Disparities in healthy working life expectancy in different Chinese populations

An analysis of longitudinal data reveals disparities in healthy working life expectancy across Chinese populations depending on various socioeconomic and demographic factors. These findings can inform inclusive strategies for extending healthy working lives for different people.

This is a summary of:
Li, C. et al. Determinants and inequities in healthy working life expectancy in China. *Nat. Med.* https://doi.org/10.1038/s41591-024-03184-3 (2024).

Published online: 24 September 2024

The question

Globally, many countries have sought to extend working life (the period of time a person spends in work) by deferring retirement age to mitigate the challenges of population aging. Notably, whether workers are sufficiently healthy to meet the expectation of longer working lives is a major concern[1–3]. People might differ in many sociodemographic characteristics that affect both health conditions and work capacities. Extending working life without considering these factors will leave already vulnerable people in even further disadvantaged situations. Healthy working life expectancy (HWLE) was proposed as a population indicator that represents the average number of years beyond 50 years of age that people can expect to be healthy and in work[4,5]. Understanding population-level disparities in HWLE has far-reaching policy implications for the creation of effective strategies for extending working life. We addressed this issue by conducting a comprehensive investigation of disparities in HWLE across Chinese populations, and further exploring how different chronic diseases shape these disparities, to identify target populations for health interventions.

The discovery

Using large-scale longitudinal data from a nationally representative survey of 23,975 Chinese participants from 2011 to 2018, we estimated HWLE for people over 50 years of age in China. These HWLE estimates derived from multi-state models consider changes in health and work transitions, which also enabled us to present disaggregated data by sociodemographic strata. We investigated disparities in HWLE across Chinese populations by gender, residence (urban or rural), education, income, occupation and region. The presence of diagnosed chronic diseases was used as a measure of health to obtain estimates of HWLE for various types of chronic diseases, which might inform more-targeted population health interventions than other health measures, such as self-assessed health. Moreover, to identify effective approaches to extending healthy working life, we examined the associations between lifestyle factors, such as physical activity, and HWLE, which could be crucial for informing strategies for the promotion of longer economically active lives.

We found disparities in HWLE across populations, with different patterns observed in health-related and work-related life expectancy. Men, people with low educational attainment, agricultural laborers and people living in rural areas had a long unhealthy working life expectancy; by contrast, healthy years not in work were longer among women, people with high education levels or income, enterprise employees and urban populations. Longer HWLE in South China than in North China suggested pervasive regional disparity. Chinese rural populations and agricultural laborers work until a much older age, even with persistent health problems. Hypertension was the leading chronic condition for people working while unhealthy (Fig. 1a). Agricultural laborers experience working while unhealthy, commonly owing to arthritis, whereas the cause of working while unhealthy for civil servants is usually dyslipidemia. Moreover, healthy lifestyle factors (no smoking, no regular drinking and engaging in regular physical activity) were associated with substantial gains in HWLE (Fig. 1b).

The implications

This study provides evidence to support the development of inclusive and flexible strategies for gradually raising the statutory retirement age in China. Priority might be given to extending working lives for women, owing to their longer healthy years not in work, but this intervention should be accompanied by the provision of supportive community nurseries and care centers for the elderly to alleviate women's family caregiving burdens. Moreover, improving the rural pension system might alleviate the plight of rural people who are forced to continue working while unhealthy, owing to financial necessity. Additionally, formulating targeted occupational health policies, fostering healthy lifestyles, promoting healthy work and living environments and providing sports facilities are all effective approaches to extending healthy working lives.

This study is based on data from China, which might limit its applicability to areas with different social, cultural and demographic contexts. There might be some degree of measurement error, owing to self-reported data for diagnosed chronic diseases and conditions. Moreover, analyses of links between HWLE and lifestyle behaviors were correlative rather than causal, and further research is needed to confirm these findings.

Our research lays the groundwork for a comprehensive investigation of disparities in HWLE. Investigating how socially patterned differences in HWLE change over time will provide important avenues for future research, which is crucial for informing targeted strategies for extending healthy working lives.

Ying Zhou & Chenshuang Li
Center for Smart and Healthy Buildings, Huazhong University of Science and Technology, Wuhan, China.

EXPERT OPINION

"The article presents a comprehensive analysis of HWLE in China using large-scale, nationally representative longitudinal data. The study addresses a gap in the literature by focusing on the inequalities in HWLE across different populations and regions, which has been less explored worldwide. This novel approach offers valuable insights for policymakers in China and other countries facing similar challenges." **Ping He, Peking University, Beijing, China.**

FIGURE

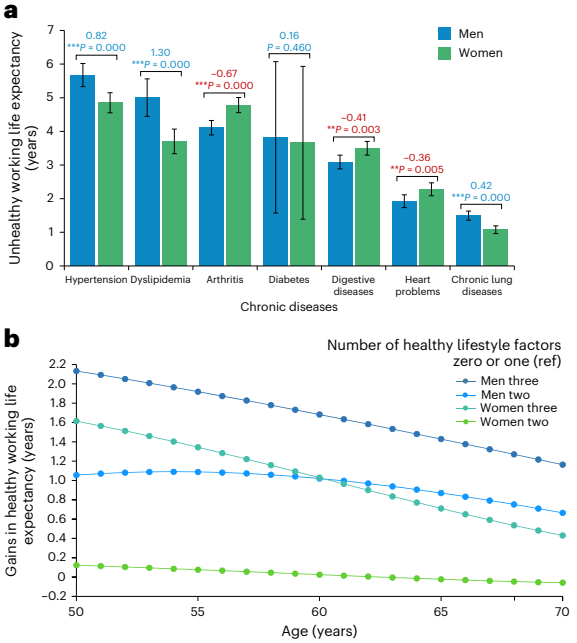

Fig. 1 | Chronic diseases, lifestyle factors and working life expectancies. a, Estimated average number of years spent in work with specific chronic diseases at 50 years of age; numbers above bars indicate differences between men and women (negative values (red) indicate more years spent for women than for men). Error bars represent 95% confidence intervals. **b**, Age-specific gains in HWLE from the adoption of healthy lifestyle habits. ref, reference.

BEHIND THE PAPER

Raising the retirement age is a major decision for China's economic and social development. In 2021, the Chinese government proposed a plan to gradually raise the statutory retirement age. In July 2024, the Third Plenary Session of the 20th Communist Party of China Central Committee further emphasized the principles of "voluntariness and flexibility," calling for full consideration of the differences between and diverse needs of different groups. Thus, how to develop effective strategies for steadily delaying retirement age has become a key issue that necessitates evidence-based decision-making. Extending healthy working lives is essential for raising the retirement age. In this context, our research question arose from a determination to investigate the differences in HWLE among different populations. This study identifies different patterns of health-related and work-related life expectancy in different people, which has far-reaching policy implications for inclusive and flexible strategies in extending working lives. **Y.Z. & C.L.**

REFERENCES

1. Parker, M., Bucknall, M., Jagger, C. & Wilkie, R. Population-based estimates of healthy working life expectancy in England at age 50 years: analysis of data from the English Longitudinal Study of Ageing. *Lancet Public Health* **5**, e395–e403 (2020).
   This paper is a representative example of existing research on and estimates of HWLE in England.
2. Lynch, M. et al. Projections of healthy working life expectancy in England to the year 2035. *Nat. Aging* **2**, 13–18 (2022).
   This paper investigates trends in HWLE in England.
3. Boissonneault, M. & Rios, P. Changes in healthy and unhealthy working-life expectancy over the period 2002–17: a population-based study in people aged 51–65 years in 14 OECD countries. *Lancet Healthy Longev.* **2**, e629–e638 (2021).
   This paper compares the trends of healthy and unhealthy working life expectancy across 14 countries within the Organization for Economic Cooperation and Development.
4. Lievre, A. et al. Healthy working life expectancies at age 50 in Europe: a new indicator. *J. Nutr. Health Aging* **11**, 508–514 (2007).
   This paper proposes an indicator of HWLE.
5. A Parker, M. et al. Extending working lives: a systematic review of healthy working life expectancy at age 50. *Soc. Indic. Res.* **150**, 337–350 (2020).
   This review article presents a systematic review of HWLE.

FROM THE EDITOR

"China is experiencing a rapidly aging population, and the government plans to increase the national pension age to extend working lives. This study highlights the fact that a 'one size fits all' approach will not be effective in extending working lives for all populations, owing to considerable socioeconomic and health disparities. The findings emphasize that strategies for preventing chronic disease and tackling prevailing disparities will extend working lives equitably across all populations." **Editorial Team, *Nature Medicine*.**