SPECIAL ARTICLE

The Ones We Seldom See: Old Folks in Young Countries

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It has long been thought that demographic aging and its attendant implications for health and social services is primarily a problem for industrialized wealthy countries. Nothing could be further from the truth since most older persons (and an increasingly higher number) reside in low-income countries. Through a description of a home visit to older women in the small town of Gondar, Ethiopia, the general state of older persons in sub-Saharan Africa is addressed. **J Am Geriatr Soc 00:1-5, 2019.**

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Some older persons are almost invisible. To start with, they may be socially marginalized. Second, they may not come to the attention of anyone in the healthcare system—either because the services are not available or because they are too healthy. And especially, if they happen to live in a small town in sub-Saharan Africa, they might well go completely unnoticed. But still, if you look hard enough, you can find them—and it is certainly worth the effort.

Coming across Mrs Koyech Nigussie, an older lady in a small town in Ethiopia, required a few fairly unlikely preconditions. First, as academic physicians, my wife and I had to be crazy enough to go off to the small town of Gondar in northern Ethiopia for a part of our sabbatical. I had just stepped down after 10 years as the director of the Medical School for International Health[1,2] the day before we set out on this odyssey. Dedicated to teaching the principles of global health to all of its students, this school had long had a student exchange—in both directions—with the University of Gondar College of Medicine and Health Sciences, the second such institution to be founded (1954) and still considered one of the top medical schools in Ethiopia (see http://www.uog.edu.et/index.php/academic-units/college-of-medicine/).

Although we had previously sent faculty to visit this site and had hosted some of their senior physicians as well as students at our faculty in Israel, still as we were considering expanding the program, it seemed a good idea to see the setup with my own eyes.

As a part of my work in the Gondar teaching hospital, as a geriatrician I was asked to give talks on aging—the first on general gerontology and the second on the clinical approach to the older patient. My host, the impressive chief of internal medicine, was enthusiastic; the audience was attentive, asking some intelligent questions. I pointed out that while Ethiopia was demographically still a young country, at just over 3.5% aged 65 years and older, there were now more than 3 500 000 such souls living here. Furthermore, as is the case in most developing countries (and among the poor in the industrialized ones as well), such disadvantaged people tend to age more quickly; this probably is due to the difficult circumstances in which they were born, grew up, and moved through the life course into the older decades—that is, if they survived. To put the usual clever statement on its head, in sub-Saharan Africa, 70 is the old 80.[3]

At every age, as is the case in these parts, the average older person's functional status is lower than members of the same cohort who grew up under more favorable conditions. Thus, while there may well be "only" 3 500 000 officially older persons in Ethiopia, I pointed out that the truer number of functionally "aged" citizens may be more like 5 million or perhaps even somewhat higher. Finally, as the pace of the demographic transition was about to take off, I suggested to my colleagues that they pay close attention to what has happened to China in just a few short decades (Figure 1).

The day after the second lecture, I received an email from Dr Biruk Mulat, one of the bright first-year internal medicine residents, which read as follows,

Having you Professor Mark [being so addressed was a part of the academic medical culture there] at our hospital, here …. at our College of Medicine and Health Science, in Gondar, Ethiopia was inspiring and helpful. You have paved the way for us to see a new knowledge and approach to a set of patients whom we encounter on a daily basis but never gave a special

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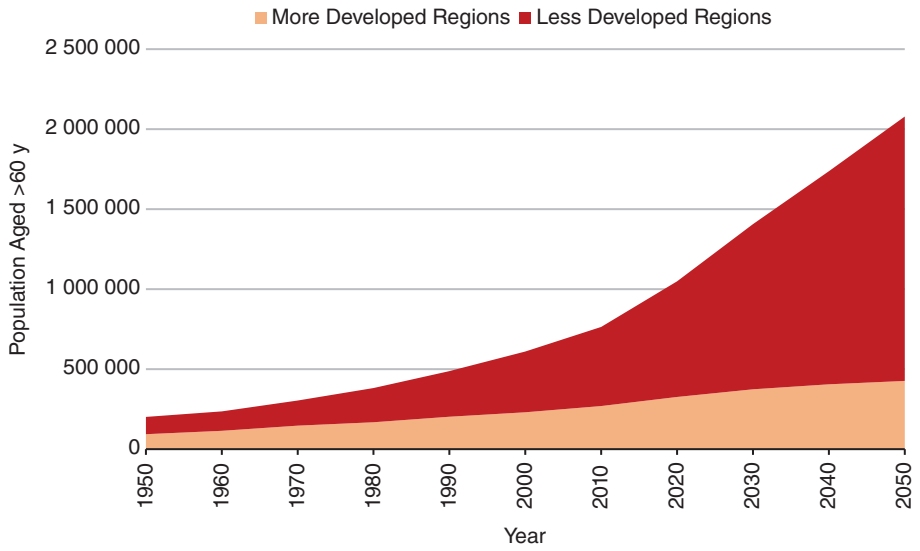

Figure 1. Absolute global population older than 60 years: less vs more developed regions. Source: United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019, custom data acquired via website: https://population.un.org/wpp/Download/Files/1_Indicators%20(Standard)/EXCEL_FILES/1_Population/WPP2019_POP_F08_1_TOTAL_POPULATION_BY_BROAD_AGE_GROUP_BOTH_SEXES.xlsx. Accessed September 18, 2019. [Color figure can be viewed at wileyonlinelibrary.com]

attention and thought to. Even though we deal with many elderly patients, we never had a specialist in geriatrics and we are new to the science. Listening to your lectures and presentations, I have come to understand how I should approach these set of people and the kind of problem they had, many of which I used to ignore. The lectures made me think on how I can improve my care.

Moreover, it was very interesting learning how the normal aging process occurs and the burdens that come with it. I think many policy makers and higher government officials need to hear it. I am living with my grandmother and you can imagine how thrilled I was to attend the lectures!

I offer this quote not to self-aggrandize, as I am sure any competent geriatrician who provided the same two introductory lectures would have elicited a similar response. My young fan had simply never been exposed to the "geriatrics approach," and he was absolutely ripe for it. But what really intrigued me was the fact that Biruk lived with his older grandmother. This arrangement I had learned was hardly uncommon in sub-Saharan Africa, where the number of human immunodeficiency virus (HIV)/AIDS orphans was huge (Unicef Press release. Orphans. June 16, 2017; https://www.unicef.org/media/media_45279.html).

Oftentimes, the only thing standing between a destitute childhood on the streets or in an overcrowded, underfunded orphanage and the possibility of a normal life was the existence of healthy grandparents with the means and willingness to bring up another set of young children. This was certainly not the case with my young friend, whose parents were fortunately alive; but still, how many medical students did I know who boarded with a grandmother?

I replied to Biruk, thanking him for his kind words and enquiring as to her health and age; as well, if she lived nearby, might it be possible to visit her at home? He replied that his grandmother was healthy and although most old people in Ethiopia did not know their exact age, he reckoned that she was most likely in her mid to late 80s. And yes, she would much welcome a visit.

In fact, Mrs N. lived just down the street, in a single room she had occupied all her life, just a 10-minute walk from the hospital entrance. Biruk lived in a little windowless room immediately adjacent to hers and had recently built a squat toilet and had added corrugated iron to the roof for her convenience and shelter just a few years back.

At the appointed hour, we walked out the hospital gate on the main road, soon turning up a rutted dirt track. As we approached her house, my excitement grew. As a geriatrician, I have always loved doing home visits, especially to my frail older patients, but this encounter was clearly going to be different. As we passed through a corrugated iron gate, we came to a small narrow compound where Biruk's grandmother was awaiting us, squatting regally on a low stool in front of a small ceremonial coffee ceremony tray, where a fragrant brew was being prepared by the young woman whom Biruk had hired to help his grandmother with her activities of daily living. We subsequently learned on interviewing this beautiful old lady that she was actually functional, but her devoted grandson wanted to be sure she lived as comfortably as possible.

As mentioned above, it turned out that Biruk was no HIV/AIDs orphan but had the extreme good fortune of having his grandmother living just a few hundred meters from the hospital in which he was training. He was from the resort town of Bahir Dar, just a 3 hours' drive south of Gondar, where his own mother lived. The grandmother, of course, was delighted to have her grandson living with her; and Biruk seemed happy with this arrangement.

We exchanged pleasantries and gifts: my wife gave Mrs Nigussie chocolate from Israel (the Holy Land! most Ethiopians are deeply religious Christians); she gave us a beautiful bag of roasted nuts, at the same time insisting that her grandson immediately put them into my wife's purse so that

we could not refuse to take our present home. I thanked Biruk's grandmother for so graciously hosting us, and we got directly to the question of her actual age.

As is the case in many traditional societies in which births were not registered and birthdays fairly irrelevant, one has to approach the establishment of chronological age via extrapolation through the patient's historical memory. Mrs Nigussie clearly remembered the Italian Occupation of Ethiopia, which began before World War II and had ended in 1941. She recalled being old enough at the time to understand the significance of the British defeat of the Italians in the East African Campaign. Conservatively figuring she could not have been less than 5 to 6 years old then, my best guestimate of her chronological age, agreeing with her grandson, was at least in the mid-80s.

That being said, from a physiological point of view (despite my earlier theorizing about early biological aging brought on by a difficult life course), she was actually in extremely fine shape. Truly, she was an exception proving the rule.[4,5] In fact, it would be difficult to find as fine an example of "successful aging" anywhere. Grandmother had all her own teeth, did not need glasses, was completely clear of mind, and was firm of grip. She walked the few kilometers to church every Sunday morning without any difficulty—up a steep hill—and easily managed her new squat toilet.

Just as important, despite being widowed three times and losing children over the years, Mrs Nigussie seemed content with the cards life had dealt her. The mutual love and respect between grandson and grandmother was truly inspiring (Figure 2). To my surprise, the old lady had no complaints at all. Biruk's grandma took no medications and had only been sick once in her life with pneumonia, which had been successfully treated at home. We talked for a while but eventually, as it was getting dark, I thought it was time to go. It is not exactly fun driving in a little three-wheeled *tuk tuk* through the pitch black and potholed streets of Gondar after the sun goes down. We took our leave with much mutual blessings and thanks.

Figure 2. Grandmother and grandson.

After this visit, I asked myself if, in fact, Mrs N. was the exception that proves the rule that older people are having a rough time in the low-income countries (LICs)? It turns out that this is most probably the case, at least for many older Ethiopians. For every healthy older person like Biruk's grandmother, there are many who are far less fortunate and live without any social or health network to support them. A good example of the travails of older people in sub-Saharan Africa is the older Ugandan lady about whom I and a colleague recently wrote in this journal.[3] In many such places, the situation of older persons, especially women, is often dire due to a concatenation of pernicious influences, including weak or unenforced laws meant to protect their legal rights.

Furthermore, as is increasingly the case in much of the world, the migration of predominantly younger people from the countryside into cities leaves many older persons marooned in distant villages. Many older persons in the LICs are not only cut off from any real health services, but often are isolated from their own younger family members and even from those of their neighbors or clansmen and women who in the past may have helped them in their time of need. Here, once again, Biruk's grandmother was the exception that proved the rule.

And what about health status? Mrs N. was the rare example of an extremely healthy older individual. That being said, studies have shown that a growing number of middle-aged and older people in LICs are now experiencing the "diseases of development," such as hypertension, diabetes mellitus, ischemic heart disease, cerebrovascular disease, and chronic obstructive pulmonary disease (COPD). For example, the Global Burden of Disease (GBD) group found that just over half (54%) of total mortality in the country is now caused not by infectious disease, but rather by noncommunicable diseases (NCDs).[6]

Specifically, for Ethiopia, the prevalence of risk factors for these illnesses is high and rising. For example, although the data are still sparse, the 2016 national The WHO STEPwise approach to noncommunicable disease risk factor surveillance (STEPS) Survey examined the rates for men of tobacco use (7.3%) and low physical activity (46.6%), with a still low, by comparison to industrialized countries, rising prevalence of overweight (8.6%) and obesity (4.4%). And surprisingly, given the fact that this is a rich agricultural country with most (80%) of her citizens living in the countryside, an astonishing 98% of the Ethiopian population reported an inadequate consumption of fruits and vegetables.[7]

For their part, the increasing prevalence of classic risk factors for ischemic heart and cerebrovascular disease (and probably at least in part for Alzheimer disease) is worrisome. For example, with respect to hypertension, the mean salt intake in Ethiopia was high, at 8.3 g/d. While still low by the standards of wealthier countries, the prevalence of hypertension was 16%—higher in urban dwellers (22%) and lower in the rural areas (13%). Even more troubling, echoing the situation in wealthier countries of just a few decades ago, only 40% of hypertensive patients have been so diagnosed; only 28% of these are taking medication, and only a quarter are under

Figure 3. The author with Dr Shitatye Alemu Balcha at a break from teaching rounds. [Color figure can be viewed at wileyonlinelibrary.com]

control. Simple arithmetic suggests that just 3 of 100 Ethiopian hypertensives are well controlled.

My own anecdotal experience during 3 months on the medical wards in Gondar indicated that the hemorrhagic strokes many of the patients were admitted with were caused primarily by uncontrolled hypertension; and these strokes occur at a younger age than we now see in industrialized countries, boding poorly for those who actually manage to reach old age. These surveys also pointed to a high rate of COPD (caused not by tobacco use but mainly by exposure to indoor cooking stoves) and an abundance of rheumatic heart disease as well as cancer—especially breast and cervical.

In addition to the still low rates of smoking, there is some other good news. Despite all of the above, in keeping with data from around the world and more specifically for East Africa due to better (albeit not yet good) attention to risk factors as well as an overall rise in socioeconomic status, the GBD study indicated a fall between 1990 and 2017 of 19% in age-standardized age-related disease burden; this compared to an overall global decrease of 23%.[8]

Looking at cognitive decline (again, from which Biruk's grandmother did not have), other studies have indicated not surprisingly that some older persons in LICs already have and others will not be spared the ravages of these diseases. A fascinating study, funded by the Bill and Melinda Gates Foundation, reported that the global number of individuals living with dementia worldwide has more than doubled from 20.2 million in 1992 to almost 44 million today, with dementia now being the fifth leading cause of death.[9] This rise was fueled mainly by an overall increase in the absolute number of older persons on the planet. In fact, at least in developed countries, we are seeing an age-standardized fall in prevalence of Alzheimer disease, at least (excuse the expression) per capita. It remains to be seen whether this will be the case in countries such as Ethiopia.

More latterly, in addition to continuing to struggle with acute infections and maternal and child illnesses, as alluded to above, people in the LICs are now also exposed to NCDs. This combination has been termed the "double burden," and there is much hand wringing over how these poor countries will cope. As my colleague Dr Shitaye Alemu,[10] a gifted internist and enlightened champion of Ethiopians with NCDs (especially diabetes) wryly offers (Figure 3), "In Ethiopia we suffer not from a double but from a *triple* burden of disease. To the first two add a struggling, underfunded and inefficient healthcare system and you will see how difficult our present situation is." A recent report from Age International supports my colleague's impression.[11] Given the rising number of older persons with their attendant challenges to LICs, we might soon want to talk about a "quadruple burden."

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There are hundreds of millions of older people around the globe[12] and soon now the absolute majority of them will be living in the poor and disadvantaged parts of the world, such as those I had observed and where I had worked in Ethiopia. My young colleague's grandmother is a wonderful example of the millions of robust and functional older people living among us. However, a significant minority of older folks everywhere will eventually become frail and require some kinds of support, few of which exist yet in the LICs. If we in the rich world are so still so ill prepared for providing appropriate services for very old, one can only imagine the challenges facing sub-Saharan Africa[3,11] and other resource-poor countries. A wag once put it, " First the West got rich, then it got old." But what if we observe a significant number of countries, like Ethiopia, that are aging before they can afford it?

However, returning to our home visit, at least for the foreseeable future, it looks like Biruk's grandmother will help him as much as he looks after her, reminding us once again that older persons can be as much a resource as a burden. Uncovering this "geriatric gem" in such an unlikely place was for me a real privilege. No doubt there are many other such people on our planet, but we must actively seek them out. As I learned with just a little effort, they are not so hard to find; furthermore, as I certainly did with my student's grandmother, we will all benefit from the discovery.

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REFERENCES

1. Margolis CZ, Deckelbaum RJ, Henkin Y, Baram S, Cooper P, Alkan ML. A medical school for international health run by international partners. Acad Med. 2004;79(8):44-51.
2. Medical School for International Health Website: https://msih.bgu.ac.il/. Accessed August 5, 2019
3. Clarfield AM, Rosenthal A. Aging in Sub-Saharan Africa: sub-par? J Am Geriatr Soc. 2017;65(6):1136-1138.
4. Clarfield AM. Healthy life expectancy is expanding. J Am Geriatr Soc. 2018; 66:200-201. see response from Olshansky: http://onlinelibrary.wiley.com/doi/10.1111/jgs.15167/full].
5. Clarfield AM. Response to Dr. Olshansky. J Am Geriatr Soc. 2018;66:198-199. https://doi.org/10.1111/jgs.15188 [see resonse from Olshansky: http://onlinelibrary.wiley.com/doi/10.1111/jgs.15189/epdf].
6. Institute for Health Metrics and Evaluation (IHME). GBD Compare Data Visualization. Seattle, WA: IHME, University of Washington. 2017. http://vizhub.healthdata.org/gbd-compare.

7. Ethiopia NCDI Commission. The Ethiopia Non Communicable Diseases and Injuries (NCDI) Commission Report Summary. Addis Ababa, Ministry of Health. 2018. https://static1.squarespace.com/static/55d4de6de4b011a1673a40a6/t/5bfc17ab21c67c558106119e/1543247788342/Ethiopia+NCDI+Commission+Report+Summary+FINAL.pdf. Accessed September 18, 2019.
8. Chang AY, Skirbekk VF, Tyrovolas S, Kasselbaum N, Dielerman JI. Measuring population ageing: an analysis of Global Burden of Disease Study 2017. Lancet Public Health. 2019;4:e259-e267.
9. GBD 2016 Dementia Collaborators. Global, regional and national burden of Alzheimer's disease and other dementias, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet Neurol. 2019;18:88-106.
10. Watts G. Lancet profile: Shitaye Alemu Balcha: committed to rural health care in Ethiopia. Lancet. 2019;393:1797.
11. Age International CEO's Visit to Ethiopia: Ethiopia Country Overview: Situation of Older People and Help Age in Ethiopia. Age International. London, England; 2019
12. United Nations Department of Economic and Social Affairs. World Population Prospects 2019. Highlights. https://www.un.org/development/desa/publications/world-population-prospects-2019-highlights.html. Accessed September 18, 2019.