

# International shortfall inequality in life expectancy in women and in men, 1950–2010

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**Objective** To assess international shortfall inequality in life expectancy at birth among women and men and the influence of geography and country income group.

**Methods** The authors used estimates of life expectancy at birth, by sex, for 12 five-year periods between 1950–1955 and 2005–2010 and estimates of population for the midpoints of each period from the *World population prospects, 2008 revision*. Shortfall inequality was defined as the weighted average of the deviations of each country's average life expectancy by sex from the highest attained life expectancy by sex for each period.

**Findings** International shortfall inequalities in life expectancy among men and among women decreased between 1950 and 1975 but stagnated thereafter. International shortfall inequality in life expectancy has been higher in women than in men, ranging from 1.9 to 2.9 years. Women in low-income countries have the biggest shortfall, currently at around 26.7 years.

**Conclusion** International shortfall inequality is higher among women than men primarily because women in low-income and lower-middle-income country groups show larger differences in life expectancy than men. Further investigation is needed to determine the pathways causing these inequalities.

Abstracts in **عربي**, **中文**, **Français**, **Русский** and **Español** at the end of each article.

## Introduction

Life expectancy at birth has long been recognized as a summary measure of mortality that allows inequality levels and trends to be compared within and across societies.<sup>1</sup> The second half of the 20th century saw large and sustained increases in life expectancy at birth throughout the world; between 1950–1955 and 2005–2010, global average life expectancy at birth rose from 48 to 70 years in women and from 45 to 65 years in men.<sup>2</sup> However, global averages mask considerable variation across countries.<sup>1</sup> International inequalities in life expectancy fell sharply between 1950 and 1990 primarily because of rapid decreases in mortality in developing countries.<sup>3,4</sup> These improvements were associated with increased access to safe water and sanitation, childhood immunization and improved public health infrastructure, as well as improved child and maternal nutrition and declining fertility.<sup>3</sup> Life expectancy trends closely mirror reductions in mortality among male and female children less than 5 years of age, which is hardly surprising given that life expectancy estimates are strongly influenced by under-five mortality.<sup>5</sup> On the other hand, the last decade of the 20th century was a period of stagnation, and inequalities in overall life expectancy increased largely because of the decline in life expectancy in sub-Saharan Africa caused by the epidemic of human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS).<sup>6,7</sup> Consequently, this region is key to understanding between-country health inequality in the late 20th century.

Research on international inequalities in life expectancy has traditionally focused on overall mortality,<sup>3,6,8</sup> but there are well known gender differences in mortality trends across

countries,<sup>9–11</sup> and within-country inequalities in life expectancy also vary by gender.<sup>12–14</sup> This suggests that the pattern of international inequality in life expectancy could differ by gender, but no known studies have compared international trends in inequalities in life expectancy separately for women and men. We used a “shortfall” measure of inequality, a method that should be distinguished from measures of total inequality<sup>8,15</sup> and akin to the notion of “shortfall” inequality discussed by Sen and others.<sup>16–19</sup> The shortfall method compares life expectancy in a given country with some maximum or selected norm to identify inequality. For example, in the assessment of gender inequality in life expectancy, shortfalls in longevity for males and females have been compared with their respective biological maxima.<sup>20</sup> This differs from traditional measures of inequality that use the population average rate as the reference value.

The aims of this study are to assess international shortfall inequalities in life expectancy among women and men and to quantify how much specific geographic regions and country income groups contribute to them.

## Methods

We used estimates of life expectancy at birth by sex from the United Nations Population Division's *World population prospects, 2008 revision*. The life expectancy estimates are for the 12 five-year periods between 1950–1955 and 2005–2010. We also extracted population estimates for the midpoints of each period (1952, 1957, 1962, etc.).<sup>2</sup> Data for life expectancy at birth by sex were available for 179 of the 193 Member States of the World Health Organization (WHO) (as of 2010). We

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excluded 14 countries with very small populations that accounted for less than 0.01% of the world's population in 2007. Countries were organized into World Bank income groups for 2010<sup>21</sup> and into WHO regions.<sup>22</sup>

### International shortfall inequality

Global life expectancy is simply defined as the weighted average of countries' life expectancy, with the weight being each country's population size. We defined international shortfall in life expectancy in the same way – as the weighted average of the deviation of each country's average life expectancy from the highest attained life expectancy for each time period, and we used each country's population size as the weight. To calculate the shortfall, we took the following steps: (i) calculated the difference between each country's average life expectancy and the highest attained life expectancy for each time period; (ii) calculated the weighted difference by multiplying each country's difference by its population size; and (iii) took the average of all weighted differences by summing the weighted differences and dividing the result by the world population (Equation 1). Highest attained life expectancy was calculated on the basis of the top 5th percentile of the life expectancy distribution worldwide. The international shortfall inequality (*S*) was calculated as:

$$S = \frac{\sum Population_{country} (LE_{top5\%} - LE_{country})}{Population_{world}} \quad (1)$$

where  $LE_{top5\%}$  and  $LE_{country}$  stand for the top 5th percentile of life expectancy worldwide and each country's life expectancy, respectively. A separate reference group was created for men and women, since gender differences in life expectancy vary across countries and the proportion of inequality in life expectancy due to biological differences between men and women is unknown. If a common reference had been used for each sex (e.g. life expectancy in women), it would have been more difficult to differentiate between biologically-driven and socially-driven inequalities. A separate reference group was also used for each period of study because the population living at an earlier time point (e.g. 1950)

would not be expected to reach the same average life expectancy as populations living decades later. By definition, this means that we are estimating the absolute difference (i.e. the degree of shortfall inequality in each period from the highest attained gender-specific life expectancy in that period).

Given the way in which we measure shortfall inequality, there are two ways for it to decline between two periods. It will decline if countries with low life expectancy gain more years of life expectancy between periods one and two, but this could be either because of a faster increase in life expectancy in countries with low life expectancy or because of a slower increase (or even a decrease) in life expectancy in countries with high life expectancy. The latter may be implausible, but we acknowledge that our measure cannot distinguish between these two scenarios.

We undertook four analyses. First, we calculated the absolute international shortfall inequality in life expectancy as the population-weighted average of country-specific deviations in life expectancy from the highest attained life expectancy at that time (i.e. top 5th percentile of life expectancy worldwide for each sex and year). Since we weighted countries by population size, we measured international inequality (between countries) rather than global inequality (between all individuals in the world).<sup>23</sup> This is the average difference between each country's average life expectancy and the highest attained life expectancy at that time for each gender group. Second, relative international shortfall inequality was constructed by dividing the absolute inequality by the corresponding highest attained life expectancy. Third, we measured the average difference in life expectancy from the highest attained level in each sex by World Bank country income group. Fourth, the absolute international shortfall inequality was decomposed by WHO region to provide evidence as to which regions and countries are driving the overall trends in shortfall inequality.

## Results

### International shortfall inequality

Fig. 1 shows that absolute international shortfalls in life expectancy among men and among women decreased dramatically between 1950 and 1975 but stagnated thereafter. International

shortfall inequality in life expectancy among women was 21 years during 1950–1955. Although a decrease of more than 6.5 years occurred in the two following decades, international shortfall inequality has stagnated at around 14 years since 1975–1980. International shortfall inequality showed a similar pattern among men and women but was slightly smaller among men. International shortfall inequality in men's life expectancy was 19.1 years during 1950–1955; it decreased to 12 years during 1975–1980; and stagnated thereafter with the exception of a small decrease during 1995–2000. During the entire study period, international shortfall inequality in life expectancy was higher in women than in men, with a difference ranging from 1.9 to 2.9 years.

The relative measure of inequality shows a pattern similar to that seen in the absolute measure of inequality for each sex (data not shown), with a sharp decrease in the period leading up to 1965–1970, followed by slight decreases subsequently.

### Shortfall by income groups

Fig. 2 shows that the lower the country income group, the greater the shortfall in life expectancy among men and among women. Women in the low-income-country group have the biggest shortfall in life expectancy, currently at around 26.7 years. In high-income countries, it is around 2.3 years. In addition, shortfalls in life expectancy for women and men living in high-income or upper-middle-income countries differ only slightly, but for women and men living in low- and lower-middle-income countries, the shortfalls in life expectancy differ from 3 to 4.5 years.

### Countries' and regions' contributions

The contribution of each country or region to international shortfall inequality in life expectancy results from the combination of two factors: the shortfall in life expectancy in that country or region from the highest attained life expectancy in each period and the proportion of the world's population represented by that country's or region's population.

China and India made the biggest contribution to shortfalls in life expectancy in 1950–1955, both among women and men, as a result of their large populations. However, China's contribution has decreased over time

Fig. 1. Absolute international shortfall inequality in life expectancy at birth, by sex, across 179 countries, 1950–2010

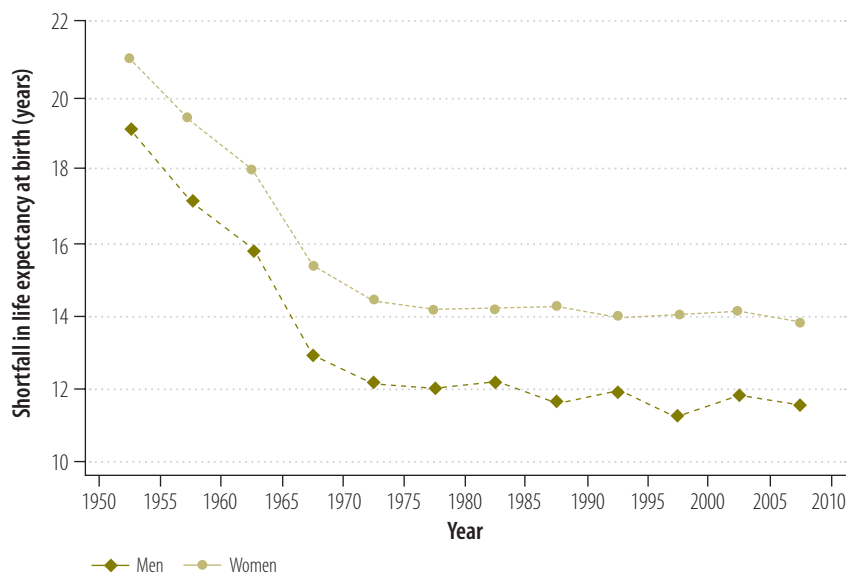
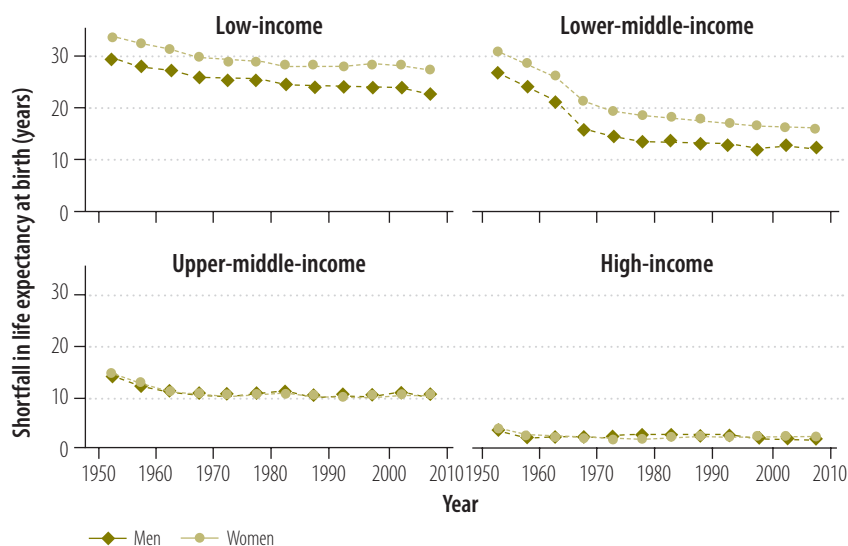


Fig. 2. Absolute shortfall inequalities in life expectancy at birth, by World Bank country income group, 1950–2010



due to increasing life expectancy in both sexes (Table 1). By contrast, the contribution of the African region to international shortfall inequality in life expectancy among women and men increased continuously over the six most recent decades, from 11% in 1950–1955 to just over 27% in 2005–2010 (Table 1). This suggests that stagnation in the declining trend in international shortfalls in life expectancy is increasingly the result of slower-than-average life expectancy growth in the African region (a consequence of actual declines in life expectancy in some countries).

## Discussion

Compared with the subset of countries with the highest attained life expectancy at birth, the rest of the world's countries show large shortfalls in life expectancy at birth for both men and women. Although international shortfall inequalities decreased sharply between 1950–1955 and 1970–1975, they have stagnated since. According to Goesling & Firebaugh, however, between-country inequality declined from 1980 to 1992 but increased from 1992 to 2000 in a significant reversal.<sup>6</sup> The difference

between their findings and ours may result from the fact that Goesling & Firebaugh used inequality measures anchored to the population average life expectancy, whereas we used shortfall from the top 5% of life expectancy. Thus, if countries with higher-than-average life expectancy in 1980 showed slower-than-average life expectancy growth during the 1980s, inequality would be reduced because these countries would actually move closer to the population average. When measured against countries comprising the top 5% for longevity, however, inequality would stagnate since these countries would not be gaining ground relative to these highest-achieving countries.

Our study also shows that between 1950 and 2010, shortfall inequalities in life expectancy have been consistently higher among women than among men. According to our findings, shortfall in life expectancy among women with respect to their top 5th percentile were larger among countries in lower-income groups. The same pattern was found among men. Additionally, shortfall in life expectancy barely differed between men and women in upper-middle- and high-income country groups, but a large difference was observed in low- and lower-middle-income groups. The current shortfall in life expectancy is 2.3 years for women versus 1.5 years for men in high-income countries, and 26.7 years for women versus 22.6 years for men in low-income countries.

Social and economic mechanisms leading to unequal distribution of health-enhancing resources are increasingly important obstacles to gains in life expectancy.<sup>1</sup> These results suggest that the larger shortfall inequalities among women, especially in lower-income countries, may be caused by social, economic or structural determinants or by a combination of these, such as unequal access to and control over material and non-material resources; unfair division of labour; unfair divisions of work; inequities in early childhood development, and barriers to primary and secondary education that discriminate against women.<sup>8,24,25</sup> Further research is necessary to identify the specific determinants that contribute to the life expectancy gap, particularly among women in lower-income countries.

Despite overall declines in international shortfall inequality in life expectancy, the remaining shortfall in

Table 1. Absolute and percentage contribution of each region of the World Health Organization (WHO) or their individual territories to international shortfall inequality in life expectancy at birth, by sex, 1950-2010

WHO region/sex	Years (%)												
	1950-55	1955-60	1960-65	1965-70	1970-75	1975-80	1980-85	1985-90	1990-95	1995-2000	2000-05	2005-10	
<b>Women</b>													
AFR	2.4 (11)	2.4 (12)	2.3 (13)	2.3 (15)	2.3 (16)	2.4 (17)	2.5 (18)	2.7 (19)	2.9 (21)	3.3 (23)	3.6 (25)	3.7 (27)	
AMR	1.2 (6)	1.2 (6)	1.1 (6)	1.1 (7)	1.0 (7)	1.0 (7)	1.0 (7)	1.0 (7)	0.9 (7)	0.9 (6)	0.9 (6)	0.9 (6)	
EMR	1.5 (7)	1.5 (8)	1.4 (8)	1.4 (9)	1.3 (9)	1.4 (10)	1.4 (10)	1.3 (9)	1.3 (9)	1.3 (9)	1.4 (10)	1.4 (10)	
EUR <sup>a</sup>	0.8 (4)	0.6 (3)	0.5 (3)	0.4 (3)	0.4 (3)	0.5 (3)	0.5 (3)	0.5 (3)	0.4 (3)	0.4 (3)	0.4 (3)	0.4 (3)	
Eastern Europe	0.5 (2)	0.3 (2)	0.2 (1)	0.2 (1)	0.2 (1)	0.3 (2)	0.4 (3)	0.4 (3)	0.5 (4)	0.5 (4)	0.5 (4)	0.5 (3)	
SEAR <sup>b</sup>	2.3 (11)	2.2 (11)	2.1 (12)	2.0 (13)	1.9 (13)	1.8 (13)	1.7 (12)	1.6 (12)	1.5 (11)	1.5 (10)	1.4 (10)	1.3 (9)	
India	5.0 (24)	4.7 (24)	4.4 (25)	4.1 (27)	3.8 (27)	3.6 (25)	3.6 (25)	3.6 (25)	3.6 (25)	3.5 (25)	3.5 (25)	3.4 (24)	
WPR <sup>c</sup>	1.1 (5)	1.0 (5)	0.9 (5)	0.8 (5)	0.7 (5)	0.7 (5)	0.6 (4)	0.6 (4)	0.5 (4)	0.5 (3)	0.4 (3)	0.4 (3)	
China	6.3 (30)	5.7 (29)	5.0 (28)	3.1 (20)	2.7 (19)	2.6 (18)	2.5 (18)	2.5 (18)	2.4 (17)	2.2 (16)	2.1 (15)	1.9 (14)	
International shortfall inequality (years)	21.0	19.4	17.9	15.3	14.4	14.2	14.2	14.2	14.0	14.1	14.1	13.8	
<b>Men</b>													
AFR	2.1 (11)	2.1 (12)	2.1 (13)	2.0 (16)	2.0 (17)	2.1 (17)	2.2 (18)	2.3 (20)	2.5 (21)	2.7 (24)	3.0 (26)	3.1 (27)	
AMR	1.1 (6)	1.0 (6)	1.1 (7)	1.0 (8)	1.0 (9)	1.0 (8)	1.0 (8)	0.9 (8)	0.9 (8)	0.7 (6)	0.8 (7)	0.7 (6)	
EMR	1.3 (7)	1.2 (7)	1.2 (8)	1.1 (9)	1.1 (9)	1.1 (9)	1.1 (9)	1.1 (9)	1.1 (9)	1.0 (9)	1.1 (9)	1.1 (10)	
EUR <sup>a</sup>	0.7 (3)	0.5 (3)	0.5 (3)	0.4 (3)	0.5 (4)	0.5 (4)	0.5 (4)	0.4 (4)	0.4 (4)	0.4 (3)	0.4 (3)	0.3 (3)	
Eastern Europe	0.5 (2)	0.3 (2)	0.2 (2)	0.3 (2)	0.4 (3)	0.5 (4)	0.6 (5)	0.5 (4)	0.6 (5)	0.6 (6)	0.7 (6)	0.6 (5)	
SEAR <sup>b</sup>	2.0 (10)	1.9 (11)	1.9 (12)	1.7 (13)	1.7 (14)	1.6 (13)	1.5 (12)	1.4 (12)	1.3 (11)	1.2 (11)	1.1 (10)	1.0 (9)	
India	4.3 (22)	3.9 (23)	3.7 (23)	3.3 (26)	3.1 (25)	2.9 (24)	2.8 (23)	2.8 (24)	2.9 (24)	2.8 (25)	2.9 (25)	2.9 (25)	
WPR <sup>c</sup>	1.0 (5)	0.8 (5)	0.8 (5)	0.7 (5)	0.7 (5)	0.6 (5)	0.5 (4)	0.5 (4)	0.4 (3)	0.3 (3)	0.3 (3)	0.3 (3)	
China	6.2 (32)	5.4 (31)	4.4 (28)	2.3 (18)	1.8 (15)	1.7 (14)	1.8 (15)	1.8 (16)	1.7 (14)	1.5 (13)	1.5 (13)	1.4 (12)	
International shortfall inequality (years)	19.1	17.1	15.8	12.9	12.2	12.0	12.2	11.7	11.9	11.2	11.8	11.6	

AFR, African Region; AMR, Region of the Americas; EMR, Eastern Mediterranean Region; EUR, European Region; SEAR, South-East Asia Region; WPR, Western Pacific Region.

<sup>a</sup> Excluding eastern Europe.<sup>b</sup> Excluding India.<sup>c</sup> Excluding China.

Note: Unless otherwise indicated, values represent the absolute number of years contributed by a particular region or territory in a given period, followed, in parentheses, by the percentage contribution to international shortfall inequality in life expectancy at birth during that period. Figures may be affected by rounding.



life expectancy is increasingly concentrated among African countries. In fact, Africa was the only region that made an increasing contribution to international shortfall inequality over time among both males and females. As previous studies show,<sup>6,8</sup> life expectancy in the African Region has stagnated since the 1990s, although a noticeable increase is reported in more recent years.<sup>2,26</sup>

### Limitations

The data used for this analysis are the best available for studying long-term trends.<sup>8</sup> Nonetheless, the source and quality of the data varies from country to country and over time. Most developed countries have comprehensive civil registration and vital statistics systems and regular censuses covering the whole population throughout the period studied. By contrast, many developing countries, with a few exceptions in Latin America and Asia, have incomplete or dysfunctional birth and death registration systems and therefore lack continuous empirical information on mortality and life expectancy. Data availability is especially problematic for the African region.<sup>8</sup> Of the 179 countries included in the present study, 55% have usable death registration data and another 14% have census or survey data on mortality. Just under one third have good data on adult mortality, and life expectancy estimates are based on child mortality data together with the use of model life table systems.<sup>2</sup> If data quality were significantly different for men and women, which is hypothetically plausible in set-

tings with serious gender inequality, it would affect the findings of shortfall in life expectancy. However, there is little direct evidence to support this.

We did not use a single country's population as the reference for the highest attainable life expectancy to avoid the problems caused by variations over time or between sexes. We also undertook sensitivity analyses using other comparison groupings, including life expectancies in the top 10th and 25th percentiles. Changing the reference population for the highest attained life expectancy did not affect the main finding that inequality in life expectancy in women has been greater than in men, nor the overall pattern of trends over time. The magnitude of inequality in women and in men changed slightly; yet the pattern remained the same.

### Implication of study findings

There are large shortfall inequalities in life expectancy among women in low-income countries. Additionally, there are large differences between shortfall inequalities of women and men in low-income countries. Urgent action is necessary to reduce these inequities. Although behaviour change policies and programmes focusing on the individual are important in improving the health of women, action at the economic, social, cultural and environmental levels are equally vital.<sup>25</sup> Broader strategies such as poverty reduction, increased labour force participation, increased literacy, training and education, improvements in the provision of and access to health

services (including reproductive health care), and increased opportunities for participation in economic, social and political activities contribute to progress in women's health.<sup>27,28</sup>

### Future study recommendations

Further research should focus on better understanding factors that contribute to the shortfall inequalities in life expectancy found in this study. It would be worthwhile to test whether shortfall inequalities in life expectancy are compounded for women by gender inequalities within countries and further investigate the impact of HIV/AIDS in driving the inequalities in Africa.

### Conclusion

The Commission on Social Determinants of Health<sup>24</sup> posits that life expectancy gaps are likely to persist unless there are greater improvements in the living and working conditions of men and especially women in lower-income countries. The question of how best to reduce the inequalities in life expectancy among women in lower-income countries requires further research to quantify the contributions of underlying factors and uncover the pathways through which these factors cause a considerably higher shortfall in life expectancy among women in lower-income countries than among men. ■

**Competing interests:** None declared.

### ملخص

#### تفاوت النقص الدولي في متوسط العمر المأمول لدى السيدات والرجال، في الفترة من 1950 إلى 2010

غير أنها شهدت ركوداً بعدها. وكان تفاوت النقص الدولي في متوسط العمر المأمول أعلى لدى السيدات عنه لدى الرجال وتراوح ما بين 1.9 إلى 2.9 سنة. وتعاني السيدات في البلدان منخفضة الدخل من أكبر نقص، ويبلغ في الوقت الراهن حوالي 26.7 سنة.

الاستنتاج تفاوت النقص الدولي أعلى بين السيدات عنه بين الرجال، وهو ما ينسب بشكل رئيسي إلى الاختلافات الكبيرة التي تظهرها السيدات في فئات البلدان منخفضة الدخل والشرحية الدنيا من البلدان متوسطة الدخل في متوسط العمر المأمول مقارنة بالرجال. ويتطلب الأمر إجراء المزيد من التحري لتحديد المسارات المسببة لأوجه التفاوت هذه.

الغرض تقييم تفاوت النقص الدولي في متوسط العمر المأمول عند الميلاد بين السيدات والرجال وتأثير الجغرافيا وفئة دخل البلدان. الطريقة استخدم المؤلفون تقديرات متوسط العمر المأمول عند الميلاد بحسب الجنس لاثنتي عشر فترة مدة كل منها خمس سنوات فيما بين عام 1950 إلى عام 1955، وفيما بين عام 2005 إلى عام 2010 وتقديرات السكان لنقاط الوسط لكل فترة من توقعات السكان في العالم، مراجعة عام 2008. وتم تعريف تفاوت النقص على أنه المتوسط المرجح لانحرافات كل متوسط من متوسطات العمر المأمول لكل بلد بحسب الجنس من متوسط العمر المأمول الأعلى بلوغاً بحسب الجنس لكل فترة.

النتائج انخفضت أوجه تفاوت النقص الدولي في متوسط العمر المأمول فيما بين الرجال والسيدات في الفترة من 1950 إلى 1975،

## 摘要

### 1950年至2010年女性和男性国际期望寿命不足值差异性

**目的** 评估女性和男性出生时期望寿命的国际不足值差异性以及地理和国家收入阶层的影响。

**方法** 作者使用在1950-1955和2005-2010年的12个五年期间按性别评估出生时期望寿命，估计2008年修订的世界人口展望的每个期间中点的人口。将不足值差异性定义为每个国家按性别的平均期望寿命和每个期间按性别达到的最高期望寿命之间的偏差的加权平均数。

**结果** 女性和男性的国际期望寿命不足值差异性在1950年至1975年之间有所下降，但此后停滞。较之男性，女性的期望寿命的国际不足值差异性更高，范围为1.9至2.9年。低收入国家的妇女不足值最大，目前约为26.7年。

**结论** 女性的国际不足值差异性比男性高的主要原因是低收入和中等偏下收入国家阶层的妇女显示出比男性更大的期望寿命差异。要确定引起差异性的原因需要进一步调查。

## Résumé

### Inégalité internationale de l'espérance de vie des femmes et des hommes, mesurée en termes d'écart, 1950-2010

**Objectif** Évaluer l'inégalité internationale de l'espérance de vie à la naissance des femmes et des hommes, en termes d'écart, et l'influence de la géographie et de l'appartenance à un groupe de pays avec un certain revenu.

**Méthodes** Les auteurs ont utilisé les estimations de l'espérance de vie à la naissance, par sexe, pour les 12 périodes de 5 ans entre 1950-1955 et 2005-2010, ainsi que les estimations de la population au milieu de chaque période des *Perspectives démographiques mondiales, révision de 2008*. L'inégalité mesurée en termes d'écart a été définie comme la moyenne pondérée des écarts entre l'espérance de vie moyenne de chaque pays par sexe, par rapport à l'espérance de vie la plus élevée atteinte par sexe sur chaque période.

**Résultats** Les inégalités internationales de l'espérance de vie entre les

hommes et entre les femmes, mesurée en termes d'écart, a diminué entre 1950 et 1975, mais a ensuite stagné. L'inégalité internationale de l'espérance de vie, mesurée en termes d'écart, est plus élevée chez les femmes que chez les hommes, allant de 1,9 à 2,9 années. Le plus grand écart concerne les femmes des pays à revenu faible, actuellement d'environ 26,7 années.

**Conclusion** L'inégalité internationale, mesurée en termes d'écart, est plus élevée entre les femmes qu'entre les hommes, principalement parce que les femmes des groupes de pays à revenu faible et revenu intermédiaire de tranche inférieure montrent des différences d'espérance de vie plus importantes que les hommes. Une étude plus approfondie est nécessaire pour déterminer les causes de ces inégalités.

## Резюме

### Международная неравномерность отставания в ожидаемой продолжительности жизни женщин и мужчин, 1950-2010 гг.

**Цель** Оценить международную неравномерность отставания в ожидаемой продолжительности жизни женщин и мужчин при рождении, а также влияние географического расположения и группы страны по уровню доходов.

**Методы** Авторы использовали данные об ожидаемой продолжительности жизни при рождении, в зависимости от пола, для 12 пятилетних периодов с 1950-1955 по 2005-2010 гг. и оценки населения для середины каждого из периодов на основе доклада ООН о перспективах населения в мире (*World Population Prospects*) от 2008 г. Неравномерность отставания для каждой страны определялась для каждого периода как средневзвешенное отклонение средней продолжительности жизни в данной стране, в зависимости от пола, от самой высокой достигнутой продолжительности жизни, в зависимости от пола.

**Результаты** Международная неравномерность отставания в ожидаемой продолжительности жизни женщин и мужчин снижалась между 1950 и 1975 гг., но в дальнейшем оставалась без изменений. Международная неравномерность отставания в ожидаемой продолжительности жизни среди женщин была выше, чем среди мужчин, и находилась в диапазоне от 1,9 до 2,9 лет. У женщин в странах с низким доходом наблюдается самое большое отставание, которое в настоящее время составляет около 26,7 лет.

**Международная** неравномерность отставания в ожидаемой продолжительности жизни выше среди женщин, чем среди мужчин, в первую очередь потому, что различия в продолжительности жизни среди женщин в странах с низким и низким-средним уровнем доходов больше, чем среди мужчин. Для определения причин этих различий необходимы дальнейшие исследования.

## Resumen

### Desigualdad internacional en la desviación en la esperanza de vida en mujeres y en hombres, 1950-2010

**Objetivo** Evaluar la desigualdad internacional en la desviación en la esperanza de vida en el nacimiento entre mujeres y hombres y la influencia de la geografía y del grupo de ingresos del país.

**Métodos** Los autores emplearon estimaciones de esperanza de vida en el nacimiento, por sexo, para 12 periodos de cinco años entre 1950-1955 y 2005-2010 y las estimaciones de población para los puntos medios de cada periodo a través de *World population prospects, 2008 revision*. La desigualdad en la desviación se definió como el promedio ponderado de las desviaciones de la esperanza de vida de

cada país por sexo partiendo de la mayor esperanza de vida alcanzada por sexo para cada periodo.

**Resultados** Las desigualdades internacionales en las desviaciones en la esperanza de vida entre hombres y mujeres descendieron entre 1950 y 1975 pero se estancaron a partir de entonces. La desigualdad internacional en la desviación en la esperanza de vida ha sido superior en las mujeres que en los hombres, oscilando entre 1,9 y 2,9 años. Las mujeres de países de ingresos bajos sufren la mayor desigualdad, actualmente en torno a 26,7 años.

**Conclusión** La desigualdad internacional en la desviación es mayor entre las mujeres que entre los hombres principalmente porque las mujeres de grupos de países de ingresos bajos y bajos-medios registran

mayores diferencias en la esperanza de vida que los hombres. Es necesario investigar este tema más en profundidad para determinar los mecanismos causantes de estas desigualdades.

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