Journal of Information Systems Engineering and Management
2025, 10(29s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

The Impact of Economic Accessibility of Healthcare Services on the Health of Elderly Individuals in China

Honglin Deng[1], Somchai Bovornkitti[2], Sarisak Soontornchai[3], Xiaoqiang Qiu[4]
[1] *Student of Doctor of Public Health, Public Health Program, Suan Sunandha Rajabhat University, Thailand. s65584949021@ssru.ac.th*
[2] *Public Health Program, Suan Sunandha Rajabhat University, Thailand. somchai.bo@ssru.ac.th*
[3] *Public Health Program, Suan Sunandha Rajabhat University, Thailand. sarisak.so@ssru.ac.th*
[4] *Epidemiological, School of Public Health, Guangxi Medical University, China. xqqiu9999@sina.com*

ARTICLE INFO

Received: 27 Dec 2024

Revised: 19 Feb 2025

Accepted: 27 Feb 2025

ABSTRACT

China is entering an aging society. An aging society will create a huge demand for healthcare services and increase healthcare costs for the entire society. Therefore, it is crucial to explore the factors that influence the health of the elderly. This study uses a sample from the China Family Panel Studies (CFPS) and employs a panel fixed-effects regression model to examine the impact of economic accessibility to healthcare services on the health of the elderly. The empirical results show that the economic accessibility of healthcare services has a significant impact on the health of the elderly. The results of the mechanism analysis indicate that this effect is primarily driven by the increased likelihood of exercise among the elderly due to improved healthcare accessibility. The impact is more pronounced among women, suggesting a greater sensitivity of their mental health to healthcare accessibility. Additionally, while the effects are slightly stronger for those aged 80 and above, the differences across age groups are relatively small, indicating consistent benefits across cohorts. These findings highlight the critical role of economic accessibility in promoting the well-being of the elderly. Healthcare policies should focus on reducing the economic burden of medical expenses for the elderly.

Keywords: Economic Accessibility, Health Services, Health of the Elderly, China

INTRODUCTION

The COVID-19 pandemic has been an challenge for health care provision (Byrne et al., 2021). In the early stage of this global pandemic, surging demand for medical services disrupted the order of medical institutions. In China, the concern about health services accessibility has been paramount. China has more than 1.4 billion people nationally, leading to a huge demand for medical resources. Meanwhile, the provision of medical resources is not sufficient, especially in less developed areas and rural areas. Therefore, China's medical resources are characterized by uneven distribution, it is hard to access quality medical services timely for some people, including elders in rural areas and internal migrants, etc.

Like many post-industrialization countries, China is becoming an aging society. The proportion of population aged 65 and above is expected to triple from 9.6% in 2015 to 27.6% in 2050 (Feng et al., 2019). Of the many health issues, those related to health care access and insurance are the most challenging. Health insurance, poverty, and health are all interconnected (Hoffman & Paradise, 2008). Individuals with lower incomes are more likely to report being in fair or poor health compared to those with higher incomes. Similarly, uninsured individuals are more likely to experience fair or poor health than those with private insurance. Not having health insurance or being underinsured can create significant medical debt, causing a great obstacle to access medical treatment.

In order to realize the equalization of the access to medical and health care, the "National Basic Public Health Service Program" (NBPHS) was issued by the "Ministry of Health" (MOH) in 2009, which mainly provide free basic public health services for urban and rural residents through primary medical and health institutions (Fu, 2020). To enjoy the services of NBPHS, one must firstly establish an electronic health record. That is, citizens already have an electronic health record can get access to freely basic health services. Meanwhile, those without an electronic health record are unable to receive freely basic health services. Whether to establish health records, to a certain extent, represents the accessibility of basic health services.

Health services accessibility refers to the ability of individuals and communities to easily obtain and use essential medical services. It involves ensuring physical proximity to healthcare facilities, affordable costs, cultural sensitivity, and timely access to care. Accessible healthcare aims to reduce disparities, use technology effectively, and implement supportive policies for better health outcomes and inclusivity.

There is a rising apprehension regarding equitable healthcare access for elderly individuals in China, who have heightened healthcare requirements but often face financial constraints (Luo et al., 2009). Moreover, there is a significant disparity in health services between urban and rural areas in China, leading to an increased percentage of people facing challenges in accessing healthcare services due to prolonged travel times (Hu et al., 2013). Therefore, in China, the accessibility of health services is influenced not only by economic factors but also by geographical location and other factors. Further, health services accessibility refers to the degree to which individuals can obtain healthcare services in a timely manner. It encompasses various dimensions, including physical proximity to healthcare facilities, availability of healthcare providers, financial affordability, and socio-cultural acceptability. In the literature, several studies have highlighted the importance of accessibility in healthcare delivery. For example, a study by Andersen & Newman (2005) examined healthcare access among low-income individuals and found that financial barriers, such as lack of health insurance or high out-of-pocket costs, were significant obstacles to accessing necessary care. Overall, these studies highlight the multifaceted nature of health services accessibility and the need for comprehensive approaches to address the barriers faced by individuals in accessing healthcare services.

Regarding accessibility, this is a supply side issue and indicates the level of service which the health care system offers the individual. Researchers have explicitly articulated all the components of access. Certainly, it is often reasonably straightforward to define the range of services under consideration. Some literature measures from the perspective of geographic accessibility. For example, The measurement was based on the travel time from the central point of each cluster using the most common modes of transportation, usually walking or taking a bus (Acharya, 2000). Besides, some literature measures using the condition of transportation infrastructure. Road conditions are used to measure the accessibility of healthcare services in Haiti (Gage & Guirlène Calixte, 2006). Furthermore, a study focusing on American veterans used wait times for medical appointments as a measure of health services accessibility (Prentice & Pizer, 2007). Attitudes towards health services are also important factors determining accessibility. A study conducted in China measured the accessibility of health services by evaluating the perceived quality of medical care and the level of trust in healthcare providers (Chen & Li, 2022). Some literature also uses the adequacy of healthcare services and the coverage of medical insurance to measure the accessibility of healthcare services. In a study that utilized the Community Tracking Study (CTS) Physician Survey, the following questions were used: there aren't enough qualified service providers or facilities in my area, and patients lack health insurance or have inadequate insurance coverage (Cunningham, 2009).

The study investigates the impact of healthcare accessibility on the health outcomes of elderly people in China. The contributions of this paper are summarized as follows: First, we exploit nationally representation survey data to perform empirical research, the data used in this study is China Family Panel Studies (CFPS), a key advantage of these surveys lies at its broad survey coverage, where the samples are representative as the respondents come across the country, this is particularly valuable in the context of the pandemic of COVID-19. Second, this article explores why the accessibility of healthcare services affects the health of the elderly and provides a detailed analysis of the mechanism of health behaviors.

The remainder of this paper is structured as follows: Section 2 presents the research design, including the empirical methods and variable measurement. Section 3 reports the empirical results, and Section 4 provides conclusion of the paper.

RESEARCH METHODOLOGY

2.1 Data collection

The major data of this study are derived from China Family Panel Studies (CFPS) in 2016, 2018, 2020 and 2022. The CFPS is a nationally representative, biennial household survey that has been performed since 2010, organized by the Institute of Social Science Survey, Peking University (sampling protocol is publicly available at www.isss.edu.cn/cfps/).

2.2 Variables measurement

The dependent variable used in this study is health outcome, it was measured from both physical health and mental health. The physical measure was measured by whether respondents felt uncomfortable in past 2 weeks. Further, the dependent variable in this study also includes the mental health of elderly individuals. Specific, refer to the practice of previous studies (Zhang et al., 2022), two metrics, life satisfaction and depression levels among elderly individuals, were used to assess the direct impact of Internet use on their mental health. The life satisfaction metric was part of the CFPS's subjective attitude module, which measured satisfaction on a scale from 1 to 5, with five levels indicating varying degrees of contentment with life. Depression level was measured using the CES-D scale short version of the CFPS questionnaire, which included 8 questions (6 measures of negative mood and 2 measures of positive mood) with 4 response options, namely, 0 = none, 1 = occasionally, 2 = often, and 3 = most of the time. Respondents' depression scores were calculated by summing together the scores from each question; the items "I feel happy" and "I live happily" were taken as the measure of positive emotion, and the negative values were taken and added together when calculating the scores. Higher scores indicated higher levels of depression.

The independent variable used in this study is health services accessibility. Refer to the study conducted by (Chen & Li, 2022), economic accessibility was used to measure health services accessibility. It was measured by the ratio of out-of-pocket expenses to total healthcare costs in the past 12 months.

While performing regression, there are multiple factors affecting dependent variable, therefore it is necessary to incorporate a series on control variables to ensure the accurate of the estimates. The control variables in this study include age, gender, urban or rural residence, the individual responsible for caregiving in the event of illness within the past year, employment status, and family relationships.

To explore the mechanisms through which healthcare accessibility impacts health. specifically, why it exerts such an influence, to explore the mechanism, this study employs three mechanism variables. These mechanism variables include three health behaviors: exercise, smoking, and alcohol consumption. With improved healthcare accessibility, older adults are more likely to access medical consultations and services. These professional medical services and diagnostic outcomes may alter their health behaviors, ultimately impacting their overall health status. In Table 1, variable definition was reported.

Table 1. Variable definition

Variables		Definition
Dependent variables	Uncomfortable in past 2 weeks	1=yes 0=never
	Mental health	Refer to the practice conducted by Zhang et al. (2022), a continuous variable ranging from 0 to 32, where higher values indicate better mental health.
Independent variables	Economic accessibility	Ratio of out-of-pocket expenses to total healthcare costs in the past 12 months.
Control variables	Age	Continuous variable, age ≥60
	Gender	1=Male 0=Female
	Living area	1=Urban area 0=Rural area
	Caregiving	3 = Care provided by a family member 2 = Care provided by friends, social services, or a caregiver 1 = No illness or no caregiving required in the past year
	Employment	Current work status: 1=Employed 0=Unemployment (include retired)
	Relationship	How is your relationship with your children? 1=Very distant 2=Not very close 3=Average 4=Close 5=Very close
Mechanism variables	Exercise	The number of times the individual engaged in physical exercise over the past week.
	Smoking	Have you smoked in the past month? 1=yes 0=never
	Drinking	Have you consumed alcohol more than three times per week in the past month? 1=yes 0=never

2.3 Methods

To estimate the effect of marriage on overweight and obesity, we conduct fixed-effects regression model via the equation **Error! Reference source not found.**.

$$Y_{it} = \alpha_0 + \beta_1 accessibility + \beta_2 x_{it} + \gamma_t + \lambda_i + \varepsilon_i \quad (1)$$

In which α_0 is a regression constant, Y_{it} represents outcome variables including physical health and mental health, $marriage_{it}$ is the indicator for marital status, equals one if individual i has married at time t, and equals zero if unmarried. x_{it} is a vector of control variables as depicted above. β_1 captures the impact of marriage. γ_t indicates year effects, λ_i captures province fixed effects and ϵ_i the error term. Fixed effects models are suitable in our study as they are designed to net out any static unmeasured characteristics of individuals, as well as static characteristics for each year. Each coefficient estimate in the regression model comes with an associated standard error, which measures the uncertainty or variability in the estimate due to sampling noise or randomness, reflecting how much the coefficient would vary if different samples were repeatedly drawn from the population. A smaller standard error indicates higher precision of the coefficient estimate, meaning the estimate is more reliable. Conversely, a larger standard error suggests greater variability and less precise estimates.

RESULTS AND DISCUSSION

3.1 Descriptive statistics

Table 2 presents the descriptive statistics of the sample, which comprises 23,389 observations. The mean of the variable Uncomfortable in past 2 weeks is 0.394, indicating that 39.4% of the population reported experiencing discomfort during the past two weeks. The mean value of mental health is 26.25, suggesting a relatively favorable mental health status for the overall sample. The average age of the sample population is 68.15 years. In terms of gender distribution, males and females are approximately equally represented. In terms of the mechanistic variables, approximately 27.4% of the population engages in smoking, while 16.2% reports alcohol consumption.

Table 2 Descriptive statistics

Variable	Observations	Mean	S. d.	Min	Max
Uncomfortable in past 2 weeks	23,389	0.394	0.489	0	1
Mental health	23,389	26.25	4.579	0	32
Economic accessibility	23,389	0.565	0.429	0	1
Age	23,389	68.15	6.222	60	98
Gender	23,389	0.506	0.500	0	1
Living area	23,389	0.483	0.500	0	1
Caregiving	23,389	2.468	0.880	1	3
Employment	23,389	0.504	0.500	0	1
Relationship	23,389	4.286	0.786	1	5
Exercise	23,389	4.684	3.554	0	50
Smoking	23,389	0.274	0.446	0	1
Drinking	23,389	0.162	0.369	0	1

3.2 Baseline regression results

Table 3 reports the impact of the economic accessibility of healthcare services on the health of the elderly. Column (1) presents the results without including control variables, showing a regression coefficient of 1.4575, which is statistically significant at the 1% level. This indicates that the economic accessibility of healthcare services contributes positively to the mental health of the elderly. Column (2) incorporates control variables, yielding a coefficient of 1.0763, which remains statistically significant. These findings confirm that economic accessibility indeed improves the mental health of the elderly.

Column (3) reports the impact on the variable Uncomfortable in past 2 weeks. Without incorporating control variables, the coefficient is -0.2442, which is statistically significant at the 1% level. This indicates that the economic accessibility of healthcare services helps reduce the likelihood of physical discomfort among the elderly. In Column (4), after including control variables, the coefficient remains significantly negative. This further confirms that economic accessibility contributes to alleviating physical discomfort among the elderly.

The above results in this section are similar to the literature that emphasize the importance of health services accessibility. For example, A study on Southeast Asian refugees revealed that this population continues to experience high levels of trauma symptoms, which are linked to an elevated risk of disease and reduced access to healthcare

services (Wagner et al., 2013). Further, it was observed that limited access to healthcare was associated with a 33–37% increase in overall mortality risk among older adults in urban areas and a 28–29% increase in rural areas (Zhang et al., 2017).

Table 3 Health effects of economic accessibility

	(1) Mental health	(2) Mental health	(3) Uncomfortable in past 2 weeks	(4) Uncomfortable in past 2 weeks
Economic accessibility	1.4575***	1.0763***	-0.2442***	-0.2095***
	(0.0700)	(0.0689)	(0.0074)	(0.0075)
Age		-0.0182***		0.0006
		(0.0048)		(0.0005)
Gender		1.4544***		-0.0974***
		(0.0573)		(0.0062)
Living area		0.5818***		-0.0220***
		(0.0438)		(0.0047)
Caregiving		-0.2578***		0.0571***
		(0.0330)		(0.0036)
Employment		0.1258**		-0.0404***
		(0.0630)		(0.0068)
Relationship		1.0424***		-0.0455***
		(0.0364)		(0.0039)
Cons	25.6145***	22.1195***	0.5008***	0.5787***
	(0.0421)	(0.3823)	(0.0045)	(0.0414)
R^2	0.0553	0.1206	0.0682	0.0968
F	433.7637	314.3677	1.1e+03	264.9876
Observations	23389	23389	23389	23389

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, Standard errors in parentheses

3.3 Potential impact mechanism

Table 4 examines the underlying mechanisms through which economic accessibility improves health outcomes. Column (1) reports the effect on exercise behavior, with a coefficient of 0.0784, which is statistically significant at the 10% level. This suggests that the economic accessibility of healthcare services significantly increases the likelihood of exercise among the elderly. The relationship between exercise and health has been well-documented in existing literature. Maintaining regular physical activity not only contributes to improvements in physical health indicators, such as optimal blood pressure levels, but also plays a significant role in promoting better mental health, including positive emotions and enhanced self-esteem (Chang et al., 2019; Pretty et al., 2005). This study confirms that the affordability of healthcare services serves as a crucial mechanism in improving exercise frequency among the elderly, thereby contributing to enhanced physical well-being and overall health.

Column (2) reports the effect on smoking behavior, with a coefficient of 0.0006, which is not statistically significant. This indicates that the economic accessibility of healthcare services does not affect the likelihood of smoking among the elderly. Column (3) reports the effect on alcohol consumption, with a statistically significant positive result, suggesting that economic accessibility increases the probability of alcohol consumption among the elderly.

Table 4. Mechanism

	(1) Exercise	(2) Smoking	(3) Drinking
Eco accessibility	0.0784*	0.0006	0.0231***
	(0.0476)	(0.0061)	(0.0055)

Age	0.0003	-0.0035***	-0.0012***
	(0.0033)	(0.0004)	(0.0004)
Gender	0.2664***	0.4385***	0.2341***
	(0.0395)	(0.0051)	(0.0045)
Living area	0.2053***	-0.0171***	0.0059*
	(0.0302)	(0.0039)	(0.0035)
Caregiving	0.0114	-0.0120***	-0.0175***
	(0.0228)	(0.0029)	(0.0026)
Employment	-0.5641***	0.0588***	0.0455***
	(0.0435)	(0.0056)	(0.0050)
Relationship	0.1602***	-0.0043	0.0044
	(0.0252)	(0.0032)	(0.0029)
Cons	3.9717***	0.3182***	0.1141***
	(0.2639)	(0.0340)	(0.0303)
R^2	0.3040	0.2680	0.1453
F	50.2683	1.2e+03	451.2192
Observations	23389	23389	23389

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, Standard errors in parentheses

3.4 Heterogeneity

Table 5 presents the heterogeneous effects of the economic accessibility of healthcare services on *uncomfortable in past 2 weeks*. Columns (1) and (2) examine the effects for rural and urban elderly populations, respectively. For rural elderly individuals, the coefficient is -0.2066 and is statistically significant at the 1% level. Similarly, for urban elderly people, the coefficient is -0.2091, which is also significant at the 1% level. The result reveals no substantial differences between rural and urban populations. Columns (3) and (4) report the heterogeneous effects by gender. The coefficient for female elderly individuals is -0.2247, while the effect for male elderly individuals is slightly smaller, with a coefficient of -0.1924. Columns (5) to (7) report the heterogeneous effects by age group. The results indicate that the regression coefficients decrease as age increases, suggesting that the impact of the economic accessibility of healthcare services diminishes with age. This implies that the benefits of economic accessibility are more pronounced for the health of younger elderly individuals.

Table 5 Heterogeneous effects (Uncomfortable in past 2 weeks)

	(1) Rural	(2) Urban	(3) Female	(4) Male	(5) 60-70	(6) 70-80	(7) >80
Eco accessibility	-0.2066***	-0.2091***	-0.2247***	-0.1924***	-0.2316***	-0.1787***	-0.1110***
	(0.0106)	(0.0106)	(0.0111)	(0.0100)	(0.0092)	(0.0140)	(0.0319)
Age	-0.0007	0.0011	-0.0005	0.0016**	0.0041***	0.0001	-0.0025
	(0.0008)	(0.0007)	(0.0008)	(0.0007)	(0.0014)	(0.0021)	(0.0042)
Gender	-0.0947***	-0.0975***	-	-	-0.1054***	-0.0810***	-0.0883***
	(0.0088)	(0.0087)	-	-	(0.0077)	(0.0116)	(0.0263)
Living area	-	-	-0.0257***	-0.0187***	-0.0202***	-0.0184**	-0.0622***
	-	-	(0.0069)	(0.0065)	(0.0058)	(0.0091)	(0.0230)
Caregiving	0.0576***	0.0559***	0.0512***	0.0625***	0.0504***	0.0742***	0.0429**
	(0.0051)	(0.0050)	(0.0054)	(0.0048)	(0.0043)	(0.0068)	(0.0168)
Employment	-0.0795***	-0.0205**	-0.0335***	-0.0479***	-0.0398***	-0.0391***	-0.0989**
	(0.0100)	(0.0099)	(0.0099)	(0.0094)	(0.0083)	(0.0126)	(0.0396)
Relationship	-0.0434***	-0.0479***	-0.0378***	-0.0531***	-0.0472***	-0.0410***	-0.0425***
	(0.0055)	(0.0057)	(0.0059)	(0.0053)	(0.0049)	(0.0072)	(0.0160)
Cons	0.6973***	0.5103***	0.6399***	0.4263***	0.3895***	0.5366***	0.8066**
	(0.0616)	(0.0560)	(0.0604)	(0.0568)	(0.0912)	(0.1605)	(0.3546)
R^2	0.0969	0.0956	0.0774	0.0938	0.1078	0.0891	0.0885
F	159.2778	148.5801	103.6735	139.7232	194.4482	66.9578	9.0976
Observations	12030	11302	11557	11827	15066	6944	1377

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, Standard errors in parentheses

Table 5 presents the heterogeneous effects of the economic accessibility of healthcare services on mental health. Regarding rural-urban differences, the economic accessibility of healthcare services has a greater impact on urban elderly individuals, contributing more significantly to the improvement of mental health in urban populations. In terms of gender differences, the impact is greater for female elderly individuals, contributing more substantially to the improvement of their mental health. With respect to age, the economic accessibility of healthcare services has a greater impact on elderly individuals aged 80 and above. However, the differences across various age groups are relatively small.

Table 6 Heterogeneous effects (Mental Health)

	(1) Rural	(2) Urban	(3) Female	(4) Male	(5) 60-70	(6) 70-80	(7) >80
Eco accessibility	0.8392***	1.2144***	1.1424***	0.9938***	1.1005***	0.9661***	1.2405***
	(0.0999)	(0.0938)	(0.1049)	(0.0903)	(0.0841)	(0.1306)	(0.3033)
Age	-0.0117	-0.0139**	-0.0260***	-0.0101	-0.0204	-0.0563***	-0.0465
	(0.0073)	(0.0062)	(0.0071)	(0.0064)	(0.0125)	(0.0197)	(0.0398)
Gender	1.4556***	1.4019***	-	-	1.4031***	1.5367***	1.4250***
	(0.0832)	(0.0775)	-	-	(0.0703)	(0.1076)	(0.2496)
Living area	-	-	0.7027***	0.4752***	0.4467***	0.7727***	1.4246***
	-	-	(0.0647)	(0.0590)	(0.0530)	(0.0845)	(0.2179)
Caregiving	-0.2893***	-0.2156***	-0.2097***	-0.3050***	-0.2313***	-0.3212***	-0.1768
	(0.0483)	(0.0443)	(0.0506)	(0.0429)	(0.0396)	(0.0637)	(0.1595)
Employment	0.9155***	-0.3837***	-0.0378	0.2945***	0.0153	0.3048***	0.2569
	(0.0949)	(0.0881)	(0.0932)	(0.0849)	(0.0764)	(0.1173)	(0.3763)
Relationship	0.9762***	1.0721***	1.0412***	1.0442***	1.0344***	1.0711***	0.9079***
	(0.0523)	(0.0503)	(0.0553)	(0.0479)	(0.0454)	(0.0668)	(0.1519)
Cons	21.2335***	22.6720***	22.5406***	23.1041***	22.3257***	24.8991***	24.3284***
	(0.5827)	(0.4973)	(0.5703)	(0.5123)	(0.8377)	(1.4943)	(3.3675)
R^2	0.1085	0.1141	0.0881	0.1124	0.1179	0.1327	0.1527
F	171.4921	182.2385	112.1356	134.7955	189.5582	102.1762	22.5778
Observations	12030	11302	11557	11827	15066	6944	1377

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, Standard errors in parentheses

CONCLUSION

The analysis demonstrates that the economic accessibility of healthcare services significantly enhances the health outcomes of the elderly. It improves mental health, as evidenced by positive and significant effects, and reduces the likelihood of physical discomfort, with consistently negative and significant coefficients across models. Mechanistically, economic accessibility increases the likelihood of engaging in exercise, though its impact on smoking is negligible, and it is associated with a higher probability of alcohol consumption. Heterogeneous effects reveal that while the benefits are significant for both rural and urban elderly populations, no substantial geographical differences are observed. The impact is more pronounced among women, suggesting a greater sensitivity of their mental health to healthcare accessibility. Additionally, while the effects are slightly stronger for those aged 80 and above, the differences across age groups are relatively small, indicating consistent benefits across cohorts. These findings highlight the critical role of economic accessibility in promoting the well-being of the elderly and suggest its potential as a policy lever, particularly for vulnerable subpopulations such as women and the very old. Future research could further explore additional mechanisms, such as social support or preventive care, to deepen the understanding of these effects.

Policymakers could prioritize increasing government healthcare subsidies for older adults, particularly for low-income and rural populations, to reduce out-of-pocket medical expenses. Expanding the network of community-based healthcare centers and integrating geriatric care into existing facilities can bring services closer to where elderly individuals live. Additionally, strengthening the training and recruitment of healthcare professionals specializing in geriatric care is crucial to meeting the growing demand for elder-focused services. Policymakers could also consider

implementing health literacy programs tailored to the elderly population, ensuring they are informed about available resources and preventive care. Collaboration with local governments and community organizations is essential to design culturally sensitive and region-specific solutions, while regular monitoring and evaluation can help adapt policies to emerging challenges and needs.

REFERENCES

[1] Acharya, L. B. (2000). Maternal and child health services in rural Nepal: Does access or quality matter more? *Health Policy and Planning*, *15*(2), 223–229. https://doi.org/10.1093/heapol/15.2.223

[2] Andersen, R., & Newman, J. F. (2005). Societal and Individual Determinants of Medical Care Utilization in the United States. *The Milbank Quarterly*, *83*(4), Online-only-Online-only. https://doi.org/10.1111/j.1468-0009.2005.00428.x

[3] Byrne, A., Barber, R., & Lim, C. H. (2021). Impact of the COVID -19 pandemic – a mental health service perspective. *Progress in Neurology and Psychiatry*, *25*(2), 27. https://doi.org/10.1002/pnp.708

[4] Chang, P.-S., Knobf, T., Oh, B., & Funk, M. (2019). Physical and Psychological Health Outcomes of Qigong Exercise in Older Adults: A Systematic Review and Meta-Analysis. *The American Journal of Chinese Medicine*, *47*(02), 301–322. https://doi.org/10.1142/S0192415X19500149

[5] Chen, L., & Li, Y. (2022). The impact of access to medical services on residents' health status: An empirical analysis based on CFPS data. *Journal of Nanjing Medical University (Social Science Edition)*, *22*(3), 278–284.

[6] Cunningham, P. J. (2009). Beyond Parity: Primary Care Physicians' Perspectives On Access To Mental Health Care: More PCPs have trouble obtaining mental health services for their patients than have problems getting other specialty services. *Health Affairs*, *28*(Supplement 1), w490–w501. https://doi.org/10.1377/hlthaff.28.3.w490

[7] Feng, Q., Yeung, W.-J. J., Wang, Z., & Zeng, Y. (2019). Age of Retirement and Human Capital in an Aging China, 2015–2050. *European Journal of Population*, *35*(1), 29–62. https://doi.org/10.1007/s10680-018-9467-3

[8] Fu, M. (2020). Effects of public health policies on the health status and medical service utilization of Chinese internal migrants. *China Economic Review*, *62*, 101464.

[9] Gage, A. J., & Guirlène Calixte, M. (2006). Effects of the physical accessibility of maternal health services on their use in rural Haiti. *Population Studies*, *60*(3), 271–288. https://doi.org/10.1080/00324720600895934

[10] Hoffman, C., & Paradise, J. (2008). Health Insurance and Access to Health Care in the United States. *Annals of the New York Academy of Sciences*, *1136*(1), 149–160. https://doi.org/10.1196/annals.1425.007

[11] Hu, R., Dong, S., Zhao, Y., Hu, H., & Li, Z. (2013). Assessing potential spatial accessibility of health services in rural China: A case study of Donghai county. *International Journal for Equity in Health*, *12*(1), 1–11. https://doi.org/10.1186/1475-9276-12-35

[12] Luo, J., Zhang, X., Jin, C., & Wang, D. (2009). Inequality of access to health care among the urban elderly in northwestern China. *Health Policy*, *93*(2–3), 111–117. https://doi.org/10.1016/j.healthpol.2009.06.003

[13] Prentice, J. C., & Pizer, S. D. (2007). Delayed Access to Health Care and Mortality. *Health Services Research*, *42*(2), 644–662. https://doi.org/10.1111/j.1475-6773.2006.00626.x

[14] Pretty, J., Peacock, J., Sellens, M., & Griffin, M. (2005). The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research*, *15*(5), 319–337. https://doi.org/10.1080/09603120500155963

[15] Wagner, J., Burke, G., Kuoch, T., Scully, M., Armeli, S., & Rajan, T. V. (2013). Trauma, Healthcare Access, and Health Outcomes Among Southeast Asian Refugees in Connecticut. *Journal of Immigrant and Minority Health*, *15*(6), 1065–1072. https://doi.org/10.1007/s10903-012-9715-2

[16] Zhang, H., Wang, H., Yan, H., & Wang, X. (2022). Impact of Internet Use on Mental Health among Elderly Individuals: A Difference-in-Differences Study Based on 2016–2018 CFPS Data. *International Journal of Environmental Research and Public Health*, *19*(1), Article 1. https://doi.org/10.3390/ijerph19010101

[17] Zhang, X., Dupre, M. E., Qiu, L., Zhou, W., Zhao, Y., & Gu, D. (2017). Urban-rural differences in the association between access to healthcare and health outcomes among older adults in China. *BMC Geriatrics*, *17*(1), 151. https://doi.org/10.1186/s12877-017-0538-9