A Situational Analysis of Disability and Aging in Myanmar

Report prepared for

HelpAge International Myanmar Country Office

Prepared by:

Ilene Zeitzer

Disability Policy Solutions

Acknowledgements

Min Nwe Tun, MD and Mr. Salai Vanni Bawi, M.A. contributed to this research by conducting key informant interviews in Myanmar and collecting written documents.

In addition, Bussarawan Teerawichitchainan, Ph.D., Singapore Management University and John Knodel, Ph.D., University of Michigan produced a separate assessment, "Empirical evidence from the 2014 Census and 2012 Myanmar Aging Survey."

The views expressed in this report are those of the author, and not necessarily those of the supporting researchers, HelpAge International or LIFT.

Contents

List of figures and tables

List of abbreviations

ADL	Activities of Daily Living
CWDs	Children with Disabilities
DPO	Disabled People's Organization
ENT	Ear, Nose and Throat
IADL	Instrumental Activities of Daily Living
ICF	International Classification of Functioning, Disability and Health
INGO	International Non-government Organization
LIFT	Livelihoods and Food Security Trust Fund
MAS	Myanmar Aging Survey
MoH	Ministry of Health (former name)
MoHS	Ministry of Health and Sports
MoSWRR	Ministry of Social Welfare, Relief and Resettlement
NCDs	Non-Communicable Diseases
NEHP	National Eye Health Plan
PWDs	Persons with Disabilities
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WG	Washington Group
WHO	World Health Organization

I. Background

The relationship between aging and acquiring a disability is complicated. It is accepted thinking to assume that it is part of the natural life course that aging often brings with it the acquisition of at least some types of disabling conditions. In fact, to some extent, that is true. What is not so clear, however, is what is simply aging and what is an actual disability? For example, as bodies age, it is a common phenomenon that it typically takes a little longer to recover from an illness or surgery or to fight off an infection. That is just a rather generalized outcome of normal aging and not the same for one person as another, but usually true for older versus younger-aged adults. The older person might have developed other conditions such as high blood pressure that can complicate full recovery or limit the effectiveness of drug therapies and so forth. Hence, the threshold between living with a health condition(s) or an impairment and that impairment developing into a full-blown disability may well be quite different between older adults and younger ones.

Where is the threshold between what is some limitation in ability to carry out a normal physical or intellectual function and what is an impairment so severe that that function can only be accomplished with great difficulty or not at all? For example, it is a recognized fact that most people, no matter how good their eyesight is in childhood and through their early years as an adult, will likely require eyeglasses, at least for reading, by the time they are in their late 30's or early 40's. In short, there are very few 50 or 60-year-olds walking around with uncorrected perfect vision. However, most people would not consider the need for eyeglasses or contact lens etc. as a disability, even if their vision without correction was quite poor.

On the other hand, the converse is often a paradox – i.e. older people who develop functional limitations are often considered to have a disability when they do not or, conversely, they do actually have a severe limitation in functioning, but it is dismissed as merely a consequence of aging. This situation is especially true in poor countries where older people have not had ongoing routine examinations, hence for example, they do not realize either that their sight or hearing is deteriorating or, even if they do, that there is anything they can do about it. In short, when it come to the population of those age 60 or older, it becomes increasingly difficult to disaggregate what is the effect of normal aging, versus what is an acquired disabling condition.

It is helpful to consider what Jerome Bickenbach, one of the world's experts on the World Health Organization's (WHO's) International Classification of Functioning, Disability and Health (ICF) has to say about the issue of health and disability and what functioning is and why it is important. He beings by saying that: "Everyone knows what health is, although we are all a bit vague about it." He then provides the WHO definition of health and then says that "no one actually uses it." He goes on to say what really matters is functioning:

> Health in short, is about how we function in our day to day lives. In order to denote this positive and practical aspect of health, WHO used the term "functioning", which is the foundation for *the International Classification of Functioning, Disability and Health (ICF).* …For the WHO, functioning is a set of specific domains of human functioning – body functions and body structures and the things people do and the

> things people aspire to be… The WHO understands functioning to be a continuous concept, that is, a concept of "more or less", measurable along a continuum from complete (or total) functioning to complete absence of (or no) functioning. In other words, when people experience difficulties in functioning the result is disability, in the WHO sense of the word. The word "disability" has suffered the plight of being defined in countless different ways, by people concerned about theory as well as people concerned about practice. Even within the health professions, there is really no consensus about what disability means. It was for that reason that the WHO outlined its notion of disability defining disability in terms of functioning; in particular, as that level of functioning that is below a determined threshold along a continuum, for each domain, between completely present and completely absent.
>
> Where the threshold is placed is not the WHO's decision, but is a matter for science and practice, epidemiology and population-based norms. It is also, it must be said, an economic and political judgment. … The threshold is somewhere in the middle of the continuum, most likely closer to the complete absence end.[1]

Moreover, the 2014 Myanmar Census acknowledged this WHO explanation of disability: "To appropriately define and understand disability, it should be seen against the backdrop of overall physical and social functioning. It should be treated as a continuum and less as a strict categorization with a firm line between 'disabled' and 'abled' … Because of this complexity and its non-discrete boundaries, it poses some serious challenges for measurement, particularly in a population census."[2]

The dilemma is further complicated by a tendency emanating from the health sector, to conflate disability with poor health. The World Report on Disability warns of the pitfalls of that approach:

> The relationship between health conditions and disabilities is complicated. Whether a health condition, interacting with contextual factors, will result in disability is determined by inter-related factors. Often the interaction of several conditions rather than a single one contributes to the relationship between health conditions and disability. Co-morbidity, associated with more severe disability than single conditions, has implications for disability. Also the presence of multiple health problems can make the management of health care and rehabilitation services more difficult. …It is not possible to produce definitive global statistics on the relationship between disability and health conditions. Studies that try to correlate health conditions and disability without taking into account environmental effects are likely to be deficient.[3]

Moreover, the conflated narrative that looks at disability as a medical condition, rather than from a social model perspective, runs counter to all recognized thinking as underpinned by

---

[1] 2012; Jerome Bickenbach; "What is Functioning and Why Is It Important"; *ICF Core Sets Manual for Clinical Practice*; edited by: Jerome Bickenbach; Alarcos Cieza; Alexandra Rauch; & Gerold Stucki; Hogrefe Publishing; pp.1-2.

[2] 2017; The Republic of the Union of Myanmar; Department of Population; Ministry of Labour, Immigration and Population; (with technical assistance from UNFPA); *The 2104 Myanmar Population and Housing Census; Thematic Report on Disability; Census Report Volume 4-K;* p.7

[3] 2011; World Health Organization and The World Bank; *World Report on Disability*; Chapter 2 "Disability – a global picture"; p.32 Geneva

the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) that disability is a social construct. Under the social construct, the disability occurs from the intersection of a person with a limitation with his/her environment. This model is laid out in the approach of the ICF where problems with human functioning are categorized in three interconnected areas: (1) impairment – i.e. problems in body functions or structure; (2) activity limitations such as difficulties in walking; and (3) participation restrictions – i.e. problems in any area of life such as employment discrimination or inability to attend school etc. *Disability refers to difficulties encountered in any or all three areas of functioning*[4]

Thus while disability is not a medical construct, acquiring a serious illness or condition or an initially non-serious condition that goes untreated, can certainly lead to that condition evolving into a permanent disability. In short, especially with regard to older people, disability needs to be seen as a potential part of the continuum of the life span; but not necessarily a given outcome. Much depends on how natural aging is dealt with in the societal structural order.

A. The Legal Underpinning of Disability in Myanmar

Myanmar is rather new to the whole idea of disability as a social construct. On December 7, 2011, Myanmar ratified the UNCRPD and in doing so, embarked on commitments to improving the lives of Myanmar citizens with a disability. On 15 June 2015, the Union Parliament enacted the Law on the Rights of Persons with Disabilities (PWDs) which is the legal framework to enact the CRPD and to work in line with international practices for persons with disabilities. It is of key importance to note that the new Myanmar law defines a PWD as: "a person who is suffering from one or more long term physical, visual, speech, hearing, intellectual, psychological, mental or sensory impairment, whether innate or not."

Even before ratifying the UNCRPD, the 2008 Constitution of the Republic of the Union of Myanmar stated: "the Union shall care for mothers and children, orphans, fallen Defense Services personnel's children, the aged and the disabled."

In Myanmar's National Strategy for the Development of Persons with Disabilities (2016–2025), the government had laid out the bare bones structure of how it intends to move forward to improve the lives of citizens with disabilities through policy development including a focus on prevention; protection; habilitation and rehabilitation; sector development; including PWDs in all poverty reduction tasks and so forth.

With specific regard to the issues of aging, Myanmar passed the Older Persons Act on December 30, 2016 applicable to Myanmar citizens who are age 60 and above. Within that act, there is a specific category of "Frail Older People" defined as "an older person who is physically or mentally impoverished and cannot exist without the assistance of [an] other person." The Act mentions that care should be provided "particularly for the frail."

Overall responsibility for PWDs in Myanmar lies with the Ministry of Social Welfare, Relief and Resettlement (MoSWRR) that has primary responsibility for all issues related to PWDs

[4] 2011; *World Report on Disability;* As above; Box 1.1 New emphasis on environmental factors; p.5

including children with disabilities (CWDs). In January 2018, MoSWRR reorganized into three departments: Social Welfare; Disaster Management (formerly Relief and Resettlement); and Rehabilitation. The various Departments are still sorting out their respective responsibilities.

One very important issue that will impact on the lives of PWDs in Myanmar is the plan that was supposed to begin making cash transfer payments in 2016 to qualified families with children with disabilities (CWDs) and PWDs up to age 64 in 2016, according to the National Social Protection Strategic Plan of December 2014. However, the rollout of the program is quite delayed because the government still needs to create a certification and registration system, before it can implement such a program.

As the plans for the cash transfer program are still in the formative stages, it is not possible to know what the intentions are of what is being discussed. However, it is to be hoped that the proposed cutoff age of 64 for Myanmar citizens with disabilities will be seriously reconsidered or, that a parallel cash transfer is being readied for older PWDs. The currently discussed age limit flies in the face of the evidence that disability is linked to aging and that older PWDs are among the poorest of the poor in Myanmar. Their living conditions are almost totally dependent on family filling the caregiver role, but that is often not realistic or financially tenable. Myanmar should recognize that the situation for the older people with disabilities will not improve without the government taking some responsibility for their well-being.

The Ministry of Health and Sports (MOHS) plays a very important role in the lives of all Myanmar citizens. As 70% of the population is poor, particularly the public health system is essential to their health and well-being, with basic (primary level care) starting at the township level that impacts the 77% of the population that lives in rural areas. A much more detailed discussion on the healthcare system occurs in following sections.

B. The Paradox within the Context of Myanmar

The above brief discussion about what constitutes actual disability versus normal aging is the subject of more in-depth discussion in the separate International Background Report [additional document produced by the author]. However, it is very important to retain, as the focus of this situational analysis of older people and disabled in Myanmar, the distinction between disability as viewed as a health condition/medical model and disability viewed as a social construct.

As a developing country with limited resources to help marginalized members of the population, Myanmar needs to understand this distinction to prioritize and identify proper methodologies going forward to address both sets of needs. Currently, Myanmar is only just beginning to approach disability from a social construct perspective and is still struggling with the basics of how to establish a far more responsive healthcare system for its citizens. For that reason, much of the information that is available about disability in Myanmar is based solely from a medical perception and that is almost the only source of what is known about older persons with disabilities.

The International Report discuses in much greater detail this issue of the paradox of aging and disability – namely that while health and disability are often conflated especially when it comes to aging and disability, nevertheless the policies developed for these two groups almost always operate in two parallel universes and as such, do a great disservice to both.

C. Background Data on Prevalence of Disability

"The 2014 Myanmar Population and Housing Census was conducted with midnight of 29 March 2014 as the reference point."[5] The first Census in 30 years, it provides the most detailed information available concerning data on Persons with Disability (PWDs) in Myanmar with "regard to demographic, social and economic characteristics, and housing conditions and household amenities."[6]

For the purposes of this Census, the decision was made to include only four activities as follows: (1) seeing; (2) hearing; (3) walking; and (4) remembering or concentrating. The disability prevalence data were:

> Out of a total of 50.3 million persons enumerated in the 2014 Census, there were 2.3 million persons (4.6% of the total population) who reported some degree of difficulty with either one or more of the four functional domains. Of this number, over half a million (representing over 1% of the population as a whole) reported having a lot of difficulty (referred in the Thematic Report as a moderate disability) or could not do one or more of the four activities at all (referred to as a severe disability). Among those with the severe degree of disability, 55 thousand were blind, 43 thousand were deaf, 99 thousand could not walk at all and 90 thousand did not have the capability to remember or concentrate.[7]

D. Recognized Shortcomings of the Census Data

It is important to address a key issue about the Census disability data. The Myanmar Census questionnaire, while using questions based on self-reported difficulties and developed by the Washington Group (WG) on Disability Statistics, chose to use only four out of the six proposed WG questions to measure disability prevalence. Hence, there is a strong likelihood that the reported data of disability prevalence in Myanmar is a "serious under-estimation of the true prevalence level of disability in Myanmar".[8]

At least two key activity domains – namely communication and mental illness – were not included at all in the 2014 Census questions. This despite the fact that the UNCRPD that Myanmar ratified in 2011, in describing who are persons with disabilities, specifically mentions both "mental" and "intellectual" and uses "sensory" to encompass all forms of

[5] 2017; *Thematic Report on Disability; as above; Census Report Volume 4-K*; Foreword; p.III
[6] 2017; *Thematic Report on Disability;* as above; p. III.
[7] 2017; *Thematic Report on Disability* p.IV
[8] 2017; *Thematic Report on Disability;* as above; p.XV

communication, rather than separating out hearing and seeing. Thus, the current disability prevalence data in Myanmar ignores various forms of speech problems from complete muteness to difficulties in speaking such as those that may be a consequence of cerebral palsy, for example. Also, in considering only intellectual problems, the Myanmar 2014 Census fails to provide the prevalence data for mental problems which are, in reality, the most common single cause for award of disability benefits under social insurance schemes among every type of disability in virtually all of the developed countries. The benefit awards for mental problems reflect an increase in that type of claim in high income economies. "The fast increase in most OECD countries in the number of disability benefit claims because of mental health problems, often at a relatively young age, is an added challenge making disability a moving target for policy makers. Mental health problems are now the biggest single cause for a disability benefit claim in most countries; in Denmark, the Netherlands, Sweden and Switzerland accounting for almost half of all new claims."[9]

To be clear, the Thematic Report on Disability acknowledged these shortcomings and identified among the limitations, the following:

> The six WG-questions on disability do not address all aspects of disability comprehensively. The questions do not completely cover social or psychological disabilities and disabilities connected to upper body movement. Unless these problems are serious enough to have an impact on a person's communication or self-care, or any of the other activities, they go undetected. …
>
> The fact that – following the United Nations Principles and Recommendations for Censuses – only four out of the six possible WG-domains are generally included in censuses, is bound to lead to an under-estimation of the disability prevalence rate. As no questions on self-care and communicating were asked in the 2014 Census, the number of persons with disabilities will clearly be under-estimated as it leaves persons with these particular disabilities out of the equation.[10]

E. The Importance of the Census Data

Despite these acknowledged limitations, the Thematic Report on Disability aptly recognizes that even if the prevalence rate might be under-reported, the real value of the Census is that it reports on the living conditions of persons with disabilities. Concerning general findings of the living situations of PWDs, the 2014 Census found:

> 1.06 million males with disabilities and 1.25 million females. The overall sex ratio of the total population was 93.0 males per 100 females, but among persons with disabilities, it was 84.2, which shows that the prevalence of disability was slightly higher among females than males. Both male and females with a disability had much lower probabilities of being in a marital union at all ages.

[9] 2010: Organization for Economic Co-Operation and Development (OECD); *Sickness, Disability and Work: Breaking the Barriers*; pp.10-11.
[10] 2017; *Thematic Report on Disability*; as above; p.9

Persons living in rural areas have higher levels of disability, both in absolute and relative terms, compared to their urban counterparts. Among the 2.3 million persons who reported having a disability in at least one of the four domains, 1.8 million live in rural areas and 532 thousand live in urban areas, **amounting to a rural share of persons with a disability of 77%.**

Nearly one half of all persons with a disability live in extended households. This shows that the traditional system in which the family takes care of an ailing or a relative with a disability is still largely in place.[11]

F. The Data about Older Persons with Disabilities

Before further exploring what the living situations are for older PWDs, it is necessary to look more closely at what the Census data shows concerning the prevalence across the four domains for these population cohorts. "The Census shows that disability is predominantly an old age phenomenon with its prevalence remaining low up to a certain age, after which rates increase substantially."[12]

Table 1: Prevalence of disability in Myanmar by sex and age groups

(Percentage with at least some difficulty in one of the four functional domains asked in the 2014 Census)

Age Groups	Both sexes	Male	Female
Under 15	1.4	1.4	1.3
15-59	3.4	3.5	3.4
60+	23.3	22.4	24.0
80+	43.2	41.9	44.0

Source: Adapted from Table A1.1 (Myanmar Census 2014 Thematic Report on Disability, 2017).

Table 2: Percentages of population aged 60 and older by domain of disability by sex

(% with at least some difficulty)

Domains of disability	Both sexes	Male	Female
Seeing	15.0	14.1	15.7
Hearing	9.2	8.8	9.5
Walking	11.6	10.7	12.3
Remembering/concentrating	8.6	7.8	9.1

Source: Adapted from Table 7.1 (Myanmar Census 2014 Thematic Report on the Older Population, 2017).[13]

The above **Table 2** shows the general prevalence rates for the older population but does not give any indication of the rates by level of severity. In order to truly understand the impact of

[11] 2017; *Thematic Report on Disability*; as above; p. XV
[12] 2017; *Thematic Report on Disability* as above; p. IV
[13] 2018, Bussarawan Teerawichitchainan and John Knodel, "Situation analysis of disability and aging in Myanmar: Empirical evidence from the 2014 Census and 2012 Myanmar Aging Survey", a separate study attached as Annex 1 to this report. Hereafter: Teerawichitchainan and Knodel (2018), see Annex 1.

having one or more disabling condition on an older person's quality of life, it is important to understand both the severity level, as well as the person's living conditions. Obviously, the more severe the level of the disability, the greater its impact on the person, especially an older person's ability to function independently. That in turn strongly affects the older PWD's ability to live alone without at least some form of regular help. The absence of such help can mean the older person with a severe disability is forced to move into an institution – if one even exists in their area. The following Tables that were adapted from different 2014 Census Thematic Reports help to provide a more detailed picture of both issues.

Table 3 shows that older women with severe disabilities in rural areas – and it is helpful to remember that 77 % of people with disabilities live in rural areas – are even more significantly impacted than males under the same circumstances.

Table 3: Disability prevalence among older men and women by degrees of disability and urban/rural location

	% With at least mild disability	% With at least moderate disability	% With severe disability
Urban			
Age 60+			
Both sexes	18.3	4.4	1.7
Male	17.3	4.0	1.5
Female	19.1	4.6	1.8
Age 80+			
Both sexes	37.3	12.4	5.2
Male	35.2	10.6	4.1
Female	38.5	13.4	5.8
Rural			
Age 60+			
Both sexes	25.5	6.5	2.3
Male	24.5	6.0	2.0
Female	26.3	6.9	2.5
Age 80+			
Both sexes	45.9	17.1	6.8
Male	44.7	15.5	5.7
Female	46.6	18.1	7.5

Source: Adapted from Table A1.5b and Table A1.5c (Myanmar Census 2014 Thematic Report on Disability, 2017). Teerawichitchainan and Knodel (2018), see Annex 1.

As mentioned, the 2014 Census data provides very little detail about the four categories of impairments that were included other than their general prevalence. To learn more, the researchers turned to the Myanmar Aging Survey (MAS) of 2012.[14]

[14] National research on the situation of older people in Myanmar carried out in 2012. The study was led by John Knodel and commissioned by HelpAge International in partnership with the Ministry of Social Welfare, Relief and Resettlement and with additional support from UNFPA. See "The situation of older persons in Myanmar: results from the 2012 survey of older persons" (revised 2014).

Table 4 provides a more detailed examination of just the two sensory domains – seeing and hearing – and with more specificity among the age ranges. The Table shows that not only do the conditions worsen considerably with age, but that they often co-exist. The data show that 5.5% of males and 8.9% of females had dual sensory impairments. By age 80, 3.6% cannot see and 1.9% cannot hear.

Table 4: Prevalence of sensory impairments among older persons in Myanmar

	% Any sensory impairments	Visual impairment[a]		Hearing impairment[a]		% Dual impairments
		% Some impairment[b]	% Cannot see	% Some impairment[b]	% Cannot hear	
All older persons	**35.1**	**27.4**	**1.1**	**13.3**	**0.7**	**7.4**
Sex						
Male	30.3	22.4	0.6	12.0	0.9	5.5
Female	39.2	31.7	1.4	14.5	0.6	8.9
Age						
60-64	25.2	21.0	0.2	6.3	0.2	2.3
65-69	26.4	21.9	0.7	7.9	0.3	4.4
70-74	38.0	32.1	0.8	14.1	0.8	9.6
75-79	42.5	32.6	1.3	17.0	1.3	9.8
80+	57.8	37.6	3.6	31.5	1.9	16.8

Source: 2012 Myanmar Aging Survey. In Teerawichitchainan and Knodel (2018), see Annex 1
Notes:
[a] Older persons with visual/hearing impairments refer to respondents who reported having some difficulty in seeing and hearing even with glasses or hearing aid if they use ones.
[b] Some impairment refers to respondents who reported they cannot see or hear too well.

Concerning the other two domains that were covered in the 2014 Census – walking and remembering/concentrating – almost 100,000 (0.19 M; 0.20 F) in the total population surveyed said they were unable to walk at all and 90,000 (0.18 for both M&F) did not have the ability to remember/concentrate. The percentages for those who responded to both domains as having a lot of difficulty were 0.35 (m) and 0.40 (f) for walking and 0.27 (M) and 0.20 (F) for remembering/concentrating. While both inability to walk or to remember/concentrate at all or even with a lot of difficulty are clear indicators of seriously impaired functioning, they nevertheless still leave a large knowledge gap. In particular, it is extremely lamentable that the 2014 Census opted to use walking as a proxy for all physical movement, thereby ignoring people who do not have the use of their arms or hands, for example. The latter situation would impact very significantly on issues of self-care.

As a result of this gap, not much is known about physical functional limitations in the population of Myanmar beyond limited information about walking. It seems quite obvious that the missing information is likely another contributory reason that the prevalence data for Myanmar are far too low to be believable. Relying on just one physical function to serve as a proxy for all of the other physical movements that impact on a person's ability to function, such as use of one's arms, not only ignores the others, it may actually distort even further the data that is captured. For example, someone who has had a stroke may be able to walk, albeit with difficulty, but may not be able to lift his/her arm or to grasp anything. Hence, the

captured data would show that the person walked "with some difficulty" implying a much higher level of functioning than the overall reality. Moreover, the ability to walk does not equate to more arduous efforts that, while depending on the ability to walk, require more strenuous effort such as climbing stairs. In short, the 2014 Census is very disappointing in its very limited choice of only four WG questions out of six, which in themselves are only the short form questionnaire.

Another issue concerning disability is that of landmines:

> Myanmar places third in the number of mine-related casualties in the world, after Colombia and Afghanistan. The majority of landmine casualties are adult civilian males. Most landmines are located in the eastern part of the country, reflecting the geography of insurgent warfare. According to the International Campaign to Ban Landmines, in Myanmar in 2014 alone, 45 people were killed and 206 were injured by mines[15]. Data for 2015 showed 31 killed and 128 injured[16]

However, organizations that work with victims of landmines say that estimates of landmine casualties in Myanmar are unreliable in part due to political sensitivities, but also because there is no official data collection mechanism, no systematic and organized victim information system, and many casualties go unreported. In 2014, 49% of the protheses delivered by the Red Cross to rehabilitation centers in Myanmar were to mine victims and in 2015, the percentage fell to 43%.[17]

Landmine groups explain that:

> Victims often do not have rapid access to medical treatment as there is often a lack of available or affordable healthcare in landmine contaminated areas. In many cases they have to be carried over difficult terrain to distant medical facilities to be attended to. In addition to the medical care itself, survivors' greatest needs include: psychosocial support, livelihood assistance and socioeconomic integration.[18]

Therefore, to get a clearer picture of how all physical disabilities impact on the functioning of persons aged 60 and older, it was more useful to turn again to data from the 2012 MAS that looked at functional limitations in both physical and mental domains. Specifically, it used Activities of Daily Living (ADLs) which are physical in nature such as bathing; feeding oneself; walking; toileting etc., and it also used Instrumental Activities of Daily Living (IADLs) which refer to cognitive processes such as managing money; remembering how to get to places, etc. The following Table 5 provides a much more complete view of functioning in both spheres and also breaks down the age ranges into four-year increments, thereby providing more detail on the impact of aging on functioning that affects an older person's ability to self-care or live alone.

---

[15] 2015; International Campaign to Ban Landmines (ICBL); "Landmine Monitor Myanmar/Burma 2015"; ICBL;2015, p.14

[16] 2016; 21 November; "The Monitor; Casualties and Victim Assistance: Myanmar Burma"; p. 1; http://the-monitor.org/en-gb/reports/20166/myanmar_burma/casualties-and-victim-assistance.aspx

[17] 2015; International Committee of the Red Cross (ICRC); "Annual Report 2014" Geneva; p.293 https://www.icrc.og/en/document/annual-report-2015-icrc. And 2016; "Annual Report 2015"; p.348; Https://app.icrc.org/files/2015-annual-report/

[18] 2016; 29 September; ISEAS Yusof Ishak Institute *Perspective*; "Landmines in Myanmar: No Solution in Sight"; Issue 2016; No 54 p.5

Table 5: Prevalence of physical difficulties among older persons in Myanmar

	All physical difficulties combined[a] (maximum=15)		Functional limitations[b] (maximum=5)		IADL difficulties[c] (maximum=5)		ADL difficulties[d] (maximum=5)	
	% with any	Mean	% with any	Mean	% with any	Mean	% with any	Mean
All older persons	**57.3**	**2.54**	**50.5**	**1.40**	**37.0**	**0.62**	**22.0**	**0.51**
Sex								
Male	48.1	2.03	41.4	1.11	30.6	0.51	17.8	0.42
Female	65.2	2.98	58.2	1.66	42.4	0.72	25.6	0.59
Age								
60-64	39.0	1.26	31.9	0.75	20.3	0.31	11.9	0.22
65-69	46.6	1.56	38.2	0.90	28.4	0.42	12.5	0.24
70-74	60.5	2.58	53.4	1.45	40.4	0.66	21.5	0.47
75-79	75.2	3.45	68.1	1.95	48.8	0.83	29.3	0.67
80+	88.4	5.68	85.0	2.93	67.3	1.33	50.7	1.43

Source: 2012 Myanmar Aging Survey. In Teerawichitchainan and Knodel (2018), see Annex 1

Notes:

[a] Physical difficulties refer to functional limitations and ADL as well as IADL difficulties.

[b] Functional limitations refer to difficulty in walking 200-300 meters, lifting 5 kg, crouching/squatting, using fingers to grasp, and walking up/down a set of stairs.

[c] IADL difficulties refer to difficulty in doing household chores, counting money, taking medication, using transportation, and making phone calls.

[d] ADL difficulties refer to difficulty in eating, getting dressed, bathing, getting up when lying down, and toileting.

II. Healthcare Issues of Older Persons with Disability

Having a disability in any country can be highly challenging, particularly if the country is poor and there are few or no accommodations to help compensate for the physical or mental limitations the person has. However, even in a poor country, there are levels or gradations of problems of delivery of care that affect some persons with disabilities more than others. One such aspect is whether the person lives in an urban or a rural setting. While life in urban areas often brings with it some increased dangers to PWDs, such as traffic issues; higher costs for food and housing; higher levels of environmental pollution; and accessibility challenges, it also has some advantages.

One of the more recognized advantages of urban living is the usually easier access to health care because full-care health facilities, as well as physicians, specialty clinics and specialist practitioners, tend to gravitate mainly to urban centers. That is certainly the situation for Myanmar, where the vast majority of physicians and specialists are either in Yangon or other principal cities, such as Mandalay. Cities also typically offer the consumer a far greater choice and ability to more easily access both health-related merchandise, such as drugs or assistive devices like wheelchairs, braces, canes, hearing aids etc., as well as needed services such as medical or vocational rehabilitation therapy.

On the other hand, rural living often presents a paucity of options for all residents, but that lack affects the well-being of PWDs even more profoundly than it does non-disabled rural residents. Thus, it is important to examine the impact of these serious medical services deficiencies on the lives of people living with a disability. Moreover, the linkage between poverty and disability – one begets the other – has already been discussed at the macro level and highlighted in the International Background Report. However, at the micro level of the individual or the family unit, the combined effects of being older, poor, ill or disabled and living in a rural area, create a multiplier effect that often reaches its nadir if the PWD also lives alone. The following section will examine all of these themes that relate to the life situation of an older person with a disability, beginning with a brief discussion of what is known about the health status of older people and then the issues around healthcare.

A. Health Status of Older Persons

The transition to a civilian government in 2011 has provided new opportunities for international donor organizations and foreign researchers to study the situation of older persons in Myanmar, with the goal of helping the government improve their status and well-being. Researchers have found that not surprisingly, “after years of political turmoil, economic hardship, and poor living conditions, many older persons in Myanmar appear to

have grave old-age health outcomes."[19] Analysis of the Myanmar Aging Survey, a survey of aging[20] conducted in 2012 by John Knodel, found that:

> …the percentage reporting that their health is poor or very poor among Myanmar older adults increases steadily as age advances rising from 17% among those age 60-64 to 31% among persons 80 and older. The survey also found that 28% of older persons in Myanmar reported problems with eyesight, compared to 18% in Thailand…Physical difficulties increase sharply with age…Compared to those in their 60s, persons in their 70s reported 2.5 times as many functional limitations on average and four times as many ADL difficulties. Almost 90% of those aged 80 and older reported at least one difficulty in physical functioning and on average they experienced nearly six specific difficulties.[21]

Another cross-sectional survey to study health status and health seeking behavior of older people in rural areas used selected townships of upper (Ye Oo Township) [Shwebo District of Sagaing Region] and lower Myanmar (Taungu Township) [Taungu is also a District in Bago Region].[22] Of the 729 participants, 59% were female; and in the age categories, the 60-74 year age group constituted 59.25%; 75-85 year olds constituted 31.7%; and the rest (9.2%) were older than age 85. The study findings revealed that the participants had "low self-perceptions of poor health (22.9% M and 24% F), but that the actual proportion of older people who had illness within the last year was 43.8% M and 41.4% F."[23]

The same study found that: "Nearly 80% have low education level, 38.2% have low income. Both of these were statistically significant risk factors for morbidity. Hypertension was the most common morbidity, followed by respiratory, Diabetes Mellitus and stroke."[24] Those older people who were poor were more likely to skip treatment than those above the poverty line (6.8% versus 14.8%). The level of education was an even more significant factor concerning seeking treatment for illness. Among those older people who had a current illness, 8.8% with lower education sought treatment; whereas 26.6% with middle and higher education did so. [25]

With the exception of stroke, none of these conditions, in and of themselves, necessarily means the person is disabled, although all of them, left untreated can easily become disabling. Hence, another key factor, beyond the person's willingness and financial ability to seek treatment is the actual availability of skilled and specialized treatment. The next section examines this aspect more closely.

---

[19] 2017, January 11; John Knodel; Bussarawan Teerawichitchainan; "Aging in Myanmar"; *Gerontologist;* Vol 57, No. 4,599-605doi:10.1093/geront/gnw211 https://academic.cup/gerontologist/article-abstract/57/4/599/2890806

[20] 2014; "The situation of older persons in Myanmar: Results from the 2012 survey of older persons" (revised 2014); Yangon, Myanmar; HelpAge International Myanmar Country Office

[21] 2017; January 11; Knodel & Teerawichitchainan as above; p. 601doi:10.1163/2210-7975_hrd-9997-3006

[22] 2012; Soe Moe; Kyi Tha; Daw Khin Saw Naing; Maung Maung Than Htike; "Health Seeking Behaviour of Elderly in Myanmar*"; International Journal of Collaborative Research on Internal Medicine & Public Health; Vol 4, No 8;* p. 1538

[23] 2012; Soe Moe et al; as above; p.p. 1540-1541.

[24] 2012; Soe Moe et al; as above; p. 1542.

[25] 2012; Soe Moe et al; as above; p.1541.

B. Access to Health Care

Myanmar has a long history of problematic health care, but with the transition to a civilian government, there has been an intense focus on trying to create new programs and solutions to help ameliorate this situation. The healthcare systems are a mixture of public and private sectors both from the perspective of provision of care to financing aspects, but the Ministry of Health and Sports[26] (MOHS) is the major provider of healthcare services. A report published in 2011 found that: "Myanmar is one of 57 countries worldwide facing a critical shortage of medical staff, defined as fewer than 23 health workers per 10,000 people, the minimum needed to provide 80 % coverage for births and measles immunizations, according to the UN World Health Organization (WHO)."[27] As the report indicates, the situation is particularly acute in rural areas, where geographic barriers and infrastructure add to the challenges of accessing healthcare.

> …in rural Myanmar – where 70 % of the country's 58 million people live – most villages lack basic healthcare. Patient travel hours – in some hilly regions nearly an entire day – to reach hospitals or clinics located only in towns. Nationwide, there are 1,504 rural health centres covering more than 65,000 villages, according to 2010 Health Ministry report. "Due to [the] remoteness between their villages and towns, patients come to the hospital only when they cannot stand their deteriorating health conditions. While some arrive [at the hospital] in time, some arrive [too] late," said a local doctor working in the country's second largest city, Mandalay. "Due to a lack of healthcare services, there are normally just two options for many rural people: rely on local traditional remedies or seek treatments from untrained [health workers]." he added.[28]

Hence, sick or injured village dwellers who cannot travel seek traditional herbal medicine solutions or s/he may go to the primary health center which has midwives and health assistants. In many villages, the midwife may have had no medical training, but is pulled into primary health care provision because there is no one else. As a result of the pivotal role the midwife often must play, especially at the village level, in the last few years, there has been a sustained governmental effort both to formally train more midwives in their intended role assisting at births, but also in more general basic health care issues. Midwives are trained by Township Medical Officers who already completed training on community-based older people care and there is a midwife module for community-based older people care covering: health; social and counseling services. All midwives in the country are provided with this guidebook to use when dealing with older people. Last year, another guidebook called "Standard Health Message" was developed that also covers Older Persons' Health Care as a major module. The Township Medical Officer or senior doctor is supposed to train their relevant nurses and midwives in their Township on this guidebook.[29]

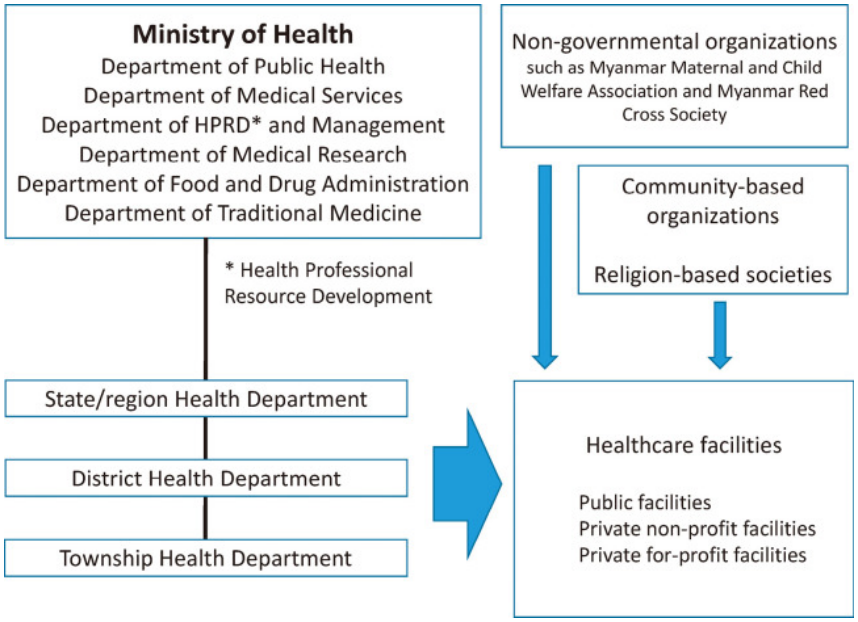
---

[26] In 2016, the name changed from the Ministry of Health to the Ministry of Health and Sports, hence, all references prior to that year will simply refer to the Ministry of Health.
[27] 2011, 28 January; Report from IRIN; "Myanmar: Rural healthcare 'in crisis'"; .doi:10www.irinnews.org/report/91761/myanmar-rural-healthcare-crisis
[28] 2011;IRIN; as above
[29] Based on information from interviews conducted by Dr. Min Nwe Tun, national consultant.

If the person opts to travel for specialist treatment, s/he can go to either a Station Hospital or a Township hospital which typically has between 25-50 beds depending on the population of the township. As the above quote from the doctor indicated, the severity of the condition may eventually drive the person to seek a specialist hospital – for example, for vision or hearing problems, but only Yangon and Mandalay have these, along with children and women's hospitals. In addition, about a dozen international health NGOs offer free medical aid in rural areas, but the demand is greater than their ability to meet it.

As mentioned, although the primary provider of health services in Myanmar is the Ministry of Health and Sports, it is a complex system of service delivery, with many players providing various roles. Fig. 1 shows the Administrative structures supporting healthcare in Myanmar.

Figure 1 Administration of Healthcare in Myanmar



Source: Nyi Nyi Latt; Su Myat Cho; Nang Mie Mie Htun;Yu Mon Saw et al.; "Healthcare in Myanmar"; Nagoya Journal of Medical Science; 2016, May; 78 (2); p.123-134; p.125

Hence, it is important to acknowledge the role of the other sectors in this patchwork system. As shown in Fig 1, one of the Departments under MoH (now MoHS) is the Department of Traditional Medicine and in 2001, the University of Traditional Medicine was established offering degrees at the Bachelor's and Master's levels. The curriculum covers traditional medicine, as well as the basic science of Western medicine. The undergraduate program is five years including a one-year internship. There were 6,963 private traditional practitioners in 2014. Most of them were trained at the Institute of Traditional Medicine until 2001, and the University of Traditional Medicine from 2002 onwards."[30]

[30] 2016; Nyi Nyi Latt; Su Myat Cho; Nang Mie Mie Htun;Yu Mon Saw et al.; "Healthcare in Myanmar"; *Nagoya Journal of Medical Science*; 2016, May; 78 (2); p.128

There are many private facilities for the wealthy. "Private Health Statistics 2015 by the Department of Medical Services reported that there were 193 private hospitals, 201 private specialist clinics, 3,911 private general clinics, and 776 private dental clinics." Conversely, there are also many privately-run facilities that serve the poor, including: many charity hospitals; non-profit clinics run by community-based organizations and religion-based societies that also provide ambulatory care.[31]

> In line with the national health policy, non-governmental organizations such as the Myanmar Maternal and Child Welfare Association and the Myanmar Red Cross Society are taking a share of service provision. Nation-wide non-governmental organizations, as well as locally acting community-based organizations and religion-based societies, also support and provide healthcare services.[32]

Table 6 shows the status of all public health facilities in Myanmar as of 2014.

Table 6 Public health facilities in Myanmar, 2014

Facility	Number
Curative and rehabilitative services	1,056
General hospitals (up to 2,000 beds)	4
Specialist/teaching hospitals (100–1,200 beds)	50
Regional/state/district hospitals (200–500 beds)	55
Township hospitals (25–100 beds)	330
Station hospital (16–25 beds)	617
Preventive and public health services	2,199
Primary and secondary health centers	87
Maternal and child health centers	348
Rural health centers	1,684
School health teams	80
Traditional medicine	259
Traditional medicine hospitals	16
Traditional medicine clinics	243

Source: 2016: Nyi Nyi Latt et al; Healthcare in Myanmar; Nagoya Journal of Medical Science; 2016 May; 78(2); 123-134; Table 1; p.126. Data from Health in Myanmar 2014

With reference to healthcare access specifically for older people, mention must be made of the so-called "Wednesday Clinics" that treat older persons. According to interviews with MoHS lead personnel,[33] these community clinics exist in rural and urban health centers, and sub-rural health centers and follow the guidance provided from WHO's model. Although Wednesdays are set aside for older people and NCDs, in actuality, older people can go Tuesday through Friday too. The patients are attended by the Basic Health Staff (BHS) who are trained in managing/treating a "Package of Essential Non-Communicable Diseases (NCDs)" (PEN), particularly hypertension and diabetes. The BHS also provide counseling, nutrition, Health Education and demonstrate physical fitness exercises. However, not all

[31] 2016; Nyi Nyi Latt et al; as above; p. 126
[32] 2016; Nyi Nyi Latt et al; as above; p. 125
[33] 2018; Interview conducted by National Expert, Dr. Min Nwe Tun, with members of the Minister of Health's Office

BHS in Myanmar have been trained in this package of services aimed at the older people and there are admitted constraints on the use of drug stocks.

1. Lack of Trained Medical Personnel

A sub-issue concerning the problem of access to healthcare is a general lack of doctors and trained specialists throughout the country. "Myanmar had an estimated 13 doctors and nurses/midwives per 10,000 residents, according to a WHO calculation. As of 2010, there were about 26,000 doctors; 23,800 nurses and 19,000 midwives nationwide, according to the government".[34] A 2016 study using more recent (2013-2014) statistics found that the numbers of doctors, nurses and midwives, and dental surgeons per 100,000 population in Myanmar were 61; 100; and 7 respectively, while in South-East Asia as a whole there were 59; 153; and 10 respectively.[35]

> Despite the doctor shortage, the 9th Medical Education Seminar agreed to reduce the annual student intake of four medical schools from 2,400 to 1,200 (300 in each university) in 2012 and thereafter. Meanwhile a new medical school was opened recently in Taung-Gyi, the capital city of Southern Shan State (150 students in 2015). In addition, the study period of medical students was extended from 6 years to 7 years.[36]
>
> In terms of education of health professionals, there is no private medical university in Myanmar. Instead, the MoH and the Ministry of Education have 15 universities and 46 nursing and midwifery training schools. Under the Ministry of Defense, there is a medical school and an allied university. In 2014, there were 39 Doctorate courses; 12 PhD courses; 47 Master's courses; and 12 Bachelor's courses provided in medical and allied universities.[37]

In addition to the issue of the great divide between the urban and rural healthcare treatment options as they pertain to facilities, there is also the problem of great disparity concerning availability of physicians, especially specialists. Moreover, not only are the majority of the major hospitals and clinics in urban areas, there is also the issue that doctors for that reason as well as others, are reluctant to serve in rural areas. "Many medical students come from wealthy urban families and thus do not want to serve in poor rural areas. There is also a pay disparity – Health workers told IRIN that rural pay for doctors was not 'respectable and is discouraging.'"[38]

Although there still is a critical shortage of doctors and trained medical personnel in Myanmar, nevertheless, Nyi Nyi Latt's team's research demonstrates the steady progress in increasing the overall numbers of healthcare personnel in Myanmar in recent years. Table 7 from their report shows the number of healthcare professionals as of 2014, but classification of public sector or private sector was available only for medical doctors, dentists, and

[34] 2011; January 28; IRIN; as above; p.1
[35] 2016; Nyi Nyi Latt et al; as above; p.128
[36] 2016; Nyi Nyi Latt et al; as above; p.128
[37] 2016; Ny Nyi Latt et al; as above; p.128
[38] 2011; January 28; IRIN; p.1

traditional medical practitioners. Some public professionals also work at private facilities, but the reverse is not the case.

Table 7 Healthcare professionals in Myanmar

Professionals	2009–10	2011–12	2013–14
	N	N	N
Medical doctor	24,536	28,077	31,542
Public*	9,728	11,675	13,099
Private	14,808	16,402	18,443
Nurse	24,242	26,928	29,532
Midwife	19,051	20,044	21,435
Pharmacist**	1,998	2,405	2,553
Medical technologist**	2,085	2,458	2,604
Dentist	2,308	2,770	3,219
Public*	703	774	782
Private	1,605	1,996	2,437
Dental nurse	262	316	357
Traditional medical practitioner	6,627	6,752	6,963
Public*	890	885	1,048
Private	5,737	5,867	5,915
Lady health visitor	3,278	3,371	3,467
Health assistant	1,845	1,893	2,062
Health supervisor	2,174	2,330	5,650

Data from Health in Myanmar 2014[13)]

* Includes those who had a part time job in private factilities.

** Data from an unpublished source

Source: 2016: Nyi Nyi Latt et al.; Healthcare in Myanmar; Nagoya Journal of Medical Science; 2016 May; 78(2); 123-134; Table 2; p.127. Data from Health in Myanmar 2014

The information available about the problems and shortcomings of healthcare delivery in Myanmar can only provide some hints about the situation of older people with disabilities. That is because, as mentioned, many health conditions do not necessarily result in disability or may do so, only after many years of neglect in treatment. Hence, it is only possible to conjecture without any certainty about the linkage between those older people with Non-Communicable Diseases (NCDs) and those who have disabilities. The 2014 Census data does not provide any help with this because two major questions were not included about those who it did identify as having serious disabilities in the four domains surveyed, namely: (1) causality; and (2) date of onset. Therefore, it is impossible to know for example, concerning those who responded that they cannot see at all, whether that has been their situation since birth; acquired in early childhood; whether it was slowly evolving or a direct result of an accident or sudden illness; etc. and finally, whether it was at all preventable or treatable? It should be noted that in the Conclusions and Policy Implications at the end of the Thematic Report on Disability, the omission of these two questions was lamented: “The 2014 Census was not able to collect information on the cause of disability or the timing of its onset.

It is suggested that for the next census consideration be given to collecting this information, though it is recognized that such information is usually better collected in surveys."[39]

About the only way it is possible to gather any reasonable theories about the nature of disability in Myanmar – especially those related to the situation of older people – is to come at the issue from a different perspective. In other words, testing the theory that because there is some information and data about NCDs in Myanmar, therefore the NCDs are responsible for some [unknown] percentage of the disability prevalence. Although, that is likely to some degree, it is impossible to quantify that linkage in any way because there is insufficient data in Myanmar to support that assertion. In fact, as this discussion will show, it does not seem to be the case that NCDs are the primary causes of disability in Myanmar for anyone of any age. To be clear, there is at this point, no data to support that theory, at least, not yet.

To illustrate this point, it is better to work backwards. Specifically, to come at the problem from a kind of reverse perspective and, in a step-wise fashion, to begin with conditions that are indisputably and universally recognized as disabilities. To do this, problems with vision and with hearing were chosen from the four conditions that were used in the 2014 Myanmar Census. The other two conditions are in some ways so vague that it is more difficult to follow the trail backwards concerning potential treatment. For example, inability to walk might be because of paralysis from birth; missing limbs acquired at birth or anytime during the life span; stroke; severe cardiac or pulmonary conditions etc. In the former cases, healthcare interventions can at best only provide adaptive equipment; in the latter cases, however, medications and rehabilitation therapy could mitigate or even reverse the effects of the condition. Hence, blindness and deafness provide far less equivocal ways of evaluating disability among the older people in Myanmar.

Thus, the next step is to consider what factors about these disabilities appear to be out of kilter, for example, statistical anomalies such as national high prevalence rates or even regional anomalies that might suggest more local or environmental causes. Then to look for explanations that might support the link to NCDs or other possible causes. The strong likelihood is that causes of disability among the older people in Myanmar are complex and encompass all the issues around their living situations. The next sections will pursue this approach.

2. Blindness

Myanmar's blindness prevalence rate is exceedingly high, although precisely what that rate is, is not verifiable. As mentioned, according to the 2014 Census, 55,000 reported that they could not see at all. However, "an Ocular Morbidity survey conducted in Myanmar in 1997-98 indicated a blindness rate of 0.58% across all sectors of the population."[40] Much more recently, Casey Eye Institute, who are partnered with Oregon Health and Science University [USA] (OHSU) Global in Myanmar, states that: "In Myanmar, with a population of 55

[39] 2017, August; as above; *Thematic Report on Disability*; Chapter 9; p.92
[40] 2015; "Improving Eye Health in Myanmar: National Action Plan 2016-2020"; World Health Organization; [summary report about the two-day workshop held 27-28 July, 2015 on Eye Health] http://www.searo.who.int/myanmar/areas/ncd_eyehealthinmyanmar/en

million people, 500,000 people are blind and approximately 10% of the rural population suffers from blindness."[41] The Institute is actually working in the country, partnering with the Mandalay Eye Hospital and the monastery-led Tipitaka Eye Hospital in several areas. Although their claimed prevalence rate may seem hyperbole, especially when compared to the far too low rate reported in the 2014 Census, the likelihood is that it is accurate.

> Epidemiological data from many Asian regions, including the Union of Myanmar remain scarce. The limited cataract survey data suggested that the prevalence of blindness in the adult population in rural regions of Myanmar may reach 90 per 1,000 persons. Among the 55 million population of Myanmar, 450,000-600,000 are estimated to have cataract-related blindness (Unofficial data, Mount Popa Taung-Kalat Blindness Prevention Project protocol 2006).[42]

One aspect where there does seem to be agreement and progress concerns efforts against blindness caused by trachoma in Myanmar. Trachoma is the leading cause of infectious blindness in the world – approximately 80 million people have active trachoma, the majority of whom are young children (3-5). A contagious bacterial infection often linked to poverty and poor hygiene, trachoma affects the conjunctival covering of the eye, the cornea, and the eyelids. It has the potential to cause blindness and can be spread directly or indirectly through contact with infected persons or by flies or other insects that carry the secretions.[43]

At one time, trachoma was endemic in Myanmar and was the key cause of blindness with an active prevalence rate of 43% in endemic areas. The National Trachoma Control project was launched in 1964 in the central dry zones to combat it and through the concerted efforts of the government supported by many INGOs and NGOs, by the year 2000, the active rate was reduced to under 1%.[44] According to the WHO and the MOHS, since the establishment of the Trachoma Control and Prevention of Blindness Program in 1984, prevalence rates of ocular disease like trachoma and bilateral cataract have decreased consistently: for instance, the prevalence rate of trachoma went down from 4.82% in 1985 and by 2014, to 0.04% in Myanmar.

However, while progress against trachoma is quantifiable, there still remains a very big challenge concerning cataracts. The National Eye Health Plan (NEHP) 2017-2021 acknowledges that: "the most common cause of blindness in Myanmar is cataracts, accounting for 60% of all blindness."[45]

Blindness caused by cataracts is sometimes preventable, and almost always treatable if caught early enough. Unlike trachoma which principally affects children, cataracts impact most heavily on older people, and affects especially those living in rural areas. The project in Mount Popa Taung-Kalat mentioned above is instructive in this regard. Australian ophthalmologists screened both eyes of 650 persons of all ages with a mean age of 49 (165

---

[41] Casey Eye Institute, OHSU (n.d.); "SE Asia Collaboration; Current State of Eye Health in Myanmar"; https://www.ohsu.edu/xd/health/services/casey-eye/about-us/casey-community-outreach/international-outreach/seasia.cfm

[42] 2009; August 3; Arie Y Nemet; Pinhas Nemet; Geoff Cohn; Gina Sutton; Gerald Sutton; & Richard Rawson; "Causes of blindness in rural Myanmar (Burma): Mount Popa Taung-Kalat Blindness Prevention Project"; *Clinical Ophthalmology*; 2009;3; 413-421; https://www.nim.nih.gov/pmc/articles/PMC2724031/p.415

[43] Trachoma facts: https://www.medicinenet.com/trachoma/article/htm#what_is_trachoma

[44] 2017; March 23; *National Eye Health Plan (NEHP) 2017-2021*; Ministry of Health and Sports; p.23;

[45] 2017; NEHP; as above; Foreword; p. 7

were children between ages 1-18). The examinations found that out of the 1,300 eyes assessed, 531 had either: Visual Impairment (VI), Severe Visual Impairment (SVI) or Blindness (BL).

> The leading causes of VI/SVI/BL were cataract with 288 cases (54.2%), glaucoma with 84 cases (15.8%), and corneal pathology with 78 cases (14.7%). Of all of the VI/SVI/BL cases, 8.4% were preventable, 81.9% were treatable, and total of 90.5% were avoidable.[46]

The study authors attributed the results to "the lack of basic ophthalmologist eye care and optician resources in rural regions in Myanmar."[47]

The recent (2016-2017) work of the Casey Eye Institute mentioned above provides an opportunity to explore this issue of lack of specialist care more closely. Myanmar has a great need for skilled ophthalmologists – "only two cornea, one oculoplastics, one retina, and two pediatric subspecialists are providing care to the population. Currently no training program exists to increase the number of subspecialists in ophthalmology."[48] As a result, their collaboration includes four main programs: (1) Mid-level Ophthalmic Personnel Training Program; (2) a pediatric vision health screening program; (3) an improved health records database; and (4) ophthalmic specialty fellowship program. The mid-level training was in conjunction with the Tipitaka Eye Hospital, which as a charity hospital run by the monks, serves principally rural patients. Two trips occurred in June and September 2017 and another was planned for later that year. Ophthalmic technicians and nurses designed the program and developed educational materials, with special consideration of technical needs unique to Tipitaka. The goal was to train up to 100 mid-level ophthalmic staff there.[49]

Also as indicated, some physicians from Myanmar benefitted from year-long fellowships in specialty training at the Casey Eye Institute and back in Myanmar in oculoplastic surgery and glaucoma subspecialty programs. The Institute's future plans hope to expand to include training to junior faculty in Myanmar including subspecialists in pediatrics, medical retina and neuro-ophthalmology.[50]

It is important to mention that many other vision-related organizations also work in Myanmar and were instrumental in helping them shape their National Eye Health Plan 2017-2021, key among them were: the World Health Organization (WHO); The Fred Hollows Foundation (The Foundation); Helen Keller International (HKI); Sight for All (SFA); Himalayan Cataract Project (HCP); Christian Blindness Mission (CBM); Save Foundation; and Help Me See. Some of them have also helped with the issue of a serious shortage of trained specialists by providing for subspecialty training. The Fred Hollows Foundation supported two Myanmar ophthalmologists to receive training in Small Incision Cataract Surgery (SICS); one for a vitreo-retina subspecialty fellowship; and two Ophthalmic Nurses trained in Operation Theater nursing procedure in Nepal. Additionally, HCP has supported two 2-month subspecialty (cornea and retina) fellowships for Yangon Eye Hospital at the TIO in Nepal and

[46] 2009; Arie Y. Nemet et al; as above; p. 414.
[47] 2009; Arie Y. Nemet et al; as above; p. 414.
[48] Casey Eye Institute, OHSU; as above; p.1
[49] Casey Eye Institute; as above; p.2
[50] Casey Eye Institute; as above; p.4

the United States, and five cataract and cornea workshops that provided on the ground training.[51]

Returning to the issue of cataracts, according to the NEHP:

> over 100,000 cataract surgeries are performed in Myanmar annually. The output varies greatly from region to region and depends largely on the availability of human resources as well as their support in terms of equipment and consumables…. Most medicines, supplies and equipment are provided by the MOHS and/or major international donors such as WHO, CBM, HKI, SFA, HCP and Fred Hollows Foundation (The Foundation).[52]

While all these financial supports are no doubt helping to improve the situation, it must be admitted that far more must be done especially, with the increased more rapid aging of the population. The NEHP admits that:

> The exact number of un-operated cataract cases (backlog) and the annual incidence are not known. The estimated backlog in the year 2000 was 300,000 cases, however it is likely to be much higher today due to the estimated annual incidence of 58,380. The annual Cataract Surgical Rate (CSR) (number of cataract operations performed per year/million population) only recently reached a level by which it overcomes the annual incidence and makes progress towards reducing the cataract backlog.[53]

In summary, in this section on blindness, the attention was focused on cataracts principally because not only do they: (1) account for 60% of all blindness in Myanmar; (2) mainly affect older people; (3) are easily diagnosed, and (4) with the right personnel and resources – both of which are heavily still lacking in Myanmar – easily treated. The problem is that the longer the vision loss due to cataracts is left untreated by surgery, the less the chances are of being able to restore vision and the greater the likelihood that the person will remain permanently blind.

It is impossible to know how many of those over age 60 in Myanmar who cannot see at all due to cataracts would have their sight restored through surgery. The solutions need to include enhanced capabilities not only of personnel and equipment, but also of surgical techniques allowing for more surgeries per day. For example, in the Western countries, uncomplicated cataracts are typically treated using laser surgery techniques that usually take only10 minutes, are done as outpatient surgery – i.e. no hospitalizations – and require only a few days of home rest for complete recovery. However, it is important to recognize that the better outcomes depend on early diagnosis and treatment. The backlogs in Myanmar indicate that the patients vision loss is likely to be far more advanced and thus the surgery more complicated or even not tenable. All of which point to the need for far greater efforts at enhanced screening and early referrals. Both of those goals will require a much more integrated system, as well as the already stated need for improved capacities in the eyecare infrastructure of personnel and service delivery.

---

[51] 2017*;* NEHP; as above; 5.7 Eye Health Systems – Financing; p.37-38.
[52] 2017; NEHP; as above; 5.5 Eye Health Systems – Medicine, Equipment and Technology; p.34
[53] 2017; NEHP; as above; 5.1.3 Cataract backlog, Incidence and Cataract Surgical Rate; p.24

Furthermore, these statements apply equally to vision loss or blindness that derives from NCDs such as Diabetic Retinopathy (DR). The NEHP acknowledged this issue and mentioned that DR has been flagged as a serious health concern as the incidence of diabetes increases in Myanmar.

> A pilot survey was conducted in 2015 to: (1) demonstrate the feasibility of locating and treating patients with vision threatening DR with portable lasers in a provincial area of Myanmar and (2) to gather data specific to Myanmar to assess the prevalence of DR, its visual burden and need for screening and treatment programs. The study took place at Sangha hospital in Pyinmana and examined 97 patients with diabetes. Of these, 33% had evidence of DR and 24% had evidence of vision threatening DR. According to this data the pilot survey concluded that while national rates for DR in Myanmar are thus far unknown, there is a significant burden of potentially blinding DR in Myanmar.
>
> The pilot survey also determined that there is a serious issue of late/under diagnosis of diabetes in Myanmar. The average time since diagnosis of diabetes was 6 years with only 24% being diagnosed within one year or less. While vision loss and blindness due to DR is to a large extent preventable with proper care, the study deemed that access to such care in Myanmar is difficult or impossible for most people with diabetes. [54]

The pilot outcomes suggest the efficacy of co-locating centers for screening for diabetes and treating patients with vision threatening DR. "The pilot recommended that a prerequisite to establishing a broader screening/treatment program for DR is a robust educational campaign to improve awareness of both diabetes and DR and to translate that awareness into timely treatment."[55]

3. Deafness

As mentioned in the introductory remarks, the 2014 Myanmar Census found that 43,000 people were deaf, but as was the case with the statistics for those who are blind, the number is very likely greatly underestimated. Unfortunately, accurate and recent prevalence data on severe hearing loss or deafness in Myanmar is even more difficult to find than reliable data on blindness. Moreover, in comparison to research and data collection on blindness, as well as general societal consideration of the condition, deafness is often "the poor step-child" especially in developing countries. In some of those countries, deafness and its frequent co-morbidity or sequela of muteness, is not considered as severe a disability as blindness and disability-based cash transfers, if paid at all for deafness, are often at a lower level of remuneration.

[54] 2017; NEHP; as above; 5.1.5 Prevalence of Diabetic Retinopathy; pp. 27-28.
[55] 2017; NEHP; as above; p.27.

This recognized discrimination against deafness was even central to the justification for a WHO 2007 survey of deafness and hearing loss in South-East Asian countries.[56] "This disability cannot be 'seen' and therefore has been very low profile and programmes are much behind the programmes for blindness."[57] The primary justification for the survey highlights why the discrimination against deafness is so thoroughly detrimental to the people who have severe hearing loss or deafness:

> Although it is not fatal, the implications of hearing impairment at the individual, family and community level and the disruption that it causes to the lives of the people is considerable. The far-reaching implications of hearing loss, both in respect of development of communication skills as well as in terms of social and economic consequences and quality of life warrants an urgent need to highlight the magnitude and severity of the problem.[58]

Furthermore, WHO estimates that as much as 50% of all deafness and hearing loss is preventable if it is detected early enough and properly treated. Myanmar is among many of the South-East Asian countries where the prevalence rates for hearing loss and deafness are a reflection of inadequate policies and infrastructure to deal effectively to prevent unnecessary disability caused by these conditions. The most frequently cited statistic, even currently, is from a 1997 WHO survey which at the time, estimated that 8% or about 4 million people in Myanmar had significant deafness according to WHO's criteria.[59] The WHO criteria define disabling hearing loss (DHL) in adults (15 years or older) as: "a hearing loss greater than 40dB in the better hearing ear and greater than 30 dB in the better hearing ear in children (0 to 14 years)."[60]

In 2012, the WHO released new estimates on the magnitude of global DHL based on 42 population-based studies. Their findings included that: "approximately one-third of persons over age 65 are affected by disabling hearing loss and that the prevalence of DHL is highest in South Asia, Asia Pacific and Sub-Sahara Africa."[61] Myanmar was part of the WHO survey from 2007 mentioned above that was a situation review and update on deafness and hearing loss and the status of intervention programs in South-East Asian countries.[62] Based on an estimated population at that time of a little over 54 million, the percentage of hearing loss (based on 1997 data) was an 8% prevalence rate for Myanmar.[63]

The 2007 study also reported on the prevalence of ear disease that can lead to hearing loss. There are several diseases that can lead to conductive as well as sensorineural hearing loss.

---

[56] 2007; December; WHO; *Situation Review and Update on Deafness, Hearing Loss and Intervention Programmes*; Proposed Plans of Action of Hearing Impairment in Countries of the South-East Region; WHO Regional Office for South-East Asia; apps.searo.who.int/pds_docs/B3177.pdf
[57] 2007, December; WHO; as above; 1. Overview of the survey; 1.1Background and justification; p.1
[58] 2007, December; WHO; as above; p. 1
[59] 2017; "Myanmar – UK Deafness Collaboration"; International Newsround; https://www.maryhare.org.uk/sites/maryhare.org.uk/files/Newsround%20Myanmar.pdf
[60] 2012; WHO *Global Estimates on Prevalence of Hearing Loss; Mortality and Burden of Disease and Prevention of Blindness and Deafness* www.who.int/pbd/deafness/WHO_GE_HL_pdf.[note: Power Point slide presentation; no page numbers]
[61]2012; WHO; as above; *Global Estimates on Prevalence of Hearing Loss*
[62] 2007; December; WHO; as above; "Situation Review and Update on Deafness" etc.
[63] 2007; WHO; as above; *Situation Review and Update on Deafness* etc. Table 1 Prevalence of Hearing Impairment; p. 7

Conductive hearing disorders are caused by abnormalities of the outer ear and/or middle ear. Such abnormalities may include reduced function of the tympanic membrane (the eardrum) or reduced function of the three tiny bones in the middle ear that carry sound waves from the tympanic membrane to the inner ear. *Sensorineural hearing loss,* however, is caused by disorders of the inner ear or auditory nerves. The study collected data on the ear pathologies that could potentially lead to auditory impairments of some type. The data collected was on the percentage of the general population that were affected by various leading ear diseases. The data for Myanmar showed that the most prevalent condition, that could be specifically identified, that the general population had (10.3%) was Chronic Non-Suppurative Otitis media (NSOM).[64] The actual highest prevalence rate for Myanmar (12.9%) was for "Other causes of sensorineural hearing loss" which meant that "there was likely no standardization as to the ear diseases included under this [category]."[65]

> NSOM is caused as a result of improperly treated middle ear infections and upper respiratory infections. It can be largely prevented and treated by medical and surgical means. Untreated, it leads to hearing loss and can progress to cause chronic suppurative otitis media (CSOM) … [prevalence = 1.3%] which, in turn, can lead to moderate to severe degrees of hearing impairment. This entity can be prevented in a large number of cases by following certain simple precautions. Wherever it does occur, it can be treated to correct the hearing loss and prevent complications.[66]

The 2007 study found that the second highest prevalence for a specifically identified condition in Myanmar was for Presbyacusis (6.5%) which is age-related hearing loss. About 30-35% of adults age 65 and older have a hearing loss and it is estimated that 40-50% of people over age 75 have it. Presbycusis is usually a sensorineural hearing disorder most commonly caused by gradual changes in the inner ear. However, sometimes presbycusis is a conductive hearing disorder. Audiologists can assess the person to determine if hearing aids would be of benefit.

Finally, the third highest specific cause of ear disease in Myanmar in the study was impacted Cerumen (2.65%) which is commonly called ear wax. Impacted Cerumen is total avoidable and treatable, but if left untreated, it can lead to other much more serious ear diseases.[67]

Hence, the fact that so many of the study subjects in Myanmar had very treatable conditions brings the issue of treatment to the fore and this is again where the 2007 study is helpful in explaining why the prevalence rates are so high. Before examining the human resources issue in Myanmar, it is helpful to consider first what WHO describes as what should be the usual generalized design of provision of ear care services.

> At the primary – community – level, services are typically provided by primary health workers or community volunteers. These types of services typically include: public awareness programs; ear and hearing exams using simple diagnostic equipment; basic treatment; and referral services. At the secondary level, the usual services would

[64] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; Table 5; "Prevalence of ear diseases that are potential cause of hearing loss (all figures are in % of general population affected by the given entity)"; data for Myanmar; p. 11
[65] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p.13
[66] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; pp.11-12
[67] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; pp.11-12

include: basic ENT [ear, nose and throat] equipment sets; a screening or clinical audiometer; appropriate medication; and simple ear surgery facilities. The human resources at the secondary level would consist of a general medical practitioner or an ENT specialist/Otolaryngologist. Finally, the tertiary level would normally consist of an ENT department at the provincial level with a staff complement consisting of otolaryngologists and associated personnel including audiologists, audiometricians, hearing aid technicians, ENT nurse and speech therapists. The facilities would include all essential ENT examination equipment, diagnostic audiometer, electro-physiological testing equipment, (tympanometer, BERA[68], OAEs testing) as well as facilities for micro-surgery of the ear. Besides these three levels of ear care, special mobile units can be useful in two settings: 1) for pilot studies and survey on a short-term basis, and 2) outreach service delivery, where such mobile units can function at the secondary or tertiary levels.[69]

From the WHO's best case scenario concerning provision of services for ear care to the reality of the situation in Myanmar, there is quite a gap. The study found that: Myanmar had 314 centers[70] at the primary level and they perform just rather basic functions – hearing screening; prescribe medicine or ear drops; dispense medicines and make referrals to appropriate centers. It does not appear that they treat any diseases[71] at primary level centers as do many of the other Asian countries in the study (for example, India, Indonesia, Bangladesh, Bhutan, Maldives and Nepal).[72] At the secondary level, Myanmar reported that there were 24 hospitals classified 200-bedded and at the tertiary level, Myanmar replied that "government referral hospitals provide diagnostic and micro-ear surgery facilities."[73]

Specifically concerning human resources for ear care, the 2007 survey found a total of just 100 ENT specialists – a ratio of 1:540210; and 50 micro-ear surgeons – a ratio of 1:1080420 – in Myanmar.[74] The same study found that the picture was, if possible, even more dismal concerning the number of audiologists and audiometricians.[75] When the study was conducted, Myanmar had only 1 audiologist for the whole country – a ratio of 1:54021000; and 10 audiometricians (1:5402100).[76] Finally, the study reported that in 2007 there were no schools for audiologists[77] or speech therapists[78] in Myanmar and a total of just 10 private hearing aid

[68] BERA = Brainstem auditory evoked response; OAE = otoacoustic emission. Both tests are used especially with newborns and children when deafness or hearing loss is suspected, for example after a child has been exposed to meningitis. The BERA detects electrical activity in the cochlea and auditory pathways to the brain much like an EKG detects electrical activities of the heart. With the OAE, a small probe is placed in the baby's ear canal and a sound is played and the ear sends back an echo.
[69] 2007; WHO; as above; *Situation Review and Update on Deafness* etc; pp.20-21
[70] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; Table13; "Number of Centres at the primary level"; p.31
[71] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; Table15: "Diseases treated at the primary level centres"; p. 32
[72] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; Table 14: "Services available at the primary-level centres"; p.31
[73] '2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p.34
[74] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; Table 9: Number of otolaryngologists and otologists and their ratio to the total population
[75] Audiometricians are paramedical staff who have been trained by audiologists or physicians in audiology, to be able to perform the hearing assessment tests.
[76] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; Table 10:
[77] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p.24
[78] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p. 24

dispensers.[79] Concerning development and distribution of low-cost, high quality hearing aids, some of the study countries – Nepal, India, Indonesia and Thailand – reported they had such programs, but Myanmar did not. [80] Furthermore, at the time of the study, Myanmar had not yet performed any cochlear implants.[81]

More than 10 years have passed since that seminal WHO study, thus it is instructive to see what improvements and changes may have taken place in Myanmar with regard to health services related to hearing. Unfortunately, there is very little new information available concerning the latest situation of persons in Myanmar with deafness and almost nothing concerning improved access to healthcare for hearing problems. An ENT conference was held in January 2017 in Yangon, in collaboration with the Society for Sound Hearing International (SSHI), with the agenda to develop a strategy for the National Committee in Myanmar.[82]

Dr. Khin Khin Phyu, Manager of Prevention of Deafness Project spoke on "The Need for Ear and Hearing Care Strategy in Myanmar." Her report about the efforts of the project showed some progress being made, in 2015 especially focused on early detection of deafness in newborns and infants through conducting a newborn and infant hearing screening (NIHS) workshop and development of Guidelines for NIHS. In 2016, hospital-based NIHS was developed using otoacoustic emissions (OAEs) in some states and divisional hospitals and in conduct of training workshops on NIHS in Mandalay. She said that in 2016, "the focus areas were Shan state; Magway region; Mandalay region; and Sagaing region. The future plan is to implement NIHS training in the rest of states and regions, to do hearing screening in all kindergartens in collaboration with school health teams and to train ENT surgeons for secondary prevention. She also stated that the project limitations included – shortage of audiology facilities and shortage of human resources (audiometrists, ENT surgeons)."[83]

While it is very good news and completely understandable that with limited resources and personnel, the focus is on intervention with young children, this laudable progress does not actually benefit older persons with hearing loss. Another recent source from 2015 demonstrates not only how much Myanmar is still dependent on foreign and charitable help with combatting deafness, but also how very localized the knowledge base about deafness still is. Essentially almost all of what happens around hearing issues in Myanmar happens in either Mandalay or Yangon, where there are two hospitals and where the only two Government Schools for the Deaf are located, namely, the Mandalay School for the Deaf and the Mary Chapman School for the Deaf in Yangon. Both schools rely on support from foreign charities. The charities associated with the schools are active in bringing in foreign ENT surgeons, audiologists and other experts to help with development of local competencies such as: teaching surgical techniques; hearing screening and fitting hearing aids.

In summary, the many knowledge gaps about deafness in Myanmar make it highly problematic to say with any accuracy what the actual general prevalence rate is, let alone to

[79] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p.36
[80] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p.37
[81] 2007; WHO; as above; *Situation Review and Update on Deafness* etc.; p. 38
[82] 2017; Myanmar Conference Report on an ENT conference held January 12-13, 2017 in Taw Win Garden Hotel, Yangon, Myanmar; www.soundhearing2030.org/Myanmar%20conference%20Report.pdf
[83] 2017; Myanmar Conference Report; as above.

know that rate for persons over the age of 60. What is known from the work of the WHO on estimating global prevalence of disabling hearing loss is that: (1) the Asia Pacific Region has an estimated prevalence rate of 10%; (2) disabling hearing loss increases with age and that it is almost one in three in adults older than 65 years; (3) the prevalence rate is unequally distributed across the world and it is associated with poverty levels, so that the rate in some [poorer] regions is nearly double that of high income regions; and (4) that association with poverty holds true even for older persons – in adults of 65 years and older, prevalence decreases exponentially as income increases."[84] Given all of the above and that 70 % of the Myanmar population lives in poverty; that 77 % of PWDs live in rural areas; that the healthcare infrastructure is generally inadequate in terms of treatment of hearing problems; and that the healthcare facilities are particularly weak in rural areas, the likely conclusion is that disabling hearing loss among the older people in Myanmar is far greater than anyone has been able to assess to date. Myanmar needs to focus much of their future efforts particularly at prevention, but also at treatment – the following sections will provide more specificity on these issues.

C. Final Remarks about Healthcare Issues and Disability in Myanmar

Although there is a possibility that at least some of the disability that is occurring in Myanmar is linked to NCDs, the lack of data vis-à-vis causality of disability makes any definitive linkages impossible to prove. The available research on NCDs is still quite limited, but more is known about that topic than about disability. The key NCDs identified for a research project for HelpAge were: Cancer; Cardiovascular Diseases; Diabetes and Chronic Obstructive Pulmonary Diseases (COPD) as outlined by the WHO and were the subject of a study on Myanmar.[85]

Theoretically all those diseases could and sometimes do result in a severe disability. For example, diabetes left untreated can eventually result in diabetic retinopathy and blindness and or the loss of limbs to amputation as could cancer in the latter case. Cardio-vascular and pulmonary diseases could result in inability or severe difficulty in walking, which was one of the four categories of disability in the 2014 Census. All these NCDs can have disabling consequences, especially if treatment is delayed for a long time. However, none of the data that does exist on disability prevalence rates allows those linkages to be drawn.

For example, it is known that Myanmar has a high prevalence of diabetes, but it is not necessarily known why, although a diet highly dependent on rice should certainly be suspect. However, if routine blood tests are not conducted that would identify pre-diabetes or actual diabetes; or if diabetes is not treated either with medications or insulin; then a logical co-morbidity, especially if the diabetes is long untreated over time, would be diabetic retinopathy. However, as people do not typically get blood tests or eye exams, both conditions go unnoted, as well as untreated. The NEHP pilot survey mentioned above found

[84] 2012; WHO as above; *Global Estimates on Prevalence of Hearing Loss*
[85] 2016; September; HelpAge International Myanmar, University of Public Health and University of Medicine-2: "*An Assessment of Available Evidence on NCDs and their Risk Factors in Myanmar"*

that out of the 97 subjects, one-third had evidence of diabetes and almost one quarter (24/97) of the subjects examined *had vision threatening diabetes*. As the population ages, this situation will only worsen exponentially unless steps are taken quickly to begin to address prevention and treatment.

At this stage, the known leading causes of disability are much more likely to be as a result of an inadequate healthcare system, as well as access to healthcare issues stemming from widespread poverty. In summary, from what is currently known about disabilities in Myanmar, the leading reasons people develop disabilities are either preventable or treatable, but they exist because the system is not there to allow for either response, especially for the mostly poor population. The 70% do not have the access to good care because: (1) there is virtually almost no attention paid to focusing on prevention programs – in general, they do not exist; (2) good treatment facilities are mainly in urban areas, but the vast majority of the population does not live where the facilities are; (3) the rural facilities such as they do exist, are not equipped to deal with the level of expertise needed to treat disabilities, neither in personnel, nor equipment, proper medications etc.; (4) the rural population, in particular, is overwhelming poor and cannot afford to pay for the treatment they need, especially over the long term; and (5) these people are also usually poorly educated and often do not know what they should do when a health condition or accident strikes, thus they delay seeking treatment or they seek the wrong kind of treatment.

III. Living Situations of Older Persons with Disabilities

A. Living in Poverty

As mentioned in the introductory section, living with a severe disability can be extremely challenging on both the person himself or herself as well as the family members who, especially in poor countries, are usually thrust into the position of being the sole or primary caregivers. Myanmar is no exception to that norm. As discussed in the International Report on Disability (produced separately for HelpAge by the author), there is an empirically proven link that exists everywhere between disability and poverty to the degree that, even in wealthy countries, persons with disabilities are more likely to be poor and poor people are more likely to have disabilities. That relationship is greatly exacerbated the poorer the country is. The 2014 Myanmar Census found that "there are twice as many people with disability in the poorest 20% of the population compared to the richest 20%"[86].

As Knodel and Teerawichitchainan note, "The Myanmar Aging Survey (MAS) found that a majority of Myanmar older adults, specifically those in the bottom 60% of wealth distribution, live in abject poverty as measured by household possessions and quality of housing…Older people in Myanmar typically live in low-income households. And only 55% feel that their income is adequate to meet their daily needs on a regular basis" [87] The MAS did not survey PWDs specifically, only older people in general, thus the poverty of older people PWDs is likely even worse than the 2014 Census data revealed. Also, as mentioned in the introduction, more people with disabilities live in rural parts of Myanmar than in urban areas, thus the combination of being poor coupled with the paucity of services available in rural areas often leads to unmet basic needs concerning their disability.

B. Family as Primary Caregivers

The 2014 Census found that nearly half of all persons with a disability live in extended households. This pattern aligns with general intergenerational patterns of living throughout Myanmar. The MAS found that:

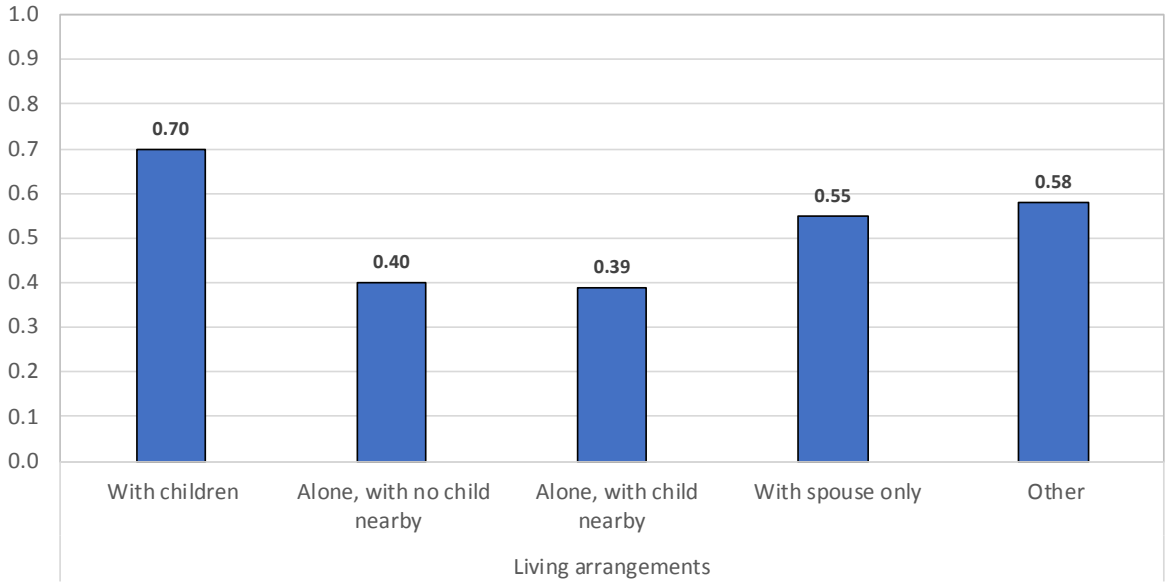
> …average household size of persons 60 and older approaches five and 86% live in households with two or more generations including 77% that co-reside with at least one of their own children.[88] … Among those that live with a married child, co-residence with a married daughter is more common than with a married son. … Normative support for filial obligations to aging parents is widespread. The vast majority of older persons believe that children should provide financial support and personal care to their parents in old age. In practice, that appears to be the situation.

[86] 2017; 28 August; UNFPA; Census 2014, Information [press release]; "Census report: People with disability trapped in a vicious circle of poverty and exclusion"; p.1
[87] 2017; Knodel & Teerawichitchainan; as above (8); p.602
[88] 2017; Knodel & Teerawichitchainan; as above; p. 603

Two-thirds of adult children of older persons provided parents with at least some material support.[89]

Figure 2 shows the predicted probability of receiving care by type of living arrangements for persons age 60 and older in Myanmar. In fact, it also shows just how critical it is in Myanmar society to have children to provide not only care to older parents, but also their domicile. The graph shows the fragility of relying on this social norm, because absent the possibility of living with their children, the older person's chances of receiving care diminish by almost half, even if there is a child nearby, but the older person does not live with him/her.

Figure 2: Predicted probability of receiving care by type of living arrangements, older persons aged 60 and above



Source: 2012 Myanmar Aging Survey. Teerawichitchainan and Knodel (2018), see Annex 1.
Notes: Predicted probabilities are based on binary logistic regression and control for sex, age, marital status, number of children, location of resident, education, household wealth and total number of physical difficulties.

If living with an adult child or family member is the norm for Myanmar citizens who are simply older people, it is even more so if they are disabled or in ill health because, there is often no other option. The MAS found that "among older persons who receive assistance with daily living activities, daughters provided [the] main care for about half overall and for about 60% of those who were no longer currently married."[90]

The 2014 Census confirmed: "Families are taking care of their relatives with a disability; this demonstrates that the traditional system where the family takes care of an ailing [relative] or a relative with a disability is still largely in place. The proportion of people living in extended households is considerably higher for those with a disability than for those without a disability: 48.3 versus 39.4 %."

While it is still the current societal norm for families to be the caregivers, as a social strategy, it fails to consider that the government's almost non-existent role in social protection may be unwittingly perpetuating the poverty of families, especially those with a sick or disabled

[89] 2017; Knodel & Teerawichitchainan as above; p.604.
[90] 2017; Knodel & Teerawichitchainan as above; p.604.

member. The lack of care options outside of the family impacts heavily on the family's income when one or more of the members needs to be the principal caregiver, because that person cannot work or contribute to the family's income. If the older person despite his/her age, was working prior to becoming disabled, that situation means the loss of two potential earners. The following case history tells the story of what can happen in Myanmar when a sudden onset disability strikes a young senior citizen who was still working and contributing to the family income.

Case Study: Dependent on Family

63 years old man, Mandalay Region

Photo by Aye Thazin Kyaw/ HelpAge International Myanmar

He was born in this village and is the youngest of 4 siblings. He finished 3rd Grade at age 15 and left school. After that he spent his life doing farming. Before he even turned age 50, all his parents and siblings passed away and his half-brother's daughter's family came and lived with him. Up to age 60, he was healthy and could do both his own farming and for others as a hired hand.

But one night, while he was sleeping in his farm hut, he was terrified to find he couldn't move one side of his body. He had to spend the night alone as nobody was nearby. In the morning, luckily someone passed by his hut and he called out for help and moved back to his house. As he was feeling extremely light-headed and nearly semi-conscious, he was sent by a small tractor to see a health assistant who gave him some injections and IV infusions and said that he had had a stroke.

Gradually he managed to move around relying on his good right side and a stick. But he does not move outside the house as he feels he does not have strength enough to do so. He said he still had no plans to go to the hospital and see doctors. He can only make do with some traditional herbal creams and ointments for his condition. He said with uncertain eyes, "I think I'm still young enough. I feel quite sad not to be able to do things as most of the ordinary people of my age could do. I'll try my best to be able to get back to normal. If I recover well enough, I wish to earn more money by resuming the farming jobs."

Table 8 shows the percentage distribution of secondary caregivers by primary caregiver among older-aged care recipients, according to MAS data. The problem of relying on family members to be the only caregivers is a slippery slope. Even if there is a secondary caregiver, it still often means that neither of the caregivers, nor the PWD is contributing to the family income. The governmental assumption may be that the traditionally large Myanmar families will always provide some kind of a built-in safety net as far as caregiving is concerned. However, the

reality may be far different in that there may be only one earner trying to provide for many who cannot.

Table 8 Percentage distribution of primary caregivers by physical difficulties and age groups, Care recipients aged 60 and above.

	% distribution of primary caregivers among those receiving care[a]					
	spouse	son	daughter	child-in-law	grandchild	other[b]
All	25.8	8.6	46.8	5.3	7.1	6.3
Physical difficulty						
None	36.0	7.9	42.7	3.4	4.1	6.0
1-2	26.3	11.1	45.2	5.3	6.9	5.3
3-4	16.8	6.1	51.1	6.4	10.9	8.7
5-9	16.2	9.0	51.8	7.0	9.8	6.2
10+	15.2	9.3	50.6	8.9	9.3	6.8
Age						
60-64	38.2	6.0	40.7	4.4	3.5	7.2
65-69	32.0	10.2	42.7	3.3	4.7	7.0
70-74	25.6	7.7	47.0	6.6	7.3	5.8
75-59	14.8	10.2	53.4	6.0	8.6	7.0
80+	10.1	10.1	54.1	7.4	14.1	4.3

Source: 2012 Myanmar Aging Survey. Teerawichitchainan and Knodel (2018), see Annex 1.
Notes:
[a] Primary caregiver refers to the person that helps the respondent most with his/her daily activities
[b] Other includes friends, neighbors, other relatives (e.g., siblings, nieces/nephews), or domestic workers

The other important issue around relying on family members to be the sole care providers is that it is highly unlikely that they have any specialized training in how to properly care for frail or disabled people. Hence, they do the best that they can, but may unintentionally make the person's physical or mental well-being worse. For example, particularly with persons with paralysis or body deformities, they may mishandle them and cause more damage. As disability is closely correlated with lower levels of education as well as poverty, the family members may also be poorly educated and may talk about the person or child with intellectual or mental problems and not realize that their comments may be hurtful to the child or person with a disability. Concerning the PWD himself or herself, the correlation to education level is consistent whether the disability is sensory or physical. In the same way that higher household wealth is in reverse proportion to the percentage of disability or difficulties, the higher the education level, the less the likelihood of having any type of disability.

Gender discrimination also plays a role in general in Myanmar in educational attainment, but its impact against women with disabilities is far worse than against males with disabilities. The 2014 Census found that having a disability meant a greater likelihood of illiteracy as follows: for males: 6.8% for non-disabled; 16.9% for disabled; however, for females, the gap

is far wider: 11.9% for non-disabled versus 31.7% for women with disabilities.[91] The illiteracy rates are also a reflection of an underlying problem namely, that of access to education. "Children with disabilities are less likely to have ever attended school and the more severe the disability, the less the likelihood of school attendance. For example, children with severe problems remembering/concentrating are 10 times less likely to attend school than children with no disability. Among 5-13 year olds, without a disability, the 2014 Census found that: 12.7% never attended school; with a disability, 38.7% never attended school."[92]

Table 9 shows the socio-economic differentials in *Sensory Impairments* among older persons in Myanmar and Table 10 shows them for *Physical Difficulties* – both are based on MAS data. As the two socio-economic situations of poverty and low education tend to go together, it is not possible to disaggregate what part the low education plays in acquiring a disabling condition. For example, it is not possible to know which one is the more compelling reason for not seeking early treatment for a potentially disabling condition such as starting to lose one's sight – inability to pay or ignorance of the potential danger in waiting to seek treatment? Of course, the reality of having a disability in a country like Myanmar may point to other very possible primary explanations, such as the lack of any appropriate treatment facility anywhere near where the PWD lives or, inability to travel to the nearest healthcare center because of the disability.

[91] 2017; The Republic of the Union of Myanmar; Department of Population; Ministry of Labour, Immigration and Population with technical assistance from UNFPA; 2014 Myanmar Population and Housing Census; *Policy Brief on Disability*; p.7

[92] 2017; *Policy Brief on Disability*; as above; p.6

Table 9 Socio-economic differentials in sensory impairments among older persons in Myanmar

	% Any sensory impairments	% Some visual impairment	% Some hearing impairment	% Dual impairments
Age 60+				
Educational attainment				
No education	50.8	43.0	21.4	13.6
Some primary	34.8	27.9	13.7	6.8
Complete primary	27.8	23.6	9.2	4.9
Beyond primary	23.0	16.5	10.0	3.4
Household wealth				
Lowest	46.6	39.2	18.5	11.0
2nd	40.2	33.3	15.7	8.8
3rd	33.9	27.6	14.0	7.6
4th	29.0	22.9	11.3	5.3
Highest	25.3	18.8	10.6	4.0
Age 80+				
Educational attainment				
No education	69.0	54.0	37.9	22.8
Some primary	53.4	36.9	31.0	14.6
Complete primary	51.8	39.3	32.1	18.2
Beyond primary	45.2	21.0	29.0	4.8
Household wealth				
Lowest	68.2	54.5	36.4	22.7
2nd	67.4	50.6	35.2	18.0
3rd	54.2	39.2	35.0	20.0
4th	50.4	32.8	29.5	11.6
Highest	50.0	30.1	31.1	11.4

Source: 2012 Myanmar Aging Survey. Teerawichitchainan and Knodel (2018), see Annex 1.

Table 10 Socio-economic differentials in physical difficulties among older persons in Myanmar

	% with any physical difficulties	% with any functional limitations	% with any IADL difficulties	% with any ADL difficulties
Age 60+				
Educational attainment				
No education	67.9	61.6	43.8	28.6
Some primary	57.7	50.0	40.1	23.0
Complete primary	52.1	46.0	28.2	18.3
Beyond primary	47.4	41.6	27.9	14.5
Household wealth				
Lowest	59.8	54.8	38.5	20.7
2nd	59.2	49.9	40.3	25.0
3rd	56.5	49.1	36.0	23.5
4th	56.7	50.6	36.0	22.2
Highest	54.3	47.5	34.3	19.0
Age 80+				
Educational attainment				
No education	90.4	87.3	66.0	51.5
Some primary	88.4	84.3	71.2	51.9
Complete primary	85.7	83.9	57.1	43.6
Beyond primary	83.9	80.6	62.9	48.4
Household wealth				
Lowest	92.4	89.4	67.4	53.0
2nd	89.9	84.3	75.0	56.2
3rd	90.8	87.5	64.2	57.5
4th	86.8	83.6	63.6	42.6
Highest	82.1	79.7	67.5	46.3

Source: 2012 Myanmar Aging Survey. Teerawichitchainan and Knodel (2018), see Annex 1.

Finally, there is the issue that with total reliance on often just one family member for caregiving, there is rarely any possibility for respite care to give family caregivers some relief. The result may be that they leave the older disabled person alone for periods of time because they have other matters that they must attend to, but this practice is quite risky. Moreover, a situation of relying only on family caregivers may reinforce to the PWD the notion of being a burden and may well contribute to the commonly encountered co-morbidity of disability – depression – which occurs often especially in older PWDs.

C. Issues of Older PWDs Living Alone

Not all older persons with disabilities in Myanmar are lucky enough to have family members to provide care for them, either in their own homes or by being nearby. The 2014 Census reported that in fact, more people with disabilities of all ages live on their own, as compared to those without disabilities living alone – 3.7% versus 0.9%. Moreover, more than two thirds (67%) of the 86,000 persons with disabilities who live alone are women – that compares to 56.6% of non-disabled women who live alone.[93] The Thematic Report on Disability acknowledges the worrisome aspects of this finding: "Given the poor resource settings of the country, most persons with a disability depend on support from family members to help with activities of daily living. It is unclear whether and how persons with disabilities who live alone are assisted, the Census did not investigate further."[94]

A small number of PWDs live in institutions but they seem to be co-mixed with other homeless persons who are also living in institutions:

> Only a small minority of persons with a disability live in institutions or are homeless persons/persons living in other collective quarters: 72 thousand persons, constituting 3.11% of all persons with disabilities, and 3.06% of all persons living in an institution or who are homeless person/persons living in other collective quarters. This shows that informal care of persons with a disability rests very much in the hands of relatives…Two out of three persons with disabilities enumerated in institutions live in religious centres; 10.1% of PWDs were enumerated in hospitals; and 8.3% in correctional facilities/prisons. [95]

The 2014 Census explains that those who were enumerated in hospitals did not necessarily live there, they happened to be there when the census was conducted. Furthermore, "among the so-called homeless population/persons living in other collective quarters, 16 thousand indicated that they had a disability, which is 1.6% of all homeless people/persons living in other collective quarters."[96]

The fact that more older women with disabilities than men live alone is likely a reflection of several factors. First, because women typically live longer than men, they may have lost their spouse. Another possible explanation is that, although divorce is quite uncommon in Myanmar, nevertheless the acquisition of a disabling condition may have led to being abandoned either by a spouse or family, especially among women:

> While divorce in Myanmar is quite rare amongst all populations, disability status does seem to be a factor. Amongst females aged 15-74, the percentage of those reporting a divorce, separation or renouncement is higher for those with a disability than for those without. Amongst males, the pattern is slightly different, with the rate lower for males with disability until age 25 but became higher until the age of 69, and then

[93] 2017; August; *Thematic Report on Disability*; as above; p.38
[94] 2017; *Thematic Report on Disability* as above; p. 38
[95] 2017; *Thematic Report on Disability*; as above; p.38
[95] 2017; *Thematic Report on Disability* as above; p.38
[96] 2017; *Thematic Report on Disability*; as above; p.38
[96] 2017; *Thematic Report on Disability;* as above; p.39

lower again for those aged 70 and over. In terms of disability domains, those individuals who experience difficulties remembering/concentrating have a much higher likelihood of experiencing a divorce/separation/renouncement than individuals with difficulties in other functional domains.[97]

The following Case Study is illustrative of many issues for Persons with Disabilities living in Myanmar.

Case Study: Disabled and Abandoned – Woman Living Alone

67-year-old Female, Mandalay Region

Photo by Aye Thazin Kyaw/ HelpAge International Myanmar

This lady regarded by the whole village as mentally ill has lived here her whole life. As she couldn't understand and reply well, a neighbor recounted as much as she knows. Though she has eight siblings they all stayed away and didn't contact her, since she started suffering from mental disturbance. She couldn't remember when she got married. She has two daughters and one son. The son is the youngest and occasionally, he comes to sleep at her small house. When she was young she did some farming. The worst thing in her life was after she gave birth to the youngest son, she became mentally deranged. The locals named this as "post-partum of obstetric insanity".[98] Some also said according to her Shan tradition when she warmed herself by fire, just after birth someone put wrong firewood for the fire. Even worse, was that her husband then left her and remarried.

The daily life for her became extremely difficult, as a person with mental disability, she couldn't get any job. At that time, nobody knew mental illness could be treated at clinic and hospital. They just assumed it was due to some kind of punishment by supernatural beings for disobeying the traditions. Her illness got worse and at times, she might wander throughout the village, collecting garbage, begging persistently for food and the things she wanted from others. A daughter who lives nearby or a neighbor might send her a morning meal. She might eat it or use it for whatever she wants. Her son who occasionally comes to visit her, does odd-

[97] 2017; *Policy Brief on Disability*; as above; Marital Status; p.3

[98] Note: This likely was what medical experts recognize as "postpartum-psychosis." It is more rare (about 1% of all births) than the more commonly known post-partum depression. Post-partum psychosis symptoms include: hallucinations; delusions; paranoia; manic mood swings; depression; confusion and disorientation. The condition *requires immediate treatment* with anti-depressants and mood stabilizers and, *if treated quickly, is usually resolved within 6 months*. It is caused by the significant hormonal changes in the mother's body post-delivery and the symptoms typically occur within 2 weeks after delivery. See: Mayo Clinic; USA; Mayo Clinic.org; post-partum psychosis.

jobs and may earn MMK 5,000 [$3.40 USD] some days. It is not clear whether she mainly survives depending on her son or just by begging around in the neighborhood.

D. Unmet Care Needs

Another major problem with the current scenario of expecting families to care for the older PWDs is the question of adequacy of the care. At best, the care of a family member provides meals and help with Activities of Daily Living (ADLs) such as eating, bathing, toileting, and other physical functions of daily life. The family member also likely provides the older PWD with help in Instrumental Activities of Daily Living (IADLs) that refer to activities that require some mental capacities such as managing when to take medicines, managing money, using transportation etc.

However, it is rare that an untrained family member would know how to manage the person's condition from a basic health perspective. In other words, how to correctly lift a frail person or a person with paralysis; what signs to watch for that the condition might be worsening; or what potential dangers to check for on a constant basis. To give just one example, people who are paralyzed or frail, and therefore spend most of their time sitting in a wheelchair or lying in bed, are prone to develop decubitus ulcers, also known as pressure sores. These ulcers have four stages that require different treatment strategies, as they progressively become more serious – if left untreated, they can quickly prove fatal. Hence, the family caregivers must first know that they should exam the PWD whose mobility is limited very frequently to check for them. Then the caregivers must know what to do if they do find them i.e. what stage they are seeing and what treatment is indicated. In short, family caregivers often are not prepared to provide the level of care required by the PWD's condition. The result of this is "unmet need" and in the case of poor families who also often are poorly educated, that unmet need increases exponentially with each factor, so it may mean that they do not seek professional help quickly enough because they do not recognize the seriousness of the situation. The following case history illustrates that even when he sought professional help, his unmet care issues, as well as ignorance of what to do, caused a continual round of suffering.

Case Study: Unmet Needs

63-year-old Male, Mandalay Region

Photo by Aye Thazin Kyaw/ HelpAge International Myanmar

This gentleman who was born and grew up here, seems to be very depressed with his life and lives a very sad existence. He had 5 male siblings, out of whom he is the sole survivor, the others died of various diseases. He had always been a farmer and previously owned some farmland and cattle. He married at 30 and his wife is now 58. He had three children, but none survived and now it is only he and his wife who are struggling with their hard lives. He said he has not been able to do anything useful for the past five years.

It all started when he was about 50 while he was doing farming and a water buffalo crashed into his right leg. The wound became infected and got worse and he ended up in the hospital. The hospital found out that he had severe diabetes and an infected middle toe of his left foot had to be amputated.

After the operation, he was discharged but his feet and hands always felt numb – so numb that he didn't know whether he was wearing footwear or not. Some people suggested to soak his feet in salty boiling water. He believed them and followed this method – he ended up with burned feet with blisters and peeled skin and had to be rushed to the hospital. The doctors said since the wounds were highly infected, it was now necessary to amputate his right leg below his knee straightaway. He was terrified and entreated the doctors not to do so. But the doctors told him if the below the knee operation was not done immediately, it would become necessary to do a below the thigh later to save his life and thus he relented.

He stayed in hospital for 3-4 months for rehabilitation. A charity organization supplied him with a cane and a prosthetic limb. About two days before his discharge, while he was practicing with these supports, he tripped and injured his amputated leg. The doctors didn't notice this and duly discharged him. Soon after returning home, the wound broke open and hemorrhaged and he was rushed back to the hospital again. This time the right leg had to be amputated again two inches above the previous place.

That happened a year ago. All the farmlands and cattle were sold out to pay the hospital fees, he said weeping. Now he could not step outside of the house. With two crutches and a useless prosthesis, he could only gaze out on the outside world. He had to depend totally on his wife for his daily essentials including meals and toileting. The wife does some odd-jobs for others to support him and herself. He said, "Whenever I feel lonely I look out this window and think that I can do nothing in this life but, instead I'm totally dependent on others for my miserable existence…"

The issue of the impact of unmet needs was researched by Knodel and Teerawichitchainan using binary logistical regression analysis on the predicted probabilities of unmet need for care among older persons who reported needing help. They used three different determinants: (1) household wealth; (2) living arrangements and (3) physical difficulties – all of which proved to be statistically significant determinants of unmet need. Not surprisingly, the level of unmet need using household wealth is inversely correlated, with the poorer the family unit, the greater the need. Figure 3a indicates that, all else equal, a significantly higher proportion of elders – 14% – from the lowest wealth quintile experienced unmet needs for care, compared to those who are economically better off.

The analysis of unmet need concerning living arrangements showed how strongly related they are to the likelihood of unmet needs for care. Only 4% of older people who live with their children reported experiencing unmet needs. However, if they lived alone, even if their children lived nearby, approximately one-fourth of the older people reported experiencing unmet needs and 17% of elders who lived with only their spouse reported unmet needs. Appendix Figure 5 indicates that the odds of unmet need for care significantly increase with increasing presence of physical difficulties, with only 3% of the older people without any physical difficulties reporting unmet care needs. The proportions of unmet needs increase to 8% for those with 1-2 physical difficulties and 9% for those with 3 or more difficulties. The only exception is among those with 10 or more physical difficulties who are less likely to experience unmet needs for care, probably because their situations are so extreme that they require around-the-clock care.

E. Older Persons with Pre-existing Disabilities

As the 2014 Census did not collect any data on date of onset of disability, it is impossible to know the prevalence rate for those older people who have had a lifelong or at least a long-term disability. Based on the fact that the Myanmar prevalence rates rise with age, the assumption is that disability in Myanmar is a phenomenon of aging and that it is aging that is the cause of disability. While it is true that disability is often a consequence of aging, the lack of that data is likely masking the true picture of what percentage of the identified older people with disabilities have had lifelong or long-term disabilities. Moreover, it is not possible to know from the data gleaned from the 2014 Census, what percentage of the older persons with disabilities had long-term conditions that eventually evolved into full-scale disabilities from lack of access to treatment care or simply from the long-term consequences of the condition.

What is certain is that at least for a certain percentage of the older population, living with a disability is not a new phenomenon, but dealing with the consequences of aging often presents entirely new challenges concerning adequacy of care. As there is no data on whether the disability pre-existed old age, it is impossible to do any formal analysis, but reading the following case study helps to provide some insights into just how difficult the nexus of aging with a disability is in Myanmar.

Case Study: A Person Aging with a Lifelong Disability

65-year-old Female, Yangon Region

Photo by Aye Thazin Kyaw/ HelpAge International Myanmar

She was born in metropolitan Yangon. She has six siblings, two males and four females. She was born with some kind of congenital disease of misshaped limbs and flaccid body. Her condition has never been formerly diagnosed medically, only being called by the locals as "Floppy muscles/soft bones ailment". Her condition was so severe that it prevented her from getting any kind of schooling. From about the age of 12, however, she managed in a limited way to help out in her mother's residence-cum-shop, although she could only drag herself around. She has never visited any medical clinics of hospitals as her impoverished, large family had no means to afford it. After a period of homelessness, they were resettled in 1990 at the East Dagon Township, then in the outskirts of Yangon.

They struggled in the new place by doing various odd-jobs. During that time of turmoil, other siblings got married and live separately with their families. Eventually only she and her older people mother were left alone at home. In 1999, a most unfortunate accident happened which changed her life for the worse. One day her mother, who had been looking after her since she was born, asked her to stand leaning a bamboo pole to bathe her as usual. While the old mother was temporarily busy preparing to give her a bath, the pole collapsed and she fell down, hurting her back badly. As she has been already congenitally disabled, the severity of her back injury was not taken seriously.

In addition, as she was not very articulate, no one took her for a consultation for the trauma that she had suffered to the clinic or hospital. It gradually got worse and after a week, she found she couldn't even sit up and became bedridden. For nearly 20 years, she has been in bed, for all her activities of daily living. She always requires the assistance of either her mother or someone else nearby. Two years ago, her old mother on whom she had totally relied, passed away at the age of 90. After her mother died, her 74 years old elder sister, came and stayed to look after her. Her younger sister who lives nearby provides daily meals.

But these sisters have no income of their own. Apart from them, she gets occasional support from neighbors, relations and monastery for her survival. Sometimes when no one is around, she has to stay soiled. It has been said that she takes some anti-diarrheal medicines so that she doesn't have to bother with her bowels for 10-14 days at a stretch for several months. Though she is not quite fluent she told us three sentences, which succinctly reflect her plight, "I can't say much. I don't want to do anything. I don't want to become anything anymore."

F. Some Final Remarks About Living Conditions

1. People with Disabilities Are Prematurely Old in Myanmar

Although each of the case studies was chosen to represent a particular aspect of the nexus of disability and aging in Myanmar, it must already be clear that every case embodies all of the aspects discussed about living conditions for older persons with disabilities in Myanmar. Every one of the PWDs was living in poverty; dependent on at least one family member in their usually extended family situations; faced with unmet needs; had low levels or no education; and either did not have the means or the ability to access any health care or, worse yet, did access it, but with further negative consequences.

Moreover, although the attitude is that all of these people are really old, in fact, each of these people were only in their 60s. The three oldest old individuals who were interviewed were intentionally omitted to demonstrate that the poor living conditions of PWDs in Myanmar cannot be simply attributed to the vestiges of old age of people at the end of a long lifespan. On the contrary, these people are experiencing premature old age, not owing so much to their chronological age, but rather to an almost total absence of either a decent system of preventative care or any long-term care policies. In fact, several had been economically active when they developed their disability and it was that fact, not their age, that prevented them from continuing to work. The lack of being able to return to work seriously impacted their already fragile financial situation and thrust them into either deeper deprivation or total dependency on their families or the charitable efforts of others. All seemed to have a co-morbidity of extreme depression, more from feeling incapable of contributing any financial help, than from the disability per se.

The healthcare system, for those who did access it, failed them miserably. The man was diagnosed with diabetes – and if his toe had to be amputated – clearly the condition was already far advanced. Not being able to feel his feet is neuropathy – again from the diabetes and again an indicator of the seriousness of his condition. Yet it does not seem that he was put under any treatment regime for the diabetes. Moreover, post the amputation of his leg, when he fell while still in the hospital, no one "noticed" the new bruises and he was discharged occasioning another need for an emergency return and further amputation when it hemorrhaged. The man who suffered a stroke evidently was not referred to any rehabilitation services, even though it appears that he would have been a good candidate for a likely recovery, because the impact seemed to be purely physical and limited to one side of his body. In short, these case studies illustrate the inadequate level of care, even when the person does seek medical attention. The one common denominator seems to be that the cost of the care contributes significantly to increasing the poverty of the family.

2. Societal Attitudes Towards Disability

Another observation about the attitude towards persons with disabilities in Myanmar is that it seems to be heavily based on pity, charity and familial responsibility, rather than on any notion of social inclusion or societal responsibility. That was especially obvious concerning the older persons with disabilities interviewed for the case studies, but it seemed to pertain to

anyone with a disability, especially someone born with it. Words evoking pity like: *affliction*, *suffering, unfortunate; wheelchair bound; or crippled* should *never be used* to speak about persons with a disability; nor should terms for their conditions that are viewed as disparaging such as: *retarded; crazy*; *deranged*; *mentally deficient* or *dumb* for a person who is mute. Similarly, their condition should not define them. The emphasis should always be person-first language, thus persons who are blind or persons who are wheelchair users, not "the blind" or "the deaf" and so forth.

Myanmar would strongly benefit from disability public awareness projects to raise the public's understanding. However, before embarking on such projects, which should be led by Disabled People's Organizations (DPOs) and with advice from the appropriate UN agencies, the government should first make a slight change to their 2015 Law on the Rights of Persons with Disabilities by replacing the definition of a person with a disability as someone "suffering" from. Instead, they should emulate the UNCRPD language and simply say: a person who "has."

3. The Issue of Personhood for Persons with Disabilities

The descriptions of how the interview subjects were often treated by other villagers also implies a kind of being written off by the general society as no longer useful. It appears that in Myanmar, once disabled, the individual loses his or her personhood and becomes defined by the condition of being disabled. In some cultures, there are superstitions that if a woman has a child with a disability, she must have done something wrong and is being punished for it and likewise, if a person has an accident that results in a disability.

Moreover, it became clear from interviews that the National Expert conducted that one serious issue is that persons with disabilities are often deliberately not given identity cards, especially babies born with a disabling condition are often denied a card or the parent does not take them to get a card. The problem is not just an occasional one as the 2014 Policy Brief on Disability highlighted, it is a serious issue:

> According to the 2014 Census, almost one quarter (23%) of persons with a disability did not have any form of identity card. This figure increases to 40.9% amongst those with a severe disability. The lack of proper identification may make it difficult for these individuals to register for benefits and access the necessary assistance.[99]

The government must address this issue of discrimination against PWDs by starting immediately to draft specific instructions to the responsible entities, at whatever the administrative levels are, who are responsible for registering births and issuing identification cards.

In any case, it is not surprising that all of the PWDs who were interviewed demonstrated strong signs of depression from feelings of being worthless and a burden and they expressed thoughts about wishing to die. If even the better educated believe that once disabled, life is no longer worth living, it is understandable that those already existing at the margin of poverty and unmet needs, feel extreme depression. Clearly Myanmar must do a better job at

[99] "2017; *Policy Brief on Disability; as above;* Access to services; p. 5

real social inclusion, beginning with public education campaigns to change perceptions about living with a disability.

4. Implications of Myanmar's Aging Population on Disability Prevalence

In the next few decades, Myanmar will see increased aging, quite likely coupled with increased migration, either to more urban areas or outside of the country. Knodel and Teerawichitchainan cite United Nations predictions that: "The number of persons 60 and older will rise approximately 250% from 4.8 million in 2015 to about 12 million in 2050."[100] As discussed in the Policy Implications section of the Thematic Report on Disability, the rapid aging of the Myanmar population will bring with it new challenges with regard to the prevalence of disability because it is a recognized worldwide phenomenon that "the older a person gets the likelier it is that they will face temporary or permanent disability in their lifetime."[101] Although Myanmar is hampered by a lack of good data on the actual disability prevalence rates, it seems clear that the perception from the 2014 Census is that: "disability is predominantly an old age phenomenon with its prevalence remaining low up to a certain age, after which rates increase substantially."[102]

> Worldwide disability is closely linked to the older population. It is a well-known fact that the prevalence rate of disability increases dramatically at older ages. …The 2014 Census thematic report on Population Projections (Department of Population, 2017e) showed that Myanmar has started the process of aging. The projections showed that the number of persons aged 15-64 years is expected to increase by 23 %, and the number of persons aged 65 and over by 221 %. This will lead to a significant increase in the number of persons with disabilities in the next 35 years.[103]

As has been mentioned, the Myanmar 2014 Census data is likely a serious under-reporting of the actual disability prevalence rates. Hence, the data may also be skewing the results to look like disability is simply a problem of the older people. In reality, it is missing many people, including children and younger adults with either full disabilities or at least at the severe impairment level. As these people age, their conditions will almost certainly worsen (as might those with milder levels of impairment), not just from aging, but also mainly because the healthcare infrastructure in Myanmar is not there to support treatments to mitigate against conditions becoming worse. To illustrate this point, it is useful to look at what is worldwide the major causes of blindness. The WHO's 2010 report on visual impairments found that the global causes of blindness as a percentage of global blindness in 2010 were as follows:

> Cataract =51%; Glaucoma = 8%; Age-Related Macular Degeneration (AMD) = 5%; childhood blindness and corneal opacities = 4%; uncorrected refractive errors and trachoma =3%; and Diabetic Retinopathy = 1%.[104] Undetermined =21%

---

[100] 2015; United Nations, Department of Economic and Social Affairs, Population Division, *World population prospects: The 2015 revision*, New York; the United Nations; https//esa.un.org/unpd/wpp/
[101]2017; *Thematic Report*; p.90
[102] 2017; *Thematic Report* As above; p. iv
[103] 2017; *Thematic Report* as above; p.91
[104] 2012 WHO; *Global Data on Visual Impairments 2010*; p.3 and Figure 2B

The same WHO study found that: "65% of people visually impaired and 82% of all blind are 50 years and older." [105] As most of the leading causes – i.e. cataracts; glaucoma; and AMD are strongly correlated to aging, it is not surprising that the large majority – 82% – of all blindness occurs in those age 50 and older. Does that imply that aging is almost certain to mean acquiring a permanent severe level impairment or a total disability? To explore that question, it is helpful to consider the situation of Japan, which holds first place in the world for older people populations – with 26.5% of their population over age 65.[106] The results of a study conducted on older people in Japan concerning cataract surgery and visual acuity was recently published.[107] The purpose of the study was to determine if there had been prior cataract surgery and the best-corrected visual acuity (BCVA) in a cohort of older people Japanese over age 68.

> A total of 2,873 subjects whose mean age was 76.3 +/- 4.9. Overall, 24.2% of the subjects had undergone cataract surgery, and 41.7% of the subjects>/- 80 years had undergone cataract surgery. …The mean BCVA of eyes with cataract surgery was significantly better than that of eyes without cataract surgery in subjects >/-80 years. Visual acuity was generally good in this cohort of older people Japanese subjects.[108]

Interestingly, the authors reported that their study confirmed the findings of those of several other cited studies on the results of cataract surgery – i.e., that it was not just the older person's sight that benefitted from the surgery, but also, that it appeared to impact positively on longevity and on quality of life. That contrasted to studies where "subjects with visual impairments were found to have twofold higher odds ratio for the prevalence of cognitive impairment than subjects without visual impairments.[109]

The implications for Myanmar of the Japanese study are significant. As discussed in the previous section on blindness, not only are cataracts the primary cause of blindness in Myanmar, but the prevalence rate at 60% is 9% higher than the global average in the above-mentioned WHO study. Moreover, the NEHP identified significant backlogs in surgery which will only get worse as the population rapidly ages. The answer must be to focus significant effort *now* on training more ophthalmologists and surgeons; decentralizing their expertise from mainly urban centers to rural ones; adopting laser surgery techniques to allow for faster surgeries that typically do not require hospitalizations and allow for quicker recovery; and most of all, to promote a system of ongoing eye health care exams for everyone.

---

[105] 2012; WHO; *Global Data* as above; p. 3

[106] According to an estimate by the Cabinet Office of Japan (www8.cao.go.jp/kourei/whitepaper/w-2015/gaiyou/27pdf_indexg.html) as quoted in Miyata et al footnote 105)

[107] 2017; April 1; *Bio Research Open Access*: Kimie Miyata; Tadanobu Yoshikawa; Masashi Mine; Tomo Nishi; Nozomi Okamoto; Testsuo Ueda; Ryo Kawasaki; Norio Kurumatani; and Nahoko Ogata: "Cataract Surgery and Visual Acuity in Elderly Japanese: Results of Fujiwara-kyo Eye Study"; Biores Open Access; 2017; 6 (1) 28-34; https://www.ncbi.nim.nih.gov/pmc/articles/PMC5397236/

[108] Kimie Miyata et al; as above; p 28.

[109] Kimie Miyata et al; as above; p. 34

Cataracts were used as an example because of their prevalence in Myanmar, but they are just a tip of the iceberg of healthcare problems plaguing the Myanmar people and the older people, in particular. As the government struggles with its healthcare funding priorities, it must not forget the needs of its older citizens, especially those living in poverty and with disabilities.

IV. Disability Actors in Myanmar

Although there are quite a few international NGOs, Civil Society Organizations, donor organizations and domestic NGOs/DPOs in Myanmar, the nexus issue of aging and disability has not been their focus. Understandably, much of their disability work has focused on issues more pertinent to younger generations, especially infants and children with disabilities and working age adults – for example, maternal and child health and education issues which have been the focus of much of the work of several INGOs, such as UNICEF. Others work on different specific issues such as mine risk education (HI Humanity and Inclusion). Concerning the agendas of the Disabled People's Organizations, most are focused on specific issues such as advocacy training; capacity building and livelihood programs, as well as issues around independent living.

In support of this analysis, a national disability expert interviewed most of the INGOs and DPOs working on disability issues.[110] While not discriminating against older PWDs, all admitted that their focus was typically on issues of young adults or children. The overwhelming viewpoint was that older PWDs are "invisible." They attributed their invisibility to inability to leave their homes and the fact that there are no older people-led DPOs in Myanmar – most of the DPO leaders are young and active in their communities. No one speaks for older PWDs and they likely would have different priorities. Nevertheless, all expressed keen interest in working across generations of PWDs and suggested several cross-cutting issues. The most commonly mentioned issue and one which several of the DPOs had quite a lot of experience with was independent living training. The fact that Myanmar already has existing DPOs with good understanding of disability from a human rights and social inclusion perspective can provide an excellent opportunity towards efforts to work together on intergenerational issues of disability. At the moment, no one in Myanmar is speaking for older persons' issues concerning impairments and disability, but it is certainly already long overdue and will only grow more urgent as the population is quickly aging.

[110] The organizations were: Myanmar Independent Living Initiative; Shwe Min Thar Foundation; Myanmar Federation of Persons with Disabilities; Future Stars Self-Advocacy Organization; Myanmar Deaf Community Development Association; Disabled People Development Organization; Yangon Deaf Organization; Women's Department of the Myanmar Federation of PWDs; Humanity and Inclusion; Myanmar Disabled Women's Association; and Myanmar National Blind Association

V. Concluding Remarks about Older Persons with Disabilities in Myanmar

When it comes to disability in general in Myanmar, it is fair to say, much more is unknown than known. The data that exists is very scant and relatively unreliable because of huge gaps in terms of varying definitions, missing categories, causality, date of onset and so forth. With regard to the 2014 Census, not only is the 4.6% prevalence data too low to be believed, but also, the tendency to see disability in the country as a condition linked primarily to old age is: (1) likely greatly under-identifying disability in children and younger adults; and (2) overstating that it is primarily a condition of the aged: "The census shows that disability is predominantly an old age phenomenon with its prevalence remaining low up to a certain age, after which rates increase substantially."[111]

Even though it is a known phenomenon that aging often brings impairments, it does not necessarily mean that those impairments result in disability because of aging. In the case of Myanmar, the disability prevalence in older persons (and very likely in younger person too) is caused by lack of a decent healthcare infrastructure that supports recognized public health protocols and has sufficient knowledge to know how to treat disabilities. There is virtually no attention to ongoing prevention; very poor public education or awareness of good health practices, including diet, and other health risks; an absence of treatment options for the vast majority of the population who are poor; and deficits in knowledge and medical personnel with expertise in how best to treat various disabilities. One proof that the disability in Myanmar is likely more linked to the country's depravations than to simple aging is to consider that it has a very high prevalence rate of blindness, especially among older persons, and that 60% of it is caused by cataracts. However, a report about a British study showed that:

> Rates of blindness and impaired eyesight have plummeted over the past 20 years in the developed world. [The study authors] used statistical methods to calculate estimates of the prevalence and most common causes of blindness and impaired vision/partial sightedness between 1990 and 2010 for all 190 countries. Over the 20-year period, the prevalence of blindness halved in high income countries, falling from 3.314 million people (0.2% of the population) to 2.736 million (0.1% of the population). Similarly, the prevalence of partial sightedness/impaired vision dropped by 38%, falling from 25,362 million (1.6% of the population) to 22.176 million (1% of the population).[112]

The study authors found that the new leading cause of blindness and partial sight was macular degeneration and they warned that the surge in prevalence of diabetes will have an

[111] 2017; *Thematic Report*; as above; p. iv.
[112] 2014; March 24; "Rates of blindness and partial sight have plummeted in developed world"; *Science Daily*; citing a study by R.R.A .Bourne; J.B. Jonas et al; "Prevalence and causes of vision loss in high-income countries and in Eastern and Central Europe; 1990-2010"; in the *British Journal of Ophthalmology, 2014;* DOI: 10.1136/bjophthalmol-2013-304033; https://www.sciencedaily.com/releases/2014/03/140324200501.htm

enormous impact on eye health, with upwards of 100 million people expected to develop diabetic retinopathy, about a third of whom risk losing their sight.[113]

In summary, what is critical for all persons with disabilities in Myanmar, but most especially for older persons, is for the government and the donor organizations to refocus much of their efforts and resources on *prevention and treatment programs* and to do so immediately because population aging is not going to wait.

[113] Science Daily; As above; p. 2

VI. References

Bickenbach, Jerome (2012); What is functioning and why is it important; *ICF Core Sets Manual for Clinical Practice*; edited by: Jerome Bickenbach; Alarcos Cieza; Alexandra Rauch; & Gerold Stucki; Hogrefe Publishing; Germany.

Casey Eye Institute, OHSU (n.d.); "SE Asia Collaboration; Current State of Eye Health in Myanmar"; https://www.ohsu.edu/xd/health/services/casey-eye/about-us/casey-community-outreach/international-outreach/seasia.cfm

HelpAge International Myanmar, University of Public Health and University of Medicine-2: (September 2016); *An assessment of available evidence on NCDs and their risk factors in Myanmar.*

International Campaign to Ban Landmines (ICBL); (2015); Landmine monitor Myanmar/Burma 2015.

International Committee of the Red Cross (ICRC);(2014) & (2016) Annual report 2014; Geneva; https://www.icrc.og/en/document/annual-report-2015-icrc. And 2016; Annual report 2015;https://app.icrc.org/files/2015-annual-report/

International Newsround (2017); Myanmar – UK Deafness Collaboration; https://www.maryhare.org.uk/sites/maryhare.org.uk/files/Newsround%20Myanmar.pdf

IRIN; *Report from IRIN*; (2011, 28 January) Myanmar: Rural healthcare 'in crisis'; .doi:10www.irinnews.org/report/91761/myanmar-rural-healthcare-crisis

ISEAS Yusof Ishak Institute *Perspective*; Landmines in Myanmar: No solution in sight; (2016; 29 September); Issue 2016; No 54.

Knodel, John (2014); The situation of older persons in Myanmar: Results from the 2012 survey of older persons; (revised 2014); HelpAge International Myanmar Country Office; Yangon, Myanmar.

Knodel, John and Teerawichitchainan, Bussarawan (2017, January 11); Aging in Myanmar; *Gerontologist;* Vol 57, No. 4,599-605doi:10.1093/geront/gnw211 https://academic.cup/gerontologist/article-abstract/57/4/599/2890806

Teerawichitchainan, Bussarawan and Knodel, John (2018); Situation analysis of disability and aging in Myanmar: Empirical evidence from the 2014 Census and 2012 Myanmar Aging Survey". Independent study for HelpAge International attached as Annex 1 to current report.

Miyata, Kimie; Yoshikawa, Tadanobu; Mine, Masashi; Nishi, Tomo; Okamoto, Nozomi; Ueda, Testsuo; Kawasaki, Ryo; Kurumatani, Norio; and Ogata, Nahoko: (2017; April 1); Cataract surgery and visual acuity in elderly Japanese: Results of Fujiwara-kyo eye study; Biores Open Access; 2017; 6 (1) 28-34.

The Monitor; Casualties and victim assistance: Myanmar Burma;(2016, 21 November; http://the-monitor.org/en-gb/reports/20166/myanmar_burma/casualties-and-victim-assistance.aspx

Myanmar Conference Report on an ENT conference held January 12-13, 2017 in Taw Win Garden Hotel, Yangon, Myanmar (2017); www.soundhearing2030.org/Myanmar%20conference%20Report.pdf

Nemet, Arie Y; Nemet, Pinhas; Cohn, Geoff; Sutton, Gina; Sutton, Gerald; & Rawson, Richard; (2009; August 3) "Causes of blindness in rural Myanmar (Burma): Mount Popa Taung-Kalat blindness prevention project"; *Clinical Ophthalmology*; 2009;3; 413-421; https://www.nim.nih.gov/pmc/articles/PMC2724031/p.415

Nyi Nyi Latt; Su Myat Cho; Nang Mie Mie Htun;Yu Mon Saw et al; (2016); Healthcare in Myanmar; *Nagoya Journal of Medical Science*; 2016, May; 78 (2).

Organization for Economic Co-Operation and Development (OECD); (2010); *Sickness, disability and work: Breaking the barriers*; Paris, France.

Republic of the Union of Myanmar; Department of Population; Ministry of Labour, Immigration and Population; (with technical assistance from UNFPA); (2017); *The 2104 Myanmar population and housing census; Thematic report on disability; Census Report Volume 4-K.*

Republic of the Union of Myanmar; Department of Population; Ministry of Labour, Immigration and Population with technical assistance from UNFPA; (2017); 2014 Myanmar Population and Housing Census; *Policy Brief on Disability.*

Republic of the Union of Myanmar; Ministry of Health and Sports; (2017; March 23); *National eye health plan (NEHP) 2017-2021.*

Science Daily; (2014, March 24); Rates of blindness and partial sight have plummeted in developed world; report based on a study by R.R.A. Bourne; J.B. Jonas et al; Prevalence and causes of vision loss in high-income countries and in Eastern and Central Europe; 1990-2010 in the *British Journal of Ophthalmology, 2014;* DOI: 10.1136/bjophthalmol-2013-304033; https://www.sciencedaily.com/releases/2014/03/140324200501.htm

Soe Moe; Kyi Tha; Daw Khin Saw Naing; Maung Maung Than Htike; (2012) Health Seeking Behaviour of Elderly in Myanmar*; International Journal of Collaborative Research on Internal Medicine & Public Health;* Vol 4, No 8; p. 1538.

Teerawichitchainan, Bussarawan and Knodel, John (2018); Situation analysis of disability and aging in Myanmar: Empirical evidence from the 2014 Census and 2012 Myanmar Aging Survey". Independent study for HelpAge International attached as Annex 1 to current report.

Trachoma facts: https://www.medicinenet.com/trachoma/article/htm#what_is_trachoma

United Nations, Department of Economic and Social Affairs, Population Division; (2015); *World population prospects: The 2015 revision*, New York; United Nations; https//esa.un.org/unpd/wpp/

United Nations Population Fund (UNFPA); Census 2014, Information [press release]; (2017/28/08); Census report: People with disability trapped in a vicious circle of poverty and exclusion.

World Health Organization; *Situation review and update on deafness, hearing loss and intervention Programmes*; (2007, December) Proposed Plans of Action of Hearing

Impairment in Countries of the South-East Region; WHO Regional Office for South-East Asia; apps.searo.who.int/pds_docs/B3177.pdf

World Health Organization; (2012);*WHO global estimates on prevalence of hearing loss; Mortality and Burden of Disease and Prevention of Blindness and Deafness*; www.who.int/pbd/deafness/WHO_GE_HL_pdf.[note: Power Point slide presentation; no page numbers]

World Health Organization and World Bank; (2011); *World Report on Disability*; Geneva.

World Health Organization; (2015); Improving eye health in Myanmar: National action plan 2016-2020; [summary report about the two-day workshop held 27-28 July, 2015 on Eye Health] http://www.searo.who.int/myanmar/areas/ncd_eyehealthinmyanmar/en

Annex

This Annex is a separate and independent study conducted in support of the Situational Analysis of Disability and Aging in Myanmar. The analysis here was conducted by Bussarawan Teerawichitchainan and John Knodel and commissioned by HelpAge International.

Situation analysis of disability and aging in Myanmar: Empirical evidence from the 2014 Census and 2012 Myanmar Aging Survey

Bussarawan Teerawichitchainan, *Singapore Management University*
John Knodel, *University of Michigan*

1. INTRODUCTION

Myanmar's population aged 60 and older is projected to increase from 9% in 2015 to approximately one fifth of the total population by the mid-21st century (United Nations, 2017). During this time period, the absolute number of population in this age group is expected to grow by 250%. Additionally, the number of Myanmar's oldest old (i.e., persons aged 80 and older) is estimated to triple, reaching over 1.3 million in 2050. Apart from population aging, Myanmar is undergoing an epidemiological transition towards an increasing burden of non-communicable diseases. Given the chronic nature of non-communicable diseases, the rise in proportions and absolute numbers of older persons who are at risk of chronic illnesses, disability, and long-term care needs can potentially create substantial demands for Myanmar's public health system and the families who care for them.

This study aims to empirically examine the situation of disability among older persons in Myanmar based on two data sources, including the 2014 census of Myanmar and the 2012 Myanmar Aging Survey. The 2014 census was the latest census enumerated by the government of the Republic of the Union of Myanmar in three decades. Since the micro-sample of the 2014 census is not publicly available, we draw primarily from published data in two census thematic reports on disability (Department of Population, 2017a) and the older population (Department of Population, 2017b). Our second source of data is the Myanmar Aging Survey (MAS), the first national survey of its kind conducted in 2012 under the sponsorship of HelpAge International. The MAS sample consists of 4,080 persons aged 60 and older throughout almost all of Myanmar[1]. Among sampled households, only one respondent aged 60 and older was randomly selected for interview. In cases where the respondent was cognitively impaired, had serious hearing problems, or otherwise too incapacitated to be interviewed, a proxy (typically the next-of-kin) was interviewed instead. The response rate is 93%. All results provided in this study are weighted to account for the sample design.

[1] Only Kachin state was excluded due to security reasons. Since Kachin represents only 3% of the national total population and since most of its population belong to the Kachin ethnic minority, the impact of Kachin's exclusion on the national representativeness of MAS should be minor at most (Department of Population, 2014).

This report is organized as follows. After the introductory section, Section 2 describes the prevalence of disability among older persons in Myanmar based on the 2014 census and the 2012 Myanmar Aging Survey. Section 3 assesses socioeconomic differentials in old-age disability. Section 4 examines patterns and correlates of receiving personal care among frail older persons. Section 5 describes patterns of primary and secondary care providers. Section 6 addresses prevalence of self-reported care gaps such as unmet needs for care and inadequate care. Section 7 discusses key findings and their policy implications.

2. PREVALENCE OF DISABILITY AMONG OLDER PERSONS

Given the lack of statistical data infrastructure in Myanmar until very recently, little is known about the situation of disability among the country's older-aged population (Knodel & Teerawichitchainan, 2017). We first review existing estimates for disability prevalence among older people based on published reports of the 2014 census. The census adopted disability measures developed by the Washington Group to examine four domains of disability including seeing, hearing, walking, and remembering/concentrating. During the census enumeration, interviewers asked each household informant about disability status of each household member. Possible responses are "no – no difficulty", "yes – some difficulty", "yes – a lot of difficulty" and "cannot do at all". In census thematic reports, degrees of disability are defined as follows. *No disability* refers to having no difficulty in all four domains. *Mild disability* refers to having some difficulty in one or more domains but there is no domain that the person experienced a lot of difficulty or could not do at all. *Moderate disability* refers to having a lot of difficulty with one or more domains but there was no domain that the person could not do at all. *Severe disability* refers to when the person could not do one or more domains at all.

Table 1. Prevalence of disability in Myanmar by sex and age groups.

Age groups	% With at least some difficulty[a]		
	Both sexes	Male	Female
Under 15	1.4	1.4	1.3
15-59	3.4	3.5	3.4
60+	23.3	22.4	24.0
80+	43.2	41.9	44.0

Source: Adapted from Table A1.1 (Myanmar Census 2014 Thematic Report on Disability, 2017).

Notes:
[a]Disability refers to persons who reported that they had at least some difficulty in one or more of the four functional domains asked in the 2014 census. These four functional domains are seeing, hearing, walking, remember/concentrating.

Based on the 2014 census, Table 1 shows prevalence of disability (i.e., having at least mild disability in one or more functional domains) in Myanmar by age groups and by sex. Results show that disability is rare among children under age 15 and among working adults aged 15-59. Under 5% of the population in these two age groups reported having any disability. Nevertheless, prevalence of disability rises sharply with age. Among those aged 60 and over, nearly a quarter (23%) had at least some difficulty in one of the four function domains. Among persons aged 80 and over, more than four in ten reported having at least a mild disability. Findings also indicate that disability is slightly more prevalent among older women than men.

Table 2. Percentages of population aged 60 and older by domain of disability by sex.

Domains of disability	% With at least some difficulty		
	Both sexes	Male	Female
Seeing	15.0	14.1	15.7
Hearing	9.2	8.8	9.5
Walking	11.6	10.7	12.3
Remembering/concentrating	8.6	7.8	9.1

Source: Adapted from Table 7.1 (Myanmar Census 2014 Thematic Report on the Older Population, 2017).

Table 2 describes percentages of older women and men in Myanmar with at least some difficulty in each of the four domains of disability. Results show that visual impairment is the most common domain of disability among persons aged 60 and older. Approximately 15% of Myanmar elders had at least some difficulty in seeing. Difficulty in walking is the second most common form of disability, accounting for 12% of older people. Moreover, results show that about 9% of the older-aged population suffered from hearing and cognitive impairments. Consistent with findings presented in Table 1, proportions having each form of disability are consistently higher among elderly women than elderly men.

Table 3 shows prevalence of disability by degrees of disability and by types of dwelling. The 2014 census distinguishes Myanmar's population in two types of dwelling: conventional households and institutions. Of Myanmar's 50.28-million population enumerated in the 2014 census, approximately 4.7% (2.35 million) resided in institutional households on the census night. Elders in conventional households are considered community-dwelling older persons. Meanwhile, institutional households include old-people's homes, orphanages, hospitals, boarding schools, hotels, hostels, guest houses, homes for people living with disabilities, prisons, monasteries, convents, military and police

barracks, and camps for workers. For all age groups, there are larger male populations in institutions compared to females.

Table 3. Disability prevalence among older men and women by degrees of disability and types of dwelling[a]

	% With at least mild disability	% With at least moderate disability	% With severe disability
Conventional households			
Age 60+			
Both sexes	23.4	5.9	2.1
Male	22.5	5.5	1.9
Female	24.1	6.2	2.3
Age 80+			
Both sexes	43.4	15.7	6.4
Male	42.1	14.2	5.3
Female	44.1	16.6	7.0
Institutional households			
Age 60+			
Both sexes	21.0	4.5	1.5
Male	20.7	4.3	1.4
Female	21.6	5.0	1.8
Age 80+			
Both sexes	38.0	11.7	4.4
Male	38.2	11.0	3.8
Female	37.5	13.1	5.6

Source: Adapted from Table A1.5a (Myanmar Census 2014 Thematic Report on Disability, 2017).

Notes:

[a]According to Census Atlas Myanmar, the 2014 census considered the following to be "institutions" old-people's homes, orphanages, hospitals, boarding schools, hotels, hostels, guest houses, homes for people living with disabilities, prisons, monasteries, convents, military and police barracks, and camps for workers. Homeless persons were also enumerated and included in the institutional population. Individuals living in institutions such as these on Census Night (29 March 2014) were considered to be living in "institutional households". For all age groups, there are greater male populations in institutions compared to females.

Results from Table 3 indicate for disability is generally higher among older people in conventional households than institutional households. This is consistent across age groups, sexes, as well as degrees of disability. Only about 4% of oldest old residents in institutional households had severe disability. This suggests that, unlike in developed contexts where disabled elders are often placed in institutionalized care settings, Myanmar elderly (regardless of disability status) tend to age in place and to coreside with their family members rather than in institutionalized care.

Table 4. Disability prevalence among older men and women by degrees of disability and urban/rural location.

	% With at least mild disability	% With at least moderate disability	% With severe disability
Urban			
Age 60+			
Both sexes	18.3	4.4	1.7
Male	17.3	4.0	1.5
Female	19.1	4.6	1.8
Age 80+			
Both sexes	37.3	12.4	5.2
Male	35.2	10.6	4.1
Female	38.5	13.4	5.8
Rural			
Age 60+			
Both sexes	25.5	6.5	2.3
Male	24.5	6.0	2.0
Female	26.3	6.9	2.5
Age 80+			
Both sexes	45.9	17.1	6.8
Male	44.7	15.5	5.7
Female	46.6	18.1	7.5

Source: Adapted from Table A1.5b and Table A1.5c (Myanmar Census 2014 Thematic Report on Disability, 2017).

Based on census data, Table 4 shows disability prevalence by degrees of disability and by urban/rural locations. Results indicate higher prevalence of disability among the elderly in rural than in urban areas. The finding is consistent across both sexes and all levels of disability severity. The urban-rural disparity in disability also exists among the oldest old. It is alarming to observe that close to half of persons aged 80 and over in rural Myanmar (46%) reported at least some degrees of disability.

While information gleaned from the 2014 census thematic reports provides national-level prevalence of disability among Myanmar's older-aged population, experts suggested that disability estimates based on census data are likely underestimated possibly because of respondents' unfamiliarity with the disability concepts, reluctance to discuss disabilities to non-family members, the wording of the census questions, and the fact that the census includes only four domains of disability (Department of Population, 2017b: 63). In this report, we thus supplement the analyses of the situation of disability among older persons by further analyzing data from the Myanmar Aging Survey. The survey permits an

assessment of various measures of disability and their demographic and socioeconomic correlates. It also contains nuanced information related to patterns of care receipt and care gaps. We are mindful of the potential discrepancy between the two data sources. According to the census thematic report on the older population (Department of Population, 2017b: 67), prevalence levels of difficulty in walking, hearing, seeing, and cognition are at least twice as high in MAS as those reported in the census. The discrepancies are likely due to different wording of the questions and different response categories. Furthermore, this could be owing to the fact that while census enumerators asked household informants indirectly about elders' disability status, the MAS directly interviewed community-dwelling older persons and probed them about various types of physical difficulties and impairments.

Based on the 2012 MAS, we examine two aspects of disability including physical difficulties and sensory impairments. When measuring physical difficulties, we consider not only activities of daily living (ADL) and instrumental activities of daily living (IADL) difficulties but also functional limitations. MAS incorporated questions to solicit a variety of information to assess older persons' physical difficulties. The first dimension of physical difficulty is *functional limitation,* which refers to difficulty in performing independently five common physical functions: lifting 5 kg, walking up and down stairs, walking 200 to 300 meters, crouching/squatting, and using fingers to hold things. The second dimension of physical difficulty refers to *IADL difficulties* which include inability to independently perform household chores, using/counting money when shopping, taking medication by self, using transportation, and making a phone call. The third dimension refers to *ADL difficulties* which include inability on one own with respect to getting up after lying down, toileting, bathing, dressing, and eating. Older persons with one or more physical difficulties are considered as those with long-term care needs. This definition is consistent with that employed in the World Bank's 2016 report on aging in East Asia and the Pacific (World Bank, 2016).

Table 5. Prevalence of physical difficulties among older persons in Myanmar.

	All physical difficulties combined[a] (maximum=15)		Functional limitations[b] (maximum=5)		IADL difficulties[c] (maximum=5)		ADL difficulties[d] (maximum=5)	
	% with any	Mean	% with any	Mean	% with any	Mean	% with any	Mean
All older persons	57.3	2.54	50.5	1.40	37.0	0.62	22.0	0.51
Sex								
Male	48.1	2.03	41.4	1.11	30.6	0.51	17.8	0.42
Female	65.2	2.98	58.2	1.66	42.4	0.72	25.6	0.59
Age								
60-64	39.0	1.26	31.9	0.75	20.3	0.31	11.9	0.22
65-69	46.6	1.56	38.2	0.90	28.4	0.42	12.5	0.24
70-74	60.5	2.58	53.4	1.45	40.4	0.66	21.5	0.47
75-79	75.2	3.45	68.1	1.95	48.8	0.83	29.3	0.67
80+	88.4	5.68	85.0	2.93	67.3	1.33	50.7	1.43

Source: 2012 Myanmar Aging Survey.

Notes:

[a]Physical difficulties refer to functional limitations and ADL as well as IADL difficulties.

[b]Functional limitations refer to difficulty in walking 200-300 meters, lifting 5 kg, crouching/squatting, using fingers to grasp, and walking up/down a set of stairs.

[c]IADL difficulties refer to difficulty in doing household chores, counting money, taking medication, using transportation, and making phone calls.

[d] ADL difficulties refer to difficulty in eating, getting dressed, bathing, getting up when lying down, and toileting.

Table 5 indicates the prevalence of physical difficulties among older persons in Myanmar. Results are shown separately for functional limitations, ADL and IADL as well as all three types of physical difficulties combined. Approximately 57% of older persons in Myanmar had at least one physical difficulty. On average, they had about 2.5 physical difficulties. Reporting ADL difficulties is least common (accounting for 22% of the sample) and reporting functional limitations is most common (51%). The pattern of differentials in the prevalence of these difficulties, however, is quite similar. Regardless of the type of difficulty, both the prevalence and mean number increases sharply with age. While under 40% of those aged 60-64 experienced one or more physical difficulties, almost 90% of those aged 80 and over reported at least one physical difficulty. Approximately half of the oldest old had at least one ADL difficulty which tends to require intensive personal care. Furthermore, older women reported higher prevalence and larger mean numbers of each type of difficulty compared to their male counterparts.

Table 6. Prevalence of sensory impairments among older persons in Myanmar.

	% Any sensory impairments	Visual impairment[a]		Hearing impairment[a]		% Dual impairments
		% Some impairment[b]	% Cannot see	% Some impairment[b]	% Cannot hear	
All older persons	35.1	27.4	1.1	13.3	0.7	7.4
Sex						
Male	30.3	22.4	0.6	12.0	0.9	5.5
Female	39.2	31.7	1.4	14.5	0.6	8.9
Age						
60-64	25.2	21.0	0.2	6.3	0.2	2.3
65-69	26.4	21.9	0.7	7.9	0.3	4.4
70-74	38.0	32.1	0.8	14.1	0.8	9.6
75-79	42.5	32.6	1.3	17.0	1.3	9.8
80+	57.8	37.6	3.6	31.5	1.9	16.8

Source: 2012 Myanmar Aging Survey.

Notes:

[a]Older persons with visual/hearing impairments refer to respondents who reported having some difficulty in seeing and hearing even with glasses or hearing aid if they use ones.

[b]Some impairment refers to respondents who reported they cannot see or hear too well.

In addition to physical difficulties, we examine prevalence of sensory impairments among older persons based on MAS survey data. In the survey, respondents were asked how well they could see or hear (with glasses or a hearing aid if they regularly use ones). Possible responses include very well, somewhat well, not too well, and could not see/hear at all. Sensory impairments in this study refer to when the respondents could not see/hear too well or could not see/hear at all. Dual impairments refer to when respondents had difficulty in both seeing and hearing. Results shown in Table 6 indicate that slightly over one third of older persons aged 60 and over in Myanmar had some sensory impairments. Self-

reported visual impairments are much more common than hearing impairments. Complete blindness and deafness are rare, accounting for only about 1% of the older-aged population. Dual impairments affected about 7% of all older persons in Myanmar. Consistent with previous findings related to physical difficulties, we find substantial gender differences in sensory impairments. Older women are more likely than men to report sensory impairments, except for deafness. Furthermore, sensory impairments increase very sharply with age. About one fourth of persons aged 60-64 reported sensory impairments, compared to nearly 60% among the oldest old. It is important to note that about 4% of the oldest old reported blindness and 17% of this age group had dual impairments.

Table 7. Prevalence of physical difficulties among older persons with sensory impairments.

	All physical difficulties combined (maximum=15)		Functional limitations (maximum=5)		IADL difficulties (maximum=5)		ADL difficulties (maximum=5)	
	% with any	Mean	% with any	Mean	% with any	Mean	% with any	Mean
All older persons								
No sensory impairment	47.8	1.85	40.9	1.04	29.1	0.46	16.9	0.35
Visual impairment	75.1	3.81	68.6	2.07	52.2	0.92	31.6	0.82
Hearing impairment	79.2	4.40	72.2	2.33	56.2	1.07	35.9	1.00
Dual impairments	84.0	4.91	77.5	2.56	62.5	1.18	40.7	1.17

Source: 2012 Myanmar Aging Survey.

Table 7 describes prevalence of multiple disabilities. Specifically, we examine the extent to which older people with sensory impairments experienced physical difficulties. Results indicate that while less than half of older persons without any sensory impairments suffered from one or more physical difficulties, compared to more than three quarters among those with sensory impairments. Among those with dual impairments, 84% reported at least one physical difficulties and on average experienced nearly 5 counts of physical difficulties. This pattern is consistent across types of physical difficulties. Results also suggest that more elders with hearing impairments reported physical difficulties compared to those with visual impairments. Overall, our findings indicate high correlations between physical difficulties and sensory impairments, suggesting that an inability to hear and see is likely to impede one's physical functioning ability. Myanmar's underdeveloped infrastructure and public health intervention may aggravate physical difficulties even further.

3. SOCIOECONOMIC DIFFERENTIALS IN OLD-AGE DISABILITY

Myanmar's major political and economic reforms that began since 2011 have led to rapid economic growth, significant poverty reduction, and improvement in living standards.

Nevertheless, the structural transformation has also put economic inequality into a sharp relief. Given economic status has important influences on health of older-aged populations, policy makers are concerned about rising health disparity across different socioeconomic strata (Teerawichitchainan & Knodel, 2015). On one hand, distinct economic gradients in health are expected to exist. Older people who are economically well off are hypothesized to be healthier and to have lower disability risks. On the other hand, given that many elders in Myanmar endured years of poor living conditions, inadequate healthcare, and weak infrastructure, economic differences in health and disability status may be minimal. Economic status differences among a wide swathe of the population may be too minor to have an impact on health differentials. Even among the minority that are economically better off, effective healthcare might be largely non-existent or inaccessible.

In this analysis, we examine socioeconomic differentials in physical difficulties and sensory impairments among older persons. We focus on two socioeconomic indicators, including educational attainment and household wealth index. Household wealth index is constructed based on ownership of household possessions and housing quality. We consider whether the older person's household possesses items such as television, electric fan, motorcycle, and refrigerator and whether the house has modern structural components such as piped water, modern floor, and toilet. We multiply a normalized score for each household possession by its weight. Weights are determined using factor scores derived from the first principal component analysis. Older persons in the MAS sample then were ranked from top to bottom according to the wealth index and divided into quintiles.

Table 8. Socio-economic differentials in physical difficulties among older persons in Myanmar.

	% with any physical difficulties	% with any functional limitations	% with any IADL difficulties	% with any ADL difficulties
Age 60+				
Educational attainment				
No education	67.9	61.6	43.8	28.6
Some primary	57.7	50.0	40.1	23.0
Complete primary	52.1	46.0	28.2	18.3
Beyond primary	47.4	41.6	27.9	14.5
Household wealth				
Lowest	59.8	54.8	38.5	20.7
2nd	59.2	49.9	40.3	25.0
3rd	56.5	49.1	36.0	23.5
4th	56.7	50.6	36.0	22.2
Highest	54.3	47.5	34.3	19.0
Age 80+				
Educational attainment				
No education	90.4	87.3	66.0	51.5
Some primary	88.4	84.3	71.2	51.9
Complete primary	85.7	83.9	57.1	43.6
Beyond primary	83.9	80.6	62.9	48.4
Household wealth				
Lowest	92.4	89.4	67.4	53.0
2nd	89.9	84.3	75.0	56.2
3rd	90.8	87.5	64.2	57.5
4th	86.8	83.6	63.6	42.6
Highest	82.1	79.7	67.5	46.3

Source: 2012 Myanmar Aging Survey.

Table 9. Socio-economic differentials in sensory impairments among older persons in Myanmar.

	% Any sensory impairments	% Some visual impairment	% Some hearing impairment	% Dual impairments
Age 60+				
Educational attainment				
No education	50.8	43.0	21.4	13.6
Some primary	34.8	27.9	13.7	6.8
Complete primary	27.8	23.6	9.2	4.9
Beyond primary	23.0	16.5	10.0	3.4
Household wealth				
Lowest	46.6	39.2	18.5	11.0
2nd	40.2	33.3	15.7	8.8
3rd	33.9	27.6	14.0	7.6
4th	29.0	22.9	11.3	5.3
Highest	25.3	18.8	10.6	4.0
Age 80+				
Educational attainment				
No education	69.0	54.0	37.9	22.8
Some primary	53.4	36.9	31.0	14.6
Complete primary	51.8	39.3	32.1	18.2
Beyond primary	45.2	21.0	29.0	4.8
Household wealth				
Lowest	68.2	54.5	36.4	22.7
2nd	67.4	50.6	35.2	18.0
3rd	54.2	39.2	35.0	20.0
4th	50.4	32.8	29.5	11.6
Highest	50.0	30.1	31.1	11.4

Source: 2012 Myanmar Aging Survey.

Tables 8 and 9 describe socioeconomic differentials in physical difficulties and sensory impairments respectively. We examine the differentials among persons aged 60 and over as well as among the oldest old. Results show clear educational gradients in physical difficulties and sensory impairments. With only one irregularity, the prevalence of each type of physical difficulties and sensory impairments decreases with increased education. For example, while 68% of uneducated elders reported one or more physical difficulties, proportions with physical difficulties drop to less than half among their highly educated counterparts. This pattern is consistent across all three types of physical difficulties (functional limitations, IADL and ADL difficulties). This is also the case for sensory

impairments. Proportions of uneducated elders with sensory impairments are almost twice larger than that of those having beyond primary schooling. Having a few years of primary education appears to reduce the odds of disability significantly.

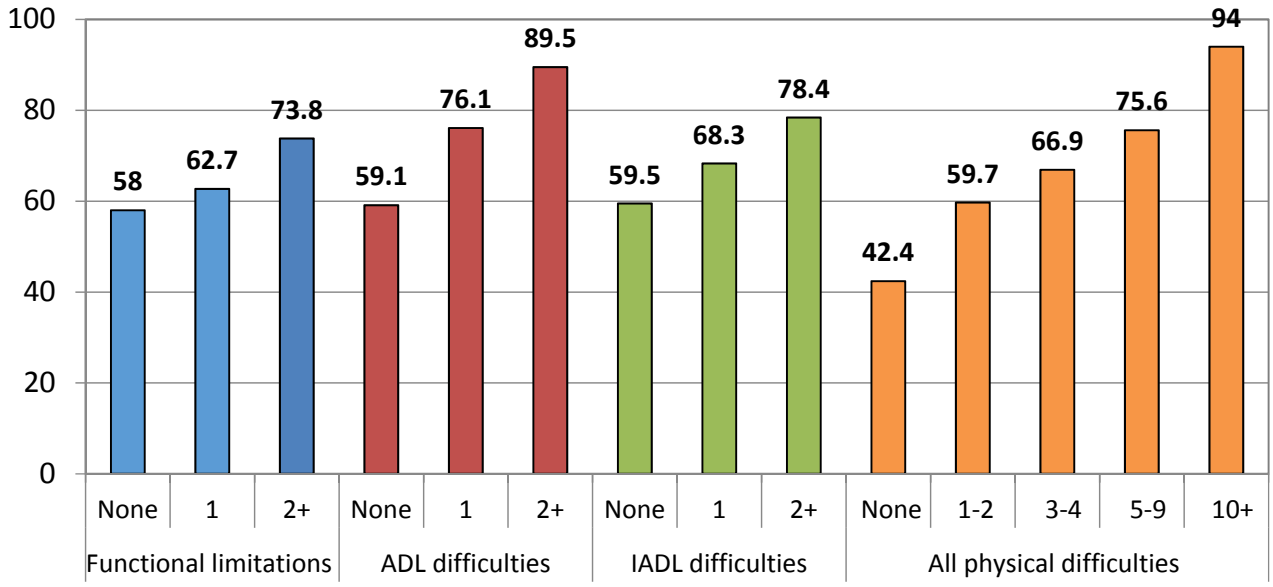
Moreover, findings show consistent wealth gradients in sensory impairments. Older persons from lower wealth quintiles reported visual, hearing, and dual impairments more frequently than those from the upper wealth quintiles. Wealth gradients in physical difficulties, however, are less clear. For instance, elders from the 2nd wealth quintile reported higher prevalence of IADL and ADL difficulties compared to those in the bottommost wealth quintile. Unlike the gradient relationship between education and physical difficulties, the relationship with wealth level is less regular, although for each type of difficulty those in the highest wealth quintile experienced the lowest prevalence of physical difficulties.

In general, population aged 80 and over are more likely than their younger counterparts to experience disability. Nevertheless, findings indicate that socioeconomic inequality in physical difficulties and sensory impairments still persists among the oldest old (with only a few exceptions). Older persons without any education and those from the poorest households are among the most vulnerable. For instance, 90% of elders with no education and 92% of those from the lowest wealth quintile had at least one physical difficulty. More than half of these groups suffered from at least one ADL difficulty and reported some visual impairments. Nearly a quarter of them experienced dual sensory impairments.

4. PATTERNS AND CORRELATES OF RECEIVING PERSONAL CARE

The analyses featured in this section examine the extent to which older persons received personal assistance in daily living. *Receipt of personal care* is incorporated as a dichotomous variable indicating whether or not the respondent reported receiving regular assistance from anyone when doing things to take care of him/herself (e.g., bathing or dressing) or to carry on daily activities. In MAS, respondents were asked directly whether they received such assistance. Note that the question allows respondents to interpret what the definition of daily activities is. It is therefore plausible that some respondents may think of daily activities in a broad generic sense rather than referring narrowly to assistance in activities of daily living as specified in the gerontological literature. The fact that a substantial share of respondents who had no physical difficulty reported receiving regular care from someone suggests this to be the case.

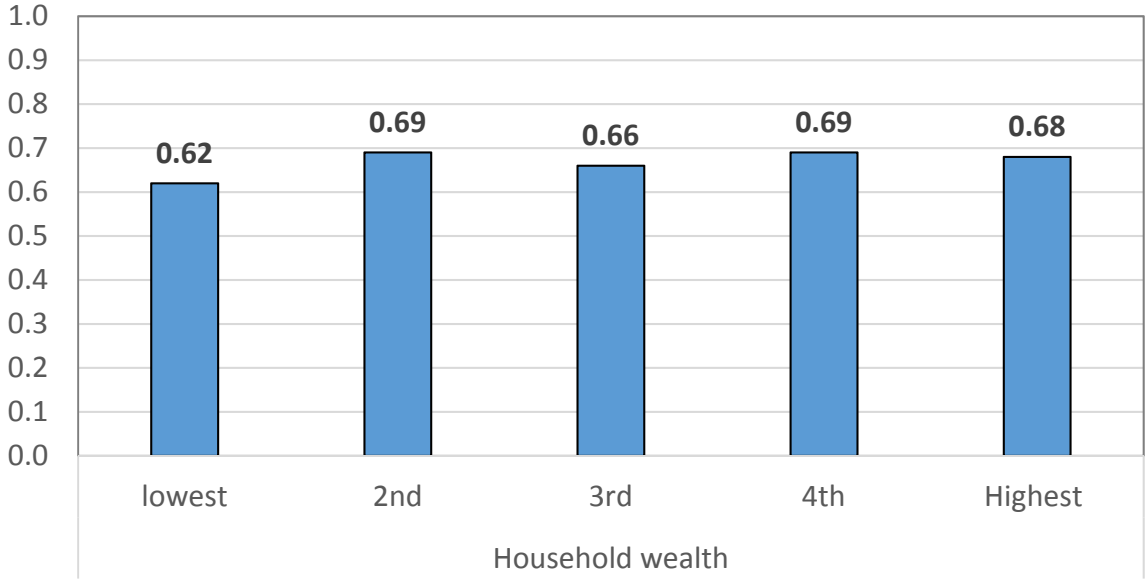
Figure 1. Percentage receiving care by types and counts of physical difficulties, older persons aged 60 and above.



Source: 2012 Myanmar Aging Survey.

Figure 1 presents the percentage of older persons that received care by types and counts of physical difficulties. The results are quite consistent regardless of the type of difficulty being considered. For all three types of difficulties the percentage that received care increases with the number of difficulties experienced. When considering all of the difficulties together, there is a consistent increase in proportions receiving care with the number of difficulties experienced which rises from 42% of those who did not report any difficulty to almost all of those (94%) of those that had 10 or more difficulties. Among the three different types of difficulties, approximately three fifths of those with no such difficulty received regular assistance in daily living. However, having multiple ADL difficulties generates assistance more than having multiple functional or IADL difficulties, suggesting that ADL difficulties are indeed more problematic to deal with on one's own.

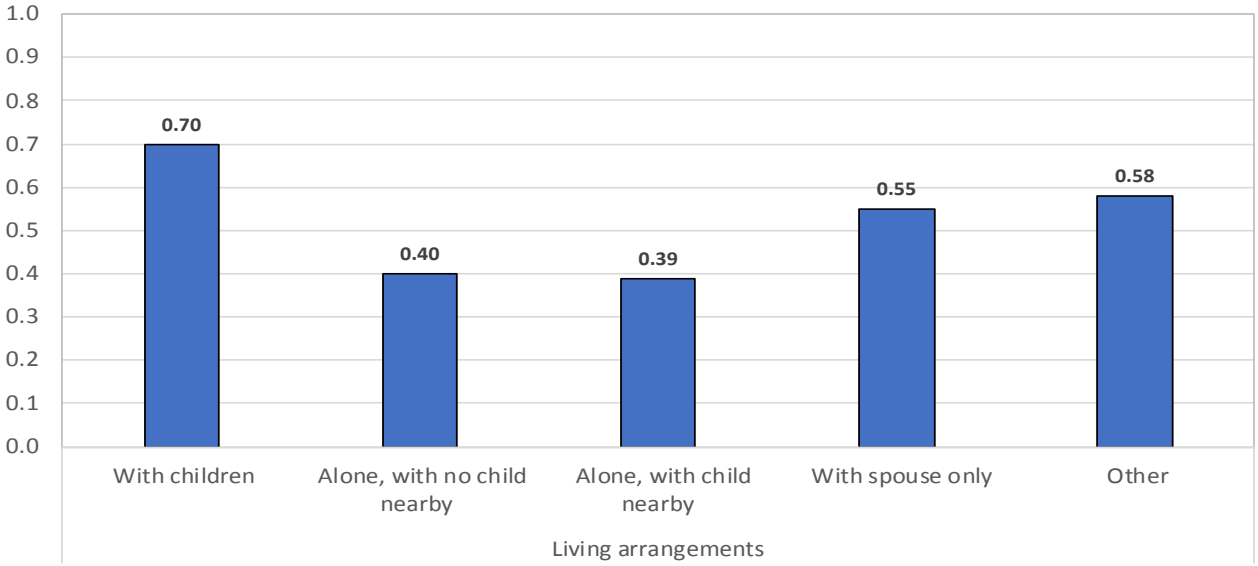
Figure 2a. Predicted probability of receiving care by household wealth, older persons aged 60 and above.



Source: 2012 Myanmar Aging Survey.

Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, living arrangements, and total number of physical

Figure 2b. Predicted probability of receiving care by type of living arrangements, older persons aged 60 and above.



Source: 2012 Myanmar Aging Survey.

Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, household wealth, and total number of physical difficulties.

The following analyses examine the covariates of self-reported regular receipt of daily living assistance in a multivariate framework. Specifically, we utilize binary logistic regressions that control for older persons' sex, age, marital status, number of children, and location of residence as well as number of physical difficulties experienced. To make it easier for interpretation, Figures 2a and 2b present predicted probabilities of receiving care among older people by household wealth and by types of living arrangements respectively. Findings suggest that household wealth is independently associated with the odds of receiving care. Holding disability status and other characteristics constant, results show that proportions of elders in the bottommost wealth quintile that received regular personal care (62%) are lower than their counterparts from economically better-off households (66%-69%). The differences are relatively small yet statistically significant. Note that results demonstrate no gradient association among the wealth quintiles beyond the first and the likelihood of receiving care.

Apart from household wealth, living arrangement is an important determinant of receipt of daily assistance among older persons. Intergenerational coresidence is strongly and significantly correlated with greater likelihood of receiving assistance in daily activities. Provided that elderly had similar disability status and socio-demographic characteristics, approximately 70% of those who coresided with children received care, compared to 55% among those living spouse only and 40% among those living alone. The differences in receiving care between solo-dwellers with and without children nearby are negligible. In an analysis not shown, we also find that the coefficients for living arrangement categories change only slightly when the number of physical difficulties in older ages is controlled.

5. PATTERNS OF PRIMARY AND SECONDARY CARE PROVIDERS

In addition to addressing the patterns and determinants of receipt of daily living assistance, we further examine the patterns of primary and secondary care providers. MAS contains information about who the main care providers are for older persons that received personal assistance. In our analysis, *primary caregiver* is incorporated as a categorical variable indicating whether the person that helped the respondent most with his/her daily activities is his/her spouse, son, daughter, child-in-law, grandchild, or other. The "other" category refers to friends/neighbors, other relatives or non-relatives/domestic helper. Additionally, the survey probed who else provided personal assistance other than the main care provider. Respondents were allowed to give multiple answers for the question regarding *minor/secondary care provider*. Possible answers are similar to the categories of primary caregiver.

Table 10. Percent distribution of primary caregivers by physical difficulties and age groups, Care recipients aged 60 and above.

	Percent distribution of primary caregivers among those receiving care[a]					
	spouse	son	daughter	child-in-law	grandchild	other[b]
All	25.8	8.6	46.8	5.3	7.1	6.3
Physical difficulty						
None	36.0	7.9	42.7	3.4	4.1	6.0
1-2	26.3	11.1	45.2	5.3	6.9	5.3
3-4	16.8	6.1	51.1	6.4	10.9	8.7
5-9	16.2	9.0	51.8	7.0	9.8	6.2
10+	15.2	9.3	50.6	8.9	9.3	6.8
Age						
60-64	38.2	6.0	40.7	4.4	3.5	7.2
65-69	32.0	10.2	42.7	3.3	4.7	7.0
70-74	25.6	7.7	47.0	6.6	7.3	5.8
75-59	14.8	10.2	53.4	6.0	8.6	7.0
80+	10.1	10.1	54.1	7.4	14.1	4.3

Source: 2012 Myanmar Aging Survey

Note:

[a]Primary caregiver refers to the person that helps the respondent most with his/her daily activities
[b]Other includes friends, neighbors, other relatives (e.g., siblings, nieces/nephews), or domestic workers.

Table 10 presents percent distribution of primary caregivers by levels of physical difficulties and age groups among older persons who received care. Approximately 64% of the total sample reported receiving regular assistance in daily activities. Results suggest that caregiving is largely a family matter in Myanmar. Children are the most common care providers, accounting for 55% of those providing the main assistance in daily activities. It is much more common for a daughter to be the main caregiver than a son. Of all primary caregivers, 47% are daughters, while only 9% are sons. Spouses are the second most common care providers, consisting of 26% of the primary caregivers in the sample. Compared to spouses and children, it is less common for children-in-law and grandchildren to be the main care providers. They account for 5% and 7% respectively of those providing the main assistance in daily activities. Together immediate family members (spouses, children, children-in-law, and grandchildren) constitute of 94% of primary care providers for Myanmar elders in the sample. Most of the remaining 6% are other relatives, friends, neighbors, and domestic workers. In an analysis not shown, we find that a majority of main caregivers in the "other" category are other relatives (e.g., siblings, nieces/nephews). It is extremely rare in Myanmar for non-family members such as friends, neighbors, or domestic workers to be the main provider of care for the elderly. Together they account for less than 1% of all primary caregivers in the sample.

Percentages of main care providers that are spouses decrease linearly with increasing number of physical difficulties and age. For example, 36% of elders without any difficulty and 38% of those aged 60-64 reported having spouses as their primary caregivers.

Proportion of spouses as main caregivers declines to 15% among those with 10 or more physical difficulties and 10% among those aged 80 and older. On the contrary, percentages of main caregivers who are children, children-in-law, or grandchildren rise steadily with increasing levels of physical difficulties and with increasing age. For instance, approximately 43% of those without difficulty reported to be primarily cared for by a daughter. The percentage increases to over 50% among those with 10 or more difficulties. Likewise, about 4% of elders aged 60-64 have grandchildren as primary caregivers. Nevertheless, the proportion jumps to 14% among the oldest old in Myanmar.

What drives the observed relationship is the association between level of physical difficulties and age. Older persons with greater demands for LTC (i.e., more physical difficulties) are usually older than those with no or lower level of physical difficulties. Furthermore, increased age is also associated with greater likelihood of widowhood, thus explaining unavailability of spouse to provide assistance in daily activities. The percentages of others (besides spouses, children, children-in-law, and grandchildren) as main care providers appear to be trendless regarding associations with level of physical difficulties or age.

Table 11. Percent distribution of secondary caregiver by primary caregiver among older-aged care recipients.

Secondary caregiver[a]	Primary caregiver					
	Spouse	Son	Daughter	Child-in-law	Grandchild	Other[b]
No secondary caregiver	17.3	10.1	15.0	6.4	19.1	35.5
Spouse	0.0	23.3	21.5	15.7	8.0	4.8
Son	39.4	14.5	33.7	69.3	24.5	6.0
Daughter	57.0	35.2	17.5	17.7	38.8	7.2
Son-in-law	5.2	1.8	12.1	0.7	8.6	0.0
Daughter-in-law	8.1	30.8	6.7	17.9	16.5	2.4
Grandchild	15.4	31.7	37.3	43.6	23.4	6.0
Other[b]	8.0	7.5	9.7	2.9	17.0	49.4

Source: 2012 Myanmar Aging Survey

Note:

[a]Multiple secondary caregivers are possible.

[b]Other includes friends, neighbors, other relatives (e.g., siblings, nieces/nephews), or domestic workers.

Table 11 presents percent distribution of secondary caregivers by type of primary care provider. For each column (type of primary caregiver), percentages do not sum up to 100% because survey respondents were allowed to give multiple answers for their secondary care providers. Approximately 11% of care recipients reported not having any secondary caregiver. Among those with spouse as the primary caretaker, more than half (57%) reported a daughter and nearly two fifths reported a son as their secondary

caregivers. About 15% reported being assisted by a grandchild in daily activities. It is far less common for this group to receive assistance from children-in-law or from others.

For care recipients whose main caretaker is a daughter, the most common secondary caregivers are grandchildren (37%) and sons (34%). About one fifth reported spouse as a secondary provider of care. Approximately 18% of this group reported daughter as a secondary caretaker. In the instances whereby respondents indicated daughter as both primary and secondary care providers, it is likely that the respondents referred to different daughters as the primary and secondary caregivers. Furthermore, we observe a slightly different pattern of secondary carers, when son is the main care provider. About 35% refer to a daughter and 32% to a grandchild as the person providing secondary assistance in daily activities. Almost one third cited a daughter-in-law as providing some care; however, it is rather rare to have a son-in-law as a secondary caregiver in these circumstances. This is in contrast to when a daughter is the main caregiver because it is more common than for a son-in-law to provide some assistance.

Results suggest that in uncommon circumstances whereby a child-in-law (most likely daughter-in-law) is the main care provider, nearly 70% also reported son and 44% grandchild as the persons providing minor assistance in daily activities. Only 6% of care recipients in this group reported no secondary caregivers. This seems to depict a story of multiple family members collectively providing care for older persons. When older persons reported a grandchild as the primary caregiver, nearly 40% and 25% reported their daughter and son respectively to provide care, even though in a secondary role. Interestingly, nearly a quarter of them reported another grandchild to provide minor assistance in daily activities, suggesting that it is not uncommon for elderly to be assisted by multiple grandchildren.

When older persons are primarily cared for by caregivers who are not their immediate family members, over 35% did not have secondary caregiver. In this care configuration, it is far less common to have a spouse, children, children-in-law or grandchildren as secondary caregivers. Nearly half of care recipients in this category reported others as providing secondary assistance in daily activities.

6. PREVALENCE OF CARE GAPS AMONG OLDER PEOPLE IN MYANMAR

In this report, we assess two indicators of care gaps. The first indicator is *unmet need for care*, which refers to a situation whereby an older person expressed need for personal assistance in daily activities but did not receive it. This study incorporates unmet need as a dichotomous variable indicating whether or not the respondent's need for personal care was fulfilled. The second type of care gaps refers to a situation whereby an elderly care recipient reported not receiving sufficient care. We include *insufficient care* as a dichotomous variable indicating whether the care recipient considered the assistance in

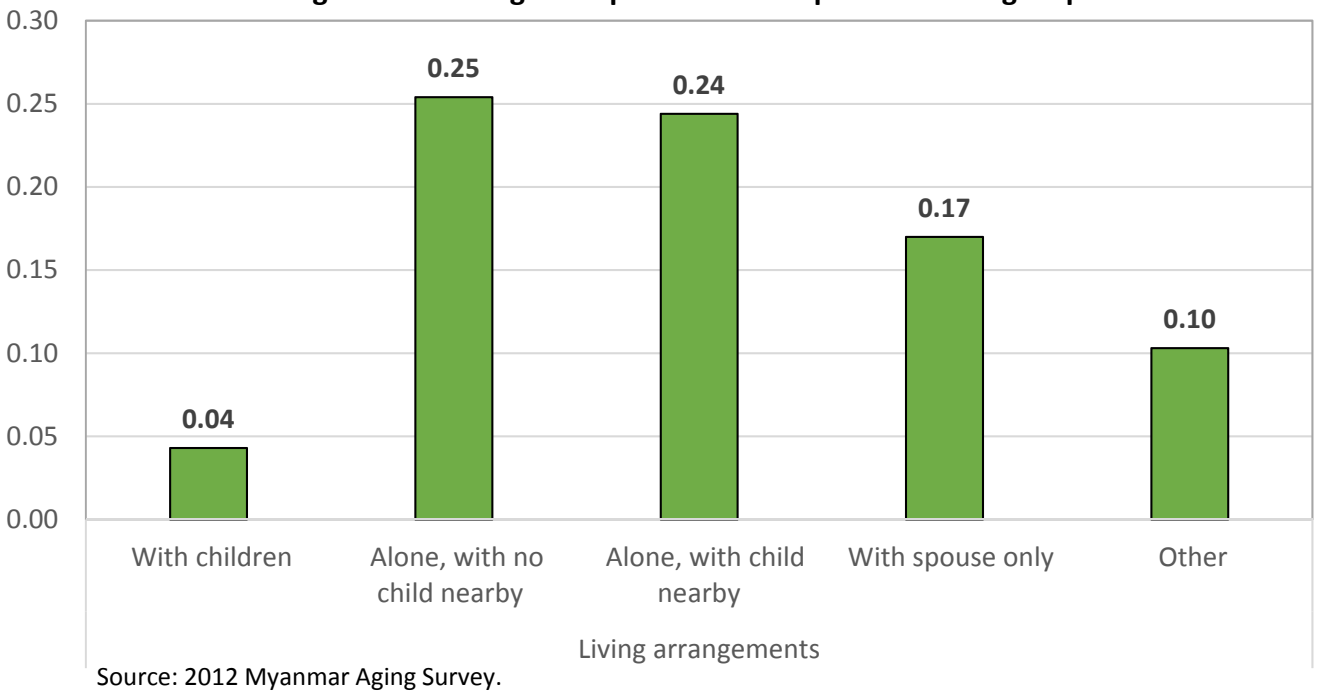
daily activities he/she received to be inadequate. We utilize binary logistic regression models that control for various demographic and socio-economic characteristics of respondents as well as their disability status (i.e., number of physical difficulties) to examine the determinants of care gaps. For unmet need for care, we restrict the multivariate analysis to older people who reported needing assistance in daily activities. Meanwhile, for the analysis of receipt of inadequate care, we limit the analytic sample to care recipients. To ease the interpretation, we present predicted probabilities of unmet need for care and inadequate care by their key determinants.

Figure 3a. Predicted probabilities of unmet need for care by household wealth among older persons who reported needing help.

Source: 2012 Myanmar Aging Survey.

Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, living arrangements, and total number of physical difficulties.

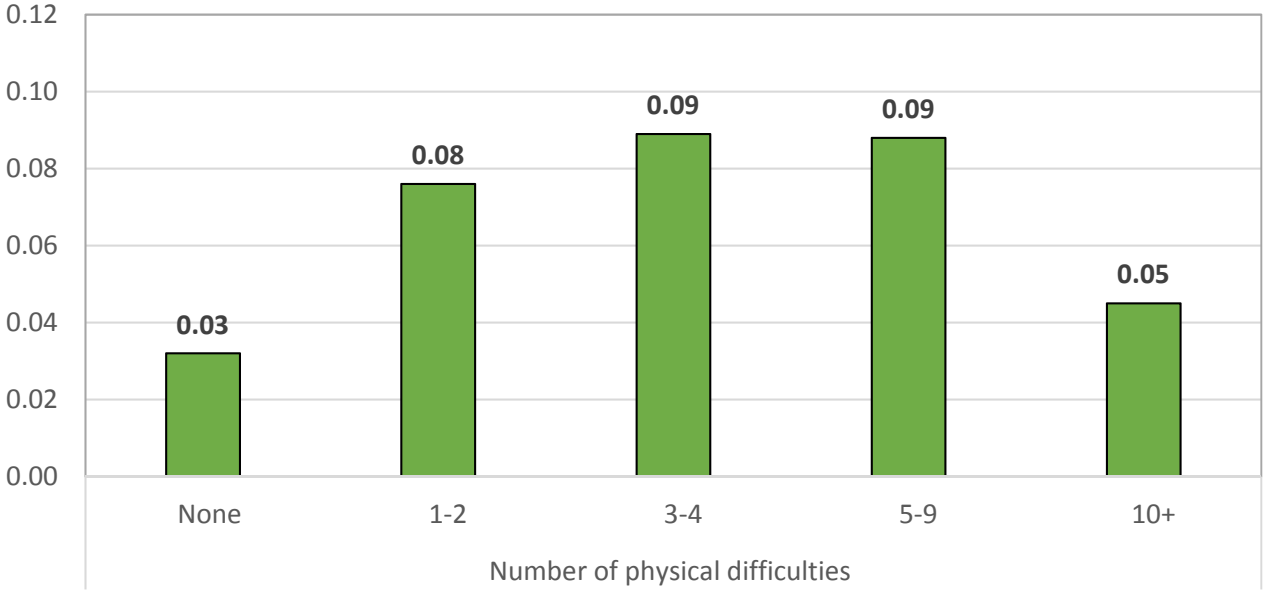
Figure 3b. Predicted probabilities of unmet need for care by types of living arrangements among older persons who reported needing help.



Source: 2012 Myanmar Aging Survey.

Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, household wealth, and total number of physical difficulties.

Figure 3c. Predicted probabilities of unmet need for care by number of physical difficulties among older persons who reported needing help.

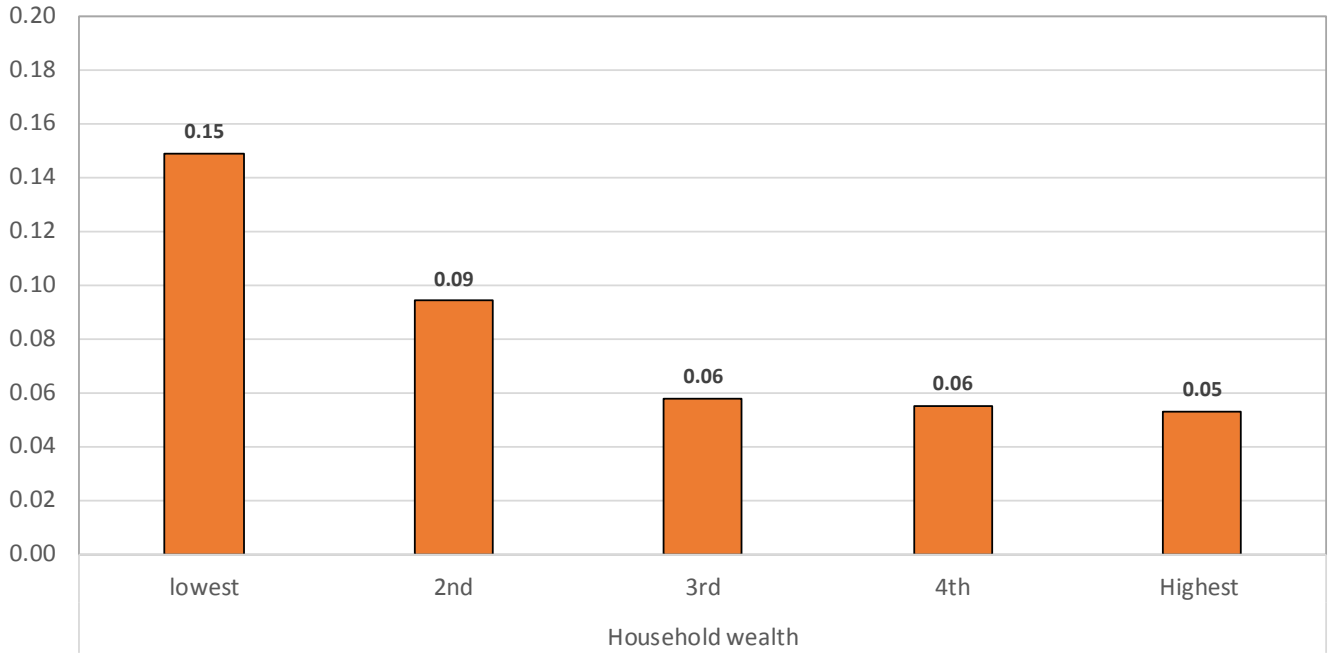


Source: 2012 Myanmar Aging Survey.

Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, household wealth, and living arrangements.

We find that about 8.7% of older people in Myanmar experienced unmet needs for care and 9.3% of care recipients reported receiving inadequate care. Results further demonstrate that household wealth, living arrangements, and number of physical difficulties are statistically significant determinants of unmet need for care. Results shown in Figure 3a indicate that, all else equal, a significantly higher proportion of elders from the lowest wealth quintile (14%) experienced unmet needs for care compared to those who are economically better off. Only 6% of those from the 2nd and 3rd quintiles and even lower proportions of elders from the top two quintiles (3%) reported unmet needs. Furthermore, findings show that living arrangement and levels of physical difficulty are strongly related to the odds of unmet need for care. According to Figure 3b, while only 4% of older persons that coresided with children experienced unmet needs, approximately one fourth of solitary living elderly (regardless of whether a child live nearby) and about 17% of elders who lived with spouse only reported not having their care needs fulfilled. Furthermore, evidence shown in Figure 3c indicates that the odds of unmet need for care significantly increase with increasing presence of physical difficulties. Holding other characteristics constant, only 3% of older persons without any physical difficulties reported unmet care needs. The proportions of unmet needs increase to 8% among those with 1-2 physical difficulties and 9% among those with 3 or more difficulties. The only exception is among those with 10 or more physical difficulties who are less likely to experience unmet needs for care.

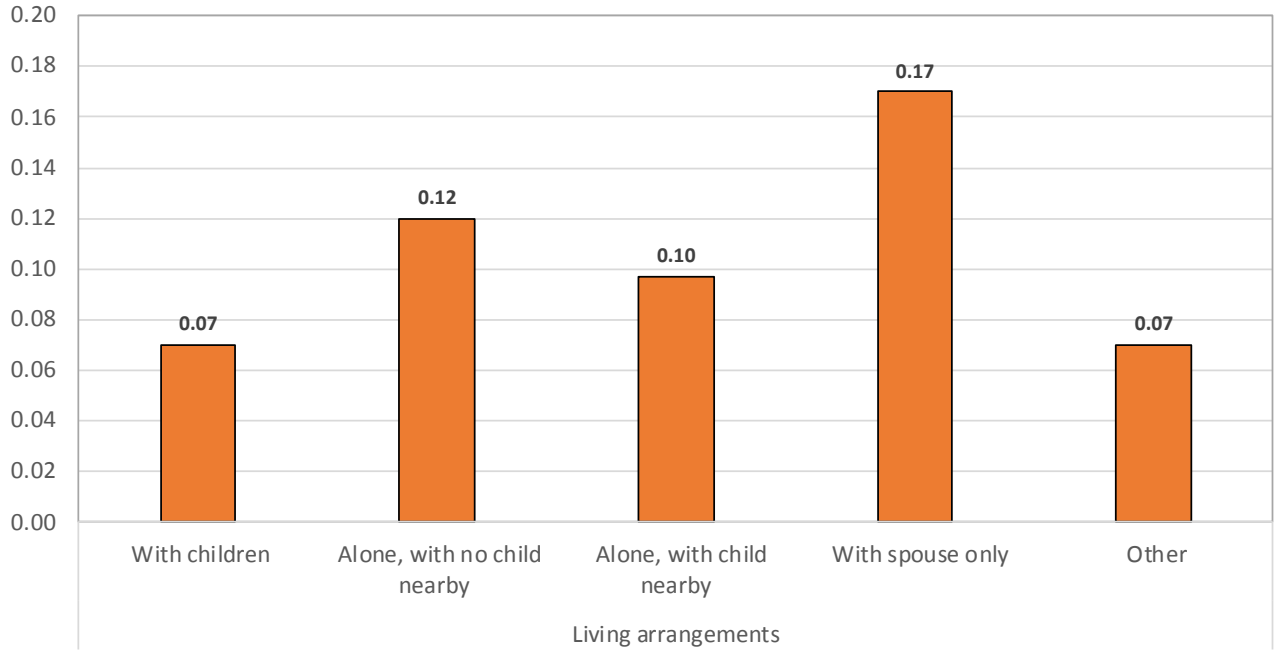
Figure 4a. Predicted probabilities of inadequate care for care by household wealth among care recipients aged 60 and above.



Source: 2012 Myanmar Aging Survey.

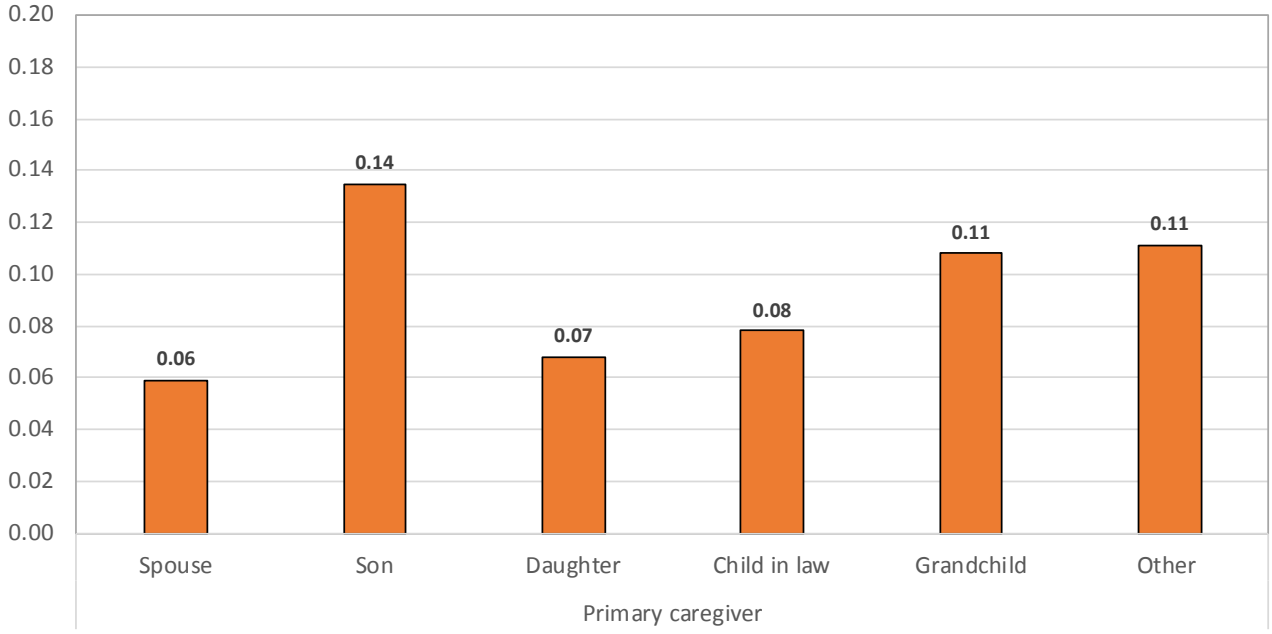
Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, living arrangements, number of physical difficulties, and type of primary caregiver.

Figure 4b. Predicted probabilities of inadequate care for care by types of living arrangements among care recipients aged 60 and above.



Source: 2012 Myanmar Aging Survey.
Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, household wealth, number of physical difficulties, and type of primary caregiver.

Figure 4c. Predicted probabilities of inadequate care for care by types of primary caregivers among care recipients aged 60 and above.



Source: 2012 Myanmar Aging Survey.
Notes: Predicted probabilities are based on binary logistic regressions and control for sex, age, marital status, number of children, location of residence, education, household wealth, living arrangements, and number of physical difficulties.

Multivariate results show that household wealth is one of the most important predictors of inadequate care among older people in Myanmar. Figure 4a indicates that 15% of elderly care recipients from the bottommost wealth quintile reported receiving inadequate care. Proportions experiencing insufficient care drop sharply to 9% among those in the 2nd quintile and 5%-6% among those in the top three wealth quintiles. Furthermore, we find that living arrangements and type of primary caregiver are independently associated with the likelihood of inadequate care. According to Figure 4b, given similar disability status and socio-demographic characteristics, care recipients who live with spouse only reported inadequate care (17%) more frequently than elderly solo dwellers and those coresiding with a child. The differences in receiving insufficient care between solo-living elders with or without children nearby are relatively small and not statistically significant. Lastly, results presented in Figure 4c show that care recipients whose primary caregiver is a son are more likely to report inadequate care compared to those with other care configurations. While 14% those being cared for by sons experienced insufficient care, between 6% and 8% of elders cared for by spouse, daughter and child-in-law (mostly daughter-in-law) reported inadequate care. This evidence suggests that preferences for women to be a primary care provider for older persons with long-term care needs appear strong in Myanmar. Results further indicate that all else equal about 11% of those cared for by a grandchild or by others experienced inadequate care.

7. DISCUSSIONS AND CONCLUSIONS

Based on the 2014 census and the 2012 Myanmar Aging Survey, this report provides empirical evidence for understanding the situation of disability among older persons in Myanmar. It also examines the roles that family members play to support frail elderly and gaps in long-term care. Our findings demonstrate that physical difficulties are quite common among persons aged 60 and older in Myanmar. Comparison with neighboring developing countries such as Thailand shows that older persons in Myanmar scored considerably worse on physical functioning and sensory impairments (Knodel et al., 2015; Teerawichitchainan & Loichinger, 2018).

Results nevertheless indicate that older persons in Myanmar commonly received regular assistance in daily activities from family members. Older person's living arrangements, particularly coresidence with adult children, is an important avenue for providing support to older persons with physical difficulties. Family networks are very strong in Myanmar, particularly when it comes to care provision for frail older persons (Teerawichitchainan & Knodel, 2018). Nearly all care recipients reported receiving the main assistance of daily activities from an immediate family member. It is very rare that care for older persons is outsourced to non-family members (e.g., domestic workers, friends or neighbors). The observed patterns of caregivers are consistent with Myanmar's bilateral kinship system which influences gender relations and gender role expectations within the

family. They likely also condition living arrangement preferences and intergenerational support for older persons. In this context, daughters are typically perceived to be emotionally closer to parents, more dependable, and more skilled in providing personal care for elderly parents. They are thus preferred over sons as a main care provider for elderly parents.

Poverty is widespread in Myanmar. The country's rapid economic development in recent years is contributing to poverty reduction and improvement in livelihoods in certain segments of the population. This change has put inequality into sharp relief, as evident in our findings related to socioeconomic disparity in disability and prevalence of care gaps. Given that care for frail elderly is almost always provided by family members who typically coreside with them, households that are economically better off are thus more capable of caring for their older-aged members. This is an area where communities and state can play a role to fill in the gap. The World Bank strongly recommends that countries in East Asia and the Pacific consider early adoption of systematic long-term care programs, ideally before the frail, elderly population becomes too large (World Bank, 2016). Our empirical assessment of the situation of old-age disability is thus timely and particularly relevant given that Myanmar policy makers are formulating policies and action plans to address population aging and its implications for the economy, health system, and society.

8. REFERENCES

Department of Population. (2014). *The population and housing census of Myanmar, 2014: Summary of the provisional results.* Yangon, Myanmar: UNFPA and Ministry of Population and Immigration.

Department of Population. (2017a) *The 2014 Myanmar Population and Housing Census, Thematic Report on Disability.* Census Report Volume 4-K. Yangon, Myanmar: UNFPA and Ministry of Population and Immigration.

Department of Population. (2017b) *The 2014 Myanmar Population and Housing Census, Thematic Report on the Older Population.* Census Report Volume 4-L. Yangon, Myanmar: UNFPA and Ministry of Population and Immigration.

Knodel, J., Teerawichitchainan, B., Prachuabmoh, V., & Pothisiri, W. (2015). *The situation of Thailand's older population: An update based on the 2014 Survey of Older Persons in Thailand.* Chiangmai, Thailand: HelpAge International East Asia and Pacific Regional Office.

Knodel, J. & Teerawichitchainan, B. (2017). Aging in Myanmar. *The Gerontologist,* 54(4), 599-605.

Teerawichitchainan, B. & Knodel, J. (2015). Economic status and old-age health in poverty-stricken Myanmar. *Journal of Aging and Health* 27(8):1462–1484.

Teerawichitchainan, B. & Knodel, J. (2018). Long-term care needs in the context of poverty and population aging: The case of older persons in Myanmar. *Journal of Cross-Cultural Gerontology* 33(2): 143-162.

Teerawichitchainan, B. & Loichinger, E. (2018). Sensory impairments among older persons in Myanmar and Thailand: Implications for functioning and wellbeing. Paper presented at the REVES@30: Past, present, and future trends in population health, University of Michigan, Ann Arbor, May 30-June 1, 2018.

United Nations. (2017). World Population Prospects: The 2017 Revision. Retrieved from https://esa.un.org/unpd/wpp/

World Bank. (2016). *Live long and prosper: Ageing in East Asia and Pacific*. Washington DC: World Bank.