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Literature Review

# Healthy Ageing: Raising Awareness of Inequalities, Determinants, and What Could Be Done to Improve Health Equity

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## Abstract

**Purpose of the Study:** Social and scientific discourses on healthy ageing and on health equity are increasingly available, yet from a global perspective limited conceptual and analytical work connecting both has been published. This review was done to inform the WHO World Report on Ageing and Health and to inform and encourage further work addressing both healthy aging and equity.
**Design and Methods:** We conducted an extensive literature review on the overlap between both topics, privileging publications from 2005 onward, from low-, middle-, and high-income countries. We also reviewed evidence generated around the WHO Commission on Social Determinants of Health, applicable to ageing and health across the life course.
**Results:** Based on data from 194 countries, we highlight differences in older adults' health and consider three issues: First, multilevel factors that contribute to differences in healthy ageing, across contexts; second, policies or potential entry points for action that could serve to reduce unfair differences (health inequities); and third, new research areas to address the cause of persistent inequities and gaps in evidence on what can be done to increase healthy ageing and health equity.
**Implications:** Each of these areas warrant in depth analysis and synthesis, whereas this article presents an overview for further consideration and action.

**Key Words:** Healthy life expectancy, Life course, Social determinants of health, Health policy, Research agenda

Populations throughout the world are rapidly ageing: About 13% of the global population is 60 years and older in 2015, and this proportion is expected to almost double by 2050, to 2.1 billion people (United Nations, 2015). This phenomenon is worldwide, with the majority of older people already residing in low- and middle-income countries where the fastest population ageing is occurring. On one hand, life expectancy continues to increase, even for the oldest age groups and in countries that are already at the frontier (Mathers, Stevens, Boerma, White, & Tobias, 2015; Oeppen & Vaupel, 2002): The average global life expectancy at age 60 is estimated to be 20 additional years (World Health Organization [WHO], 2015a). Yet on the other, global averages mask huge differences in health status across and within countries for life expectancy as well as risk, disease, and disability at older ages (for example, see Hambleton et al., 2015; Murray et al., 2012; WHO, 2012).

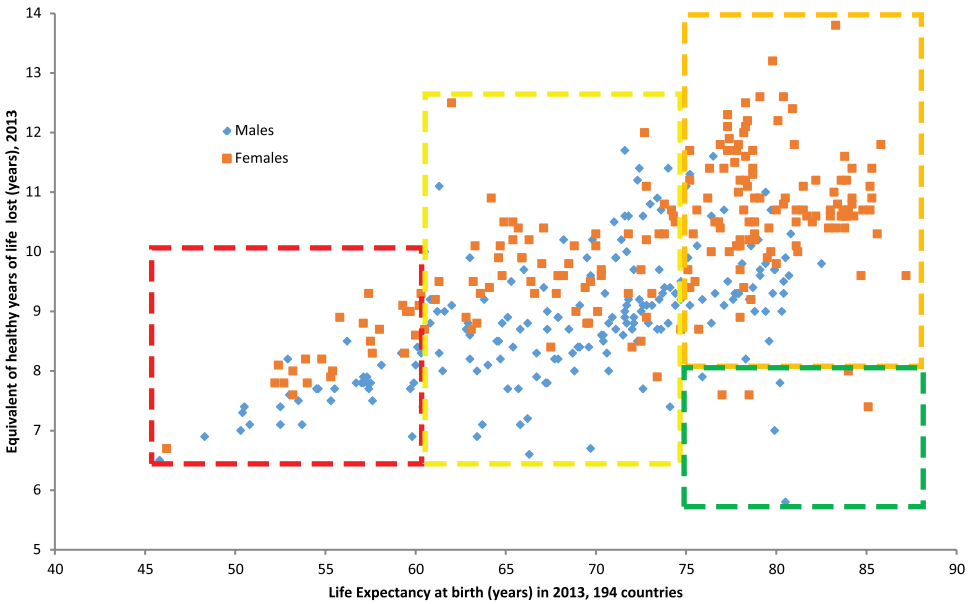



**Figure 1.** Life expectancy at birth, plotted against equivalent of healthy years of life lost since birth, males and females, 194, WHO Member States, 2013. Source: WHO Global Health Observatory Data Repository (WHO, 2015a).

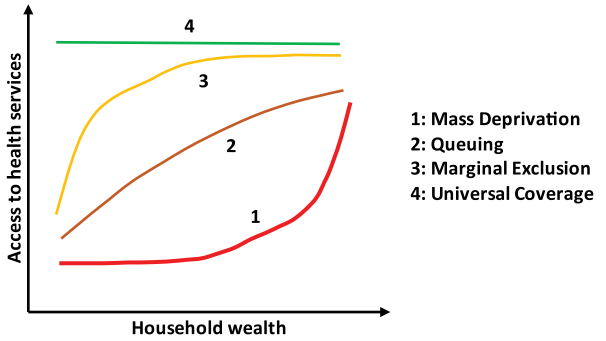
Absolute differences in health status across countries are striking and represent health inequalities. The WHO documents across 194 countries, a difference of 38 years for life expectancy at birth, 37 years for healthy life expectancy at birth, and 13 years for life expectancy at age 60 years (WHO, 2015a). To visualize the range of inequalities, Figure 1 illustrates average life expectancy at birth, reflecting age-specific mortality, plotted against healthy years of life lost since birth, due to disability or disease (defined as the difference between life expectancy at birth and healthy life expectancy at birth), for 194 countries, by sex.

Figure 1 also offers a basis to consider which health inequalities could be labeled as health inequities, that is, differences in health that are judged "unnecessary, avoidable, unfair, and unjust" and warrant remedial action (Anand, Peter, & Sen, 2004; Braveman & Gruskin, 2003; Whitehead, 1992). For example, we identify four groups of countries, given current age- and sex-specific mortality, morbidity, and disability rates. The red box includes about 30 countries where on average, people cannot expect to live beyond 60 years of age, yet can expect to have up to 10 healthy years of life lost. The yellow box includes about 100 countries that have substantial variations in healthy life expectancy across countries with similar levels of life expectancy at birth. The orange box includes another 60 countries, a continuation of the yellow box, with the added observation that longer life expectancies do not automatically correlate with more years of healthy life, something particularly important for women. The green box includes a few countries that document it is possible, on average, to extend life expectancy and minimize years of healthy life lost.

Relative differences in health status—or factors that contribute to health across the life course—can also represent health inequalities. Examining relative differences across levels of socioeconomic characteristics within a population (Adler et al., 1994) can also provide insights on whether inequalities can be labeled as health inequities (Box 1). For example, physical activity positively contributes to older adults' health (WHO, 1998). Yet do differences in activity levels exist that could be considered avoidable and unfair? To explore whether systematic differences in physical activity exist, by socioeconomic characteristics, we conducted a basic analysis on adults 50 years and older, included within the WHO multicountry longitudinal cohort Study on Global AGEing and Adult Health (SAGE), Wave 1, a nationally representative household survey of six countries (Kowal et al., 2012). Figure 2 illustrates the proportion of men and women who engage in physical activity at WHO recommended levels (Selivanova & Cramm, 2014; WHO, 2015b), by country and highest level of education completed. Except in Mexico, in five countries (China, Ghana, India, Russian Federation, and South Africa) older men and women with less than primary education are significantly less likely to engage in at least 150 min of physical activity per week than those adults with more education.

These examples highlight inequalities in older adults' health, and that can be considered for the most part as health inequities. Furthermore, evidence documents when many inequities accumulate over the life course, due to exposure to multiple health, environmental, and social risks or barriers, these shape initial differences in health status as well as health trajectories well into older ages (Kuh, 2007; Lui et al., 2010). A recent European task force reviewing evidence on social determinants of health and older people, agreed that the distribution of factors that lead to differences in the health of older adults, reflect the accumulated disadvantage, discrimination, and experience

## Box 1. Interpreting Social Patterns: Implications to Improve Healthy Ageing Across the Social Gradient




The figure illustrates the importance of measuring the pattern of inequality across the entire population (whole of gradient) to understanding differences that might be considered as health inequities (WHO, 2013a, 2013b). A whole of the gradient approach means that the entire population is monitored (not only ratio of the poorest in comparison with the least poor or richest subgroups of the population), and systematic, social patterns are particularly explored. These patterns can be important inputs to policy making.

When only the poorest do not have access to a service (Line 3: marginal exclusion), policies probably need to focus on expanding provision to particular groups that are excluded or marginalized. When almost everyone does not have access to a service (Line 1: mass deprivation), more wide-ranging or universal strategies are usually required and can be successful. For example, analysis of the WHO Study on Global AGEing and Adult Health (SAGE) study data across six low- and middle-income countries indicate that high levels of coverage (Line 4) in cancer screening in older adults are feasible even in countries with high income inequality, where there is substantial progress toward universal health coverage (Lee, Huang, Basu, & Millett, 2015).

When policies aim to level up social gradients (moving from Line 1 to Line 4), being fairer can result in significant health benefits for older adults and improvement in health equity. For example, around one in five cases of Alzheimer's disease worldwide is estimated to be attributable to low educational attainment (population attributable risk of 19.1%) with almost 6.5 million attributable cases globally in 2010 alone (Norton, Mathews, Barnes, Yaffe, & Brayne, 2014), which underscores the need for primary prevention strategies. In many settings, the pattern will fall somewhere between the two extremes (Line 2: queuing), and a combination of strategies will be needed, with specific policies to increase access to care by older adults taking into account of each national context (Peltzer et al., 2014).

The WHO Commission on Social Determinants of Health noted that a policy maker would know that health inequities are getting better over time, if there is documented evidence that there is a progressive "raising" and "flattening" of the health gradient (WHO, 2008), meaning that the health of all social groups is improving toward a level closer to that of the most advantaged social group (Line 4). Longitudinal studies are thus needed to assess if inequities are stagnant, worsening, or improving.

of underlying inequities such as in health, education, and living and working conditions (Grundy et al., 2013).

## What Are the Causes of Differences in Health of Older Adults?

Given the wide range of health inequalities and health inequities observed, we ask (Sadana, 2013; Solar & Irwin, 2007)

(1) For older adults, where do health differences across countries and within countries originate, if we trace them back to their deepest roots?
(2) What pathways lead from root causes to these stark differences in health and longevity observed at the population level?
(3) Where and how should we intervene to reduce health inequities and improve healthy ageing?

Before addressing these questions, we agree that healthy ageing, as an outcome and goal, is more than the absence of disease, disability, or death. This follows the WHO definition of health (WHO, 1948) and views of older adults themselves (Perkinson & Solimeo, 2013; Phelan, Anderson, LaCroix, & Larson, 2004). It includes aspects of physical, functional, mental, and social well-being and is an interactive, socially embedded process. Beyond the scope of this article, a vast literature debates what constitutes good health and well-being for older adults, largely from high-income, "Western" countries—and as a corollary, the theories, categories, assumptions, policies, institutions, and strategies to understand and address not only challenges to good health in older age but also the roles of older adults in society. This includes the demographic, social, and economic challenges associated with population ageing and balancing the needs and rights of different age groups and age cohorts (Daniels, 2008).

Yet it is relevant to note that recent critiques and reviews point out that a much more inclusive and holistic definition of good health in older ages is needed to guide public policy, than for example, the definition of successful ageing (Rowe & Kahn, 1987, 1997). It should reflect sufficient levels of physical and cognitive functioning so that older adults can do what they value [for example, see Martinson & Berridge's (2015) critique of successful ageing] and not overemphasize older adults' instrumental role

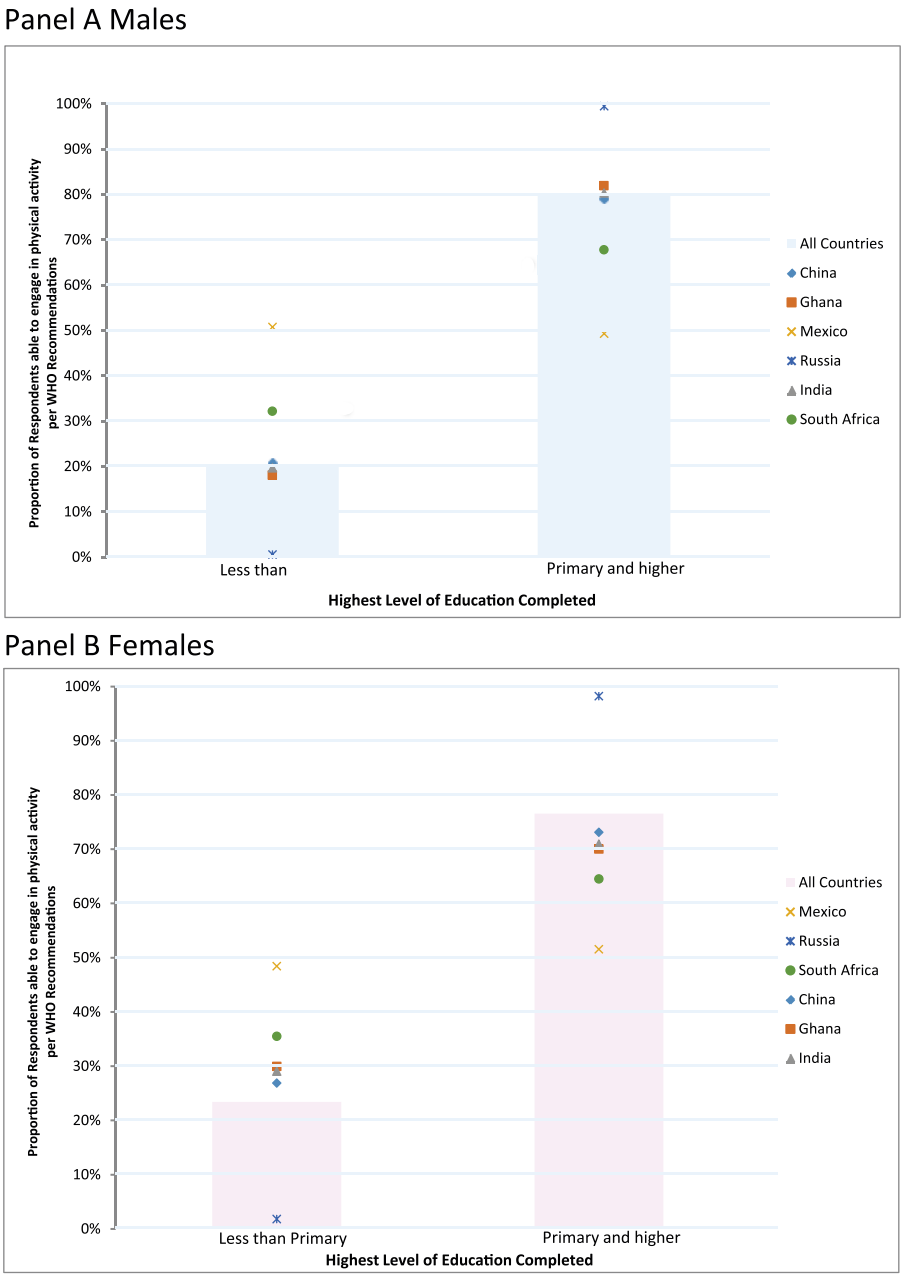



**Figure 2.** Proportion of (**A**) male and (**B**) female respondents able to engage in physical activity at WHO recommended levels by country and education level, adults 50 years and older, WHO Study on Global AGEing and Adult Health (SAGE) Study, Wave 1, 2007–2010.

toward economic productivity [for example, see Moulaert and Biggs' (2013) review of active and productive ageing]. Moreover, with population ageing gaining importance worldwide, alternative, social theories and concepts of good health for older adults are being crafted from a wider range of countries and perspectives [for example, see Liang & Luo (2012) on harmonious ageing]. These should inform global policies. Most recently, Rowe and Kahn's (2015) summary of successful ageing critiques acknowledges similar conclusions and outlines a way forward: The need to understand a broader range of views, including more components such as social factors and more inclusive definitions of ageing well, enables wider applicability outside of Western, high-income countries, and adopt a life-course perspective.

Recognizing debates and suggestions, the WHO World Report on Ageing and Health defines "healthy ageing" as "the process of developing and maintaining the functional ability that enables well-being in older age." Functional ability is determined by "the intrinsic capacity of the individual (i.e. the combination of all the individual's physical and mental – including psychosocial – capacities), the environments he or she inhabits (understood in the broadest sense and including physical, social and policy environments), and the interaction between these." (WHO, 2015c). This definition also draws on WHO's (2001) International Classification of

Functioning, Disability and Health and Sen's (1985) functionings and capabilities approach toward human development. As outlined in the WHO report, it also extends "active ageing" (WHO, 2002) by promoting a stronger response by health and social care systems to meet the needs and rights of older adults. Thus, in addition to length of life, the ability to function and interact within a supportive environment that accommodates declines in intrinsic capacity is an important outcome for healthy ageing.

To address Questions (1) and (2), we unabashedly start with the framework developed for the WHO Commission on Social Determinants of Health (Solar & Irwin, 2007). We also reviewed previous models that have focused on understanding the historical production of inequalities and of health inequities in particular (Smith, 2003; Diderichsen, 1998; Krieger, 2014; Sen, 1992). We have also incorporated findings from more recent analyses of the Commission's framework that refine it to describe and explain the health of older adults and the experience of healthy ageing (Sadana, Foebel, Williams, & Beard, 2013; Wallace, 2012; Zaidi, 2014). For example, it is well documented that genetic, environmental, and social influences are important determinants of longevity, health, and overall well-being. Wallace (2012) reviewed evidence on how social determinants affect the health of older adults and points out that social determinants of health impact ageing and the life course by at least four pathways:

- socioeconomic influences during the prenatal period and early childhood, based on critical periods and events that have direct or indirect latent impacts;
- cumulative health impact of social, economic disadvantage, or privilege;
- sorting people into different life-course trajectories, which shape opportunities and chances as they age; and
- recognizing intergenerational transmission of health inequities that alter healthy ageing trajectories from birth.

To help address Question (3), we conducted a detailed review of all evidence on how to narrow health inequities, synthesized by the WHO Commission on Social Determinants of Health, including its nine global knowledge networks, from an ageing and health perspective. Even if the Commission did not focus explicitly on ageing and health, life course and cumulative effects of experiences are mentioned throughout. Similar to Solar and Irwin's assessment (2007), concerning opportunities to intervene, we acknowledge that previous models and frameworks for promoting ageing and health have paid insufficient attention to political variables; differential impacts and consequences of social and biologic stratification; consideration of sources of resilience or strengths (not only vulnerabilities), that could accumulate over time; and that health and social systems, and the built environment, are also intermediary determinants that can mitigate (or exacerbate) inequities or initial declines in intrinsic capacity.

Finally, we find Bass' (2013) challenge to develop an improved model of ageing and health, relevant for gerontologist, very pertinent. We offer one approach to increase underlying theoretical foundations (for example, discussed in Biggs, Lowenstein, & Hendricks, 2003); recognize multiple determinants; and support identification of multidisciplinary solutions that account for "diverse findings and viewpoints." Specifically, with some adjustments to the Commission's framework, we propose an approach that brings together several theories that help identify factors that contribute to levels and distribution of health in older ages: (a) biomedical causation (privileging genetic endowment, body functions, and medical care); (b) social causation (where social position determines levels of health and its distribution through intermediary factors); and (c) life-course perspectives (recognizing the importance of time and timing in understanding causal links between exposures and outcomes within an individual's life course, across generations, and in population-level trends in health and survival). Together, these form an ecosocial or multilevel, multidomain framework to highlight factors and plausible pathways to healthy ageing and identify entry points to reduce health inequities.

## Determinants, Pathways, and Policy Entry Points

Figure 3 lists contributing factors in four blocks: (a) the natural–socioeconomic–political environments, or overall context; (b) genetic inheritance and socioeconomic position; (c) intermediary determinants, and (d) healthy ageing outcomes of interest.

The framework starts with root causes, attributed to the physical–socioeconomic–political context. As Solar and Irwin (2007) describe, this is a deliberately broad term that refers to the spectrum of factors in society that cannot be directly measured at the individual level, yet shapes health across the life course and diversity observed across individuals, groups, and populations. "Context therefore encompasses a broad set of structural, cultural, natural, and functional aspects of a social system whose impact on individuals tends to elude quantification but which exert a powerful formative influence on patterns of social stratification" and thus on people's health opportunities over the life course. These are also referred to as the "causes of the causes."

➢ Almost all of these underlying determinants are amenable to policy change, even though measureable improvements require sustained, coordinated actions. Yet in the context of predictable population ageing, these are very relevant targets for policy actions, given the expected returns on investments, and are fundamental if transformational change is to be realized.

The second block comprises of two components influenced by the overall context that together assign individuals to different positions in society: genetic inheritance and social

position. The first, genetic inheritance, is often referred to as "nature": Yet it can reflect biologic intergenerational influences, meaning that genes can be influenced by the environment of our parents and that the genes individuals inherit can be altered by subsequent environmental exposures and behaviors, both during gestation and once born, over the life course. The second, a significant part of "nurture," is social position, including the social construction of age. Within each society, the degree to which material and other resources, prestige and power are unequally distributed reflects social stratification. The resulting difference in people's lives can be portrayed as a system of social hierarchy and provides insight on how different groups experience healthy ageing and longevity. Marital status and household structure are important for older adults, in addition to more standard categories of social position listed in Figure 3.

- Actions that dismantle discrimination, and level up socioeconomic conditions, will likely uplift the trajectory of healthy ageing for all people.

The third block shapes the healthy ageing process through intermediary determinants. These include individual-level differences in strengths, exposures, and vulnerabilities, which reflect social stratification and its interface with genetic inheritance, as well as health-promoting and health-damaging processes and conditions. Reflecting our review of the WHO Commission's evidence, key intermediary elements that play an important part in explaining healthy ageing, as these link underlying determinants and individual experiences, include critical events or states, such as early childhood education, injuries, loss of spouse, abuse, or high debt as well as physiobiologic markers.

As Solar and Irwin (2007) describe, these in turn lead to differential consequences of health for more and less advantaged individuals and groups. This bundle of intermediary factors enable or not, the "conversion of resources and primary goods" toward achieving functioning in peoples' lives, and more generally, the ability to achieve what people have reasons to value (Sen, 1992). The intermediary

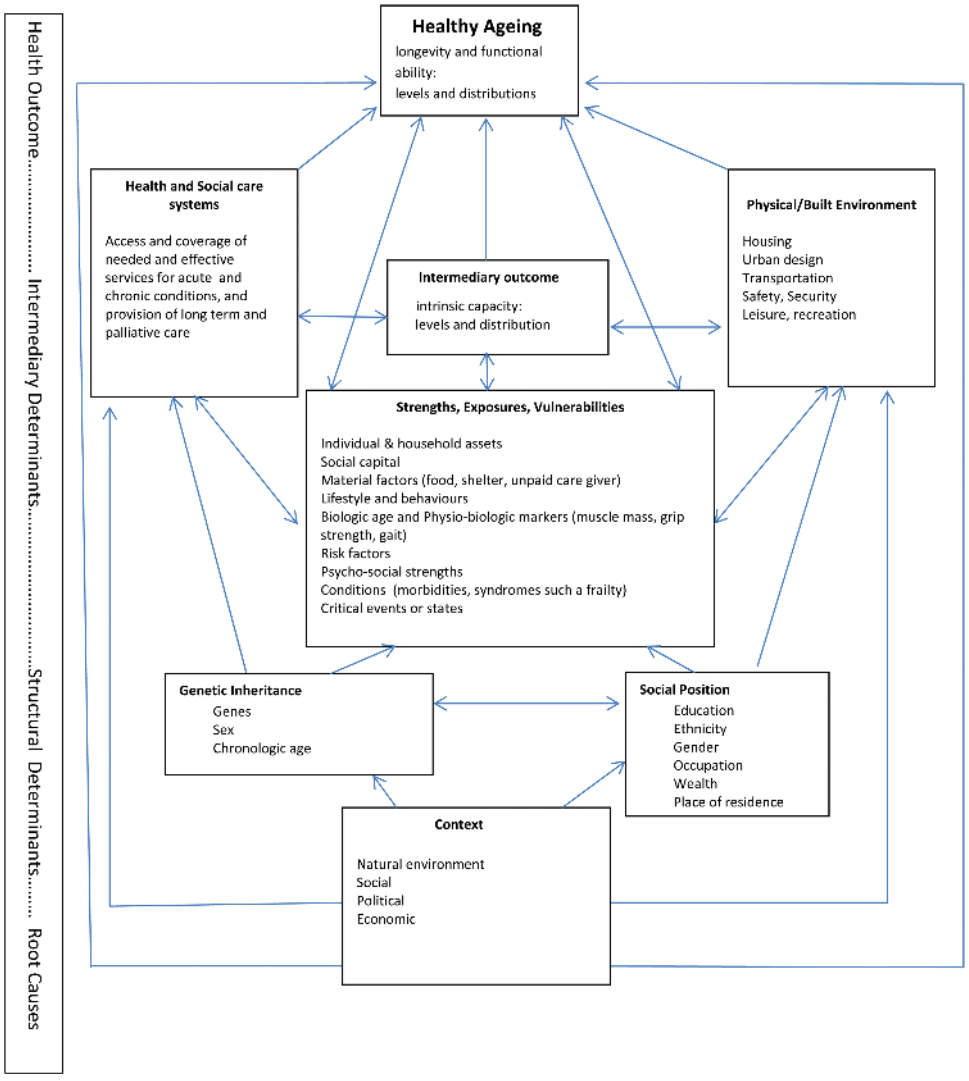



**Figure 3.** Factors that contribute to levels and distribution of health in older age. Adapted from Solar and Irwin (2007) and WHO (2008).

health outcomes relevant to healthy ageing are intrinsic capacity, such as physical and cognitive capacities.

- In each of the above listed elements, policies at different levels (household, communities, regional, national, or global) can improve these determinants and their contribution to realizing healthy ageing. A vast literature exists in this area: The novelty is to place these elements as intermediary determinants that (a) acknowledges the root causes of the level and distribution of strengths, exposures, and vulnerabilities (e.g., that these do not simply reflect individual choice) and (b) considers what are the acute and longer-term opportunities to sustain and increase intrinsic capacity and functional ability through population and clinical strategies. For example, relevant to older adults, actions that identify prefrail and frail individuals, and then support increased physical activity and appropriate nutritional supplements, can potentially reverse frailty and restore physical and cognitive capacities (Michel, Cruz-Jentoft, & Cederholm, 2015).

Two sectors or systems are particularly important for improving healthy ageing from an equity perspective. These are also considered as intermediary social determinants: health and social care systems, and the physical or built environment. Each has multiple opportunities to improve healthy ageing, including (a) crafting policies within each area that promote healthy ageing across the life course, that mediate structural and other intermediary determinants; (b) providing leadership and partnership to other sectors; and (c) as pointed out by the WHO Commission on Social Determinants of Health, mediating the differential consequences of illness in people's lives, where they "live, work, learn and play." This means, for example, to contribute to minimizing the burden of negative consequences that widen the gap between individuals and social groups (e.g., such as regressive financing mechanisms where the poor subsidize the rich; expecting poor families to take care of older family members without support or respite, relevant to high-, middle-, and low-income countries alike; or in practice serve to exclude the poor from access to needed services). It also means empowering families, care givers, and local communities to support older adults where they live, as this is where most older persons want to experience healthy ageing. For example, the age-friendly cities and communities network advocates to enhance the built environment by putting in place "structures and services to be accessible to and inclusive of older people with varying needs and capacities" (WHO, 2007); such interventions are being documented in a global database of age-friendly practices.

The final block represents the core outcomes of the healthy ageing process, longevity and the ability to experience healthy ageing (a range of functional abilities, spanning physical, cognitive, and social). Although preliminary, this framework could be further developed and provide multiple opportunities to better document pathways and policy entry points toward healthy ageing and health equity. Approaches to translate promising entry points to proposals for action are briefly raised in the next section.

## What Could Be Done to Reduce Health Inequities—Differences that Are Avoidable and Unfair?

Building on policy entry points, strategies must not just improve conditions for the best-off or the statistical average of all older persons but to "level up" the inequalities that are judged as inequities, across the whole social gradient (Box 1). Effective solutions sometimes have to be different approaches for different socioeconomic and demographic groups, otherwise actions could inadvertently increase social stigma, widen inequities, and further erode solidarity (Popay et al., 2008; Wood, Sutton, Clark, McKeon, & Bain, 2006). Good governance supporting a whole of government and whole of society response—leadership and coordination mechanisms that engage and hold accountable all government and nongovernmental sectors and enable civil society organizations and older adults themselves to contribute—can support social cohesion, respect decisions reflecting fair processes, catalyze broad based support, and increase accountability (Blas et al., 2008; WHO EURO, 2012).

Action to improve healthy ageing and reduce health inequities, therefore include (a) action within the health sector or health system, including social care and (b) action on the broader social determinants of health—for the latter, these are actions that often lay outside of the health sector or health system, such as the built environment or economic policies. Even if the dividing line between (a) and (b) can vary in each country depending on the boundary of the health sector and health and social systems, multisectoral and intersectoral approaches are essential toward improving health equity. The health sector must take a lead, catalytic role in many areas, yet it must also accept to align and contribute to the goals and actions led by other sectors. For the health system, this is crucial, as health programs generally do not implement interventions that address structural or broader determinants or root causes of inequities; in addition, government sectors leading ageing policy or programs are often outside of the health sector. Table 1 briefly summarizes the strongest evidence from the WHO Commission that highlights policy entry points specific to healthy ageing, within the health sector, and in other sectors.

Yet there are many challenges. Stakeholders and actors need to recognize in each context, why many health inequities persist over time and accumulate in older age. Obstacles include that differences in health status of older adults are not judged as unfair or unjust, perhaps due to social norms, ageism, and other forms of institutionalized discrimination; that there are a complexity of causes;

**Table 1.** Areas for Action Over the Life Course to Enhance Healthy Ageing and Health Equity

| Life-course stage | Possible entry points for actions and interventions | |
|---|---|---|
| | Health—Health systems have a direct managerial role for the availability, accessibility, acceptability, and quality of (Benach, Muntaner, & Santana, 2007; Gilson et al., 2007; Grundy et al., 2013; Kwan & Petersen, 2010; Labonté et al., 2007; Malarcher, Olson, & Hearst, 2010; Mendis & Banerjee, 2010; Sen & Ostlin, 2007; Whiting et al., 2010) | Other sectors—Health systems have a catalytic leadership role to address (Benach et al., 2007; Gilson et al., 2007; Grundy et al., 2013; Irwin, Siddiqi, & Hertzman, 2007; Jouve, Aagaard-Hansen, & Aidara-Kane, 2010; Kjellstrom et al., 2008; Marmot, 2012; Popay et al., 2008; Roberts & Meddings, 2010; Sen & Ostlin, 2007; Whiting et al., 2010) |
| Older adults | Tertiary preventive and treatment services and long-term care scaled up in light of demographic change and population ageing, increasing quality and reducing discriminatory treatment / increasing patient interaction | Community and home settings / infrastructures / opportunities for walking / exercise; social inclusion / food insecurity and malnutrition / reducing discriminatory practices / reducing exposure to risk factors for NCDs and CDs / Inclusion in insurance schemes, favoring universal schemes / prevention of elder abuse |
| Adults | Secondary preventive and treatment services | Public pensions and publicly financed social services / nonregulated markets and outlets / advertising and media exposure / reducing exposure to risk factors for NCDs and CDs |
| Young adults | Secondary preventive services | Labor-market, including employment conditions (pension schemes, health and social insurance, unemployment benefits), reducing exposure to risk factors for NCDs and CDs |
| Adolescents | Primary preventive services, including oral health and prevention of early and/or unwanted pregnancies | Reducing exposure to risk factors for NCDs and CDs / exposure to environmental and occupational risks /family and community dysfunction / inclusion in insurance schemes, favoring universal schemes |
| Children | Primary preventive services, including prevention of malnutrition and obesity | Labor-market, including employment conditions; early child development / inclusion in insurance schemes, favoring universal schemes / reducing exposure to risk factors for NCDs and CDs |

*Note*: CD = communicable diseases; NCDs = noncommunicable diseases.

lack of evidence on what can be done or local mechanisms on how to put knowledge in practice; the reality that the health sector in many countries are neither resourced nor positioned to catalyze change; as well as many competing priorities for action within the health system and across public and private sectors (Anand et al., 2004; Eyal, Hurst, Norheim, & Wikler, 2013; WHO, 2008). In general, there is evidence that health systems which successfully strive for health equity tend to share several broad features (Blas and Sivasankara-Kurup, 2010; Gilson, Doherty, Loewenson, & Francis, 2007; Sadana & Blas, 2013). There is also growing evidence for strategies health systems can put in place to support healthy ageing from an equity perspective (Bloom, Mahal, & Rosenberg, 2012; Fernando, Arora, & Crome 2011; HelpAge, 2013, 2014, 2015; Marmot, 2012; Prince et al., 2015; Yip & Hsiao, 2014) These include

- **catalytic leadership, processes and mechanisms that encourage intersectoral action** across public and private sectors to promote healthy ageing and that cooperate to meet the expectations of these other sectors;
- **data collection at least by age and sex throughout the life course**, and also by key social characteristics such as income, race, ethnicity, geographic location, among others, that enables the identification of socially patterned differences important for older adults, with absolute and relative differences monitored over the entire social gradient;
- **strong health system functions, including oversight and governance:** policies, regulations and incentives in place to ensure that older adults have access to services where ever they live, their age, or social or economic circumstances, without discrimination or financial burden;
- **progressive realization of universal (not voluntary) health coverage**, including particular benefits to children and older adults, socially disadvantaged and marginalized groups, and others who are often not adequately covered (Box 2);

## Box 2. Universal Health Coverage and Healthy Ageing

All people in a society should be able to experience healthy ageing and fair access to the resources that can make this a reality. WHO promotes that the path toward universal health coverage (UHC) requires a deliberative process in each country to develop health policies and deliver quality services that extend coverage also to all older adults without financial burden—as 100% population coverage is the basis for UHC (WHO, 2010). This includes identifying and negotiating what is the service package for healthy ageing (that could reflect services across life stages) and benefit packages for older adults that reflect essential services, supportive care, and pharmaceuticals, for example, that promote, maintain, and improve physical and cognitive functioning irrespective of disease, risk factor, or condition. It also means increasing both the level and progressivity of funding and the pooling of resources from across the entire population (e.g., different age groups and households). This promotes equity, as older adults' out-of-pocket spending on health services could be eliminated, while their contributions through mandatory, prepayment mechanisms would reflect their ability to pay (e.g., not their disease status or level of functioning).

Yet how can countries make decisions to expand UHC that incorporate equity concerns? WHO (2014) recently produced guidelines on ethical approaches to expand coverage of services, in a fair, deliberative way. Every country will need to consider its context; for example, across the six countries included with the WHO SAGE Study, catastrophic health spending ranged from about 8% in South Africa to almost 46% in India, even among older people with insurance (Goeppel, Frenz, Tinnemann, & Grabenhenrich, 2014). Three key recommendations could benefit policy processes and decisions that incorporate services to promote healthy ageing:

(1) Categorize services into priority classes. Relevant criteria include those related to cost–effectiveness, priority to the worse off, and financial risk protection
(2) First expand coverage for high-priority services to everyone. This includes eliminating out-of-pocket payments while increasing mandatory, progressive prepayment with pooling of funds
(3) When doing this, ensure that disadvantaged groups are not left behind. These will often include low-income groups and rural populations, both relevant for older adults.

The Chilean government's AUGE plan (Explicitly Guaranteed Universal Access plan), launched in 2005, provides one example of a deliberative process to expand UHC that is inclusive of older adults. Between 2005 and 2015, the number of services included within its package increased from 25 conditions to 80, most recently representing provision of services addressing about 60% of the total burden of disease. The selection of conditions/treatments to include was the result of a multistage process where burden of disease, cost–effectiveness, supply of medical resources, and social preferences were considered. Of the 80 current conditions, 7 are specifically targeted to older adults and accumulated over 2.4 million cases between 2005 and March 2014, which represented 11% of the total AUGE plan (Paraje & Infante, 2015):

(1) Hip replacement to persons with hip arthritis for people 65 years and older;
(2) Refractive errors (65 and older);
(3) Orthotic devices (65 and older);
(4) Treatment for light or moderate knee arthritis (55 and older);
(5) Integral oral health (60 and older);
(6) Bilateral hypoacusia requiring hearing devices (65 and older);
(7) Ambulatory pneumonia (65 and older).

Even if these seven reflect health services primarily for morbidities and physical conditions concentrated among older adults, this is a major step forward to expand coverage and support functioning. Most services included within AUGE address conditions that have a higher prevalence among older adults (such as acute myocardial infarction, cataracts surgery, depression, and several types of cancer), though older adults are not specially targeted.

- **comprehensive approach to understand the broader determinants of healthy ageing**, and the differential exposures and vulnerabilities that individuals and groups may be exposed; and how these approaches can be integrated within care for adults with complex multimorbidities and long-term care needs;
- **primary health care–centered integrated delivery model for older adults**, which focuses on population-based prevention, health promotion, and disease management, with effective coordination between primary, secondary, and tertiary health care providers, underpinned by effective financial protection and with links to social care;
- **health equity concerns incorporated into public health programs spanning communicable and noncommunicable conditions** (such as cardiovascular disease, diabetes, injury prevention and rehabilitation, nutrition,

food safety, oral health, mental health, tuberculosis, neglected tropic diseases, alcohol abuse, and tobacco use), as well as for conditions that to date are often age dependent (i.e., dementia, stroke, chronic obstructive pulmonary disease; vision, mobility and hearing impairments), for which the burden of disease arises more from experiencing disability and functional decline than from mortality;

- **identification and provision of key services** (appropriate, effective, accessible) care across life stages, taking stock that primary prevention in adults aged younger than, for example, 60 years will improve health in successive cohorts of older people; and recognizing that much of the potential to reduce disease burden and improving functional status will come from more effective primary, secondary, and tertiary prevention;
- **work force trained, managed, and deployed**, with an appropriate skill mix and competences to deliver essential services for older adults, in urban and rural settings;
- **do not reinforce inequities**, such as discrimination through ageism—in planning, regulations, the way services are delivered, good workforce mix, financing schemes; considers that chronologic age should not be the main criteria to assess health status, nor need for services; addresses signs of elder abuse; and
- **organizational arrangements and practices that involve different population groups**, age groups and civil society organizations that advocate for older adults and "age friendly" societies more generally—within a fair process and participatory decision making.

Currently, all countries have different starting points, yet commitment to take steps and to act for the long term is possible at every level of development. For example, universal health coverage provides an important platform to identify, negotiate, and provide health services and potentially, social services to older adults. For example, the Chilean government's AUGE plan (Explicitly Guaranteed Universal Access plan) is a program that selected a number of conditions and treatments to include within the country's health service delivery package aimed at the entire population, as well as targeted to specific groups, including older adults (Box 2). Although social services and long-term care are not yet included in the benefit package, guarantees include timely access to treatment and financial protection from catastrophic expenditures related to such treatments, key pillars of universal health coverage (Paraje & Infante, 2015). Other experiences from Latin America also show that it is possible to implement measures to mitigate income inequalities through social transfers and improve the health of older adults that reach the entire population (HelpAge, 2013).

Many higher income countries are considering ways to reduce spending on health and overutilization of services, including many in Western Europe that have relatively low out-of-pocket expenses for health services compared with other regions in the world. Documenting equity in healthy ageing remains relevant in these settings as well. A recent investigation in Germany of older adults' (57–84 years) out-of-pocket expenses for health (covering inpatient care, outpatient physician and nonphysician services, medical supplies, pharmaceuticals, dental prostheses, and nursing care) found significantly lower financial burden for the wealthiest 20% of the population as compared with the poorest 20% (Bock et al., 2014). Whether policy objectives addressing population ageing and health are to contain costs, limit the rate of increase, or expand coverage of services, information on social gradients are crucial in thinking though potential consequences of draft policies, crafting new policies that have equity-enhancing features, or evaluating the impact of existing policies, on older adults and their families.

Although all countries could start addressing the health of older adults in a more systematic way, more evidence that is applicable in diverse contexts is also needed. The final section considers issues that could help develop a research agenda from an equity perspective that fully embraces health systems and health status as part of the multiple determinants that contribute to healthy ageing.

## What New Research Areas Are Likely to Give Insights on How to Improve Healthy Ageing and Health Equity

It is clear that there are important knowledge gaps that if addressed, could better identify, implement, and evaluate what can be done in a wide variety of settings to support older adults with different priorities and needs, to improve and extend the experience of healthy ageing and longevity. Key issues that need more attention include

- **shifting conceptualizations of the health of older adults**—due to a persistent focus on biomedical or disease outcomes, with limited understanding of how ageism reduces health opportunities, or without a consideration of how the variations between individuals or within groups may require different strategies;
- **enhancing research methods that investigate the distinct context of older adults**—as health systems research or clinical intervention studies often exclude older adults, or do not consider their particular characteristics in comparison with younger adults, without norms or standards for measuring intrinsic capacity or functional ability over time or within their context;
- **strengthening evidence available to support the design of policies and interventions in diverse contexts and subpopulations**—as most evidence on what can be done by health and social sectors or broader actions across diverse policy areas comes from high-income countries, with few evaluations of interventions assessed with longitudinal, population representative cohort studies or evaluated from equity-enhancing perspectives;
- **increasing political engagement and participatory processes that draw on evidence and put in place mechanisms to improve healthy ageing**—although principles and evidence can support agenda setting and development of options for policies and interventions at the

global level, catalyzing change is much more complex and unique to each setting, involving negotiation, coordination, and accountability across stakeholders; and
- **implementation research** to guide real-life policy formulation and translation of policy into concrete action within the health sector as well as across other sectors—this would include ongoing supportive research during implementation, as well as case study research to foster learning across countries on processes and experiences.

Important questions that older adults and policy makers ask remain to be answered. Also needed are approaches to overcome challenges relating to synthesis and translation of evidence into better policy and practice; improvements in data, methods, and measurement needs; and encouraging innovation. Clearly, research policy making is neither a linear nor simply a technical process (Pang et al., 2003). It requires building up of relationships, collaborations, skills, and resources to be implemented that are shaped by stakeholder's motivations, time perspectives, and priorities, with the subject of healthy ageing being no exception (Kokkonen, Rissanen, & Hujala, 2012; Loeb et al., 2001; Martin-Matthews, Tamblyn, Keefe, & Gillis, 2009; Wald, Leykum, Mattison, Vasilevskis, & Meltzer, 2014). An analysis of more recent research strategies on ageing and health, which reviews key themes (Schoeni & Ofstedal, 2010), public views (Law, Starr & Connelly, 2011), and fit with national priorities (Pacheco Santos et al., 2011), would be useful. This will help shape and identify national or more local research priorities addressing ageing and health in specific countries, as well as broader strategies addressing older adults with different capacities and abilities in all countries. Together, this would provide systematic insights on how stakeholders have coordinated priorities and developed action plans given their context. Ideally, reflecting older adults needs and preferences, a broad range of stakeholders should agree to address the most important knowledge gaps and ensure mechanisms and resources to do so (Moyer, LeFevre, & Siu, 2013).

Moreover, research priorities could consider several strategic areas aligned to an eventual, comprehensive model of healthy ageing. If these acknowledge a broad range of structural and intermediary determinants, these priorities also become relevant to integrate within research agendas set from a whole of government and health policy and system perspectives. This could take into account the breadth of issues (Burholt & Dobbs, 2012; Lowenstein, Katz, & Biggs, 2011; Luigi, Kennedy, & Longo, 2014; Martial, Mantel-Teeuwisse, & Jansen, 2013; Pillemer, Wells, Wagenet, Meador, & Parise, 2011), the range of knowledge producers and collaborators (Felix et al., 2014; Mara dos Santos, 2014; Underwood, Satterthwait, & Bartlett, 2010), the need for better research designs and methods addressing health and social services (Morrison, 2013; Wysocki, Butler, Kane, & Shippee, 2013) including approaches to measure levels and distribution of functional ability (Cosco, Muniz, Stephan, & Brayne, 2014; Seals & Melov, 2014; Yat-sang Lum, 2013), when to intervene at critical points across the life course (Evans, Kiran, & Bhattacharyya, 2011; Flicker, 2013), generalize results to more places (Adam et al., 2012; Nair, Shu, Volmink, Romieu, & Spiegelman, 2012; Suzukii et al., 2009), and mitigate the consequences of accumulated inequities (Winkler, 2013), particularly in the following four strategic areas (adapted from Östlin et al., 2011):

- **Underlying conditions and circumstances**—structures, norms and processes that shape and differentially affect a person's likelihood to age well across the life course within a given society and across countries.
- **Integration across health and social systems**—their organization, coverage of essential services and performance that affects the health of older adults at home, in communities, or within institutions, for example, promote health, integrate support, mitigate vulnerabilities and illnesses, and strengthen physical, cognitive, and social capacities and abilities.
- **Broader environmental context and mechanisms**—that together optimize functional ability taking into account a person's level and trajectory in the experience of healthy ageing, at household, community, workplace, or other locations.
- **Measure and understand challenges and assess impact of action**—ways to incorporate older adult's preferences, better describe trajectories over the life course and identify inequities, and evaluate what works in different contexts.

## Conclusion

Although there are many topics of fundamental importance to population ageing and health, this article aims to connect healthy ageing and health equity. After highlighting stark differences in health status globally, in particular life expectancy and healthy life expectancy, we consider theories that should contribute to a model of healthy ageing to explain levels and distributions observed, incorporating important structural and intermediate causes of inequalities and inequities. We then modify the WHO Commission on Social Determinants' of Health framework to take account of factors that are particularly relevant and explain differences in the level and distribution of important health outcomes for older adults, including factors at early and later stages of life. Policy and action entry points are also highlighted that could be led by the health sector or by other sectors and that are likely to address determinants and reduce inequities with the aim to support people to function well into older ages. We also highlight features health systems can put in place to support greater equity in healthy ageing and mitigate the consequences of accumulated inequities, including policies that aim for increasing universal health coverage inclusive of older adults. These strategies are relevant for high-, middle-, and low-income settings. Finally, several

questions and challenges remain, and gaps in knowledge raise potential areas for future research, and improved research processes.

The task ahead is to agree on key concepts and definitions, understand plausible pathways, and develop comprehensive multisector and intersectoral approaches to support healthy ageing and in particular older adults. This needs to include identification and evaluation of interventions at different points in time that can help identify what works to improve healthy ageing in an equity-oriented way, in different contexts.

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