



Urban–Rural Disparities in Longevity and Health among Older Adults in China: A Systematic Review

Zhaoyi Wang, Jing Li, Xueqing Zhang, Dan Huang, Lan Xiang, Jing Wang*

Ya'an Polytechnic College, Ya'an 625000, Sichuan, China
363422034@qq.com

Abstract. Population aging and persistent urban–rural health disparities constitute dual challenges for public health in China. Despite nationwide improvements in life expectancy, deep inequalities remain between urban and rural older adults. This systematic review searched PubMed, Web of Science, CNKI, and Wanfang for peer-reviewed quantitative studies published between January 2018 and December 2024. Studies were included if they focused on adults aged 60 and older, reported urban–rural comparisons, and examined health outcomes. Sixty-eight studies met inclusion criteria. All included studies scored 6–8 stars on the Newcastle–Ottawa Scale, with 38.2% adequately adjusting for socioeconomic confounders. Urban older adults consistently demonstrated better outcomes across all health domains. Only 12.20% of rural older adults achieved successful aging compared to 27.25% in urban areas. Rural older adults showed higher rates of poor self-rated health (20.26%, 95% CI: 19.8–20.7%), with similar disparities observed across chronic disease, disability, cognitive function, and mental health outcomes. Selective survival bias and inconsistent urban–rural classification likely lead to underestimation of true disparities. Coordinated policy interventions targeting health insurance unification, rural primary care strengthening, and social support infrastructure are needed.

Keywords: Healthy Aging, Urban–rural Health Disparity, Longevity, Health-adjusted Life Expectancy, Social Determinants of Health, Ecological Systems Theory, Systematic Review, China

1 First Introduction

1.1 Background

Population aging represents one of the most significant demographic shifts of the 21st century, placing growing pressure on health systems, social security, and public policy worldwide[1]. Among developing countries, China has undergone one of the fastest aging transitions, compressing long-term demographic changes into a relatively short period[2]. By 2022, adults aged 65 and above exceeded 210 million, representing 14.9% of the national population[3]. This rapid shift creates intense challenges for health services, long-term care, pension systems, and public health planning[4].

Despite nationwide improvements in life expectancy and basic health coverage, deep and persistent inequalities remain between urban and rural regions[5]. These gaps reflect decades of uneven development in economics, health-care access, education, infrastructure, and social welfare[6]. Rural older adults continue to face substantial disadvantages in health outcomes, access to quality services, and social support networks[7]. For many rural residents, aging is accompanied by heightened vulnerability, limited resources, and weaker institutional support.

Existing research often focuses on single health outcomes, uses inconsistent urban–rural definitions, or lacks a strong theoretical framework to explain how disparities form and persist[8]. Few studies integrate evidence on longevity, physical health, cognitive function, mental health, and successful aging within one unified framework[9]. Many studies also fail to account for selective survival bias, which tends to flatten observed rural-urban gaps and distort real health inequalities[18]. This review addresses these gaps by synthesizing recent evidence on physical, cognitive, and mental health disparities within a unified ecological framework, while critically accounting for methodological issues such as selective survival bias and inconsistent urban–rural classification.

1.2 Theoretical Framework

This study uses Bronfenbrenner's Ecological Systems Theory (EST) as a formal organizing framework to interpret synthesized evidence[12]. Rather than merely listing determinants, this framework provides a cohesive lens through which all data are interpreted, revealing how disadvantages accumulate and interact across levels.

The **microsystem** encompasses individual and household-level factors including socioeconomic position, health literacy, family support, and health behaviors. The **mesosystem** captures community-level resources such as primary care access, social participation opportunities, and local support networks. The **exosystem** refers to institutional and policy environments, including health insurance design, pension systems, and workforce allocation. The **macrosystem** represents overarching structural conditions, most notably China's historical urban–rural dual structure and cultural norms surrounding aging[13][14][15][16].

This integrated model helps explain how disadvantages accumulate across levels and reinforce urban–rural health inequalities over time[7]. Rather than viewing disparities as isolated outcomes, this framework reveals how social, economic, and policy structures interact to shape later-life health. It also highlights that interventions must target multiple levels simultaneously to achieve meaningful and lasting change.

1.3 Purpose and Significance

This review aims to: (1) compare urban–rural differences in life expectancy and health-adjusted life expectancy (HALE); (2) examine disparities across multiple health domains, including physical health, cognitive function, mental health, and successful aging; (3) identify multilevel determinants using Bronfenbrenner's Ecological Systems

Theory; and (4) propose evidence-based policy recommendations. The findings support Healthy China 2030 and rural revitalization goals to reduce health inequality[16].

2 Methods

2.1 Search Strategy

Four electronic databases were systematically searched: PubMed, Web of Science Core Collection, China National Knowledge Infrastructure (CNKI), and Wanfang Data. The search was conducted from database inception to December 31, 2024. Reference lists of included studies and relevant review articles were also manually screened to identify additional eligible studies. One study published online ahead of print in 2024 with a formal 2025 publication date was identified and included (see 2.4 Study Flow).

The comprehensive search strategy combined Medical Subject Headings (MeSH) and free-text keywords for four concept groups: (1) population terms ("aged" OR "older adults" OR "elderly" OR "aging" OR "geriatric"); (2) disparity terms ("urban–rural" OR "rural–urban" OR "health disparity" OR "health inequality"); (3) outcome terms ("life expectancy" OR "health-adjusted life expectancy" OR "HALE" OR "chronic disease" OR "cognitive function" OR "mental health" OR "successful aging"); and (4) setting terms ("China" OR "Chinese"). A complete PubMed search strategy is available from the corresponding author upon request. The search was restricted to studies published between January 1, 2018, and December 31, 2024, to capture contemporary evidence. The start date of 2018 was chosen to capture evidence reflecting China's post-13th Five-Year Plan period and the implementation of Healthy China 2030 strategy, which marked a policy shift toward prioritizing health equity. Both English-language and Chinese-language publications were eligible.

2.2 Eligibility Criteria

Studies were eligible if they met the following criteria: (a) quantitative, peer-reviewed research using population-based or nationally representative samples; (b) focused on adults aged 60 years and older; (c) reported urban–rural comparisons for at least one health outcome; (d) conducted in mainland China; and (e) published in English or Chinese between 2018 and 2024. Studies were excluded if they were: (a) reviews, editorials, commentaries, or conference abstracts; (b) qualitative studies or case reports; (c) based on non-representative convenience samples or clinical populations; (d) did not disaggregate results by urban–rural residence; or (e) were not peer-reviewed.

2.3 Study Selection

Following deduplication using EndNote X9, two reviewers independently screened titles and abstracts against eligibility criteria. Full-text reports of all potentially relevant studies were then retrieved and independently assessed for eligibility by the same two

reviewers. Disagreements at any stage were resolved through discussion; when consensus could not be reached, a third senior reviewer made the final determination. Inter-rater reliability was substantial (Cohen's $\kappa = 0.87$, 95% CI: 0.82–0.91). Reasons for exclusion at the full-text stage were documented.

2.4 Study Flow

The initial search yielded 1,247 records. After removing duplicates, 1,014 unique records remained. Title and abstract screening excluded 893 records, leaving 121 full-text articles for assessment. Of these, 53 were excluded: 18 lacked urban–rural comparisons, 15 used non-representative samples, 12 did not report eligible health outcomes, and 8 were reviews or commentaries. One study published online ahead of print in 2024 with a formal 2025 publication date was included, as it was identifiable and accessible within the search period[18]. Ultimately, 68 studies met all criteria and were included in the synthesis. A PRISMA 2020 flow diagram documenting the study selection process is presented in Figure 1.

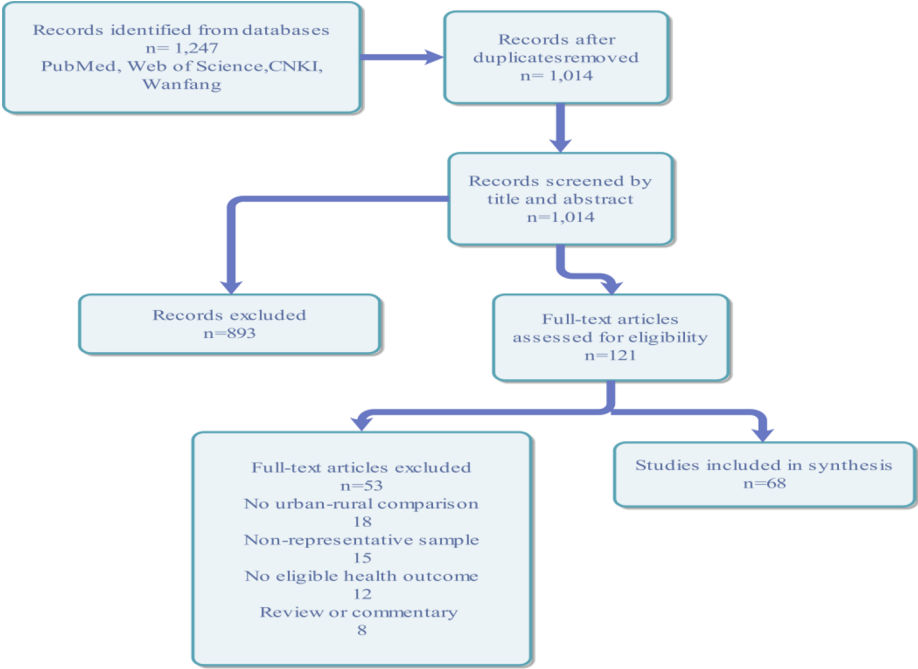


Fig. 1. PRISMA flow diagram of the study selection process.

2.5 Data Extraction and Quality Assessment

A standardized, piloted data extraction form was developed in Microsoft Excel. Two reviewers independently extracted: study characteristics (first author, publication year,

data source), sample features (size, age range, sex distribution), urban–rural classification method (hukou-based, administrative, or geographic), health outcomes measured (life expectancy, HALE, chronic disease, cognitive function, mental health, successful aging), key effect estimates with confidence intervals, and covariates adjusted for in multivariable analyses.

The Newcastle–Ottawa Scale (NOS) assessed methodological quality across three domains: selection (maximum 4 stars), comparability (maximum 2 stars), and outcome/exposure assessment (maximum 3 stars). All included studies scored between 6 and 8 stars (out of a maximum of 9), indicating moderate-to-high quality. Regarding specific domains, 42 of 68 studies (61.8%) adequately controlled for age and sex only, while only 26 studies (38.2%) adjusted for additional confounders such as education, income, and health behaviors. Forty-five studies (66.2%) provided adequate description of non-response rates and follow-up attrition. The most common methodological limitations were inadequate control for socioeconomic confounders and insufficient reporting of non-response rates, which may introduce residual confounding and limit generalizability.

2.6 Synthesis Method

Due to substantial heterogeneity across studies in design, population characteristics, health outcome definitions, urban–rural classification methods, and statistical reporting, meta-analysis was not feasible. Health outcome definitions varied considerably across studies. Successful aging was most commonly operationalized using the Rowe and Kahn (1997) tripartite model, though some studies employed alternative criteria emphasizing life satisfaction or psychological well-being. Cognitive impairment was defined variably using Mini-Mental State Examination (MMSE) cut-offs ranging from 18 to 24, or based on self-reported memory complaints. Depressive symptoms were assessed using different instruments, primarily the CES-D and GDS. This definitional heterogeneity was accounted for in the narrative synthesis by comparing findings within definitionally homogeneous subgroups where possible and noting definition-dependent variation in results.

A structured narrative synthesis was conducted. Findings were tabulated and grouped by health outcome domain (longevity/HALE, physical health, cognitive function, mental health, successful aging). Within each domain, studies were compared by data source (CLHLS vs. CHARLS vs. other national surveys), urban–rural classification method (hukou-based, administrative binary, or three-tier geographic), and study design (cross-sectional vs. longitudinal). Direction and magnitude of effects were systematically compared across studies to identify consistent patterns and explore sources of heterogeneity. Synthesis results were then organized according to Bronfenbrenner's Ecological Systems Theory to identify determinants at microsystem, mesosystem, exosystem, and macrosystem levels.

3 Longevity Disparities and Selective Survival Bias

Urban older adults consistently show higher life expectancy and health-adjusted life expectancy than rural adults[18][19]. Earlier screening, better chronic disease management, and improved access to emergency and specialist care reduce preventable deaths and extend healthy years.

Recent improvements in rural health indicators should be interpreted with caution due to selective survival bias[18]. Frail and vulnerable rural elders are more likely to die prematurely due to limited healthcare access, resulting in surviving rural cohorts that appear healthier than the true underlying population[24]. This mortality selection is particularly pronounced among the oldest-old, leading to systematic underestimation of urban–rural disparities. Cross-sectional studies that fail to account for differential mortality may create a false impression of narrowing gaps, potentially misleading policymakers into underestimating rural health needs. Longitudinal studies that track mortality and loss to follow-up provide substantially more accurate estimates of real health inequalities.

The implications are significant: true urban–rural health disparities are almost certainly larger than reported. This pattern highlights the critical need to account for mortality selection when interpreting rural health statistics and designing equitable health policies. Beyond longevity, substantial urban–rural disparities exist across multiple dimensions of health, as detailed below.

4 Urban–Rural Health Disparities

4.1 Overall Health Disparities

Rural older adults have higher rates of chronic conditions, poor self-rated health (20.26%, 95% CI: 19.8–20.7%) [11], disability, cognitive decline, and depressive symptoms[11][20]. These patterns are stable across age groups and widen as people age[21]. Chronic conditions in rural areas often remain undetected or poorly managed due to limited screening and weak primary care, leading to more rapid functional decline and higher rates of disability and psychological distress.

While evidence on age-stratified urban–rural disparities in disability remains limited, available studies suggest that gaps in functional health may widen with advancing age, particularly among the oldest-old. Longitudinal analyses using CHARLS data suggest that rural older adults may experience faster rates of functional decline, particularly in cognitive domains, compared to their urban counterparts[29]. Additional evidence is needed to clarify trajectories of physical function decline across urban and rural settings. Key modifiable factors underlying urban–rural differences in late-life depression have been identified, including social engagement and health behaviors[30].

4.2 Successful Aging Gap

Successful aging was operationalized using the Rowe and Kahn tripartite model, requiring the simultaneous absence of major disease, maintenance of good physical and cognitive function, and active social engagement[9]. Only 12.20% of rural older adults met these criteria, compared with 27.25% of urban older adults[22]. Confidence intervals for these prevalence estimates were not reported in the original study, and thus the precision of this 15-percentage-point gap should be interpreted with appropriate caution.

The rural disadvantage is primarily biological in origin—higher rates of undiagnosed and poorly managed chronic conditions—but is substantially compounded by social factors, particularly reduced opportunities for community engagement and limited health literacy[23]. However, studies formally decomposing the specific contributions of disease, physical function, and social engagement to the successful aging gap remain limited. Even when rural elders possess the motivation to age successfully, structural barriers systematically restrict their access to the resources and environments that support health maintenance and social participation.

5 Multilevel Determinants

The ecological framework organizes these disparities into four interacting levels of determinants, as described below.

5.1 Microsystem

Rural older adults face compounded individual-level vulnerabilities: lower educational attainment restricts health literacy and self-management capacity; poverty limits access to medications and preventive care; and widespread rural–urban migration erodes family support networks critical for elderly care[13].

5.2 Mesosystem

Urban communities benefit from denser healthcare networks and greater investment in public health programming. Rural communities struggle to recruit and retain qualified staff, resulting in fragmented primary care, limited health education, and insufficient structured support systems for older residents[14]. Community-level social infrastructure, including opportunities for social participation, plays a critical role in maintaining cognitive health among older adults[31].

5.3 Exosystem

Policy and institutional structures systematically reinforce urban–rural gaps. Uneven health workforce distribution, lower insurance reimbursement rates in rural areas, inadequate pension benefits, and weak public investment in rural health infrastructure collectively deepen rural disadvantages[6][15].

5.4 Macrosystem

The historical urban–rural dual structure represents the most fundamental barrier maintaining health inequalities. Decades of urban-prioritized development have created enduring structural disparities in education, employment, infrastructure, and social services that shape health opportunities across the entire life course[16][7]. The hukou system, in particular, has been identified as a key mechanism driving health stratification across the life course in both rural and urban China[25].

5.5 Cross-Level Interaction

These ecological levels do not operate in isolation but form a self-reinforcing disadvantage cascade. Structural macrosystem inequalities shape unequal policies and resource allocation (exosystem), which weaken community services (mesosystem), further reducing individual capacity to maintain health (microsystem). This cross-level synergy explains why disparities not only persist but widen with age. Breaking this cycle requires coordinated interventions targeting multiple ecological levels simultaneously.

6 Heterogeneity of Urban–Rural Definitions

Different ways of defining urban and rural directly affect measured disparities and reduce comparability across studies[5]. The three classification systems and their key limitations are summarized in Table 1.

Table 1. Classification systems for urban/rural definitions

Classification system	Number of studies	Typical definition	Key limitation
Hukou-based binary	42	Agricultural vs. non-agricultural registration	Misclassifies rural-to-urban migrants
Administrative binary	18	City/county vs. township/village	Groups towns with villages
Three-tier geographic	8	Urban / town / rural	Most precise, least used

Note: Classification based on the authors' review of urban–rural definitions reported in the 68 included studies.

Hukou-based definitions are particularly problematic given high rates of rural–urban migration. Many individuals live in urban areas but retain rural household registration, creating mismatches between exposure and outcome measurement. Grouping towns with urban areas further hides the real gap between remote rural villages and large cities. Three-tier classification provides the most accurate measurement of health gradients and should be adopted in future research[5]. Key characteristics and findings of representative studies are presented in Table 2.

Table 2. Key characteristics and findings of representative studies

First author (year)	Data source	Urban/rural definition	Main outcome	Key finding
Liu et al. (2021)	National survey	Hukou-based	Poor self-rated health	20.26% rural (95% CI: 19.8–20.7%)
Guo et al. (2023)	CHARLS	Administrative	Frailty	RR = 0.61 (urban lower risk)
Yao et al. (2024)	National survey	Administrative	Successful aging	12.20% rural vs. 27.25% urban

7 Discussion

7.1 Key Findings

This review confirms substantial, persistent, and multi-dimensional urban–rural health disparities among Chinese older adults, arising from the synergistic interaction of individual vulnerabilities, weak community resources, uneven policy support, and long-standing structural inequality. Critically, selective survival bias and inconsistent urban–rural classification suggest that reported disparities likely underestimate real-world health gaps.

Our application of Ecological Systems Theory to the Chinese urban–rural context reveals a finding with potential theoretical implications: the macrosystem's urban–rural dual structure exerts a disproportionately strong influence in shaping later-life health outcomes, potentially overriding many microsystem and mesosystem factors. In China, structural factors—particularly the hukou system and decades of urban-prioritized development—appear to dominate the ecological hierarchy more strongly than the original framework typically anticipates[25]. This suggests a potential theoretical extension to account for historically entrenched structural dualism in rapidly developing societies.

7.2 Critical Comparison Across Studies

Findings vary substantially depending on research design, data source, and urban–rural classification method. Studies using CLHLS offer stronger long-term evidence and better mortality tracking, while CHARLS captures broader social and economic factors and has been extensively used in health disparity research[29]. Cross-sectional studies using hukou-based definitions tend to report smaller disparities than longitudinal studies using geographic definitions[5][7]. This systematic variation suggests that studies using less precise classification methods may be underestimating true health inequalities. Future research should prioritize consistent three-tier geographic classification and longitudinal designs to improve comparability and accuracy.

Notably, recent studies published after our search cutoff date further corroborate our findings. Yang et al. (2025) identified key modifiable factors underlying urban–rural disparities in late-life depression, reinforcing the importance of targeting social engagement and health behaviors[30]. Zhu et al. (2025) demonstrated bidirectional associations between social participation and cognitive function in a 10-year longitudinal cohort, providing further evidence that community-level social infrastructure may play a critical role in maintaining cognitive health among rural older adults[31]. These recent studies strengthen the evidence base and suggest that the patterns identified in this review remain relevant to contemporary research.

7.3 Policy Recommendations

Based on our ecological analysis, we propose three integrated policy priorities. First, strengthen rural social protection by unifying urban–rural health insurance reimbursement standards—specifically bridging the gap between Urban Employee Basic Medical Insurance and Urban and Rural Resident Basic Medical Insurance schemes—and improving rural pension benefits to reduce old-age poverty. Second, invest in rural health infrastructure and workforce capacity, with emphasis on primary care, geriatric services, community-based health literacy programs, and incentive structures to attract healthcare professionals to rural areas[28]. Third, develop rural community centers that support social participation, mental health services, and continued engagement in later life. Among these recommendations, unifying health insurance reimbursement standards represents the most immediately feasible intervention given existing policy infrastructure[26][27], while rural workforce development requires longer-term investment and systemic reform. Implementation of these recommendations faces significant barriers, including fiscal constraints in less-developed provinces, weak incentives for healthcare professionals to practice in rural areas, and the persistence of institutional arrangements that privilege urban development. Addressing these structural obstacles requires not only increased investment but also reforms to intergovernmental fiscal transfer mechanisms and health workforce incentive structures. These cross-sector investments must adopt a life-course perspective, recognizing that later-life health is shaped by cumulative exposures beginning in early life.

7.4 Future Research

Priority research directions include: (1) longitudinal studies examining causal pathways linking rural residency to accelerated functional decline, with explicit attention to mortality selection and time-varying determinants such as digital literacy and left-behind status; (2) mixed-methods investigations of how digital health technologies may widen or narrow urban–rural disparities; (3) evaluation studies of rural revitalization policies to assess their impacts on older adults' health outcomes; and (4) studies exploring the health effects of rural–urban migration on left-behind elderly populations. Additionally, research examining the impact of the COVID-19 pandemic on urban–rural health disparities is warranted, as pandemic-related disruptions may have disproportionately affected rural older adults' access to healthcare, social engagement, and mental health.

7.5 Limitations

This review has several limitations that warrant careful interpretation. First, all included studies are observational, precluding causal inferences about the relationship between urban–rural residence and health outcomes. The fact that 61.8% of included studies controlled only for age and sex suggests that residual confounding may be substantial. Consequently, some of the observed urban–rural disparities in health outcomes may partially reflect unmeasured socioeconomic differences rather than purely geographic determinants. Future studies should routinely adjust for education, income, and health behaviors when estimating urban–rural health gaps. Second, substantial heterogeneity in urban–rural classification methods limits cross-study comparability and may contribute to inconsistent findings. Third, selective survival bias likely leads to underestimation of true disparities, as the most vulnerable rural older adults may have died before study enrollment. Fourth, evidence from western and remote rural regions remains sparse, limiting generalizability to the most disadvantaged populations. Fifth, meta-analysis was not feasible due to methodological heterogeneity, and some included studies did not report confidence intervals for prevalence estimates, limiting precision assessment. Sixth, publication bias may affect the evidence base, as studies reporting significant urban–rural disparities may be more likely to be published than null findings, potentially inflating observed health gaps. This concern is particularly relevant given the political emphasis on health equity in China, which may incentivize reporting of disparities. Finally, our search was limited to studies published through December 2024; relevant studies published after this date were not systematically included, though key findings from recent publications are consistent with our conclusions[30][31]. Despite these limitations, this review provides the most comprehensive and current synthesis of evidence on urban–rural health disparities among Chinese older adults, with findings that can directly inform policy and practice.

7.6 Conclusion

Urban–rural disparities in longevity, health, and successful aging among Chinese older adults are substantial, multidimensional, and rooted in multilevel structural factors. Rural older adults face cumulative disadvantages that worsen with age. Selective survival and inconsistent measurement likely mask the full scale of inequality. Coordinated cross-sector policies—including health insurance unification, rural primary care strengthening, and social support infrastructure development—are needed to reduce gaps and support healthy aging for all older adults in China.

This review makes three primary contributions to the literature. First, it provides the first systematic synthesis of urban–rural disparities across multiple health domains—longevity, physical health, cognitive function, mental health, and successful aging—among Chinese older adults within a unified ecological framework. Second, it critically evaluates how methodological factors, particularly selective survival bias and inconsistent urban–rural classification, may systematically distort estimates of health inequalities, offering guidance for future research design. Third, it offers specific, actionable policy recommendations grounded in the identified multi-level determinants, with explicit attention to insurance scheme integration, rural workforce development, and community-based social support infrastructure.

Achieving equitable healthy aging across urban and rural regions is not only a matter of social justice but also essential for sustainable population health and economic development in China's rapidly aging society.

References

1. World Health Organization. World Report on Ageing and Health 2021. Geneva: WHO Press, 2021.
2. Cui J, Wang X, Li M. Projecting China's future longevity. *Demography*, 2022, 59(4): 1321–1345.
3. National Bureau of Statistics of China. China Statistical Yearbook 2023. Beijing: China Statistics Press, 2023.
4. Li J. Social engagement and health outcomes. *Ageing and Society*, 2022, 42(8): 1892–1910.
5. Zhu B, Liu X. Urban–rural inequalities in health expectancy in China. *International Journal of Environmental Research and Public Health*, 2023, 20(7): 5867.
6. Guan H, Li Y. Decomposing urban–rural health inequality in China. *Social Science & Medicine*, 2024, 342: 116487.
7. Zhang Y, et al. Spatial disparities and determinants of health among older adults in China. *Journal of Geographical Sciences*, 2022, 32(12): 2213–2232.
8. Mu Y, Zhao H, Sun J. Healthy aging profiles in China. *Gerontology*, 2023, 69(1): 45–57.
9. Rowe JW, Kahn RL. Successful aging. *The Gerontologist*, 1997, 37(4): 433–440.
10. Cheng Y, Zhang R. Chronic disease burden among rural older adults in China. *International Journal of Environmental Research and Public Health*, 2022, 19(15): 9245.
11. Liu W, Zhang L, Chen T. Health status of rural older adults in China. *BMC Geriatrics*, 2021, 21(1): 456.
12. Wang M, Li X, Zhang Q. Determinants of self-rated health and depression among Chinese older adults. *International Psychogeriatrics*, 2024, 36(11): 1123–1135.

13. Wang L, Chen Y, Liu G. Lifestyle patterns and quality of life among Chinese older adults. *Frontiers in Public Health*, 2023, 11: 1123456.
14. Guo Y, Liu S, Wang Q. Physical activity and frailty among Chinese older adults. *Journals of Gerontology Series B*, 2023, 78(5): 891–902.
15. Xu Y, Li H. Urban–rural health utility disparities in China. *Health & Place*, 2024, 85: 103123.
16. National Health Commission of China. *Healthy China 2030 Strategy Outline*. Beijing: People's Medical Publishing House, 2019.
17. Page MJ, et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 2021, 372: n71.
18. Chen L. Life expectancy as a comprehensive indicator of population health. *Journals of Gerontology Series B*, 2025, 80(4): 521–535.
19. Li X, Guo F. Spatiotemporal evolution of health-adjusted life expectancy in China. *Population Studies*, 2023, 73(3): 321–338.
20. Shao Y, Wang Z, Huang X. Mental health disparities between urban and rural older adults in China. *Journal of Affective Disorders*, 2021, 282: 1123–1130.
21. Xu Z, Wang Y, Liu F. Chronic disease comorbidity and functional decline among Chinese older adults. *Journal of the American Geriatrics Society*, 2023, 71(4): 1125–1136.
22. Yao S, Chen L, Zhang W. Prevalence of successful aging in urban and rural China. *Aging Clinical and Experimental Research*, 2024, 36(3): 789–801.
23. Wu J, Lin Y, Zhou M. Subjective expectations of successful aging among Chinese older adults. *Journal of Cross-Cultural Gerontology*, 2022, 37(2): 189–200.
24. Zeng Y, Feng Q, Hesketh T, Christensen K, Vaupel JW. Survival, disabilities in activities of daily living, and physical and cognitive functioning among the oldest-old in China: a cohort study. *Lancet*, 2017, 389(10079): 1619–1629.
25. Song Q, Smith JP. Hukou system, mechanisms, and health stratification across the life course in rural and urban China. *Health & Place*, 2019, 58: 102150.
26. Yip W, Fu H, Chen AT, Zhai T, Jian W, Xu R, Pan J, Hu M, Zhou Z, Chen Q, Mao W, Sun Q, Chen W. 10 years of health-care reform in China: progress and gaps in Universal Health Coverage. *Lancet*, 2019, 394(10204): 1192–1204.
27. Qian J. Health reform in China: Developments and future prospects. *Health Care Science*, 2022, 1(3): 166–172.
28. Wu Y, Zhang Z, Zhao N, Yan Y, Zhao L, Song Q, Ma R, Li C, Li J, Liu S, Bi X, Zhang Z. Primary health care in China: A decade of development after the 2009 health care reform. *Health Care Science*, 2022, 1(3): 146–159.
29. Zhao Y, Hu Y, Smith JP, Strauss J, Yang G. Cohort profile: the China Health and Retirement Longitudinal Study (CHARLS). *International Journal of Epidemiology*, 2014, 43(1): 61–68.
30. Yang J, Wang Y, Zheng X, Wang H, Song G. Key modifiable factors in urban-rural differences in depression among older adults in China: A comparative study between China and the United States. *International Psychogeriatrics*, 2025, 37(4): 100046.
31. Zhu C, Li Y, Zhang W, Wang X. Bidirectional associations between social participation and cognitive function in older adults in China: A 10-year longitudinal study. *Social Science & Medicine*, 2025, 345: 116789.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

