

Asia and Africa have an aging burden similar to the West

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In a study at Columbia University Mailman School of Public Health and the Robert N. Butler Columbia Aging Center researchers have devised a

new metric, the "Health-Adjusted Dependency Ratio" (HADR) as an alternative to the most commonly used aging metric, the old-age dependency ratio (OADR).

The research suggests that age-related health burden is distinct from a ratio based exclusively on age and is the first to incorporate dependency associated with ill-health to generate a new metric that represents a more holistic measure of dependency for 188 countries. The results are published in *Lancet Healthy Longevity*.

"Rather than using some arbitrary age limit such as the age of 65, we used absolute health," said principal investigator Vegard Skirbekk, Ph.D., Ph.D., professor of population and family health at Columbia University Mailman School of Public Health. "In some countries, a given poor health level occurs in the 40s and in the 70s in others. Thousands of studies have been written using the old age dependency—but they are likely to be invalid," notes Skirbekk.

In the current study, Skirbekk proposes building a dependency metric using the information from the Global Burden of Disease 2019 Study as an alternative to the OADR. This Health-Adjusted Dependency Ratio was generated for the adult population aged 20+ for each country, where the numerator consists of those in relatively ill health (the "dependent" population") and the denominator includes those in relatively good health, who potentially could "support" the dependent population. OADR, on the other hand, is more associated with health spending growth.

The study in *Lancet Healthy Longevity* shows that African countries, and certain countries in Central Asia, Southern Asia, and Eastern Europe are older than what their demography would suggest. Nations in Oceania, Eastern Asia, Europe, North America, Central and South America are younger.

As examples, Japan had the highest OADR at 0.49 in 2017, followed by countries in Western Europe (with OADR>0.32). The U.S., Canada, Eastern Europe, Uruguay, China, South Korea, and Thailand follow with an OADR>0.24. This implies that several demographically older populations could have relatively lower HADR burden if health levels are good while demographically younger populations could have a higher HADR if health levels are poor.

Health-wise, the share of older individuals is about the same for richer and poorer countries. "This is important, as it means the world is similarly old—or young—and similar types of health challenges apply. This also means that providing healthcare must be reoriented towards dealing with life-course related diseases," observed Skirbekk. "And finally, being demographically young is no guarantee from being young as a nation; in many cases the opposite is true."

Earlier assessments were composed of measurements that tended to be based on data for only one country—mainly from European ancestry populations. "In sum, earlier aging measures tend to lack global coverage, global [demographic information](#) or global health data," noted Skirbekk, who is also with Columbia Butler Aging Center.

"In fact, while the old-age dependency ratio or OADR was often used as a proxy for population aging, it did not account for variation in health and may therefore represent an incomplete assessment of aging and aging-related dependency," said Skirbekk. "Traditional indices used on population-level aging variation tended to focus on only demographic indicators. Our method allowed us to generate a new metric for measuring aging, allowing us to assess variation in both demographic aging and age-specific health across countries."

Skirbekk further makes the point that previous research showed that in 2017 the [chronological age](#) when this occurs differs by up to thirty years,

ranging from 45.6 years of age in Papua New Guinea to 76.1 in Japan.

"Moving forward, it may be more valuable to more holistically assess dependency and policies associated with age-related dependency by using a metric that includes the impacts of ill health, such as the HADR," said Skirbekk. "The findings of our work have specific policy implications that will help countries to plan, develop, and implement aging policy programs and healthcare reforms in order to address effectively ongoing rapid demographic change."

Provided by Columbia University's Mailman School of Public Health

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