Hindawi
Health & Social Care in the Community
Volume 2024, Article ID 3011392, 11 pages
https://doi.org/10.1155/2024/3011392

Research Article

Does Maintaining High Accessibility to Medical Care Services Increase Psychological Well-Being of Chinese Older Adults?

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Received 25 October 2023; Revised 4 January 2024; Accepted 12 January 2024; Published 24 January 2024

Academic Editor: Gianpiero Greco

Objective. The health benefits of medical care services for older adults have been well known. This study aims to identify trajectories of medical care accessibility and their impacts on Chinese older adults' psychological well-being to enrich findings on health outcomes of medical care accessibility. *Methods*. This study included 2660 participants aged 65 years and older from the 2005–2018 Chinese Longitudinal Healthy Longevity Survey, and this paper used the latent class growth model to analyze the heterogeneous trajectories of medical care accessibility among Chinese older adults. Ordinary least squares (OLS) regression was also used to explore whether the trajectories of medical care accessibility impact the psychological well-being of Chinese older adults and its heterogeneity among different subgroups of older adults. *Results*. Three distinct trajectories of medical care accessibility "maintaining high accessibility" ($n = 2230$, 84.1%), "medium to high accessibility" ($n = 222$, 8.10%), and "high to low accessibility" ($n = 208$, 7.80%) were identified, respectively. Regression results show that older adults maintaining high accessibility to medical care reported well psychological well-being. This result was particularly evident among older adults in urban and eastern areas. *Discussion*. Our findings highlight the importance of maintaining high accessibility to medical care and reducing inequalities in the accessibility to medical care for increasing psychological well-being of Chinese older adults.

1. Introduction

Since the beginning of the new century, China has experienced rapid population aging. In 2000, the proportion of the total population aged 60 years and older was 10.46%, and by the end of 2022, this had increased to 19.8%. By 2030, the number of older adults in China is expected to reach 358 million, accounting for about 25% of the population [1]. Population aging has become a challenging social issue, affecting China's sustainable development [2]. As the population ages, there is a substantial increase in the utilization of age-related care and medical care services [3]. Older adults, especially the "oldest old," consume a disproportionately large share of medical and care services, leading to a significant growth in the demand for such services [4, 5]. The high prevalence of chronic diseases among the aging population is also expected to increase the great need for medical and care services [6]. Hence, how to satisfy the increased demand for such medical and care services has become an urgent challenge for the Chinese government to actively respond to population aging. The integration of services across care and clinical settings has been considered essential for promoting health outcome and reducing health disparities, mortality, and morbidity among the aging population [7]. To achieve the goal of healthy aging, the Chinese government has made many efforts to improve medical and care services as well as their integration. In December 2019, the Law of the People's Republic of China on Basic Medical Sanitation and Health Promotion proposed that health institutions of all levels and types should divide and cooperate in providing citizens with a full range and cycle of medical and health services, including prevention, health care, treatment, nursing care, rehabilitation, and hospice care, and in guaranteeing the fair accessibility to

essential medical and health services. China's General Office of the State Council has successively issued the "Guidance on Promoting the Integration of Medical and Health Care with Senior Care Services" and "Opinions on Promoting the Development of Senior Care Services," which proposed to strengthen the construction of infrastructure for providing medical and care services. With long-term efforts of the Chinese government and society, the accessibility of medical and care services for old population is expected to increase with the improvement in medical and care infrastructure and the development of a long-term care system. However, it may not be all older adults who benefit equally from the increased provision of medical and care infrastructure. The changing trend of accessibility to medical and care services and its impact on older people's health is worthy of our attention.

Service accessibility was defined as availability, suitability, affordability, and timeliness in obtaining some services [8], which reflects the size of opportunities for individuals to identify needs, find resources, obtain use, and meet needs [9]. Availability of medical services has been consistently considered the most basic component of accessibility of medical services. Shengelia and his partner provided two meanings to the accessibility of medical services: the possibility of obtaining medical services and the number of medical services that can be used [10]. Care services often accompany medical services for older adults [11]. Both medical services and care services are necessitated for health recovery of older adults who are sick. A study has shown that when sick older adults are treated and cared promptly, they will recover faster and feel secure and happy [12]. Therefore, in this study, accessibility of medical care services mainly focuses on the possibility of obtaining both necessary medical and care service timely.

Studies have confirmed that access to medical and care services during illness was positively associated with older adults' health [13]. However, the health outcome of medical and care accessibility in previous studies mainly focuses on physical health [14]. According to the definition of WHO, health is "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." This definition indicates that the dimensions of health outcomes are becoming increasingly rich and diverse [15]. Psychological well-being, as an individual's subjective evaluation and perception of life, is also an essential aspect of health outcomes [16, 17]. Two dimensions of positive (life satisfaction) and negative emotions (depressive symptoms) have been used for the measure of psychological well-being [18, 21].

The association between older adults' psychological well-being and access to medical and care services can be explained by the theory of health vulnerability. Fineman [20] initially introduced the vulnerability theory within the realms of law and social justice, subsequently broadening its applicability to disciplines such as public health, sociology, and medicine. This theory challenges conventional approaches that predominantly concentrate on individual behaviors, emphasizing, instead, the pivotal role of social structures and systemic factors in influencing health outcomes. Health vulnerability theory is dedicated to averting harms by addressing the social, economic, and cultural factors that contribute to health vulnerability of individuals [21, 22]. Within this context, antivulnerability capabilities encompass the array of measures, tools, and strategies devised to mitigate these vulnerabilities and enhance the health outcomes of vulnerable individuals or groups [23]. These measures may include access to healthcare services, social support networks, financial assistance, and policies that address social determinants of health such as poverty, housing, and education [24]. The overarching objective of these measures is to mitigate health disparities and enhance the overall health and well-being of vulnerable populations [25]. According to health vulnerability theory, the health status of older adults, encompassing both physical health and psychological well-being, should be influenced by accessibility to medical care, which was considered as a crucial antivulnerability ability [26, 27]. The prompt availability of medical care services can address health issues early on and improve their overall well-being, enabling them to enjoy a higher quality of life despite aging and physical challenges, thereby boosting their confidence in life and improving psychological well-being [28,29]. Recently, some studies have focused on the relationship between accessibility of medical or care service and older adults' psychological well-being (life satisfaction or depressive symptoms). A study on older adults who are living independently in communities has suggested that access to care services can enhance their life satisfaction through positive human contact in addition to providing direct treatment [30]. Accessibility to medical care service may also strengthen the resilience of frail older adults in critical domains of their life, as reflected in its associations with life satisfaction, loneliness, and depression [31]. Indeed, when older adults who need medical care service can receive it in time and get a sense of companionship from their caregivers, they will feel that they have not been abandoned, thus reducing the risk of depression [32, 33]. Previous studies on the relationship between medical or care service and health outcomes among older adults have primarily relied on cross-sectional data [16, 34–36]. In most cases, access to medical or care service was examined at one point in time, respectively, which cannot identify the changes in access to both medical and care services and their impact on psychological well-being.

Numerous cross-sectional studies have shown that significant rural-urban and regional disparities exist in terms of medical and care resources in China [37–40]. The proportion of older adults in eastern China who have access to medical care services is 2.045 times of that of older adults in the West, and in urban areas, having access to medical care is 0.568 times higher than that of older persons in rural areas [41]. Studies in England and Germany have shown that older adults in regions with different levels of economic status have different opportunities to access medical care services and that older adults living in advantaged areas have high access to medical care services and better psychological health [42–44]. Chinese researchers have explored the association between access to healthcare services and older adults' life satisfaction, depression, and loneliness in rural

areas [45, 46] and urban areas [47–49], respectively. However, there is a lack of national representative study that examines the regional heterogeneity in the relationship between accessibility to medical care and psychological well-being in China.

Thus, based on the existing theoretical and empirical evidence, the current study aims to fill the gaps in the literature by (1) identifying the trajectories of medical care accessibility over a 13-year period, (2) examining the impact of medical care trajectories on psychological well-being, and (3) investigating the regional and rural-urban differences in the association between trajectories of medical care accessibility and psychological well-being among Chinese older adults.

2. Methods

2.1. Data. Data used in this study came from the Chinese Longitudinal Healthy Longevity Survey (CLHLS), which is a nationwide population-based longitudinal study. The CLHLS was conducted in 1998 and with follow-up surveys in 2000, 2002, 2005, 2008, 2011, 2014, and 2018. Participants of the first and second waves of CLHLS were limited to those aged 80 years and older; then, older adults aged 65 to 79 years were added to the survey in 2005 and subsequent waves. Older adults in 23 provinces, cities, and autonomous regions which accounted for 85% of the total Chinese older population in China were selected by a multistage cluster sampling approach (please refer to https://opendata.pku.edu.cn/dataverse/CHADS for detailed information of the data sampling process).

In the current study, five most recent waves (from 2005 to 2018) of CLHLS were used for data analysis because information on accessibility to medical care was unavailable in previous waves. The 2005 wave included 15638 (age: 62–120) respondents. The following four waves added 9842 respondents in 2008, 1532 in 2011, 1126 in 2014, and 12411 in 2018, respectively. Attrition was prevalent: 8166 participants dropped out due to death or the loss of follow-up in 2008, 8532 in 2011, 3699 in 2014, and 3773 in 2018, respectively. To explore trajectories of accessibility to medical care services among older adults, respondents who met the following criteria were included in this study: (a) 65 years old and above, (b) having complete information on accessibility to medical care services for at least three waves, and (c) be survived in the 2018 wave. According to these criteria, 2,660 eligible respondents were included to identify trajectories of accessibility to medical care services, among which 46.1% participated in five waves, 38.5% in four waves, and 15.4% in three waves.

Among the 2660 respondents participating in the follow-up study, missing values for certain time-invariant covariates (e.g., years of schooling and primary occupation) were imputed using available data from preceding waves. To address the absence of data for other covariates, we applied the multiple imputation by chained equations (MICE) technique with 20 imputed datasets for estimation [50]. Concerning incomplete longitudinal data on accessibility to medical care, LCGM estimated the parameters of latent trajectories using the full information maximum likelihood (FIML) approach in the Mplus software. This approach accommodates incomplete longitudinal data [54]. As a result, trajectory group membership could be identified even for individuals with fewer than 5 waves of data on accessibility to medical care. It is noteworthy that 520 cases were removed due to missing values pertaining to depressive symptoms, which could not be imputed from prior waves or be judged accurately by others. There is no significant difference in sample characteristics between the deleted samples and the retained samples.

2.2. Measures

2.2.1. Accessibility of Medical Care Services. Accessibility of medical services has been measured by whether they can seek medical attention promptly when sick [55]. Following the prior study, accessibility of medical care services was measured by a combination of two questions: "When you were seriously ill, could you be able to get to the hospital timely for treatment?" and "Who primarily took care of you when you were not feeling well or when you were ill?" Responses to these two questions were classified into the following four categories: "to be treated timely and taken care of when they were sick," "not to be treated timely but taken care of when they were sick," "to be treated timely, but not to be taken care of," and "both not to be treated timely and taken care of." Then, accessibility to medical care was measured as follows: "to be treated and taken care of when they were sick = 3," "be treated timely but not to be taken care of, or not to be treated timely but be taken care of = 2," and "both not to be treated timely and taken care of = 1." A higher score indicates better accessibility to medical care services.

2.2.2. Psychological Well-Being. In this study, psychological well-being was measured by life satisfaction and depressive symptoms. Life satisfaction was measured by asking the respondents, "what do you think about your life now?" Four responses were provided: very bad = 1, bad = 2, so-so = 3, and perfect = 4, with higher scores indicating higher satisfaction in life.

The brief score of the Center for Epidemiological Studies-Depression (CES-D) [53] was used for the measure of depressive symptoms. Participants were asked how often (with a 5-point scale ranging from "never" to "always") they experienced ten depressive symptoms (e.g., "I felt sad" and "My sleep was restless"). A sum score of all items was obtained, with a higher score indicating more severe depressive symptoms.

2.2.3. Control Variables. The following variables were included as covariates in the study: age, gender, education (length of schooling), marital status (widowed/divorced/never married = 0; being married = 1), living alone (yes = 1; no = 0), current living location (urban = 1; rural = 0), regions (eastern region = 1; central region = 2; western region = 3),

household per capita income and occupation (jobless or housework = 1; farm = 2; others = 3), disposable economic level (sufficiency = 1; inadequate = 0), medical insurance (yes = 1; no = 0), endowment insurance (yes = 1; no = 0), surviving children (a continuous variable), having chronic disease (yes = 1; no = 0), self-rated health, and ADL (activity of daily living, a continuous variable).

2.3. Statistical Analysis. We first described the trends of accessibility to medical care services for older adults in China over the decade and compared the rural-urban and regional differences in the trends of accessibility to medical care services. Next, we identified the heterogeneous trajectories of accessibility to medical care services for older adults in China using the latent class growth model (LCGM). Then, we compared the differences in social-demographic characteristics, life satisfaction, and depressive symptoms between different trajectory types through t tests (for continuous variables), and Pearson's chi-squared test (for categorical variables). Ordinary least squares (OLS) regression was used to examine the association between trajectories of accessibility to medical care services and older adults' psychological well-being. Rural-urban and regional differences in the association between trajectories of medical care services accessibility and psychological well-being were also tested after controlling covariates. The LCGM was conducted using the statistical software program of Mplus, version 8.0. All regression analyses were conducted using Stata 17 software. P value <0.05 is statistically significant.

3. Results

3.1. Changing Trends of Accessibility to Medical Care Services. Figure 1 presents the changing trends of accessibility to medical care services for older adults in China. During 2005–2018, the overall percentage of full accessibility to medical care services for older adults in China showed an upward trend, increasing from about 87.73% in 2005 to approximately 95.36% in 2018. Though the gap in full accessibility to medical care services between rural and urban areas was narrowing, the percentages of full accessibility to medical care services for older adults in rural areas were always lower than those in urban areas during 2005–2018. The eastern region had the highest full accessibility to medical care services for older adults. The percentages of full accessibility to medical care services for older adults in eastern and central regions of China kept increasing during 2005–2018. However, these percentages in the western region declined during 2008–2018.

3.2. Trajectories of Accessibility to Medical Care Services for Older Adults. Our analysis started with a basic linear growth model in which the entire sample was considered belonging to a single homogeneous group. Then, two to four-class LCGMs were conducted to ascertain the optimum LCGM model. The relative fit indices for all models are presented in Table 1. For all models, the BLRT values are significant. The BLRT shows that the three-class solution fit significantly better than the two-class solution, but the four-class solution did not fit significantly better than the three-class solution. This suggests that the three-class model could be considered optimum. The AIC, BIC, and ABIC values decrease steadily from the two to three-class models, which indicates a preference for the three-class solution. However, the entropy value for the two-class solution is higher than that of the three-class solution, indicating that the two-class model is better. A researcher suggested that BIC should weigh more in comparisons within model sets because it performed best of the information criteria [54]. Based on this consideration, the three-class model was selected.

Three latent classes identified in the trajectories of accessibility to medical care services are shown in Figure 2. The first latent class, which was named "high to low accessibility" (7.82% of the sample), indicates a high initial score (intercept = 3.456, $p < 0.001$) and a significant downward trend (slope = −0.468, $p < 0.001$). The second class, which was named "medium to high accessibility" (8.10%), represents a medium initial score (intercept = 1.632, $p < 0.001$) and a slight rising trend (slope = 0.323, $p < 0.001$). The third class was named "maintaining high accessibility" (84.10% of the sample), representing a high initial score (intercept = 2.990, $p < 0.001$) and an unchanged trend over time (slope = 0.001, $p < 0.001$).

3.3. Class Members' Characteristics in Three Trajectories of Accessibility to Medical Care Services. Table 2 shows the differences in sociodemographic characteristics across members in three trajectories of medical care accessibility. Compared to older people with "medium to high accessibility" and "high accessibility," those with "high to low accessibility" to medical care services were more likely to be married (84.92% vs. 67.89% vs. 54.44%), came from the eastern region (62.57% vs. 52.63% vs. 60.71%), had no endowment (79.89% vs. 67.37% vs. 57.16%) and medical insurance (53.63% vs. 16.32% vs. 14.21%), had inadequate money (52.51% vs. 27.37% vs. 13.38%), had a small number of children (2.09 vs. 3.56 vs 3.66), had a lower percentage of chronic disease (39.66% vs. 66.32% vs. 69.28%), reported lower life satisfaction (3.31 vs. 3.46 vs. 3.75), and had more depressive symptoms (24.12 vs. 23.11 vs. 22.13).

3.4. Associations between Trajectories of Accessibility to Medical Care Services and Older Adults' Psychological Well-Being. Table 3 shows the regression results for the association between the trajectories of accessibility to medical care service and psychological well-being after controlling confounders. Model 1 shows that the trajectories of "high to low accessibility" and "medium to high accessibility" to medical care service were significantly associated with life satisfaction. These findings suggest that both older adults with increased accessibility (−0.146, $p < 0.01$) and decreased accessibility (−0.186, $p < 0.05$) had lower life satisfaction than those who maintained high accessibility. In Model 2, a positive association between the trajectories of "high to low accessibility" and older adults' depressive symptoms was statistically significant, which suggests that older adults with

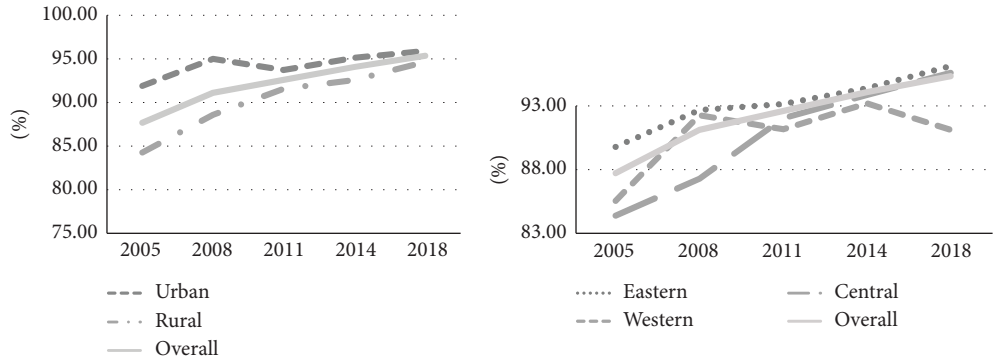

Figure 1: Trends of full accessibility to medical care services in China, 2005–2018.

Table 1: Latent class model fit for trajectories of accessibility to medical care services.

Number of classes	AIC	BIC	saBIC	Entropy	LMR	BLRT	Estimated probability for trajectory group (%)			
							1	2	3	4
1	9213.522	9272.372	9240.599	—	—	—	100.0			
2	6407.330	6483.834	6442.529	0.977	NS	**	91.45	8.55		
3	4599.596	4693.755	4693.755	0.987	***	***	7.80	8.10	84.10	
4	3762.016	3873.830	3813.461	0.976	NS	***	89.13	1.03	5.32	4.52

AIC, Akaike information criterion; BIC, Bayesian information criterion; saBIC, sample size adjusted BIC; LMR, Lo–Mendell likelihood ratio test; BLRT, bootstrap likelihood ratio test. Signifcance levels: $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

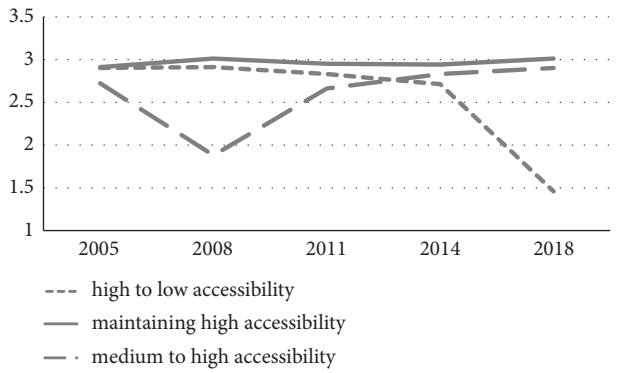

Figure 2: Latent classes for trajectories of medical care accessibility.

a trajectory of decreased accessibility had higher depression symptoms (0.755, $p < 0.05$) than those who maintained high accessibility. However, the association between the trajectories of "medium to high accessibility" and depressive symptoms was not significant.

3.5. Heterogeneity Analysis. Table 4 shows the regression results of stratified analysis for trajectories of medical care accessibility and life satisfaction controlled for covariates. The results suggest that the associations between the trajectories of medical care accessibility and life satisfaction were rural-urban and regional differences. Only in urban areas or eastern regions, older adults with trajectories of "high to low accessibility" (−0.358, $p < 0.001$; −0.564, $p < 0.001$) or "medium to high accessibility" (−0.175, $p < 0.01$; −0.196, $p < 0.01$) to medical care services reported lower life satisfaction than those maintaining high accessibility to medical care services.

Table 5 presents the regression results of stratified analysis for trajectories of medical care accessibility and depressive symptoms controlled for covariates. Rural-urban and regional differences in the effect of trajectories of medical care accessibility on depressive symptoms were also confirmed. Only in urban, eastern, or central areas of China, older adults with a trajectory of "high to low accessibility" (0.874, $p < 0.01$; 1.665 $p < 0.01$; 4.636 $p < 0.01$) to medical care services reported more depressive symptoms than those maintaining high accessibility to medical care services.

4. Discussion

Medical care services play a crucial role in older adults' healthy aging by treating diseases, preventing chronic

Table 2: Sociodemographic characteristics of members in three trajectories.

Variables		Overall sample ($N = 2660$)	High to low accessibility ($N = 208$)	Medium to high accessibility ($N = 222$)	High accessibility ($N = 2230$)	F/χ^2
Age		84.93 (8.65)	85.64 (8.92)	85.99 (9.46)	84.76 (8.53)	4.34***
Gender	Male	47.21%	43.58%	38.95%	48.38%	7.21***
	Female	52.79%	56.42%	61.05%	51.62%	
Current living location	Rural	47.83%	53.63%	50.00%	47.07%	3.21
	Urban	52.17%	46.37%	50.00%	52.93%	
Regions	Eastern	60.18%	62.57%	52.63%	60.71%	10.58***
	Central	27.95%	26.26%	37.89%	27.12%	
	Western	11.87%	11.17%	9.47%	12.17%	
Marital status	Being married	57.95%	84.92%	67.89%	54.44%	70.79***
	Others	42.05%	15.08%	32.11%	45.56%	
Living alone	Yes	17.83%	23.46%	27.37%	16.35%	18.53***
	No	82.17%	76.54%	72.63%	83.65%	
Education degree		3.23 (4.25)	2.96 (3.85)	2.11 (2.76)	3.12 (3.98)	15.20***
Disposable economic level	Sufficiency	82.39%	47.49%	72.63%	86.62%	18.64***
	Inadequate	17.61%	52.51%	27.37%	13.38%	
Household per capita income		15127.34 (17009.25)	14901.493 (15587.44)	13178.044 (16631.94)	15195.526 (17178.58)	2.13
Occupation	Jobless/housework	64.04%	69.83%	67.37%	63.17%	4.41
	Farmer	28.43%	24.58%	25.26%	29.10%	
	Others	7.53%	5.59%	7.37%	7.73%	
Endowment insurance	Yes	40.21%	20.11%	32.63%	42.84%	40.13***
	No	59.79%	79.89%	67.37%	57.16%	
Medical insurance	Yes	82.52%	46.37%	83.68%	85.79%	17.66***
	No	17.48%	53.63%	16.32%	14.21%	
Surviving children		3.21 (1.85)	2.09 (2.02)	3.56 (1.82)	3.66 (1.72)	9.27***
ADL		29.37 (5.47)	28.91 (6.04)	28.98 (5.62)	29.43 (5.42)	2.74
Self-rated health		3.26 (1.05)	3.03 (1.16)	3.07 (1.05)	3.30 (1.04)	2.58
Chronic disease	Yes	66.71%	39.66%	66.32%	69.28%	64.66***
	No	33.29%	60.34%	33.68%	30.72%	
Life satisfaction		3.53 (1.07)	3.31 (1.12)	3.46 (1.11)	3.75 (1.03)	15.66***
Depressive symptoms		23.12 (6.62)	24.12 (7.13)	23.11 (6.94)	22.13 (5.90)	17.49***

Note. Ref.: reference category. Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 3: Regression results for trajectories of medical care accessibility and psychological well-being.

	Life satisfaction Model 1 coefficient	Depressive symptoms Model 2 coefficient
Trajectory of accessible medical care (ref.: maintaining high accessibility)		
Medium to high accessibility	−0.146** (0.083)	−0.333 (0.729)
High to low accessibility	−0.186* (0.118)	0.755** (0.565)
Age	−0.079** (0.003)	−0.013 (0.021)
Gender (ref.: male)	0.023 (0.048)	0.314 (0.320)
Current living location (ref.: rural)	0.034 (0.045)	0.640** (0.304)
Regions (ref.: eastern)		
Central	−0.101** (0.051)	0.497 (0.343)
Western	−0.007 (0.069)	−0.999** (0.473)
Married status (ref.: widowed/divorced/never married)	0.015 (0.052)	−1.123*** (0.345)
Living style (ref.: others)	−0.188 (0.127)	1.158 (0.833)
Education degree	−0.100 (0.063)	−0.641 (0.428)
Economic disposable level (ref.: inadequate)	0.299*** (0.064)	−2.840*** (0.443)
Household per capita income	0.062*** (0.014)	−0.044 (0.097)
Occupation (ref.: others)		
Farmer	−0.102 (0.092)	0.795 (0.591)
Jobless/housework	−0.241*** (0.084)	1.231** (0.543)
Endowment insurance (ref.: no)	0.076* (0.046)	−0.800*** (0.306)
Medical insurance (ref.: no)	0.175*** (0.065)	0.533 (0.437)
Surviving children	0.017 (0.013)	0.044 (0.091)
Self-rated health	0.698*** (0.046)	−3.723*** (0.299)
ADL	0.051*** (0.004)	−0.247*** (0.038)
Chronic disease (ref.: no)	0.075 (0.048)	0.119 (0.322)
Constant	2.059***	33.59***
R^2	0.317	0.236
N	2660	2140

Note. Ref.: reference category. Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 4: Regression results for life satisfaction by current living location and region.

	Life satisfaction				
	Current living location		Regions		
	Urban	Rural	Eastern	Central	Western
Trajectory of medical care accessibility (ref.: maintaining high accessibility)					
Medium to high accessibility	−0.358*** (0.108)	−0.077 (0.100)	−0.564*** (0.110)	−0.310 (0.107)	−0.316 (0.243)
High to low accessibility	−0.175** (0.141)	−0.178 (0.152)	−0.196** (0.138)	−0.365 (0.227)	−0.362 (0.217)
Control variables			Controlled		
Constant	3.354*** (0.522)	2.726*** (0.505)	2.696*** (0.468)	3.266*** (0.654)	3.898*** (1.262)
R^2	0.186	0.268	0.230	0.256	0.217
N	1423	1237	1611	731	318

Note. Ref.: reference category. Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Table 5: Regression results for depressive symptoms by current living location and region.

	Depression symptoms				
	Current living location		Regions		
	Urban	Rural	Eastern	Central	Western
Trajectory of medical care accessibility (ref.: maintaining high accessibility)					
Medium to high accessibility	−0.801 (1.135)	−0.198 (1.109)	−0.630 (1.041)	−0.842 (1.723)	−0.918 (0.833)
High to low accessibility	0.874** (0.751)	0.498 (0.855)	1.665** (0.840)	4.636** (0.833)	0.754 (1.935)
Control variables			Controlled		
Constant	42.20*** (3.892)	26.40*** (4.005)	29.57*** (3.557)	42.09*** (5.037)	40.96*** (10.00)
R^2	0.240	0.274	0.255	0.272	0.312
N	1130	1010	1230	629	281

Note. Ref.: reference category. Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

diseases, slowing the progress of functional disability, increasing life span, and improving quality of life [55–60]. To determine whether older adults' psychological well-being has benefited from increased or maintaining high accessibility to medical care services in China. This study identified heterogeneous trajectories of accessibility to medical care services among Chinese older adults. Then, we examined the association between trajectories of accessibility to medical care services and psychological well-being. Our results show that three different classes of trajectories, "high to low accessibility," "medium to high accessibility," and "maintaining high accessibility," were identified, which captured the heterogeneity in accessibility to medical care services during the 13 years period. Our findings also suggest that maintaining high accessibility to medical care services could improve psychological well-being for older adults in China.

In line with previous researchers' statement that the accessibility to medical care services in China has indeed been improved to a certain extent along with increased investment in essential medical resources [48, 61], our descriptive analysis confirmed that the accessibility to medical care services for older adults in China showed an upward trend during the decade. However, the result of LCGM suggests that the trajectory of accessibility to medical care services was heterogeneous for different older adults in China. Though most of older adults maintained a high accessibility or realized an increase from medium to high accessibility, there was still a subgroup of Chinese older adults (7.82%) who experienced a decline in access to medical care services in the last decade. Significant differences in sociodemographic characteristics among class members of accessibility trajectories to medical care services also indicate that those subgroups with declined access to medical care services tend to be the vulnerable group with the fewest economic resources for old-age support (e.g., disposable economic level, endowment insurance, medical insurance, and surviving children). Our findings suggest that not all older adults benefited from China's economic development and massive investment in medical care resources and confirmed that inequity exists in the accessibility to medical care services [62].

Although previous studies have well-documented the positive effect of medical care accessibility on health and well-being [34,63], this study further contributes to the literature by providing evidence on the association between cumulative to medical care accessibility and psychological well-being (life satisfaction and depressive symptoms). We found that older adults who experienced high to low medical care accessibility reported higher depressive symptoms and lower life satisfaction than those who maintained a trajectory of high medical care accessibility. This finding further confirmed the health vulnerability theory [29] and validated the protective and restorative effects of medical care accessibility on health vulnerability. In addition, this study found that older adults who experienced medium to high medical care accessibility reported lower life satisfaction but had no significant difference in their depressive symptoms than those that maintained a high trajectory of medical care accessibility. These findings suggest that not only maintaining high medical care accessibility could benefit older adults' psychological well-being but also increasing medical care accessibility could reduce their depressive symptoms in China.

The association between trajectories of accessibility to medical care and psychological well-being was only significant among older adults in economically developed regions, which is in line with the findings that increasing input in rural healthcare facilities in recent decades has not led to commensurate improvements in rural residents' life satisfaction [64]. Regional disparities may be partly explained by differences in socioeconomic resources and service quality between rural and urban areas and across different regions [65, 66]. Even if medical care services are available, many older adults in rural and western areas usually refuse to seek medical services when they are sick due to their limited socioeconomic resources. In addition, the quality of medical care service in rural areas (economically underdeveloped areas) is lower than that in urban or economically developed areas of China, which restricts its capacity to satisfy older adults' demand in rural or western areas [67]. The Chinese government should gradually transfer its focus from increasing population coverage of basic medical care services to improving medical service quality and targeted provision of services required by economically undeveloped regions' older populations.

We acknowledge that there are some limitations in this study. First, the sample in this study only included those participants who completed at least three waves of the survey. There may be some bias in the estimated proportion of medical care accessibility trajectories. Second, medical care accessibility is a complex, multifaceted concept [8, 9], which was only measured as seeking medical attention and care in time when sick in the current study. Hence, other dimensions of medical care accessibility should be considered in future studies. Third, this study exclusively focused on the relationship between medical care accessibility trajectories and life satisfaction, and issues of causality are not directly addressed and discussed.

5. Conclusions

Despite these limitations, the current study took a first try with longitudinal data that examined the association between the trajectory of medical care accessibility and psychological well-being (life satisfaction and depressive symptoms) and its rural-urban and regional disparity. Satisfying older adults' growing need for high-quality medical care has become a significant policy issue in China, which is experiencing rapid population aging. Our findings show that Chinese older adults have experienced three distinct trajectories ("high to low accessibility," "medium to high accessibility," and "maintaining high accessibility") of medical care accessibility over the 13-year period, which were found to be significantly associated with psychological well-being in later life. Moreover, the effect was more pronounced in older adults living in urban and eastern areas. Findings can be used to identify heterogeneity in the medical care accessibility for older adults in China and

emphasize the importance of maintaining and improving accessibility to medical care services in promoting the psychological well-being of older people, paying attention to vulnerable groups with reduced accessibility, and prioritizing support and service orientation to eliminate differences in accessibility. At the same time, our findings also highlight the importance of proving medical care services which centered older adults' need and improving service quality in economically undeveloped regions.

Data Availability

The Chinese Longitudinal Healthy Longevity Survey (CLHLS) data used to support the findings of this study may be released upon application to the Center for Healthy Aging and Development Studies of Peking University, which can be contacted at https://opendata.pku.edu.cn/dataverse/CHADS.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

This work was supported by the National Social Science Foundation of China (21ZDA103).

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