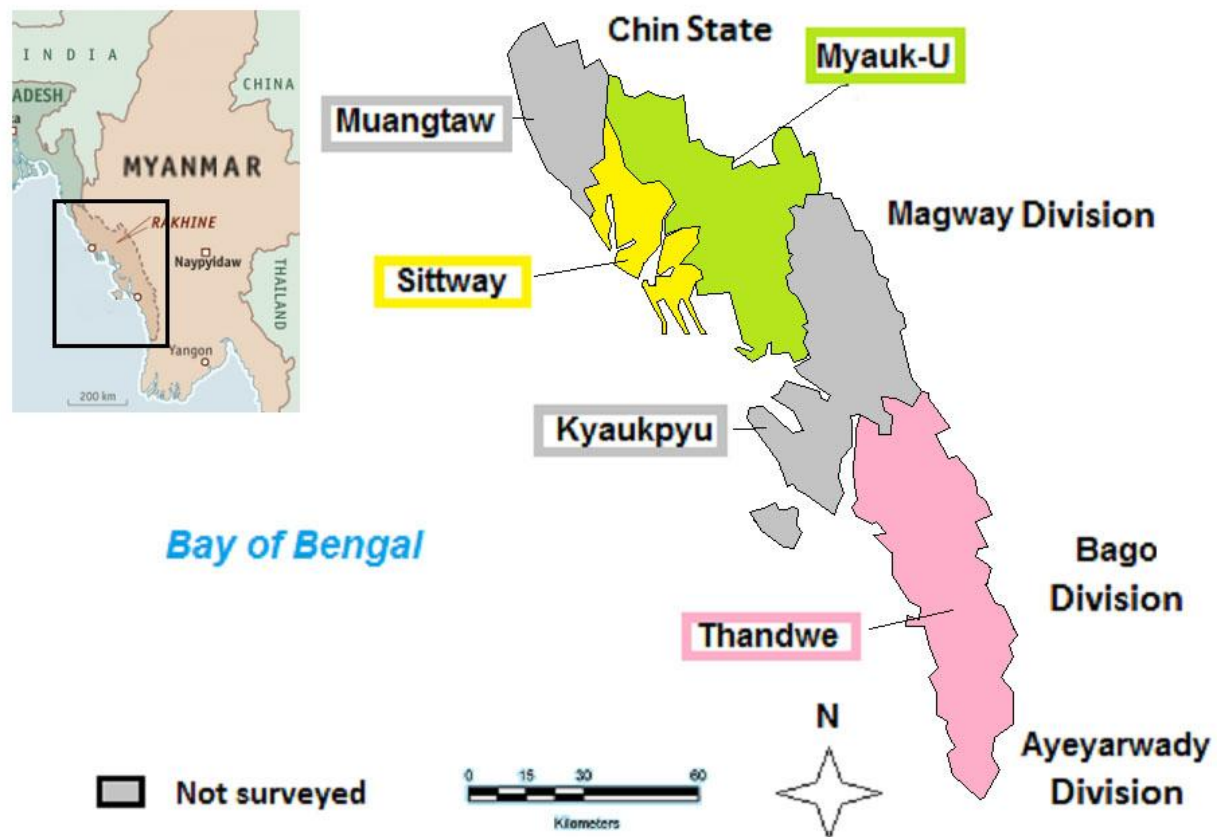
or those with intellectual impairment, consent was sought from a family member, who was present during all interviews. All interviews were anonymous and the full names not recorded.

Results

Location

Three out of the five districts of Rakhine State were surveyed (Figure 1). Overall, 31 Rakhine villages and 3 cities in each district were surveyed (70% of the respondents). Muslims communities, customarily in the north of the Rakhine State, were interviewed (30% of the respondents) in 2 villages in Sittwe and 2 villages in Myauk-U districts and in one internally displaced persons (IDP) camp in Sittwe.

Figure 1: Map of the districts surveyed, Rakhine State, Myanmar

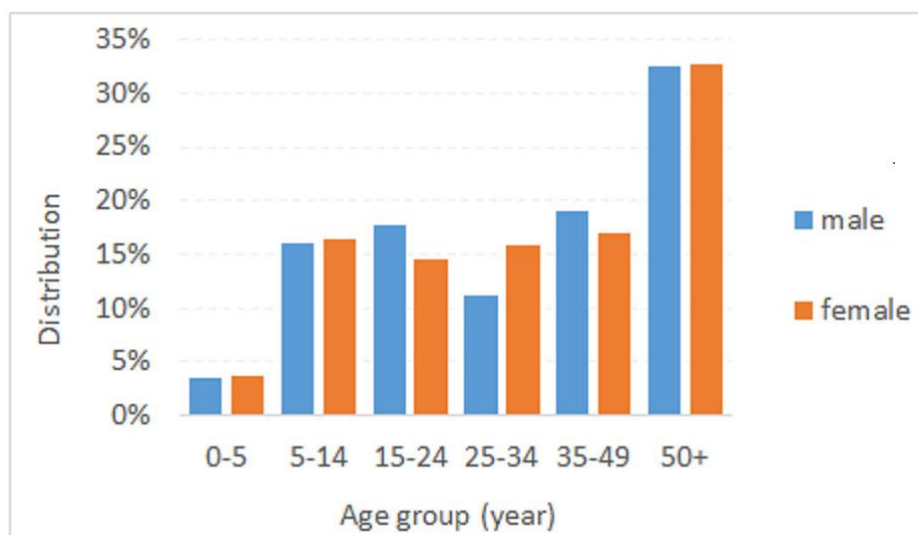


Respondents characteristics

Quantitative survey

The study, including training and data collection, was conducted between March and May 2016. The number of persons interviewed and included in the quantitative survey was 334 of which 144 were from Sittwe district (43%), 124 from Myauk-U (37%), 66 from Thandwe (20%). The total number of male was 169 and female was 165 resulting in a sex ratio (male/female) of 1.02 (Figure 2). The mean age of the population interviewed was 37 years ranging from 3 to 98 years old, no sex difference was detected ($p=0.849$).

Figure 2: Respondents' age group distribution by sex



Age distribution of the population with disabilities interviewed in each district was not different from the pre-defined target age distribution (in Sittwe, $p=0.150$; in Myauk U, $p=0.996$; and in Thandwe, $p=0.341$) except in the IDP camp ($p=0.049$, 7% of the sample) where the people with disabilities' were slightly younger and the age distribution different.

Overall, the proportion of children under 15 years old were 19% (3% under five and 16% between five and 14 years old), young adults (15 to 24 years old) were 16%, adults (25 to 49 years old) were 33% and older adults (50 years old or more) were 33% of the surveyed population with disabilities (Table 1, Figure 2).

Table 1: Age distribution, population with disabilities surveyed by township (excluding IDP camp), Rakhine State, Myanmar

Age group	Sittwe		Thandwe		Myauk-U		Total	
	n	Distribution	n	Distribution	n	Distribution	n	Distribution
0-4	4	3%	2	3%	4	3%	10	3%
5-14	23	19%	11	17%	13	11%	47	16%
15-24	16	13%	15	23%	16	14%	47	16%
25-34	17	14%	7	11%	18	16%	42	14%
35-49	19	16%	13	20%	24	21%	56	19%
50+	41	34%	18	27%	41	35%	100	33%
Total								
(p-value)	120	(0.150)	66	(0.341)	116	(0.921)	302	(0.210)

Overall (excluding the IDP camp), the age distribution of the sample was representative of the population with disabilities in Rakhine State ($p=0.210$). The overall sex ratio ($p=0.717$) was not different from the target as well as the place of residence (86% surveyed from rural area compared to 83% targeted, $p=0.350$).

Qualitative study

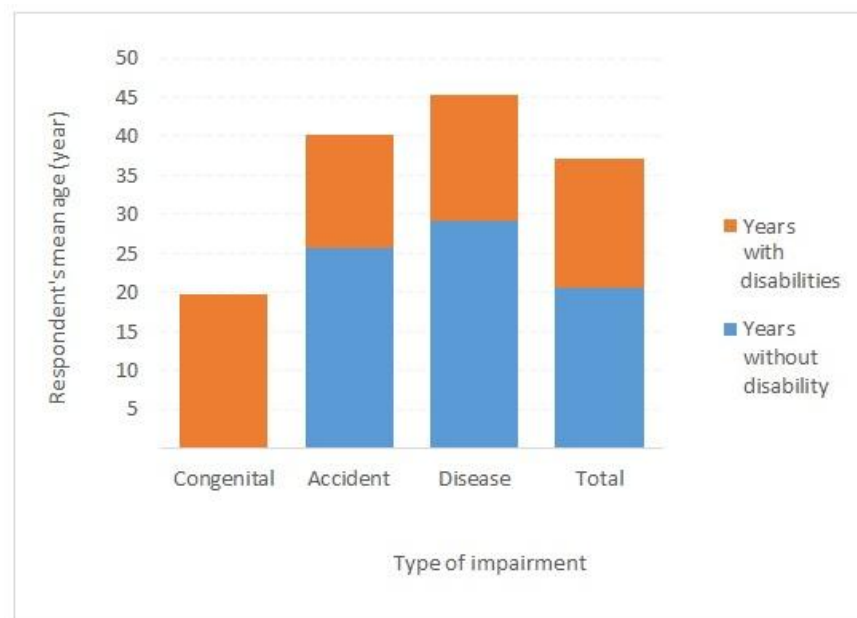
The eight focus group discussions (FGD, 58 persons), included representation of persons with all types of impairment as well as groups with specific criteria. One FGD was conducted with persons with visual impairment, one with people with mobility impairment, one in an IDP camp, two FGD were held in Myauk-U with one group representing the Rakhine community and one group representing the Muslim community and two FGD in Rakhine villages in Sittwe district. All FGD were gender balanced except one specific FGD held with women only.

The 20 in-depth interviews were conducted in key informants from Non-governmental Organizations (NGO), schools, and social action and health services.

Type and onset of disabilities

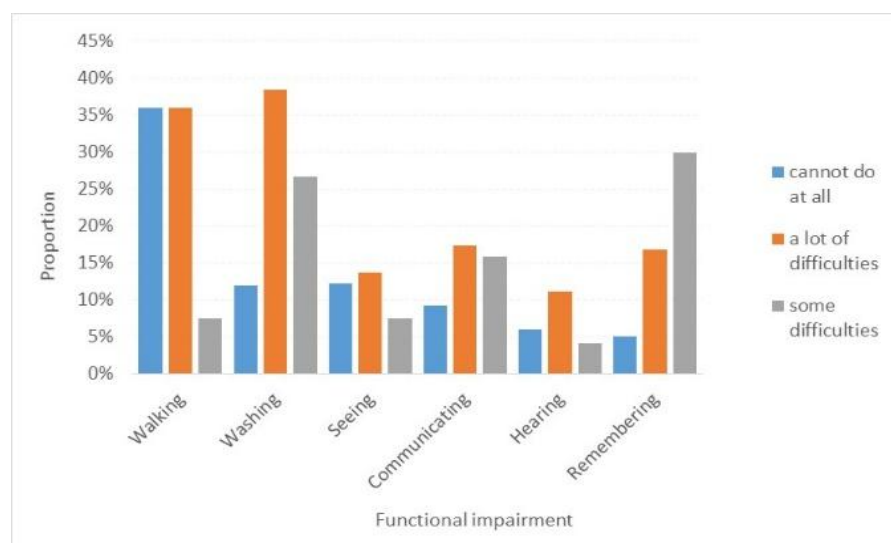
The mean age at onset of disability was 16 years old and the mean lifespan with disabilities was 21 years (Figure 3). The breakdown by cause of disability was disease (46%), congenital (27%), accident (21%), other (4%) and don't know (1%). No sex difference was detected ($p=0.569$). The proportion of respondents with chronic disease was 22% with no sex difference ($p=0.803$).

Figure 3: Lifespan with disabilities by type of impairment, Rakhine State, Myanmar



Overall, 55% of the respondents could 'not do at all' (severe disability) and 99% 'had a lot of difficulties' to do at least one of 6 categories of the Washington Group set of questions to assess the type and severity of the disability. No sex difference was detected ($p=0.846$, $p=0.119$, respectively).

Figure 4: Proportion of respondents with functional impairment by type and severity, Rakhine State, Myanmar



Respondents from Thandwe district were at lower risk for any severe disability (AOR 0.14) compared to other districts. Severe functional impairment ('cannot do at all') was 36% for walking, 12% for bathing, 12% for visual, 9% for communicating, 6% for hearing and 5% for remembering (Figure 4). Persons with a disability of a disease origin (mainly poliomyelitis) were at higher risks (AOR 2.69) for walking impairment. There was no difference observed in children under five years old compared to older respondents ($p=0.395$).

Female (AOR 2.31) compared to male and respondents over 35 years old (AOR 4.92) were significantly more at risk for severe visual impairment. No difference was detected for the other types of functional impairment.

Table 2: Type of severe impairment by sex, Rakhine State, Myanmar

Type of impairment	Total			Male			Female			p*
	Severe	Total	%	Severe	Total	%	Severe	Total	%	
Walking	120	334	36%	58	169	34%	62	165	38%	0.535
Bathing	40	334	12%	24	169	14%	16	165	10%	0.205
Visual	41	334	12%	14	169	8%	27	165	16%	0.024
Communicating	31	334	9%	15	169	9%	16	165	10%	0.796
Remembering	17	334	5%	10	169	6%	7	165	4%	0.486
Hearing	20	334	6%	6	169	4%	14	165	8%	0.057
Total	183	334	55%	88	169	52%	95	165	58%	0.312

*p-value for sex difference comparison

Conclusion and recommendations

Using an anthropological approach (snowball sampling) and the Washington Group short set of questions (WG) enabled the survey to identify 99% of persons with disabilities with a least 'a lot of difficulties' for one functional impairment and a majority of persons with severe disabilities ('cannot do at all', 55%). Using snowball sampling, under age and sex controls, ensured the representativeness of the sample and enabled detection of persons with all kinds of functional impairments notably persons with intellectual impairment (16% had 'a lot of difficulties' and 5% 'cannot do at all'). The most frequent severe impairment was walking impairment (36%) and was more frequent in persons with an impairment due to a disease (mainly poliomyelitis). Snowball sampling stratified by age and sex is recommended to investigate the needs of the persons with disabilities in the field.

Individuals' characteristics

In the 15 years old or more population, 52% of the respondents were married and the median number of children was 1, no differentiation between sexes detected ($p=0.801$, $p=0.535$, respectively).

Table 3: Marital status and education level by sex, Rakhine State, Myanmar

Individual characteristics (15 years or more)	Male			Female			P
	N	Total	%	N	Total	%	
Married	69	136	51%	69	132	52%	0.801
Number of children (median)		1			1		0.535
Illiteracy	47	136	35%	78	132	59%	0.000
Ever go to school	91	136	67%	61	132	46%	0.001
Barriers (not satisfied of the level education)							
Financial means	66	116	57%	72	124	58%	0.855
Parents did not take me	14	116	12%	23	124	19%	0.165
It was too far away	9	116	8%	11	124	9%	0.755
I had to help with domestic activities	9	116	8%	6	124	5%	0.350
Teachers or administration were not willing to take in a child with disability	1	116	1%	2	124	2%	0.601
Other	17	116	15%	25	124	20%	0.262

*p-value for sex difference comparison

Education

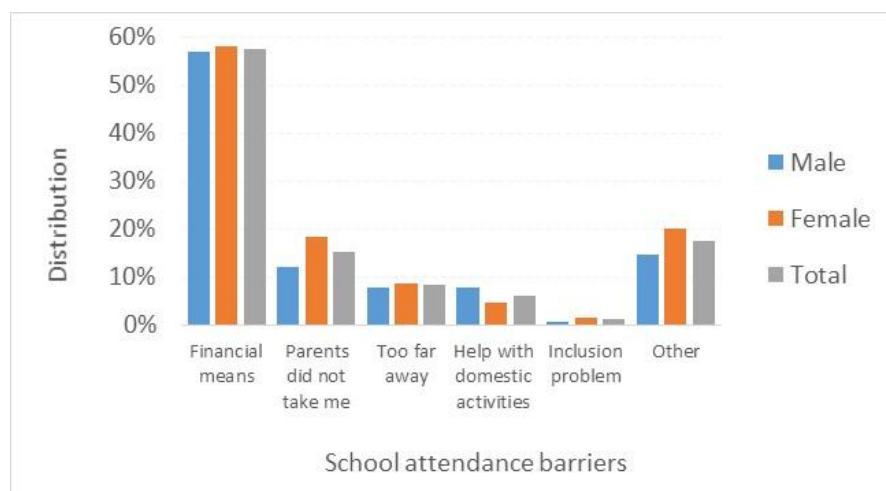
In 15 years old or more respondents, illiteracy rate was 47%, and was significantly higher in females (59%) than in males (35%, $p=0.001$). Correspondingly, the proportion of females who ever went to school was significantly lower (46%) than in males (67%, $p=0.001$), and the median school level was significantly lower in females (complete primary school) than in males (incomplete secondary school, $p=0.003$).

Education Department Officer, Rakhine State:

Children with disabilities attend school along with children without disabilities in the same class. It would be good if we could do whatever necessary for the students with disabilities because they are more vulnerable. But we need additional money to help them.

In the education department, all activities are implemented under instruction of the government. We do not have any special activities for them.

Figure 5: School attendance barriers, persons with disabilities, Rakhine State, Myanmar



Using multivariate analysis, females (AOR 2.04) compared to males, persons with congenital disabilities (AOR 2.47) and persons with severe hearing impairment (AOR 2.05) were at higher risk for illiteracy.

Education Department Officer, Rakhine State:

Teachers from schools where there are some deaf or mute students should attend sign language training. If the government had a plan to train teachers in sign language, they would attend that training.

Now, the education system is free of charge and the government supports one set of school uniform and one set of school curriculum books. There is, at least, a primary school in each village. However, I think there might be some children who are not sent to school because their parents are too poor.

Conclusion

Higher risk for illiteracy in persons with congenital disabilities and severe hearing impairment revealed that children were not adequately included in educational programs. Distance to school, adequate access to toilet facilities at school, lack of self-confidence, discrimination

associated with financial difficulties of the parents to pay the school fees (although school is now free) were the main difficulties faced by the families to send children to school.

Recommendation

Dissemination and awareness raising on the study results and subsequent training on disability inclusive development, with State level authorities (district, township and village) is recommended, especially as it relates to the access and inclusion of persons with disabilities in educational programs. Some teachers should also be trained for sign language.

Livelihood

Item score

In a list of 22 basic items owned by the person with disabilities or the family household (air conditioner, bank account, bicycle, car, cattle, cellphone, chicken, couch, electricity, fan, fridge, internet connection, land, motorbike, landline phone, radio, rice cooker, solar power system, sewing machine, stove, table and chairs, TV), the mean number of items owned by the household was 3.4, and significantly difference between districts ($p=0.001$), ranging from 0.8 in the IDP camp, 1.8 in Myauk-U and, 3.8 in Sittwe to 6.6 in Thandwe.

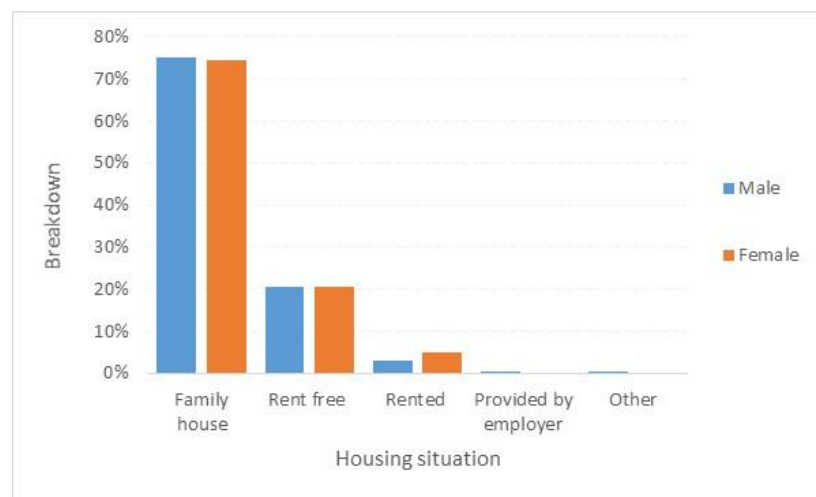
Housing situation

A large majority of the persons with disabilities were residing in a family house (75%) or were renting a house for free (21%). No sex difference was detected between these categories of housing (Table 4). The median number of person by household was 5 ranging from 1 to 12, without sex difference observed. Persons with disabilities from Myauk-U (AOR 14.90) or Sittwe (AOR 4.02) were more likely to live in a family house compared to other districts while persons living in a family house had higher item score (AOR 1.60).

Table 4: Housing situation by sex, persons with disabilities, Rakhine State, Myanmar

Housing situation	Total		Female		Male		P
	%	N	%	Total	%	Total	
Family house	75%	334	75%	169	75%	165	0.899
Rent free	21%	334	21%	169	21%	165	0.981
Rented	4%	334	3%	169	5%	165	0.372
Provided by employer	0%	334	1%	169	0%	165	0.322
Other	0%	334	1%	169	0%	165	0.322

Figure 6: Housing situation by sex, persons with disabilities, Rakhine State, Myanmar



Income

The average household size was 5 persons and the median monthly income of a household with a person with a disability was 45,000 MMK (around 38 USD) ranging from 0 to 200,000 MMK. As a result, the average income per person was 8 USD a month.

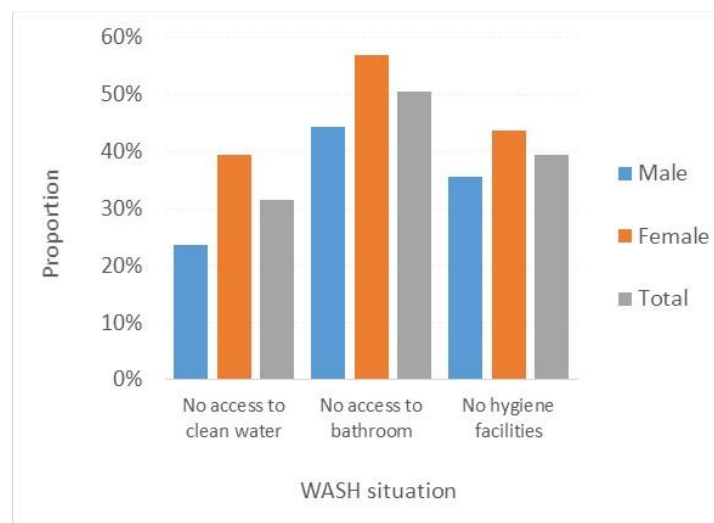
A large majority of the respondents did not know what the monthly income was (85%) probably because most of the persons with disabilities do not work and do not generate income. Moreover, most of the household workers have casual work (farming) subject to seasonal variability or small scale activities for basic self-sustainability.

Water, sanitation and hygiene (WASH)

Overall, 31% (95%CI 26%-36%) of the respondents did not have access to clean water (Table 5). While 100% in the IDP camp had access to clean water, 34% (95%CI 29%-39%) of the other respondents did not have access and females had a significantly lower access compared to males ($p=0.002$). Using multivariate analysis, the most at risk were females (AOR 2.41) compared to males, as well as respondents living in Thandwe (AOR, 8.81) and Myauk-U (AOR 27.26) compared to Sittwe district.

Overall, 51% (95%CI 45%-56%) of the respondents did not have access to a bathroom and this proportion was significantly greater for females (57%) than males (44%, $p=0.021$). Using multivariate analysis, the most at risk were females (AOR 1.58) and residents living in Myauk-U (AOR 2.14).

Figure 7: WASH situation by sex, persons with disabilities, Rakhine State, Myanmar



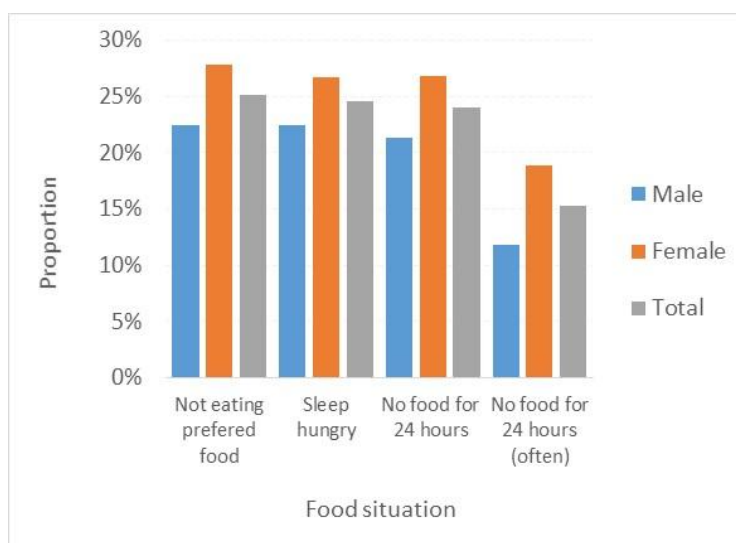
Because of a lack of resources, 25% of the respondents were not eating their preferred food or were sleeping hungry within the last month without sex difference detected. Regarding severe food shortage, 15% (95%CI 11%-19%) of the respondents were sometimes (3 times a month or more) not able to eat for 24 hours within the last month. Using multivariate analysis, the risks were higher in children (under 15 years old, AOR 2.02) compared to older persons and persons with severe disabilities (AOR 4.21) compared to persons with less severe disabilities.

Table 5: Access to water, bathroom, hygiene and food by sex, Rakhine State, Myanmar

Livelihood characteristics	Total		Male		Female		P*
	%	N	%	N	%	N	
No access to clean water	31%	334	24%	169	39%	165	0.002
No access to a bathroom	51%	334	44%	169	57%	165	0.021
No hygiene facilities	40%	334	36%	169	44%	165	0.128
Not eating preferred food	25%	334	22%	169	28%	165	0.256
Sleep hungry	25%	334	22%	169	27%	165	0.375
No food for 24 hours	24%	334	21%	169	27%	165	0.238
Often	15%	334	12%	169	19%	165	0.201

*p-value for sex difference comparison

Figure 8: Food situation by sex, persons with disabilities, Rakhine State, Myanmar



Employment

The proportion of persons with disabilities aged of 15 years old or more who ever worked was 53%. Females (40%) had significantly “ever worked” less than males (65%, $p=0.001$). At the time of interview, 78% of the persons with disabilities aged of 15 years or more did not currently work. Using multivariate analysis, the most at risk for current unemployment were the persons with a severe disability (AOR 4.27), females (AOR 2.04, and those living in Myauk-U district (AOR 2.09).

Among the persons who were currently working, 24% were working for an employer, 50% were working on their own land and 16% were self-employed or selling things in their shop. No sex difference was detected.

Table 6: Employment (15 years or more) by sex, Rakhine State, Myanmar

Employment		Total		Male		Female		P (sex difference)
		%	N	%	N	%	N	
Ever worked		53%	272	65%	138	40%	134	0.000
Not currently working		78%	272	72%	138	84%	134	0.012
Adapted training		3%	272	3%	138	2%	134	0.731
What current job	Work for an employer	24%	58	37%	38	30%	20	0.602
	Work on my land	50%	58	47%	38	55%	20	0.581
	Small shop / self-employed	16%	58	16%	38	15%	20	0.937

*p-value for sex difference comparison

3% of the respondent aged of 15 years or more were engaged in vocational training. They were almost 4 times more likely to currently work compared to those who did not receive any vocational training (Risk Ratio 3.65, 95%CI 1.13-9.10, p=0.018, 71% vs. 20%, respectively).

Female, 22:

I am interested in vocational training but I don't know what kind of vocational training is suitable for me.

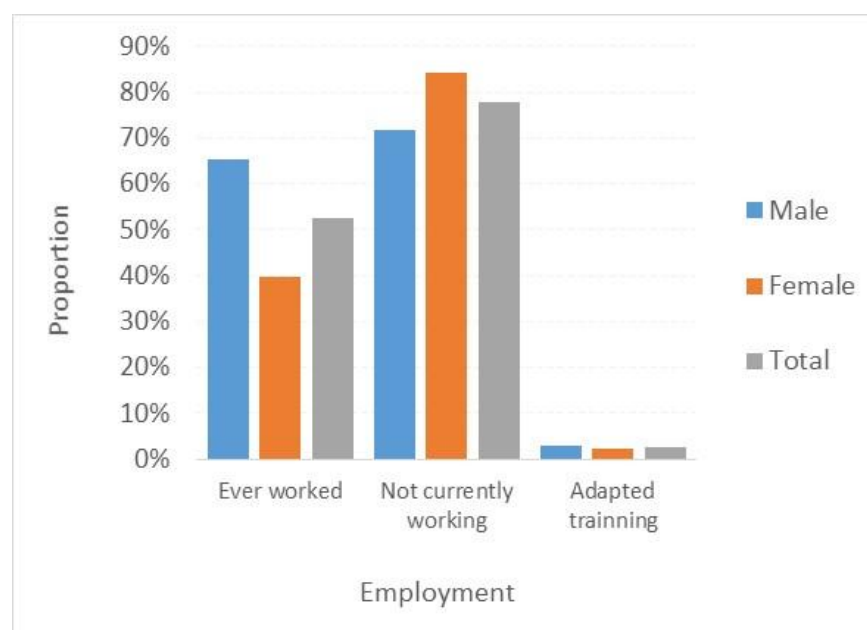
Male, 27:

I want to attend an English course so that I can open an English class in my village.

Female, 18:

I already attended basic computer training in Yangon at the Adult Disabled School. But now I have no idea about what kind of job I could get.

Figure 9: Employment situation by sex, persons with disabilities, Rakhine State, Myanmar



Household activities

The proportion of respondents aged of 15 years or more who could not perform any household activities by themselves was 50% (95%CI 44%-56%). Using multivariate analysis, persons with severe (AOR 1.94) compared to persons with less severe disabilities and persons living in Myauk-U (AOR 2.01) compared to other districts were at higher risks for not being able to perform any household activities by themselves.

Females were significantly more likely to perform cooking (90%) and laundry (75%) activities than males (60%, 75%, respectively) while males were more likely more to fetch (42%) and chop wood (30%), and go out for shopping (25%) compared to females (15%, 1%, 4%, respectively, $p=0.001$, for all comparisons, Table 7). The large proportions of respondents, of both sexes, answering questions about cooking, cleaning and washing clothes indicated that persons with disabilities usually stay at home because they do not have employment.

Table 7: House activities (15 years or more) by sex, Rakhine State, Myanmar

Activities	Total			Male			Female			p*
	n	Total	%	n	Total	%	n	Total	%	
Household activities	136	271	50%	64	137	47%	72	134	54%	0.248
Cleaning	93	136	68%	40	64	63%	53	72	74%	0.164
Cooking	81	136	60%	16	64	25%	65	72	90%	0.000
Laundry	62	136	46%	8	64	13%	54	72	75%	0.000
Fetching wood	38	136	28%	27	64	42%	11	72	15%	0.000
Family cares	22	136	16%	10	64	16%	12	72	17%	0.869
Chopping wood	20	136	15%	19	64	30%	1	72	1%	0.000
Shopping	19	136	14%	16	64	25%	3	72	4%	0.000

*p-value for sex difference comparison

Conclusion

The very low number of items owned by the household of a person with disabilities showed the extreme poverty conditions associated with very low access to water, sanitation and hygiene facilities. The study findings showed an average income household of 8 USD per person a month associated with irregular wages (casual work). Most of the persons with disabilities (75%) were staying at the family's house, did not have access to clean water (31%), bathroom (51%) or hygiene facilities (40%). In terms of employment, 78% of the persons interviewed were not currently working although persons who had received a vocational training were 4 times more likely to currently work. The large proportions of respondents, of both sexes, answering questions about cooking, cleaning and washing clothes indicated that persons with disabilities usually stay at home because they do not have employment.

Recommendations

Forthcoming interventions should focus on awareness raising and inclusive policies for persons with disabilities especially vocational training programs, in particular, for those with a severe disability, female, and residing in Myauk-U district where the employment rate was the lowest.

Sanitation strategies should be implemented with a focus on females and respondents living in Myauk-U district. Additionally, toilet, water points, and bathing areas must be physically accessible for persons with disabilities, especially those persons with mobility issues, assistive devices, and visual impairments. Regarding food aid for persons with severe food shortage (15%), interventions should focus on children (under 15 years old) and persons with a severe disability.

Social assistance

The proportion of persons with disabilities receiving a pension was 3% (95%CI 1%-5%). Males were significantly more likely to receive a pension (AOR 10.05) compared to females as well as respondents over 50 years old (AOR 21.40) compared to other age groups.

Table 8: Pension and assistance by sex, Rakhine State, Myanmar

Assistance	Total		Male		Female		p*
	%	N	%	N	%	N	
Pension	3%	334	5%	169	1%	165	0.011
No assistance	81%	334	77%	169	85%	165	0.046
excluding IDP camp	87%	310	83%	156	92%	154	0.029

*p-value for sex difference comparison

81% (95%CI 77%-85%) of the respondents did not receive any assistance or social service within the last two years, the proportion of females (85%) being significantly greater than in males (77%, p=0.046).

Using multivariate analysis, the persons most in need of assistance were female (AOR 1.82), living in Myauk-U (AOR 4.87) or Thandwe (AOR 5.71) as well as persons with moderate (AOR 2.49) compared to those with severe disability. 100% of the persons from the IDP camp were receiving a monthly ration of rice. The monthly ration of rice per person was 14.5 kg a month.

Among the persons with disabilities (outside the IDP camp) receiving any aid, one person received a wheel chair from ICRC, a few persons received a walking stick from DRC (Danish Rescue Committee), slippers, plastic chairs, rice, salt dry fish, bean, chilies, cooking oil, milk powder, cooking pot, plates, blankets, clothes, toys, drinking water, financial support from Plan International or Red Cross association.

In the IDP camp, persons with disabilities received sitting chair, walking sticks, blanket and toilet pan from LWF (Lutheran World Federation), CDN (Consortium of Dutch Federation), Save the Children, IRC (International Refugee Committee), MSA, CRD, WASH (Solidarité International).

NGO worker, IDP camp:

Although we give information to everyone in the IDP camp, we do not have any persons with disabilities who participate in our activities (child development group, youth development group, women development group and skill Training for adolescent).

Conclusion

A large majority of the persons with disabilities (81%) did not receive any assistance or social service within the last two years, in particular females, living in Myauk-U or Thandwe as well as persons with moderate compared to those with severe disability while 100% of the persons from the IDP camp received assistance.

Recommendation

The development of an inclusive action plan fostering inclusive initiatives should be implemented with non-governmental organizations (NGO), Department of Social Welfare (DSW), disabled people's organizations (DPO), and community based organizations (CBO) to improve the assistance coverage to all persons with disabilities in Rakhine State.

Psychological impact

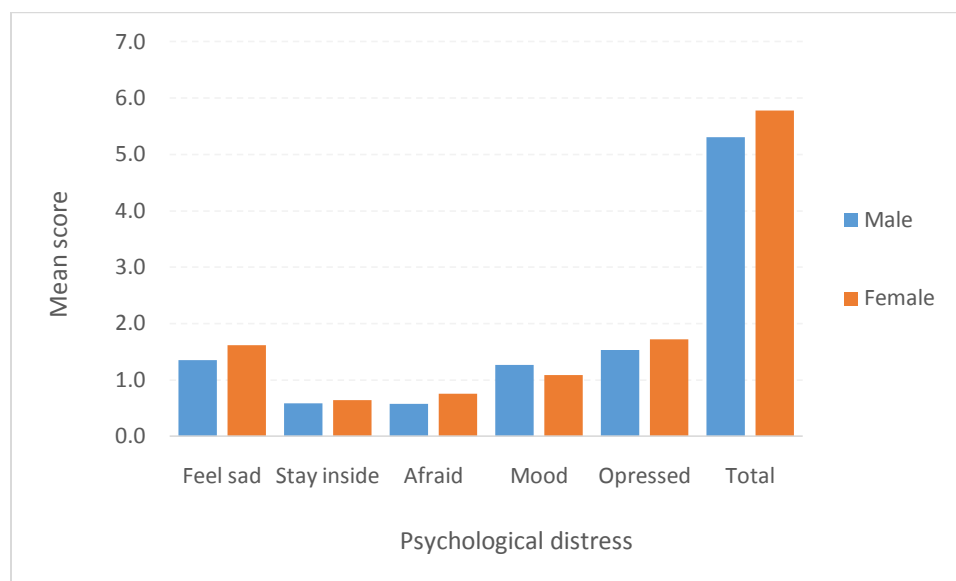
Using five different types of psychological distress and a score ranging from never (0) to very often (4), the total mean score was 5.5 (ranging from 0 to 19), without significant difference between males (5.3) and females (5.8, $p=0.316$). 'Feel sad' and 'feel oppressed' had the highest scores of psychological distress for both sexes and was overall occurring sometimes (score = 2) for a majority of persons with disabilities.

Table 9: Psychological distress score by sex, Rakhine State, Myanmar

Psychological distress	Total				Male			Female			P
	Median	Mean	sd	N	Mean	sd	N	Mean	sd	N	
Total score	5	5.5	3.4	334	5.3	3.3	169	5.8	3.4	165	0.316
Feel sad	2	1.5	1.3	334	1.4	1.3	169	1.6	1.2	165	0.051
Feel like staying inside the house	0	0.6	1.0	334	0.6	1.0	169	0.6	1.0	165	0.514
Feeling afraid	0	0.7	1.1	334	0.6	1.0	169	0.8	1.1	165	0.171
Quick change of mood	1	1.2	1.2	334	1.3	1.1	169	1.1	1.2	165	0.150
Feel oppressed	2	1.6	1.1	334	1.5	1.1	169	1.7	1.1	165	0.085

Legend: sd, standard deviation; p-value for sex difference comparison

Figure 10: Psychological distress score by sex, Rakhine State, Myanmar



Using multivariate analysis, respondents under 50 years old ($p=0.005$), living in Sittwe ($p=0.001$) and having no access to a bathroom ($p=0.001$) had a significant higher psychological distress score compared to other groups were at higher need of psychological support.

Education Department Officer:

Some students with disabilities stop attending school when they grow up because they feel ashamed.

Psychological support

The proportion of respondents who never received any psychological support to deal with their current life situation was 94%. 2% received support from an NGO, 1% from a social assistant, 1% from a peer support group and the other 2% from family, neighbors, psychologist or local organization for people with disabilities. Persons with severe disability were more likely to receive any kind of support (AOR 3.26).

The main strength to cope with the disability was the family (51%), 'had no other option' (18%), 'overcame the situation alone' (16%) and 'my spirituality' (9%).

Female, 22:

I feel depressed sometimes when I cannot do what I want, but when it happens my family usually encourages me.

Using multivariate analysis, people aged 35 years old or more (AOR 6.36), persons with severe disabilities (AOR 2.27) and from Sittwe (AOR 3.71) were more likely to state that they 'overcome the situation alone' while females (AOR 1.97) and persons with severe disabilities (AOR 22.21) were more likely to report having 'no other option'.

On the other hand, persons with severe disabilities (AOR 0.17) and older respondents of 50 years old or more (AOR 0.57) were more like not to report that their family was the main strength to cope with their disabilities.

Conclusion

94% of the respondents never received any psychological support to deal with their current life situation and mostly relied on their family (51%).

Recommendation

Further psychological support strategies interventions should focus on persons with disabilities with a higher need of psychological support in particular persons under 50 years old, living in Sittwe and having no access to a bathroom.

Access to services

Despite primary health services coverage of 69% (95%CI 65%-74%) at an average of 40 minutes distance, none of the persons with disabilities reported they had access to a rehabilitation service (0%, 0/334, (95%CI 0%-1%).

Male, 15:

*I think that the medical service is not good for us [persons with disabilities]
and our Rakhine State is very poor.*

While the proportion of respondents reporting they had access to school (at least primary) was 81% (95%CI 77%-85%) at an estimated average of 30 minutes distance, only 2% (95%CI 1%-4%) stated they had access to a vocational service (at 30 minutes distance).

The coverage for social services was 13% (at 40 minutes distance); 8% for traditional healers (at one hour distance) and 3% for psychological support (at more than one hour distance).

Figure 11: Access to service, Rakhine State, Myanmar

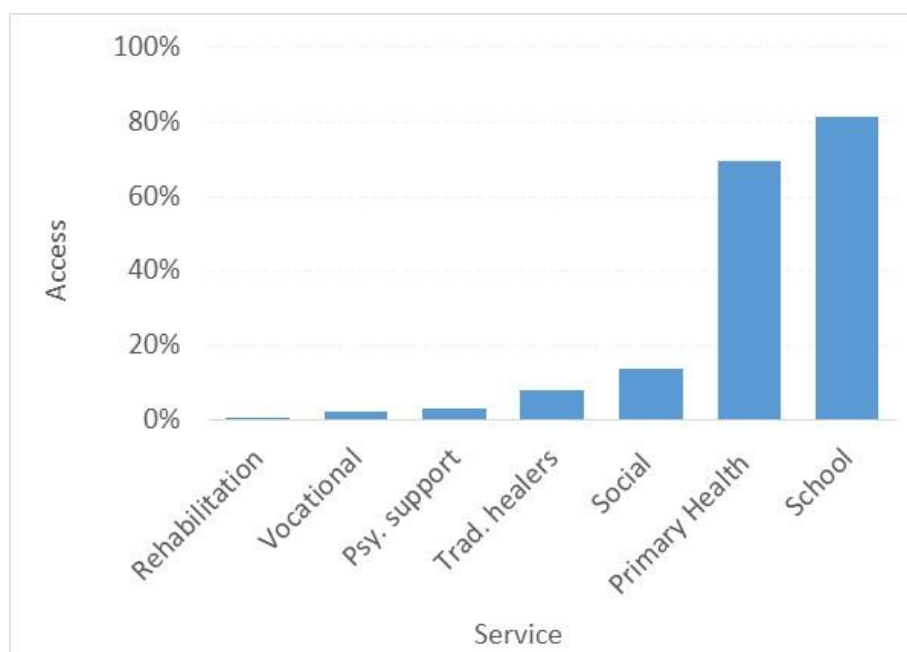


Table 10: Access coverage by service, 95%CI, Rakhine State, Myanmar

Service	N	Access coverage			Minutes
		%	lower 95%CI	upper 95%CI	
School	334	81%	77%	85%	34
Primary Health	334	69%	65%	74%	43
Social	334	13%	10%	17%	39
Traditional healers	334	8%	5%	11%	61
Psychological support	334	3%	1%	5%	70
Vocational	334	2%	1%	4%	30
Rehabilitation	334	0%	0%	1%	

Conclusion

While there was primary health services coverage of 69% and a school (at least primary) coverage of 81%, at an average distance of around 40 minutes distance, the coverage of vocational service was 2% and there was no access to any rehabilitation services.

Recommendation

The development of inclusive programs for persons with disabilities should focus on access to physical rehabilitation, vocational and social services. Mapping of available services within the State and region is recommended. Information campaigns on access to services would be an asset for persons with disabilities to promote access to health, rehabilitation, economic and education services.

Needs and barriers in access to services

Health seeking behavior, needs and barriers

Overall, 68% (95%CI 63%-73%) of the respondents faced difficulties in pursuing their health seeking behaviors (general practitioner, specialist, medication, physiotherapist, prostheses, and traditional healer). The barriers to health seeking behavior were related to the unavailability of the service (45%), lack of financial resources (27%) and distance to the service (19%). A significantly higher proportion of females (32%) experienced health seeking behavior constrained by financial difficulties than males (22%, $p=0.035$). No other sex difference was detected.

Male, 17, walking impairment:

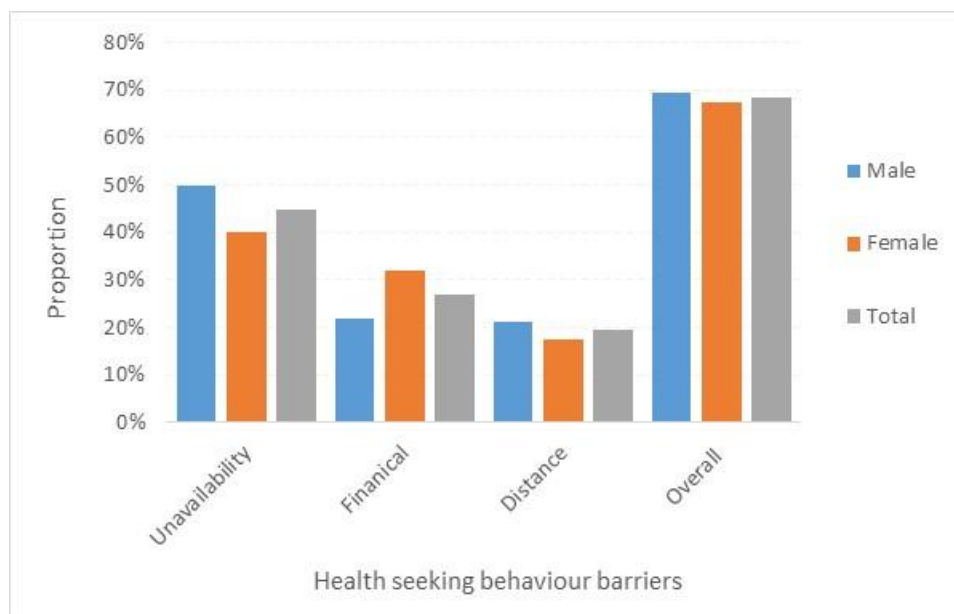
According to the doctors, my leg would be in a better situation if I was under regular medical care but because of financial difficulties my family cannot afford to follow the physician's recommendations.

Table 11: Medical services barriers, Rakhine State, Myanmar

Medical services	Total			Male			Female			p*
	n	Total	%	N	Total	%	N	Total	%	
Unavailability	150	334	45%	84	169	50%	66	165	40%	0.075
Financial barrier	90	334	27%	37	169	22%	53	165	32%	0.035
Distance barrier	65	334	19%	36	169	21%	29	165	18%	0.390
Overall	228	334	68%	117	169	69%	111	165	67%	0.701

*p-value for sex difference comparison

Figure 12: Health seeking behavior barriers, Rakhine State, Myanmar



The proportion of respondents in need of general practitioners was 64% (95%CI 59%-70%) but the access was limited by a lack of financial resource (32%), availability of the service (24%) or distance to the service (19%). Using multivariate analysis, the persons most in need of general practitioners were the persons with the most acute situation (i.e. an onset of disabilities of less than 3 years) (AOR 2.51) compared to persons with longer onset of disabilities, with hearing (AOR 2.18) and remembering impairments (AOR 2.34) compared to persons with other impairments.

The need for specialists was 55% (95%CI 50%-60%), similarly limited by the availability (52%), lack of financial resources (23%) or distance to the service (13%). The most in need of a specialist were the persons with a recent onset of disabilities (less than 3 years) (AOR 2.25),

remembering impairment (AOR 1.80) and congenital disabilities (AOR 2.30) compared to other groups.

Table 12: Access coverage by service, Rakhine State, Myanmar

Service	Needs			Barriers				
		Not available	Distance	transport / place to stay	difficult to enter the building	no money to pay the service	refused because of my disability	no difficulty
Medical								
General Practitioner	64%	24%	19%	3%	0%	32%	7%	33%
Specialist	55%	52%	18%	5%	1%	23%	3%	13%
Medication	64%	28%	13%	2%	0%	29%	4%	34%
Physiotherapist	35%	86%	4%	1%	4%	3%	3%	1%
Prostheses	24%	62%	6%	3%	15%	6%	1%	9%
Traditional healer	27%	69%	12%	4%	1%	10%	2%	4%
Other basic services								
Social service	29%	78%	10%	1%	0%	0%	0%	9%
Psychological services	3%	27%	36%	0%	9%	0%	18%	9%
Schools	38%	10%	8%	2%	2%	2%	73%	0%
Vocational training	46%	52%	8%	6%	1%	25%	31%	1%

The need for medication was 64% (95%CI 59%-69%), also limited by a lack of financial resources (29%), availability (28%) or distance too the service (13%). The most in need of medication were the persons with remembering impairment (AOR 1.98) and congenital disabilities (AOR 2.17) compared to other groups.

The need for physiotherapist was 35% (95%CI 30%-40%), principally limited by the availability (86%). The most in need of physiotherapists were male (AOR 1.91), persons with congenital disabilities (AOR 3.31) or walking impairment (AOR 3.57) compared to other groups.

Male, 52:

We have difficulty to access the hospital as it is far away. Before, we could not go to the hospital because of the conflict but now we were allowed to go with permission of the authorities.

The need for prostheses was 35% (95%CI 30%-40%), principally limited by the availability (62%) and the difficulty to enter the building (15%). The persons the most in need for a prostheses were male (AOR 2.34), and with walking impairment (AOR 4.00) compared to other groups.

Physiotherapist, Sittwe hospital:

The entrances and the stairs in Sittwe hospital are not convenient for the persons with disabilities especially those using wheel chairs. For persons with disabilities, I know only the National Rehabilitation Hospital in Yangon.

Most vulnerable populations Regarding the financial barriers to access any health services, females (AOR 2.09) compared to males and respondents living in the IDP camp (AOR 12.42) or Sittwe (AOR 9.91) compared to other districts were the most vulnerable categories in the population. No other significant risk factor was detected.

Concerning the unavailability of the services, persons with congenital disabilities (AOR 2.23) were at higher health hazard compared to other groups. No other significant risk factor was detected.

Vis-à-vis the distance to access any medical services, persons with disabilities aged of 25 years old or more (AOR 2.00) and from Sittwe (AOR 5.12) were at higher risks. No other significant risk factor was detected.

Female, 33:

I think that the quality of medical care is not good and I never heard that there is a rehabilitation center for persons with disabilities.

Other basic services

The need in social services was 29% (95%CI 24%-34%) but the access was mainly restricted by the availability (52%). The persons with congenital disabilities (AOR 5.09) were at higher needs for social services compared to persons with other types of disabilities while those from the camp were at lower needs (AOR 0.31) compared to other persons from Rakhine State.

The need for vocational training was 46% (95%CI 41%-51%), restricted by the availability (52%) and also because access was refused due to the impairment of the person (31%). Persons with disabilities aged of 15 to 34 years old (AOR 2.26) and from Thandwe (AOR 5.07) were more in need compared to other groups.

The need for school was 38% (95%CI 33%-43%) but the access was mainly refused because of the impairment of the respondents (78%). The persons with congenital disabilities (AOR 5.37) were the most in need for school while those from the IDP camp were at lower need (AOR 0.31) compared to other persons with disabilities in the Rakhine State.

Female, 27:

I never attended school. My parents did not want me to school because they thought that I could not walk properly and the school was far for me.

Conclusion

Over two thirds (68%) of the persons with disabilities in the Rakhine State had faced difficulties in pursuing their health seeking behaviors (general practitioner, specialist, medication, physiotherapist, prostheses, and traditional healer). The barriers to health seeking behavior were related to the unavailability of the service (45%), lack of financial resource (27%) and distance to the service (19%).

Recommendation

In terms of health seeking behavior, interventions to decrease the financial barriers to accessing any health services should focus on females and persons living in the IDP camp or Sittwe. Other inclusive strategies regarding the availability of the medical services should focus particularly on persons with congenital disabilities. Additionally, access to information on available service

should be improved. Regarding the distance to services, interventions should focus on persons with disabilities aged of 25 years old or more and from Sittwe.

Unmet medical needs

Overall, 75% (95%CI 69%-81%) of the persons with disabilities had unmet medical needs. Unmet medical needs were defined by the proportion of persons who needed any health facilities and who could not go there as much as needed. These were composed of persons who could not attend at all any health facility and others that should have gone more often. 43% of the respondents went to any health facilities while 36% needed to go more often. Of the 57% of the respondents who did not go, 68% needed to attend a service.

The respondents most at risks for unmet needs in health facilities or 'see the doctor' within the last 2 years were those with recent onset of disabilities (under 3 years, AOR 2.20; from 4 to 6 years, AOR 1.83) compared to those with longer onset and those with severe hearing impairment (AOR 2.87). No other significant risks factors were detected.

Conclusion

In Rakhine State, the unmet needs rate in health services for persons with disabilities was 75%. The persons most in need or not receiving appropriate medical care were those with recent disabilities and with severe hearing impairment.

Recommendation

The training of DSW workers on disability identification and the needs of persons with a recent onset of impairment is recommended, in particular disabilities starting within the last 3 years (independently of the age of the person) as they have the most acute health and rehabilitation needs.

Rehabilitation and health services

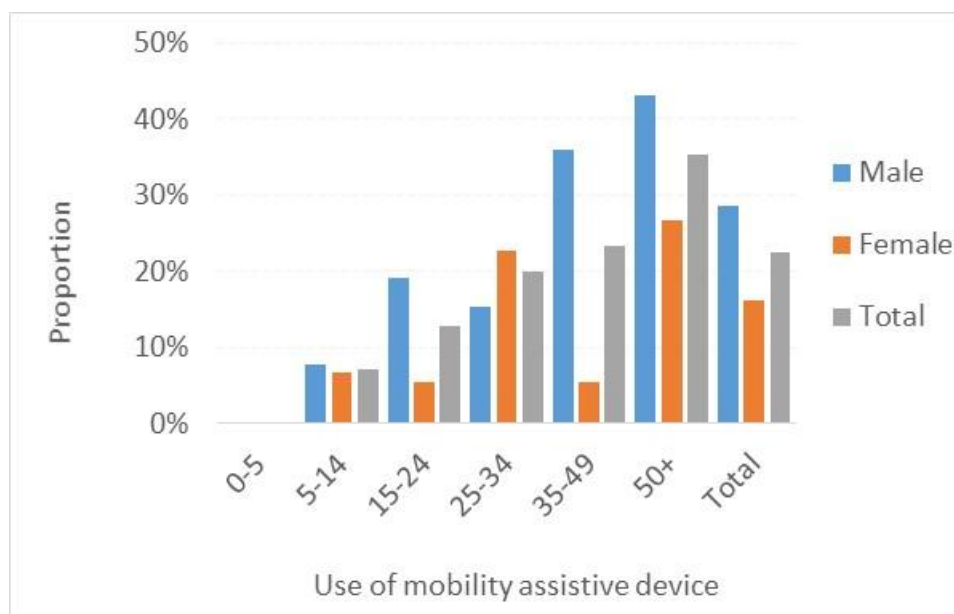
The proportion of respondents using an assistive device was 17% mainly because of a walking impairment. Only a few persons with other type of impairments used an assistive device (glasses). In persons with walking impairment, the assistive devices were mostly homemade (49%), or purchased by the family (33%), received from NGO (13%) or the hospital (5%). Among

those using a device, 65% used a walking stick, 22% used crutches, 7% used prostheses and one person had a wheel chair.

Physiotherapist, Sittwe hospital:

We let the persons use assistive devices during medical care but we don't donate them. We can just help them to contact some charity organizations.

Figure 13: Use of mobility assistive device, persons with walking impairment, Rakhine State, Myanmar



In persons with any mobility impairment, 23% used an assistive device. There was a higher proportion of males using assistive device (29%) compared to females (16%, $p=0.001$). Older persons were more likely to use an assistive device compared to younger persons with walking impairment ($p=0.005$).

Among persons with walking impairment, the most at risk for not using any assistive device were females (AOR 2.14), aged below 50 years old (AOR 3.24), and persons residing in Myauk-U (AOR 5.07) or Thandwe (AOR 3.48) compared to other place of residence (including the IDP camp).

The proportion of persons with walking impairment satisfied with their assistive device was 50% without significant difference detected between service providers (homemade, 54%; purchased by the family, 47%; received from NGO, 33%; or the hospital, 50%).

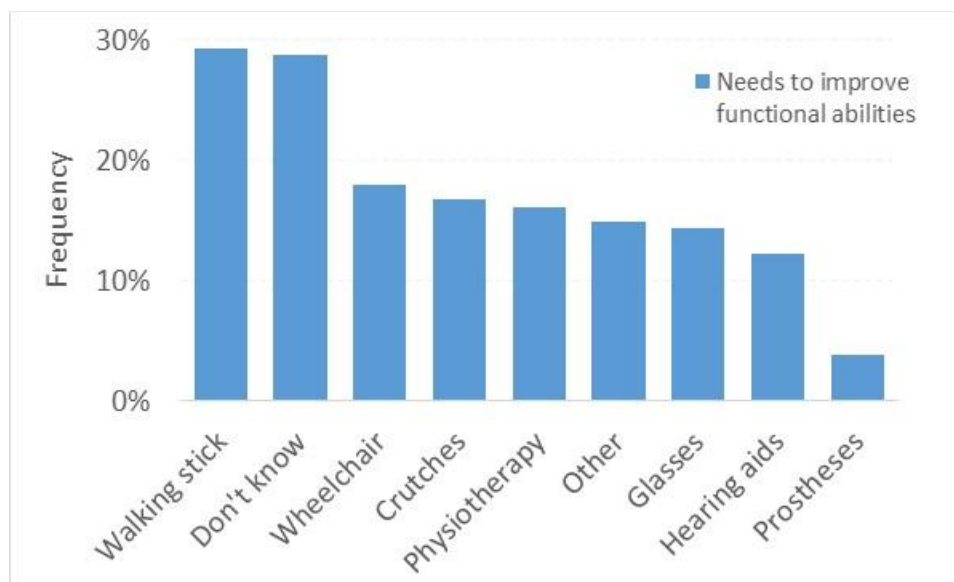
Male, 17:

I am using an assistive device, but it hurts me. Instead of using a formal walking stick, I use a hand-made walking stick made of bamboo and wood but it is uncomfortable.

For maintenance of the assistive device, almost everyone self-repairs the device (98%) except one male from Thandwe district who received a device from Yangon physical rehabilitation center and also got it repaired there.

The proportion of persons with walking impairment with a self-reported good mobility was 18%. The proportion of persons with a good mobility using an assistive device (23%) and significantly greater others not using any device (0%, $p=0.001$).

Figure 14: Needs to improve functional impairments, Rakhine State, Myanmar



The most frequent assistive devices or services needed to improve the functional mobility of the respondents were related to mobility. 46% of the respondents needed a cane, a wheelchair,

crutches or prostheses. The persons the most in need of any mobility device were male (AOR 2.04), aged of 25 years old or more and respondents from Muslim villages (any district).

Others needs were: physiotherapy (16%), glasses (14%), hearing aids (12%), or 'others' category (15%) was mainly medication. 29% of the respondent did not know any device to improve their impairment.

Conclusion

Only a few persons with disabilities used an assistive device (17%), essentially for their mobility impairment (cane, crutches). Most of these were homemade or purchased by the family and almost everyone self-repaired the device. 23% of the persons with disabilities using an assistive device reported they had a good mobility and none for others.

Recommendation

Further interventions for persons with walking impairment should focus on persons not using any assistive device, i.e. females, aged below 50 years old and persons living in Myauk-U or Thandwe districts. The most needed devices were related to mobility in particular for male, aged of 25 years old or more and respondents from Muslim villages (any district).

Community interactions

Discrimination and isolation

The overall proportion of persons with disabilities who felt that 'life is harder' compared to others or 'felt abandoned' or 'hated by the community' because they cannot do things like before the onset of disabilities was 64% (95%CI 59%-69%). No sex difference was detected (Table 13).

Overall, a majority (51%, 95%CI 46%-57%) of the persons with disabilities were feeling that life was more difficult compared to others, 7% (95%CI 4%-10%) were feeling hated by the community, 4% (95%CI 2%-6%) can no longer do the same things before the onset of disabilities and 2% (95%CI 0%-3%) felt isolated or abandoned by the community.

Overall, the most at risk for these opinions were aged between 25 to 34 years old (AOR 3.13), living in Sittwe (AOR 1.80), with severe disability (AOR 2.91), with a higher psychological distress score (AOR 1.20) and those who have unmet needs in health services (AOR 2.05).

Table 13: Discrimination and isolation, Rakhine State, Myanmar

Community discrimination	Total			Male			Female			p*
	n	Total	%	n	Total	%	n	Total	%	
Life is more difficult	172	334	51%	90	169	53%	82	165	50%	0.515
Feel hated by the community	24	334	7%	12	169	7%	12	165	7%	0.951
Can no longer do the same things as before	12	334	4%	4	169	2%	8	165	5%	0.223
Felt isolated / abandoned	6	334	2%	3	169	2%	3	165	2%	0.976
Total	214	334	64%	109	169	64%	105	165	64%	0.870

*p-value for sex difference comparison

Perception

The proportion of respondents who were feeling like ‘other people look at them differently’ was 59% (95%CI 54%-65%) without sex difference detected. The most at risk for this perception were persons with disabilities under 35 years old (AOR 2.08) and with a higher psychological distress score (AOR 1.12).

Among the persons with disabilities feeling that ‘other persons look at them differently’, 55% were feeling that other persons ‘pity them’, 24% were given help when needed, 11% ‘avoid looking at me’, and 6% were given better care. Females (11%) were receiving significantly less help when needed compared to males (17%, $p=0.029$).

Female, 33:

Our community does not have superstitious beliefs anymore about persons with disabilities but my neighbors gossip about me and insult me because I am a woman with disabilities and I want to get married.

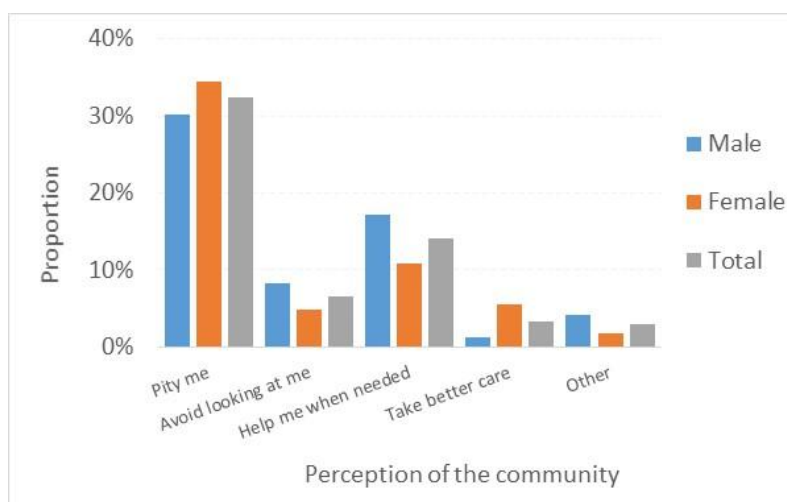
Male, 48:

I feel depressed when people make fun of me when I go out of my house. Sometimes, I want to give up my life.

The proportion of persons with disabilities reporting that people used pejorative terms to refer to them because of their impairment was 31% (95%CI 26%-36%). The most frequently

discriminated persons were under 50 years old (AOR 2.60), living in Sittwe (AOR 4.21) or in the IDP camp (AOR 5.74) and with a higher psychological distress score (AOR 1.12).

Figure 15: Community perception, Rakhine State, Myanmar



IDP camp, NGO worker, LWF:

The people without disabilities here discriminate the people with disabilities because there is no public awareness.

Table 14: Community perception and use of pejorative terms, Rakhine State, Myanmar

Community interactions		Total		Male			Female			p*
	n	Total	%	n	Total	%	n	Total	%	
Perception										
Pity me	108	334	32%	51	169	30%	57	165	35%	0.394
Help me when I need	47	334	14%	29	169	17%	18	165	11%	0.206
Avoid looking at me	22	334	7%	14	169	8%	8	165	5%	0.100
Take better care	11	334	3%	2	169	1%	9	165	5%	0.029
Other	10	334	3%	7	169	4%	3	165	2%	0.213
Total	198	334	59%	103	169	61%	95	165	58%	0.531
Use of pejorative terms										
Sometimes	67	335	20%	37	169	22%	30	165	18%	0.397
Often	37	336	11%	15	169	9%	22	165	13%	0.194
Total	105	334	31%	52	169	31%	53	165	32%	0.790

*p-value for sex difference comparison

Community participation

The community participation of the persons with disabilities was assessed using a list of four different types of activities in the community: family visits, community festivities, shopping at the market and worshipping.

As a result, there was a significant higher proportion of females (51%) compared to males (38%) who were never having family visits ($p=0.022$). Similarly, there was a higher proportion of females (52%) never attending any festivities in the community compared to males (38%, $p=0.012$) and attending worshipping places (50%, 66%, respectively, $p=0.002$) while no sex difference was detected for going to the market.

Male, 24:

It is not appropriate for girls (with visual impairment) to go out, they usually don't go out. It is only appropriate to go out for us (males with visual impairment).

The proportion of persons with disabilities never ever participating to any of all the four community events was 28% (95%CI 24%-33%). Using multivariate analysis, persons with severe disabilities (AOR 7.13), aged of 25 years old or more (AOR 1.77) and females (AOR 1.95) were more at risk of never attending any community activities at all.

Female, 33:

I never go to the festival with my husband because I am afraid that he will lose face when we walk together.

Figure 16: Never participating in any community event, Rakhine State, Myanmar

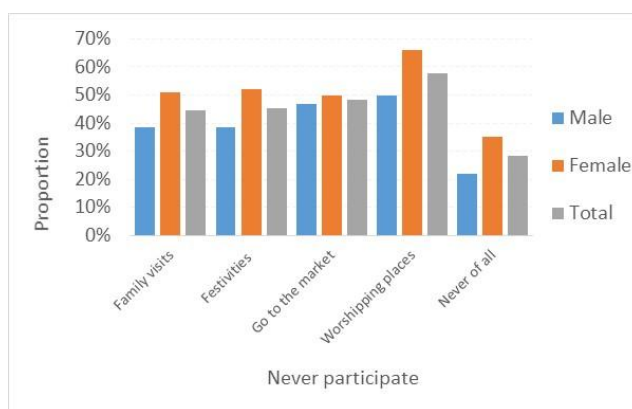


Table 15: Community participation, Rakhine State, Myanmar

Community participation		Total			Male			Female			p*
	n	Total	%	n	Total	%	n	Total	%		
Family visits											
As much	53	334	16%	31	169	18%	22	165	13%	0.210	
Almost as much	15	334	4%	7	169	4%	8	165	5%	0.755	
Just sometimes	116	334	35%	65	169	38%	51	165	31%	0.147	
Never	149	334	45%	65	169	38%	84	165	51%	0.022	
Festivities in the community											
As much	45	334	13%	26	169	15%	19	165	12%	0.300	
Almost as much	10	335	3%	3	169	2%	7	165	4%	0.186	
Just sometimes	126	336	38%	73	169	43%	53	165	32%	0.037	
Never	151	334	45%	65	169	38%	86	165	52%	0.012	
Go to the market											
As much	52	334	16%	27	169	16%	25	165	15%	0.835	
Almost as much	24	335	7%	10	169	6%	14	165	8%	0.364	
Just sometimes	96	336	29%	52	169	31%	44	165	27%	0.407	
Never	161	334	48%	79	169	47%	82	165	50%	0.589	
Worshipping places											
As much	45	334	13%	27	169	16%	18	165	11%	0.175	
Almost as much	4	335	1%	3	169	2%	1	165	1%	0.326	
Just sometimes	90	336	27%	54	169	32%	36	165	22%	0.037	
Never	193	334	58%	84	169	50%	109	165	66%	0.002	
Never participate to any activity											
Overall	95	334	28%	37	169	22%	58	165	35%	0.007	

*p-value for sex difference comparison

Male, 15:

In some places, persons with visual impairment are neglected by their community. Our stage show can benefit us a lot as many people come and recognize the capability of people with visual impairment. For example, persons with visual impairment from Rakhine can get some information and join the blind school. Moreover, people from our community can see that people with visual impairment can do various kinds of things.

Leadership role

The proportion of persons with disabilities who ever had a leadership role in the community was 16% (95%CI 12%-20%). The proportion of females (5%) ever having a role was lower than males (27%, $p=0.001$). A significant lower proportion of persons with congenital disabilities (10%) ever had a role in the community compared to persons with disabilities due to an accident (19%) or a disease (16%).

Using multivariate analysis, females (AOR 7.81) and persons with congenital (AOR 2.45) compared to other type of disabilities were less likely to have a role in the community.

Table 16: Community leader role by type of disability, Rakhine State, Myanmar

Type of disability	Total			Male			Female			p*
	n	Total	%	n	Total	%	n	Total	%	
Ever had leader role (total)	54	334	16%	46	169	27%	8	165	5%	0.000
Congenital	9	91	10%	9	50	18%	0	41	0%	0.003
Accident	13	70	19%	11	34	32%	2	36	6%	0.012
Disease	25	154	16%	19	74	26%	6	80	8%	0.008
Don't know	10	19	50%	7	11	64%	0	8	0%	0.008
Cannot have a leader role	149	295	51%	60	138	43%	89	157	57%	0.001
Don't know	99	295	34%	46	138	33%	53	157	34%	0.619

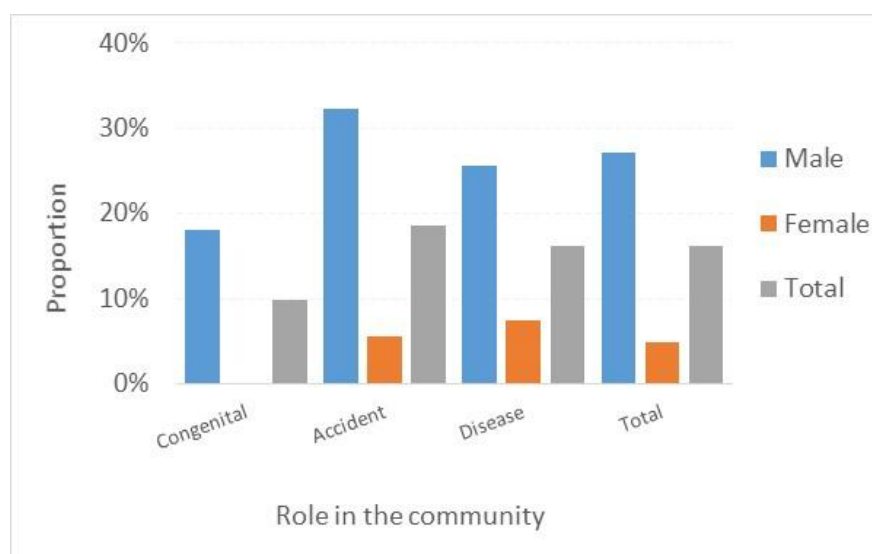
*p-value for sex difference comparison

Overall, the proportion of persons with disabilities who did not think they could have a role in the community was 51%. For those who never had a leadership role, a greater proportion of females (57%) than males (43%) thought they would never become a community leader ($p=0.001$) while the proportion without opinion was 34% without sex difference detected ($p=0.619$).

Physiotherapist, Sittwe hospital:

Since there is no public awareness about the rights of the persons with disabilities, their neighbors look at them as different persons and they feel very embarrassed.

Figure 17: Ever had any role in the community by type of impairment, Rakhine State, Myanmar



Conclusion

Over a quarter of the persons with disabilities were never attending any community events (family visits, festivities, market and worshipping places). Overall, 16% of the persons with disabilities ever had a leadership role in the community but females and persons with congenital disabilities were less likely to have any role.

Recommendation

The creation and strengthening of self-help groups (SHG) should be applied to increase social cohesion and inclusion by organizing social events, including persons with disabilities, and conduction awareness meetings for persons with disabilities, with a focus on persons 25 years or old or more, females, or with severe disabilities, so that persons with disabilities can meet and talk about their difficulties and needs.

Male, 41:

I would like to get the capacity building training and awareness raising ceremony activities.

Awareness about rights

In Rakhine State, 94% of the persons with disabilities never heard about laws for persons with disabilities and 94% have never heard about the Convention on the Rights of Persons with Disabilities (CRPD).

Female, 25:

It would be very good for us if we had a meeting place to talk together once a year.

The proportion of respondents who were member of an organization for persons with disabilities for one year or more was 2%. However, the proportion increased to 38% for persons who were members less than one year, with the average membership duration being two weeks. This finding can be attributed to study participants deciding to register with the local disabled persons' organization. The local disabled persons' organization was the study partner. Individuals, after being identified but prior to being interviewed for the study, joined the organization.

Male, 41:

I would like to get capacity building training and participate in awareness raising activities.

Recommendation

The creation and strengthening of self-help groups (SHG) should be applied to increase dissemination of information and awareness-raising on the rights of persons with disabilities.

Priorities to improve living conditions

The most frequent answers of the persons with disabilities for improving their living conditions were business/micro-credit (53%), employment (49%), physical rehabilitation (49%), medication (44%) and education (16%).

The most likely persons with disabilities to be willing to engage in business/micro-credit and employment were 15 years old or more (AOR 2.72); those most likely to have medical priorities

(for rehabilitation and medication) were persons with a chronic disease (AOR 1.86), and those most likely to have educational priorities were under 25 years old (AOR 19.14).

Male, 43:

I wish I had a permanent job, to stand on my own feet without relying on others. I feel having little value and depressed because I am only doing casual works.

Figure 18: Priorities to improve living conditions, persons with disabilities, Rakhine State, Myanmar

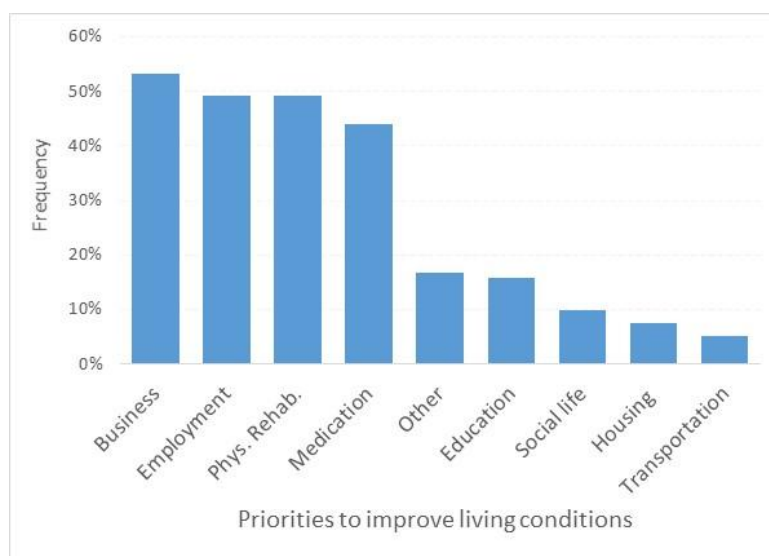


Table 17: Priorities by sex, Rakhine State, Myanmar

Priorities	Total			Male			Female			P*
	n	Total	%	n	Total	%	n	Total	%	
Business	178	334	53%	85	169	50%	93	165	56%	0.266
Employment	164	334	49%	84	169	50%	80	165	48%	0.824
Physical rehabilitation	164	334	49%	81	169	48%	83	165	50%	0.664
Medication	147	334	44%	70	169	41%	77	165	47%	0.334
Education	54	334	16%	27	169	16%	27	165	16%	0.923
Social life	33	334	10%	19	169	11%	14	165	8%	0.398
Housing	25	334	7%	14	169	8%	11	165	7%	0.574
Transport	18	334	5%	11	169	7%	7	165	4%	0.359
Psycho social support	15	334	4%	10	169	6%	5	165	3%	0.203

*p-value for sex difference comparison

Recommendation

To improve the living conditions of persons with disabilities living in Rakhine State, interventions, in terms of micro-credit, should focus on persons of 15 years old or more, interventions related to rehabilitation and medication should focus on persons with a chronic disease, and interventions related to education should focus on persons under 25 years old.

Conclusions and recommendations

The needs assessment study of persons with disabilities in Rakhine State, Myanmar, used a representative sample stratified on sex and age with snowball sampling to identify persons with disabilities for a sample of over 400 persons (including both quantitative and qualitative surveys). The study design was designed to identify and include persons with severe disabilities. The unmet needs in health and social services and high unemployment rate indicated that the persons with disabilities are prone to extreme poverty in Rakhine State.

Overall, awareness raising on the study results and subsequent training on disability inclusive development, with State level authorities (district, township and village) is recommended, especially as it relates to livelihoods and access and inclusion of persons with disabilities in educational and health programs.

Extreme poverty

The livelihood score of persons with disabilities (from a list of basic items owned by the person with disabilities' household) and an average income per person of 8 USD a month revealed very low living conditions associated with no access to clean water (31%) or a bathroom (51%).

Regarding food aid for persons with severe food shortage (15%), interventions should focus on children (under 15 years old) and persons with a severe disability.

The study showed that business, micro-credit and/or employment are the first priorities for persons with disabilities from Rakhine State.

The development of an inclusive action plan, fostering inclusive initiatives, based on the study results should be implemented with DSW, DPO, and CBO to improve the quality of life of persons with disabilities, at the state, district, township and village level. Additional workshops

with local authorities, NGO, DPO, and CBO on target interventions, identified by the study, should be implemented.

Unmet service needs

In Rakhine State, the unmet needs rate in health services for persons with disabilities was 75%. The persons most in need or not receiving appropriate medical care were those with recent onset of their disabilities and with severe hearing impairment.

The training of DSW workers on disability identification and the needs of the most recently impaired persons, basic psychosocial support, and referral mechanisms should be implemented. Moreover, taking into consideration that persons with severe hearing impairment were at higher risk for illiteracy, DSW workers should be trained for sign language and access to education and accessible communication formats/languages is recommended.

Despite a primary health services coverage of 69%, access to a general practitioner, specialist, medication, physiotherapist, or vocational training were restricted by a lack of financial resources, availability of the service and distance (most of the services are only available in Yangon for the whole country).

81% of the respondents did not receive any assistance or social service within the last two years. Upcoming assistance strategies should focus on women and persons living in Myauk-U or Thandwe districts where the aid was more scarce.

Water, sanitation, hygiene (WASH)

Half of the persons with disabilities did not have access to a bathroom and the study showed that persons without access were at higher risk for psychological distress. In order to decrease psychological distress and increase access to bathrooms, further sanitation strategies should be implemented with a focus on females and respondents living in Myauk-U district. Additionally, toilet, water points, and bathing areas must be physically accessible for persons with disabilities, especially those persons with mobility issues, assistive devices, and visual impairments.

Vocational training

While the persons with disabilities were almost 4 times more likely to currently work if they had vocational training, the need for vocational training is high but restricted by availability. Access

to vocational training was also frequently refused because of the individual's disability. Forthcoming interventions should focus on awareness raising and inclusive policies for persons with disabilities in vocational training programs in particular those with a severe disability, female, and residing in Myauk-U district where the employment rate was the lowest.

Gender issues

Overall, females with disabilities were more vulnerable than males with disabilities. They were at higher risks for illiteracy, unemployment, access to clean water, access to a bathroom, not receiving any assistance, lower community participation, not using assistive device, and having more financial difficulties to access medical services compared to males with disabilities. Focus on enabling women and girls to access services is recommended for all service providers, including Government, NGO and CBO.

Awareness

The study showed very low awareness about rights of people with disabilities (6%) and low affiliation to a CBO or DPO.

The creation and strengthening of self-help groups (SHG) should be applied to increase social cohesion and inclusion, dissemination of information, and awareness-raising on the rights of persons with disabilities.

Mapping of available services within the State and region is recommended. Information campaigns on access to services would be an asset for persons with disabilities to promote access to health, rehabilitation, economic and education services.

Persons with disabilities must be included in the provision of services, especially services essential to basic needs (primary healthcare, food distribution, WASH). This includes the consideration of persons with disabilities in a humanitarian crisis. Physical and communication accessibility must also be considered.

The recent increase in the proportion of members from an organization for persons with disabilities was a direct result of the study design using snowball sampling technique. This indicates a high desire to engage with one's peers and participate in a social organization. Emphasis on creating greater social opportunities for persons with disabilities is recommended.

Community differences

The mean age of persons with disabilities in the IDP camp was significantly lower compared to other people with disabilities. Further studies should be conducted to explain this difference.

While people with disabilities from the IDP camp had a lower livelihood condition (lower item score) compared to others, they had better access to clean water, a bathroom, and food aid compared to other persons with disabilities in the Rakhine State. Muslim communities were at higher risks for illiteracy, and Muslims from the villages had a higher need for mobility assistive devices.

Study limitations

Despite a randomization under age and sex controls, the snowball sampling technique might have detection limits for people with sensorial and intellectual impairments. Without any robust population reference distribution by type of disabilities, it is difficult to distinguish whether the technique used here underestimated some types of disabilities or not. Therefore, the snowball sampling technique might be influenced by the community perception to identify persons with disabilities, and physical impairment related to mobility might have been overrated compared to sensorial and intellectual impairments.

Further analysis on the distribution by type of impairment should be conducted to further define the population with disabilities according to age, sex, and the local environment.

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