## Comment

## How "old age" was withdrawn as a diagnosis from ICD-11

The classification of the causes of death and diseases dates back to the 18th century. The International Statistical Institute adopted the first international classification of diseases in 1893. After 1948, WHO assumed responsibility for publishing the International Classification of Diseases (ICD) as a global, multilingual catalogue of known human diseases, medical conditions, and mental health disorders, to standardise disease diagnosis. The 11th revision (ICD-11) was launched on Jan 1, 2022. The ICD is a platform for systematic statistical data collection, which are analysed and interpreted to compare causes of mortality and morbidity in different countries or regions of the world over time. Embedded within the ICD are diagnostic categories that are very influential in the operation of global health-care systems. Clinically, the diagnostic categories form the basis for recording and tracking statistics about illnesses; health data pertaining to primary, secondary, and tertiary care; and causes of death on death certificates. Diagnostic codes are also embedded within the ICD and are used as tools for decision support, resource allocation, and financial reimbursement for health-care services and delivery. Large-scale use of data based on ICD diagnostic codes includes adjudication of insurance coverage, other payment systems for health-care services, planning and administration of patient quality and safety, and largescale research.

WHO had proposed the inclusion of the term "old age" in ICD-11 under the MG2A diagnostic category of symptoms, signs, or clinical findings not elsewhere classified. The new "old age" label in ICD-11 was intended to replace the R54 code of "senility", previously used in ICD version10. The decision to replace the R54 code resulted from increasingly negative connotations around the term "senility", which had been infrequently used in the past three decades. Unfortunately, the term "old age", referring to people by an undefined chronological age, led to very serious real-world challenges for being used inappropriately and erroneously.

An additional extension code (XT9T) was included in the causality section of ICD-11,<sup>1</sup> which defined "ageingrelated" as "caused by pathological processes which persistently lead to the loss of organism's adaptation and progress in older ages". The intention for including the additional code was to provide a greater focus on the biological aspects of ageing in global health policy and better opportunities for the development of new biological therapies. However, because of societal ageism, and because biological ageing and chronological ageing are not synonymous, the addition of these two codes left the ICD-11 proposal with potential for unintended negative consequences. We outline the rationale and process by which the terms "old age" and "pathological" were ultimately withdrawn from ICD-11.

Ageing is not a pathological process and is globally accepted as a normal human attribute, with longevity being a privilege that we all hope to enjoy. Although age is a known risk factor for many diseases, there is evidence that chronological age in humans, is highly heterogeneous and is phenotypically expressed with substantial interindividual variability, which increases with age.<sup>1</sup> Independently, chronological age is known to be of limited use for individual diagnosis, prognostication, and treatment guidance. Similarly, chronological age is of limited use in planning and promoting population health, healthy ageing, and social care.

Old age is not a disease, but ageism is. Decades of implicit bias in the form of societal ageism has been openly expressed during the COVID-19 pandemic,<sup>23,4</sup> with massive societal economic costs and health costs.<sup>5,6</sup> Violations of older people's human rights have led to increased global attention and sensitivity to the topic of ageism. According to WHO's report on ageism, published in March, 2021, globally one in two people are ageist.

Such ageism means that older people have been left behind with respect to their rights to health for decades, but especially during the COVID-19 pandemic. A major global movement in response to WHO's proposal to include "old age" as a diagnosis in ICD-11 was rapidly organised and launched by several sectors, including non-governmental and professional organisations, driven mostly by civil society organisations at national, regional, and international levels. Data on ageism were contemplated, and the global societal implications were judiciously considered on the matter of including "old age" as a diagnosis in ICD-11. For example, in Brazil, vigorous national debate and media involvement ensued as a result of several campaigns, namely



oa

For more on the WHO Report on ageism see https://www.who. int/teams/social-determinantsof-health/demographic-changeand-healthy-ageing/ combatting-ageism



the #VelhiceNãoÉDoença (Old Age is Not a Disease) campaign. There were consistent and clear messages from all stakeholders, calling for WHO's Committee on ICD-11 to rescind "old age" as a diagnosis. Ultimately, we arranged a meeting with WHO's ICD-11 committee in October, 2021, to review a proposal to consider alternative terms to "old age", which was subsequently submitted via ICD-11's official platform. Three terms were suggested as replacements: (1) "senescence," as a biological term, refers to the condition or process of deterioration with age. Cells undergo senescence throughout the lifecourse, but the process increases with ageing; (2) "ageing associated decline in intrinsic capacity" is a term that recognises the biological, physiological, and psychological processes of ageing and their effect on a person's intrinsic capacity; and (3) "frailty" is a measure of increased risk for developing an age-associated syndrome that stems from reduced reserve across multiple physiological systems and decreased resilience to daily stressors. Frailty is a strong predictor of mortality, independent of age, sex, multimorbidity, and functional status.7-10 Furthermore, in certain circumstances, frailty can be reversed, so the term in itself should not carry a negative and fatalistic value as a construct.

Because advanced age is associated with an increased risk of more complex medical conditions, it might be helpful to have a gauge of when advanced age might be contributing to a person's health concerns. Such a gauge should be useful to identify and procure the specific type and amount of care that each person might require for functioning as optimally and independently as possible. The gauge should be helpful in reducing premature institutionalisation, hospitalisation, and exposure to low value investigations and interventions.

To be clear, WHO's inclusion of "old age" in ICD-11 was not intended to cast age or ageing as a disease, nor to consider ageing in terms of the number of years since birth, or greater than a particular age category. The intention was to recognise that the physiological process of ageing has a detrimental effect on a person's intrinsic capacity. This intention is consistent with WHO's healthy ageing framework, which evolved from previous influential WHO work: Active Ageing. Increasingly, healthy ageing is recognised as a fine balance between maximising intrinsic capacity and enhancing social and environmental supports, all aimed

at optimising the older person's functional capacity, autonomy, and independence.

In the context of healthy ageing, "ageing associated decline in intrinsic capacity", in very sharp contrast to the diagnosis of "old age", would be fully aligned with and reflect the ICD's purpose, and accomplish the ICD's envisioned resolutions. With global ageing, an urgent imperative exists to accurately assess population health and to holistically target maintenance and optimisation of physical and cognitive function, which would also be possible by enhancing ICD's reporting system with use of the term "ageing associated decline in intrinsic capacity". We believe there would be a substantial shift of focus with use of this term, from a static to a dynamic assessment of the person's health and capacity across a life trajectory. Consideration of the past, current, and future potential for improvement in the health and intrinsic capacity of older people would lead to appropriate interventions. Furthermore, the use of intrinsic capacity forms a basis to assess current and future needs for support, to have the best quality of life possible. The value proposition of using the concept of intrinsic capacity in ICD-11 is its emphasis on incorporating the spheres of prediction and prevention in observing the dynamic, complex equation of a person's health status.

Importantly, intrinsic capacity is related to frailty, but it is not the same concept. WHO introduced the concept of age-related decline in intrinsic capacity to ICD-11, which is defined as the composite of all physical and mental capacities that a person can draw on, including biological reserve. By contrast, frailty is a clinical state that can be reversed, and it is characterised by the person's increased vulnerability to endogenous and exogenous stressors, which could arise from substantial loss of intrinsic capacity.<sup>10</sup>

The response to our global advocacy effort was ultimately fruitful. WHO felt that our "dialogue helped to find a way forward in this matter" and allocated a dedicated process for review of the term "old age". The review led to the retraction of the term "old age" as a category title and index listings from ICD-11, having been replaced by "ageing associated decline in intrinsic capacity". Additionally, use of the term "pathological" as an extension code (XT9T) to describe the normal process of "ageing" has been replaced by the much more appropriate term, "biological". ICD's diagnostic categories substantially affect patient care, health-care management, and resource allocation. In the context of highly prevalent and ubiquitous societal ageism, erroneous and arbitrary use of the "old age" code, based on chronological age alone, would compromise safety and quality of health care for older people. Furthermore, clinical decision making based on ageism would lead to failure in identifying modifiable risk factors and treatment options, resulting in poorer health care and quality of life outcomes. Opportunities for primary, secondary, and tertiary prevention, symptom management, and social and environmental supports could be overlooked.

All new ICD-11 codes must be evaluated and monitored closely with respect to frequency and specific circumstances of their use. Techniques of simple descriptive analyses, longitudinal analyses, and target trial analyses frameworks will help us to better understand the patterns of usage of ICD codes, trajectories of health-care use, and causes of death. Finally, a better understanding of health-care factors affecting older people will lead to safer, more equitable, more effective, and sustainable systems of health care, while preserving older people's human rights and dignity.

AK reports consulting fees from the International Longevity Centre Global Alliance on behalf of their institution and consulting fees from Bradesco Health Insurance Brazil, honoraria for lectures and live events from MSD, Pfizer, Novartis, Apsen, John Hurtford Foundation, and AARP; and support for attending meetings at Age Friendly Institute, Boston, MA, USA, WHO, Geneva, Switzerland, and travel to the Chilean Ministry of Health Santiago, Chile. KR reports leadership roles as chair of the board for the International Longevity Centre Canada, chair of advocacy and public awareness committee and board member for the International Psychogeriatric Association, co-chair for the Canadian Coalition for Seniors Mental Health, chair steering group for the Global Alliance for the Rights of Older People, and chair of the section of positive psychiatry for the World Psychiatric Association. JEB declares no competing interests. We wish to thank everyone and all key participants from civil society, non-governmental organisations, professional associations, and others who advocated passionately and strongly for this change to ICD-11.

Copyright  $\otimes$  2022 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

## \*Kiran Rabheru, Julie E Byles, Alexandre Kalache kiranrabheru@hotmail.com

Department of Psychiatry, Faculty of Medicine, University of Ottawa, Ottawa, ON, Canada (KB); College of Health Medicine and Wellbeing, School of Medicine and Public Health, University of Newcastle, Newcastle, Australia (JEB); International Longevity Centre, Rio de Janeiro, Brazil (AK)

- Muscedere J. The need to implement frailty in the International Classification of Disease (ICD). J Frailty Aging 2020; 9: 2–3.
- 2 Kessler E-M, Bowen CE. COVID ageism as a public mental health concern. Lancet Healthy Longev 2020; 1: e12.
- 3 Rabheru K. The spectrum of ageism, mentalism, and ableism: expressions of a triple jeopardy. Am J Geriatr Psychiatry 2021; 29: 989–92.
- 4 Rabheru K, Gillis M. Navigating the perfect storm of ageism, mentalism, and ableism: a prevention model. Am J Geriatr Psychiatry 2021; 29: 1058–61.
- 5 Levy BR, Slade MD, Chang E-S, Kannoth S, Wang S-Y. Ageism amplifies cost and prevalence of health conditions. *Gerontologist* 2020; 60: 174–81.
- 6 Chang E-S, Kannoth S, Levy S, Wang S-Y, Lee JE, Levy BR. Global reach of ageism on older persons' health: a systematic review. PLoS One 2020; 15: e0220857.
- 7 Rockwood K, Howlett SE. Age-related deficit accumulation and the diseases of ageing. Mech Ageing Dev 2019; 180: 107–16.
- 8 Rockwood K, Song X, MacKnight C, et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005; 173: 489–95.
- 9 Fried LP, Ferrucci L, Darer J, Williamson JD, Anderson G. Untangling the concepts of disability, frailty, and comorbidity: implications for improved targeting and care. J Gerontol A Biol Sci Med Sci 2004; 59: 255–63.
- 10 Belloni G, Cesari M. Frailty and intrinsic capacity: two distinct but related constructs. *Front Med* 2019; **6**: 133.