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The Impact of Health Conditions on Elderly Care Mode Choices among Older Populations

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***Abstract*—**This study focuses on the impact of health disparities on elderly care model selection among older adults. By analyzing data from the 2023 China Health and Retirement Longitudinal Study (CHARLS) and employing univariate analysis methods, we empirically investigate the care choice behaviors and underlying factors among seniors with varying health statuses.The results demonstrate that health dimensions including self-care ability, mental health, chronic disease burden, and health behaviors significantly influence care model preferences. Specifically, those with limited self-care capacity show greater preference for institutional care, while individuals with positive psychological states tend to choose home-based care. Additionally, demographic factors such as gender, age, and marital status also exert significant effects.These findings provide both theoretical foundations and practical guidance for optimizing elderly care policies and improving service quality. The research contributes to building more human-centered and efficient elderly care systems, ultimately supporting the goal of ensuring happy and fulfilling later lives for aging populations.

Keywords*—Care Model Selection; Health Disparities; Charls Dataset*

I. INTRODUCTION

With China's rapid economic development and significant improvements in healthcare conditions, the average life expectancy of Chinese residents has continued to increase, directly accelerating the population aging process. By the end of 2024, China's population aged 60 and above reached 310 million, while those aged 65 and above totaled 220 million, accounting for 22% and 15.6% of the total population respectively. This marks China's entry into a moderately aging society, representing one of the most prominent characteristics of its demographic transformation.

The advent of an aging society has reshaped China's population structure, creating substantial challenges for both families and society. Traditional family-based elderly care models are under increasing pressure, with their sustainability being called into question. Against this backdrop, the health status of older adults has become a critical factor influencing their choices of elderly care models. Health disparities directly determine the diversity and complexity of their care needs.

In light of these circumstances, this study aims to conduct an in-depth analysis of the decision-making behaviors of older adults with different health statuses when selecting among various care models, as well as the underlying influencing factors. The research seeks to explore how health disparities affect the care model selection process, thereby providing theoretical support and practical guidance for building a more human-centered and efficient elderly care service system.

Eun-Young Kim (2006) applied the Andersen model to compare characteristics of older adults choosing home-based versus institutional care, finding that married individuals with poor physical function, cognitive impairment, and multiple comorbidities were more likely to prefer home care [1]. Williams et al. (2016) observed that older adults lacking self-care abilities, due to urgent care needs, tended to opt for nursing homes [2]. Conversely, Melanie (2011) demonstrated that physically healthy elders with good functional independence actually favored home-based arrangements [3].

Baker et al. (2008) emphasized that older adults weigh psychological needs, social engagement, and family support when selecting care models, aiming to optimize quality of life [4]. Glass et al. (2010) further promoted the concept of active aging, advocating social participation as a pathway to sustained physical and mental well-being among elders [5].

This study, grounded in China's aging population data, adv ances the health-difference perspective on elderly care decision s. By employing empirical methods and disaggregating health dimensions, it offers deeper insights into how health variations shape older adults' care preferences.

II. DATA SOURCES

This study conducts empirical analysis using data from the 2023 China Health and Retirement Longitudinal Study (CHARLS). The survey covers 150 counties and 450 villages across China, including approximately 10,000 households with over 17,000 middle-aged and elderly respondents aged 45 and above. The CHARLS database contains both urban and rural samples, ensuring good representativeness of China's middle-aged and elderly population. Consequently, empirical research utilizing CHARLS data yields more accurate results.

The data processing procedure involved: First, identifying variables corresponding to research questions in the user manual, then employing Stata functions including replace, forvalue, and if to clean the CHARLS data. The final sample comprised 977 valid observations after filtering respondents who clearly answered elderly care preference questions and maintained high data completeness.

III. ONE-WAY ANALYSIS OF VARIANCE

A. Impact of Activities of Daily Living (ADL) on Elderly Care Preference

This study measured self-care ability using the Activities of Daily Living (ADL) scale[6], which comprises six indicators in the CHARLS questionnaire: dressing, bathing, eating, transferring, toileting, and continence control. Responses were coded as 1 ("no difficulty"), 2 ("difficult but manageable"), 3 ("needs assistance"), or 4 ("unable to complete"). Individuals scoring 3 or 4 were classified as having ADL impairments (coded 0), while those scoring 1 or 2 were considered independent (coded 1).

Results (Table Ⅰ) showed significant associations ($P<0.05$) between all six ADL indicators and care preference, with bathing, transferring, and continence control exhibiting the strongest effects ($P<0.001$). Specifically, over 82% of fully independent elders preferred home-based care, whereas those requiring assistance showed markedly higher inclination toward institutional care—reaching 43.2% among individuals needing continence support. These findings underscore ADL dependency as a critical determinant of elderly care choices,

with functional limitations significantly increasing the likelihood of institutional care adoption.

TABLE I. IMPACT OF ACTIVITIES OF DAILY LIVING (ADL)

ADL	Classification	Home-based elderly care		Socialized elderly care		χ^2/H	p-value
		N	%	N	%		
Dressing	Independent(1)	755	82.2	164	17.8	6.261	0.012
	Dependent(0)	40	69	18	31		
Bathing	Independent(1)	731	83.2	148	16.8	18.547	<0.001
	Dependent(0)	64	65.3	34	34.7		
Feeding	Independent(1)	770	82	169	18	6.333	0.012
	Dependent(0)	25	65.8	13	34.2		
Indoor ambulation	Independent(1)	765	82.6	161	17.4	18.048	<0.001
	Dependent(0)	30	58.8	21	41.2		
Continence	Independent(1)	761	82.3	164	17.7	9.261	0.002
	Dependent(0)	34	65.4	18	34.6		

B. Impact of Mental Health on Elderly Care Preference

This study assessed mental health using the 10-item CES-D depression scale from the CHARLS survey [7]. Participants rated ten items (e.g., "feeling bothered," "hopefulness," "loneliness") on a 4-point scale (1 = rarely/none, 2 = not much, 3 = sometimes/half the time, 4 = most of the time). After reverse-coding eight negatively phrased items, responses were dichotomized: scores of 1–2 indicated low depression/good mental health (coded 1), while scores of 3–4 indicated high depression/poor mental health (coded 0).

Results (Table Ⅱ) showed that while mental health overall had limited impact on care preference, two indicators—"hopefulness" and "happiness"—were significantly associated ($P < 0.05$). Specifically, elders with greater hopefulness (83.9% vs. 78.2%) and happiness (83.5% vs. 77.3%) were more likely to prefer home-based care. Other indicators (e.g., sadness, sleep problems, loneliness) showed nonsignificant trends ($P > 0.05$). These findings suggest that positive mental states (hopefulness and happiness) may exert a stronger influence on elderly care decisions than negative psychological symptoms.

TABLE II. IMPACT OF ACTIVITIES OF MENTAL HEALTH

Mental Health	Classification	Home-based elderly care		Socialized elderly care		χ^2/H	p-value
		N	%	N	%		
Irritated	Much or most of the time (0)	288	79.3	75	20.7	1.574	0.21
	Little or none of the time (1)	507	82.6	107	17.4		
Poor concentration	Much or most of the time (0)	280	82.1	61	17.9	0.189	0.664
	Little or none of the time (1)	515	81.0	121	19.0		
Depressed	Much or most of the time (0)	260	78.5	71	21.5	2.629	0.105
	Little or none of the time (1)	535	82.8	111	17.2		
Everything effortful	Much or most of the time (0)	284	80.2	70	19.8	0.481	0.488
	Little or none of the time (1)	511	82.0	112	18.0		
Hopeful	Much or most of the time (0)	341	78.2	95	21.8	5.189	0.023
	Little or none of the time (1)	454	83.9	87	16.1		
Fearful	Much or most of the time (0)	148	86.0	24	14.0	3.01	0.083
	Little or none of the time (1)	647	80.4	158	19.6		
Sleep problems	Much or most of the time (0)	309	81.1	72	18.9	0.03	0.863
	Little or none of the time (1)	486	81.5	110	18.5		
Cheerful	Much or most of the time (0)	262	77.3	77	22.7	5.716	0.017
	Little or none of the time (1)	533	83.5	105	16.5		
Lonely	Much or most of the time (0)	223	79.4	58	20.6	1.054	0.305
	Little or none of the time (1)	572	82.2	124	17.8		
Life unmanageable	Much or most of the time (0)	159	78.3	44	21.7	1.569	0.21
	Little or none of the time (1)	636	82.2	138	17.8		

C. Impact of Chronic Disease Burden on Elderly Care Preference

Drawing on the chronic disease burden framework, this study examined 15 conditions—including hypertension, diabetes, cancers, stroke, dementia/Alzheimer's, Parkinson's, arthritis, and asthma—using CHARLS data. Results (Table Ⅲ) revealed no significant associations ($P > 0.05$) between most chronic conditions and care preference, with one exception: dementia/Alzheimer's showed a clear link ($P < 0.05$).

The nonsignificant findings for hypertension, diabetes, and other common conditions likely reflect older adults' adaptation to living with these illnesses, as many still maintain daily independence and thus see little need to alter their care arrangements. Dementia stands apart: its progressive cognitive decline and behavioral symptoms (e.g., wandering, agitation) demand 24-hour supervision, specialized cognitive therapies, and intensive caregiver support—resources typically unavailable in ordinary home or community settings. Consequently, families of dementia patients often face overwhelming physical and emotional strain, driving them toward institutional care despite their initial preference for home-based solutions.

TABLE III. IMPACT OF CHRONIC DISEASE BURDEN

Chronic Disease	Classification	Home-based elderly care		Socialized elderly care		χ^2/H	p-value
		N	%	N	%		
Hypertension	Yes (0)	86	86.9	13	13.1	2.196	0.138
	No (1)	709	80.8	169	19.2		
Dyslipidemia	Yes (0)	82	83.7	16	16.3	0.381	0.537
	No (1)	713	81.1	166	18.9		
Hyperglycemia	Yes (0)	39	78.0	11	22.0	0.395	0.530
	No (1)	756	81.6	171	18.4		
Cancer/Malignant tumors	Yes (0)	14	82.4	3	17.6	0.011	0.916
	No (1)	781	81.4	179	18.6		
Chronic pulmonary disease	Yes (0)	46	85.2	8	14.8	0.548	0.459
	No (1)	749	81.1	174	18.9		
Liver disease	Yes (0)	26	76.5	8	23.5	0.558	0.455
	No (1)	769	81.5	174	18.5		
Heart disease	Yes (0)	52	78.8	14	21.2	0.312	0.577
	No (1)	743	81.6	168	18.4		
Stroke	Yes (0)	21	75.0	7	25.0	0.772	0.380
	No (1)	774	81.6	175	18.4		
Kidney disease	Yes (0)	39	88.6	5	11.4	1.604	0.205
	No (1)	756	81.0	177	19.0		

Gastric/Digestive disorders	Yes (0)	57	80.3	14	19.7	0.060	0.807
	No (1)	738	81.5	168	18.5		
Mental/Emotional disorders	Yes (0)	15	75.0	5	25.0	0.547	0.460
	No (1)	780	81.5	177	18.5		
Memory-related disorders	Yes (0)	54	70.1	23	29.9	6.969	0.008
Kidney disease	No (1)	741	82.3	159	17.7		
Parkinson's disease	Yes (0)	12	70.6	5	29.4	1.327	0.249
Gastric/Digestive disorders	No (1)	783	81.6	177	78.4		
Arthritis/Rheumatic disease	Yes (0)	73	83.0	15	17.0	0.160	0.689
	No (1)	722	81.2	167	18.8		
Asthma (non-pulmonary)	Yes (0)	24	85.7	4	14.3	0.359	0.549
Kidney disease	No (1)	771	81.2	178	18.8		

D. Impact of Health Behaviors on Elderly Care Preference

Based on the health behavior theoretical framework, this study examines the influence of smoking, alcohol consumption, social engagement, napping habits, and physical labor on elderly individuals' preferences for care arrangements. The findings reveal significant variations in how different health behaviors affect care choices, as detailed below:

Smokers were significantly less likely to prefer home-based care (75.8%) compared to non-smokers (85.1%) (P<0.001), while their preference for institutional care was higher (24.2% vs. 14.9%). This may reflect poorer health among smokers, necessitating professional institutional support, or stricter home environments that discourage smoking, prompting institutional care choices.

The most pronounced effect was observed in social activity. Elderly with active social lives showed a markedly higher preference for home-based care (88.6%) than those without (75.8%) (P<0.001). This suggests that maintaining social networks fosters a preference for familiar environments where social needs are more easily met. It underscores the importance of integrating social activity spaces and programs in institutional care development.

TABLE IV. IMPACT OF HEALTH BEHAVIORS

Health Behaviors	**Classification**	**Home-based elderly care**		**Socialized elderly care**		χ^2/H	**p-value**
		N	**%**	**N**	**%**		
Smoking	Yes (0)	297	75.8	95	24.2	13.574	<0.001
	No (1)	498	85.1	87	14.9		
Drinking	Yes (0)	266	80.6	64	19.4	0.193	0.661
	No (1)	529	81.8	118	18.2		
Social activities	No(0)	416	75.8	133	24.2	25.903	<0.001
	Yes(1)	379	88.6	49	11.4		
Daytime napping	No(0)	403	84.1	76	15.9	5.818	0.030
	Yes(1)	392	78.7	106	21.3		
Physical labor	No(0)	100	74.6	34	25.4	4.661	0.031
	Yes(1)	696	82.4	148	17.6		

Interestingly, elders with regular napping habits exhibited a higher preference for institutional care (21.3%) than non-nappers (15.9%) (P=0.030). This may stem from napping's association with structured routines, or institutional facilities' ability to provide regimented daily schedules.

Those engaged in physical labor showed a stronger inclination toward home-based care (82.4%) compared to non-laborers (74.6%) (P=0.031). Physically active elders typically maintain better physical function and self-care abilities, enabling independent living at home. Regular activity delays functional decline—a critical capability for home-based care.

The only non-significant factor was alcohol use (P=0.661), indicating no clear impact on care preferences. This may relate to the heterogeneity of drinking patterns, where varying degrees and types of consumption neutralize effects.

(See Table IV for detailed statistics.)

E. The Influence of Personal Factors on Elderly Care Preference

Personal factors include indicators such as gender, age, marital status, household registration type , residential region, type of medical insurance, timing of pension distribution, number of children, presence of male children, family structure of children, relationship with children, sense of loneliness, and life satisfaction. The results show that gender, marital status, household registration type, residential region, type of medical insurance, timing of pension distribution, and family structure of children exhibit significant differences in elderly care choices ($P < 0.05$). Details are presented in Table Ⅴ.

The study found that marital status has the most significant impact ($P < 0.001$). Among those living with a spouse, 89.1% chose home-based care, while unmarried individuals had a much higher preference for institutional care (43.5%), highlighting the critical role of spousal support in elderly care decisions. Gender differences were also notable, with women showing a significantly higher preference for home-based care (86.1%) compared to men (77.0%) ($P < 0.001$).

Individuals with non-agricultural hukou (89.5%), urban employee medical insurance (91.0%), and government-funded medical care (95.8%) had significantly higher rates of home-based care (all $P < 0.001$), underscoring the importance of social security in elderly care choices. In terms of family support, elderly individuals without children had a much higher preference for institutional care (50%) compared to those with children ($P < 0.001$). However, satisfaction with child relationships did not show a significant influence ($P = 0.312$). Loneliness and life satisfaction had limited effects on elderly care choices ($P > 0.05$), with no significant differences observed in these factors.

TABLE V. IMPACT OF PERSONAL FACTORS

Personal Factors	**Classification**	**Home-based elderly care**		**Socialized elderly care**		χ^2/H	**p-value**
		N	**%**	**N**	**%**		
Gender	Female	404	86.1	65	13.9	13.534	<0.001
	Male	391	77.0	117	23.0		
Age	90+ years	7	100.0	0	0.0	7.575	0.056
	80-90 years	67	73.6	24	26.4		
	70-80 years	189	84.4	35	15.6		
	60-70 years	532	81.2	123	18.8		
Marital status	Never married	13	56.5	10	43.5	92.012	<0.001
	Widowed	198	81.1	46	18.9		
	Divorced	12	92.3	1	7.7		
	Separated	8	80.0	2	20.0		

	Married but not cohabiting	66	51.6	62	48.4		
	Married and cohabiting	498	89.1	61	10.9		
Household registration type	Agricultural	489	77.0	146	23.0	22.788	<0.001
	Non-agricultural	306	89.5	36	10.5		
Residential region	Rural	355	84.3	66	15.7	13.576	0.001
	Urban-rural fringe	117	71.3	47	28.7		
	Urban center	323	82.4	69	17.6		
Health insurance type	Urban employee insurance	181	91.0	18	9.0	27.552	<0.001
	Urban-rural resident insurance	64	79.0	17	21.0		
	Urban resident insurance	44	86.3	7	13.7		
	New rural cooperative insurance	465	77.2	137	22.8		
	Government-paid medical care	23	95.8	1	4.2		
	Other	18	90.0	2	10.0		
Pension disbursement timing	No pension	123	79.4	32	20.6	13.832	0.017
	Over 1 year	1	33.3	2	66.7		
	1 year	51	68.9	23	31.3		
	6 months	16	72.7	6	27.3		
	3 months	34	81.0	8	19.0		
	1 month	570	83.7	111	16.3		
Number of children		795	81.4	182	18.6	1.689	0.194
Having male children (Y/N)	No	136	78.2	38	21.8	1.440	0.230
	Yes	659	82.1	144	17.9		
Children composition	No children	14	50.0	14	50.0	21.024	<0.001
	More female children	281	84.1	53	15.9		
	Equal number	210	83.3	42	16.7		
	More male children	290	79.9	73	20.1		
Relationship with children	Currently no children	7	77.8	2	22.2	5.944	0.312
	Not at all satisfied	17	81.0	4	19.0		
	Slightly satisfied	45	70.3	19	29.7		
	Moderately satisfied	317	80.9	75	19.1		
	Very satisfied	355	83.3	71	16.7		
	Extremely satisfied	54	83.1	11	16.9		
Loneliness	Most of the time	125	77.6	36	22.4	4.270	0.234
	Sometimes	98	81.7	22	18.3		
	Occasionally	59	75.6	19	24.4		
	Rarely/never	513	83.0	105	17.0		
Life satisfaction	Not at all satisfied	31	79.5	8	20.5	0.499	0.974
	Slightly satisfied	62	82.7	13	17.3		
	Moderately satisfied	429	81.3	99	18.8		
	Very satisfied	230	81.0	54	19.0		
	Extremely satisfied	43	84.3	8	15.7		

CONCLUSION AND RECOMMENDATIONS

Based on the above research findings, we propose the following practical recommendations: First, it is essential to strengthen home-based elderly care support services by providing daily living assistance such as in-home nursing, bathing aid, and meal delivery for seniors with limited self-care abilities, while also offering training programs for both the elderly and their family members to enhance self-care skills. Second, efforts should be made to improve the professional nursing standards of institutional elderly care facilities through increased financial investment, infrastructure upgrades, and the deployment of qualified caregivers, with particular attention to specialized care for groups such as dementia patients. Additionally, greater attention should be paid to the mental health of the elderly by integrating psychological services into elderly care programs, conducting regular mental health assessments and counseling sessions, and organizing diverse social activities to foster positive psychological well-being. Chronic disease management services also need enhancement through the establishment of health records for elderly patients, provision of regular health check-ups, disease monitoring, and medication guidance, along with health education for both seniors and their families. Furthermore, promoting healthy lifestyles is crucial by encouraging the elderly to quit smoking, limit alcohol consumption, and actively participate in social and physical activities, with communities providing appropriate venues and facilities. Personalized elderly care services should be optimized by tailoring care plans to individual health conditions and personal factors to precisely meet seniors' needs. Finally, it is important to strengthen family-based elderly care support by improving the social security system to reduce the burden on families, while also enhancing marriage and family counseling services to reinforce the fundamental role of family in elderly care.

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