Economic Costs of Living with Disabilities and Stigma in Viet Nam

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List of tables

List of figures

Abbreviations

ADRA	Australian Development Research Award
AusAID	Australian Agency for International Development
BMI	Body mass index
DSS	Disability and Stigma Survey
HCMC	Ho Chi Minh City
ICF	International Classification of Functioning, Disability and Health
MDG	Millennium Development Goals
MOLISA	Ministry of Labor, the Invalid and Social Affairs
PPS	Probability proportional to size
PWD	People/person (living) with disability
PWOD	People/person (living) without disability
PWSD	People/person (living) with severe disability
PWMD	People/person (living) with multiple disabilities
PWMSD	People/person (living) with multiple severe disabilities
VHLSS	Vietnam household living standard survey
WG	Washington Group
WHO	World Health Organization

Acknowledgements

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CHAPTER 01

Introduction

Introduction

This study aims at providing empirical knowledge on the situation of people living with disabilities (PWD) in Viet Nam. In particular, the study examines various forms of stigma and discrimination against PWD, and estimates of economic costs associated with living with disability and disability-related stigma at the household level. Research data were collected in six provinces, namely Lang Son, Thai Binh, Quang Nam, Kon Tum, Dong Nai, and Vinh Long as well as the country's two largest cities, Ha Noi and Ho Chi Minh City in 2011. Financial resource for research was drawn from the Australian Development Research Award (ADRA) of the Australian Agency for International Development (AusAID) and the contribution from the Institute for Social Development Studies (ISDS) which is the institution that led the research in collaboration with experts from Ha Noi Medical University and the Institute of Population, Health and Development (PHAD). The study received technical support from experts of the Nossal Institute for Global Health of the University of Melbourne in Australia.

The rationale of this research project is guided by three interrelated theoretical foundations. The first one is the social model of disability which proposes that the barriers that exist within society and the way society is organized, rather than disability, are the ultimate factors explaining the disadvantages and social exclusion of PWD from participation in the mainstream of social activities. The second one is the classic study of Erving Goffman (1963) on stigma, defined as the effect of a particular attribute that is viewed as socially discrediting; and the later work of Richard Parker and Peter Aggleton (2003) which examines how stigma is used to turn difference into inequality [1, 2]. The third theoretical foundation is the Amartya Sen's capability approach which defines that disability is based on value judgements concerning capabilities and functioning, and that disability can be seen as a capability deprivation, resulting in extra costs associated with "functioning" of PWD [3]. Sen's approach also offers a useful framework to analyse the link between disability and poverty.

In 2006, with a grant from the Ford Foundation, ISDS conducted a large-scale survey on disability in three provinces and one city of high prevalence in Viet Nam, namely Thai Binh, Quang Nam, Da Nang city, and Dong Nai. The survey evidenced widespread stigma that results in discrimination in various forms against PWD across different settings, ranging from family, community to school, hospital, workplace, and government organization. It was found that stigma is a major cause that severely limits life chances of PWD and entrenches their poverty. For example, stigma alone explains maltreatment in school of 19% of students with disabilities, marriage refusal of 16% of adults with disabilities, employment dismissal of 25% of workers with disabilities, and exclusion from community activities of 30% of PWD. A major reason for discrimination is a perception of over 70% of interviewed respondents that PWD are "abnormal" and "paying price" for sins of their "previous lives"[4].

In the rapidly growing research literature, the relationship between health-related stigma and individual socio-economic outcomes has been explored. Generally, stigma is suggested to have negative impacts on the stigmatized person's life chances in a number of dimensions, such as in education, employment opportunities, health and health care utilization. Yet, in the main, researches on stigma have been criticised for being too vaguely defined and unable to contribute to social policy. In particular, very few studies have attempted to estimate the economic costs associated with disability, including costs associated with disability-related stigma and discrimination by means of quantitative methods.

For Viet Nam, there are several available sources of data on disability and health in Viet Nam; however, none have enough information on stigma, not to mention its associated economic costs:

- The 2006 Viet Nam Living Standard Survey (VLSS) and the sample of the 2009 Census[1] have questions to identify functional difficulties

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1   15% sample data with long-form questionnaire only.

or disability (short forms of the ICF)[2]. A disability profile can be created from the 15% sample of the 2009 Census or/and the 2006 VLSS. However, those surveys as well as other available data did not have information on disability-related stigma and cost of living with disability.

- Ministry of Labor, the Invalid and Social Affairs (MOLISA) collect statistics of population with disability annually[3]. However, there is also a concern to its accuracy from experience of a previous study of ISDS on disability. More importantly, there is a difference between population with disability as defined by MOLISA and the ICF: The statistics of MOLISA includes population with disability in severe condition only as it aims to provide social services and supports to most disadvantaged group of PWD. The ICF looks at disability and health on a broad view with several health and health-related domains; it stresses on health and functioning rather than disability [5].

- Beside those two major sources, there were some small-scale studies on disability in Viet Nam, e.g. 2002-2003 study in Hai Duong and 2006 ISDS' study in three provinces and one city. However, those studies have small sample sizes and do not include information on disability-related stigma or economic costs of disability.

This study uses data from the 2011 Disability and Stigma Survey (2011 DSS). This is complex population-based survey with questionnaires at household and individual levels. The survey covers all 6 socio-economic regions of the country plus two special urban areas namely Ha Noi and Ho Chi Minh cities. Beside basic information of socio-economic characteristics of the respondents and their households as could be found in the other disability-related surveys, this survey has some unique information that can be considered as added value of the study. First, the survey includes information on stigma against PWD. Both types of stigmatization, i.e. self and external stigma, are included. This could be seen as the first large-scale

survey in Viet Nam that includes this information. Furthermore, validation of stigma measures in the context of Viet Nam was completed in a smaller scale survey. This was decided given the fact that measure of stigma against PWD in Viet Nam was not developed while international measures were not validated. This is also a unique feature of this study. Secondly, cost of disability was measured. This is also unique in Viet Nam and it allows measuring cost of living with disability as well as cost of stigma against PWD. Major findings of the study are as the follows:

Disability profile

Disability is a serious social challenge in Viet Nam. Disability prevalence is high (more than a third of the adult population aged 15 and older live with some difficulties in seeing, hearing, walking, cognition, self-care and communicating) and multi-disability is profound (58% having more than one disability). The prevalence of disability, however, varies across provinces and localities.

Aging is the major cause of disability (accounting for 46.9% of disability). Diseases is the second most common cause (40% of disability), followed by accidents (9.2%).

The prevalence of disability is slightly higher among females (40.2%) than males (36.5%). Disability is largely a phenomenon among the elderly, with prevalence among those 60 or older is as high as 75.1%, and the likelihood of having multiple disability increases with age. Urban-rural differences in disability is notable, with the prevalence is 39.8% in the rural areas and 33.7% in the urban areas.

People with disabilities (PWD) have more difficulties in getting married, and if married are more likely to have disrupted married (divorce/separation) compared to people without disabilities (PWOD).

Self-assessed health status of PWD show a much worse situation compared to PWOD, with 42% of the former rated their health poor compared to 8.5% of

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2   The 2006 VLSS includes people aged 5 or older. It has information on the following functions: seeing, hearing, remembering, and staying focus in 10 minutes, walking, self-caring (i.e. washing and dressing), and communicating. It also includes information of causes and duration of disability. The 15% sample of the 2009 Census have questions asking level of difficulty regarding the following four functions: seeing, hearing, walking and remembering.

3   Decision 179/QD-LDTBXH issued on January 5th, 2008 clearly indicated the duties of the Department of Social Protection under the MOLISA include "State management of disabled population", "update and provide statistics of target population", and "have statistics on number of severe people with disabilities and number of those who received subsidize from the Government".

the latter. Yet, one fourth of PWD never have health insurance because they do not have money to buy insurance or because they do not have trust in the scheme. Because of their poor health and disability, PWD pay considerably on health care. Health care expenditure is a financial burden on PWD and their families.

PWD have serious disadvantage in education. It is found that school attendance has a negative relationship with level of disability among youth population at all levels, and the proportion of PWD who completed education at each level is lower than those among PWOD.

About 20% of PWD in the working ages (18-60 years old) do not work. The main reason for not working reported is their poor health caused by disability. More PWD are found working in agriculture or household economy compared to PWOD; the latter are found more in public and private sector jobs. Thus, the proportion of PWD having an income, including salary and non-salary allowance or subsidies from the state and non-state entities is significantly smaller than PWOD. For PWD working in these entities, their monthly salaries are lesser compared to PWOD working on the same jobs. At the household level, household income and level of disability have an inverse relationship. PWD are found living in poorer households than PWOD.

Disability-related stigma

PWD have significantly higher stigma score and higher risk of high stigma levels than PWOD. This finding is applicable when analyses are separately made for each type of disability. Those with disability are found 1.8 times more likely to experience from high stigma level than those without disability.

In comparison to PWOD, the odds ratio of experiencing from high stigma among PWD ranges from 1.5 to 11.7 depending on types of disability and levels of difficulty. Those with remembering, communication and self- care difficulties have higher rates of stigma than those with other difficulties.

Younger PWD experience higher levels of stigma and have higher stigma score than older age groups. This may be explained by assuming that society generally expects younger people to experience less difficulty with mobility, communication and remembering when compared to older people.

Those with higher education levels consistently experience lower levels of stigma, irrespective of the type of difficulty. It can be explained that those with higher education often are more self-confident and have better social conditions as compared to those with low education levels.

Difference in stigma scores between urban and rural areas is found in the model for vision, self-care and remembering difficulties. PWD living in urban areas are more likely to have higher stigma score than their counterparts in rural areas. This can be explained by cultural differences between rural and urban areas in terms of family and social interaction in Viet Nam.

Those who are in the poorest group have highest stigma score in almost all models irrespectively the type of difficulties. This is in accordance with findings from other studies that reported stigma was more common among the poor than that among the rich.

Cost of living with disability and disability-related stigma

The cost of living with disability is substantial, accounting for about 8.8%-9.5% percent of annual household income (VND 3.991-4.343 million or about US$ 200-218).

The cost of living with disability varies by type of disability. Communication difficulty is shown to result in highest additional costs (the annual cost of living with communication difficulty was estimated to be from 24.2% to 32.9% of household income), followed by moving difficulty and remembering difficulty (from 9% to 12.3%; and from 9.3% to 11.6% of household income respectively) and hearing difficulty (from 8.5% to 9.5% of household income). Self-care difficulty was shown to lead to the lowest levels of extra of living cost (from 6.7% to 10.5% of income). The costs of living with disability increases as people have more severe impairment.

The cost of living with disability was higher among households having PWD aged 60 years old and over (from 28.5% to 30.1% of household income) compared to that among households having PWD aged less than 60 years old (from 6.8% to 7.8% of household income).

The additional costs of living with disability were higher among households with female PWD (9.5% to 12.1% of income) compared to that among households with male PWD (4.7% to 8.7% of income).

The additional costs of living with disability were higher among urban households (11.3% to 14.6% of income) compared to that among rural households (5.2% to 6.7% of income).

Stigma is found to aggravate the cost of living with disability: (i) The cost of living with disability with high level of stigma was about 4 to 5 times higher than that of living with disability with any level of stigma; (ii) stigma status explains 19.5%-31.6% of the income gaps between household with and without PWD. Stigma tends to exclude PWD from employment and income-earning opportunities, forcing them into poverty. Stigma is shown to be linked to increased risk of further disability. Exclusion from public infrastructure tends to limit the availability of sanitation, clean water, electricity, and health care services. These limitations tend to increase the risk of impairment, creating a mutually reinforcing cycle.

The findings from this study have important policy implications in Viet Nam and elsewhere. The study has addressed the cumulative relationships among disability, stigma and poverty and proved that there exits the vicious cycle among disability, stigma and poverty. The study has strengthened the arguments that addressing the extra economic costs of disability is a logical step towards alleviating elements of social exclusion for PWD and inclusion and anti-discrimination programs can, therefore, simultaneously reduce both disability and poverty. It also implies that eliminating poverty is unlikely to be achieved unless the rights and needs of PWD are taken into account.

The Government should take actions to support PWD as well as eliminate stigma against PWD. Different interventions could be implemented such as providing free or subsidized services, compensating social security benefits and promoting equality in employment and access to services for PWD. Interventions to promote the well-being and social inclusion of PWD include policies to ensure adequate income for PWD or those caring for PWD.

CHAPTER 02

The 2011 Disability and Stigma Survey (2011 DSS)

The 2011 Disability and Stigma Survey (2011 DSS)

2.1. GENERAL INFORMATION

This study uses data from the 2011 Disability and Stigma Survey (2011 DSS). It is a complex population-based survey with questionnaires at household and individual levels. The survey covers all 6 socioeconomic regions of the country plus two special urban areas, namely Hanoi and Ho Chi Minh cities. Beside basic information relating to the socioeconomic characteristics of the respondents and their households as could be found in the other disability-related surveys, this survey has some unique information that can be considered as added value of the study. Firstly, the survey includes information on the impact of stigma against PWD. Both types of stigmatization, i.e. self and external stigma, are included. This could be seen as the first large-scale survey in Vietnam that includes this information. Furthermore, validation of stigma measures in the context of Vietnam was completed in a smaller scale survey. This was decided given the fact that measure of stigma against PWD in Vietnam was not developed while international measures were not validated. This is also a unique feature of this study. Secondly, cost of disability was measured. This is also unique in Vietnam and

it allows to measure cost of living with disability as well as cost of stigma against PWD.

2.2. DEFINITION AND MEASUREMENT OF DISABILITY

This study uses the well-known framework of the International Classification of Functioning, Disability and Health, known commonly as ICF, of the World Health Organization [6]. This framework was endorsed by all 191 WHO Member States for use as the international standard to describe and measure health and disability at both individual and population levels.

For reasons of practicality, this study uses the Washington Group short set of six questions on disability to identify self-reported population with and without disability [7]. Those six functions or domains of difficulties include: seeing/vision, hearing, memory and in the ability to concentrate for more than ten minutes at any one time, walking, self-caring (i.e. washing and dressing), and communicating. The set was developed based on the ICF framework. Specific questions and response categories are provided in Box 1.

Box 1. Questions to define disability status

The following questions ask about your difficulties you may have doing certain activities because of a health problem.

1. Do you have difficulty seeing even if wearing glasses?
2. Do you have difficulty hearing even if using a hearing aid?
3. Do you have difficulty remembering or concentrating?
4. Do you have difficulty walking or climbing stairs?
5. Do you have difficulty with (self-care such as) washing all over or dressing?
6. Using your usual (customary) language, do you have difficulty communicating (for example understanding or being understood by others)?

Response categories: 1) No - no difficulty; 2) Yes - some difficulty; 3) Yes - a lot of difficulty; and 4) Cannot do at all.

The WG short set was used in the screening form, the household questionnaire, and the individual questionnaire. The WG short set in the screening form was applied to all actual and current residents of the study sites; the WG set in the household questionnaire was applied to all members of all households that have the sampled individuals; and the WG set in the individual questionnaire was applied to the sampled individuals.

A direct question, i.e. "Is this a person with disability?", was also used in the household questionnaire and was applied to all members of the household.

The study also had questions on causes and duration of each and every difficulty in the individual questionnaire.

There are several ways to define a person living with disability. The following concepts and definitions are suggested for use in this study.

- *Person living without disability (PWOD):* Persons who has "no difficulty" in any of the considered domains.

- *Person living with disability (PWD):* Persons with at least "some difficulty", i.e. "some difficulty" or "a lot of difficulty" or "cannot do at all", in at least one of the considered domains.

- *Person with severe disability (PWSD):* Persons who "cannot do at all" in at least one of the considered domains.

- *Person with multiple disabilities (PWMD):* Persons with at least "some difficulty" in at least two of the considered domains.

- *Person with multiple severe disabilities (PWMSD):* Persons who "cannot do at all" in at least two of the considered domains.

2.3. STUDY SAMPLE AND SAMPLING

The study has a nationally representative sample of the Vietnamese non-institutionalized population, both children and adults, aged 15 and above.

Geographical coverage concern

Under the recent socioeconomic development plan, Viet Nam has 63 provinces and the country is divided into 6 socio-economic regions[4]. Great socio-economic and cultural diversities were seen among those regions. Additionally, substantial dissimilarities were seen between rural and urban areas. Hanoi and Ho Chi Minh city (HCMC) are two special metropolis (city-provinces), one in the north and one in the south, that have distinctive characteristics in comparison to other provinces of the country in general and province of its region in particular. The inclusion of such variations in the sample is important and hence it is considered in the sampling strategy.

Sampling strategy

This study uses multi-stage sampling strategy given the context of Viet Nam, objectives and budget limitation of this study.

The study sample includes both population with and without disability with an over-sample of the disabled population. Screening was implemented to construct a sampling frame of both the disabled and non-disabled population. Due to the unavailability of an existing reliable model, a screening form was developed to collect information for the sampling frame.

Multistage sampling

In the first stage, all provinces of Viet Nam were stratified into special metropolis (Hanoi and HCMC) and non-special-metropolis provinces (all other provinces). Both Hanoi and HCMC from the special metropolis stratum were selected. For non-special-metropolis stratum, one province from each of the six socio-economic regions was randomly selected. Hence, province is the primary sampling unit in this study. A list of all the selected provinces is provided in Appendix 1.

In the second stage, two rural communes and four urban communes (also known as urban wards) were selected from each of the special metropolis provinces; four rural communes and two urban communes were selected from each of the non-special-metropolis provinces using probability proportional to size (PPS).

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4   Northern Uplands, Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong Delta.

In the third stage, two sub-communes (i.e. urban residential groups or rural villages) were selected from each of the selected communes using PPS. Sampling frames were constructed through screening after this stage. All residents of the selected sub-communes were approached for the screening to identify their age and disability status. Those who were younger than 15 years old were eliminated from the list. Those who were 15 years old or older were then classified and listed in two separated lists that were used as the two sampling frames for this study: a list of persons living with disability and a list of persons living without disability (using the concepts and definitions as presented above).

In the fourth stage, 22 PWD and 22 PWOD were selected from the sampling frame for population with and without disability respectively via a process of simple random sampling for the interview. The list of random numbers was generated using EpiInfo.

Sample size

Results from the 2006 VLSS show that less than 16% of the population are PWD[5]. It is presumed that this proportion has not changed and the current proportion of PWD population is still less than 16%. The sample size needed for each selected province if we wish to have a representative sample at provincial level, as recommended by sample size determination in health studies [8] is 207[6]. With study design effect set at 2, 8 provinces incorporated, and the non-response rate predicted to be 20%, the estimated sample size needed for this study is 4,140[7]. By dividing this by the number of clusters or 96 and then rounding up, we have a target of 44 individuals per cluster. Therefore, the sample size for this study is 4,224[8].

Table 1. Summary of sampling and sample

Stage	Sampling unit	Size
1	Primary sampling unit: Province	8 provinces: randomly select 1 province from each of the 6 socio-economic regions plus HN & HCMC
2	Secondary sampling unit: Commune	48 communes: stratified by rural-urban and select 6 communes from each of the selected provinces with PPS: 2 rural and 4 urban communes for HN & HCMC; 4 rural and 2 urban communes for non-special-metropolis provinces.
3	Third-level sampling unit: Sub-commune	96 sub-communes: select 2 sub-communes from each of the selected communes with PPS.
4	Ultimate sampling unit: Individual	4,224: 22 PWD and 22 PWOD

2.4. STUDY TOOLS

A screening form was developed in order to construct the sampling frames. The form is presented in Appendix 3.

A household questionnaire was developed to collect information at household level. The household head or adult who knew the most about the household and was available at the time of the interview was selected for the interview. If several respondents

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5 This was estimated based on the "difficult" threshold; the proportion went down to 3.6% if "very difficult" threshold was used, and 1% if "Cannot do it" threshold was used.

6 Estimating population proportion with specified absolute precision d=0.05, confidence level = 95%, anticipated population proportion = 0.16.

7 As (207 x 8 x 2)/(0.8) = 4,140.

8 As 44 x 96 = 4,224.

came from the same household, then the completion of only one questionnaire was required for each household. The household questionnaire is presented in Appendix 4.

An individual questionnaire was developed to collect personal information for each individual. The individual questionnaire is presented in Appendix 5.

2.5. THE PILOT AND FIELDWORK

Study questionnaires were piloted with 16 respondents in Thai Binh city, Thai Binh and Ngoc Khanh, Ba Dinh, Ha Noi between June and July, 2011. The principal investigators (PI) of the project, senior and experienced staffs of ISDS, participated in the pilot as interviewers. The questionnaires worked were deemed to be quite successful and no major change was deemed necessary. Revisions of the questionnaires were made and the questionnaires were finalized within one week after the pilot.

Six teams of a total of 6 team leaders, 5 administrative staffs, 25 field supervisors, and 90 interviewers were recruited for the study. The key role for the team leaders was the coordination of the fieldwork. The administrative staff were responsible for logistics such as booking air tickets, cars, hotels, printing the questionnaires, etc. The roles of accountants were primarily financial support and organizing the payment of team members. The most important task of field supervisors was quality assurance by monitoring the interview process, checking the completed questionnaires, and spot-checking some interviews of the assigned interviewers. The key role of interviewers was to ensure that they conducted the interview by strictly following the guidance they received from the trainers and to report problems or issues that occurred during the fieldwork. All team members were either staffs of a research institution (The Institute for Family and Gender Studies, The Institute of Sociology, The Institute for Human Studies, The Southern Institute of Sustainable Development) or 3rd or 4th year students in social sciences.

Training for all team leaders, all field supervisors, and interviewers of the team in each region (Northern, Central and Southern) was carried out in 2 days in July and August, 2011. The content of training covered not only the questionnaire but also key issues such as the definition of disability, stigma, interview skills and general preparation

for the fieldtrip. At the end of each training day, all members had a role play in pair. Team leaders and all supervisors had one day additional training covering the sampling method, financial notes and using the administrative forms. All training were facilitated by PIs.

Administrative and logistic preparation was carried out long before the survey. All communes were pre-informed about the presence of a study team on health to assure greater collaboration of potential respondents and consequently a high response rate. The contact process was conducted with the local partners at a provincial, district, ward and commune level.

The fieldwork was carried out between the end of July and September. The fieldwork started in Tien Hai town of Thai Binh province. All members of the study team were required to attend the study in this site. This initial fieldwork was conducted to allow all team members: 1) to become familiar with the questionnaires; 2) to deal with some actual challenges and problems that arose from the fieldwork; and 3) to harmonize fieldwork procedures among study teams. Three teams (North, Central, and South) then split and worked independently under the coordination of a project officer from ISDS and with ongoing technical support from the PIs.

2.6. DATA PROCESSING AND ANALYZING

2.6.1. Data entering & cleaning

Data was entered using Epi Data and single entry procedures were applied. Data entry forms were carefully created and tested within two months. Checks for validity, internal consistency, and skip patterns were carefully designed to minimum error due to data entry.

The data management unit (DMU) of ISDS took responsibility for data entry and management. Data was entered by 8 data entry clerks who were experienced data entry clerks from ISDS. One staff of the DMU was assigned to coordinate and supervise the data entry process; she was also in charge of trouble-shoot when problems occurred during data entry.

Upon the completion of data entering, data cleaning was carried out and validity and consistency

checks were then applied again. Additionally, more complicated checks were carried out.

2.6.2. Data analysis

Response rate

The response rate was very high: 99 percent of the interviews were successfully completed. There were only a few people whom the interviewers could not meet after three attempts and there were also some uncompleted interviews. None of the potential respondents refused to participate once the interviewer could meet with them.

Several reasons may have contributed to the high response rate: 1) Pre-informing by the study team to local authorities and local residents about the presence of the study team; 2) Great collaboration from local authorities and collaborators; 3) Construction of the up-to-date sampling frames that included actual residents of the study sites; those who do not actually live in the study sites, such as those who were studying or working in other provinces, were not included; 4) Re-informing by local authorities about the presence of the study team shortly before its presence (few days) and ongoing requests for cooperation of the study team on various topics.

Finally, a total of 23,460 households were interviewed for screening and 4,093 respondents from 3,720 households successfully completed the main interviews. A completed interview in this context means the respondent completed individual questionnaire and the household questionnaire was also completed by that respondent or someone else in the household.

The response rate was very high: 99 percent of the interviews were successfully completed. There were only a few persons whom the interviewers could not

meet after three attempts and some uncompleted interviews. None of the potential respondents refused to participate once the interviewer could meet with them.

Design effect

As this study used a complex multistage sampling design, design effect should be considered. The use of survey procedures that take the complex sample design into account in analyses is strongly recommended in on projects like this. In practice, most software packages offer analysis of survey procedures. The svy procedure in STATA is recommended due to its precise calculation for variance estimates, low cost, and a variety of survey procedures that could offer.

Variables needed to declare the design (for use in svyset) in STATA were generated and included in the dataset. The svyset syntax for descriptive analyses is:

svyset prov [pweight=weight], fpc(fpc1) strata(strata1) || /// commune, fpc(fpc2) strata(urban) || suid, fpc(fpc3) || /// _n, fpc(fpc4) strata(a12)

For multivariate analysis, use:

svyset prov [pweight=weight], strata(strata1) || /// commune, strata(urban) || suid || _n, strata(a12)

Weighting

Sampling weight was estimated. It is the inverse of the probability of an observation being sampled. The weight was adjusted to match population size to size of population aged 15 or older as reported in the most recent 2009 Census.

CHAPTER 03

Disability Profile

Disability Profile

3.1. DISABILITY PREVALENCE

3.1.1. Disability prevalence

Findings from the population-based sample survey

More than a third of the adult population aged 15 or older live with some difficulties in seeing, hearing, walking, cognition, self-care or communicating. The prevalence in each of the six life domains is presented in Table 2. The population of people with severe disabilities accounted for about 1.6% of the total adult population when 6 domains were used. Of these issues, sight issues were the most prevalent, followed by walking and cognition[9]. However, when moderate to severe disability is considered, problems with walking were most prevalent. This pattern of disability is very similar to trends found in the 2009 Census data [9].

The difference of disability prevalence between the measurements using the 4 and 6 life domains of disability is minor. The prevalence of disability using the 4 life domains was 38.64%, which is very close to 38.87% when 6 domains were used. Similarly, the prevalence of severe disability was 1.24% when 4 domains were used and 1.61% when 6 domains were used. For this reason and simplicity of information, 4 domains will be used in the following sections of this report.

The occurrence of multiple-disability is profound. Findings from this study show that about a fourth of the adult population or more than half (58%) of the PWD population has at least some difficulty in more than one domain. Again, this finding is very similar to the findings of the most recent Census.

Table 2. Prevalence of disability by domain and degree of difficulty

Core domains	Degree of difficulty		
	At least some difficulty	At least a lot of difficulty	Unable/ Cannot do at all
Seeing	27.1	3.8	0.0
Hearing	12.5	2.3	0.3
Walking	20.3	5.7	0.8
Cognition	16.6	2.4	0.5
Self-caring	3.5	2.2	1.1
Communicating	4.5	1.5	0.5
Four domains[10]	38.4	9.6	1.2
All six domains[11]	38.5	9.7	1.6
Multiple domains[12]	23.0	4.1	0.9

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9   Cognition represents "remembering or concentrating" throughout this report.

10 This is the group of the first 4 life domains (i.e. seeing, hearing, walking, and cognition) together. Persons who have difficulties in at least one domain fall into this group.

11 This is the group of all 6 life domains together. Persons who have difficulties in at least one domain fall into this group.

12 This is another measure reflecting multi-dimensionality of disability. Persons who have difficulties in more than one domain fall into this group.

There is a high variation of disability prevalence across surveyed provinces. Quang Nam has the highest disability prevalence at 61%; Thai Binh, Kon Tum and Dong Nai have very similar rate of disability prevalence at around 45%; and the lowest rates are found in HCM city, Ha Noi, and Vinh Long at 22%, 18%, and 17% respectively. When severe disability is considered, Kon Tum, Quang Nam and Thai Binh stand out as provinces with the highest prevalence of disability.

Figure 1. Prevalence of disability by type and province
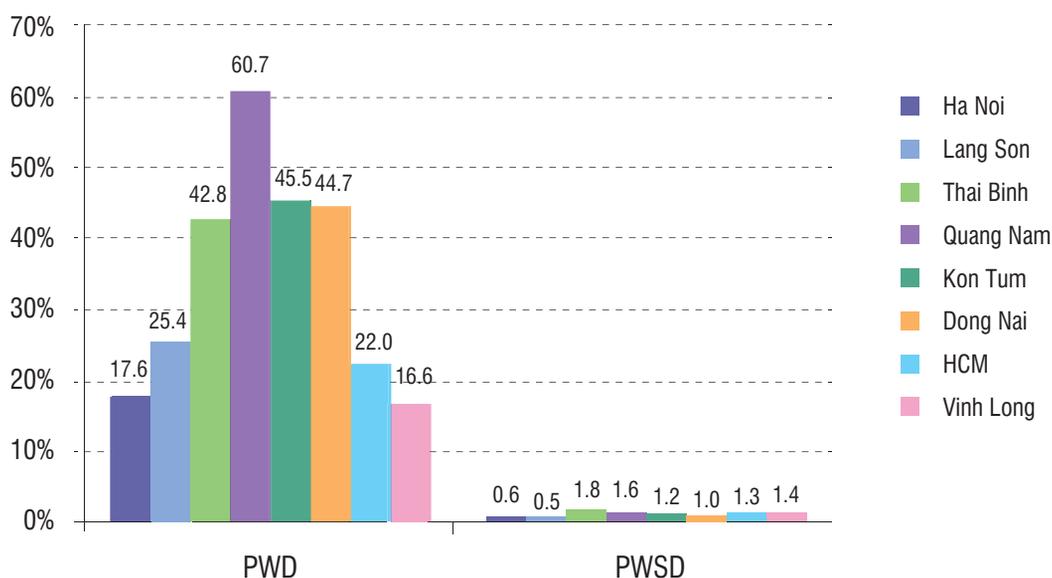
Findings from the screening

The screening data shows that the prevalence of disability among adult population aged 15 or older is 27.0% in the study sites. This rate is significantly lower than the rate found from the sample data. There are also great variations of disability prevalence by province. Except for Ha Noi, disability prevalence detected in other provinces from the screening data is also smaller than that found in the sample data. On the one hand, the screening data is more accurate given its larger sample size. On the other hand, the sample data is more accurate because the household head or representative would answer for absent household members in several cases under the screening exercise while the respondents answer themselves in the sample data.

Prevalence of disability in comparison to findings from other national surveys

The prevalence of disabilities found in other national surveys is even smaller. The prevalence of disability found in the 2009 Viet Nam Population and Housing Census sample data was 7.8% [9] and the 2006 Viet Nam Living Standards Survey (VLSS) was 15.8%.

Possible reasons for the difference in disability prevalence among the surveys and reassessment of the disability prevalence

There are significant differences in disability prevalence among the large national-scale surveys. This issue leads to two big questions: 1) what are the reasons for the differences?; and 2) what is the disability prevalence in the country? Differences of the prevalence of disability found in different sources of data is presented in Figure 2 bellow.

Figure 2. Prevalence of disability of adult population aged 15 or older by different sources of data
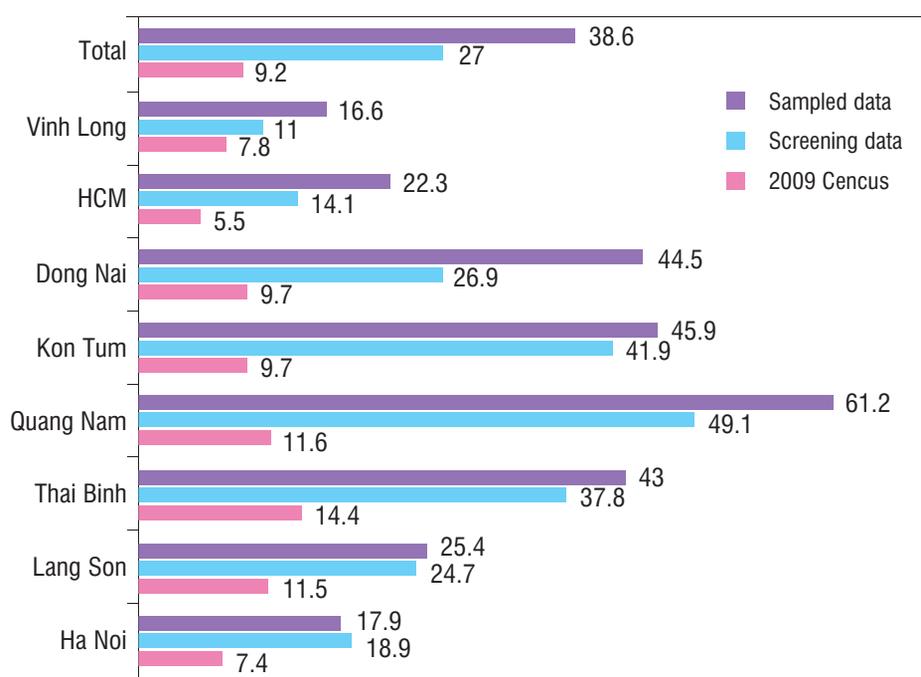
The difference in the number of domains used to identify disability status has contributed to this variation, but only in very minor way. Our findings of the disability rate using the 4 and 6 life domains earlier have shown this; analysis of the 2006 VLSS showed a similar finding [9].

The difference in the age range of the study population also contributed to this variation but its contribution to this difference is also small. The age range of the population in the 2009 Population and Housing Census is 5 years or older while it is 15 years or older in this study and the 2006 VLSS. When limiting the age range of the Census data to 15 years or older, the prevalence of disability increased to 9.2% which is not much higher than the 7.8% for population aged 5 or older because the prevalence of disability is very low at young ages.

The great variation of disability by geographical region is most likely an important factor contributing to the significant variation of disability prevalence among the available surveyed data. Although all of the available surveys are national representative, they are still only sample surveys, i.e. not all geographical units are included in the survey. This survey and the 2006 VLSS do not include all provinces of the country. The 2009 Census sample data size is huge at 15% of the total population and

it includes all provinces but it still does not include all districts of the country. Those studies used multi-stage sampling and they were based on the population size of the sampling geographical unit while ignoring the disability prevalence in each unit. If disability is equality distributed among all sampling unit in the same sampling stage, weighted results from those surveys will reflect an accurate picture of the disability prevalence. Unfortunately, disability is not equally distributed. Provinces like Thai Binh have many war veterans and a higher prevalence of disability in this province in comparison to other provinces in the same region is expected. Quang Nam is also a special province where a lot of bombs from the American war time still remained and people living in this province are still suffering from that; a higher prevalence of disability in this province is also expected. Difference in disability prevalence between the screening data and sample data of this same survey and their variation by province provides another practical good example for this argument.

The theoretical principle is that the larger the sample size and the larger the geographical coverage of the sample, the more accurate the findings of the prevalence of disability. Under this principle, the prevalence found in the 2009 Census data at 9.2% and 9.8% for adult population aged 15 and aged 18

or older respectively would be the best estimates of disability prevalence among adult population. The high estimates of disability prevalence found in this study are most likely contributed by the presence of provinces with high disability prevalence including Thai Binh and Quang Nam. On the other hand, the surveys with smaller sample size like this survey has its own advantages as it may have better quality interviewers, better training for the interviewers, more layers of field supervision, and consequently higher data accuracy or reliability.

Given the above reasons, it is likely that none of the current national surveys would have provided a reliable figure on prevalence of disability in the country. It is a great challenge to deal with all of the above constraints in order to get a reliable estimate of disability prevalence at national level. Nonetheless, these data sources have provided great data resources to study disability. Regardless of the variation in the prevalence of disability, patterns of disability, e.g. variation of disability

prevalence by socioeconomic and other factors, found in this study are very similar to that found in the 2009 Census sample data and the 2006 VLSS data. Moreover, data from this study will provide further information that was not available in either the 2009 Census or the 2006 VLSS data.

3.1.2. Main reason of disability

Given the nature of the ICF measurement, it is not strange when it is found that half of the disability is caused by 'being old'. About a quarter of the respondents reported that their disability is caused by disease. Accidents were shown to be the third main reason for disability, especially in limiting the ability to walk. Although the American war ended a long time ago, its consequences are still present in the disability data; War and agent orange, which is also war-related, is the fourth most common reason, with about 5% of the population with disabilities, reported this as the main cause for their disability.

Figure 3. Main self-reported reasons of disability (%)
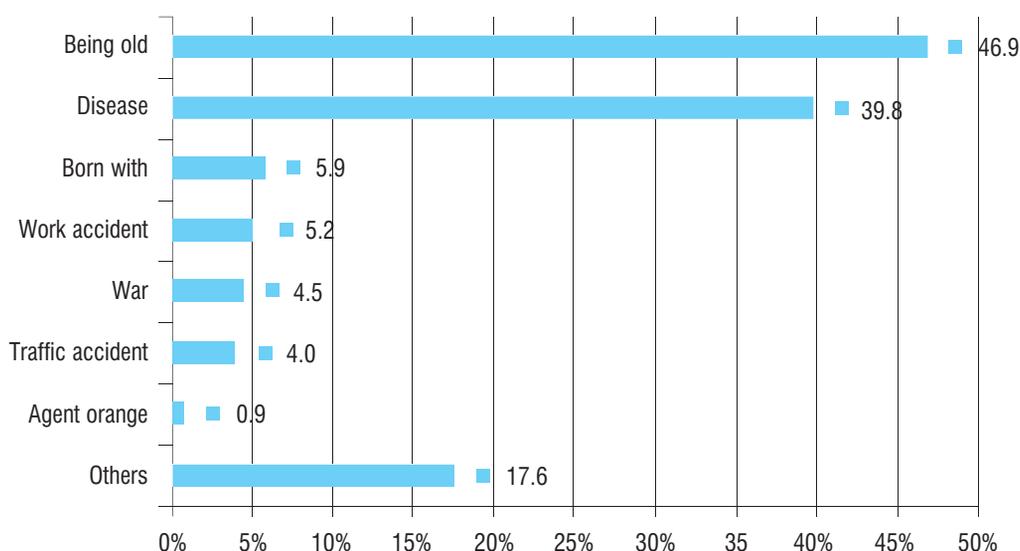
Excluding people reporting old ages as the main reason for their disability, more than half of the PWD reported diseases as the main reason for their disability. There is a higher share (about 10% more) of people reporting disease as the main reason for their disability among those who have walking difficulties than among those who have difficulties in the other domains. There is a greater share of PWD who were being born with communicating and self-caring difficulties while the share is smallest

for seeing and walking difficulties. The likelihood of reporting an accident as the main reason for a disability is higher among those who have walking and self-caring difficulties. The likelihood of reporting war as the main reason for as the reason for a disability is higher among those who have hearing and cognition difficulties, followed by those who have seeing, walking, and communicating difficulties.

Figure 4. Main self-reported reasons of disability after exclusion of being old by disability domain
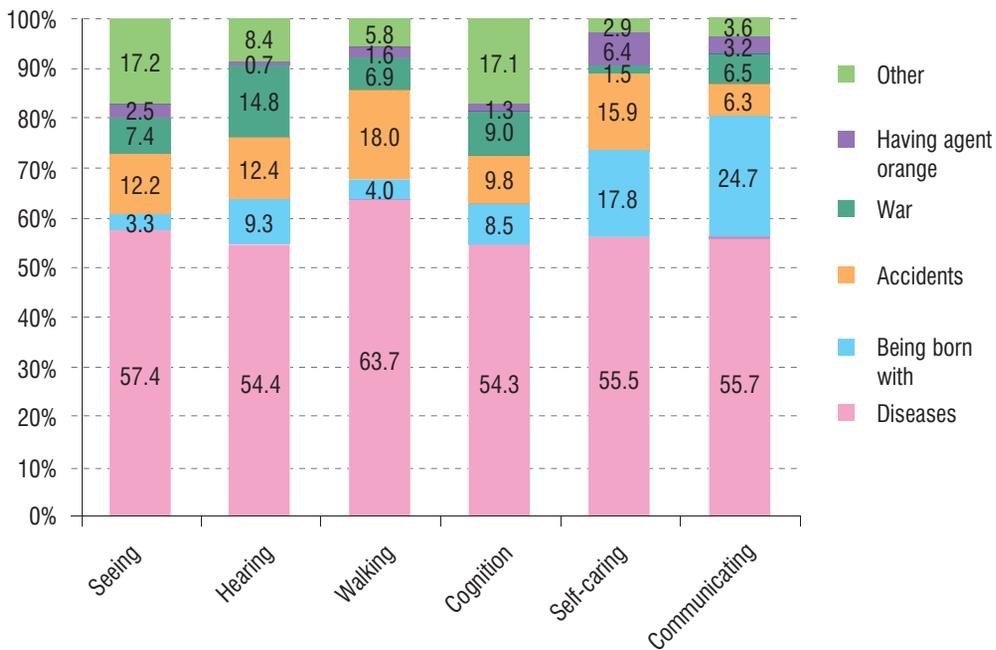
The above picture changes substantially when severe disability is examined. There is a much greater variation in the main reason for severe disability by the domain of difficulties. Slightly more than half of people with cognition, self-caring, and communicating difficulties still reported diseases as the main reason for severe disability; but was reported by the majority (almost 90%) of people with seeing difficulties, while it was reported by less than half of people with walking difficulties and only a quarter of those with hearing difficulties. Accident was reported as the main reason contributing to severe disability in cognition and self-caring. War was reported as the main reason for many people with severe vision disability while Agent Orange was reported as the main reason for a large share of people with severe a communicating related disability.

Figure 5. Main self-reported reasons of people who have severe disability
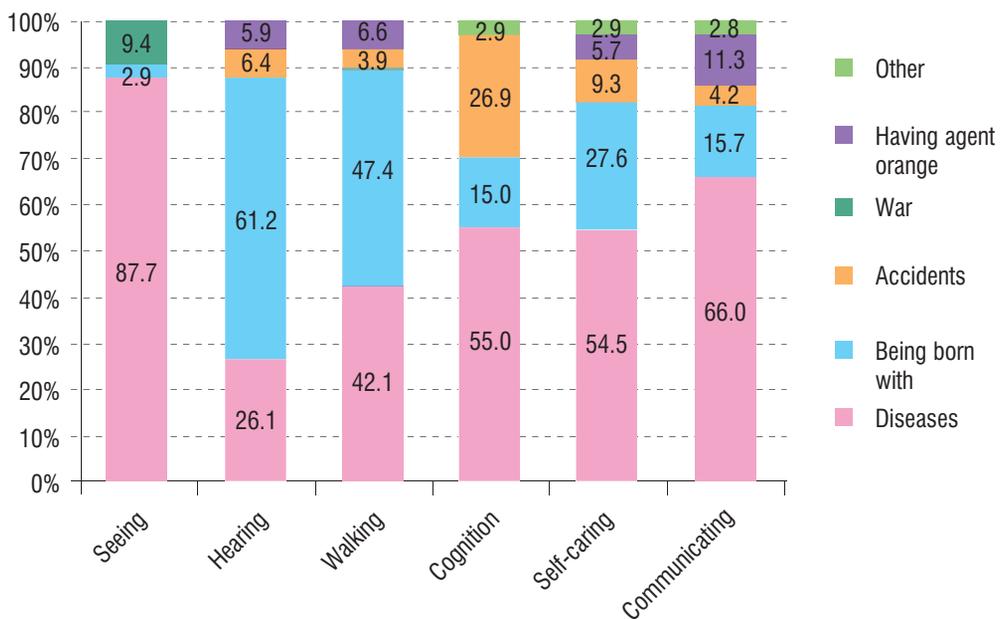
3.1.3. Gender difference of disability

The prevalence of disability is slightly higher among females than it is among males and this is observed in almost all domains. The prevalence of disability among females is 40.2% while it is 36.5% among males aged 15 or older. This pattern is similar to what was found from the 2009 Census data [9].

Figure 6. Prevalence of disability by domain, degree of difficulty, and gender
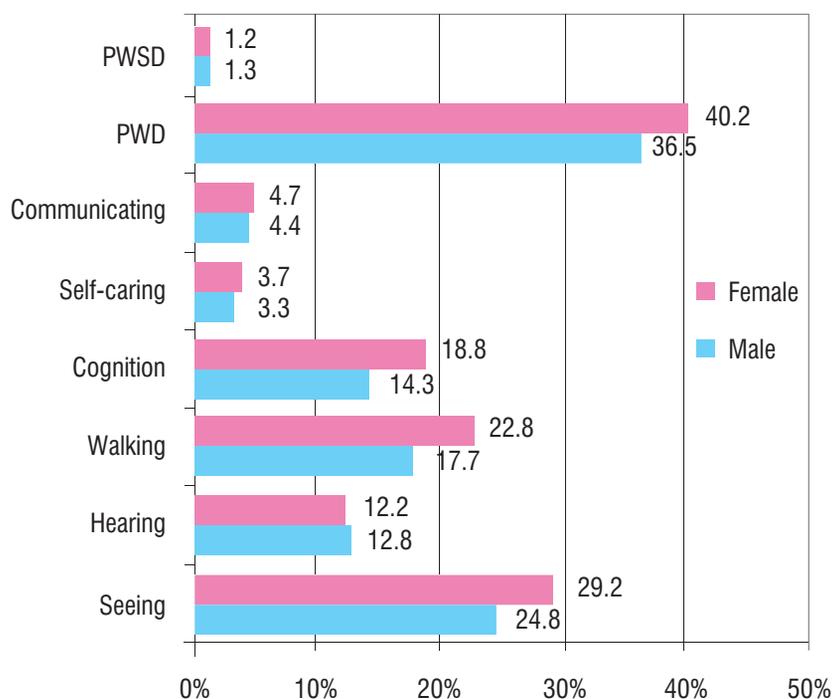
3.1.4. Age variations of disability

Disability is largely a phenomenon among the elderly. The prevalence of disability among the elderly aged 60 or older is as high as 75.1%, while it is only 35.3% among the middle age, i.e. 25 to 59 years old, population and 16.6% among youth aged 15 to 24 years old [10][13]. Besides, it is also found that the likelihood of having multiple disabilities increases as age increases; the proportion of youth population with disabilities having multiple disability is very small while the majority of the elderly with disabilities live with multiple disability.

Table 3. Prevalence of disability by domain, degree of difficulty and age

	Core domains					
	Visual	**Hearing**	**Walking**	**Remembering**	**All four**	**Multiple domains**
At least some difficulty						
Male						
15-24 years	6.8	7.1	3.4	5.4	16.9	4.3
25-59 years	21.7	7.8	14.9	11.2	32.9	14.8
≥ 60 years	61.6	42.5	48.9	40.0	78.1	62.6

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13 The Law on the Elderly defines elderly as persons aged 60 or older (GoV, 2009).

Table 3. Prevalence of disability by domain, degree of difficulty and age

	Core domains					
	Visual	Hearing	Walking	Remembering	All four	Multiple domains
At least some difficulty						
Female						
15-24 years	12.8	1.2	1.6	3.6	16.2	2.3
25-59 years	25.3	9.1	19.4	16.7	37.5	20.2
≥ 60 years	59.1	34.2	55.6	40.4	72.5	59.6
All people						
15-24 years	9.5	4.4	2.6	4.6	16.6	3.4
25-59 years	23.6	8.5	17.3	14.1	35.3	17.6
≥ 60 years	60.2	37.9	52.5	40.2	75.1	61.0
Cannot do at all						
Male						
15-24 years	0.0	1.4	0.2	1.4	1.4	1.4
25-59 years	0.0	0.1	0.8	0.3	0.9	0.3
≥ 60 years	0.1	0.8	2.5	0.8	2.7	0.7
Female						
15-24 years	0.0	0.2	0.1	0.2	0.3	0.2
25-59 years	0.2	0.2	0.4	0.5	1.1	0.2
≥ 60 years	0.2	0.2	2.0	0.7	2.7	0.2
All people						
15-24 years	0.0	0.9	0.1	0.9	0.9	0.9
25-59 years	0.1	0.2	0.6	0.4	1.0	0.2
≥ 60 years	0.2	0.4	2.2	0.8	2.7	0.4

Distribution of age-specific prevalence rates of disability shows that disability prevalence remains low, i.e. around 10% or less, until late an individual reaches their late 30s or early 40s, but then increases sharply after that. This age threshold is very similar to what was found in the 2009 Census data [9]. Another finding from this pattern that is similar to outcomes from the Census data is that the prevalence of seeing difficulties was also higher than the other types of disabilities.

Figure 7. Age-specific prevalence by type of disability
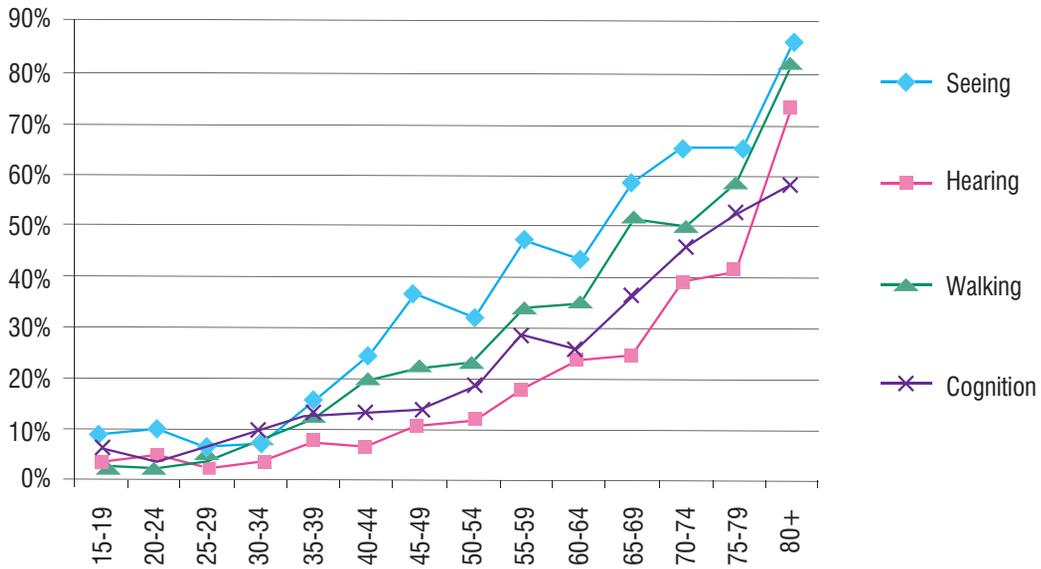
3.1.5. Urban-rural differences in disability

The majority of the PWD population aged 15 or older live in rural areas: 80% and 88% of the PWD and PWSD respectively live in rural areas. The high proportion of rural residents is mostly contributed by the population distribution within the country [11]; the proportion of the PWOD aged 15 or older living in rural area is also as high as 75%. Nonetheless, the prevalence of disability in rural areas is still higher than that in urban areas: the prevalence is 39.8% in the rural areas while it is 33.7% in the urban areas. These findings suggest that rural areas still need greater attention from programs or interventions supporting PWD.

Figure 8. Prevalence of disability by domain and urban/rural place of residence
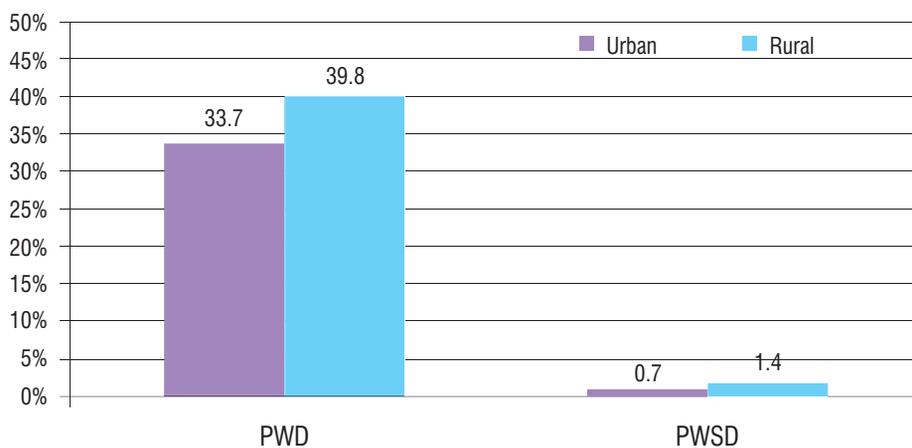
3.1.6. Disability and living arrangement

Living alone is more common among the adult PWD than the adult PWOD, especially in old age. Given the greater need for care and support from their families, those findings suggest that difficulties or disadvantages of the PWD are amplified with lower availability of such support.

Data suggests that while people aged 15-59 may not have a great demand for social support from the Government as the majority of them live with more

than one family member who might be able to help them; the elderly PWD and especially the PWSD have a much greater demand for social support from the Government. While only 7% of elderly PWOD live alone, about 14% and 19% of the elderly PWD and PWSD respectively live alone.

Figure 9. Proportion of people living alone by disability status and age
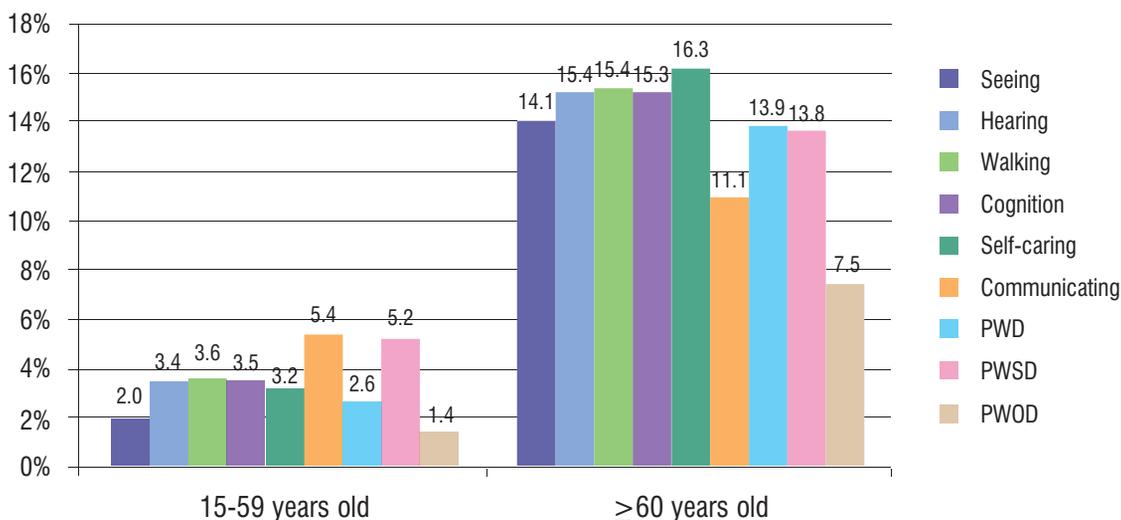
3.2. DEMOGRAPHIC CHARACTERISTICS OF POPULATION WITH DISABILITIES

3.2.1. Gender

There is no significant difference in proportion of female population between populations living with and without disabilities: for all of the three considered groups, females account for half of the population.

Figure 10. Proportion of female population by disability status

3.2.2. Age

Compared with the PWOD, PWD is much older and PWSD is the oldest population. The shapes of the population pyramids of the three groups of population presented in Figure 11 bellow clearly show the difference: while the PWOD still have a broad-based population pyramid, the PWD and PWSD have much higher proportions of people in both the middle and older age groups respectively.

36

Figure 11. Population pyramids of population with and without disabilities

	PWOD Mean=36, Median=34		PWD Mean=52, Median=52		PWSD Mean=56, Median=58	
	Female	Male	Female	Male	Female	Male
80+	0.1	0.1	8.1	8.0	16.7	27.6
75-79	0.6	0.4	3.8	3.7	4.0	0.7
70-74	1.3	0.2	5.1	6.0	9.3	2.4
65-69	1.2	1.7	6.4	5.6	6.4	0.0
60-64	4.6	2.6	7.3	8.5	1.5	1.8
55-59	4.6	4.0	11.0	12.0	23.0	23.0
50-54	8.5	10.5	12.3	11.9	8.8	6.4
45-49	8.5	8.5	12.9	11.3		4.5
40-44	10.1	12.2	9.7	11.1	13.1	0.0
35-39	12.1	10.4	8.3	5.1	1.7	1.7
30-34	13.4	12.3	4.9	5.0	5.2	6.3
25-29	13.9	11.7	4.0	2.9	9.4	6.7
20-24	10.3	8.4	1.5	4.8		0.0
15-19	10.8	17.0	4.6	4.1	3.7	19.1

3.2.3. Marital status

Findings from this study show that the PWD have more difficulty getting married. In all age groups the proportion of the never married people among the PWD is significantly higher than that of the PWOD. On the other hand, the proportion of people who have disrupted marriages, i.e. divorced, separated or widowed, is also higher among the PWD comparing to the PWOD, especially at older ages.

Figure 12. Marital status of the populations living with a disability and multiple disabilities and population without disabilities

Legend: Divorce/Separated, Widow, Currently, Never married
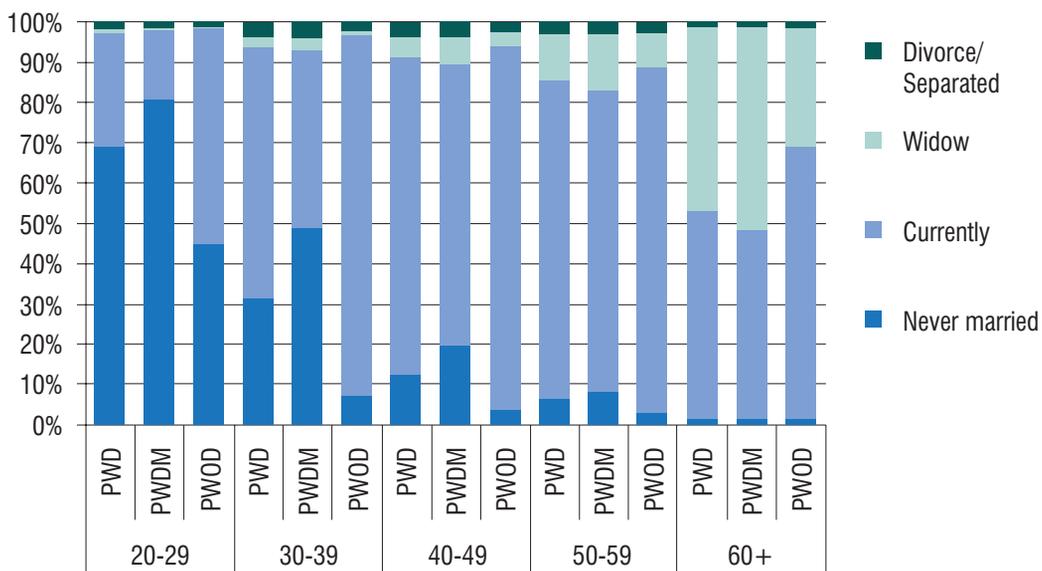
3.3. HEALTH

3.3.1. Self-assessment of current health status

The PWD and especially the PWSD rated their current health status much worse than the PWOD. While more than one-third of the PWOD reported good health, there were only 8.7% of the PWD and less than 1% of the PWSD reported good health. The same message is seen while looking at the self-assessment of poor health: 8.5% of the PWOD reported poor health while 42% of the PWD and nearly 90% of the PWSD reported poor health. Those results show greater health disadvantages of the PWSD compared to non-PWD population; the results are expected given the working concept of disability.

Figure 13. Self-assessment of current health status by disability status
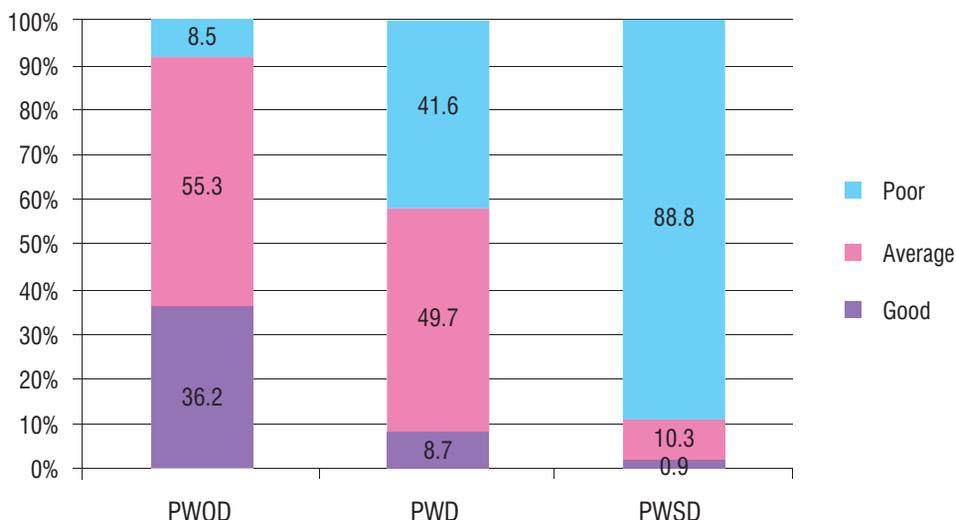
3.3.2. Body mass index (BMI)

Body mass index (BMI) is estimated for youth (15 to 24 years old), older adult population (25 to 50 years old), and elderly population (60 years old or older) and difference by disability status is assessed. The WHO cut-off points for Asian and Pacific adult population [12] are used for classification of underweight and overweight.

Findings from this study show very different pictures between the PWOD and PWD. While youth PWOD has a high prevalence of underweight, youth PWD and especially youth PWSD are facing a high prevalence of overweight and obesity. Overweight and obesity rises significantly then the PWOD move to older ages but the opposite direction is found among the PWSD. While the PWSD elderly does not face the situation of high prevalence of overweight and obesity, they face a very high prevalence of underweight with almost two-third of them are underweight.

Those findings indicate very different needs of nutrition care for different groups of the PWSD compared to the PWOD population. It is anticipated that limitation of physical movement of the PWSD would be associated with high prevalence of overweight and obesity in young ages; that would result in greater likelihood of getting ill and poorer health; and that would further result in high prevalence of underweight in the old ages. Nonetheless, this study cannot provide explanations for those different patterns of overweight, obesity and underweight; this is an important issue that may have important implications for better health of the PWSD and hence further studies are strongly recommended.

Figure 14. Body mass index by population groups and disability status
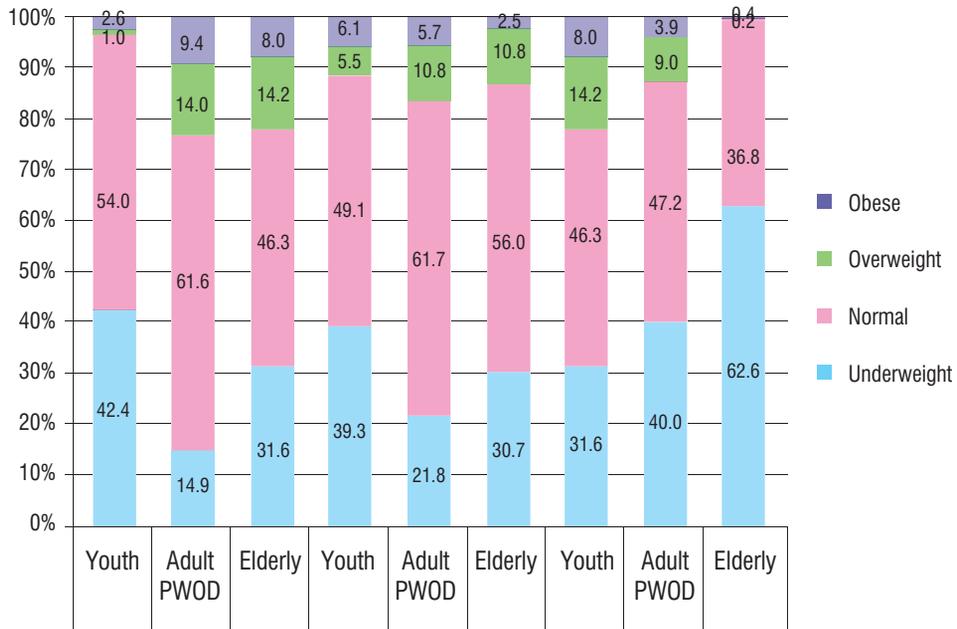
3.3.3. Health risk behaviors

Two health risk behaviors namely a history of smoking and a history of drinking were assessed in this study. A respondent will be classified as a smoker if s/he says yes to question "Have you ever smoked cigarette or pipe?" A respondent will be classified as a drinker if s/he says yes to question "Have you ever finished (drinking) more than a glass of beer or a cup of liquor?"

In general, this study finds that males are much more likely to get involve to health risk behaviors of smoking and drinking than females. This finding is very similar to what was found in other data like two rounds of the survey assessment of Vietnamese

youth [13] or the global adult tobacco survey in Viet Nam [14]. For this reason, the following analyses are applied to females and males separately.

Among the male population, it is found that the PWD are more likely while the PWSD are slightly less likely to ever-smoked than the PWOD. Slightly more than a half of the PWOD have ever smoked while two-third of the PWD have ever smoked and slightly less than a half of the PWSD ever smoked. The PWSD are also less likely to ever drunk than the PWOD, but there is no significant difference in ever drunk behavior between the PWD and the PWOD. The prevalence of ever drunk is about 50% among the PWSD, but it is close to 80% among the PWD as well as the PWOD.

Figure 15. Proportion of males smoking and drinking by disability status

39
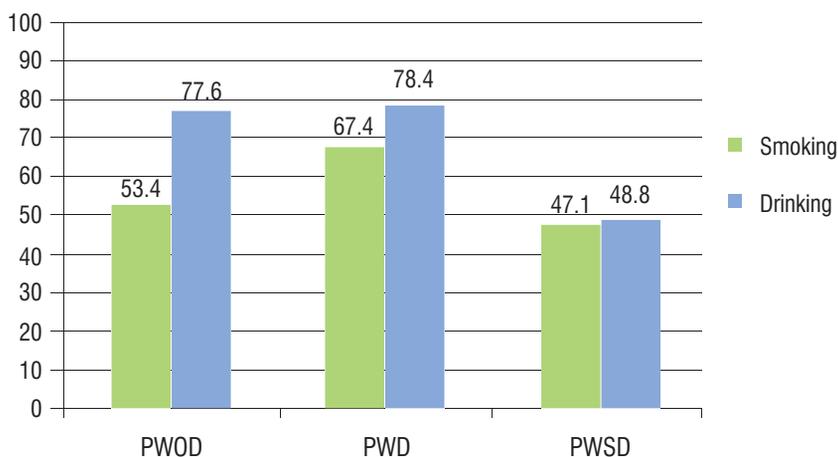
Among females, similar patterns of differences among the PWOD, PWD and PWSD were also found in smoking behavior: the PWD are more likely but the PWSD are less likely to smoke than the PWOD. Nonetheless, the difference is not significant given the very low prevalence of smoking among female population. About 15% of the PWOD and 12% of the PWD reported that they have ever drunk but the rate is less than 1% among the PWSD.

Figure 16. Proportion of females smoking and drinking by disability status
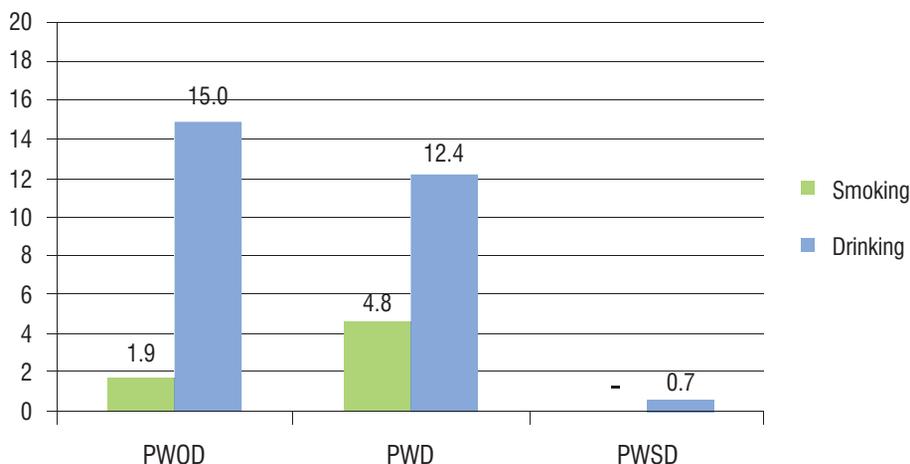
3.3.4. Health insurance

Having health insurance

The proportion of people with a disability who also have health insurance is higher compared to PWOD (62.0% and 55.9%); PWSD reported the highest rate of the respondents who have health insurance at the time of survey (78.2%). PWOD are the population that has the highest proportion of people that have never had health insurance (29.5%) when compared to other groups (25.8% for the PWD and 13.0% for PWSD). This picture of health insurance ownership is likely also relates to the picture found in self-assessed health status of each group since the population with poorer health has the higher proportion of having health insurance. Although having a health insurance happens before current good or poor health status, the causal effect is likely to go from health status to ownership of health insurance, i.e. poorer health among the PWD population is a motivation for them to buy health insurance; besides, the PWD are more likely than the PWOD to receive free health insurance from the Government.

Figure 17. Distribution percentage of having health insurance by disability status
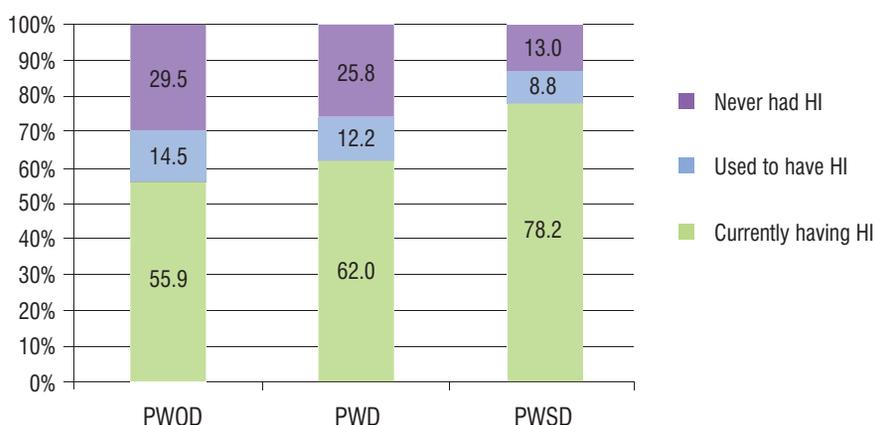
Main reasons for not having health insurance

"Do not have money" was reported as the most significant reason for not having health insurance regarless of disability status. "Do not have money" was reported more by the PWD and especially the PWSD: 44.2% of the PWOD, 61.7% of the PWD, and 72.9% of the PWSD reported this as the reason for not having health insurance. Another important reason for not having health insurance as reported by the respondents relates to their trust to the health insurance program: around one-fifth of the respondents regardless of their disability status thought that having health insurance does not help. This reason would be associated with complains of the small amount of payment by the health insurance, complications to get insurance, and the attitude or hesitance to atitude of staffs at health centers to users of health insurance.

Findings from this study show a good public awareness of health insurance program. There are only less than 5% of the PWOD and/or PWD have never heard of health insurance. The proportion of people who do not know where to buy health insurance is also low among the PWD, i.e. 5% among the PWD and zero percent among the PWSD; but there are still nearly 10% of the PWOD do not know where to buy health insurance.

Figure 18. Reasons for not having health insurance by disability status
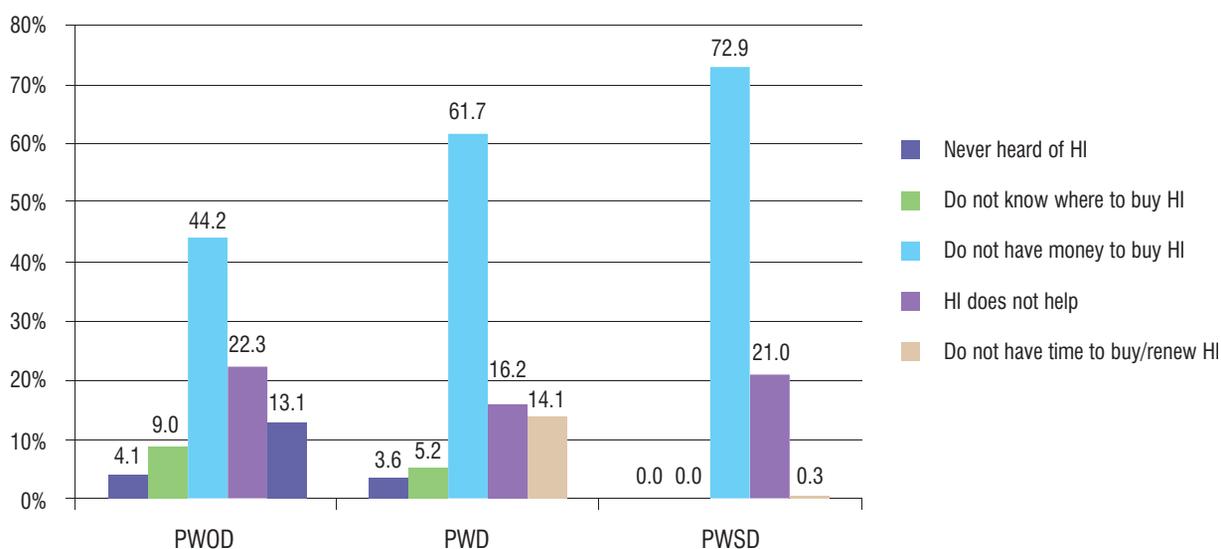
Type of health insurance

Regarding types of health insurances, there are significant difference between the type health insurances owned by PWD, PWSD and PWOD. Most of the PWSD who own a health insurance card have the health insurance card for the poor (40.7%) and health insurance card for prioritized persons or people who receive special care from Government's policies for their (or their family members) great contribution to the Nation or their special needs

(39%). Those two types of health insurance are also the main types of health insurance that the PWD had. For the PWOD, their proportion of having those two types of health insurance are significant lower (12.9% and 8.0%). This picture indicates that the PWD is more vulnerable because of not only their disablity status but also economically poor status; the relationship between disability and poor will be presented in greater details in the later part of this report.

Figure 19. Type of health insurrance card by disability status

Figure 19. Type of health insurrance card by disability status
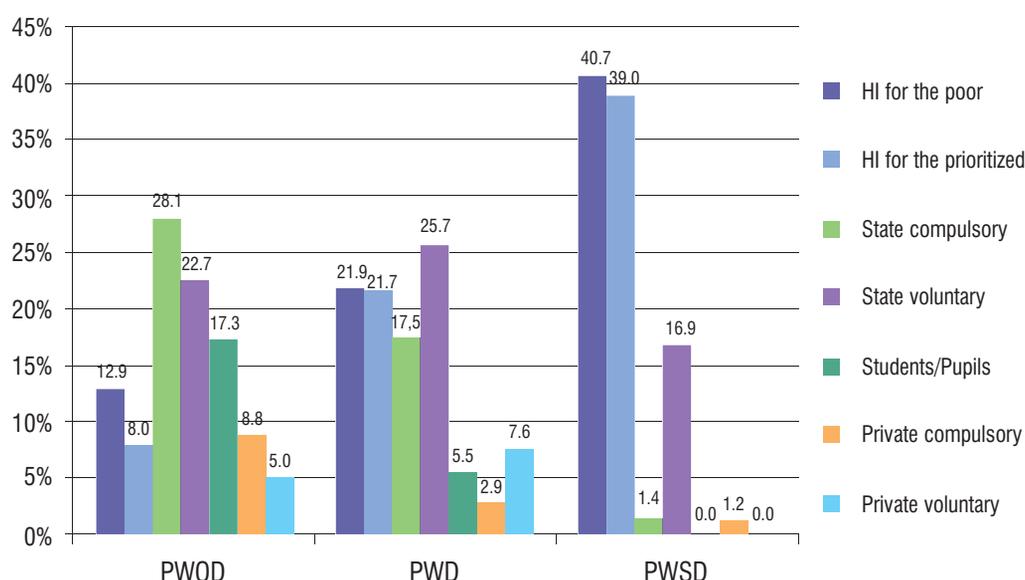
3.3.5. Utilization of health care services

Self-treatment and the use of outpatient and inpatient care

All respondents were asked to see whether they had to: 1) use inpatient care at any health care facility, i.e. the respondent got admitted and spent at least one night in the facility, during the past 12 months; 2) use outpatient care during the past 3 months; and 3) self-treated during the past 3 months.

It was found that self-treatment is very common in Viet Nam with more than half of the respondents regardless of their disability status reporting that

they had this behavior during the past 3 months. The PWD and PWSD were more likely than the PWOD to have the three afore mentioned behaviors. While 10% of the PWOD had used inpatient care in the past 12 months, there were more than 20% of the PWD and nearly 30% of the PWSD had used the inpatient services in the past 12 months. While 20% of the PWOD had used outpatient care in the past 3 months, there were nearly 40% and more than 30% of the PWD and PWSD respectively had used the outpatient care during the same period. The results seem reasonable given the poorer health status of the PWD and especially the PWSD comparing to the PWOD.

Figure 20. The use of inpatient, outpatient care and self-treatment behavior by disability status
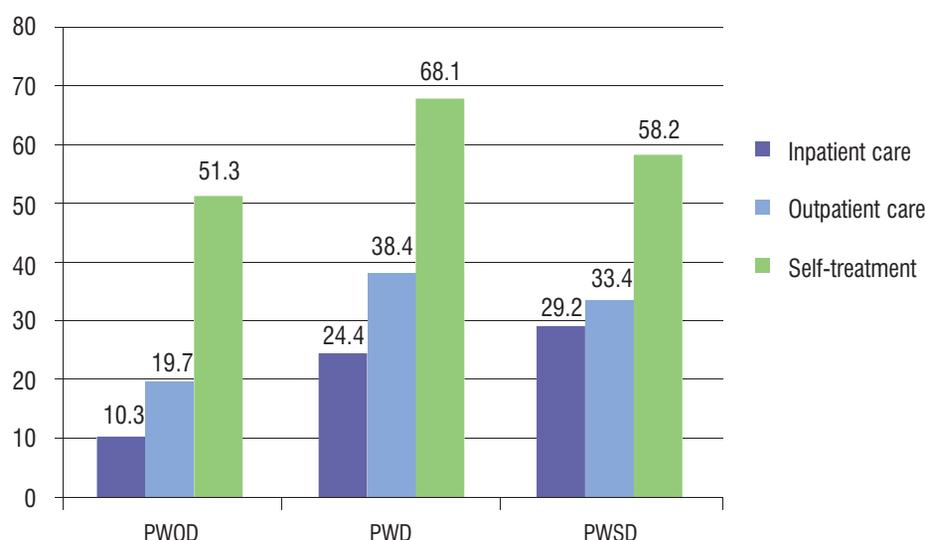
The use of private and public health care services and level of use

Among users of the outpatient care, district hospitals and provincial hospitals are among the most frequently used facilities with a quarter to a third of the respondents having used them in the past; additionally, there is no significant difference among the PWOD, PWD and PWSD regarding the use of those facilities. However, there are clear differences by disability status in the use of other health care facilities among the users of the outpatient care. The PWD and especially the PWSD are more likely to use commune health clinics and private hospitals while the PWOD are more likely to use private clinics and central hospitals.

Among users of the inpatient care, district hospitals are still most widely used by the PWD and PWSD but it is not for the PWOD: 62%, 48%, and 10% of the PWSD, PWD, and PWOD who used inpatient care respectively used district hospitals. Provincial hospitals are still widely used by all groups of people who used inpatient care: 30%, 39% and 36% of the PWSD, PWD, and PWOD respectively used provincial hospitals for inpatient care. There are not many people using either commune health centers or private health care for inpatient care. The central hospitals are used more among the PWSD and the PWOD than among the PWD.

Figure 21. Health utilization by disability status
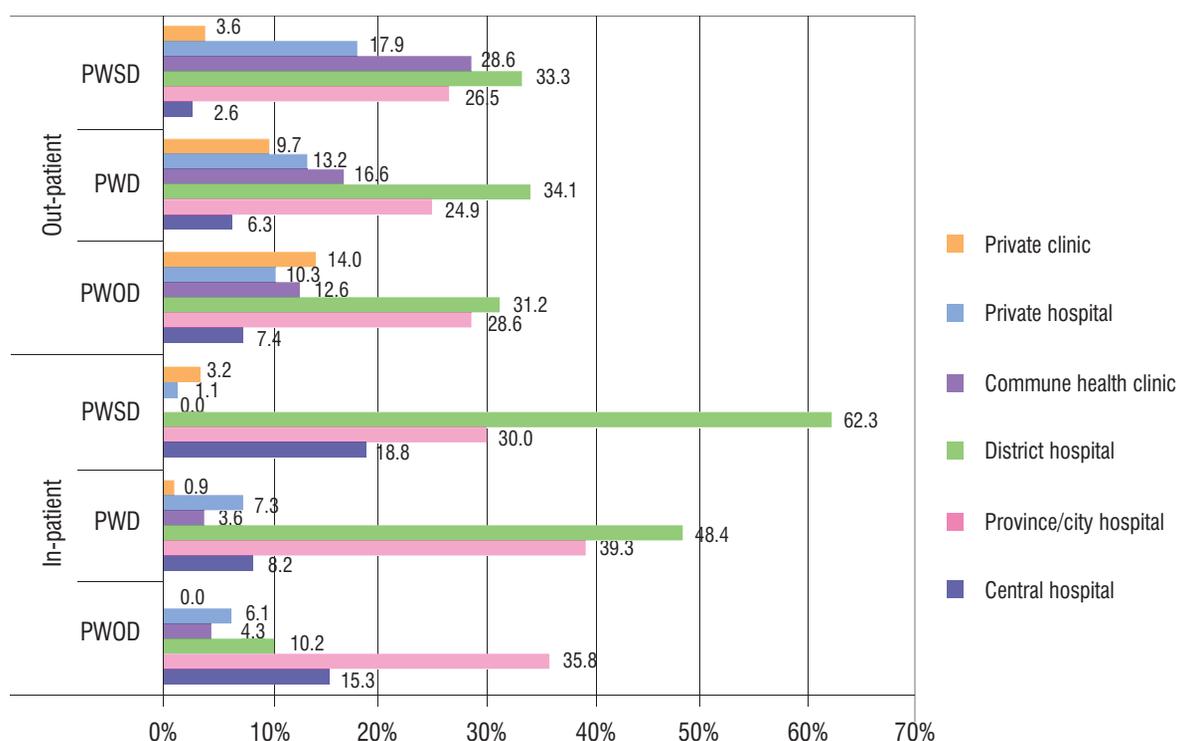
3.3.6. Expenditure on health care

As expected and as seen in the previous section, those with a greater level of disability have worse health status and pay more for health care. Table 4 describes the average expenditure for inpatient care in the past 12 months, outpatient care in the past 3 months, and self-treatment in the past 3 months of the PWSD, PWD and PWOD who use those care services. Outpatient care costs are significantly

more than those associated with self-treatment and inpatient care costs are significantly more than those associated with outpatient care. On average, PWOD, PWD and PWSD users of the inpatients care paid 5.2, 6.6, and 13.4 million VND respectively per person during the past 12 months. Expenses for outpatient care among PWOD, PWD and PWSD who use the service are 0.9, 1.3, and 1.9 million VND respectively for the past 3 months or 3.6, 5.4, and 7.5 million VND respectively for the past 12

months. This figure assumes that expenditure in the past 3 months is equivalent to one-fourth of the expenditure in the past 12 months. Under the same assumption, expenditure for self-treatment among the PWOD, PWD and PWSD who use that are 1.3, 2.3, and 3.8 million VND respectively in the past 12 months. The greater use of inpatient care among the PWD and especially the PWSD, and the significantly higher expenditure for inpatient care implies that there was a greater financial burden for health care for the PWD and especially the PWSD compared to those encountered by the PWOD.

Among those who need health care, i.e. those who either used inpatient care, outpatient care, self-treatment or a combination of these, the PWOD, PWD and PWSD had to pay on average 3.1, 6.0, and 10.3 million VND per person respectively in the past 12 months for health care. The picture showing the greater financial burden for health care of the more PWD population remains.

Table 4. Average expenditure per person for health care by disability status

Unit: VND

		PWOD	PWD	PWSD
Among the users				
Expense for inpatient care (past 12 months)	Mean	5,197,282	6,627,277	13,400,000
	Median	1,500,000	2,500,000	5,000,000
Expense for outpatient care (past 3 months)	Mean	900,117	1,354,546	1,884,091
	Median	400,000	500,000	900,000
Expense for self-treatment (past 3 months)	Mean	325,544	575,912	960,149
	Median	100,000	200,000	500,000
Among all users of any of them				
Total in the past 12 months	Mean	3,111,852	6,043,406	10,300,000
	Median	800,000	2,000,000	4,400,000

3.4. EDUCATION

3.4.1. Net enrolment ratio in tertiary education

TThe net enrolment ratio in tertieary education was estimated in order to assess equality between the PWD and PWOD in education. It is estimated by comparing the number of children aged 15 to 17 who were enrolling in tertiary education against the total number of children aged 15 to 17.

It is found that the net enrolment ratio in tertiary education is significantly lower among the PWD when compared to PWOD and that this is observed for both male and female populations. It is interesting to see that the ratio is higher among females than males in both groups. Unfortunately, the sample size for the PWSD is too small to have meaningful analysis and comparison; hence the PWSD is excluded in this analysis.

Figure 22. Net enrolment ratio in tertiary education by disability status and gender
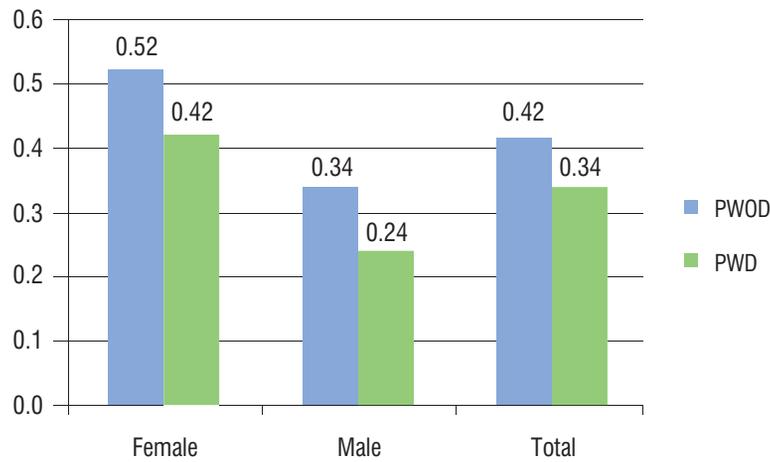
3.4.2. Ratio of girls to boys in tertiary education

The ratio of girls to boys in tertiary education is estimated in order to assess gender equality among the PWD compared to the PWOD; this is an indicator to measure achievement of the third goal of the MDG on gender equality and empower women. It is measured by number of girls over number of boys who were attending tertiary school regardless of their age.

This indicator shows that Viet Nam has will have achieved the third goal of the MDG ahead of time for PWOD. Gender disparity remains among the PWD; however, the more vulnerable group is not females but males. As this study cannot explain this interesting finding, it is recommended that further studies explore reasons for this gender disparity.

Figure 23. Ratio of girls to boys in tertiary education
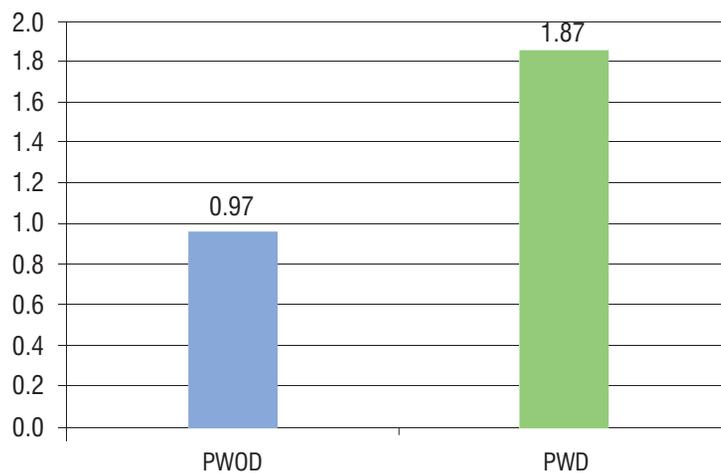
3.4.3. School attendance

The proportion of people who had ever attended school was used to measure school attendance. It is found that school attendance has a negative relationship with level of disability among youth population. The proportion of the PWOD, PWD and PWSD youth aged 15 to 24 who had ever attended school is 99.8%, 90.8% and 49.7% respectively. Similar pattern is found among general adults aged 15 or older.

There is a clear gender disparity in school attendance with the opposite trend found between the PWSD and the other groups, i.e. the PWD and PWOD. The proportion of youth who had attended school

is not significantly different or higher for females compared to males among the PWOD and PWD. This picture is consistent with the pictures found in the previous two education indicators. However, this proportion is significantly lower for females compared to males among the PWSD.

Figure 24. Proportion of youth who had ever attended school by disability status and gender
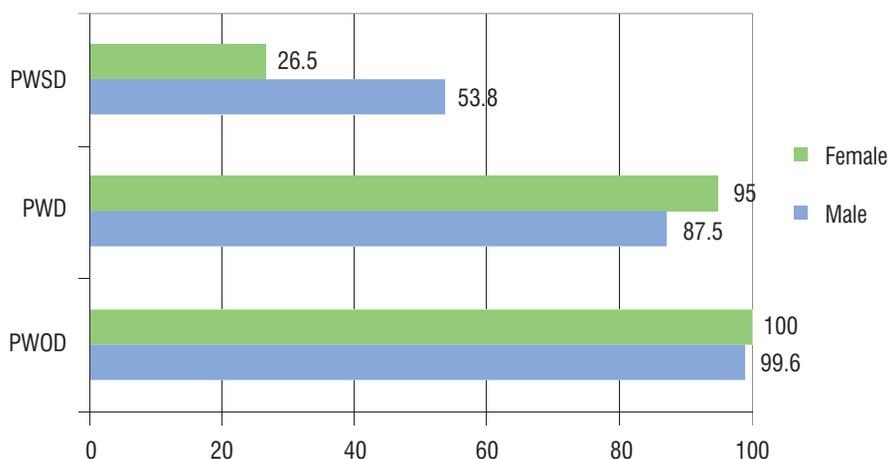
3.4.4. Completion of primary education

Achieving universal primary education was set as an important goal of the MDG. While data is not available to measure any of the three indicators that were set up to record the achievement of this goal, the proportion of people who had completed primary education is used to proximate achievement of this goal.

Completion of primary education and disability also has a negative relationship with the PWSD and is noticeably more vulnerable than the other populations. The proportion of PWOD, PWD and PWSD youth who have completed primary education is 98.3%, 88.8% and 41.9% respectively. Similar results were found among general adults aged 15 or older: 89.9%, 71.0% and 32.0% of the PWOD, PWD and PWSD adults respectively had completed primary education.

Similar to what was found in school attendance, opposite pictures of gender disparity are found between the PWSD and the other groups, i.e. the PWD and PWOD. Likewise, this finding raises a great concern to gender equality for the PWSD.

Figure 25. Proportion of youth aged 15 to 24 who had completed primary education by disability status and gender
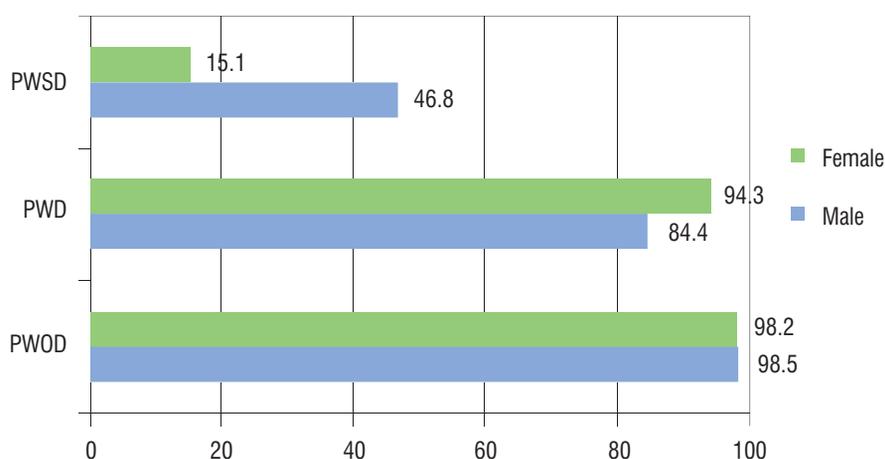
Differences between the PWSD and the other two groups (the PWD and PWOD) were also found when rates of completion of primary education is analyzed by age group. Among the PWD and the PWOD, the proportion of people who had completed primary education is higher among the younger population. However, the pattern is only found among the PWSD when a comparison is made between the middle-age people and the elderly; the opposite pattern is found while comparing the youth to the middle-age people or the elderly. Those results suggest that progress over time or over generations in education has been achieved among the general population or the PWOD. Similar achievements were seen among the older adult PWSD but the youth PWSD seemed to face great challenges that have pushed them backward in education.

Figure 26. Completion of primary education by disability status and age group
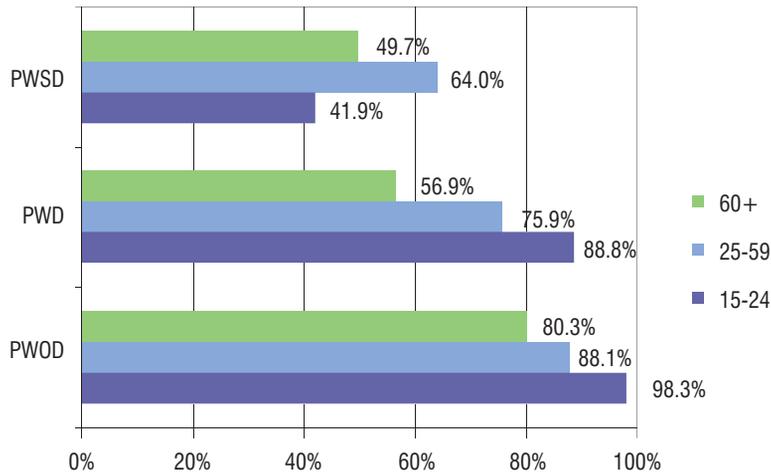
Similar results are found while looking at completion of secondary and tertiary schools among adults aged 15 or older.

Figure 27. Completion of secondary and tertiary education of adults aged 15 or older by disability status
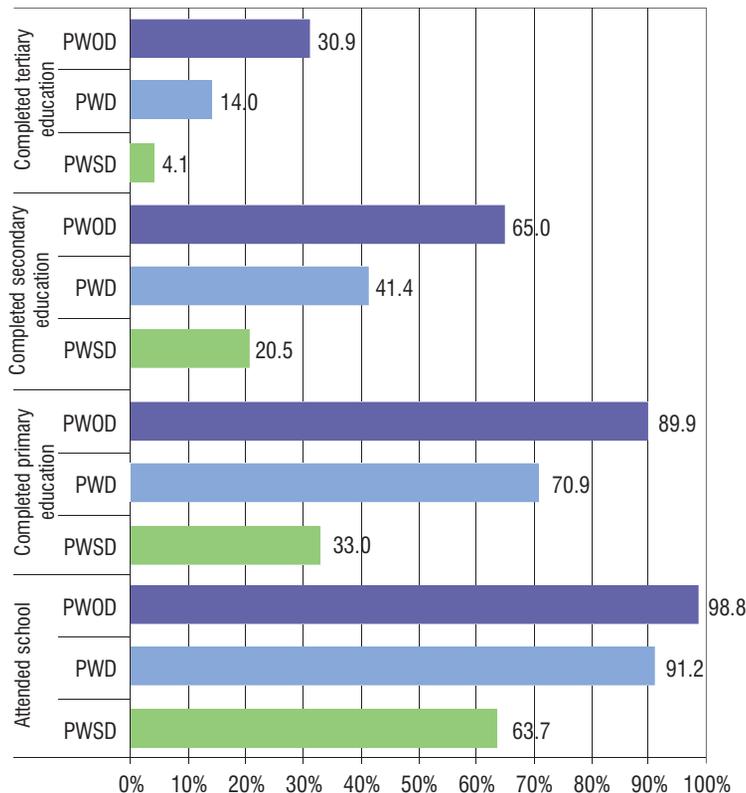
3.4.5. Expenditure on education

PWD in Viet Nam usually receive some support from either the Government or social programs. Decree 55/ND-CP[15] is an example of the support that a PWD would typically receive from the Government. However, most of the available support targets only PWSD but most people of this population, as seen above, are not in school.

In this part, we are looking at direct cost on education in the past year and its difference by disability status. Direct costs on education include tuition and other direct cost, such as expenditures for night or informal classes, textbooks, educational tools, uniforms, and contribution to school in the past year. Analyses are limited among those who are attending the school and attended school in the past year.

It is found that the PWD and PWOD paid about the same amount of money for tuition in the past year but the PWD paid more for other direct educational cost. On average, the PWD and PWOD paid 2.7 million VND per year for the tuition; PWD paid 4.7 million VND while PWOD paid 3.3 million VND for the other direct educational cost.

Figure 28. Expenditure on education for the past year by disability status and gender

Unit: VND
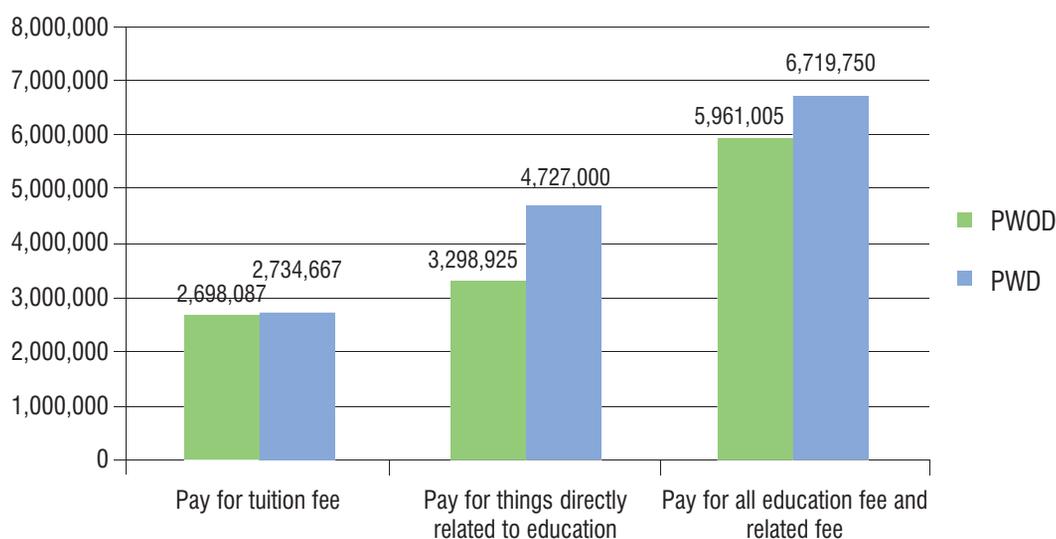
3.5. ECONOMIC PARTICIPATION AND INCOME

3.5.1. Working status

The proportion of working adult PWD population in working age, i.e. 18 to 60 for males and 18 to 55 for females, is very close to that of the PWOD. About 80% of the PWD, as well as the PWOD, in working age were currently working at the time of the survey. However, the proportion among the PWSD is very low at less than 5%. Noticeably, there is a clear gender difference between the PWD and the PWOD in working status: while the proportion of working males is higher among the PWOD, it is slightly lower among the PWD.

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[15] The Decree No.55/ND-CP stipulates in the Article 11 that students with disability who have no one to rely on; and who are recommended by the commune/ward People's Committee to be fostered in support centers are subsidy with an amount of 100,000 VND per person per month; and they are provided with books, notebooks, learning tools according to the Regulations of MOET.

Figure 29. Proportion of people in working-age work by disability status
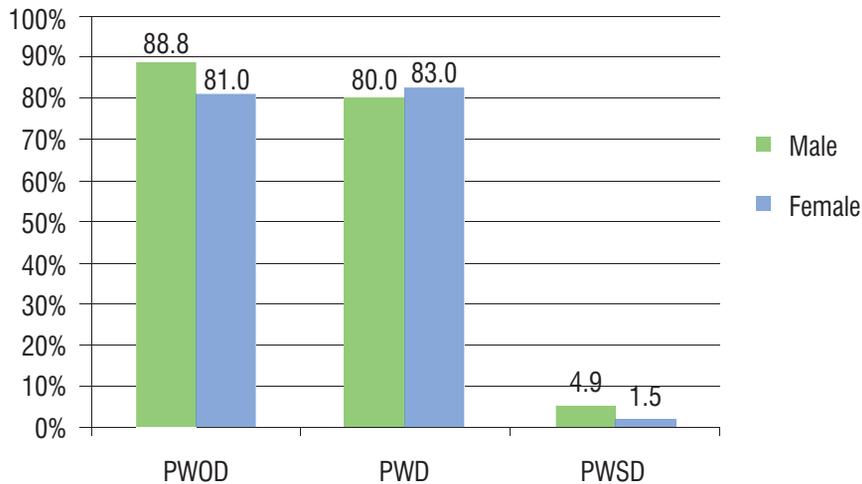
3.5.2. Reasons for not working

The proportion of PWD in working age reporting disability as the main reason for not currently working is very low: it is only 5.1% among the PWD and 19.7% among the PWSD. Health problem was reported as the major reason for not working among the adult PWD, especially among the PWSD, at working age. Doing housework and being in-school were reported as the main reasons for not working among the PWOD. Those are also the second and third reasons after the health problem for not working among the PWD.

Figure 30. Reasons for not working by disability status
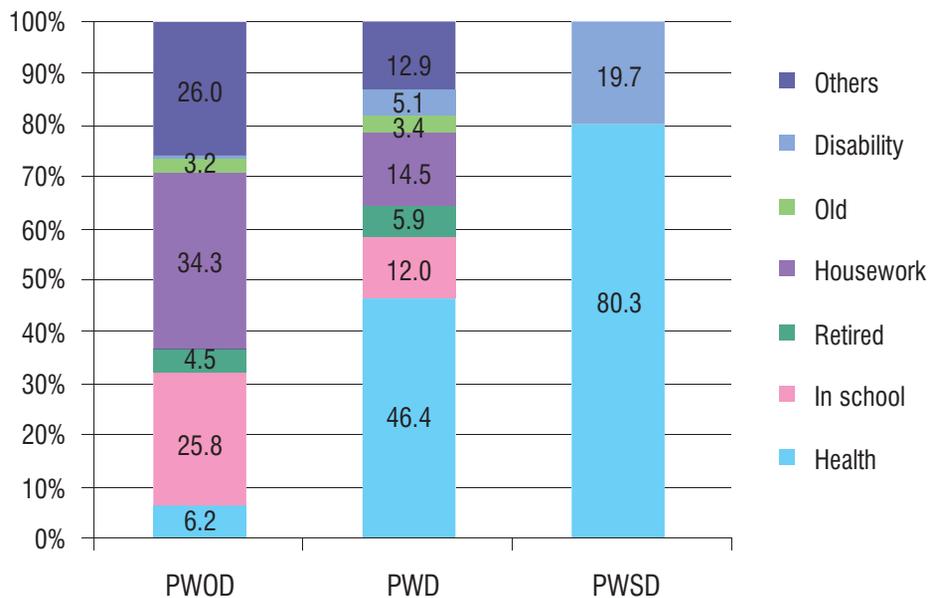
Gender disparities are seen clearly in reasons highlighted for not working. As expected, housework was dominantly reported by females. Among the PWOD, males seem to have more advantages than females as the proportion of males who reported "in-school" as the main reason for not working is signficantly higher than that of females. Among the PWSD, the proportion of people reporting disability as the main reason for not working is higher among males compared to females.

Figure 31. Reasons for not working by disability status and gender

Figure 31. Reasons for not working by disability status and gender
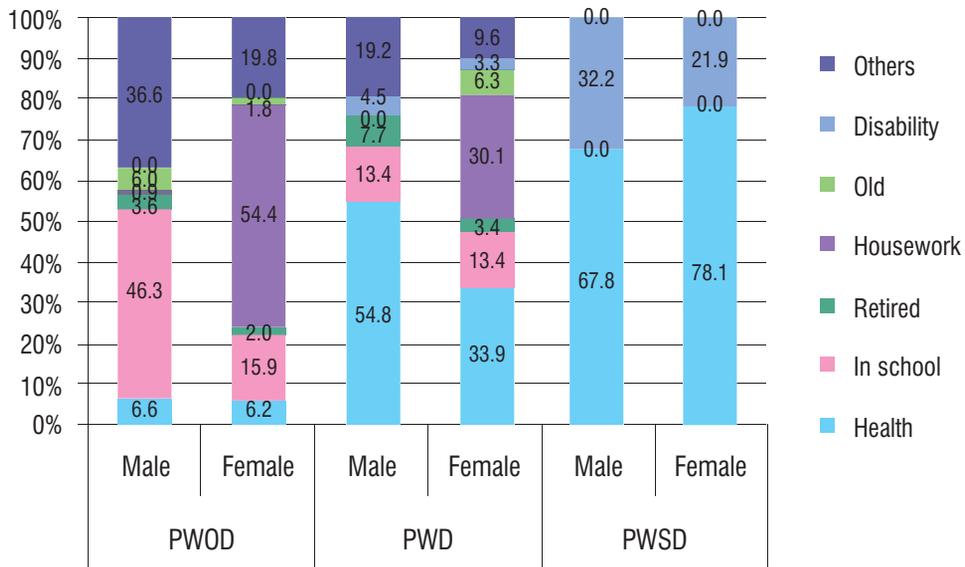
3.5.3. Occupational structure of the current main job

There are differences in occupational structures between the PWOD and PWD who were currently working at the time of the interview. In general, the proportion of PWD working as farmers is higher than that of the PWOD, partially because the percentage of the PWD living in rural areas is higher than that of the PWOD. However, this finding remains after controlling for rural or urban characteristic of the place of residence. The proportion of PWD working in social services is lower than that of the PWOD. As the majority of the PWSD were not working, they are not included in analyses under this session.

Figure 32. Current main job of adults who are working by disability status and rural/urban characteristic of the place of residence

Figure 32. Current main job of adults who are working by disability status and rural/urban characteristic of the place of residence
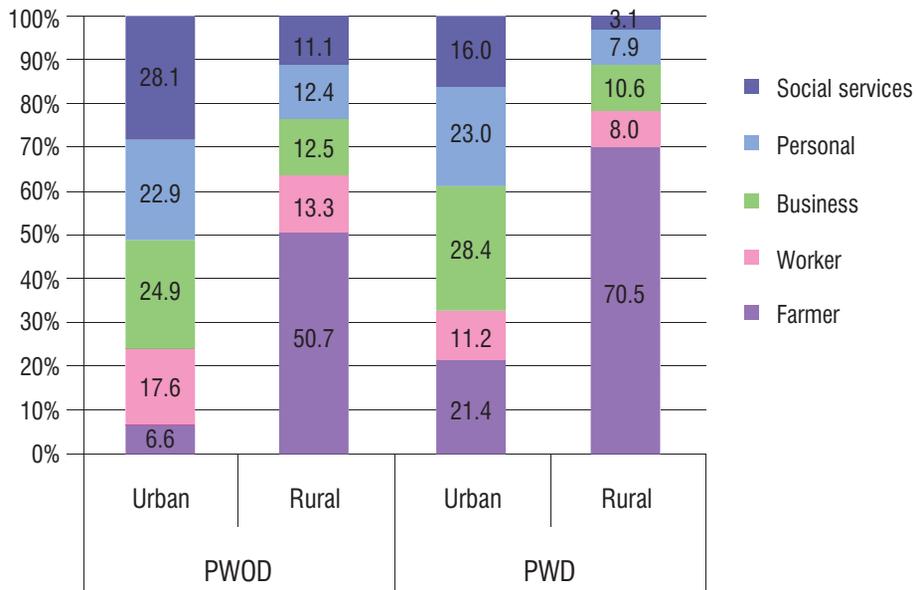
It is interesting to see the contrasting gender difference between the PWD and the PWOD in occupational structure. While the proportion of people doing business is smaller among male compared to female PWD, the proportion is greater among male compared to female PWOD. In contrast, while the proportion of people doing personal service jobs is greater among male compared to female PWD, the proportion is smaller among male compared to female PWOD.

Figure 33. Current main job of adults who are working by disability status

Legend:
- Social services
- Personal
- Business
- Worker
- Farmer

Values (from bottom to top):

	Farmer	Worker	Business	Personal	Social services
PWOD Male	39.1	14.5	22.9	8.6	15.1
PWOD Female	38.6	15.4	9.0	20.5	16.5
PWD Male	57.8	9.1	10.8	18.4	4.0
PWD Female	56.5	11.0	18.3	5.8	8.6

3.5.4. Job sector of the current main job

By job sector, there is a higher proportion of PWD working in self-business and family business than the PWOD and this is true for both male and female populations. The proportion of PWD working in private sector is smaller than that of the PWOD; and similar result is found in public sector.

Figure 34. Job sector of the current main job of adults who are working by disability status

Legend:
- Self
- Family
- Private
- State

	State	Private	Family	Self
PWOD Male	16.9	24.3	44.4	14.4
PWOD Female	13.6	17.8	46.8	21.8
PWD Male	5.3	18.0	57.8	18.9
PWD Female	8.4	10.3	57.7	23.7

3.5.5. Individual income

Salary

It is found that almost 100% of people, both PWD and PWOD, who are currently working receive salary from their work. In general, it is found that the PWD have a lower monthly salary than that of the PWOD. Roughly half of the PWD have a salary of 1.25 million VNDs or less while it is about 2 million VNDs for the PWOD. People with self-caring and hearing difficulties have lower salary than the other PWD but the difference is small.

Table 5. Average monthly salary in VND of those who have salary

Unit: VND

	Mean	Median
Visual	2,922,361	1,100,000
Hearing	1,640,173	950,000
Walking	1,910,321	1,000,000
Remembering	2,002,783	1,000,000
Self-caring	2,229,744	800,000
Communicating	1,629,236	1,000,000
PWD	2,749,689	1,250,000
PWOD	3,139,277	2,000,000

Non-salary allowance or subsidies

It is not strange to see that the proportion of PWD-populations receiving either an allowance or subsidies is significantly higher than the non-PWD population: the proportions are 16.4%, 53.6% and 3.9% among the PWD, PWSD and PWOD respectively. However, what is noticeable is that it is not the majority of the PWSD but only slightly more than a half of them who have a non-salary allowance. Moreover, most of the allowance came from the State and a greater part of that came from non-disability programs; there are only less than 3% of the PWD and 20% of the PWSD receiving allowance from the disability State programs. These findings indicate three important points: 1) Most of the allowance received for disabilities in Viet Nam came from the Government; 2) PWD have received significant attention from other non-disability-specific programs of the State; and 3) Unfortunately, the Government's resources for social support programs in general and disability programs in particular are very limited.

Figure 35. Proportion of people receiving non-salary allowance by type of allowance
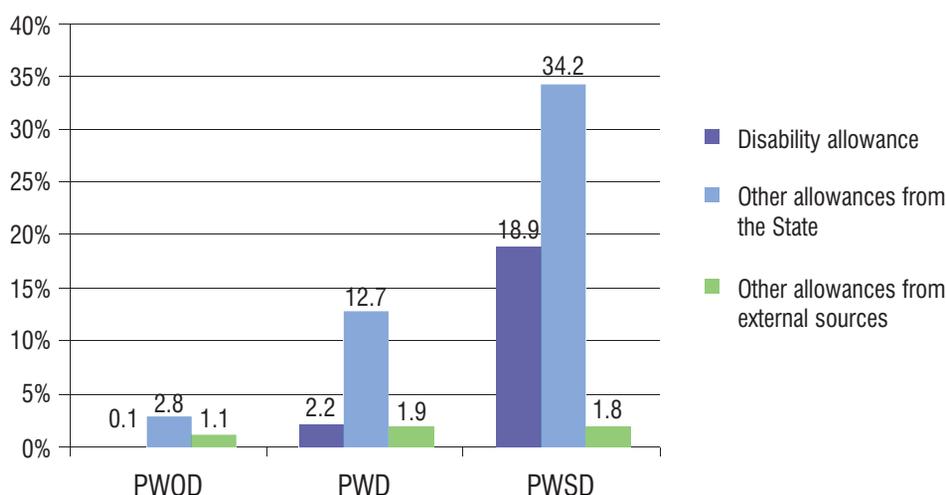
Further analyses of the total allowance in the past 12 months shows that the allowance from the non-State entities per person with disability is significantly higher than that received from the State, especially for the PWSD. Nonetheless, the contribution of the non-State allowance is still very minor, mostly because of its small coverage.

Table 6. Average total allowance per month in the past 12 months

Unit: VND

	From the State		From external sources		Total allowance	
	Mean	Median	Mean	Median	Mean	Median
PWD	5,796,774	2,360,000	13,600,000	5,500,000	6,691,723	2,610,000
PWSD	4,080,789	2,160,000	12,600,000	18,000,000	5,956,452	2,400,000
PWOD	7,105,653	2,160,000	8,381,818	10,000,000	7,985,031	3,000,000

Income

The proportion of the population with disability who have an income, including salary and non-salary allowance or subsidies from the State and non-State entities, is significantly smaller than that of the population without disability. While almost 80% of the PWOD have income, it is slightly more than 70% of the PWD and only 60% of the PWSD have income.

Figure 36. The proportion of people having an income, i.e. salary and non-salary allowance
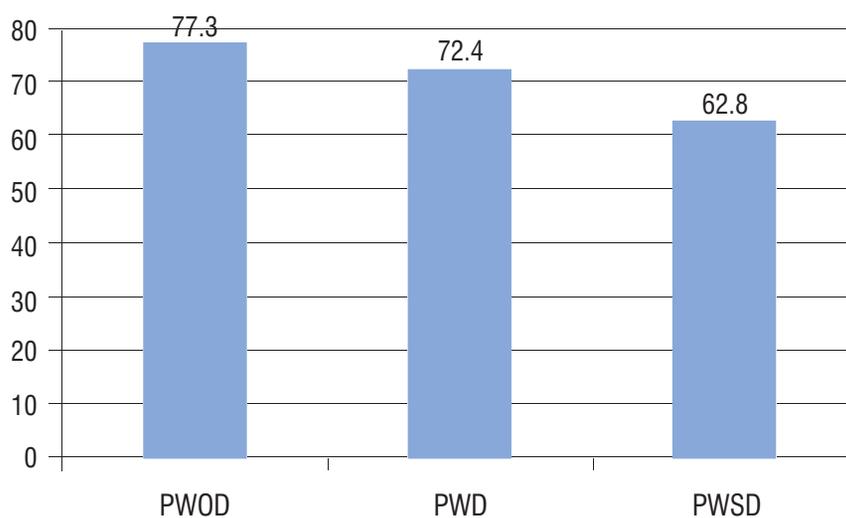
3.5.6. Household income and poverty

Household income

Household income and level of disability have an inverse relationship: PWD live in poorer households than the PWOD and PWSD live in poorest households.

Figure 37. Monthly household income quintiles (in the past 12 months) by disability status

	PWOD	PWD	PWSD
Mean	7,394,380	6,330,970	4,724,839
Median	4,800,000	3,800,000	3,500,000
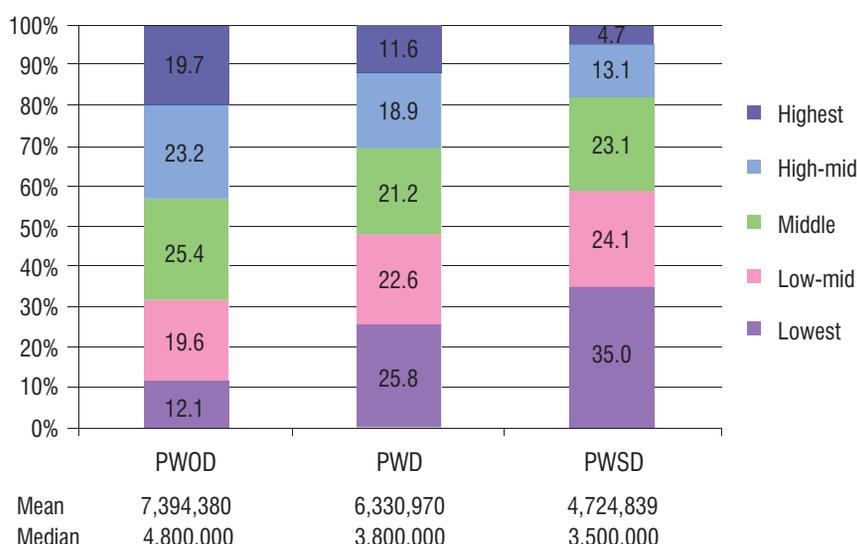
Poor and near-poor vs. non-poor households

A similar picture of the relationship between disability and poverty is found when using the cut-off points from the most recent classification of the poor and near-poor households for the period 2011-2015 of the Government as provided in Decision 09/2011/ QD-TTg and signed by the Prime Minister on 30 January 2011. Following this new classification, there are 8% of the PWD in rural areas live in poor households while it is only 3.5% among the PWOD; the prevalence goes up to 20% for the PWSD in rural areas.

Figure 38. Proportion of people living in poor and near-poor households by disability status
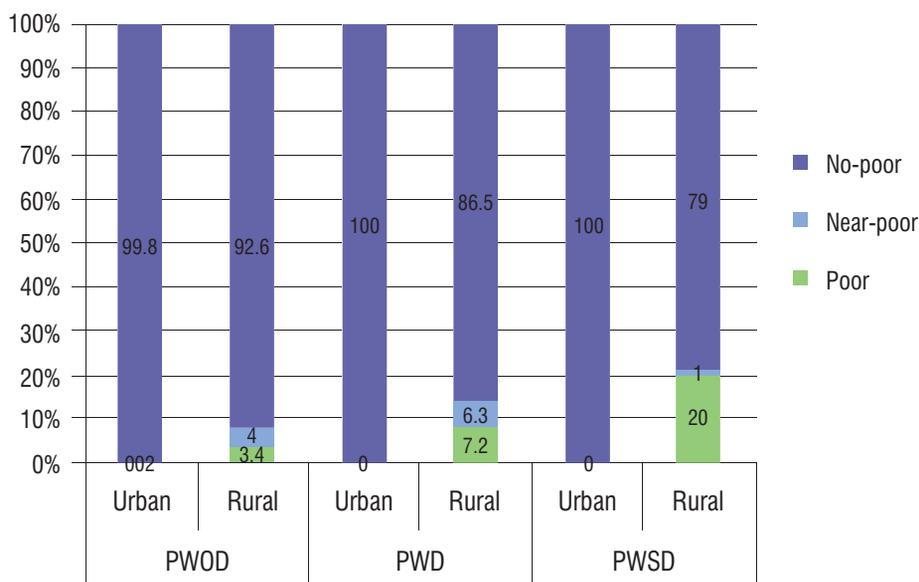
3.6. SOCIAL AND POLITICAL PARTICIPATION

3.6.1. Accessing to public transportation

About one-fifth of the PWD and 90% of the PWSD cannot use public transportation on without

assistance.

Public transportation is not popularly used in Viet Nam: there are 10% or less of both PWOD and PWD populations who use the public means of transportation on regular basis; and about only another 40% of the PWOD and PWD population use public transportation infrequently. Even when

Figure 39. Proportion of people using public means of transportation by disability status
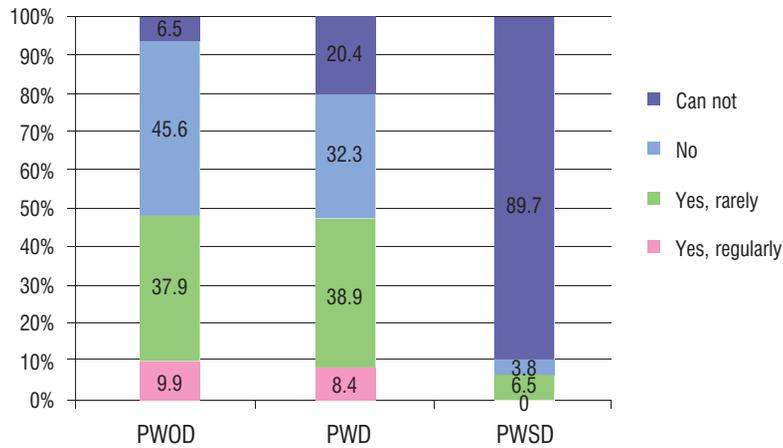
these two groups are combined, less than half of the populations use the public transportation.

3.6.2. Participation in socio-political or mass-organizations and activities

While PWSD are least likely to participate in socio-political organizations, the PWD are more likely than the PWOD to participate in socio-political organizations. The proportion of PWSD participating in any socio-political organization is 21% while it is 46% among the PWOD, but it is as high as 59% among the PWD. Health problems were reported as the major reason limiting socio-political participation of the PWD.

Mass-organizations play an important role in socio-political participation and this would have had strong effect on the pattern of socio-political participation in general as seen above. It should be noted that although mass-organizations are political organizations, most of the participants join the activities of the organizations on voluntary basis and do not have any income; some of them do have an allowance but it is still low. The facts that most of the PWD were not working and a that fair share of them have allowance would have enabled them to participate in those mass-organizations. Additionally, the greater participation of the PWD in veteran associations and elderly associations due to their older characteristics have contributed to this picture.

Figure 40. Proportion of socio-political participation by organization
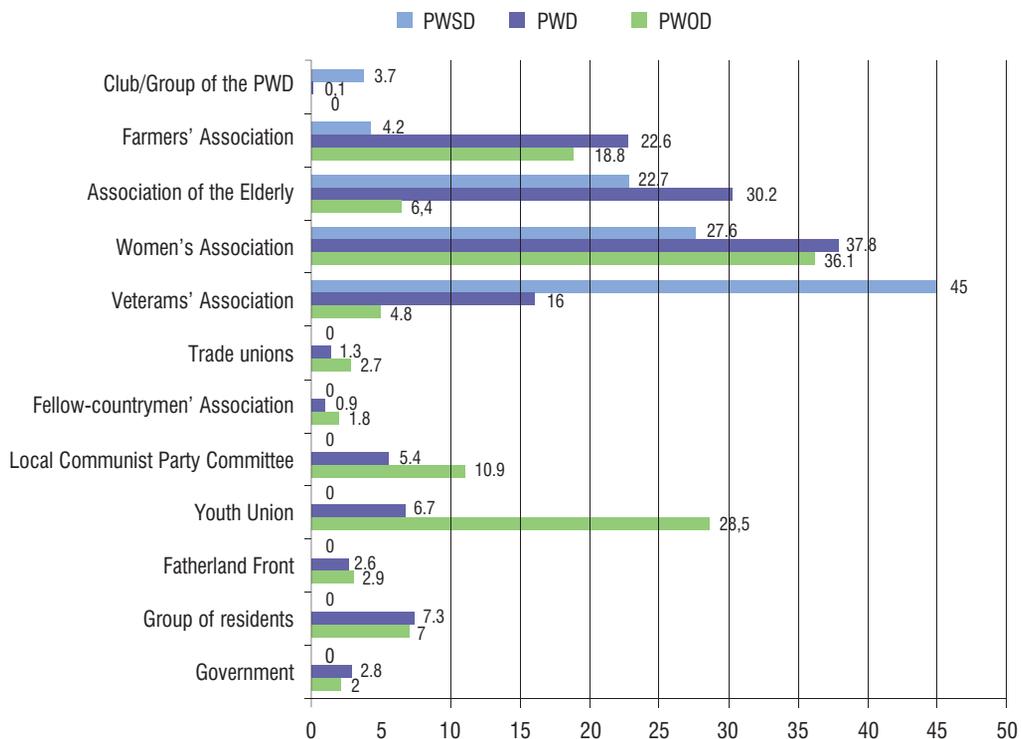
Finally, it should be noted that most of the participants, 79%, 75% and 84% of the PWOD, PWD, and PWSD respectively, participate in socio-political activities on regular basic.

3.7. LIFE SATISFACTION

Satisfaction with non-material life

The spiritual life of people with a disability and PWD was approached through the level of self-assessed satisfaction for non-material life. The results in Figure 41 shows that PWOD have a better non-material life and have the highest rate of satisfaction and lowest rate of non-satisfaction compared to the PWD and the PWSD; and the rate of satisfaction is reducing as the level of difficulties increasing. The satisfied rate for non-material life among the PWOD, PWD, and PWSD are 45%, 28% and 14% respectively. The rates of non-satisfaction among those groups are 8%, 17% and 53% respectively.

Figure 41. Level of satisfaction with current non-material life by disability status
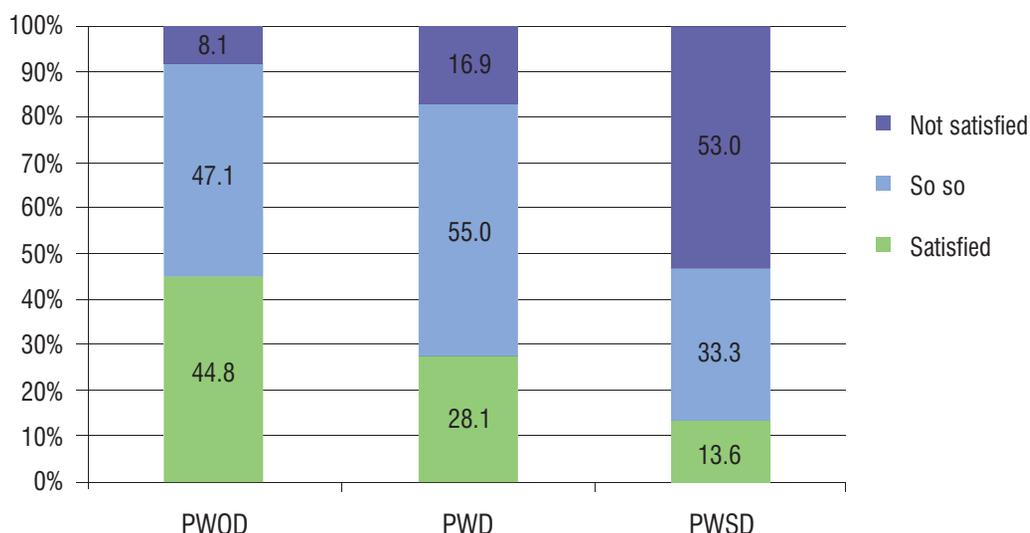
The above pattern of satisfaction with non-material life is very similar to that of self-assessment of quality of life in general.

Figure 42. Self-evaluation of the quality of life by disability status
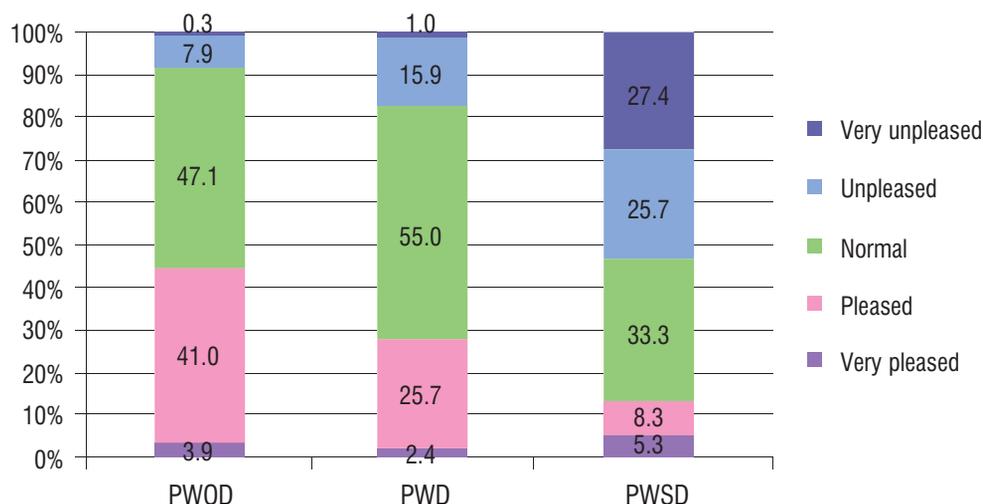
3.8. AWARENESS OF DISABILITY LAW

The Disability Law which supports PWD, is very new as it was passed in 2010 and became effective since January 2011. When asked "Does Viet Nam have a disability law?", slightly more than a half of the respondents said yes, most of the others said "do not know", and a very small proportion of people said no. It is also found that the proportion of people saying yes is similar across the PWOD, PWD and PWSD.

Figure 43. Responses to the question "Does Viet Nam has disability law?"
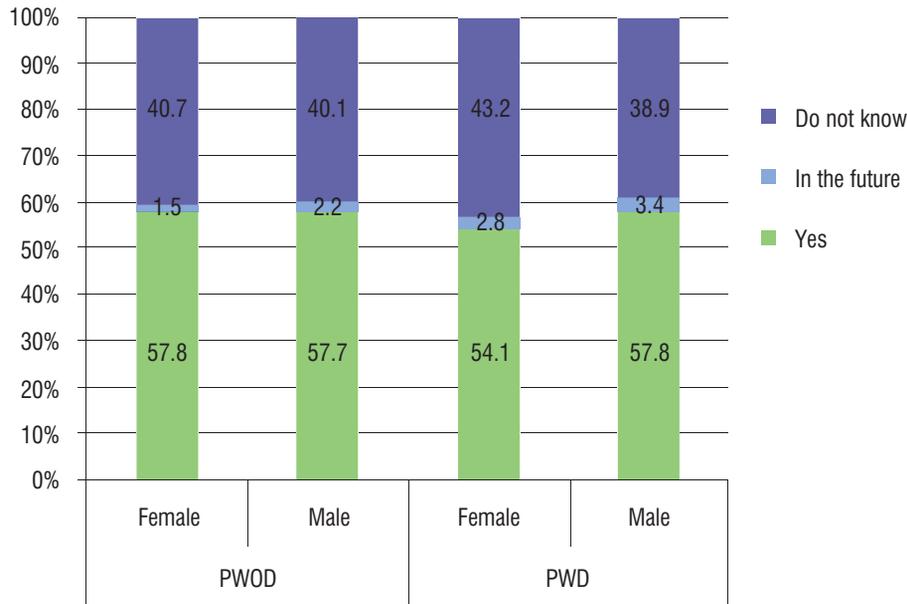
Among those who responded that Viet Nam has a Disability Law, only about one-fifth of them (18%, 17% and 21% of the PWOD, PWD, and PWSD) reported that they knew about the content of this Law. Fortunately, the majority or more than 80% of those who know about the content of the Law reported that the Law is suitable. One-fourth of the PWOD and PWD, and almost one-third of the PWSD reported that the Law is very suitable.

Figure 44. Proportion of respondents reporting that they do know about the content of the disability law among those who said that Viet Nam does have that law
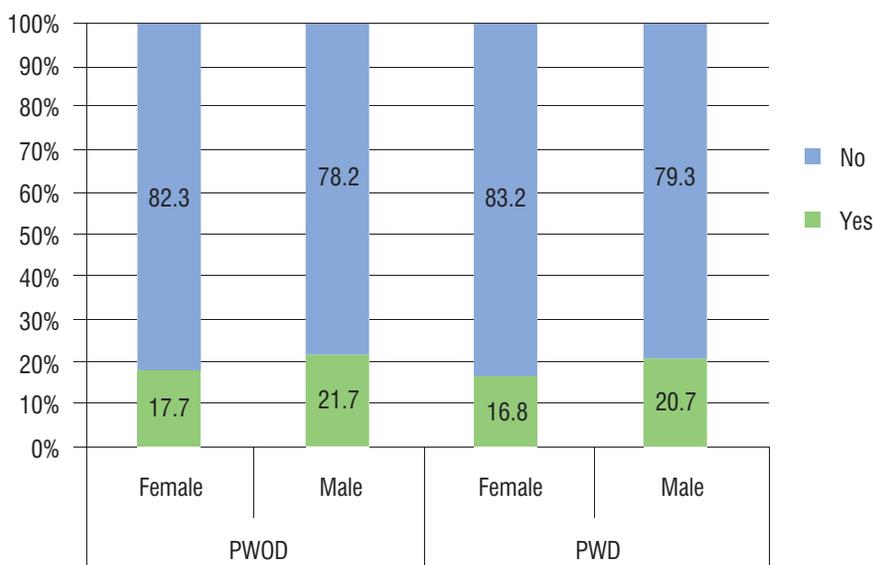
CHAPTER 04

Disability-related Stigma and Discrimination

CHAPTER 04

Disability-related Stigma and Discrimination

4.1. INTRODUCTION

According to Oxford Dictionaries, stigma is "a mark of disgrace associated with a particular circumstance, quality, or person" [15]. Several definitions of stigma are introduced by different authors. According to Weiss and Ramakrishna, stigma is a "social process or related personal experience characterized by exclusion, rejection, blame or devaluation that result from experience or reasonable anticipation of an adverse social judgment about a person or group."[16]. The literature discusses two main categories of stigma, including perceived stigma, and enacted stigma. Perceived stigma (also referred to as self-stigma, internalized stigma and felt stigma) refers to "devaluation, shame, secrecy and withdrawal triggered by applying negative stereotypes to oneself" [17] or "fear of being discriminated against" [18]. Self-stigma has also been defined by an author as "an internalized stigma that eats away one's self-esteem and self-efficacy" [19]. Enacted stigma refers to "actual experiences of discrimination" [20].

Stigma is associated with several chronic health conditions and disability [21-23]. Stigma can have negative impacts on the lives of people in several ways. It can "diminish self-esteem and rob social opportunities of people" [17]. Several studies reveal that stigma is among important factors that deny people access to education, employment opportunities and health care. A study in India found that children with disability had very high out of school rates, and PWD had a 60% lower employment rate than the general population. This study also revealed that stigma by community and families contribute to converting impairment to disability [24]. Furthermore, several studies indicate that stigma has negative impacts to social and psychological integration in the community. Experiencing stigma has a huge impact on confidence and may reinforce feelings of exclusion, rejection, social withdrawal and worthless [25].

A previous study in Viet Nam reported that various forms of stigma and discrimination towards PWD are widespread across different settings, ranging from within the family, to the community, school, hospital, workplace, and government organization. Stigma was reported as a major cause that severely limited the life chances of PWD and entrenching their poverty.

This chapter aims to (1) Describe and analyse the experience of stigma among people with and without disability and (2) Estimate how much of stigma experience in a person can be attributed to disability.

4.2. MEASUREMENT OF STIGMA

4.2.1. Development of stigma scale

A stigma scale was developed with the aim to cover both perceived and enacted stigma. Detailed descriptions of the development process, validity and reliability of the stigma scale can be found elsewhere [26]. Several steps were employed to develop the stigma scale. Following are brief description of development process:

Development of the first version of the stigma scale

The first step, a narrative review of available stigma related scales and questions were performed to search for relevant questions. Several questions were reviewed, adapted and included in our stigma scale.

A qualitative study was conducted to explore types of stigma and its impacts on general activities, education, employment and health care among PWD in Vietnamese context. Thus, the first version of the stigma scale was developed with reference from literatures and inputs from qualitative study.

Revision of the first version based on experts' discussion

At the second step, pilot interviews were done and followed by discussions in a group of researchers and linguistic experts to revise the scale. A number of questions were revised and removed as they were not easy to understand or overlapped.

Validating process and final version of the stigma scale

At the final step, a study among 400 people (with and without disabilities) was implemented to assess factorial validity and internal consistency reliability of the stigma scale. Test-retest reliability was examined with 40 repeated interviews. Twenty questions were dropped due to small contribution to the construct validity of the scale or less reliable. The final stigma scale was proved to be valid and reliable to detect stigma and to compare stigma among different groups. The scale consisted of 40 questions, covering 7 principle factors as presented in the Figure 45. Each question had five options for choice, including Never (0); Sometime (1); Often (2); Very often (3) and Don't know (DK). Twenty four among 40 questions were positive questions and needed to be reversed when calculating the stigma score. The higher stigma scores the higher level of stigma that a person experienced.

Figure 45. Seven principal factors of the stigma scale
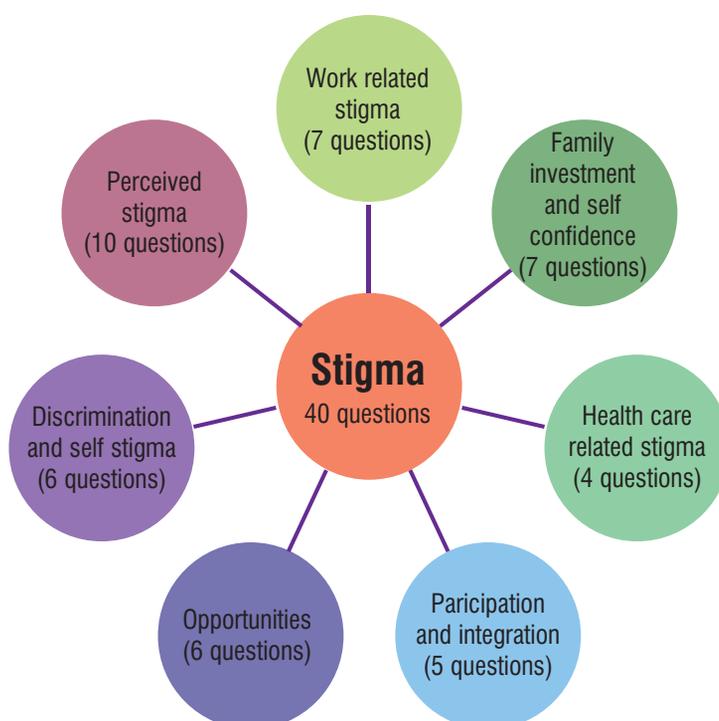
4.2.2. Stigma related variables

- **Overall stigma score** was computed by summing up the stigma score from all 40 questions of stigma scale. As designed, each question had 4 choices with the score ranged from 0 to 3. Thus the overall stigma score can range from 0 to 120.

- **General stigma score** was computed by summing up the stigma score of two factors including 10 questions of subscale titled "perceived stigma" and 6 questions of subscale entitled "discrimination and self-stigma". Thus, the total general stigma score can range from 0 to 48.

- **Sub stigma scale score** was computed for each principal factor of the scale. Seven subscale scores were estimated, including:

  1) Work related stigma score: a range from 0 to 21.

  2) Family investment and self-confidence score: a range from 0 to 21.

  3) Perceived stigma score: a range from 0 to 30.

  4) Opportunity score: a range from 0 to 18

  5) Participation and integration score: a range from 0 to 15.

6) Health related stigma score: a range from 0 to 12.

7) Discrimination and self-stigma score: a range from 0 to 18.

- **High level of stigma** was identified as having an overall stigma score that was equal to or greater than the upper quartiles value (at 75% of the range). Those who had an overall stigma score is 49 or greater was identified as being experienced from high level of stigma.

4.2.3. Disability related variables

- **Disability** was identified if having at least one type of 6 difficulties: vision, hearing, cognition, mobility, self-care, and communication. Six types of difficulties were identified using WHO as described in the first chapter.

- **Specific types of disability:** For each specific type of disability including vision, hearing, cognition, mobility, self-care, and communication difficulties two variable types were used:

  - **Dichotomous variable:** Presence (1) or absence (0) of specific disability

  - **Ordinary variable:** These ordinary variables has three values:

    * No difficulty (0)

    * A little difficulty (1)

    * A lot of difficulties and more severe (2)

- **Number of disability types:** number of disabilities that a person experienced. We identified 6 types of disability. Thus, the values ranged from 0 to 6.

- **Severe disability:** was identified if a person had at least one type of disability reported as severe disability according to the criteria for severe disability presented in the first chapter.

4.2.4. Data analysis

Item scores of all 24 positive questions among a total of 40 questions from the stigma scale were reversed before calculating the overall stigma score and general stigma scores. Missing values and "don't know" answers were replaced with imputed values based on background variables including sex, education level and main job. Mean, standard deviation and median of overall stigma scores, general stigma scores and subscale stigma scores were estimated with descriptive statistics. Prevalence of high stigma level among people with and without disabilities was estimated. Log linear regression was used to examine the relationship between total stigma score and different types and levels of disability as well as other variables, such as sex, age groups, education, main jobs, income quintiles and living locations. Logistic regression was used to examine the association between the occurrence of high level of stigma and different types and levels of disability while controlling for the effects of other variables, such as sex, age groups, education, main jobs, income quintiles and location. A significant level of $\alpha = 5\%$ was applied.

4.3. RESULTS

4.3.1. Stigma among people with and without disabilities

The stigma scale has 40 questions. The stigma score could range from 0 to 120. As designed, the higher stigma scores the higher level of stigma a person experienced. Four thousand and forty-nine individuals completed the survey, the mean stigma score for all participants was 40.6 (SD=12.6) and median was 40. The lower bound of interquartile range was 32 and the upper bound interquartile was 49 meaning that 75% of the participants had a stigma score of less than 49 and more than 25% of the participants had a stigma score higher than 49. A stigma score of 49 is used as a cut off to define a person with high level of stigma.

The stigma score of PWD was significantly higher than that of PWOD (44.9 vs. 37.9 and p<0.05 with Man Whitney test) (Figure 46 and Table 7).

Figure 46. Box plot of total stigma score of people with and without disability
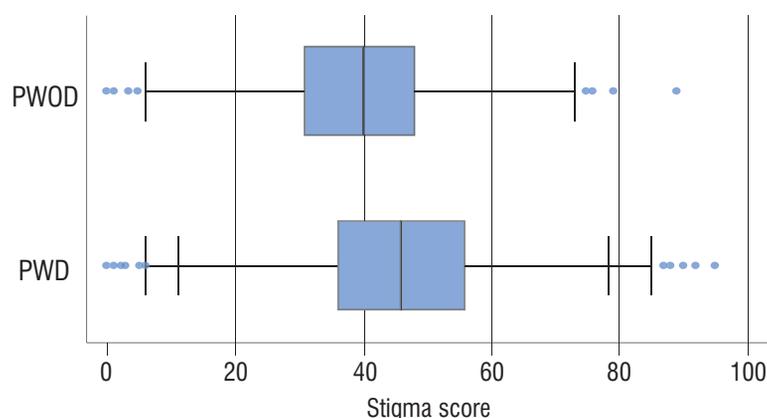
Table 7 shows that for all subscales of the stigma   scale the PWD had higher score than PWOD.

Table 7. Descriptive statistics of total scale and subscale of stigma scores of people with and without disability

Stigma score		PWOD	PWD	Overall	p
Total stigma score (40 questions)	mean	37.9	44.8	40.6	<0.05
	sd	11.6	13.1	12.6	
	median	38.0	44.0	40.0	
	Q25%	30	36	32	
	Q75%	46	53	49	
General stigma score (16 questions)	mean	3.5	5.0	4.1	<0.05
	sd	3.4	4.6	4.0	
	median	2.0	4.0	3.0	
Work related stigma (7 questions)	mean	9.5	10.5	9.8	<0.05
	sd	3.0	3.3	3.1	
	median	9.0	10.0	10.0	
Family invest	mean	9.7	11.9	10.6	<0.05
	sd	3.9	3.9	4.1	
	median	9.0	12.0	11.0	
Perceived stigma	mean	1.5	2.4	1.9	<0.05
	sd	2.6	3.3	2.9	
	median	0.0	1.0	1.0	

Table 7. Descriptive statistics of total scale and subscale of stigma scores of people with and without disability

Stigma score		PWOD	PWD	Overall	p
Opportunity	mean	9.2	11.2	10.0	<0.05
	sd	3.3	3.6	3.5	
	median	9.0	11.0	10.0	
Participation	mean	7.3	7.8	7.5	<0.05
	sd	2.7	2.8	2.8	
	median	8.0	8.0	8.0	
Health related stigma	mean	0.8	1.3	1.0	<0.05
	sd	1.7	2.2	1.9	
	median	0.0	0.0	0.0	
Discrimination	mean	1.9	2.6	2.2	<0.05
	sd	1.4	1.8	1.6	
	median	2.0	2.0	2.0	

Figure 47. Box plot of stigma score among people with and without disability, stratified by age groups and sex
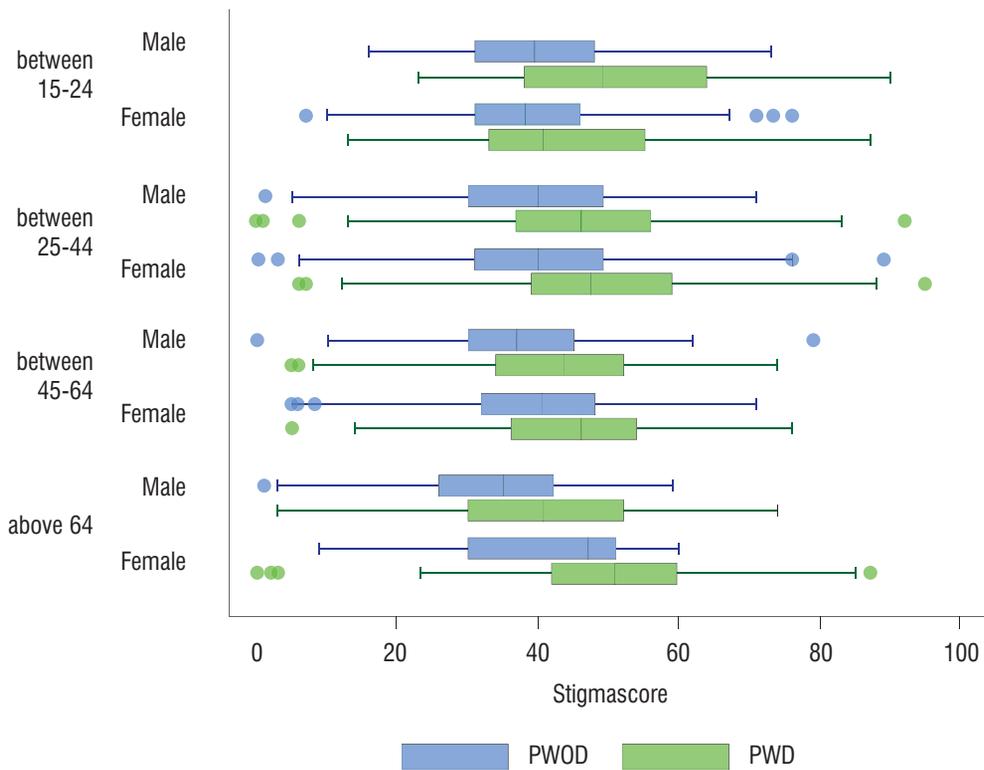
Figure 47 presents distribution of stigma score for males and females in different age groups. In all age groups the stigma scores of PWD were higher than that of the PWOD. There was a trend that those in two youngest groups experienced more stigma than the two older groups. Women consistently experienced more stigma than men did in all age groups, except the youngest group.

Table 8. Linear regression of stigma score across socio-economic groups

Variables		Coefficient	p
Disability	PWOD		
	PWD*	3.17	0.00
Sex	Male		
	Female	0.57	0.32
Age group	15-24		
	25-44*	-2.46	0.02
	45-64*	-4.21	0.00
	>=65*	-5.92	0.00
Education levels	None		
	Primary*	-5.24	0.00
	Secondary*	-12.39	0.00
	Tertiary*	-15.78	0.00
	College/university*	-24.61	0.00
Main job	Not working		
	Farmers	1.84	0.22
	Workers	0.58	0.73
	Business	0.77	0.64
	Personal service	1.11	0.49
	Social services*	-3.54	0.04
Income quintile	The first poorest		
	Second poorest	0.37	0.64
	Middle	-0.43	0.62
	Second richest	-0.83	0.40
	Richest*	-2.22	0.03
Location	Rural		
	Urban*	1.30	0.05
	cons	53.75	0.00

Table 8 shows the results of linear regression model for stigma score across socio economic groups. After control for the effect of other variables to stigma score, PWD significantly had higher score than PWOD did. Besides disability, age and education were among the most important predictor of stigma score. The older groups significantly had lower level of stigma than the youngest group did. Those with higher education significantly had lower level of stigma than those with lower education levels.

Regarding occupation, only those who worked in social services area significantly had lower stigma score than those who did not have a job.

There was a tendency that those who had higher income reported lower levels of stigma. However statistical significance was found between the poorest and the richest groups.

Those who lived in urban areas significantly reported higher stigma score as compared to those who lived in rural areas did. No difference between sexes about stigma score was found.

Table 9. Logistic regression model for high stigma across socio-economic groups

Variables			OR	Lower limit	Upper limit
Disability	PWOD				
	PWD*		1.78	1.33	2.38
Sex	Male				
	Female		1.17	0.86	1.59
Age group	15-24				
	25-44*		0.56	0.31	0.98
	45-64*		0.45	0.25	0.80
	>=65*		0.33	0.15	0.74
Education levels	None				
	Primary*		0.36	0.18	0.73
	Secondary*		0.11	0.05	0.22
	Tertiary*		0.06	0.03	0.13
	College/university*		0.02	0.00	0.06
Main occupation	Not working				
	Farmers		1.34	0.64	2.80
	Workers		0.96	0.42	2.19
	Business		1.01	0.42	2.42
	Personal service		1.45	0.64	3.30
	Social services		0.37	0.09	1.56

Table 9. Logistic regression model for high stigma across socio-economic groups

Variables		OR	Lower limit	Upper limit
Income quintile	The first poorest			
	Second poorest	1.25	0.85	1.86
	Middle	1.17	0.75	1.81
	Second richest	1.26	0.76	2.10
	Richest	0.81	0.41	1.58
Location	Rural			
	Urban	1.18	0.81	1.73

Table 9 presents results from logistic regression of occurrence of high stigma in different socio economic groups:

- PWD were 1.78 times more likely to experience from high stigma than PWOD did.

- Age and education remained to be significant predictors of high stigma in the logistic regression model. The older groups were significantly less likely to experience from high stigma than the youngest group aged from 15 to 24 years old. Among those in the age group of 65 years old and older, high stigma was only 33% (95% CI: 0.15-0.74) of high stigma prevalence among those in the age group 15-24.

- Those with higher education levels significantly reported lower stigma levels. In comparison to those with no education, the risk of experiencing high stigma was only 2% (95% CI:<0.001-0.06) among those with college education, was 6% (95% CI:0.03-0.13) among those with tertiary education, was 11% (95% CI:0.05-0.22) among those with secondary education.

- Main occupation, income and living location were not significant predictors of high stigma. No difference between men and women was found.

4.3.2. Variation between people with different types of disability

Table 10. Descriptive statistics of stigma score for people without and with different levels of difficulty

Level of disability	Statistics	Vision	Hearing	Remembering	Walking	Commu-nication	Self-care
No difficulty	Mean	39.2	39.7	39.2	39	39.8	40
	SD	12.2	12.3	11.8	11.9	11.9	12.2
	Median	39	40	39	39	40	40
A little difficulty	Mean	43.5	44.8	45.2	45.4	51.2	50.5
	SD	12.5	12.6	12.8	12.2	14.3	13.4
	Median	44	45	46	46	51	51

Table 10. Descriptive statistics of stigma score for people without and with different levels of difficulty

Level of disability	Statistics	Vision	Hearing	Remembering	Walking	Commu-nication	Self-care
A lot of difficulty	Mean	48.8	54.7	60.9	50.6	67.6	60.5
	SD	14.5	14.3	15.1	15.2	10.9	15.1
	Median	49	55	62	51	69	61

Table 10 shows that the stigma scores consistently increased by increasing level of difficulty across all types of disability. The stigma scores did not largely differ between groups characterized by different types of disability. However, the stigma scores of those with remembering, self-care and communication difficulty were slightly higher than that of those with other types of disability.

Figure 48. The occurrence of high level of stigma among those with and without different types of disabilities.
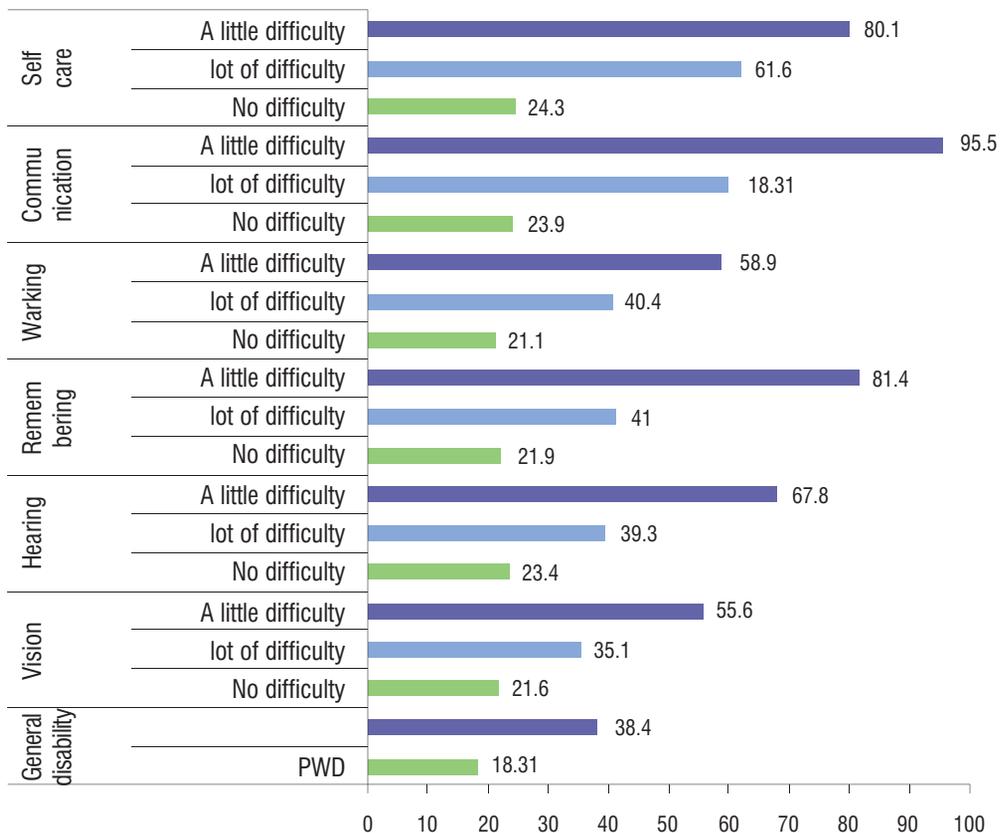
Figure 48 shows the occurrence of high level of stigma among those with and without different types of disabilities. There was a consistent trend that the occurrence of high stigma was more common among those with higher levels of disability. In comparison to other groups, high stigma level was the most common among those who had communication difficulty (95.5% among those with a lot of difficulty in communication), followed by those with difficulty in remembering (81.4% among those with a lot of difficulty) and those with difficulty in self-care (80.1% among those with a lot of difficulty). Difficulty in vision is a disability type that had lowest prevalence of high stigma (only 55.6% of the group with a lot of difficulty vs. 58.9%-95.5% of groups with other types of disability).

Table 11. Summary of results from linear regression model for stigma score, different levels of difficulty and socio-economic factors for each type of disability

Variables		Vision	Hearing	Remem-bering	Walking	Commu-nication	Self-care
Level of difficulty	No difficulty						
	A little difficulty	2.10*	2.32*	3.77*	3.02*	5.99*	1.71
	lot of difficulty	3.86*	2.34	8.44*	2.39	14.22*	5.86*
Sex	Male						
	Female	0.59	0.65	0.52	0.50	0.73	0.66
Age group	15-24						
	25-44	-2.18*	-2.15*	-2.34*	-2.34*	-2.08	-2.10*
	45-64	-3.76*	-3.35*	-3.69*	-3.73*	-3.17*	-3.17*
	>=65	-5.45*	-4.96*	-5.69*	-5.37*	-4.69*	-4.48*
Education levels	None						
	Primary	-5.70*	-5.51*	-5.44*	-5.33*	-5.09*	-5.66*
	Secondary	-12.85*	-12.75*	-12.65*	-12.50*	-12.30*	-12.95*
	Tertiary	-16.45*	-16.38*	-16.11*	-16.06*	-15.96*	-16.64*
	College/university	-25.34*	-25.13*	-24.96*	-24.77*	-24.69*	-25.42*
Main job	Not working						
	Farmers	2.15	2.43	2.31	2.12	2.59	2.60
	Workers	0.88	1.12	1.11	0.92	1.26	1.25
	Business	1.12	1.41	1.28	1.22	1.45	1.39
	Personal service	1.37	1.63	1.57	1.42	1.71	1.67
	Social services	-3.37*	-3.21	-3.17	-3.40*	-3.19	-3.16
Income quintile	The first poorest						
	Second poorest	0.52	0.41	0.44	0.42	0.42	0.50
	Middle	-0.42	-0.55	-0.46	-0.52	-0.59	-0.56
	Second richest	-0.80	-1.00	-0.99	-0.93	-0.95	-0.95
	Richest	-2.17*	-2.34*	-2.25*	-2.27*	-2.29*	-2.29*
Location	Rural						
	Urban	1.36*	1.32	1.33*	1.31	1.23	1.38*
	cons	54.12*	53.95*	53.96*	54.12*	53.31*	54.07*

Table 11 presents summary results from linear regression independently for each type of disability. The results were consistence with the results from linear regression model for any types of disability. Age and education remained to be the most important predictors of the stigma score. The richest group consistently had lower stigma score as compared to the poorest group.

The differences between occupational groups were only remained in the model for vision difficulty and walking difficulty. The differences between rural and urban areas were only found in the models for vision, remembering and self-care difficulties.

Table 12. Summary of results from logistic regression models for high stigma, different levels of difficulty and socio-economic factors of each type of disability

Variables		Vision	Hearing	Remem-bering	Walking	Commu-nication	Self-care
Disability	No difficulty						
	A little difficulty*	1.50*	1.56*	1.96*	1.74*	4.29*	2.69
	A lot of difficulty*	2.59*	2.04	3.69*	1.94	6.40*	11.69*
Sex	Male						
	Female	1.15	1.17	1.15	1.13	1.19	1.17
Age group	15-24						
	25-44	0.59	0.60	0.58	0.58	0.61	0.61
	45-64*	0.49*	0.55*	0.50*	0.50*	0.57	0.57*
	>=65*	0.36*	0.41*	0.35*	0.36*	0.42*	0.43*
Education levels	None						
	Primary*	0.33*	0.35*	0.34*	0.35*	0.36*	0.33*
	Secondary*	0.10*	0.11*	0.10*	0.11*	0.11*	0.10*
	Tertiary*	0.05*	0.05*	0.05*	0.06*	0.06*	0.05*
	College/ university*	0.01*	0.01*	0.01*	0.02*	0.02*	0.01*
Main job	Not working						
	Farmers	1.40	1.48	1.46	1.38	1.53	1.55
	Workers	1.02	1.07	1.06	1.03	1.12	1.11
	Business	1.09	1.16	1.12	1.11	1.17	1.14
	Personal service	1.52	1.60	1.58	1.53	1.64	1.62
	Social services	0.38	0.39	0.39	0.37	0.38	0.39

Table 12. Summary of results from logistic regression models for high stigma, different levels of difficulty and socio-economic factors of each type of disability

Variables		Vision	Hearing	Remem-bering	Walking	Commu-nication	Self-care
Income quintile	The first poorest						
	Second poorest	1.30	1.26	1.28	1.26	1.25	1.29
	Middle	1.17	1.13	1.16	1.14	1.12	1.14
	Second richest	1.25	1.20	1.23	1.20	1.20	1.22
	Richest	0.82	0.80	0.82	0.80	0.80	0.82
Location	Rural						
	Urban	1.20	1.18	1.18	1.18	1.14	1.20

Table 12 presents summary results from logistic regression for each type of disability. These models again confirm the importance of levels of difficulty, age and education in the presence or absence of high stigma level, irrespective types of disability. The odds ratios of having high stigma between different levels of difficulty ranged from 1.5 to 11.7. The largest odd ratios between groups were found in the model for self-care, communication and remembering difficulties.

4.4. DISCUSSION

PWD had significantly higher stigma score and higher risk of high stigma levels than PWOD. This finding is applicable when analyses were separately made for each type of disability. Several studies indicated that stigma is highly associated with disability and adversely impacts on employment opportunities, education and social networks [27-30]. We found those with disability were 1.8 times more likely to experience from high stigma level than those without disability.

In comparison to the PWOD, the odds ratio of experiencing from high stigma among PWD ranged from 1.5 to 11.7 depending on types of disability and levels of difficulty. In our study we found that those with remembering, communication and self-care difficulties had higher rates of stigma than those with other difficulties did. We could not find any other comparable studies but other studies also found different levels of stigma among different disabilities/conditions. A study in Canada

found that the level of perceived stigma was higher among those with chronic fatigue syndrome than those patients with fibromyalgia, irritable bowel syndrome, multiple sclerosis, rheumatoid arthritis and inflammatory bowel disease [31]. A study in India reported that those with speech and hearing difficulties could experience less from stigma than other difficulties. Differently from our study, this study found that more people thought that people with vision difficulty experienced from God curse than that for those with mental health problems [24].

Our study found that younger people experienced higher levels of stigma and had higher stigma score than older age groups. This may be explained by assuming that society generally expects younger people to experience less difficulties with mobility, communication and remembering when compared to an older person. Yet one other study we found reports on the level of stigma between age groups, this study reported no difference in stigma levels across various age groups. No reasons were given for this finding [31].

We found that those with higher education levels consistently experienced lower levels of stigma, irrespective of the type of difficulty. Our finding is in accordance with results from a study in Tanzania among people with HIV/AIDS that found stigma was 1.29 times more common among the less educated people [32]. Another study in three provinces in Viet Nam also found that the negative perception was less common among higher educated persons [33].

71

It can be explained that those with higher education often are more self-confident and have better social conditions as compared to those with low education levels.

We only found difference in stigma scores between urban and rural areas in the model for vision, self-care and remembering difficulties. A study from India also reported that stigma toward PWD was more common among people in the urban setting than was in the rural [24]. This can be explained by cultural differences between rural and urban areas in terms of family and social interaction in Viet Nam. A study in Viet Nam reported that people in the rural areas satisfied with their family more than those in the urban did [34]. In contrast to our findings, another study in Viet Nam found that the negative perception toward PWD was more common in rural people than that among urban population. However in that study the negative perception was just defined as *"the PWD can't not have a normal life"* [33]. The possible explanation could be those who live in the urban areas have better understandings about rights and capacity of PWD, then they know PWD can have a normal life as may other PWOD. Furthermore, supportive equipment and facilities for PWD in urban areas may be more available and better than those in the rural areas. Thus, those who live in rural areas may be less optimistic about life of a PWD.

Our results indicated that those who were in the poorest group had highest stigma score in almost all models irrespectively the type of difficulties. This is in accordance with finding from other study that reported stigma was more common among the poor than that among the rich [33].

4.5. CONCLUSION

The main findings are follows:

- PWD significantly had higher stigma score and 1.78 time higher risk of high stigma than PWOD did.

- The stigma score increased by increasing level of difficulty in all types of disabilities.

- People with communication, remembering and self-care difficulties had higher prevalence of high stigma than the people with other difficulties did.

- The younger people suffered more from high stigma and had higher stigma score as compared to the older people.

- Those with higher education levels consistently had lower stigma score and lower risk of suffering from high stigma than did the groups with lower education level.

- The richest group significantly has lower stigma score than the poorest group did.

- PWD from the urban areas were more likely to have higher stigma score than those PWD from rural areas.

- Sex and occupation were not associated with stigma score as well as high stigma level.

CHAPTER 05

Economic costs of Living with Disability and Stigma in Viet Nam

Economic costs of Living with Disability and Stigma in Viet Nam

5.1. INTRODUCTION

Complex relationships among disability, stigma and poverty have not been well studied. Some reports from developed countries, such as by Martin and White (1988) [35], Berthoud et al. (1993) [36], Zaidi and Burchardt (2003) [37], Saunders (2006) [38], and Cullinan et al. (2011) [39], have demonstrated that the extra costs of disability are substantial. However, the studies have not addressed the impact of stigma on the relationship between disability and poverty. Quantitative research in this area from the developing world is even scarcer. This leads to difficulties in advocating for policies and interventions that would address these issues for PWD.

This chapter, using the empirical data from our survey, provides research findings on the complex relationships among disability, stigma and poverty in Viet Nam. Specifically, we aim to: (1) estimate cost of living with disability in Viet Nam; (2) investigate joint-effect of disability and stigma on the cost of living.

This chapter is organized into 6 sections. Section 2 presents definition of the cost of living with disability and our hypothesis on the impact of stigma on the cost of living with disability. Section 3 reports a brief review of various methods used in estimating the cost of living with disability. Section 4 describes the standard of living approach that we used in this study as well as the methods that we used in investigating the impact of stigma on the cost of living with disability. Section 5 provides the empirical results. And, section 6 discusses the policy implications arising from the study results.

5.2. COST OF LIVING WITH DISABILITY AND ITS LINK WITH STIGMA

The cost of living for PWD is generally higher than for the rest of the community. This results from the additional needs that PWD have, including goods and services which PWD need but people without disabilities don't (e.g. home adaptations or an assistant) and items everyone needs but PWD need more of (e.g. washing powder or health care) [40].

In this report, the cost of living with disability is defined as an extra amount of money PWD would need to spend to achieve the same standard of living as populations without disabilities [36, 40].

The cost of living with disability depends on three factors[40]:

• The amount of additional need they have as a result of their disability (in turn depends on severity of disability, etc);

• The level of provision of free/subsidized services, by government or voluntary organizations;

• The effect of their disability on income, for example, PWD generally have lower incomes than PWOD (as they are less likely to be employed)

Stigma is defined as a social process that exists when elements of labeling, stereotyping, separation, status, status loss, and discrimination occur in a power situation that allows them [41, 42]. In health related stigma, this judgment is based on an enduring feature of identity conferred by a health problem or health related conditions [43].

We hypothesized that there exists a vicious cycle among disability, stigma and poverty (Figure 49).

Figure 49. Hypnotized vicious cycle among disability, stigma and poverty
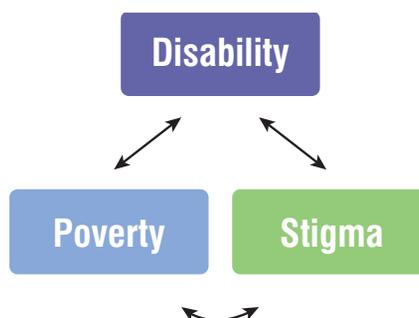
Stigma tends to exclude PWD from employment and income-earning opportunities [44-46]. In other word, stigma reinforces the severity of disability and leads to higher cost of living with disability (Figure 50).

Figure 50. Hypnotized impact of stigma on the cost of living with disability
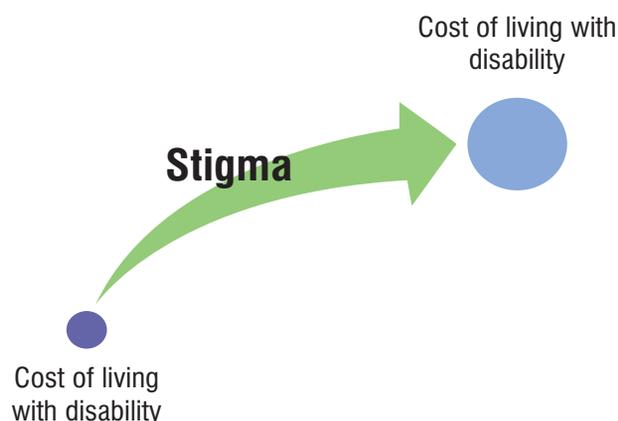
5.3. REVIEW OF AVAILABLE METHODS FOR ESTIMATING THE COST OF DISABILITY

Four main approaches are generally used to estimate the costs of disability.

- ***Direct survey approaches (DSAs) or the subjective approach -*** Asking individuals with a disability (or their care givers or experts) how much extra they spend on specific expenditure items. The implied comparison is with how they would spend their money if they had no disability. The DSA is in practice the most straightforward approach as any additional costs identified can be aggregated to give an estimate of total extra costs arising from a disability. This approach gives accurate estimates of spending on items purchased only by PWD (or only needed because of disability) but not accurate estimates of spending on items needed by both people with and without disabilities. The DSA is unlikely to provide accurate estimates of the additional costs of disability [36, 40].

- ***Expenditure diary approaches (EDAs), also known as the comparative approach*** - involves taking detailed measurements of all expenditures of a sample of PWD and comparing the results to data on corresponding expenditures from a sample of PWOD [36, 40]. In this approach the comparison is with other PWOD. This is likely to provide more accurate estimates than the direct survey approach, both because the data are collected through diaries and also because it is possible to compare expenditures in a fully consistent way. The extra spending on some items leads to lower spending on others, since income is constrained. For example, higher expenditure on heating may mean less money for new clothes. This method allows the areas both where PWD spend significantly more and spend significantly less than other households to be identified. Data collection for this method tends to be administratively demanding (since diaries are lengthy and detailed), and the results from this approach can be difficult to interpret. One reason for this is that results may be subject to the effects of averaging. For example, suppose one set of PWD spend extra on food and fuel and spend less on transport and services. Assume also that another group with disability spends extra on transport and services, and less on food and fuel. The approach has difficulty determining whether the observed differences in actual spending patterns reflect differences in the needs of the household, or in the resources available. For PWD as a whole the results would not show an increase in any area. There are also some technical difficulties:

- Expenditures can usually only be measured for households, not for individuals; some of the extra costs faced by the person with disabilities may be cancelled out by reduced consumption among other members of the household.

- Expenditure is an accurate indicator of consumption only if it is assumed that people with and without disabilities buy at the same prices. In practice PWD may sometimes have to pay more for the same goods or services. A trip to the shops, for example, might require a taxi fare instead of a bus ride.

- Normal expenditure patterns are strongly influenced by household composition and by levels of income; it is necessary to allow for the possibility that PWD may not live in typical households with typical incomes.

- **The budget standards approach** - involves developing detailed budgets for households with and without a person with disability and using the difference to indicate the extra costs associated with the disability. Budgets are derived consensually by getting groups to come together and agree on how much is needed to achieve a pre-determined standard of living [47]. It is also possible to develop a budget standard more normatively by identifying the items that are needed to achieve the standard of living and then costing them, as other studies have done [48]. The budget standards approach is restricted by its ability to capture what is required by different households to achieve a specific standard of living

- **The standard of living approach** - estimates how much income is required to raise (persons/

households?) those with a disability to the same standard of living as those without disability? The standard of living method looks for evidence of a reduction in the standard of living that PWD can attain from a given income. It focuses on the reduced standard of living because of expenditure forgone due to disability related expenditure [37].

The standard of living approach is based on the assumption that PWD experience a lower standard of living than PWOD with the same income, because of diversion of money resources to goods and services required because of their disability. For a given standard of living it is possible to compare what incomes people with and without disabilities have, the difference being the extra costs incurred by disability (Figure 51).

For a given level of income Y_0, a household containing a person with a disability is predicted to have a standard of living of S_{0D}. The corresponding standard of living for a comparable household without a person with a disability is higher at S_{0ND}.

The implication is that the household having persons with disabilities could enjoy the same standard of living as the household not having persons with disabilities, but would require a higher income to do so. An income level of Y_1 gives the household having persons with disabilities the same standard of living as the household not having persons with disabilities achieves at Y_0:

Figure 51. The standard of living approach
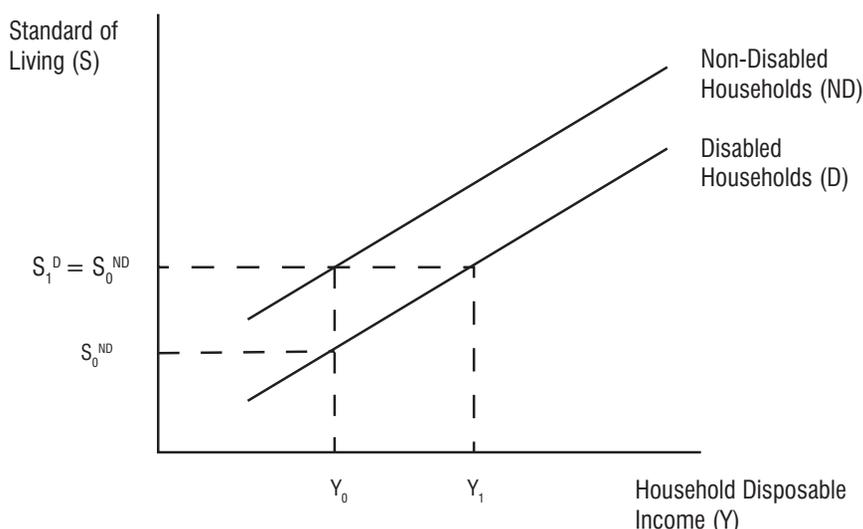
$$S = \alpha \ln(Y) + bD + gX + k$$

In which:

- S is an indicator of the standard of living

- Y is household income

- D is a dummy variable relating to disability status

$$Extra\ cost = -b/a$$

- X is a vector of other characteristics including household composition

- a, b, and g are the coefficients to be estimated and

- k is a constant.

The standard of living approach has been considered as the best methodology for estimating the cost of disability [40]. The standard of living approach for measuring extra costs of disability draws on the subjective approach to equivalisation by concentrating on the relationship between standard of living and income, and on the consumption-patterns approach by using objective data on incomes and consumption. At the same time, the standard of living approach does not suffer from many of the drawbacks associated with other approaches such as neither individuals nor experts are required to make judgments for the standard of living method about hypothetical levels of consumption with and without disability and avoids the arbitrariness associated with deriving equivalence scales from social security benefit levels [37]. Its main limitation relates to its dependence on how the standard of living is measured, although it is possible to experiment with alternative measures and assess how sensitive the results are to each of them [40]. This method is an indirect method of measuring the costs associated with disability and does not capture the individual direct costs associated with disability, such as health care which is a substantial cost for households. The approach does not estimate the opportunity cost of ill health and disability, such as potential foregone earnings.

5.4. METHODS

5.4.1. The standard of living approach

In this study, the standard of living approach was employed as this was deemed the most appropriate method to meet the objectives of the research. The analyses were done through following steps:

5.4.1.1. Constructing the dependent variable:

The dependent variable of our model was the standard of living, a composite. In this study, the standard of living variable was constructed based on economic theory and experiences from previous studies.

According to economic theory, the standard of living variable consists of three important factors [37, 39]:

- It is not simply a statement of income

- It should consist of goods and services that are not systematically related to disability status

- It should be elastic with respect to income. Choosing an indicator which is sensitive to the bottom of the distribution means the results will reflect extra needs (necessities) but may not discriminate well for higher-income households. Choosing an indicator which is sensitive at the top of the distribution means the results will reflect extra expenditure (luxuries). A combined indicator may help to cover the full range.

It is important to remember that the indicator is not intended to measure standard of living overall - it is necessary only that it should be elastic with respect to disposable income for households with a range of tastes [39].

Berthoud et al. (1993) found a combined indicator based on ownership of seven consumer durables and five questions about budgeting (including ability to save) fitted quite well with the criteria [36]. Zaidi and Burchardt (2005) used both a variable on "any savings" and an index of consumer durables as standard of living variables. Cullinan et al. created an asset-based composite variable after empirically testing the desirable criteria [39]. In a previous Vietnamese study, Mont and Cuong used the 11 household assets (motorbike; wardrobe; bed; tables, chairs, sofas; television; electric fan;. cooker; - ush toilet; permanent house; and tap water) to construct the standard of living variable [49].

Our survey collected information on different items which can be used as proxies of the standard of living including saving ability (has any saving) and

34 household assets (type of house, tape water, flush toilet, cooking energy , television, radio, video, fridge, air-conditioner, electric fan, heater, washing machine, electric water boiler, rice cooker, micro wave, telephone, mobile phone, computer, internet, gas cook, stove, sofa, motorbike, bike, electric bike, car, truck, boat, electric generator, agriculture machine, vacuum cleaner, camera, satellite TV, kettle) which may cover the wider range of income.

After empirically testing the relationships between income and disability status with all the potential variables, we decided to use 20 variables (the variables that were statistically significant at the 5 per cent level were chosen) in constructing the standard living indicator, including.

1) Saving,

2) Flush Toilet

3) Television

4) Radio

5) Video

6) Fridge

7) Fan

8) Washing Machine

9) Rice Cooker

10) Micro Wave

11) Telephone

12) Mobile Phone

13) Computer

14) Gas

15) Motorbike,

16) Car

17) Boat

18) Agriculture Machine

19) Camera

20) Satellite TV channel

For each above items, a score of 1 was given if the answer was "yes" to the question. These scores are then totaled for each household, representing the standard of living of the household (sol1).

We also created a second standard of living indicator from the 12 variable selected using principal component analysis techniques. This second standard of living indicator was constructed into 5 equal-size groups (quintiles) (sol2).

5.4.1.2. Creating key independent variables

The following independent variables were included:

- *Income*

In this study, the natural logarithm of annual disposable income of the household was used. As suggested by Zaidi and Burchardt (2003), household income is not equivalised for household size or composition [37].

- *Disability status*

We used definition of the International Classification of Functioning, Disability, and Health (ICF) which focuses on people's ability to take particular actions in their current environment [6]. Respondents were asked questions about difficulties they may have doing 6 domains of activity.

1) Do you have difficulty seeing, even if wearing glasses?

   a. No - no difficulty

   b. Yes - some difficulty

   c. Yes - a lot of difficulty

   d. Cannot do at all

Remaining questions have same response categories.

2) Do you have difficulty hearing, even if using a hearing?

3) Do you have difficulty walking or climbing steps?

4) Do you have difficulty remembering or concentrating?

5) Do you have difficulty (with self-care such as) dressing?

6) Using your usual (customary) language, do you have difficulty, for example, understanding or being understood?

Respondents were identified as having a disability if they answered "some difficulty" to at least one of the questions.

5.4.1.3. Selecting other independent variables

Other independent variables were determined by our hypotheses about their importance in the relationship between standard of living, income and disability. They were

- Geographical location (urban=1, rural=0)

- Household size: the household equivalence scale is used rather than actual household size. The value of the parameter - has been estimated from previous studies based on 59 countries' household survey data, and it equals 0.56 (Equivalized household size= Actual household size power 0.56) [50]

- Sex of the household's head (male=1, female=0)

- Age of the household's head

- Ethnicity of the household's head (kinh=1, others=0)

- Marital status the household's head (married=1, others=0)

- Education of the household's head (secondary education or higher=1, others=0)

- Sex of the person with disability (male=1, female=0)

- Age of the person with disability (less than 60 years old=1; Equal or greater the 60 years olds/elderly=2)

- Education of the person with disability (secondary education or higher=1, others=0)

- Person with disability has a job (yes=1, no=0)

5.4.1.4. Modeling approach

According to Zaidi and Burchardt (2003), it is important to bear in mind that the purpose of this empirical work is not to specify a model that could explain variation in the standards of living. Rather, the aim is to quantify how income is related to a standard of living indicator (i.e. obtain an estimate of an income curve), and how disability - by shifting the income curve to the right - reduces the standard of living [37].

A multiple modeling approach was adopted to analyze the underlying relationship between living standards, income and other independent variables. We derived estimates using two distinct estimation methodologies, ordinary least squares (OLS) (dependent variable was sol1) and ordered logit regression (dependent variable was sol2). We ran different models to assess the cost of living with disability by:

- Age of the person with disability: 1) less than 60 years old; 2) equal or greater the 60 years olds/elderly

- Gender of the person with disability: 1) men; 2) women

- Location: 1) urban; 2) rural)

- Types of disability: 6 functions, including 1) seeing; 2) hearing; 3) walking; 4) cognition; 5) communication; and 6) self-care).

- Severity of disability: 1) no difficulty; 2) some difficulty of at least one of the 6 functions, 3) a lot of difficulty of at least one of the 6 functions; and 4) can't not do at all of at least one of the 6 functions

5.4.2. Assessing joint-effect of disability and stigma on the cost of living

5.4.2.1. Extension of the standard of living approach

In order to assess the effect of stigma on the cost of living with disability, using the concept that stigma reinforces the severity of disability and leads to higher cost of living with disability, we created a new variable that can be used as a proxy of the joint-effects (interaction) between disability and stigma status as the following:

1) Generating a total stigma score for each individual by summing up the score of all the 40 questions on stigma which were validated in the first phase of this study (see chapter 4);

2) Classifying the households into high stigma and low stigma groups. We used 2 cut-odd points (median and upper bound of inter-quartile). A household with person whose stigma score greater than median (or upper bound of inter-quartile) value of the overall stigma score was classified as high stigma. Other households were regarded as low stigma;

3) Creating a variable indicating the joint-effects (interaction) between disability and stigma status (pwd_stigma) with the following categories:

- Household without disabilities &"Low stigma"=1

- Household without disabilities & "High stigma"=2

- Household with disabilities & "Low stigma"=3

- Household with disabilities & "High stigma"=4

The interaction variable was then introduced into the models to get parameters for estimating the additional cost associated with both disability and stigma status.

5.4.2.2. Oaxaca decomposition technique

Oaxaca decomposition technique was used to explore whether stigma status is associated with the observed gap in income between households with and without disabilities.

This technique has been widely used by labor economists to study racial, ethnic, and sex differences in wages and income [51-54]. This technique allowed us to decompose the differences in income between households with and without disabilities into 3 components:

(i) Differences in the intercepts or the portion due to the distribution of the population characteristics

(i) Differences in the coefficients or the portion due to the influence of those population characteristics (unexplained portion 1)

(ii) Differences in the interactions between the intercepts and the coefficients (unexplained portion 2)

$$\mathbf{Y}^{non-disabled} - \mathbf{Y}^{disabled} = \Delta x \beta^{disabled} + \Delta \beta x^{non-disabled} + \Delta x \Delta \beta$$

Component (i) is also called endowment or the explained part of the gap. The combination of components (ii) and (iii) is called unexplained part of the gap or the part of the gap that is associated with disability status. Further descriptions of the decomposition techniques can be found elsewhere [12-54].

In this study, we constructed an ordinary least square for estimating the gap in income between households with and without disabilities and decomposing the gap, including the portion associated with stigma status.

5.4.3. The statistical software

Data analyses were done carried out using Stata10 software (Stata Corporation). Lincom test was used in estimating 95% con-dence interval of additional cost of living with disability. For Oaxaca decomposition procedure, we used a STATA ado

file written by Ian Watson, a senior researcher at the Australian Centre for Industrial Relations Research and Training at the University of Sydney, to perform the decomposition. Cluster option was used to adjust for sampling design.

5.5. RESULTS

5.5.1. Cost of living with disability

Table 13 presents the parameter estimates of the two econometric models which can be used to estimate the cost of living with disability. In each model, the dependent variable was standard of living and independent variables were the disability status, the natural logarithm of annual disposable income of the household and other relevant characteristics of both household and the person with disability. The cost of living with disability as a percentage of income by dividing the estimated coefficient on

the relevant disability variable by the estimated coefficient on log income.

Model 1 is the OLS model for the whole sample. The coefficient on the disability status variable was estimated to be -0.18 and found to be statistically different from zero, implying that households containing a person with disability have lower standard of living. This is in line with our hypothesis. The coefficient on log income was 1.93 and also signicantly different from zero. Using the parameter estimates from Model 1, the cost of disability as a percentage of income was estimated as 9.5%, with a 95% con-dence interval of 1.7-17.0% of

household income. At the annual median income for households with disabilities during of VND 45.6 million, the estimated annual cost of living with disability was VND 4.343 million (95% condence interval of VND 0.792-7.895 million).

Model 2 is the ordered logit model for the whole sample. The coefficients on the disability status variable and log income were signicantly different from zero. The annual cost of living with disability was estimated to be 8.8% of income or VND 3.991 million (95% condence interval of VND 0.207-7.775 million).

Table 13: Estimated annual cost of living with disability (any disability)

	OLS model (Model 1)	Ordered logit model (Model 2)
Annual household income, log	1.93*	1.67*
Disability variable	-0.18*	-0.15*
Estimated cost of living with disability as a % of income	9.5%	8.8%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	1.7%	0.5%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	17.3%	17.0%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability per year (VND)	4,343,468	3,990,565
Lower bound of 95%CI for the estimated cost of living with disability (VND)	792,341	206,586
Upper bound of 95%CI for the estimated cost of living with disability (VND)	7,894,596	7,774,545
R-squared	0.66	0.31

denotes significant coefficient (p<0.05)

Table 14 reports the parameter estimates for households with people who had vision difficulty. The coefficients on the disability status variable and log income were signicantly different from zero. Using OLS model, the annual cost of living with vision difficulty was estimated to be 12.7%

of income or VND 5.778 million (95% condence interval of VND 1.991-9.565 million). Using ordered logit model, the annual cost of living with vision difficulty was estimated to be 10.2% of income or VND 4.648 million (95% condence interval of VND 0.754-8.542 million).

Table 14: Estimated annual cost of living with vision difficulty

	OLS model (Model 3)	Ordered logit model (Model 4)
Annual household income, log	1.93*	1.67*
Disability variable	-0.24*	-0.17*
Estimated cost of living with disability as a % of income	12.7%	10.2%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	4.4%	1.7%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	21.0%	18.7%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability per year (VND)	5,777,743	4,648,145
Lower bound of 95%CI for the estimated cost of living with disability (VND)	1,990,527	753,804
Upper bound of 95%CI for the estimated cost of living with disability (VND)	9,564,956	8,542,485
R-squared	0.66	0.31

denotes significant coefficient

Table 15 shows the results of the models for households with people who had hearing difficulty. The coefficients on the disability status variable and log income were signicantly different from zero. Using OLS model, the annual cost of living with hearing difficulty was estimated to be 9.5% of income or VND 10.128 million (95% condence interval of VND 4.344-13.952 million). Using ordered logit model, the annual cost of living with hearing difficulty was estimated to be 8,5% of income or VND 9.045 million (95% condence interval of VND 3.899-14.194 million).

Table 15. Estimated annual cost of living with hearing difficulty

	OLS model (Model 5)	Ordered logit model (Model 6)
Annual household income, log	1.92*	1.66*
Disability variable	-0.39*	-0.33*
Estimated cost of living with disability as a % of income	20.1%	19.8%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	9.5%	8.5%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	30.6%	31.1%

Table 15. Estimated annual cost of living with hearing difficulty

	OLS model (Model 5)	Ordered logit model (Model 6)
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability per year (VND)	9,148,149	9,044,692
Lower bound of 95%CI for the estimated cost of living with disability (VND)	4,344,285	3,895,868
Upper bound of 95%CI for the estimated cost of living with disability (VND)	13,952,018	14,193,511
R-squared	0.66	0.31

denotes significant coefficient

Table 16 shows the results of the models for households with people who had moving difficulty. The coefficients on the disability status variable and log income were signicantly different from zero. Using OLS model, the annual cost of living with moving difficulty was estimated to be 9% of income or VND 4.194 million (95% condence interval of VND 0.232-7.992 million). Using ordered logit model, the annual cost of living with moving difficulty was estimated to be 12.3% of income or VND 5.598 million (95% condence interval of VND 1.496-9.700 million).

Table 16. Estimated annual cost of living with moving difficulty

	OLS model (Model 7)	Ordered logit model (Model 8)
Annual household income, log	1.93*	1.66*
Disability variable	-0.17*	-0.20*
Estimated cost of living with disability as a % of income	9.0%	12.3%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	0.5%	3.3%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	17.5%	21.3%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability per year (VND)	4,112,796	5,597,888
Lower bound of 95%CI for the estimated cost of living with disability (VND)	232,204	1,495,616
Upper bound of 95%CI for the estimated cost of living with disability (VND)	7,993,393	9,700,160
R-squared	0.66	0.31

denotes significant coefficient

Table 17 shows the results of the models for households with people who had remembering difficulty. The coefficients on the disability status variable and log income were signicantly different from zero. Using OLS model, the annual cost of living with remembering difficulty (the additional cost of living with impairment when compared to living with no impairment) was estimated to be 11.6% of income or VND 9.621 million (95% condence interval of VND 5.293-13.949 million). Using ordered logit model, the annual cost of living with remembering difficulty was estimated to be 9.3% of income or VND 8.697 million (95% condence interval of VND 4.229-13.165 million).

Table 17. Estimated annual cost of living with remembering difficulty

	OLS model (Model 9)	Ordered logit model (Model 10)
Annual household income, log	1.92*	1.66*
Disability variable	-0.41*	-0.32*
Estimated cost of living with disability as a % of income	21.1%	19.1%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	11.6%	9.3%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	30.6%	28.9%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability per year (VND)	9,620,848	8,697,379
Lower bound of 95%CI for the estimated cost of living with disability (VND)	5,293,107	4,229,496
Upper bound of 95%CI for the estimated cost of living with disability (VND)	13,948,584	13,165,267
R-squared	0.66	0.31

* denotes significant coefficient

Table 18 shows the results of the models for households with people who had self-care difficulty. The OLS and ordered logit models showed that the annual cost of living with self-care difficulty was estimated to be 10.5% and 6.7% of income or VND 4.785 million and VND 3.033 million, respectively. However, coefficients on the disability status variable were not statistically signicant, meaning that the additional costs of living with self-care difficulty were not different from zero.

Table 18. Estimated annual cost of living with self-care difficulty

	OLS model (Model 11)	Ordered logit model (Model 12)
Annual household income, log	1.93*	1.66*
Disability variable	-0.20	-0.11

Table 18. Estimated annual cost of living with self-care difficulty

	OLS model (Model 11)	Ordered logit model (Model 12)
Estimated cost of living with disability as a % of income	10.5%	6.7%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	-5.0%	-9.2%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	26.0%	22.5%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability per year (VND)	4,785,109	3,032,961
Lower bound of 95%CI for the estimated cost of living with disability (VND)	-2,298,664	-4,211,593
Upper bound of 95%CI for the estimated cost of living with disability (VND)	11,868,877	10,277,520
R-squared	0.66	0.31

denotes significant coefficient

Table 19 shows the results of the models for households with people who had communication difficulty. The coefficients on the disability status variable and log income were signicantly different from zero. Using OLS model, the annual cost of living with communication difficulty was estimated to be 32.9% of income or VND 14.997 million (95% condence interval of VND 8.009-21.985 million). Using ordered logit model, the annual cost of living with communication difficulty was estimated to be 24.2% of income or VND 11.018 million (95% condence interval of VND 3.706-18.329 million).

Table 19. Estimated annual cost of living with communication difficulty

	OLS model (Model 13)	Ordered logit model (Model 14)
Annual household income, log	1.92*	1.66*
Disability variable	-0.63*	-0.40*
Estimated cost of living with disability as a % of income	32.9%	24.2%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	17.6%	8.1%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	48.2%	40.2%
Median income for households with disability (VND)	45,600,000	45,600,000

Table 19. Estimated annual cost of living with communication difficulty

	OLS model (Model 13)	Ordered logit model (Model 14)
Estimated average cost of living with disability per year (VND)	14,996,645	11,018,077
Lower bound of 95%CI for the estimated cost of living with disability (VND)	8,008,605	3,706,746
Upper bound of 95%CI for the estimated cost of living with disability (VND)	21,984,690	18,329,408
R-squared	0.66	0.31

* denotes significant coefficient

The average estimates of annual costs of living with disability by types of impairment are summarized in Figure 52. Communication difficulty was shown to result in highest additional costs (VND 11.018-14.997 million), followed by remembering difficulty and hearing difficulty. Self-care difficulty was shown to lead to the lowest levels of extra of living cost (VND 3.032-4.785 million).

Figure 52. Average annual cost of living with disability by types of impairment

(Unit: VND)
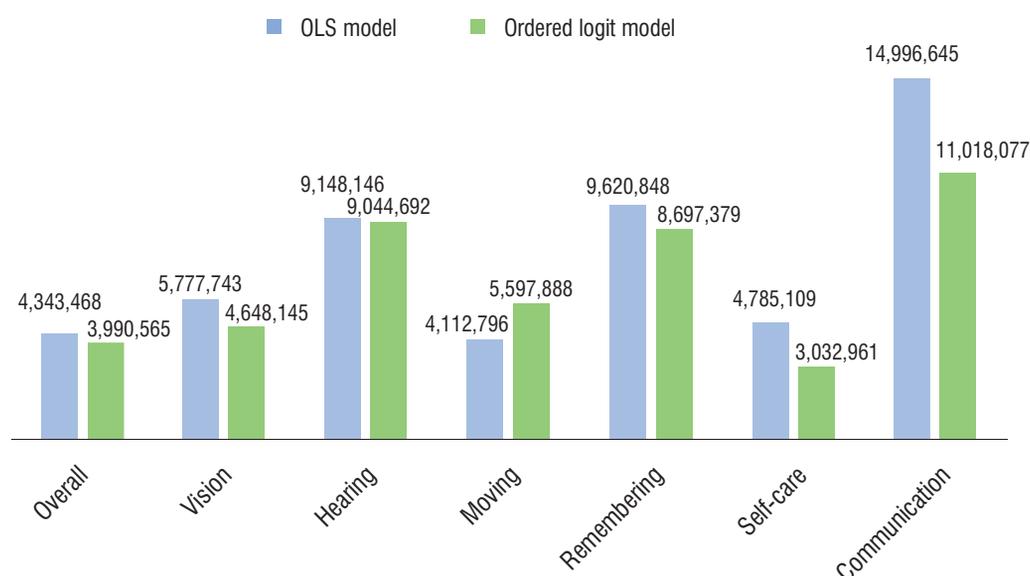
Table 20 reports the parameter estimates by age of the person with disability. The additional costs of living with disability were higher among households with person with disability aged 60 years old and over (30.1% of income or VND 13.345 million by OLS model and 28.5% of income or VND 12.636 million by ordered logit model) compared to that among households with person with disability aged less than 60 years old (7.8% of income or VND 3.731 million by OLS model and 6.8% of income or VND 3.257 million by ordered logit model). However, the differences were not statistically significant.

Table 20. Estimated cost of living with disability by age of the person with disability

	OLS model		Ordered logit model	
	Elderly (Model 11)	Non-elderly (Model 12)	Elderly (Model 13)	Non-elderly (Model 14)
Annual household income, log	2.01*	1.88*	1.77*	1.62*
Disability variable	-0.60*	-0.15*	-0.50*	-0.11*
Estimated cost of living with disability as a % of income	30.1%	7.8%	28.5%	6.8%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	4.7%	-0.7%	0.0%	-2.3%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	55.4%	16.2%	53.1%	15.8%
Median income for households with disability (VND)	44,400,000	48,000,000	44,400,000	48,000,000
Estimated average cost of living with disability per year (VND)	13,345,277	3,731,021	12,636,462	3,256,848
Lower bound of 95%CI for the estimated cost of living with disability (VND)	2,072,126	320,050	230,002	1,084,018
Upper bound of 95%CI for the estimated cost of living with disability (VND)	24,618,424	7,782,086	23,588,832	7,597,714
Pseudo R-squared	0.67	0.66	0.31	0.31

denotes significant coefficient

Table 21 reports the parameter estimates by gender of the person with disability. The additional costs of living with disability were higher among households with female person with disability (9.5% of income or VND 4.569 million by OLS model and 12.1% of income or VND 5.824 million by ordered logit model) compared to that among households with male person with disability (8.7% of income or VND 3.882 million by OLS model and 4.7% of income or VND 2.105 million by ordered logit model). However, the differences were not statistically significant.

Table 21. Estimated cost of living with disability by gender of the person with disability

	OLS model		Ordered logit model	
	Men (Model 15)	Women (Model 16)	Men (Model 17)	Women (Model 18)
Annual household income, log	1.85*	1.99*	1.65*	1.69*
Disability variable	-0.16	-0.19	-0.08	-0.20*

Table 21. Estimated cost of living with disability by gender of the person with disability

	OLS model		Ordered logit model	
	Men (Model 15)	**Women (Model 16)**	**Men (Model 17)**	**Women (Model 18)**
Estimated cost of living with disability as a % of income	8.7%	9.5%	4.7%	12.1%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	-2.9%	-0.2%	0.0%	1.6%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	20.4%	19.2%	16.7%	22.7%
Median income for households with disability (VND)	44,400,000	48,000,000	44,400,000	48,000,000
Estimated average cost of living with disability per year (VND)	3,882,576	4,568,803	2,104,986	5,824,080
Lower bound of 95%CI for the estimated cost of living with disability (VND)	-1,297,652	-79,445	0	752,986
Upper bound of 95%CI for the estimated cost of living with disability (VND)	9,062,804	9,217,051	7,433,062	10,895,174
Pseudo R-squared	0.65	0.67	0.32	0.31

* denotes significant coefficient

Table 22 reports the parameter estimates by living area of the person with disability. The additional costs of living with disability were higher among urban households (14.6% of income or VND 6.496 million by OLS model and 11.3% of income or VND 5.001 million by ordered logit model) compared to that among rural households (5.2% of income or VND 2.484 million by OLS model and 6.7% of income or VND 3.194 million by ordered logit model). However, the differences were not statistically significant.

Table 22. Estimated cost of living with disability by living area of the person with disability

	OLS model		Ordered logit model	
	Urban (Model 19)	**Rural (Model 20)**	**Urban (Model 21)**	**Rural (Model 22)**
Annual household income, log	2.07*	1.86*	1.90*	1.55*
Disability variable	-0.30*	-0.10	-0.21	-0.10
Estimated cost of living with disability as a % of income	14.6%	5.2%	11.3%	6.7%

Table 22. Estimated cost of living with disability by living area of the person with disability

	OLS model		Ordered logit model	
	Urban (Model 19)	Rural (Model 20)	Urban (Model 21)	Rural (Model 22)
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	3.0%	-5.3%	0.0%	-4.8%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	26.3%	15.6%	23.0%	18.1%
Median income for households with disability (VND)	44,400,000	48,000,000	44,400,000	48,000,000
Estimated average cost of living with disability per year (VND)	6,496,479	2,483,784	5,000,932	3,194,453
Lower bound of 95%CI for the estimated cost of living with disability (VND)	1,333,856	-2,523,163	-	-2,318,400
Upper bound of 95%CI for the estimated cost of living with disability (VND)	11,659,107	7,490,731	10,196,802	8,707,301
Pseudo R-squared	0.56	0.54	0.26	0.23

denotes significant coefficient

We also estimated the cost of living with disability by level of severity. Severity of disability was classified in 4 levels: 1) no difficulty; 2) some difficulty of at least one of the 6 functions, 3) a lot of difficulty of at least one of the 6 functions; and 4) can't not do at all of at least one of the 6 functions.

Table 23, Table 24 and Figure 53 show the estimated costs of living with disability by severity. For each level of severity, the cost of living with disability as a percentage of income was calculated by dividing the respective coefficient on each of the severity dummy variables by the coefficient on log income. The cost of living with disability was shown to increase as people had more severe impairment.

Households with person who had some difficulty of at least one of the 6 functions incurred an additional cost of 3.7% of income or VND 1.853-1.872 million per year. However, the figures were not significant different from zero (at significance level of 0.05). The cost of living with disability for the households with person who had a lot of difficulty of at least one of the 6 functions and those with person who can't not do at all of at least one of the 6 functions were 21.8%-24% of income or VND 7.850-8.644 million. The cost of living with "can't not do at all" disability was 35.78%-43% of income or VND 12.864-15.471 million. The additional costs associated with "a lot of difficulty" and "can't not do at all" were significant different from zero.

Table 23. Estimated cost of living with disability by severity (OLS model)

	Some difficulty (Model 23)	A lot of difficulty (Model 24)	Can't not do at all (Model 25)
Annual household income, log	1.91*	1.91*	1.91*
Disability variable	-0.07	-0.46*	-0.8209027*
Estimated cost of living with disability as a % of income	3.7%	24.0%	43.0%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	-4.6%	11.4%	19.4%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	12.0%	36.6%	66.6%
Median income for households with disability (VND)	50,400,000	36,000,000	36,000,000
Estimated average cost of living with disability per year (VND)	1,853,006	8,644,090	15,470,795
Lower bound of 95%CI for the estimated cost of living with disability (VND)	-2,324,624	4,115,696	6,971,101
Upper bound of 95%CI for the estimated cost of living with disability (VND)	6,030,637	13,172,483	23,970,492
R-squared	0.66		

denotes significant coefficient

Table 24. Estimated cost of living with disability by severity (Ordered logit model)

	Some difficulty (Model 26)	A lot of difficulty (Model 27)	Can't not do at all (Model 28)
Annual household income, log	1.65*	1.65*	1.65*
Disability variable	-0.06	-0.36*	-0.59*
Estimated cost of living with disability as a % of income	3.7%	21.8%	35.7%
Lower bound of 95%CI for the estimated cost of living with disability as a % of income	-5.2%	9.0%	10.2%
Upper bound of 95%CI for the estimated cost of living with disability as a % of income	12.6%	34.6%	61.2%
Median income for households with disability (VND)	50,400,000	36,000,000	36,000,000
Estimated average cost of living with disability per year (VND)	1,872,476	7,849,516	12,863,675

Table 24. Estimated cost of living with disability by severity (Ordered logit model)

	Some difficulty (Model 26)	A lot of difficulty (Model 27)	Can't not do at all (Model 28)
Lower bound of 95%CI for the estimated cost of living with disability (VND)	-2,597,666	3,247,528	3,682,901
Upper bound of 95%CI for the estimated cost of living with disability (VND)	6,342,613	12,451,507	22,044,445
R-squared	0.31		

denotes significant coefficient

Figure 53. Average annual cost of living with disability by severity

(Unit: VND)
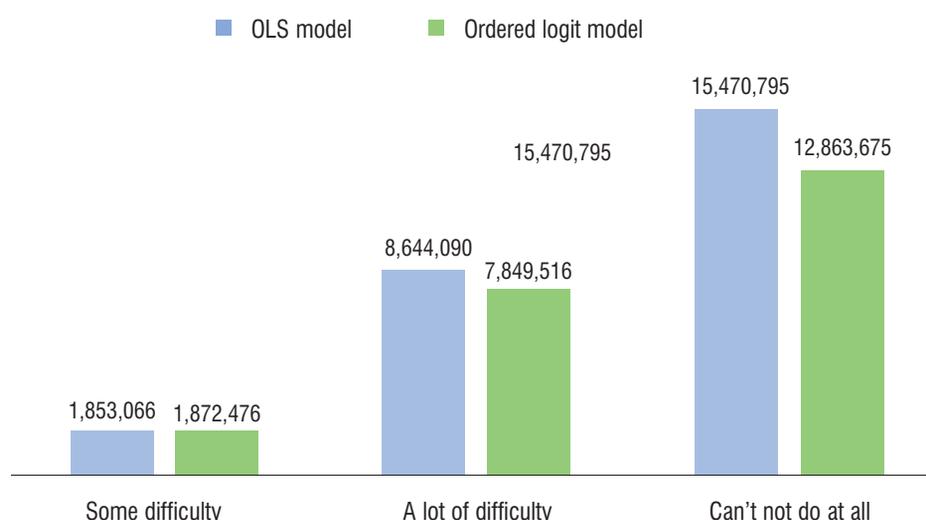
5.5.2. Joint-effect of disability and stigma on the cost of living

We classified the households into high stigma and low stigma groups. We used 2 cut-odd points (median and upper bound of inter-quartile). A household with person whose stigma score greater than median (or upper bound of inter-quartile) value of the overall stigma score was classified as high stigma. Other households were regarded as low stigma.

Using median as the cut-off point of stigma level

The correlation between disability and stigma status (using median as the cut-off point of stigma level) is presented in Figure 54. Table 25 presents

the parameter estimates of the two econometric models which can be used to estimate the cost of living with both disability and high level of stigma. In both model 29 (the OLS model) and model 30 (the ordered logit model), the coefficients on the disability status variable and log income were signicantly different from zero. The annual costs of living with both disability and high level of stigma as percentage of the household income were estimated to be 39.3% (the OLS model) and 34.9% (the ordered logit model). The average costs of living with both disability and high level of stigma per year estimated from the two models were VND 17.903 million (95%CI: VND 12.395-23.412 million) and VND 15.906 million (95%CI: VND 10.254-21.559 million), respectively.

Figure 54. Correlation between disability and stigma status (median as the cut-off point)

Legend: Stigma Low, Stigma High

No: Stigma High 42.9, Stigma Low 57.1
Yes: Stigma High 57.2, Stigma Low 42.8

Some difficulty
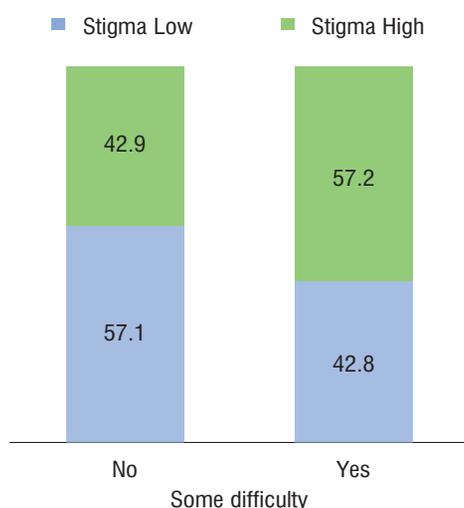
Table 25. Estimated annual cost of living with both disability and stigma (median as the cut-off point)

	OLS model (Model 29)	Ordered logit model (Model 30)
Annual household income, log	1.87*	1.63*
Disability variable	-0.73*	-0.57*
Estimated cost of living with disability and high level of stigma as a % of income	39.3%	34.9%
Lower bound of 95%CI for the estimated cost of living with disability and high level of stigma as a % of income	27.2%	22.5%
Upper bound of 95%CI for the estimated cost of living with disability and high level of stigma as a % of income	51.3%	47.3%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability and high level of stigma per year (VND)	17,903,837	15,906,502
Lower bound of 95%CI for the estimated cost of living with disability and high level of stigma (VND)	12,395,270	10,253,844
Upper bound of 95%CI for the estimated cost of living with disability and high level of stigma (VND)	23,412,403	21,559,160
R-squared	0.67	0.31

* denotes significant coefficient

As shown as in Figure 55, the cost of living with both disability and high level of stigma was about four-times higher than that of living with disability and any level of stigma.

Figure 55. Join-effect of disability and stigma on the cost of living (median as the cut-off point)
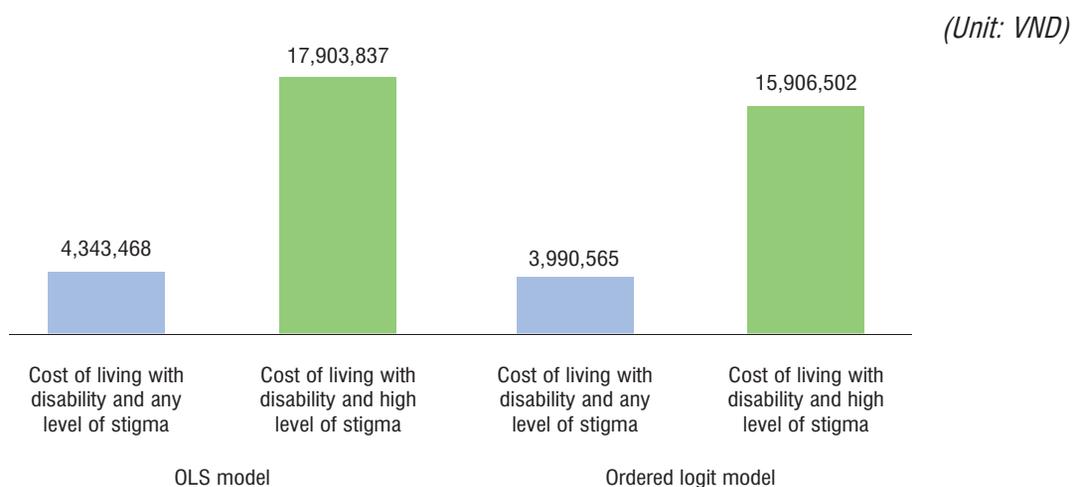
(Unit: VND)

	OLS model		Ordered logit model
Cost of living with disability and any level of stigma	Cost of living with disability and high level of stigma	Cost of living with disability and any level of stigma	Cost of living with disability and high level of stigma
4,343,468	17,903,837	3,990,565	15,906,502

*** Using upper bound of inter-quartile as the cut-off point of stigma level**

The correlation between disability and stigma status (Using upper bound of inter-quartile as the cut-off point of stigma level) is presented in Figure 56. Table 26 presents the parameter estimates of the two econometric models which can be used to estimate the cost of living with both disability and high level of stigma. In both model 31 (the OLS model) and model 32 (the ordered logit model), the coefficients on the disability status variable and log income were signicantly different from zero. The annual costs of living with both disability and high level of stigma as percentage of the household income were estimated to be 56.9% (the OLS model) and 53.7% (the ordered logit model). The average costs of living with both disability and high level of stigma per year estimated from the two models were VND 19.858 million (95%CI: VND 13.790-25.926 million) and VND 18.262 million (95%CI: VND 12.022-24.503 million), respectively.

Figure 56. Correlation between disability and stigma status (upper bound of inter-quartile as the cut-off point)

■ Stigma Low   ■ Stigma High

	No	Yes
Stigma High	17.5	35.0
Stigma Low	82.5	65.0

Some difficulty
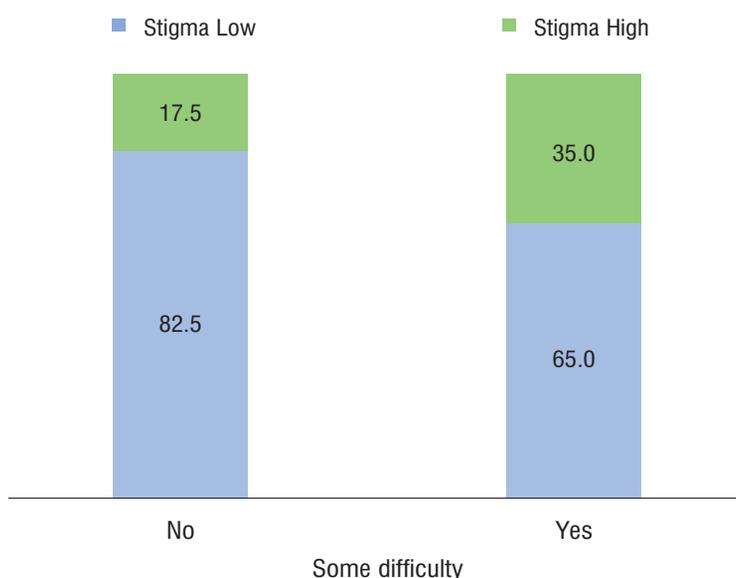
Table 26. Estimated annual cost of living with both disability and stigma (upper bound of inter-quartile as the cut-off point)

	OLS model (Model 31)	Ordered logit model (Model 32)
Annual household income, log	1.86*	1.62*
Disability variable	-0.81*	-0.65*
Estimated cost of living with disability and high level of stigma as a % of income	43.5%	40.0%
Lower bound of 95%CI for the estimated cost of living with disability and high level of stigma as a % of income	30.2%	26.4%
Upper bound of 95%CI for the estimated cost of living with disability and high level of stigma as a % of income	56.9%	53.7%
Median income for households with disability (VND)	45,600,000	45,600,000
Estimated average cost of living with disability and high level of stigma per year (VND)	19,858,344	18,262,581
Lower bound of 95%CI for the estimated cost of living with disability and high level of stigma (VND)	13,790,320	12,022,020
Upper bound of 95%CI for the estimated cost of living with disability and high level of stigma (VND)	25,926,363	24,503,137
R-squared	0.67	0.31

denotes significant coefficient

As shown as in Figure 57, the cost of living with both disability and high level of stigma was about five-times higher than that of living with disability and any level of stigma.

Figure 57. Join-effect of disability and stigma on the cost of living (upper bound of inter-quartile as the cut-off point)

(Unit: VND)
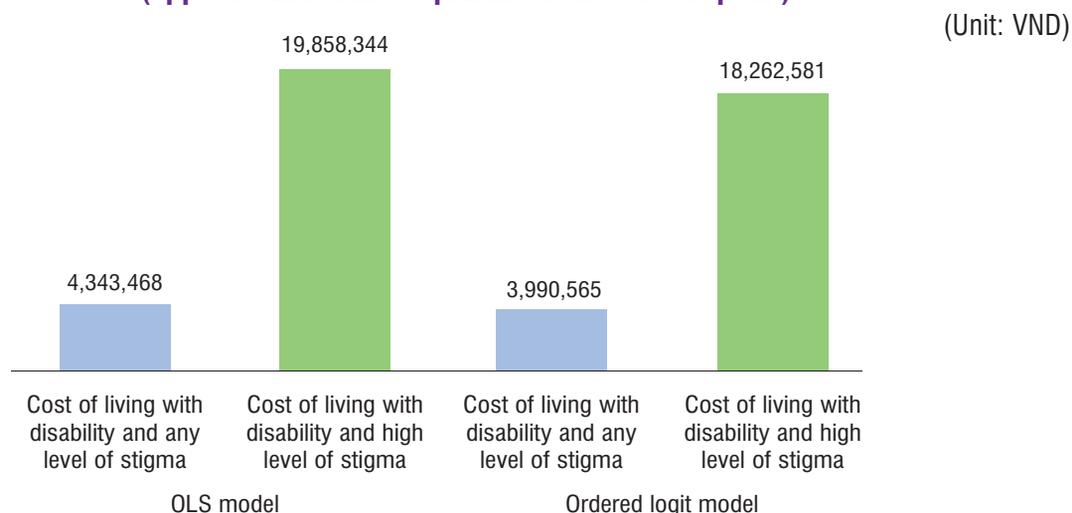
5.5.3. Income gap by disability status due to stigma

*** Using median as the cut-off point of stigma level**

Figure 58 shows the difference in annual household income by both disability and stigma status (median as the cut-off point). Annual incomes for households with and without disabilities were VND 89.062 million and 75.801 million, respectively. Annual incomes for low-stigmatized and high-stigmatized households were VND 107.833 million and 56.604 million, respectively. On average, a household with person with disability and had high level of stigma earned only VND 52.803 million.

Figure 58. Annual household income by disability and stigma status (median as the cut-off point)
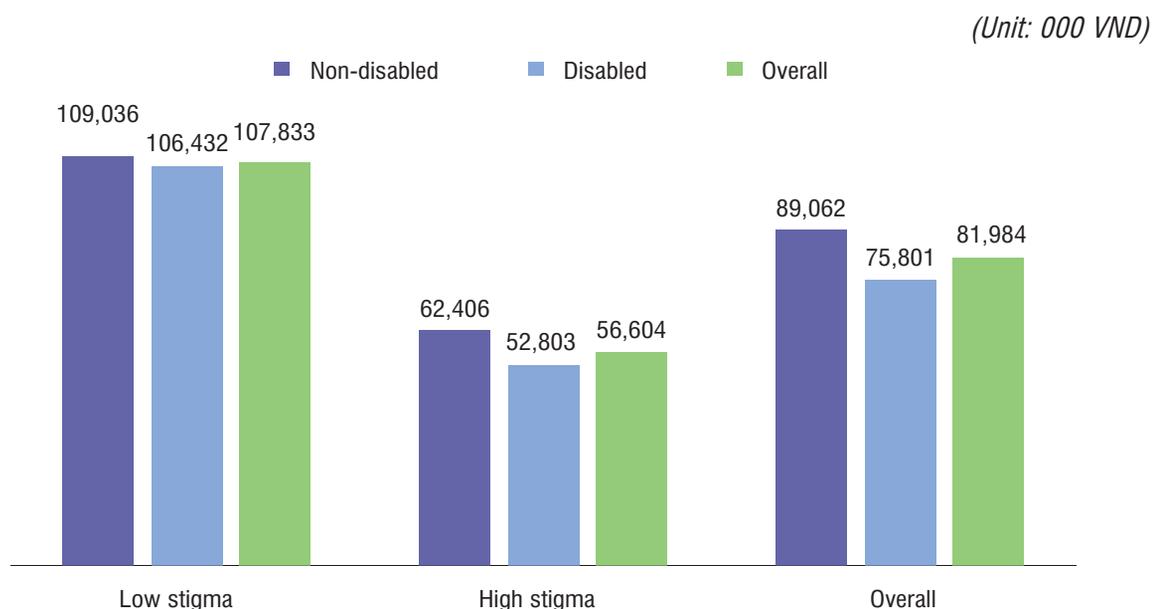
(Unit: 000 VND)

The gap in annual income between households with and without disabilities was decomposed into major components (Table 27). 71.0% of the gap was due to the endowments (explained part). The difference was in favor of the non-households with disabilities and was statistically significant. The remaining 29.0% of the gap was due to the differences in the coefficients and the interactions (unexplained part). However, the unexplained component was not statistically significant. It is important to note that stigma status explained 19.5% of the gap in annual income between households with and without disabilities. The contribution of stigma to the total gap was statistically significant.

Table 27. Decomposition of the gap in annual income between households with and without disabilities (median as the cut-off point)

Income (log)	Coefficient	Lower bound of 95%CI	Upper bound of 95%CI
Household without disabilities	17.79	17.74	17.84
Household with disabilities	17.54	17.49	17.58
Total gap	0.25	0.19	0.32
Gap due to endowments	0.18	0.13	0.23
Gap due to coefficients	0.11	0.04	0.18

Income (log)	Coefficient	Lower bound of 95%CI	Upper bound of 95%CI
Gap due to interaction	-0.04	-0.09	0.02
Gap due to endowments by stigma	0.05	0.03	0.06
% explained	71.0%		
% unexplained	29.0%		
% explained gap by stigma	19.5%		

*** Using upper bound of inter-quartile as the cut-off point of stigma level**

Figure 59 shows the difference in annual household income by both disability and stigma status (upper bound of inter-quartile as the cut-off). Annual incomes for households with and without disabilities were VND 89.062 million and 75.801 million, respectively. Annual incomes for low-stigmatized and high-stigmatized households were VND 94.761 million and 47.128 million, respectively. On average, a household with person with disability and had high level of stigma earned only VND 46.324 million.

Figure 59. Annual household income by disability and stigma status (upper bound of inter-quartile as the cut-off)

(Unit: 000 VND)
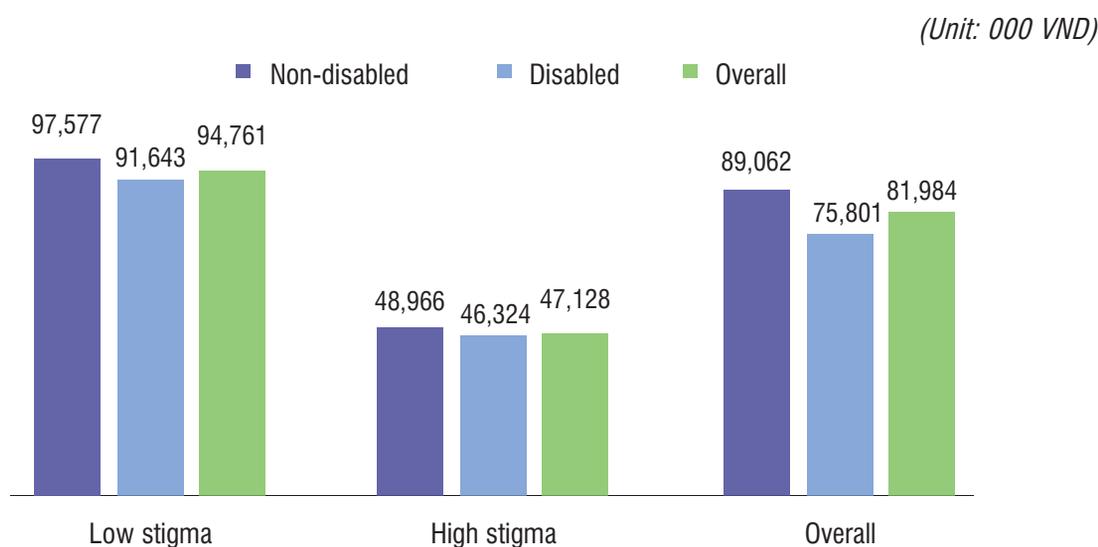
The gap in annual income between households with and without disabilities was decomposed into major components (Table 28). 79.2% of the gap was due to the endowments (explained part). The difference was in favor of the non-households with disabilities and was statistically significant. The remaining 20.8% of the gap was due to the differences in the coefficients and the interactions (unexplained part). However, the unexplained component was not statistically significant. It is important to note that stigma status explained 31.6% of the gap in annual income between households with and without disabilities. The contribution of stigma to the total gap was statistically significant.

Table 28. Decomposition of the gap in annual income between households with and without disabilities (upper bound of inter-quartile as the cut-off)

Income (log)	Coefficient	Lower bound of 95%CI	Upper bound of 95%CI
Household without disabilities	17.8	17.7	17.8
Household with disabilities	17.5	17.5	17.6
Total gap	0.3	0.2	0.3
Gap due to endowments	0.2	0.2	0.3
Gap due to coefficients	0.1	0.0	0.2
Gap due to interaction	0.0	-0.1	0.0
Gap due to endowments by stigma	0.1	0.1	0.1
% explained	79.2%		
% unexplained	20.8%		
% explained gap by stigma	31.6%		

5.6. DISCUSSION AND POLICY IMPLICATION

We have shown that the cost of living with disability in Viet Nam is substantial, accounting for about 8.8%-9.5% percent of annual household income (VND 3.991-4.343 million or about US$ 200-218). The figure is a bit lower than the estimate of 11.5 percent of household income by Mont and Cuong (2011), using the data from Viet Nam Household Living Standards Survey 2006 [49]. A study in Tamil Nadu, India found that the average costs of disability were over 9% and amounted to two to three times the productivity losses from poor nutrition [55]. Zaidi and Burchardt (2003) found the extra costs of living with disability in UK varied between 11 percent and 69 percent of income [37]. Saunders (2006) showed that the costs of living with disability in Australia correspond to 29 per cent of equivalised income" although this measure increases to 37 per cent when an alternative, and probably more realistic, measure of disability is used [38]. A report by Cullinan et al. estimated the long-run economic cost of disability in Ireland of about 30.3 percent to 32.7 percent of average weekly income [39].

We found that the cost of living with disability in Viet Nam varied by type of impairment. Communication difficulty was shown to result in highest additional costs (VND 11.018-14.997 million). Zaidi and Burchardt (2003) reported that non-pensioners with locomotion impairment, limited independence, mental health problems and difficulties in reaching or dexterity are found to have significant extra costs. Pensioners with limited independence and locomotion impairment also face significantly greater extra costs than other groups [37].

The costs of living with disability in Viet Nam were higher among households with person with disability aged 60 years old and over, among households with female PWD and household with PWD located in urban area.

We have also showed that the costs of living with disability increased as people had more severe impairment. The finding is in line with previous studies. INDECON (2004) [56], Zaidi and Burchardt (2003) [37] and Cullinan et al. 2011 [39] also found that severity of disability is an important factor and leads to higher costs.

Our study has not only contributed to the existing literature on the close relationship been disability

and poverty [57-59] but also provided some insights into the vicious cycle among disability, stigma and poverty. We have demonstrated that stigma aggravated the cost of living with disability, i.e. 1) The cost of living with disability with high level of stigma was about 4 to 5-times higher than that of living with disability with any level of stigma; and 2) Stigma status explains 19.5%-31.6% of the income gaps between households with and without disabilities;

Although there is no similar quantitative study in this area, qualitative research have already ascertained that stigma tends to exclude PWD from employment and income-earning opportunities, forcing them into poverty [44-46]. Stigma was shown to be linked to increased risk of further disability. Exclusion from public infrastructure tends to limit the availability of sanitation, clean water, electricity, and health care services. These limitations tend to increase the risk of impairment, creating a mutually reinforcing cycle [60].

There are some methodological issues that we need to note in this study. Firstly, we used cross-sectional data so that important issues relating to unobserved heterogeneity and dynamics of disability remained unaddressed. Secondly, as using standard of living approach, the study findings might be subject to the methods for measuring standard of living. Further, we did not include opportunity costs of ill health and disability, such as potential foregone earnings.

Nevertheless, to our knowledge, this study is one among very few quantitative reports on the cost of living with disability and stigma from developing countries. We used the standard of living approach which has been considered as the best methodology for estimating the cost of disability [40, 56]. Using

both economic theory and the experiences from previous studies would have led to accurate and comparable findings. Our estimates from both OLS and ordered logit models were quite similar each other, showing the high repeatability of the study findings.

The findings from this study have important policy implications in Viet Nam and elsewhere. The study has addressed the cumulative relationships among disability, stigma and poverty and proved that there exits the vicious cycle among disability, stigma and poverty. The study has strengthened the arguments that addressing the extra economic costs of disability is a logical step towards alleviating elements of social exclusion for PWD [39] and inclusion and anti-discrimination programs can, therefore, simultaneously reduce both disability and poverty [61]. It also implies that eliminating world poverty is unlikely to be achieved unless the rights and needs of PWD are taken into account [62].

The Government should take actions to support PWD as well as eliminate stigma against PWD. Different interventions could be implemented such as providing free or subsidized services, compensating social security benefits and promoting equality in employment and access to services for PWD. Interventions to promote the wellbeing and social inclusion of PWD include policies to ensure adequate income for PWD or those caring for a person with a disability.

This preliminary study may therefore serve as a baseline for further assessments, including collection of panel or longitudinal data to address unobserved heterogeneity and a use more sophisticated econometrics models.

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APPENDIXES

Appendixes

APPENDIX 1. THE STUDY PROVINCES

Domain/ Region	Name of the study province
Metropolis domain	Hanoi
	Ho Chi Minh city
Non-metropolis domain (region)	
Northern Uplands	Lang Son
Red River Delta	Thai Binh
Central Coast	Quang Nam
Central Highlands	Kon Tum
Southeast	Dong Nai
Mekong Delta	Vinh Long

APPENDIX 2. SEPARATED ANALYSES OF STIGMA SCORES FOR EACH TYPE OF DISABILITY

1. Stigma scores among people with and without vision difficulty

Table 29. Descriptive statistics of stigma score for people without and with different levels of vision difficulty

		No difficulty (1)	A little difficulty (2)	A lot of difficulty (3)	p
Total stigma score	mean	39.23	43.52	48.76	P1-2:<0.05
	sd	12.24	12.48	14.52	P1-3:<0.05
	median	39.00	44.00	49.00	P2-3:<0.05

Table 29 shows that mean stigma score increased with increasing level of vision difficulty. The total stigma score for the group without vision difficulty was 39.23, for the group with little difficulty was 43.52 and for the group with a lot of difficulty was 48.76. The differences between 3 groups of vision difficulty were statistically significant (ANOVA test).

Figure 60. Box plot of stigma score among different group characterized by levels of vision difficulty, age groups and sex
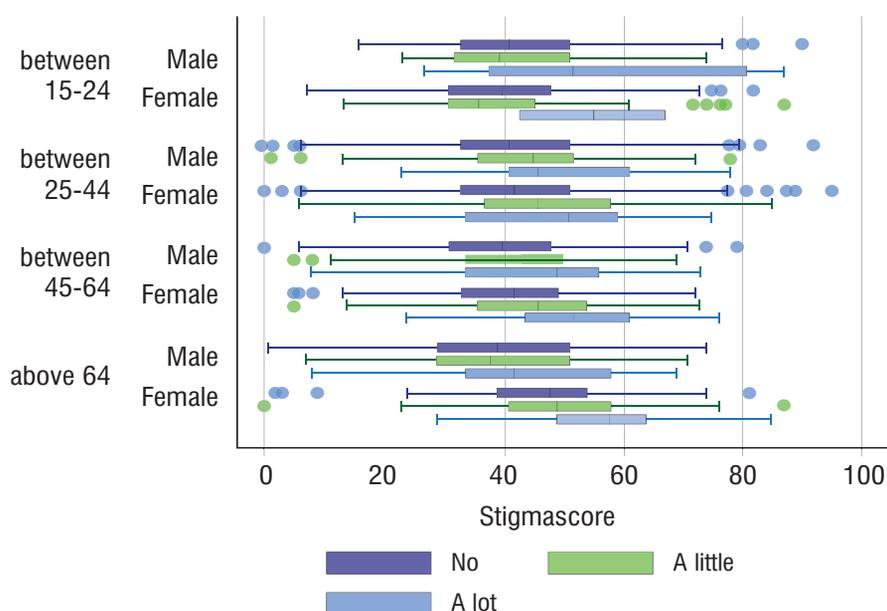
Figure 60 describes the interquartile range of stigma score for each group according to the level of vision difficulty and separated by each age group and sex. The stigma score increase with increasing level of difficulty across all age and sex groups. The interquartile range was largest among males with a lot of vision difficulty and aged 15 to 24.

Table 30 shows the results of linear regression model for stigma score across socio economic groups of and levels of vision difficulty. Level of difficulty, age and education were the most important predictors of stigma score. After controlling for the effect of other variables, the stigma score significantly increased with increasing levels of difficulty. The older groups

significantly had lower level of stigma than the youngest group did. Those with higher education significantly had lower level of stigma than those with lower education levels.

Regarding occupation, only those who worked in social services area significantly had lower stigma score than those who did not have a job. There was a tendency that those who had higher income reported lower levels of stigma. However statistical significance was found between the poorest and the richest groups.

Those who lived in urban areas significantly reported higher stigma score as compared to those who lived in rural areas did. No difference between sexes about stigma score was found.

Table 30. Linear regression model for stigma score, different levels of vision difficulty and socio-economic factors

Variables		Coefficient	p
Difficulty in vision	No difficulty		
	A little difficulty*	2.10	0.001
	Lot of difficulty*	3.86	0.030
Sex	Male		
	Female	0.59	0.308
Age group	15-24		
	25-44*	-2.18	0.039
	45-64*	-3.76	0.000
	>=65*	-5.45	0.001
Education levels	None		
	Primary*	-5.70	0.000
	Secondary*	-12.85	0.000
	Tertiary*	-16.45	0.000
	College/university*	-25.34	0.000
Main job	Not working		
	Farmers	2.15	0.152
	Workers	0.88	0.597
	Business	1.12	0.502
	Personal service	1.37	0.394
	Social services*	-3.37	0.049
Income quintile	The first poorest		
	Second poorest	0.52	0.520
	Middle	-0.42	0.640

Table 30. Linear regression model for stigma score, different levels of vision difficulty and socio-economic factors

Variables		Coefficient	p
Income quintile	Second richest	-0.80	0.413
	Richest*	-2.17	0.030
Location	Rural		
	Urban*	1.36	0.044
	cons	54.12	0.000

Table 31 presents results from logistic regression of occurrence of high stigma in different levels of vision difficulty and socio economic groups:

- People with a little vision difficulty were 1.5 (95% CI:1.1-2.1) times more likely to experience from high stigma than PWOD did. People with a lot of difficulty were 2.6 (95% CI:1.2-5.5) times more likely to experience from high stigma than PWOD did.

- In comparison to those in the age group 15-24 years, high stigma among those whose age from 45 to 64 years and among those whose age from 65 and above were only 49% (95% CI:0.28-0.87) and 36% (95% CI:0.16-0.81), respectively. No difference between those in the age group 25-44 and the youngest group.

- Education also remained to be significant predictors of high stigma. Those with higher education levels significantly reported experience less from high stigma. Compared to the non-education group, the risk of high stigma was 1% (95% CI:<0.001-0.06) among those with college education, 5% (95% CI:0.02-0.12) among those with tertiary education, 10% (95% CI:0.05-0.22) among those with secondary education, and 33% (95% CI:0.16-0.69) among those with primary education.

- Main occupation, income and living location were not significant predictors of high stigma. No difference between men and women was found.

Table 31. Logistic regression model for high stigma and different levels of vision difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Disability	No difficulty			
	A little difficulty*	1.50	1.09	2.06
	lot of difficulty*	2.59	1.23	5.45
Sex	Male			
	Female	1.15	0.85	1.57
Age group	15-24			
	25-44	0.59	0.34	1.04
	45-64*	0.49	0.28	0.87
	>=65*	0.36	0.16	0.81

Table 31. Logistic regression model for high stigma and different levels of vision difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Education levels	None			
	Primary*	0.33	0.16	0.69
	Secondary*	0.10	0.05	0.21
	Tertiary*	0.05	0.02	0.12
	College/university*	0.01	0.00	0.06
Main job	Not working			
	Farmers	1.40	0.67	2.93
	Workers	1.02	0.45	2.32
	Business	1.09	0.46	2.59
	Personal service	1.52	0.67	3.46
	Social services	0.38	0.09	1.57
Income quintile	The first poorest			
	Second poorest	1.30	0.87	1.92
	Middle	1.17	0.75	1.82
	Second richest	1.25	0.75	2.08
	Richest	0.82	0.42	1.60
Location	Rural			
	Urban	1.20	0.82	1.76

2. Stigma scores among people with and without hearing difficulty

Table 32. Descriptive statistics of stigma score for people without and with different levels of hearing difficulty

	No difficulty	A little difficulty	Rất khó khăn	p
Mean	39.73	44.84	54.71	P1-2:<0.05
SD	12.25	12.64	14.32	P1-3:<0.05
Median	40.00	45.00	55.00	P2-3: <0.05

Table 32 shows that mean stigma score increased with increasing level of hearing difficulty. The total stigma score for the group without hearing difficulty was 39.73, for the group with little difficulty was 44.38 and for the group with a lot of difficulty was 54.71. The differences between 3 groups of hearing difficulty were statistically significant (ANOVA test).

Figure 61. Box plot of stigma score among different group characterized by levels of vision difficulty, age groups and sex
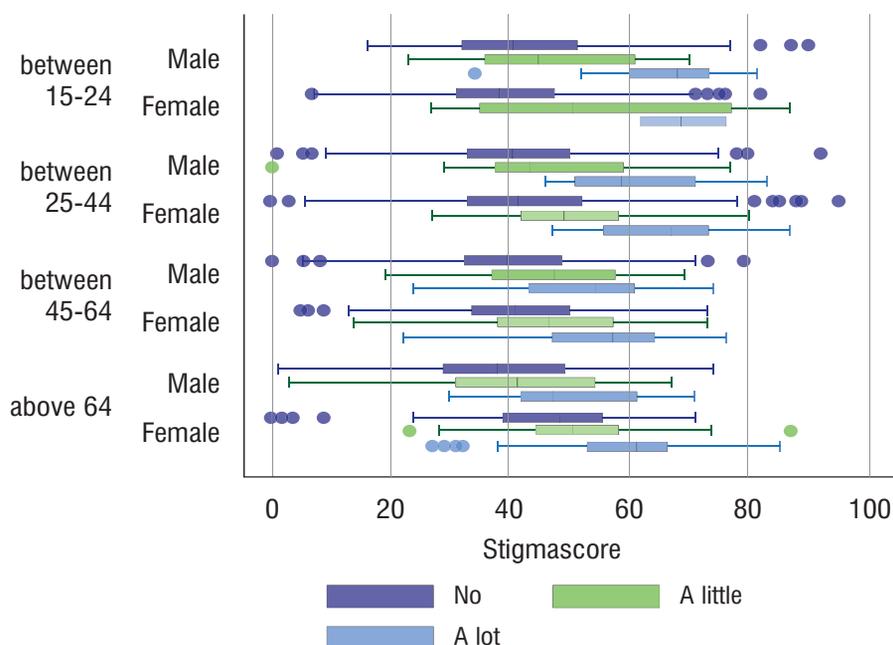
Figure 61 describes the interquartile range of stigma score for each group according to the level of hearing difficulty and separated by each age group and sex. The stigma score increase with increasing level of difficulty across all age and sex groups. The younger group had higher stigma score. The stigma score of females in the youngest group had larger interquartile range as compared to other.

Table 33. Linear regression model for stigma score, different levels of hearing difficulty and socio-economic factors

Variables		Coefficient	p
Disability	No difficulty		
	A little difficulty*	2.32	0.008
	Lot of difficulty	2.34	0.374
Sex	Male		
	Female	0.65	0.260
Age group	15-24		
	25-44*	-2.15	0.043
	45-64*	-3.35	0.002
	>=65*	-4.96	0.003

Table 33. Linear regression model for stigma score, different levels of hearing difficulty and socio-economic factors

Variables		Coefficient	p
Education levels	None		
	Primary*	-5.51	0.000
	Secondary*	-12.75	0.000
	Tertiary*	-16.38	0.000
	College/university*	-25.13	0.000
Main job	Not working		
	Farmers	2.43	0.110
	Workers	1.12	0.503
	Business	1.41	0.399
	Personal service	1.63	0.312
	Social services	-3.21	0.063
Income quintile	The first poorest		
	Second poorest	0.41	0.606
	Middle	-0.55	0.536
	Second richest	-1.00	0.312
	Richest*	-2.34	0.020
Location	Rural		
	Urban	1.32	0.050
	cons	53.95	0.000

Table 33 shows the results of linear regression model for stigma score across socio economic groups of and levels of hearing difficulty. Similar to the model for stigma score and level of vision difficulty, level of hearing difficulty, age and education were the most important predictors of stigma score. There was a tendency that those who had higher income reported lower levels of stigma. However statistical significance was found between the poorest and the richest groups.

With regards to the occupation only those who worked in social services area significantly had lower stigma score than those who did not have a job.

No difference between sexes and between living locations about stigma score was found.

Table 34. Logistic regression model for high stigma and different levels of hearing difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Disability	No difficulty			
	A little difficulty*	1.56	1.03	2.34
	Lot of difficulty	2.04	0.79	5.26
Sex	Male			
	Female	1.17	0.86	1.59
Age group	15-24			
	25-44	0.60	0.34	1.06
	45-64*	0.55	0.31	0.96
	>=65*	0.41	0.18	0.91
Education levels	None			
	Primary*	0.35	0.17	0.72
	Secondary*	0.11	0.05	0.22
	Tertiary*	0.05	0.02	0.13
	College/university*	0.01	0.00	0.06
Main job	Not working			
	Farmers	1.48	0.70	3.12
	Workers	1.07	0.47	2.47
	Business	1.16	0.48	2.78
	Personal service	1.60	0.70	3.67
	Social services	0.39	0.09	1.63
Income quintile	The first poorest			
	Second poorest	1.26	0.85	1.87
	Middle	1.13	0.73	1.76
	Second richest	1.20	0.72	2.00
	Richest	0.80	0.41	1.55
Location	Rural			
	Urban	1.18	0.81	1.72

Table 34 presents results from logistic regression of occurrence of high stigma in different level of hearing difficulty and socio economic groups:

- People with a little hearing difficulty were 1.6 (95% CI:1.03-2.34) times more likely to experience from high stigma than PWOD did. People with a lot of difficulty were 2.04 (95% CI: 0.79-5.26) times more likely to experience from high stigma than PWOD did.

- In comparison to those in the age group 15-24 years, high stigma among those whose age from 45 to 64 years and among those whose age from 65 and above were only 41% (95% CI:0.18-0.91) and 55% (95% CI:0.31-0.96), respectively. No difference between those in the age group 25-44 and the youngest group.

- Education also remained to be significant predictors of high stigma. Those with higher education levels significantly reported experience less from high stigma. Compared to the non-education group, the risk of high stigma was 1% (95% CI:<0.001-0.06) among those with college education, 5% (95% CI:0.02-0.13) among those with tertiary education, 11% (95% CI:0.05-0.22) among those with secondary education, and 35% (95% CI:0.17-0.72) among those with primary education.

- Main occupation, income and living location were not significant predictors of high stigma. No difference between men and women was found.

3. Stigma among people with and without remembering difficulty

Table 35. Descriptive statistics of stigma score for people without and with different levels of remembering difficulty

	No difficulty	A little difficulty	A lot of difficulty	p
Mean	39.22	45.24	60.91	P1-2:<0.05
SD	11.83	12.77	15.06	P1-3:<0.05
Median	39.00	46.00	62.00	P2-3: <0.05

Table 35 shows that mean stigma score increased with increasing level of remembering difficulty. The total stigma score for the group without remembering difficulty was 39.22, for the group with little difficulty was 45.24 and for the group with a lot of difficulty was 60.91. The differences between 3 groups of remembering difficulty were statistically significant (ANOVA test). The difference between group with little remembering difficulty and group with a lot of remembering difficulty was larger than the difference between two groups of vision difficulty as well as two groups of hearing difficulty.

Figure 62. Box plot of stigma score among different group characterized by levels of remembering difficulty, age groups and sex
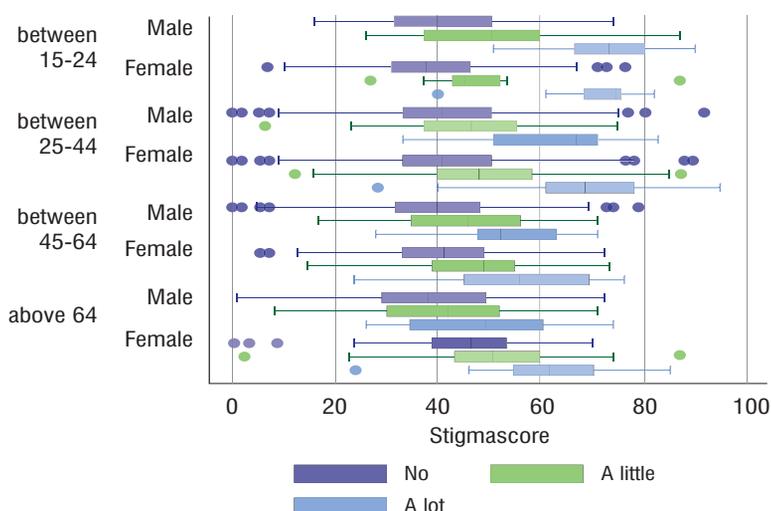
Figure 62 describes the interquartile range of stigma score for each group according to the level of remembering difficulty and separated by each age group and sex. The stigma score increase with increasing level of difficulty across all age and sex groups. Those who had a lot of remembering difficulty from two youngest groups had the highest stigma score.

Table 36. Linear regression model for stigma score, different levels of remembering difficulty and socio-economic factors

Variables		Coefficient	p
Disability	No difficulty		
	A little difficulty*	3.77	0.000
	Lot of difficulty*	8.44	0.002
Sex	Male		
	Female	0.52	0.368
Age group	15-24		
	25-44*	-2.34	0.027
	45-64*	-3.69	0.001
	>=65*	-5.69	0.000
Education levels	None		
	Primary*	-5.44	0.000
	Secondary*	-12.65	0.000
	Tertiary*	-16.11	0.000
	College/university*	-24.96	0.000
Main job	Not working		
	Farmers	2.31	0.127
	Workers	1.11	0.503
	Business	1.28	0.444
	Personal service	1.57	0.330
	Social services	-3.17	0.065
Income quintile	The first poorest		
	Second poorest	0.44	0.579
	Middle	-0.46	0.602

Table 36. Linear regression model for stigma score, different levels of remembering difficulty and socio-economic factors

Variables		Coefficient	p
Income quintile	Second richest	-0.99	0.318
	Richest*	-2.25	0.025
Location	Rural		
	Urban*	1.33	0.047
	cons	53.96	0.000

Table 36 shows the results of linear regression model for stigma score across socio economic groups of and levels of remembering difficulty. Similar to the model for stigma score and level of other types of difficulty, age and education were the most important predictors of stigma score.

Those who lived in the urban areas significantly had higher stigma score. There was a tendency that those who had higher income reported lower levels of stigma. However no statistical significance was found. No difference between sexes, between occupation and between living locations about stigma score was found.

Table 37. Logistic regression model for high stigma and different levels of remembering difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Disability	No difficulty			
	A little difficulty*	1.96	1.38	2.77
	Lot of difficulty*	3.69	1.55	8.76
Sex	Male			
	Female	1.15	0.84	1.56
Age group	15-24			
	25-44	0.58	0.33	1.02
	45-64*	0.50	0.29	0.88
	>=65*	0.35	0.16	0.76
Education levels	None			
	Primary*	0.34	0.16	0.71
	Secondary*	0.10	0.05	0.21
	Tertiary*	0.05	0.02	0.12
	College/university*	0.01	0.00	0.06

Table 37. Logistic regression model for high stigma and different levels of remembering difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Main job	Not working			
	Farmers	1.46	0.69	3.09
	Workers	1.06	0.46	2.45
	Business	1.12	0.47	2.69
	Personal service	1.58	0.69	3.61
	Social services	0.39	0.09	1.64
Income quintile	The first poorest			
	Second poorest	1.28	0.86	1.90
	Middle	1.16	0.74	1.81
	Second richest	1.23	0.74	2.04
	Richest	0.82	0.42	1.60
Location	Rural			
	Urban	1.18	0.81	1.73

Table 37 presents results from logistic regression of occurrence of high stigma in different levels of remembering difficulty and socio economic groups:

- People with a little remembering difficulty were 1.96 (95% CI:1.38-2.7) times more likely to experience from high stigma than PWOD did. People with a lot of difficulty were 3.69 (95% CI:1.55-8.76) times more likely to experience from high stigma than PWOD did.

- Similar to the model for stigma score and other types of difficulty as well as socio-economic factors, age and education level are significant predictors of high stigma while sex, occupation, income and living location did not significantly associated with high stigma.

4. Stigma among people with and without walking difficulty

Table 38. Descriptive statistics of stigma score for people without and with different levels of walking difficulty

	No difficulty	A little difficulty	A lot of difficulty	p
Mean	39.00	45.37	50.64	P1-2:<0.05
Sd	11.94	12.17	15.20	P1-3:<0.05
Median	39.00	46.00	51.00	P2-3:<0.05

117

Table 38 shows that mean stigma score increased with increasing level of walking difficulty. The total stigma score for the group without walking difficulty was 39.0, for the group with little difficulty was 45.37and for the group with a lot of difficulty was 50.64. The differences between 3 groups of walking difficulty were statistically significant (ANOVA test).

Figure 63. Box plot of stigma score among different group characterized by levels of walking difficulty, age groups and sex
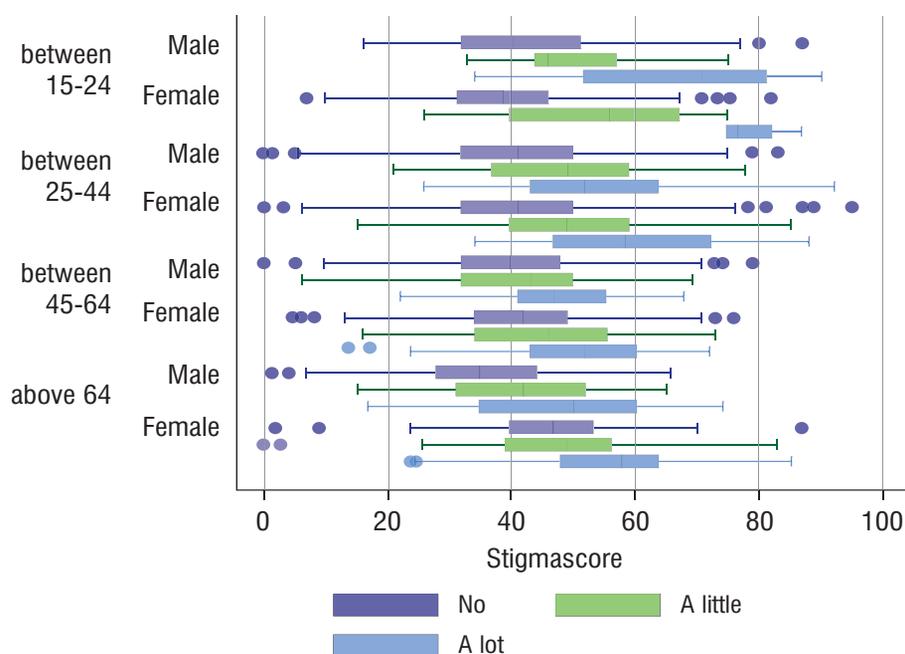
Figure 63 describes the interquartile range of stigma score for each group according to the level of walking difficulty and separated by each age group and sex. The stigma score increase with increasing level of difficulty across all age and sex groups. Those who had a lot of walking difficulty from two youngest groups had the highest stigma score.

Table 39. Linear regression model for stigma score, different levels of walking difficulty and socio-economic factors

Variables		Coefficient	p
Disability	No difficulty		
	A little difficulty*	3.02	0.000
	Lot of difficulty	2.39	0.202
Sex	Male		
	Female	0.50	0.391
Age group	15-24		
	25-44*	-2.34	0.028
	45-64*	-3.73	0.001
	>=65*	-5.37	0.001

Table 39. Linear regression model for stigma score, different levels of walking difficulty and socio-economic factors

Variables		Coefficient	p
Education levels	None		
	Primary*	-5.33	0.000
	Secondary*	-12.50	0.000
	Tertiary*	-16.06	0.000
	College/university*	-24.77	0.000
Main job	Not working		
	Farmers	2.12	0.160
	Workers	0.92	0.579
	Business	1.22	0.466
	Personal service	1.42	0.376
	Social services*	-3.40	0.049
Income quintile	The first poorest		
	Second poorest	0.42	0.599
	Middle	-0.52	0.558
	Second richest	-0.93	0.342
	Richest*	-2.27	0.023
Location	Rural		
	Urban	1.31	0.051
	cons	54.12	0.000

Table 39 shows the results of linear regression model for stigma score across socio economic groups of and levels of walking difficulty:

- Only the group with little walking difficulty significantly had higher stigma score. The difference between the group of people without disability and group with a lot of walking difficulty was not statistically different.

- Similar to the other models for stigma score, levels of difficulty and socio economic factors, age and education were the most important predictors of stigma score.

- Those whose job was in social services significantly had higher stigma score.

- Although there was a tendency that those with higher income reported lower stigma, significant difference was only found between the poorest group and the richest group.

- No difference between sexes, and between living locations about stigma score was found.

Table 40. Logistic regression model for high stigma and different levels of walking difficulty and socio-economic factors

Variables			OR	Lower limit	Upper limit
Disability	No difficulty				
	A little difficulty*		1.74	1.22	2.49
	Lot of difficulty		1.94	0.96	3.93
Sex	Male				
	Female		1.13	0.83	1.54
Age group	15-24				
	25-44		0.58	0.33	1.01
	45-64*		0.50	0.29	0.88
	>=65*		0.36	0.16	0.80
Education levels	None				
	Primary*		0.35	0.17	0.73
	Secondary*		0.11	0.05	0.22
	Tertiary*		0.06	0.02	0.13
	College/university*		0.02	0.00	0.06
Main job	Not working				
	Farmers		1.38	0.66	2.89
	Workers		1.03	0.45	2.36
	Business		1.11	0.47	2.64
	Personal service		1.53	0.67	3.47
	Social services		0.37	0.09	1.54
Income quintile	The first poorest				
	Second poorest		1.26	0.85	1.87
	Middle		1.14	0.73	1.76
	Second richest		1.20	0.72	1.99
	Richest		0.80	0.41	1.56
Location	Rural				
	Urban		1.18	0.81	1.72

Table 40 presents results from logistic regression of occurrence of high stigma in different levels of walking difficulty and socio economic groups:

- People with a little walking difficulty were 1.74 (95% CI:1.22-2.49) times more likely to experience from high stigma than PWOD did. People with a lot of difficulty were 1.94 (95% CI: 0.96- 3.93) times more likely to experience from high stigma than PWOD did.

- Similar to the model for stigma score and other types of difficulty as well as socio-economic factors, age and education level are significant predictors of high stigma while occupation, income and living location did not significantly associated with high stigma.

5. Stigma among people with and without communication difficulty

Table 41. Descriptive statistics of stigma score for people without and with different levels of communication difficulty

	No difficulty	A little difficulty	A lot of difficulty	p
mean	39.84	51.24	67.64	P1-2:<0.05
sd	11.96	14.28	10.85	P1-3:<0.05
median	40.00	51.00	69.00	P2-3:<0.05

Table 41 shows that mean stigma score increased with increasing level of communication difficulty. The total stigma score for the group without communication difficulty was 39.84, for the group with little difficulty was 51.24 and for the group with a lot of difficulty was 67.64. The differences between 3 groups of communication difficulty were statistically significant (ANOVA test).The difference between group with little communication difficulty and group with a lot of communication difficulty was larger than the difference between two groups of vision difficulty as well as between two groups of hearing difficulty.

Figure 64. Box plot of stigma score among different group characterized by levels of communication difficulty, age groups and sex

121
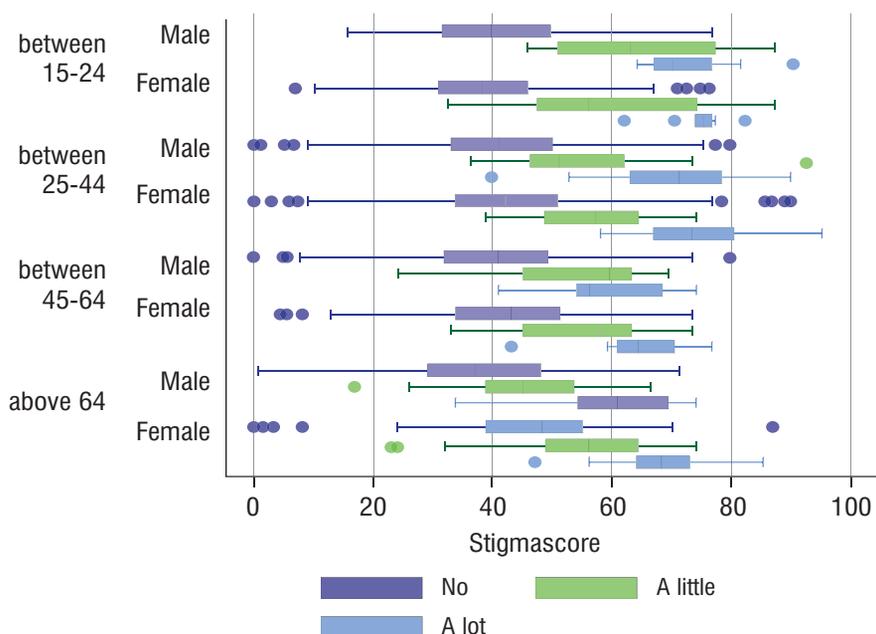
Figure 64 describes the interquartile range of stigma score for each group according to the level of communication difficulty and separated by each age group and sex. The stigma score increase with increasing level of difficulty across all age and sex groups. Those who had communication difficulty from two youngest groups had the highest stigma score.

Table 42. Linear regression model for stigma score, different levels of communication difficulty and socio-economic factors

Variables		Coefficient	p
Disability	No difficulty		
	A little difficulty*	5.99	0.002
	Lot of difficulty*	14.22	0.000
Sex	Male		
	Female	0.73	0.206
Age group	15-24		
	25-44	-2.08	0.050
	45-64*	-3.17	0.003
	>=65*	-4.69	0.005
Education levels	None		
	Primary*	-5.09	0.000
	Secondary*	-12.30	0.000
	Tertiary*	-15.96	0.000
	College/university*	-24.69	0.000
Main job	Not working		
	Farmers	2.59	0.086
	Workers	1.26	0.447
	Business	1.45	0.384
	Personal service	1.71	0.290
	Social services	-3.19	0.064
Income quintile	The first poorest		
	Second poorest	0.42	0.603
	Middle	-0.59	0.512

Table 42. Linear regression model for stigma score, different levels of communication difficulty and socio-economic factors

Variables		Coefficient	p
Income quintile	Second richest	-0.95	0.334
	Richest*	-2.29	0.022
Location	Rural		
	Urban	1.23	0.070
	cons	53.31	0.000

Table 42 shows the results of linear regression model for stigma score and socio economic factors and levels of communication difficulty:

- The stigma scores were significantly higher in the groups with higher level of communication difficulty.

- Similar to the other models for stigma score, levels of difficulty and socio economic factors, age and education were the most important predictors of stigma score.

- The richest group significantly had higher stigma score than the poorest group. The differences between other income groups were not statistically significant.

- No difference between sexes, occupations and between living locations about stigma score was found.

Table 43. Logistic regression model for high stigma and different levels of communication difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Disability	No difficulty			
	A little difficulty*	4.29	1.99	9.27
	Lot of difficulty*	6.40	1.14	35.81
Sex	Male			
	Female	1.19	0.88	1.62
Age group	15-24			
	25-44	0.61	0.35	1.08
	45-64	0.57	0.33	1.00
	>=65*	0.42	0.19	0.95
Education levels	None			
	Primary*	0.36	0.17	0.75
	Secondary*	0.11	0.05	0.23

Table 43. Logistic regression model for high stigma and different levels of communication difficulty and socio-economic factors

Variables			OR	Lower limit	Upper limit
Education levels	Tertiary*		0.06	0.02	0.13
	College/university*		0.02	0.00	0.06
Main job	Not working				
	Farmers		1.53	0.72	3.23
	Workers		1.12	0.49	2.59
	Business		1.17	0.49	2.81
	Personal service		1.64	0.71	3.78
	Social services		0.38	0.09	1.61
Income quintile	The first poorest				
	Second poorest		1.25	0.84	1.85
	Middle		1.12	0.72	1.75
	Second richest		1.20	0.72	2.01
	Richest		0.80	0.42	1.56
Location	Rural				
	Urban		1.14	0.78	1.67

Table 43 presents results from logistic regression of occurrence of high stigma in different levels of communication difficulty and socio economic groups:

- People with a little communication difficulty were 4.29 (95% CI:1.99-9.27) times more likely to experience from high stigma than PWOD did. People with a lot of difficulty were 6.4 (95% CI: 1.14-35.18) times more likely to experience from high stigma than PWOD did.

- Similar to the model for occurrence of high stigma and other types of difficulty, education level is an important predictor of high stigma.

- Only the oldest group (65 years old and older) significantly had lower experiencing from high risk of experiencing from high stigma than the youngest group did.

- Occupation, income and living location did not significantly associated with high stigma.

6. Stigma among people with and without self-care difficulty

Table 44. Descriptive statistics of stigma score for people without and with different levels of self-care difficulty

	No difficulty	A little difficulty	A lot of difficulty	p
Mean	40.02	50.48	60.45	
SD	12.15	13.42	15.06	
Median	40.00	51.00	61.00	

Table 44 shows that mean stigma score increased with increasing level of self-care difficulty. The total stigma score for the group without self-care difficulty was 40.02, for the group with little difficulty was 50.48 and for the group with a lot of difficulty was 60.45. The differences between 3 groups of self-care difficulty were statistically significant (ANOVA test). The difference between group with little self-care difficulty and group with a lot of self-care difficulty was at the same level as the difference between two groups of communication difficulty and remembering difficulty.

Figure 65 describes the interquartile range of stigma score for each group according to the level of self-care difficulty and separated by each age group and sex. The stigma score increase with increasing level of difficulty across all age and sex groups. Those who had self-care difficulty from two youngest groups had the highest stigma score.

Figure 65. Box plot of stigma score among different group characterized by levels of self-care difficulty, age groups and sex
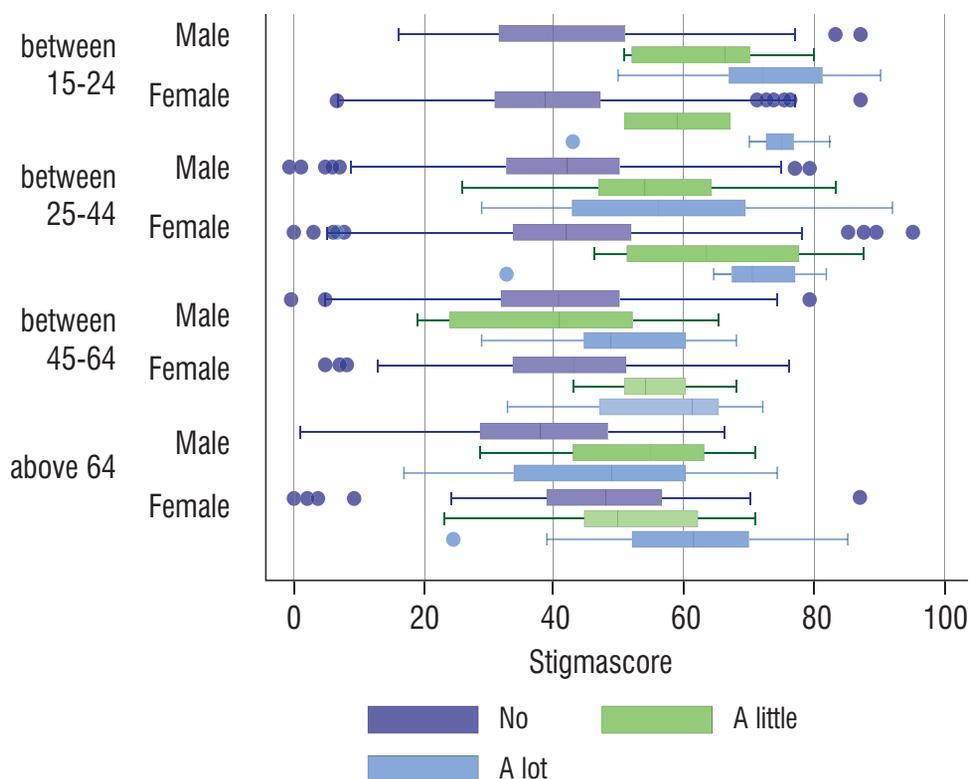
Table 45 shows the results of linear regression model for stigma score and socio economic factors and levels of self-care difficulty:

- The stigma scores were significantly higher in the groups with higher level of self-care difficulty.

- Similar to the other models for stigma score, levels of difficulty and socio economic factors, age and education were the most important predictors of stigma score.

- The richest group significantly had higher stigma score than the poorest group. The difference between other income groups was not statistically significant.

- Those who lived in the urban areas significantly had higher stigma score than those who lived in rural areas did.

- No difference between sexes, occupations about stigma score was found.

Table 45. Linear regression model for stigma score, different levels of self-care difficulty and socio-economic factors

Variables		Coefficient	p
Disability	No difficulty		
	A little difficulty	1.71	0.718
	Lot of difficulty*	5.86	0.018
Sex	Male		
	Female	0.66	0.251
Age group	15-24		
	25-44*	-2.10	0.048
	45-64*	-3.17	0.003
	>=65*	-4.48	0.008
Education levels	None		
	Primary*	-5.66	0.000
	Secondary*	-12.95	0.000
	Tertiary*	-16.64	0.000
	College/university*	-25.42	0.000
Main job	Not working		
	Farmers	2.60	0.085
	Workers	1.25	0.451
	Business	1.39	0.405
	Personal service	1.67	0.299
	Social services	-3.16	0.066
Income quintile	The first poorest		
	Second poorest	0.50	0.539
	Middle	-0.56	0.531
	Second richest	-0.95	0.336
	Richest*	-2.29	0.022
Location	Rural		
	Urban*	1.38	0.042
	cons	54.07	0.000

Table 46 presents results from logistic regression of occurrence of high stigma in different levels of self-care difficulty and socio economic groups:

- People with a lot of self-care difficulty were 11.7 (95% CI:1.8-75.6) times more likely to experience from high stigma than PWOD did. The risk of experiencing from high stigma of people with a little difficulty did not significantly differ from PWOD.

- Similar to the model for the occurrence of high stigma and other types of difficulty, education level is an important predictor of high stigma.

- The older groups significantly had lower risk of experiencing from high stigma than the youngest group did.

- Sex, occupation, income and living location did not significantly associated with high stigma.

Table 46. Logistic regression model for high stigma and different levels of self-care difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Disability	No difficulty			
	A little difficulty	2.69	0.64	11.42
	Lot of difficulty*	11.69	1.81	75.58
Sex	Male			
	Female	1.17	0.86	1.59
Age group	15-24			
	25-44	0.61	0.35	1.07
	45-64*	0.57	0.32	0.99
	>=65*	0.43	0.19	0.98
Education levels	None			
	Primary*	0.33	0.16	0.69
	Secondary*	0.10	0.05	0.21
	Tertiary*	0.05	0.02	0.12
	College/university*	0.01	0.00	0.06
Main job	Not working			
	Farmers	1.55	0.74	3.25
	Workers	1.11	0.49	2.55
	Business	1.14	0.48	2.72
	Personal service	1.62	0.71	3.70
	Social services	0.39	0.09	1.66
Income quintile	The first poorest			
	Second poorest	1.29	0.87	1.92

Table 46. Logistic regression model for high stigma and different levels of self-care difficulty and socio-economic factors

Variables		OR	Lower limit	Upper limit
Income quintile	Middle	1.14	0.73	1.78
	Second richest	1.22	0.73	2.03
	Richest	0.82	0.43	1.58
Location	Rural			
	Urban	1.20	0.83	1.75

DISABILITY AND STIGMA SURVEY

MASTER SHEET

The Institute for Social Development Studies is conducting a research on health and disease situation in 8 provinces/cities nationwide. The research results will lay the data foundation for the development of appropriate policy recommendations and programs aimed at supporting the people with disability to overcome their obstacles in life and integrate into the society. Your family is one of many which have been selected at random as interviewees about related issues. We commit that all the information revealed in the interview with you will be kept confidential and only used for scientific purpose. Thank you so much for your cooperation!

1. Province/city: .... District: .... Commune/ward: ....

2. Address: ....

3. Household head's name: ....

4. Interviewer: .... Code:

5. Number of people in the household: .... people.   Interviewer uses more separate interview checklists if there are more than 6 people in the household.

The following questions ask about the **health-related** *difficulties in performing certain things.*

Question 10 to 15: Interviewer reads the choices and gives the color cards to the respondent.

Codes for question 10 to 15:   *1= No difficulty*   *2= A little difficulty*   *3= A lot of difficulty*   *4= Being unable to do that;*

Codes for questions 18: 1 = Disabled - is one to whom at least 1 choice in the questions from 10 to 15, either choice 2, 3 or 4, is correct;

2 = Non-disabled - is one who chooses choice 1 for all the questions from 10 to 15

No.	Question	Respondent 1	Respondent 2	Respondent 3	Respondent 4	Respondent 5	Respondent 6
7	Full name						
8	Gender	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female
9	Year of birth *(according to solar calendar)* *If year of birth >1996 (under 15) → Question 16*						
10	Do you have any vision difficulty, even while wearing glasses?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
11	Do you have any difficulty in hearing, even when using hearing aid machine?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
12	Do you have any difficulty in walking or climbing up the stairs/steps?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
13	Do you have any difficulty in memorizing or concentrating?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
14	Do you have any difficulty in taking care of yourself, such as washing or getting dressed?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
15	Do you have any difficulty in communication, such as understanding others or making yourself understood, due to mental or physical health problems?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
16	Is s/he [*name of the disabled member*] residing permanently in the household in reality? (1 = Yes; 2 = No)	1 2	1 2	1 2	1 2	1 2	1 2
17	Is s/he [*name of the disabled member*] a disabled person? (1 = Yes; 2 = No/Wrong)	1 2	1 2	1 2	1 2	1 2	1 2
18	*Interviewer fills in after the interview.* Categorize the disabled by C10-C15: 1= Disabled; 2=Non-disabled.	1 2	1 2	1 2	1 2	1 2	1 2

No.	Question	Respondent 7	Respondent 8	Respondent 9	Respondent 10	Respondent 11	Respondent 12
7	Full name						
8	Gender	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female
9	Year of birth *(according to solar calendar)* **If year of birth >1996** *(under 15)* → **Question 16**						
10	Do you have any vision difficulty, even while wearing glasses?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
11	Do you have any difficulty in hearing, even when using hearing aid machine?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
12	Do you have any difficulty in walking or climbing up the stairs/steps?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
13	Do you have any difficulty in memorizing or concentrating?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
14	Do you have any difficulty in taking care of yourself, such as washing or getting dressed?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
15	Do you have any difficulty in communication, such as understanding others or making yourself understood, due to mental or physical health problems?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
16	Is s/he [*name of the disabled member*] residing permanently in the household in reality? (1 = Yes; 2 = No)	1 2	1 2	1 2	1 2	1 2	1 2
17	Is s/he [*name of the disabled member*] a disabled person? (1 = Yes; 2 = No/Wrong)	1 2	1 2	1 2	1 2	1 2	1 2
18	***Interviewer fills in after the interview.*** *Categorize the disabled by C10-C15: 1= Disabled; 2=Non-disabled.*	1 2	1 2	1 2	1 2	1 2	1 2

No.	Question	Respondent 13	Respondent 14	Respondent 15	Respondent 16	Respondent 17	Respondent 18
7	Full name						
8	Gender	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female	1 = Male 2 = Female
9	Year of birth *(according to solar calendar)* *If year of birth >1996 (under 15) → Question 16*						
10	Do you have any vision difficulty, even while wearing glasses?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
11	Do you have any difficulty in hearing, even when using hearing aid machine?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
12	Do you have any difficulty in walking or climbing up the stairs/steps?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
13	Do you have any difficulty in memorizing or concentrating?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
14	Do you have any difficulty in taking care of yourself, such as washing or getting dressed?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
15	Do you have any difficulty in communication, such as understanding others or making yourself understood, due to mental or physical health problems?	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
16	Is s/he [*name of the disabled member*] residing permanently in the household in reality? (1 = Yes; 2 = No)	1 2	1 2	1 2	1 2	1 2	1 2
17	Is s/he [*name of the disabled member*] a disabled person? (1 = Yes; 2 = No/Wrong)	1 2	1 2	1 2	1 2	1 2	1 2
18	*Interviewer fills in after the interview.* Categorize the disabled by C10-C15: 1= Disabled; 2=Non-disabled.	1 2	1 2	1 2	1 2	1 2	1 2

APPENDIX 4. HOUSEHOLD QUESTIONNAIRE

HOUSEHOLD *INTERVIEW CHECKLIST*

A. GENERAL INFORMATION

Place of interview:

1. Province/city: .... District: ....

Commune/ward/town: ....Hamlet/Group: ....

2. Place of interview:

       1 = Urban area   2 = city town/district town
       3 = Rural area

Household code in the master sheet: ☐☐☐☐

4. Full name of interviewer: .... Code: ☐☐

Interview	First time	Second time	Third time
5. Interview result: 1 = Done 2 = Not meeting the interviewee 3 = Interviewee refusing to respond 4 = Arranging another meeting time 5 = Wrong address 6 = Undone			
6. Interview started at	.... h	.... h	.... h ....
7. Interview ended at	.... h	.... h	.... h ....
8. Date of interview	.... / .... / 2011	.... / .... / 2011	.... / .... / 2011

9. Full name of field supervisor: .... Code: ☐☐

Note:

....

....

....

B. INFORMATION ABOUT FAMILY MEMBERS

1. How many people are there in your family, including you? .... people

2. How many people in your family reside permanently in reality-**staying with each other?** .... people

No.	Full name	Relation with house-hold head?	Gender 1=Male; 2=Female	Month/year of birth (solar calendar) 99/9999 =KB	Racial status?	Marital status?	Going to school? 1=Yes; 2=No; 9=No idea	Level of education completed?	Residing permanently in reality? 1=Yes → B13; 2=No	How long been away? (number of days)
B3		B4	B5	B6	B7	B8	B9	B10	B11	B12
1	respondent			/						
2				/						
3				/						
4				/						
5				/						
6				/						
7				/						
8				/						
9				/						
10				/						
11				/						
12				/						

B4

1 = Household head
2 = Wife/husband of household head
3 = Biological child
4 = Daughter-in-law/son-in-law
5 = Father/mother
6 = Grandfather/Grandmother
7 = Aunt/Uncle
8 = Grandchild
9 = Biological brother/sister
10 = Relative
11 = Housemaid
12 = Other *(specify)*

B7

1 = Kinh
2 = Other *(specify)*

B8

1 = Never been married
2 = Married
3 = Widowed/widowered
4 = Divorced
5 = Separated
9 = No idea

B10

0 = Illiterate/never going to school
1, 2, 3 … 12 = Grade 1 (2, 3…12)
13 = Two-year/ Three-year college
14 = *University or higher*
99 = Not remember/no idea

No.	Full name	Occupational status? 1-6 & 16 → B16	Description of job	Sector working in?	Having health insurance card? 2/9 → B18	Type of main health insurance card?	Government policy beneficiary? 2/9 → B20	Type of policy?	Being a disabled person? 2/9 → B22	Code of main care-taker?
B3		**B13**	**B14**	**B15**	**B16**	**B17**	**B18**	**B19**	**B20**	**B21**
1	*respondent*									
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

B13	B15	B19	B17
1 = Having no capacity to work	1 = For the Government	1 = War invalid	1 = Health insurance card for children under 6
2 = Being jobless and not wanting to find a job	2 = For the community/ cooperative	2 = Disabled	2 = Health insurance card for the poor
3 = Being jobless and looking for a job	3 = For a private company 100%	3 = Poor	3 = Card for policy beneficiary family/people with merits 4 = Health insurance card for students/pupils
4 = Going to school	4 = For a foreign company 100%	4 = Other(specify)	
5 = Being retired	5 = For the family	**B16, B18, B20**	5 = Compulsory State health insurance card
6 = Being a housewife/husband	6 = For oneself	1 = Yes/Correct	6 = Voluntary State health insurance card
7 = Being a factory worker	7 = For a joint-venture company	2 = No/Wrong	
8 = Being a farmer, fisherman	8 = Unsuitable	9 = No idea	7 = Compulsory private health insurance card
9 = Being a craftsman	9 = No idea		8 = Voluntary private health insurance card
10 = Doing small business			
11 = Doing big business			
12 = Providing personal services			
13 = Providing social services (teacher, doctor…)			
14 = Being a managerial staff			
15 = Being a military officer/ Police officer			
16 = Being small			
17 = Being old and weak			
18 = Other, specify			

B21: By the codes in column B3; 66 = Non-family member; 67 = Not needing a caretaker; 68 = Needing a caretaker, but having none; 99 = No idea

Now, I would like to ask some questions about the difficulties caused by health problems the family members may face.

No.	Full name	Does [Name] have any vision difficulty, even while wearing glasses?	Does [Name] have any difficulty in hearing, even when using hearing aid machine?	Does [Name] have any difficulty in walking or climbing up the stairs/steps?	Does [Name] have any difficulty in memorizing or concentrating?	Does [Name] have any difficulty in taking care of himself/herself, such as washing or getting dressed?	Does [Name] have any difficulty in communication, such as understanding others or making himself/ herself understood, due to mental or physical health problems?
B3		B22	B23	B24	B25	B26	B27
1	respondent						
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

B22-B27

1= No difficulty   2= A little difficulty   3= A lot of difficulty   4= Being unable to do that

137

C. THE DISABLED PERSON IN THE FAMILY

C1 Number of disabled people in the family? *(Interviewer checks with B20)* .... IF **0** → **D1**

C2 How does having a disabled member affect other family members?

	Effects on other family members	a. Number of people	b. Codes of these people in the household interview checklist
a	Is there anybody who has to quit his/her job to take care of the disabled member?		
b	Is there anybody who has to spend less time on his/her job to take care of the disabled member?		
c	Is there anybody who has to do a part-time job to have more income for the disabled member?		
d	Is there anybody who has to work overtime to have more income for the disabled member?		
e	Is there anybody who has to stop his/her education to take care of or earn money for the disabled member?		
f	Is there anybody who has to get married earlier than planned to have someone take care of the disabled member?		
g	Is there anybody who has to prolong his/her singlehood to take care of the disabled member?		
h	Is there anybody whose health is deteriorated quickly due to taking care of the disabled member?		
i	Other (Specify)		

C3 In general, how does having a disabled member affect the family?

     1 = Very negatively   4 = Positively

     2 = Negatively   5 = Very positively

     3 = No effect   9 = No idea

C4 Does having a disabled member cause any difficulties for the family?

     1 = No difficulty → **D1**   4 = Too much difficulty

     2 = A little difficulty   9 = No idea → **D1**

     3 = A little difficulty

C5 Are the difficulties in? *(Circle the appropriate answers)*

     1 = Finance   4 = Relation in family

     2 = Nhân lực   5 = Time

     3 = Spirit   6 = Other (specify)

C6 What is the biggest difficulty among them? *Coding from C5: ....*

D. LIVING STANDARD OF THE FAMILY

No.	Question	Answer	Move
D1	What is the <u>main</u> source of water your family is using for <u>drinking?</u>	Piped water inside the house .... 1 Piped water outside the house.................... 2 Public piped water.... .... 3 Rain water.. 4 Bottled water / Purified water .... 5 Hand-dug well water.................................. 6 Drilled well water...................................... 7 River, lake, pond, ditch, canal water............ 8 Other *(specify)* 9	
D2	What is the <u>main</u> source of water your family is using for <u>washing</u>?	Piped water inside the house .... 1 Piped water outside the house.................... 2 Public piped water.... .... 3 Rain water.. 4 Bottled water / Purified water .... 5 Hand-dug well water.................................. 6 Drilled well water...................................... 7 River, lake, pond, ditch, canal water............ 8 Other *(specify)* 9	
D3	What type of toilet is your family using?	Private septic tank .... 1 Private two-section toilet .... 2 Private rudimentary .... 3 Public/shared toilet .... 4 Having no toilet .... 5 Other *(specify)* 6	
D4	What type of house is your family living in?	Temporary, rudimentary house (cottage made from bamboo, leaves, thatch) .... 1 Semi-solid house .... 2 Solid house (e.g: a house with brick wall and cement ceiling) .... 3 Other *(specify)* 4	
D5	Do you own, rent, borrow or illegally build this house or do you stay with the owner of the house for free?	Own house .... 1 Rental house... 2 Borrowed house/ Living with the owner of the house for free .... 3 Temporary/ illegal house .... 4 Other *(specify)* 5	
D6	What is your total **house area**, including the area of the bedroom, living room, dining room, kitchen and bathroom?	*m²*	

No.	Question	Answer	Move
D7	What is the total **_land area_** _(including building land, ground, garden land, and excluding farming land)_ that your family is entitled to use and sell/give/present? _(make a sum of all the land plots if there is more than one)_	m^2	
D8	What is the <u>main source</u> of energy your family is using for cooking?	Electricity .... 1 Gas .... 2 Oil .... 3 Coal (coke, beehive coal,...) .... 4 Firewood .... 5 Dried leaves, straw, thatch, rice husk .... 6 Other, specify 7	
D9	Is your family using electricity?	Yes .... 1 No 2	**2→ D11**
D10	Where does the electricity your family is using come from?	Grid .... 1 Generators .... 2 Other, specify 3	
D11	Could you please tell me the total average <u>monthly</u> income of all the family members over the last year _(including all the income sources such as salary, allowances, given money, selling products... before subtracting the expenses)?_	Under 500.000 dong .... 1 From 500.000 dong to under 1 million .... 2 From 1 million to under 2 million .... 3 From 2 million to under 3 million .... 4 From 3 million to under 4 million .... 5 From 5 million to under 6 million .... 6 From 7 million to under 8 million .... 7 From 9 million to under 10 million .... 8 From 50 million upward 9	
D12	What is that sum again if you make a more accurate estimate? _(round it up)_	_dong_	
D13	How many people in your family contribute to that amount of income?	_people_	
D14	Which category of the following do you think your family income falls into, by comparison with those of other families in your locality? _(Interviewer reads the choices)_	Rich .... 1 Rather rich .... 2 Average .... 3 Poor .... 4 Very poor 5	

No.	Question	Answer	Move
D15	What category does your family's economy fall into, according to the classification of the local government - the communal People's Committee?	Poor .... 1 Other .... 2 No idea 9	
D16	Does your family have any savings now?	Yes .... 1 No 2	
D17	Does your family have any debt now?	Yes .... 1 No 2	

E. PERMANENT AND DURABLE PROPERTIES

Property	Quantity?	Property	Quantity?
1. TV		17. Electric cooker	
2. Radio/Radio-cassette		18. Sofa, antique chairs and tables, antique reproduction chairs and tables	
3. Video/CD/DVD player		19. Motorbike	
4. Fridge		20. Bicycle	
5. Air-conditioner		21. Electric bicycle	
6. Electric fan		22. Car	
7. Electric heater machine/fan		23. Cong nong (a kind of rudimentary vehicle)	
8. Washing machine		24. Boat/canoe	
9. Water boiler		25. Electricity generator	
10. Electric rice cooker		26. Agricultural machine (e.g. rice husking machine)	
11. Microwave oven/ baking oven		27. Vacuum cleaner/humidifier	
12. Telephone		28. Digital camera	
13. Mobile phone		29. Satellite/Digital TV	
14. Computer		30. Electric kettle	
15. Internet-access		31. Livestock (buffalo, cow, ox, horse,...)	
16. Gas cooker		32. Poultry (chicken, duck, wild goose,...)	

F. INCOME AND EXPENDITURE FOR THE FAMILY

F1. Could you please tell me the total income of all the family members from the following sources last year?

Note to interviewer: Ask about each income source before subtracting the expense (if any).

Income sources	Number of income earner	Amount (dong)
a. Crop farming		
b. Livestock farming		
c. Aquaculture /aqua-exploitation		
d. Salary/ wages from sources other than the State budget		
e. Salary/ wages from the State budget		
f. Pension		
g. Sub-occupations and non-agricultural self-employed activities		
h. Remittances		
i. Bank interests, investment income, lending interests		
j. Allowance/aids by the State for the disabled		
k. Other allowance/aids by the State		
l. Other income source *(specify)*		
Total		

The interviewer checks if the total amount falls in the range in D11 or D12 (multiplied by 12 because D11 and D12 is monthly income? If not, ask the respondent again to have a more accurate estimate.

F2. How much **per month** on average do all the members in your family spend on the following?

Expenditure items	Amount *(dong)*
a. Food	/ month
b. Non-alcoholic drink	/ month
c. Alcohol	/ month
d. Domestic water	/ month
e. Electricity	/ month
f. Telephone and mobile phone	/ month
g. Internet	/ month
h. House/land rental	/ month

Expenditure items	Amount *(dong)*
i. Transportation	/ month
j. Cooking fuel, oil for lighting	/ month
k. Cable TV	/ month
l. Newspaper	/ month
m. Cigarette/pipe tobacco	/ month

F3. How much **per year** on average *(take the last year for example)* do all the members in your family spend on the following (**EXCLUDING THE ITEMS IN F2**)?

Expenditure items	Amount *(dong)*
a. Education	/ 1 year
b. Health care	/ 1 year
c. Offerings in special circumstances such as funerals, accidents, weddings, holidays	/ 1 year
d. Clothes, jewelry	/ 1 year
e. Purchase of furniture, pets, decorative plants	/ 1 year
f. House repair/building	/ 1 year
g. Recreation, traveling, offerings to pagodas/temples	/ 1 year
h. Use of motorbike or car such as gasoline, maintenance, insurance, parking ...	/ 1 year
i. Contribution to the family line, community	/ 1 year
j. Investment, purchase of production/business equipment	/ 1 year
k. Tax	/ 1 year
l. Other *(specify)*	/ 1 year

Thank you so much!

APPENDIX 5: INDIVIDUAL QUESTIONNAIRE

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INDIVIDUAL *INTERVIEW QUESTIONNAIRE*

(disabled person/non-disabled person)

A. GENERAL INFORMATION

Place of interview:

1. Province/city: .... District: ....

Commune/ward: ....Hamlet/Group:...

2. Place of interview:

      1 = Urban area   2 = City town/district town

      3 = Rural area

3. Household code: ☐☐☐☐

4. Full name of interviewer: .... Code: ☐☐

Interview	First time	Second time	Third time
5. Interview result: 1 = Done 2 = Not meeting the interviewee 3 = Interviewee refusing to respond 4 = Arranging another meeting time 5 = Wrong address 6 = Undone			
6. Interview started at	.... h	.... h	.... h ....
7.Interview ended at	.... h	.... h	.... h ....
8. Date of interview	.... / .... / 2011	.... / .... / 2011	.... / .... / 2011

9. Full name of field supervisor: .... Code: ☐☐

Filled in by interviewer:

10. Full name of respondent: ....

11. Code of respondent in household questionnaire .... *(99 if not being the household member)*

12. Which group in the screening questionnaire does the respondent belong to?

    1 = Disabled   2 = Non-disabled → **A14**

13. Can the respondent answer the questions in this questionnaire by himself/herself?

    1 = Yes → **A14**

    2 = No → **Say thank you. Interview the main care giver**

14. Interviewer's comment on the respondent's cooperation:

    1 = Very cooperative   3 = Normal

    2 = Cooperative   4 = Not very cooperative

15. Interviewer's comment on quality of the information collected:

    1 = Very good   3 = Not very good

    2 = Good   4 = Very bad

16. Interview setting:

    1 = Only with the respondent   3 = With the respondent and two other people or so

    2 = With the respondent and another person

B. PERSONAL INFORMATION ABOUT EDUCATION AND OCCUPATION

No.	Question	Answer		Move
B1	When were you born according to the solar calendar?	.... / .... *(99/9999=can not remember the month/ year)*		
B2	Gender? *(filled in by interviewer)*	Male .... 1 Female 2		
B3	What level of education did you <u>finish</u>? = Not finish grade 1 1, 2, … 12 = Grade1 (2, 3... 12) 13 = Two-year/ Three-year college 14 = University or higher			
B4	Are you going to any school now *(At any level, including two-year/ three-year college, university)?*	Yes .... 1 No 2		**1→ B7**
B5	Why aren't you going to school? *Circle the appropriate answer(s)*	Not being admitted .... 1 Being expelled from school ... 2 Lacking/having no money ..... 3 Having health problem .... 4 Having difficulty in traveling ... 5 Far school .... 6 Unsuitable facilities 7	Unsuitable teaching methods .... 8 Insufficient/unsuitable teaching/ learning equipment .... 9 Limited learning capacity ... 10 Being kept away by schoolmates .... 11 Not being supported by teachers/schoolmates 12	

No.	Question		Answer	Move
B5	Why aren't you going to school? *Circle the appropriate answer(s)*	Not being allowed to participate in school activities .... 13 Not being encouraged by family ..14 Having to work .... 15 Having to take care of family members .... 16 Being married/Giving birth to children 17	Thinking learning continuation is of no use .... 18 Having learned enough as self-expected .... 19 Waiting for job .... 20 Other (specify) .... 21 No idea 99	
B6	What is the most important reason among those you have listed for your not going to school?		*Coding from B5:*	} → **B13**
B7	What grade or level of education are you attending? *0 = Not finish grade 1* *1, 2, … 12 = Grade1 (2, 3... 12)* *13 = Two-year/ Three-year college* *14 = University or higher*			
B8	How much did you pay for tuition fee last year? *(for required courses only)*		*dong*	
B9	How much more per year on average do you/your family have to pay for things directly related to your education such as extra education, books/ notebooks, learning equipment and stationeries, uniform, and other financial contributions to school, besides the tuition fee?		*dong*	
B10	What difficulties do you face in your education now? *Circle the appropriate answer(s)*	No difficulty .... 1 Lacking/having no money .... 2 Having health problem .... 3 Having difficulty in traveling ..... 4 Far school .... 5 Unsuitable facilities .... 6 Unsuitable teaching methods .. 7 Insufficient/unsuitable teaching/ learning equipment .... 8 Limited learning capacity 9	Being kept away by schoolmates .... 10 Not being supported by teachers/schoolmates ..... 11 Not being allowed to participate in school activities .... 12 Not being encouraged by family .... 13 Having to work .... 14 Having to take care of family members .... 15 Being married/Giving birth to children .... 16 Other *(specify)* .... 17 No idea 99	**1** → **B13**
B11	What is the biggest difficulty among those you have listed *(question B10)*?		*Coding from B10:*	

No.	Question		Answer	Move
B12	How do those difficulties negatively affect you? *Circle the appropriate answer(s)*		No negative effect .... 0 Undesired learning result ... 1 Being unable to acquire much knowledge/skill .... 2 Being bored with learning ... 3 Being unconfident .... 4 Having to retake the courses/exams .... 5 Deteriorated health .... 6 Other *(specify)* .... 7 No idea 9	
B13	Have you learned up to your expectation?		Yes .... 1 No .... 2 No idea/have never thought of this 9	**1 → B16** **9 → B16**
B14	Why? *Circle the appropriate answer(s)*	Not being admitted .... 1 Lacking/having no money ..... 2 Having health problem .... 3 Having difficulty in traveling ... 4 Far school .... 5 Unsuitable facilities .... 6 Unsuitable teaching methods .. 7 Insufficient/unsuitable teaching/learning equipment 8	Limited learning capacity ..... 9 Feeling a complex .... 10 Not being encouraged by family .... 11 Having to work .... 12 Having to take care of family members .... 13 Being married/Giving birth to children .... 14 Other *(specify)* .... 15 No idea 99	
B15	What is the most important reason among those you have listed for your not learning up to your expectation?		*Coding from B14:*	
B16	Are you going to work now?		Yes .... 1 No 2	**9 → B19**
B17	Why aren't you going to work? *Circle the appropriate answer(s)*	Being immature .... 1 Being retired .... 2 Not needing/wanting to go to work .... 3 Working as a housewife .... 4 Going to school 5	Being unable to get a job ...... 6 Looking for a job .... 7 Former employing organization dissolved .... 8 Too far working place .... 9 Having difficulty in traveling .. 10	

No.	Question	Answer	Move
	Having health problem .... 11 Being pregnant/Taking maternity leave .... 12 Having to take care of family members .... 13 Having to do housework 14	Being maltreated at working place .... 15 Being fired .... 16 Not being encouraged to go to work by family .... 17 Other *(specify)* .... 18 No idea 99	
B18	What is the most important reason among those you have listed for your not going to work?	*Coding from B17:*	$\Big\}\rightarrow$ **B31**
B19	What is your **full-time** job now?	Worker .... 1 Farmer/fisherman .... 2 Craftsman .... 3 Doing small business .... 4 Doing big business .... 5 Providing personal services .. 6 Providing social services (teacher, doctor…) .... 7 Managerial staff .... 8 Military officer/Police officer .... 9 Other .... 10 No idea 99	
B20	Can you describe your full-time job?		
B21	Are you doing this full-time job for yourself, other individuals, a private company, the Government or anybody else?	For the Government .... 1 For the community/co-operative .... 2 For a private company 100% .. 3 For a foreign company 100% ... 4 For the family .... 5 For oneself .... 6 For a joint-venture company .... 7 Other *(specify)* .... 8 No idea 9	
B22	Do you earn any income from your current full-time job?	Yes .... 1 No 2	**2 → B24**

148

No.	Question		Answer	Move
B23	What is your average monthly income from this full-time job, including bonus and allowances? *Interviewer cross-checks with the income of the household*		*dong*	
B24	When did you start this job *(current full-time job)*?		*Month .... year ....* *(99/9999= not remember month/year)*	
B25	Are you doing any other **part-time** jobs?		Yes .... 1 No 2	**2 → B28**
B26	How many **part-time jobs** are you doing now?			
B27	What is your total average monthly income from all of these jobs?		*dong*	
B28	Do you have any difficulties in your working place? *Circle the appropriate answer(s)*	No difficulty .... 1 Negatively affecting health .... 2 Poor job performance .... 3 Having difficulty in traveling ... 4 Working place being far from home .... 5 Unsuitable facilities .... 6 Insufficient/ unsuitable working equipment .... 7 Unsuitable job .... 8 Limited working capacity ...... 9 Not being respected .... 10 Unfriendly workmates .... 11 Low salary/no pay rise ... 12	No labor contract signed .. 13 Being assigned only one kind of work .... 14 Having no/ little vocational training .... 15 No/little chance for promotion .... 16 No social/health insurance ..17 Voices not being heard .... 18 Not being encouraged by family .... 19 Other *(specify)* .... 20 Low market demand for products .... 21 No idea 99	**1 → B31**
B29	What is the biggest difficulty in your working place among those you have listed?		*Coding from B28:*	
B30	How do those difficulties negatively affect you? *Circle the appropriate answer(s)*		No negative effect .... 0 Undesired learning result ...... 1 Being unable to acquire much knowledge/skill .... 2 Poor job performance .... 3 Being bored with learning 4	

No.	Question	Answer	Move
B30	How do those difficulties negatively affect you? *Circle the appropriate answer(s)*	Being unconfident .... 5 Low income .... 6 Deteriorated health .... 7 Other *(specify)* .... 8 No idea 9	
B31	Are you receiving any monthly allowance? *IInterviewer asks for more information about type/ source of allowance if necessary.*	Yes, disability allowance .... 1 Yes, other allowances from the State .... 2 Other allowances from external sources .... 3 No 4	4 → **B33**
B32	How much allowance have you received over the past 12 months? *a. From the State* *b. From external sources*	*a. State: .... dong* *b. Other: .... dong*	
B33	Do you have any savings now?	Yes .... 1 No 2	
B34	Are you in any debt now?	Yes .... 1 No 2	
B35	Do you read newspapers at least once per week? *(both online and printed newspapers)*	Yes .... 1 No 2	
B36	Do you listen to the radio at least once per week?	Yes .... 1 No 2	
B37	Do you watch TV at least once per week?	Yes .... 1 No 2	

C. HEALTH SITUATION AND INSURANCE

No.	Question	Answer	Move
C1	How tall are you?	*cm*	
C2	How heavy are you?	*kg*	
C3	How would you evaluate your <u>current</u> health in general? *Interviewer <u>reads</u> the choices*	Very good .... 1 Good .... 2 Medium .... 3 Weak .... 4 Very weak 5	

No.	Question	Answer	Move
C4	How would you evaluate your spiritual life in general? *Interviewer reads the choices.*	Very pleased .... 1 Pleased .... 2 Normal .... 3 Unpleased .... 4 Very unpleased 5	
C5	Do you have a health insurance card?	Yes .... 1 No, used to .... 2 Never 3	**2 → C7** **3 → C8**
C6	What kind of card do you have? *Circle the appropriate answer(s).*	Health insurance card for children under 6 ... 1 Health insurance card for the poor .... 2 Card for policy family/peole with merits .... 3 Health insurance card for students/pupils .... 4 Compulsory State health insurance card (other) .... 5 Voluntary State health insurance card (other) ... 6 Compulsory private health insurance card .. 7 Voluntary private health insurance card 8	→ **C9**
C7	What kind of card did you use to have? *Circle the appropriate answer(s).*	Health insurance card for children under 6 .... 1 Health insurance card for the poor .... 2 Card for policy beneficiary family/people with merits .... 3 Health insurance card for students/pupils .... 4 Compulsory State health insurance card (other) .... 5 Voluntary State health insurance card (other) ... 6 Compulsory private health insurance card .... 7 Voluntary private health insurance card 8	
C8	Why don't you have a health insurance card? *Circle the appropriate answer(s).*	Having never heard about health insurance program .... 1 Not knowing where to buy .... 2 Having no money .... 3 Thinking health insurance card is of no use ...... 4 Not having time to buy/extend the expiry .... 5 Other *(specify)* 6	
C9	Have you ever smoked cigarette or pipe tobacco?	Yes .... 1 Never 2	**2 → C11**

No.	Question	Answer	Move
C10	How often do you smoke a week? *(Interviewer puts 0 if once every several weeks or so)*	*time/week*	
C11	Have you ever drunk up a big glass of beer or a cup/glass of wine?	Yes .... 1 Never 2	**2 → D1**
C12	How often do you drink alcohol now? Every day, every month, every year or others?	Every day .... 1 Every week .... 2 Every month .... 3 Every year .... 4 Less often (/once every several years) .... 5 Not using alcohol currently 6	

D. HEALTH-RELATED DIFFICULTIES

The following questions ask about the difficulties **caused by health problems** you may face when doing some certain things:

No.	Question	Answer	Move
D1	Do you have any **vision** difficulty, even while wearing glasses? *Interviewer reads the choices.*	No difficulty .... 1 A little difficulty .... 2 A lot of difficulty .... 3 Being unable to do that 4	**1 → D5**

D2	Which of the following is the correct reason for your vision difficulty?
	 Interviewer reads the choices one by one and circles only one selected choice.
		Having infectious disease and parasites 10
		 Being born with 20
		 Having agent orange 30
		 Other diseases 40
		 Injury:
		   Car/motorbike accident 51
		   Accidents while using other means of transport 52
		   Traffic accidents 53
		   War 54
		 Being old 60
		 Other reasons *(specify)* ... 70	

D3	When did your vision difficulty begin?	Month .... year	
D4	Do you wear glasses? IF YES: regularly or irregularly?	Regularly .... 1 Irregularly .... 2 No 3	

No.	Question	Answer	Move
D5	Do you have any difficulty in **hearing**, even when using hearing aid machine? *Interviewer reads the choices.*	No difficulty .... 1 A little difficulty .... 2 A lot of difficulty .... 3 Being unable to do that 4	**1→ D9**

D6	Which of the following is the correct reason for your hearing difficulty?
	
	Interviewer reads the choices one by one and circles only one selected choice.
		Having infectious disease and parasites 10
		Being born with 20
		Having agent orange 30
		Other diseases 40
		Injury:
		   Car/motorbike accident 51
		   Accidents while using other means of transport 52
		   Traffic accidents 53
		   War 54
		Being old 60
		Other reasons *(specify)* ... 70	

D7	When did your hearing difficulty begin?	Month .... year	
D8	Do you use a hearing aid machine? IF YES: regularly or irregularly?	Regularly .... 1 Irregularly .... 2 No 3	
D9	Do you have any difficulty in **memorizing or concentrating**? *Interviewer reads the choices.*	No difficulty .... 1 A little difficulty .... 2 A lot of difficulty .... 3 Being unable to do that 4	**1→ D12**

D10	Which of the following is the correct reason for your difficulty?
	
	Interviewer reads the choices one by one and circles only one selected choice.
		Having infectious disease and parasites 10
		Being born with 20
		Having agent orange 30
		Other diseases 40
		Injury:
		   Car/motorbike accident 51
		   Accidents while using other means of transport 52
		   Traffic accidents 53
		   War 54	

No.	Question	Answer	Move
D10	Which of the following is the correct reason for your difficulty? *Interviewer reads the choices one by one and circles only one selected choice.*	Being old .... 60 Other reasons *(specify)* ... 70	
D11	When did your difficulty begin?	Month .... year	
D12	Do you have any difficulty in **walking or climbing up the stairs/steps**? *Interviewer reads the choices.*	No difficulty .... 1 A little difficulty .... 2 A lot of difficulty .... 3 Being unable to do that 4	**1→ D16**

D13	Which of the following is the correct reason for your difficulty?
	
	Interviewer reads the choices one by one and circles only one selected choice.
		Having infectious disease and parasites 10
		Being born with 20
		Having agent orange 30
		Other diseases 40
		Injury:
		   Car/motorbike accident 51
		   Accidents while using other means of transport 52
		   Traffic accidents 53
		   War 54
		Being old 60
		Other reasons *(specify)* ... 70	

D14	When did your difficulty begin?	Month .... year	
D15	Do you use a wheelchair or other aid devices (crutches, canes, frames/fake legs…)?	Yes .... 1 No 2	
D16	Do you have any difficulty in **taking care of yourself**, such as washing or getting dressed? *Interviewer reads the choices.*	No difficulty .... 1 A little difficulty .... 2 A lot of difficulty .... 3 Being unable to do that 4	**1→ D19**

No.	Question	Answer	Move

D17	Which of the following is the correct reason for your difficulty? *Interviewer reads the choices one by one and circles only one selected choice.*	Having infectious disease and parasites 10
		Being born with 20
		Having agent orange 30
		Other diseases 40
		Injury:
		  Car/motorbike accident 51
		  Accidents while using other means of transport 52
		  Traffic accidents 53
		  War 54
		Being old 60
		Other reasons *(specify)* ... 70	

D18	When did your difficulty begin?	Month .... year	
D19	Do you have any difficulty in **communication**, such as understanding others or making yourself understood, due to mental or physical health problems? *Interviewer reads the choices.*	No difficulty .... 1 A little difficulty .... 2 A lot of difficulty .... 3 Being unable to do that 4	**1→ E1**

D20	Which of the following is the correct reason for your difficulty? *Interviewer reads the choices one by one and circles only one selected choice.*	Having infectious disease and parasites 10
		Being born with 20
		Having agent orange 30
		Other diseases 40
		Injury:
		  Car/motorbike accident 51
		  Accidents while using other means of transport 52
		  Traffic accidents 53
		  War 54
		Being old 60
		Other reasons *(specify)* ... 70	

D21	When did your difficulty begin?	Month .... year	

E. ACCESS TO AND USE OF HEALTH CARE SERVICES OVER THE PAST 12 MONTHS

The following questions are about difficulties caused by health problems that you might encounter when doing certain things.

No.	Question	Answer	Move
E1	Over the past 12 months, have you received any in-patient treatment in any health care institution? *(In-patient treatments means staying overnight on patients' bed in the health care institution)*	Yes .... 1 No .... 2 No idea/Not remember 9	**2→ E4** **9→ E4**
E2	Where have you received in-patient treatment over the last 12 months? *(Circle the appropriate answer(s).)*	Central hospital .... 1 Province/city hospital .... 2 District hospital .... 3 Commune/ward health care station .... 4 Private hospital .... 5 Private clinic .... 6 Other (specify) .... 7 No idea/Not remember 9	
E3	How much in total have you and your family had to pay for all of your in-patient treatment over the last 12 months? *(including fees for health checkup, tests, bed, surgeries, medication, traveling, food, accommodation for you and your caretakers, excluding the amount paid/refunded by health care insurance company)* *Note: Interviewer asks the amount for each item in each treatment and then sums up the total.*	*dong*	
E4	Over the past 3 months, have you received any <u>out-patient treatment</u> in any health care institution? *(Not staying overnight on patients' bed in the health care institution)*	Yes .... 1 No .... 2 No idea/Not remember 9	**2→ E7** **9→ E7**
E5	Where have you received <u>out-patient treatment</u> over the past 3 months? *(Circle the appropriate answer(s).)*	Central hospital .... 1 Province/city hospital .... 2 District hospital .... 3 Commune/ward health care station .... 4 Private hospital .... 5 Private clinic .... 6 Other (specify) .... 7 No idea/Not remember 9	

No.	Question	Answer	Move
E6	How much in total have you and your family had to pay for all of your out-patient treatment over the last 3 months? *(including fees for health checkup, tests, bed, procedures, medication, traveling, food, accommodation for you and your caretakers, excluding the amount paid/refunded by health care insurance company)* *Note: Interviewer asks the amount for each item in each treatment and then sums up the total.*	*dong*	
E7	Over the past three years, have you ever <u>self-treated</u>? *(Buying medicines or giving prescriptions for your diseases without health care workers' prescriptions)*	Yes .... 1 No .... 2 No idea/Not remember 9	**2→ F1** **9→ F1**
E8	How much in total have you/your family had to pay for all of your self treatment over the last 3 months? *Note: Interviewer asks the amount for each item in each treatment and then sums up the total.*	*dong*	

F. SOCIAL PARTICIPATION

No.	Question	Answer	Move
C7	Can you use public means of transport by yourself?	Yes .... 1 No 2	**2→ F3**
C8	Do you use any public means of transport currently?	Yes, regularly .... 1 Yes, rarely .... 2 No 3	**1→ F4** **2→ F4**
C9	Which of the following is the reason for your not using public means of transport? *(Circle the appropriate answer(s).)*	Using private means of transport .... 1 Inconvenient route .... 2 Having difficulty/Being unable to get on the vehicle .... 3 Being crowded and limited in space .... 4 Other *(specify)* 5	
C10	Do you participate in any social, political, mass organizations?	Yes .... 1 No 2	**1→ F6**

No.	Question	Answer	Move
C11	Why don't you participate in any?	Having no idea about those organizations .... 1 Thinking participation is unnecessary .... 2 Not being allowed to participate .... 3 Limited health .... 4 Other *(specify)* 5	→ **F8**
C12	Which organization do you participate in? *(Circle the appropriate answer(s).)*	Government (People's council, People's committee) .... 1 Fatherland Front .... 2 Youth Union .... 3 Women's Association .... 4 Veterans' Association .... 5 Local Communist Party Committee .. 6 Group of residents .... 7 Association of the Elderly .... 8 Farmers' Association .... 9 Fellow-countrymen' Association .. 10 Club /Group of the disabled ..... 11 Other club /group (specify) ..... 12 Other organization (specify) 13	
C13	Do you often participate in these organizations' activities?	Very regularly .... 1 Regularly .... 2 Rarely 3	
C14	How many times have you watched films outside your home (in the cinema, outdoor cinema, mobile cinema…) over the past 12 months?		
C15	How many times have you participated in festival activities over the past 12 months or a year?		

G. SOCIAL ATTITUDES

INTERVIEWERS: Introduce to respondents how to use the response cards. Read the following guide *Now I will ask you questions one by one. For each question, please use the response card and select only one answer option that is most close to your thought. The "others" or "peers" here mean those who are at about the same age, live in the same neighborhood or in the same school or workplace with you.*

No.	Question	Never	Sometimes	Often	Very often	DK/ No answer
1	Do you feel emotionally connect to other people as much as you would like to?	0	1	2	3	9
2	Do you feel self-conscious in social situations?	0	1	2	3	9
3	Do you feel that you are burden to others?	0	1	2	3	9
4	Do you tend to blame yourself for any problems you may have?	0	1	2	3	9
5	Do people tend to avoid you?	0	1	2	3	9
6	Do people tend to make fun of you?	0	1	2	3	9
7	Are you treated as fairly by others as your peers are?	0	1	2	3	9
8	Are you socially active as your peers are in community/collective activities?	0	1	2	3	9
9	Are you comfortable meeting new people?	0	1	2	3	9
10	Are you invited to participate in social activities as often as you would like to?	0	1	2	3	9
11	Do you have the same respect as your peers do?	0	1	2	3	9
12	Do you feel capable to study up to the level that you would like to have?	0	1	2	3	9
13	Do you often feel confident to try to learn new things?	0	1	2	3	9
14	Anh/chị có thường nghĩ rằng việc học tập, kể cả học nghề, là cần thiết với anh/chị không? Do you think study, including vocational training, is necessary for you?	0	1	2	3	9

No.	Question	Never	Sometimes	Often	Very often	DK/ No answer
15	Do you feel you would be accepted at study or vocation training as your peers do?	0	1	2	3	9
16	Are you concerned about negative attitudes of teachers at study or vocational training?	0	1	2	3	9
17	Are you concerned about negative attitudes of other students at study or vocational training?	0	1	2	3	9
18	Are you concerned of being discriminated against at study or vocational training?	0	1	2	3	9
19	Does your family give you similar opportunities to study as it does to others family members?	0	1	2	3	9
20	Does your family invest in your study as much as other family members?	0	1	2	3	9
21	Do you feel confident to ask for help in your study from teachers/ other students?	0	1	2	3	9
22	Do you face any exclusion from enrolling in study or vocational training?	0	1	2	3	9
23	Have you experienced more negative attitudes from other students compared to your peers?	0	1	2	3	9
24	Are you included in school activities as much as your peer?	0	1	2	3	9
25	Do you feel that your study capability is fairly assessed by other people in school?	0	1	2	3	9
26	Do you feel you are discriminated against in the school?	0	1	2	3	9
27	Do you feel you are able to find a job that you would like?	0	1	2	3	9
28	Are you concerned of negative attitudes towards you in the workplace?	0	1	2	3	9

No.	Question	Never	Sometimes	Often	Very often	DK/ No answer
29	Do you feel confident/able to have/ run your own business or be self employed?	0	1	2	3	9
30	Are you concerned of being discriminated against at the workplace?	0	1	2	3	9
31	Do you have equal opportunities to find work as your peers do?	0	1	2	3	9
32	Do you have the same access to information regarding job opportunities as your peers do?	0	1	2	3	9
33	Do you have the same opportunities to start your own business as your peers do?	0	1	2	3	9
34	Does your family invest in your work development as much as other family members?	0	1	2	3	9
35	Are you included in social activities at work as much as your peers at work ?	0	1	2	3	9
36	Are your contributions, comments or suggestions often appreciated at work as much as your peers at work?	0	1	2	3	9
37	Do you have the same income as compared to your peers (who are in the same working position)?	0	1	2	3	9
38	Do you have the same possibility to increase your salary/income as compared to your peers at work?	0	1	2	3	9
39	Do you have similar chance to be promoted as compared to your peers at work?	0	1	2	3	9
40	At the workplace, do you receive the same welfares as your peers at work do?	0	1	2	3	9
41	At the workplace, is your work capability is assessed by others as fairly as that of your peers?	0	1	2	3	9
42	Are you treated at the workplace as fairly as your peers?	0	1	2	3	9

No	Question	Never	Sometimes	Often	Very often	DK/ No answer
43	Are you fearful of negative attitudes towards you from health care workers?	0	1	2	3	9
44	Are you fearful of negative attitudes towards you from others patients and their relatives?	0	1	2	3	9
45	Are you concerned of being discriminated against at health care facilities?	0	1	2	3	9
46	Do you ever delay seeking treatment for health conditions until they are severe because you are fearful of negative attitudes towards you at health care facilities?	0	1	2	3	9

H. KNOWLEDGE ABOUT LAW ON RIGTS AND RESPONSIBILITIES OF THE DISABLED

No.	Question	Answer	Move
H1	Do you think Vietnam has issued the Disability Law?	Yes .... 1 In the near future .... 2 In the far future .... 3 No idea 9	2 → Finish 3 → Finish 9 → Finish
H2	Are you aware of the provisions of this Disability Law?	Yes .... 1 No 2	2 → Finish
H3	What do you think of the suitability of this law?	Very suitable .... 1 Suitable .... 2 Unsuitable .... 3 No idea 9	→ Finish

Thank you so much!