Health Economics Review

RESEARCH

Open Access

Confidence in China's healthcare system: a focus on lower-middle class

Yifan Jiang[1], Bin Peng[2], Dandan Jin[1], Xinxin Peng[3] and Jinghua Zhang[1*]

Abstract

Background During the post-pandemic era, there has been growing anxiety regarding health security, especially among the middle class worldwide. The public's confidence in the healthcare system encompasses their expectations and perceptions of the healthcare system's ability to meet their needs without financial hardship. This study aims to examine the disparities of confidence and to identify potential vulnerable subgroups.

Methods Adopting the China General Social Survey (CGSS) 2021, we performed multivariate logistic regression to analyze the associations between confidence level and socioeconomic classes, controlling for demographics.

Results Among all respondents ($n=2341$), 71% reported confidence. However, respondents identified as lower-middle class had the least likelihood of reporting confidence (OR = 0.64, $p=0.006$) compared to the lowest social class. De facto married respondents had 21% lower odds of confidence (OR = 0.78, $p=0.046$) compared to unpartnered respondents.

Conclusions Our findings reveal that, contrary to expectations, the lower-middle class in China—rather than the lowest social strata—exhibits the least confidence in the healthcare system. This low confidence appears closely linked to heightened insecurity about downward social mobility stemming from catastrophic healthcare expenditure. Moreover, married individuals also revealed low level of confidence in the healthcare system. These results underscore the urgent need for universal healthcare policies in China and similar emerging economies that specifically address the unique health security concerns of the lower-middle class and consider the dynamics inherent in marriages and families associated.

Keywords Healthcare system, Confidence, Socioeconomic status, Marital status, Health security

Introduction

Healthcare systems play a crucial role in social safety nets by providing essential medical services and ensuring equal access to healthcare for all individuals, regardless of their socioeconomic status, which is the core principle of universal health coverage [1–4]. The public confidence in healthcare system encompasses the general public's expectation, belief regarding the reliability in the healthcare system's ability to fulfill its mission [5–7]. It is different from patients' trust in physicians [1, 2, 8], which is based on interpersonal relationship and social norms [9–11]. Thus, confidence in the healthcare system can

*Correspondence:
Jinghua Zhang
jhuzhang@must.edu.mo
[1]School of Business, Macau University of Science and Technology, Macao 999078, China
[2]Neuroeconomics Laboratory, Guangzhou Huashang College, Guangzhou 511300, China
[3]School of Management, Jiangsu University of Technology, Changzhou 213000, China

reflect the overall performance and accountability of the whole health system [12, 13], as well as confidence in the government [3]. Its roles in promoting health preventive actions [14, 15] and compliance behaviors during a pandemic [1, 16] have received increased attention.

Confidence in the health system and socioeconomic status

Socioeconomic status has been identified as a key determinant of confidence in healthcare [17, 18]. A positive correlation between socioeconomic status and confidence in the healthcare system is often observed [17, 18], as higher socioeconomic standing frequently correlates with greater expectations regarding the availability of healthcare resources [19, 20]. Meanwhile, boosted confidence or satisfaction may be observed in lower income levels, attributed to visible improvement in core public health infrastructure [21, 22].

There has been a dramatic increase in health security vulnerability among those experiencing in-work poverty on a global scale over the past decades [23–25], primarily due to their heightened health vulnerabilities [26] and limited access to social security [23–25], including inadequate insurance coverage. Married working poor individuals frequently lack access to spousal health insurance coverage and affordable childcare support too [27].

Healthcare system background in China

Over the past two decades, China has exerted significant effort to expand healthcare resources and improve accessibility [28], unifying both urban and rural residents under a single health insurance system [29]. Over 95% of the population is covered by basic health insurance schemes [30]. Out-of-pocket (OOP) expenses as a percentage of total health spending was 27.6% in 2021 [31], higher than Thailand's (9.04%) and Brazil's (25.27%) [32]. Public health expenditures represent 6.72% of GDP [31], comparable to other middle-income countries like Brazil (9.89%) and India (3.28%) and below the world average of 10.36% [33].

The number of medical practitioners and healthcare facility beds per 1000 people has increased from 1.22 to 2.34 in 2003, respectively, to 2.55 and 6.70 by 2021, aligning with those reported in high-income countries [28].

Lower middle class and health vulnerable groups in China

The lower socioeconomic classes in China, mainly including informal urban workers employed in manual and semi-manual labor, face considerable challenges in accessing healthcare due to characteristics of their employment [34]. This subpopulation is characterized by stagnating wages and fewer compensation benefits and health insurance coverage than formally employed counterparts [35, 36]. Lacking official urban residency status, they often do not have full access to social insurance benefits and are at heightened risk of substantial financial hardship when medical services are needed [37, 38].

Although ongoing healthcare reforms in China have enabled urban informal sector workers to enroll in the Urban Employee Basic Medical Insurance (UEBMI) program as "flexible employee", substantial barriers to participation remain. Unlike their formally employed peers, who can receive employer contributions, informal workers must pay the entire UEBMI premium out of pocket, according to China's social insurance law [39]. This financial burden, coupled with stagnant wages, deters many from enrolling in the program.

In addition, for informal workers, the total contribution amount including both the UEBMI and social security premiums represents a substantial share of their limited incomes. For instance, in Guangzhou City, one of the most economically developed megacities in China, the minimum contribution amounts is CNY1476.52 in 2024, which is equivalent to about 22% of the average monthly wage of employees in the urban private sector in Guangzhou City [40]. Starting from 2025, the premium has further increase by about 3.5%. The financial strain has deterred enrollment. Consequently, it is estimated that only about 50% of informal sector workers in China participate in health insurance [41]. The low rate of health insurance coverage among the informal employed still poses a risk of inadequate coverage [42].

This study aims to investigate confidence levels in China's healthcare system among the lower-middle class, which is insufficiently studied. By addressing this research gap, practical implications arise for effectively operating the healthcare system and efficiently allocating resources to enhance health security and social benefits. These implications extend not only to China but also to other emerging economies that confront similar challenges.

Methods

Data source and sampling

This study adopts the dataset collected in 2021 by the China General Social Survey (CGSS). CGSS, initiated in 2003 and conducted by the National Survey Research Center (NSRC) at Renmin University of China, is China's first national, comprehensive, and continuous large-scale social survey project. The 2021 CGSS collected data from all respondents for its core and thematic modules, yielding a valid sample of 8,148. Additionally, the health module of the International Social Survey Programme (ISSP) was randomly administered to one-third of the respondents. Most of the key variables in this study are derived from the ISSP health module. The final sample utilized in the analysis consists of 2341 valid responses across 19 Chinese provinces.

Dependent variable

Confidence in the healthcare system was measured using a survey question: "In general, how much confidence do you have in the healthcare system?" Respondents could choose from five categories ranging from "complete confidence" to " no confidence at all." A binary variable was constructed as the dependent variable, taking a value of 1 for responses indicating "complete confidence" or "a lot of confidence."

A three-level dependent variable is not applicable in this study, as only 83 respondents indicated "almost no confidence" or "no confidence at all," which represents approximately 3.55% of the total sample. This limited number of responses is insufficient for conducting a valid logistic regression analysis [43].

Independent variable

(1) The key variable of interest is self-reported socioeconomic status [44, 45], as classified by the CGSS questionnaire to be five levels: upper, upper-middle, middle, lower-middle, and lower class.

(2) Demographic characteristics: Age (≥ 60 = 1), gender (male = 1), marital status (De facto married including both legally married and cohabiting = 1, Unpartnered including being single, divorced, or separated = 0); Ethnicity (Han = 1), religious beliefs (any = 1), political affiliation (the Communist Party of China (CPC) member = 1).

(3) Socio-economic characteristics: Education level (primary or below = 0; middle school = 1; undergraduate = 2; graduate = 3), employment status (employed = 1), health insurance status (none = 1), childcare responsibilities (How many children under the age of 18 do you have? None = 0).

(4) Health status as indicated by chronic disease status: "Whether being chronically ill, sick or disabled" (yes = 1). Being satisfied with most recent treatment (dissatisfied = 0; fair = 1; satisfied = 2).

(5) Geographic characteristics: Residence type (rural = 0; urban = 1) and regional classification, which is a set of dummy variables based on the National Bureau of Statistics of China's economic region classification code [46]. This classification divides provinces into five major regions: East, Central, West, and Northeast.These region dummy variables help to control the region fixed effects.

Statistical method

This study adopted a binary choice (BC) logistic regression model as the baseline model. To further explore variations in the association between marital status and confidence in the healthcare system across socioeconomic groups, an interaction term between marital status and socioeconomic status (marital status * socioeconomic status) was introduced to the BC model. This helped address the research question more comprehensively compared to examining only main effects. All statistical analyses were conducted in Stata version 18.

Results

Descriptive statistics

The descriptive statistics are provided in Table 1. In this sample, 71% of surveyed respondents reported confidence in China's healthcare system. As for the distribution of socioeconomic status, the largest group is the lower-middle class at 35.7%, followed by the middle class at 32.8%. The upper-middle class makes up 15.8%, and the upper class is the smallest group at 4.4%. The lowest social status group comprises 11.1% of the population.

Within the "Confident" group, there was a slightly lower proportion from the lowest socioeconomic class (10.9%) than in the group reporting "Not confident" (11.7%). Similarly, the lower-middle class had lower representation in the "Confident" group (32.4%) versus the "Not confident" group (44.0%). Additionally, both the upper-middle class (17.0% versus 13.1%) and upper class (5.2% versus 2.5%) had greater representation in the "Confident" group relative to the "Not confident" group.

The demographic characteristic on this sample is consistent with national population census data 2021 [47].

Disparities in confidence in the healthcare system among social classes in China

The regression results for the baseline model are presented in Table 2. Using the unmarried group as the baseline category, those married have an odds ratio of 0.78 ($p = 0.046$), indicating that this group is less likely to report confidence in the healthcare system. Compared to the "lowest class" group, the "lower-middle class" are significantly less likely to report confidence in the healthcare system (OR = 0.64, $p = 0.006$). However, individuals in the "upper class" have an odds ratio of 1.71 ($p = 0.083$), suggesting a potentially higher likelihood of reporting a much higher level of confidence.

The odds ratio for males is 1.18 ($p = 0.095$). Individuals with chronic diseases have significantly lower odds (OR = 0.66, $p < 0.001$). Compared to those who are "not satisfied" (reference category), individuals with a "neutral" satisfaction level or those who are satisfied with their recent healthcare experience have significantly higher odds ratios (OR = 1.77, $p < 0.001$; OR = 4.58, $p < 0.001$) respectively. Compared to the "Eastern" region (reference category), the "Western" region has an odds ratio of 1.27 ($p = 0.058$).

Interaction effects of marital and socioeconomic status

Among the interaction term groups reported in Table 3, taking the non-married people in the lowest-class as the control group, the OR value of the married people

Table 1 Descriptive statistical (based on confidence)

Characteristics	Full sample (*N*, %)	Not confident	Confident	*P*-value
Sample Size	2341	678 (29.0%)	1663 (71.0%)	
Marital status				
Unpartnered	565 (24.1%)	140 (20.6%)	425 (25.6%)	0.011
De facto married	1776 (75.9%)	538 (79.4%)	1238 (74.4%)	
Social status				
Lowest	261 (11.1%)	79 (11.7%)	182 (10.9%)	< 0.001
Lower-middle	836 (35.7%)	298 (44.0%)	538 (32.4%)	
Middle	769 (32.8%)	195 (28.8%)	574 (34.5%)	
Upper-middle	371 (15.8%)	89 (13.1%)	282 (17.0%)	
Upper	104 (4.4%)	17 (2.5%)	87 (5.2%)	
Age				
Below 60	1586 (67.7%)	443 (65.3%)	1143 (68.7%)	0.113
60 and over	755 (32.3%)	235 (34.7%)	520 (31.3%)	
Gender				
Female	1,283 (54.8%)	385 (56.8%)	898 (54.0%)	0.219
Male	1,058 (45.2%)	293 (43.2%)	765 (46.0%)	
Education				
Primary and below	679 (29.0%)	206 (30.4%)	473 (28.4%)	0.009
Middle school	1,151 (49.2%)	350 (51.6%)	801 (48.2%)	
Undergraduate	472 (20.2%)	117 (17.3%)	355 (21.3%)	
Graduate	39 (1.7%)	5 (0.7%)	34 (2.0%)	
Ethnicity				
Others	156 (6.7%)	39 (5.8%)	117 (7.0%)	0.252
Han	2185 (93.3%)	639 (94.2%)	1546 (93.0%)	
Religious beliefs				
No religious beliefs	2173 (92.8%)	631 (93.1%)	1542 (92.7%)	0.769
With religion	168 (7.2%)	47 (6.9%)	121 (7.3%)	
Political affiliation				
No-affiliation	1886 (80.6%)	574 (84.7%)	1312 (78.9%)	0.001
CPC members	455 (19.4%)	104 (15.3%)	351 (21.1%)	
Employment status				
Unemployed	74 (3.2%)	27 (4.0%)	47 (2.8%)	0.156
Employed	2267 (96.8%)	651 (96.0%)	1616 (97.2%)	
Childcare responsibilities				
None	1690 (72.2%)	490 (72.3%)	1,200 (72.2%)	0.989
One	347 (14.8%)	101 (14.9%)	246 (14.8%)	
Two or more	304 (13.0%)	87 (12.8%)	217 (13.0%)	
Status of health insurance holdings				
None	93 (4.0%)	22 (3.2%)	71 (4.3%)	0.136
Basic medical insurance	1839 (78.6%)	553 (81.6%)	1,286 (77.3%)	
Commercial/ Supplementary/ Other medical insurance	108 (4.6%)	29 (4.3%)	79 (4.8%)	
Two or more of the above types	301 (12.8%)	74 (10.9%)	227 (13.7%)	
With chronic disease				
No	1529 (65.3%)	401 (59.1%)	1128 (67.8%)	< 0.001
Yes	812 (34.7%)	277 (40.9%)	535 (32.2%)	
Recent healthcare experience				
Dissatisfied	597 (25.5%)	248 (36.6%)	349 (21.0%)	< 0.001
Fair	1201 (51.3%)	352 (51.9%)	849 (51.1%)	
Satisfied	543 (23.2%)	78 (11.5%)	465 (28.0%)	
Residence				
Rural	998 (42.6%)	292 (43.1%)	706 (42.5%)	0.785
Urban	1343 (57.4%)	386 (56.9%)	957 (57.5%)	
Region				

Table 1 (continued)

Characteristics	Full sample (*N*, %)	Not confident	Confident	*P*-value
East	882 (37.7%)	264 (38.9%)	618 (37.2%)	0.484
Central	707 (30.2%)	212 (31.3%)	495 (29.8%)	
West	644 (27.5%)	174 (25.7%)	470 (28.3%)	
Northeast	108 (4.6%)	28 (4.1%)	80 (4.8%)	

in the mid-lower class is 0.49 ($p = 0.026$), indicating that this group of people are significantly much less likely to report confidence in the healthcare system. Meanwhile, the results in Table 3 show that the OR values of the marital status subgroups among other social strata are not significant.

Discussion

This study utilized a large, nationally representative dataset to investigate socio-economic factors associated with confidence in China's healthcare system, with a focus on health security and challenges faced by vulnerable groups across socioeconomic classes, especially, the lower-middle class.

Lower-middle classes fall between the cracks

Social risk theory suggests that the social security systems, including healthcare, in many industrial societies often fail to provide adequate coverage for the lower-middle class, or those in in-work poverty [24, 48]. This study's findings align with this perspective, highlighting that the lower-middle class frequently encounters significant barriers to accessing essential healthcare services.

There have been increased health security anxiety among China's middle and lower-middle class [49]. It is reported that around 62.9% of the self-reported middle-class residents in China believe that the level of social security (especially health security) in China is too low and does not provide adequate protection [50]. Given the inadequate health insurance coverage [51], limited healthcare access [52], and disparities in healthcare outcomes [53–55], it is reasonable to infer that the lower-middle class has health security notably lower than the well-represented middle class.

The lower-middle class often falls between the cracks, yet paradoxically, this study found that the lowest social class reported a relatively higher level of confidence in the healthcare system. This is largely attributed to the Chinese government's commitment over the past decade to enhance health assistance programs and specialized insurance for severe illnesses [56]. While the lowest social class group originally has relatively lower expectation, the government initiatives have provided essential health security to the impoverished, addressing the most basic health needs, and fostering a sense of stability among the lowest social strata [57], contrasting sharply with the lower-middle class.

Economic stagnation may especially heighten the risk of impoverishment and downward mobility for lower middle socioeconomic status groups, often driven by burdensome healthcare expenditures [38]. Consequently, the perception of these risks can erode their confidence in the healthcare system more broadly.

Insecurity among those married

Contrary to existing literature that highlights positive findings associated with marriage, such as higher satisfaction with health systems and better overall health status [58, 59], this study reveals that married individuals in China actually report significantly lower levels of confidence in the healthcare system. This is unexpected because marital status is often associated with stronger social networks and support systems [60–66]. In Chinese society, spouses still serve as the primary informal caregivers [29, 60]. Therefore, when a spouse falls ill, the couple suffers a dual setback: a reduction in income as well as another spouse's caregiving instead of earning income [61, 63]. This economic vulnerability may be further compounded by a heightened sense of risk aversion among those married compared to their counterparts [67]. Furthermore, China's single-child policy has weakened intergenerational support networks, amplifying the burdens associated with elderly care and comprehensive healthcare giving [68].

In this context, the burdens of informal caregiving and financial insecurity converge may together lead to a lack of confidence in the healthcare system among the married lower-middle class.

Robustness check

We conducted several robustness checks to validate our findings. First, we examined the number of children as reported by each respondent, however, the coefficients were insignificant. This suggests that despite having childcare responsibilities, middle-lower class families in marriage may share heightened anxieties about healthcare insecurities.

Additionally, we assessed the impact of objective local socioeconomic indicators, such as per capita GDP and healthcare facility density. Combining these provincial-level indicators into our analysis yielded no marginal benefits, confirming that our primary findings remain robust and unaffected by these variables.

Table 2 Confidence in healthcare system and socioeconomic association(logistic regression)

Characteristics	Odds ratio	*P*-value	95%CI
Marital status			
Unpartnered	reference		
De facto married	0.78**[1]	0.046	0.61–1.00
Social status			
Lowest	reference		
Lower-middle	0.64***	0.006	0.47–0.88
Middle	1.03	0.842	0.74–1.44
Upper-middle	1.11	0.582	0.76–1.62
Upper	1.71*	0.083	0.93–3.15
Age			
Below 60	reference		
60 and above	0.86	0.226	0.68–1.10
Gender			
Female	reference		
Male	1.18*	0.095	0.97–1.43
Education			
Primary and below	reference		
Middle school	0.96	0.701	0.76–1.21
Undergraduate	1.01	0.939	0.72–1.43
Graduate	1.81	0.257	0.65–5.07
Ethnicity			
Others	reference		
Han	0.84	0.412	0.57–1.26
Religious beliefs			
No religious beliefs	reference		
With religion	1.14	0.491	0.78–1.66
Political affiliation			
No-affiliation	reference		
CPC members	1.24	0.138	0.93–1.63
Employment status			
Unemployed	reference		
Employed	1.46	0.151	0.87–2.43
Childcare responsibility			
None	reference		
One	0.99	0.937	0.74–1.31
Two or more	1.04	0.778	0.77–1.41
Status of health insurance holdings			
None	reference		
Basic medical insurance	0.70	0.172	0.42–1.17
Commercial/ Supplementary/ Other medical insurance	0.80	0.521	0.41–1.57
Two or more of the above types	0.85	0.570	0.47–1.51
With chronic disease			
No	reference		
Yes	0.66***	< 0.001	0.53–0.82
Recent healthcare experience			
Dissatisfied	reference		
Fair	1.77***	< 0.001	1.43–2.19
Satisfied	4.58***	< 0.001	3.39–6.19
Residence			
Rural	reference		
Urban	1.05	0.664	0.85–1.29
Region			
East	reference		

Table 2 (continued)

Characteristics	Odds ratio	*P*-value	95%CI
Central	1.07	0.574	0.85–1.35
West	1.27*	0.058	0.99–1.64
Northeast	1.21	0.431	0.75–1.95
Constant	2.01	0.122	0.83–4.88
Observations	2341		
Pseudo R-squared	0.068		

Note 1: *, **, *** indicate significant at 10%, 5% and 1% levels respectively

Table 3 Association between marital status and confidence in the healthcare system across different social status (logistic regression)

Characteristics	Odds ratio	*P*-value	95%CI
Lowest Unpartnered	reference		
Lowest De facto married	0.74	0.387	0.37–1.46
Lower-middle Unpartnered	0.60	0.140	0.31–1.18
Lower-middle De facto married	0.49**[1]	0.026	0.26–0.92
Middle Unpartnered	0.91	0.793	0.44–1.87
Middle De facto married	0.79	0.471	0.42–1.50
Upper-middle Unpartnered	1.52	0.374	0.61–3.81
Upper-middle De facto married	0.78	0.470	0.40–1.52
Upper Unpartnered	1.34	0.686	0.32–5.56
Upper De facto married	1.33	0.509	0.57–3.12
Control variables [2]	Control	Control	Control
Constant	2.12	0.151	0.76–5.87
Observations	2341		
Pseudo R-squared	0.0686		

Note: 1. *, **, *** indicate significant at 10%, 5% and 1% levels respectively

2. Though not reported here, the same variables of demographics, socioeconomic characteristics, and regional effects as shown in Table 3 were controlled for in this regression

Policy implications

In recent years, China's national health insurance system has introduced new measures to improve health risk protection, such as allowing healthcare funds in individual accounts to be shared among direct family members [60]. However, without broader social sharing mechanisms, the health burdens remain concentrated within family.

While the government has implemented policies to support the most vulnerable social groups, the middle class—particularly the lower middle population—often feels overlooked in policy considerations, remaining invisible and marginalized even as the economy grows [69].

This issue of falling between the cracks has evolved from a regional phenomenon into a global issue [24]. As AI technology rapidly develops and transforms industries, the resulting shifts in the economy and job market are likely to be profound and swift. Without adequate social security and opportunities for upward mobility, the lower middle classe is increasingly susceptible to severe social problems and even life-threatening situations, including rising rates of despair-related deaths [70, 71].

Limitations

This analysis has several limitations stemming from the data source. Firstly, the subjective nature of the indicators used to measure confidence and socioeconomic status introduces the potential for measurement errors. In the future, an index of confidence may be constructed to provide more specific information [20]. Secondly, due to data limitations, the study can only establish associations rather than causal relationships between variables. Further research is warranted to address these gaps. For example, how the ongoing healthcare reimbursement reform and auditing actions may have affected the confidence in the healthcare system.

Conclusion

This study highlights a significant finding that the lower-middle class and married individuals exhibit comparatively lower levels of confidence in China's healthcare system, reflecting the prevailing healthcare anxiety among the public. Despite government efforts to implement policies targeting impoverished individuals, the lower-middle population often lacks eligibility for social assistance programs and may feel marginalized in the policy-making process.

The stable development of the middle class is crucial for ensuring social stability and fostering sustainable economic growth. This research emphasizes the need to deepen and evolve the universal health insurance system with comprehensive coverage to cater to the evolving healthcare needs of lower-middle class amidst increasing uncertainties in the environment. Thus, this study provides valuable empirical evidence for healthcare system policymakers in China and other emerging economies.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13561-025-00608-9.

Supplementary Material 1

Author contributions

Conceptualization, Yifan Jiang, Jing Hua Zhang, Bin Peng and XinXin Peng; Data curation, Yifan Jiang; Formal analysis, Yifan Jiang; Funding acquisition, Bin Peng; Methodology, Jing Hua Zhang and Dandan Jin; Project administration, Bin Peng; Resources, Bin Peng; Supervision, Jing Hua Zhang, Bin Peng;

Validation, Jing Hua Zhang; Writing– original draft, Yifan Jiang, Dandan Jin, Bin Peng and XinXin Peng; Writing– review & editing, Jing Hua Zhang, Bin Peng, Dandan Jin and XinXin Peng.

Funding
Bin Peng was supported by the Neuroeconomics Laboratory of Guangzhou Huashang College (Grant No.: 2021WSYS002); Jinghua Zhang was supported by Macau University of Science and Technology Foundation, Faculty Research Grant (FRG-24-040-MSB).
The funding parties have no role in the conduct or direction of the research. The researchers maintain full independence and autonomy in designing and carrying out the study, without interference or influence from the funding source. The research findings and conclusions will be determined solely by the scientific merit and the data collected, without any external input or oversight from the parties providing financial support for the project.

Data availability
No datasets were generated or analysed during the current study.

Declarations

Competing interests
I declare that the authors have no competing interests as defined by BMC or other interests that might be perceived to influence the results and/or discussion reported in this paper.
The Research Ethics Committee of School of Business, Macau University of Science and Technology (MUST) has examined and issued Ethical Approval. The relevant Ref. No. is MSB-20240508.

Received: 18 August 2024 / Accepted: 25 February 2025
Published online: 18 March 2025

References

1. Chan HF, Brumpton M, Macintyre A, Arapoc J, Savage DA, Skali A, et al. How confidence in health care systems affects mobility and compliance during the COVID-19 pandemic. PLoS ONE. 2020;15(10):e0240644. https://doi.org/10.31234/osf.io/86qxu.
2. Gille F, Smith S, Mays N. What is public trust in the healthcare system? A new conceptual framework developed from qualitative data in England. Social Theory Health. 2021;19(1):1–20. https://doi.org/10.1057/s41285-020-00129-x.
3. Roder-DeWan S, Gage A, Hirschhorn LR, Twum-Danso NAY, Liljestrand J, Asante-Shongwe K, et al. Level of confidence in and endorsement of the health system among internet users in 12 low-income and middle-income countries. Bmj Global Health. 2020;5(8). https://doi.org/10.1136/bmjgh-2019-002205.
4. Straten GF, Friele RD, Groenewegen PP. Public trust in Dutch health care. Soc Sci Med. 2002;55(2):227–34. https://doi.org/10.1016/s0277-9536(01)00163-0.
5. Braveman P, Gruskin S. Defining equity in health. J Epidemiol Community Health. 2003;57(4):254–8. https://doi.org/10.18865/ed.29.S1.173.
6. Peng X, Zhang JH. Socioeconomic inequality in public satisfaction with the healthcare system in China: a quantile regression analysis. Archives Public Health. 2022;80(1):165. https://doi.org/10.1186/s13690-022-00925-z.
7. Russell S. Treatment-seeking behaviour in urban Sri Lanka: trusting the State, trusting private providers. Soc Sci Med. 2005;61(7):1396–407. https://doi.org/10.1016/j.socscimed.2004.11.077.
8. Zhao D, Zhao H, Cleary PD. Understanding the determinants of public trust in the health care system in China: an analysis of a cross-sectional survey. J Health Serv Res Policy. 2019;24(1):37–43. https://doi.org/10.1177/1355819618799113.
9. Hillen MA, De Haes HC, Smets EM. Cancer patients' trust in their physician—a review. Psycho-oncology. 2011;20(3):227–41. https://doi.org/10.1002/pon.1745.
10. Liu Y, Wang P. Changes in Chinese patients' trust in doctor: a systematic review and meta-analysis 2021. https://doi.org/10.21203/rs.3.rs-470437/v1. Accessed 11 Feb 2025.
11. Tucker JD, Wong B, Nie J-B, Kleinman A. Rebuilding patient–physician trust in China. Lancet. 2016;388(10046):755. https://doi.org/10.1016/s0140-6736(16)31362-9.
12. Duckett J, Hunt K, Munro N, Sutton M. Does distrust in providers affect health-care utilization in China? Health Policy Plann. 2016;31(8):1001–9. https://doi.org/10.1093/heapol/czw024.
13. Musa D, Schulz R, Harris R, Silverman M, Thomas SB. Trust in the health care system and the use of preventive health services by older black and white adults. Am J Public Health. 2009;99(7):1293–9. https://doi.org/10.2105/ajph.2007.123927.
14. Li DJ, Ko NY, Chen YL, Wang PW, Chang YP, Yen CF. Confidence in coping with COVID-19 and its related factors among the public in Taiwan. J Neuropsychiatry Clin Neurosci. 2020;74(11):608. https://doi.org/10.1111/pcn.13128.
15. Sun C, Zhai Z. The efficacy of social distance and ventilation effectiveness in preventing COVID-19 transmission. Sustainable Cities Soc. 2020;62:102390. https://doi.org/10.1016/j.scs.2020.102390.
16. Afriyie DO, Masiye F, Tediosi F, Fink G. Confidence in the health system and health insurance enrollment among the informal sector population in Lusaka, Zambia. Soc Sci Med. 2023;321:115750. https://doi.org/10.1016/j.socscimed.2023.115750.
17. Rosário EVN, Severo M, Francisco D, Brito M, Costa D. Examining the relation between the subjective and objective social status with health reported needs and health-seeking behaviour in Dande, Angola. BMC Public Health. 2021;21(1):979. https://doi.org/10.1186/s12889-021-11003-4.
18. Svoronos T, Macauley RJ, Kruk ME. Can the health system deliver? Determinants of rural Liberians' confidence in health care. Health Policy Plann. 2015;30(7):823–9. https://doi.org/10.1093/heapol/czu065.
19. Booyens J, Cloete J, Venter D. Perceptions of disease, illness and health care among working and middle class residents in Port Elizabeth. South Afr J Ethnology. 1998;21(4):153–64.
20. Kruk ME, Kapoor NR, Lewis TP, Arsenault C, Boutsikari EC, Breda J, et al. Population confidence in the health system in 15 countries: results from the first round of the People's voice survey. Lancet Global Health. 2024;12(1):e100–11. https://doi.org/10.1016/s2214-109x(23)00499-0.
21. Abiola SE, Gonzales R, Blendon RJ, Benson J. Survey in sub-Saharan Africa shows substantial support for government efforts to improve health services. Health Aff. 2011;30(8):1478–87. https://doi.org/10.1377/hlthaff.2010.1055.
22. Zhang JH, Peng X, Liu C, Chen Y, Zhang H, Iwaloye OO. Public satisfaction with the healthcare system in China during 2013–2015: a cross-sectional survey of the associated factors. BMJ Open. 2020;10(5):e034414. https://doi.org/10.1136/bmjopen-2019-034414.
23. Crettaz E. A state-of-the-art review of working poverty in advanced economies: theoretical models, measurement issues and risk groups. J Eur Social Policy. 2013;23(4):347–62. https://doi.org/10.1177/0958928713507470.
24. Liu J. Rethinking the defining contextualization of in-work poverty: the challenge of individualism and globalization. J Chin Sociol. 2022;9(1):1. https://doi.org/10.1186/s40711-021-00160-z.
25. Seccombe K, Amey C. Playing by the rules and losing: health insurance and the working poor. J Health Soc Behav. 1995;168–81. https://doi.org/10.2307/2137223.
26. Belcher JR. How to help the working poor develop assets. J Soc Soc Welf. 1994;21:57. https://doi.org/10.15453/0191-5096.2190.
27. McMurray GL, Kazanjian DP. Day Care and the Working Poor: The Struggle for Self-Sufficiency. 1982. https://doi.org/10.2307/3324498
28. Yip W, Fu H, Jian W, Liu J, Pan J, Xu D, et al. Universal health coverage in China part 1: progress and gaps. Lancet Public Health. 2023;8(12):e1025–34. https://doi.org/10.1016/s2468-2667(23)00254-2.
29. Li Y-N, Nong D-x, Wei B, Feng Q-M, Luo H-y. The impact of predisposing, enabling, and need factors in utilization of health services among rural residents in Guangxi, China. BMC Health Serv Res. 2016;16:1–9. https://doi.org/10.1186/s12913-016-1825-4.
30. 2021 Medicare Advancement Statistical Snapshot. 2021. https://www.gov.cn/guoqing/2022-03/23/content_5680879.htm. Accessed 11 Feb 2025.
31. 2022 China Health Statistics Yearbook. In: Statistics CNBo, editor. 2022.
32. Out-of-pocket expenditure as percentage of current health expenditure (CHE) (%): World Health Organization. 2021. https://www.who.int/data/gho/data/indicators/indicator-details/GHO/out-of-pocket-expenditure-as-percentage-of-current-health-expenditure-(che)-(-). Accessed 11 Feb 2025.
33. Current health expenditure (% of GDP): World Health Organization Global Health Expenditure database. 2021. https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS. Accessed 11 Feb 2025.
34. Chen JY, Qiu JL. Digital utility: datafication, regulation, labor, and DiDi's platformization of urban transport in China. Chin J Communication. 2019;12(3):274–89. https://doi.org/10.1080/17544750.2019.1614964.

35. Rozelle S, Xia Y, Friesen D, Vanderjack B, Cohen N. Moving beyond Lewis: employment and wage trends in China's high-and low-skilled industries and the emergence of an era of polarization: presidential address for the 2020 association for comparative economic studies meetings. Comp Econ Stud. 2020;62(4):555. https://doi.org/10.1057/s41294-020-00137-w.
36. Van Doorn N, Ferrari F, Graham M. Migration and migrant labour in the gig economy: an intervention. Work Employ Soc. 2023;37(4):1099–111. https://doi.org/10.2139/ssrn.3622589.
37. Hsiao WC, Yip W. Financing and provision of healthcare for two billion people in low-income nations: is the cooperative healthcare model a solution? Soc Sci Med. 2024;345:115730. https://doi.org/10.1016/j.socscimed.2023.115730.
38. Jia Y, Hu M, Fu H, Yip W. Provincial variations in catastrophic health expenditure and medical impoverishment in China: a nationwide population-based study. Lancet Reg Health–Western Pac. 2023;31. https://doi.org/10.1016/j.lanwpc.2022.100633.
39. The Social Insurance Law of the People's Republic of China. 2018. http://www.mohrss.gov.cn/xxgk2020/fdzdgknr/zcfg/fl/202011/t20201102_394629.html?eqid=b0f054eb000500880000000026434f2d2 Accessed 11 Feb 05.
40. Guangzhou statistical yearbook: Guangzhou statistics bureau. 2023. http://tjj.gz.gov.cn/datav/admin/home/www_nj/. Accessed 11 Feb 2025.
41. Chen B, Liu T, Guo L, Xie Z. The disembedded digital economy: social protection for new economy employment in China. Social Policy Adm. 2020;54(7):1246–60. https://doi.org/10.1111/spol.12603.
42. Yuan B, Li J, Wu L, Wang Z, editors. Multi-level social health insurance system in the age of frequent employment change: the urban unemployment-induced insurance transition and healthcare utilization in China. Healthcare: MDPI; 2019.
43. Ford JM. Content analysis: An introduction to its methodology2004. 1110 p. https://doi.org/10.4135/9781071878781.n14
44. Cundiff JM, Matthews KA. Is subjective social status a unique correlate of physical health? A meta-analysis. Health Psychol. 2017;36(12):1109. https://doi.org/10.1037/hea0000534.
45. Demakakos P, Nazroo J, Breeze E, Marmot M. Socioeconomic status and health: the role of subjective social status. Soc Sci Med. 2008;67(2):330–40. https://doi.org/10.1016/j.socscimed.2008.03.038.
46. How are economic zones divided?. 2021. https://www.stats.gov.cn/zt_18555/zthd/lhfw/2021/rdwt/202302/t20230214_1903926.html. Accessed 11 Feb 2025.
47. Seventh National Population Census Bulletin: Office of the Leading Group of the Seventh National Population Census of the State Council. 2021. https://www.gov.cn/guoqing/2021-05/13/content_5606149.htm. Accessed 11 Feb 2025.
48. Hylton MOB. Legal and policy implications of the flexible employment relationship. J Lab Res. 1996;17(4):583–93. https://doi.org/10.1007/bf02685801.
49. Z W. Growing Concerns Over Health Care Among Chinas Middle Class: Caixin Insight. 2019. https://www.caixinglobal.com/upload/Growing%20Concerns%20Over%20Health%20Care%20Among%20Chinas%20Middle%20Class.pdf. Accessed 11 Feb 2025.
50. Li C. Insecurity and anxiety of the Chinese middle class. The middle class in world society: Routledge India; 2020. pp. 304– 15. https://doi.org/10.4324/9781003049630-18
51. Acharya A, Vellakkal S, Taylor F, Masset E, Satija A, Burke M, et al. The impact of health insurance schemes for the informal sector in low-and middle-income countries: a systematic review. World Bank Res Obs. 2013;28(2):236–66. https://doi.org/10.1093/wbro/lks009.
52. Naicker N, Pega F, Rees D, Kgalamono S, Singh T. Health services use and health outcomes among informal economy workers compared with formal economy workers: A systematic review and meta-analysis. Int J Environ Res Public Health. 2021;18(6):3189. https://doi.org/10.1289/isee.2021.o-to-143.
53. Liu J, Zhang Y. Health status and health disparity in China: a demographic and socioeconomic perspective. China Popul Dev Stud. 2019;2:301–22. https://doi.org/10.1007/s42379-018-0015-y.
54. Wang Q, Jiao J. Health disparity and cancer health disparity in China. Asia-Pacific J Oncol Nurs. 2016;3(4):335–43. https://doi.org/10.4103/2347-5625.195899.
55. Yan X, Liu Y, Cai M, Liu Q, Xie X, Rao K. Trends in disparities in healthcare utilisation between and within health insurances in China between 2008 and 2018: a repeated cross-sectional study. Int J Equity Health. 2022;21(1):30. https://doi.org/10.1186/s12939-022-01633-4.
56. Ma X, Zhang J, Meessen B, Decoster K, Tang X, Yang Y, et al. Social health assistance schemes: the case of medical financial assistance for the rural poor in four counties of China. Int J Equity Health. 2011;10:1–13. https://doi.org/10.1186/1475-9276-10-44.
57. Gao Q. Welfare, work, and poverty: social assistance in China. Oxford University Press; 2017. https://doi.org/10.1093/oso/97801.
58. Maharlouei N, Akbari M, Akbari M, Lankarani KB. Socioeconomic status and satisfaction with public healthcare system in Iran. Int J Community Based Nurs Midwifery. 2017;5(1):22. https://doi.org/10.1186/s13690-022-00925-z.
59. Park K, Park J, Kwon YD, Kang Y, Noh J-W. Public satisfaction with the healthcare system performance in South Korea: universal healthcare system. Health Policy. 2016;120(6):621–9. https://doi.org/10.1016/j.healthpol.2016.01.017.
60. Guiding Opinions of the General Office of the State Council on Establishing and Improving Basic Employee Medical Insurance Guiding Opinions on Outpatient Co-payment Protection Mechanism: General Office of the State Council of the People's Republic of China. 2021. https://www.gov.cn/zhengce/zhengceku/2021-04/22/content_5601280.htm. Accessed 11 Feb 2025.
61. Blair SL, McCormick JH. Family and health: evolving needs, responsibilities, and experiences. Emerald Group Publishing; 2014. https://doi.org/10.1108/S1530-353520148B.
62. Golics CJ, Basra MKA, Finlay AY, Salek S. The impact of disease on family members: a critical aspect of medical care. J R Soc Med. 2013;106(10):399–407. https://doi.org/10.1177/0141076812472616.
63. Grossbard-Shechtman A. A theory of allocation of time in markets for labour and marriage. Econ J. 1984;94(376):863–82. https://doi.org/10.2307/2232300.
64. Pochard F, Azoulay E, Chevret S, Lemaire F, Hubert P, Canoui P, et al. Symptoms of anxiety and depression in family members of intensive care unit patients: ethical hypothesis regarding decision-making capacity. Crit Care Med. 2001;29(10):1893–7. https://doi.org/10.1097/00003246-200110000-00007.
65. Poston D, Turnbull A, Park J, Mannan H, Marquis J, Wang M. Family quality of life: A qualitative inquiry. Ment Retard. 2003;41(5):313–28. https://doi.org/10.1352/0047-6765(2003)41%3C313:fqolaq%3E2.0.co;2.
66. Tatangelo G, McCabe M, Macleod A, You E. I just don't focus on my needs. The unmet health needs of partner and offspring caregivers of people with dementia: A qualitative study. Int J Nurs Stud. 2018;77:8–14. https://doi.org/10.1016/j.ijnurstu.2017.09.011.
67. Blake D, Cannon E, Wright D. Quantifying loss aversion: evidence from a UK population survey. J Risk Uncertain. 2021;63(1):27–57. https://doi.org/10.1007/s11166-021-09356-7.
68. Huang F, Fu P. Intergenerational support and subjective wellbeing among oldest-old in China: the moderating role of economic status. BMC Geriatr. 2021;21:1–12. https://doi.org/10.1186/s12877-021-02204-y.
69. Escosteguy AC, Coutinho LL. The rise of the working poor within the Brazilian mediascape: the mythology of social inequality's disappearance. Brazil: media from the country of the future. Emerald Publishing Limited; 2017. pp. 37–51. https://doi.org/10.1108/s2050-206020170000013006.
70. Case A, Deaton A. The epidemic of despair. Foreign Aff. 2020;99(2):92–102.
71. Case A, Deaton A. Deaths of despair and the future of capitalism. Princeton University Press; 2021. https://doi.org/10.2307/j.ctv161f3f8.8.

Publisher's note