Differential Analysis of Demand Preferences and Care Willingness for Elderly Care Services between Urban and Rural Older Adults in the Pearl River Delta Region

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Abstract

Objective To understand the differences in demand preferences for elderly care services between urban and rural permanent elderly residents in the Pearl River Delta region, and to provide references for promoting balanced development of urban and rural elderly care services.

Methods Using a multi-stage stratified random sampling method, 7 community health service centers in 2 prefecture-level cities in the Pearl River Delta region were selected, and a questionnaire survey was conducted among 1,919 permanent elderly residents aged 60 and above who visited the centers.

Results A total of 641 urban elderly (33.4%) and 1,278 rural elderly (66.6%) in the Pearl River Delta region were surveyed; the proportion of urban elderly with only one child was significantly higher than that of rural elderly (22.2% vs 8.7%; $p<0.001$); the proportion of urban elderly who indicated they would purchase socialized elderly care service projects when needed was significantly higher than that of rural elderly (30.0% vs 15.3%; $p<0.001$); the proportion of rural elderly who agreed with the concept of raising children for old-age support was higher than that of urban elderly (76.1% vs 58.2%; $p<0.001$); 37.3% and 19.9% of urban and rural elderly respectively indicated that public health emergencies had an impact on their elderly care planning; the proportion of rural elderly who preferred family-based elderly care was higher than that of urban elderly (71.8% vs 57.1%; $p<0.001$); the proportion of urban elderly who explicitly expressed willingness to choose institutional elderly care was significantly higher than that of rural elderly (62.6% vs 44.0%; $p<0.001$). With family-based elderly care as the reference, urban elderly with monthly household

income and expenditure “surplus” [OR(95% CI):0.038(0.006-0.246)] and “basically balanced” [OR(95% CI): 0.072(0.012-0.431)], and those who agreed with the concept of raising children for old-age support [OR(95% CI): 0.318(0.110-0.923)] had lower willingness to choose institutional elderly care; urban males [OR(95% CI): 1.544(1.058-2.254)], those who would purchase socialized elderly care service projects [OR(95% CI): 2.208(1.213-4.020)], and those who believed that public health emergencies had an impact on their elderly care planning [OR(95% CI): 1.806(1.183-2.757)] were more inclined toward community home-based elderly care; rural elderly with local household registration were more inclined toward institutional elderly care [OR(95% CI): 4.237(1.031-17.405)] and community home-based elderly care [OR(95% CI): 1.463(1.057-2.024)]; rural elderly with non-only child status [OR(95% CI): 0.156(0.050-0.482)] and those who agreed with the concept of raising children for old-age support [OR(95% CI): 0.318(0.110-0.923)] had lower willingness to choose community home-based elderly care; rural elderly who believed that public health emergencies had an impact on elderly care planning [OR(95% CI): 3.260(1.002-10.600)] were more inclined toward institutional elderly care.

Conclusion There are significant differences in attitudes toward the concept of raising children for old-age support between urban and rural elderly; urban elderly are more receptive to socialized elderly care service projects compared to rural elderly, and the impact of public health emergencies on elderly care planning is basically consistent between urban and rural elderly. It is recommended that, in addition to strengthening the function of family-based elderly care, urban and rural elderly care resources should be rationally allocated according to urban-rural differences.

Full Text

Analysis of Differences in Demand Tendencies and Care Preferences for Elderly Care Services Between Urban and Rural Older Adults in the Pearl River Delta Region

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Abstract

Objective: To understand the differences in demand tendencies for elderly care services between urban and rural permanent residents in the Pearl River Delta (PRD) region and to provide evidence for promoting balanced development of urban and rural elderly care services. **Methods:** Using a multi-stage stratified random sampling method, we selected seven community health service centers in two prefecture-level cities in the PRD region and conducted a questionnaire survey among 1,919 permanent residents aged 60 years and older who visited these centers. **Results:** The survey included 641 urban elderly (33.4%) and 1,278 rural elderly (66.6%). The proportion of urban elderly with only one child was significantly higher than that of rural elderly (22.2% vs. 8.7%; $p<0.001$). Urban elderly were significantly more likely than rural elderly to express willingness to purchase socialized elderly care services when needed (30.0% vs. 15.3%; $p<0.001$). Rural elderly showed higher agreement with the traditional concept of "raising children to support old age" than urban elderly (76.1% vs. 58.2%; $p<0.001$). Public health emergencies affected retirement planning for 37.3% of urban and 19.9% of rural elderly. Rural elderly showed stronger preference for family-based care than urban elderly (71.8% vs. 57.1%; $p<0.001$), while urban elderly were significantly more willing to choose institutional care than rural elderly (62.6% vs. 44.0%; $p<0.001$). Using family-based care as the reference, multinomial logistic regression revealed that among urban elderly, those with household monthly income-expenditure "surplus" [OR (95% CI): 0.038 (0.006-0.246)] or "basically balanced" [OR (95% CI): 0.072 (0.012-0.431)], and those agreeing with the concept of raising children for old age [OR (95% CI): 0.318 (0.110-0.923)] showed lower willingness to choose institutional care. Urban males [OR (95% CI): 1.544 (1.058-2.254)], those willing to purchase socialized elderly care services [OR (95% CI): 2.208 (1.213-4.020)], and those believing public health emergencies affected their retirement planning [OR (95% CI): 1.806 (1.183-2.757)] were more inclined toward community home-based care. Among rural elderly, those with local household registration were more inclined toward both institutional care [OR (95% CI): 4.237 (1.031-17.405)] and community home-based care [OR (95% CI): 1.463 (1.057-2.024)], while those with more than one child [OR (95% CI): 0.156 (0.050-0.482)] and those agreeing with raising children for old age [OR (95% CI): 0.318 (0.110-0.923)] showed lower willingness to choose community home-based care. Rural elderly who believed public health emergencies affected their retirement planning [OR (95% CI): 3.260 (1.002-10.600)] were more inclined toward institutional care. **Conclusions:** Significant differences exist between urban and rural elderly in attitudes toward the concept of raising children for old age. Urban elderly are more recep-

tive to socialized elderly care services than rural elderly. The impact of public health emergencies on retirement planning is substantial in both groups. We recommend strengthening family-based care functions while rationally allocating urban-rural elderly care resources according to regional differences.

Keywords: urban and rural areas; elderly care services; demand; care preferences

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Introduction

With China's socio-economic development, population aging has accelerated rapidly, imposing heavy burdens on individuals, families, and society [**?**]. Elderly care preferences reflect older adults' fundamental attitudes and perspectives regarding care arrangements [**?**]. As population aging becomes increasingly prominent, demand for new forms of socialized elderly care services—primarily community home-based care and institutional care—has gradually increased beyond traditional family-based care [**?**]. However, differences in urban-rural economic development, living environments, and social divisions of labor may all influence elderly care preferences and choices [**?**]. Influenced by factors such as the family planning policy, population migration, and urbanization, rural areas in China are experiencing deeper actual aging, yet have far fewer elderly care resources compared to urban areas, making the rural elderly care problem more pronounced [**?**]. To accurately identify and meet the demand tendencies for elderly care services among urban and rural elderly in the PRD region and achieve balanced development of elderly care services, this study conducted a questionnaire survey of permanent residents aged 60 and older in the PRD from June to October 2022, comparing and analyzing differences in elderly care service demand tendencies between urban and rural areas to provide references for promoting balanced urban-rural elderly care development.

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1. Methods

1.1 Study Participants Considering that China has established a relatively comprehensive community health service system that provides non-discriminatory, equitable, and accessible basic medical and national essential public health services to elderly permanent residents (those living in the locality for six months or more), this study relied on community health service institutions for sample collection. We employed a multi-stage random sampling method: first, randomly selecting two prefecture-level cities in the PRD region; second, randomly selecting 20% of subordinate administrative districts in each city; and third, randomly selecting two community health service centers (stations) in each district as sample collection sites. The study targeted permanent elderly residents aged 60 and older who visited these community health service centers (stations), with trained community medical

staff conducting on-site questionnaire surveys. A total of 2,000 questionnaires were distributed, with 1,919 valid questionnaires recovered, yielding a valid response rate of 95.9%.

1.2 Research Methods We designed an elderly care preference questionnaire based on the China Longitudinal Aging Social Survey (CLASS) [**?**], covering basic demographic information, family structure and living arrangements, and retirement life planning (preferences). The questionnaire underwent three rounds of consultation and revision by six experts specializing in elderly care research and six frontline elderly care practitioners, who deemed the item design reasonable and well-aligned with the research objectives. The Guttman coefficient was 0.9093 and the content validity index was 0.9167, indicating good reliability and validity.

Based on household registration status, study participants were divided into urban elderly and rural elderly groups to analyze basic characteristics and compare differences in retirement planning.

1.3 Quality Control Before the survey, participants were fully informed of the research purpose and questionnaire instructions, and their consent was obtained. After survey completion, logical verification of data was performed. EpiData 3.1 software was used to create databases with double data entry. Standard statistical analysis software and appropriate statistical methods were employed for data analysis.

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2. Results

Statistical analysis employed percentages (%), with inter-group comparisons using ^{2} tests. Multinomial logistic regression was used to analyze factors influencing elderly care preferences among PRD older adults, with stratified analysis by urban-rural residence. SPSS was used for all analyses.

2.1 Basic Characteristics This study surveyed 1,919 older adults, including 641 urban elderly (33.4%) and 1,278 rural elderly (66.6%). Basic characteristics are shown in Table 1 . Significant differences existed between urban and rural elderly in the PRD region regarding gender, age, marital status, education level, primary income source, household monthly income-expenditure status, household registration location, medical insurance, pension insurance, life satisfaction, child status, sibling status, willingness to purchase socialized elderly care services, attitudes toward raising children for old age, affordable monthly institutional care costs, impact of public health emergencies on retirement planning, and proactive learning about local elderly care policies ($P<0.05$). No significant differences were found in retirement status, self-perceived health status, loneliness, or anxiety ($P>0.05$).

2.2 Awareness of Local Elderly Care Policies Results showed that 11.0% (212/1,919) of elderly had proactively learned about local elderly care policies, with urban elderly (16.5%) showing higher rates than rural elderly (8.3%). The proportion of urban elderly who learned about policies through personal experience, computer networks, and television was significantly higher than rural elderly, while rural elderly were more likely to learn through relatives/friends/neighbors, promotional videos, and community workers. However, differences between urban and rural elderly in overall policy awareness and primary learning channels were not statistically significant ($P>0.05$), as shown in Table 2 .

2.3 Preferences for Care Providers and Care Modes Results indicated that both urban and rural elderly viewed children as the primary caregivers, with rural elderly showing significantly higher agreement than urban elderly. Rural elderly also demonstrated significantly stronger preference for family-based care. Among those preferring family-based care, 76.3% (979/1,283) preferred living with sons, 7.8% (100/1,283) preferred living with daughters, and 15.9% (204/1,283) did not specify (including childless elderly). Notably, rural elderly preferring to live with sons (81.6%, 748/917) was significantly higher than urban elderly (63.1%, 231/366), while rural elderly preferring to live with daughters (7.0%, 64/917) was significantly lower than urban elderly (9.8%, 36/366). Significant differences existed between urban and rural elderly in perceptions of primary caregivers, current main care modes, personally preferred care modes, and key factors to consider in retirement planning ($P<0.05$), as shown in Table 3 .

2.4 Preferences for Institutional Care When considering only institutional care preferences, 50.1% of elderly explicitly expressed willingness to choose institutional care, with urban elderly showing significantly higher rates than rural elderly. Urban elderly also demonstrated significantly higher preference for public institutions. Key factors in selecting institutional care differed notably between groups, as shown in Table 4 . Significant differences existed between urban and rural elderly in reasons for choosing institutional care ($P<0.05$).

2.5 Impact of Public Health Emergencies Results showed that 25.7% of elderly reported that public health emergencies affected their retirement planning, with urban elderly (37.3%) significantly higher than rural elderly (19.9%). Among those affected, rural elderly reported more pronounced impacts (41.7%) than urban elderly (34.7%). The impact of public health emergencies on retirement planning differed between urban and rural elderly, as shown in Table 5 , though differences in specific impact aspects were not statistically significant ($P>0.05$).

2.6 Multinomial Logistic Regression Analysis of Elderly Care Preferences Using elderly care preference (preferred care mode) as the dependent variable (with family-based care as reference) and age (60-69 years; 70+ years), gender (male; female), marital status (married; unmarried), education (college and above; high school/vocational; middle school; primary school; illiterate/semi-illiterate), household monthly income-expenditure status (surplus; basically balanced; deficit), household registration (local; non-local), pension insurance (yes; no), life satisfaction (satisfied; dissatisfied), child status (only child; non-only child), willingness to purchase socialized elderly care services (yes; no; unclear), attitude toward raising children for old age (agree; disagree), impact of public health emergencies on retirement planning (yes; no), and proactive learning about local policies (yes; no; unconcerned) as independent variables, we conducted multinomial logistic regression with urban-rural stratification. Results are shown in Table 6 .

Compared with family-based care, urban male elderly and married rural elderly were more willing to choose community home-based care, while married PRD elderly (non-stratified) showed lower willingness to choose institutional care. PRD elderly (non-stratified) and rural elderly with primary school education showed lower willingness to choose institutional care compared with illiterate/semi-illiterate elderly. PRD elderly (non-stratified) and urban elderly with household monthly income-expenditure "surplus" showed lower willingness to choose institutional care, while urban elderly with "basically balanced" income-expenditure showed lower willingness for both institutional and community home-based care. Local-registered rural elderly were more willing to choose both institutional and community home-based care, while local-registered PRD elderly (non-stratified) were more willing to choose community home-based care. Urban elderly with pension insurance were more willing to choose community home-based care. Rural elderly satisfied with life and those with non-only child status showed lower willingness to choose institutional care. PRD elderly (non-stratified), urban elderly, and rural elderly who explicitly expressed willingness to purchase socialized elderly care services were more willing to choose community home-based care, as were those who were "unclear" about purchasing such services. PRD elderly (non-stratified) who agreed with raising children for old age showed lower willingness for both institutional and community home-based care, while urban elderly showed lower willingness for institutional care and rural elderly showed lower willingness for community home-based care. PRD elderly (non-stratified) and rural elderly who proactively learned about local policies showed lower willingness for community home-based care, while PRD elderly (non-stratified) who were "unconcerned" about local policies were more willing to choose institutional care.

Discussion

The seventh national census data show that by November 2020, China's population aged 60 and above reached 264 million, accounting for 18.7% of the total population (with those aged 65+ totaling approximately 191 million, or 13.5%). Compared with the 2010 sixth national census, the proportion of population aged 60+ increased by 5.44%, and those aged 65+ increased by 4.63%, indicating deepening population aging and sustained pressure on long-term balanced population development [**?**]. Research indicates that as aging accelerates and life expectancy increases, the elderly population requiring professional care—particularly the oldest-old and disabled—is expanding [**?**], which will place even greater pressure on China's elderly care system. This study found that the average age of urban elderly in the PRD $(71.15\$\pm5.992 years) was significantly higher than that of rural elderly (68.89\pm\$5.905$ years), with a notably higher proportion of urban elderly aged 80+ compared with rural elderly, suggesting that PRD urban areas may face increasing care pressure due to growth in the oldest-old population.

Research shows that as elderly care policy practice in China develops toward diversified responsibility, the supply of care resources has gradually expanded from the family to society, while residents' awareness of preparing for old age through personal savings, labor income, and pension insurance continues to strengthen [**?**]. This study found that PRD urban and rural elderly's primary income sources were pensions (72.6%), personal savings (66.4%), children/relatives' support (64.5%), personal labor income (20.3%), commercial insurance (6.5%), and government subsidies (5.2%), consistent with previous research. Notably, rural elderly relying on children/relatives for support (69.0%) was significantly higher than urban elderly (55.4%). A striking 76.1% of rural elderly agreed with the concept of raising children for old age, significantly higher than urban elderly (58.2%). Correspondingly, both urban and rural elderly ranked children as the primary caregivers and family-based care as their personally preferred mode. Logistic regression confirmed that PRD elderly agreeing with raising children for old age showed lower willingness to choose institutional care over family-based care. Among those preferring family-based care, 76.3% preferred living with sons, far exceeding the 7.8% preferring daughters, with research noting that sons remain the primary reliance for family-based care [**?**]. These findings demonstrate that family-based care remains the preferred mode among PRD elderly, with rural elderly showing stronger preference than urban elderly. Logistic regression further confirmed that rural elderly with non-only child status showed lower willingness to choose family-based care.

This study found that 60.1% of urban elderly reported household monthly income-expenditure "surplus," significantly higher than rural elderly (40.5%). Additionally, 24.8% of urban elderly could afford monthly institutional care costs of 3,000 yuan or more, far exceeding rural elderly (4.3%), indicating better overall economic status among urban elderly. Furthermore, only 6.1% of urban elderly were illiterate/semi-illiterate compared with 20.6% of rural elderly, and

16.5% of urban elderly had proactively learned about local elderly care policies versus only 8.3% of rural elderly. Research shows that socioeconomic status determines purchasing power for socialized services like institutional care, with better-off elderly having more autonomous choices [**?**] and being more likely to choose institutional care when needed [**?**]. Education level reflects attitudes, and as a new care mode, socialized care—including institutional care—is more accepted by better-educated elderly who value autonomous lifestyle choices [**?**]. The finding that urban elderly (30.0%) were significantly more willing than rural elderly (15.3%) to purchase socialized elderly care services further validates these conclusions.

This study found that when considering multiple subjective preferences, only 4.2% of urban and 1.8% of rural elderly preferred institutional care, with both groups favoring public institutions. However, when asked solely about institutional care willingness without considering other options, 62.6% of urban elderly explicitly expressed willingness, significantly higher than rural elderly (44.0%). The primary reasons for choosing institutional care were "poor health requiring care" and "loneliness needing companionship," with about one-quarter selecting "family conflicts." Although research suggests that the "silver wave," rural youth out-migration creating "empty nests," and family planning-induced family miniaturization will ultimately end traditional family-based care [**?**], the overall concept of relying on children for old age remains dominant [**?**].

Additionally, this study found that about one-quarter of PRD elderly reported that public health emergencies (e.g., COVID-19) affected their retirement planning, with urban elderly (37.3%) significantly higher than rural elderly (19.9%). Among those affected, rural elderly reported more pronounced impacts (41.7%) than urban elderly (34.7%). Urban elderly were more likely to report impacts in "increasing commercial insurance purchase," "strengthening contact with relatives and friends," and "preferring integrated medical-nursing institutions," while rural elderly more frequently reported "emphasizing health," "focusing on living environment," and "changing retirement location." Logistic regression showed that PRD elderly who believed public health emergencies affected their planning were more willing to choose institutional and community home-based care, with urban elderly preferring community home-based care and rural elderly preferring institutional care, consistent with their respective impact concerns. These findings highlight both the prominent impact of public health emergencies on retirement planning and clear urban-rural differences in these impacts.

In summary, from attitudes to behavioral tendencies, family-based care rooted in the concept of raising children for old age remains the preferred choice among PRD urban and rural elderly. Compared with urban areas, rural areas face increasing family miniaturization and empty-nesting due to out-migration of working-age adults, which has impacted traditional concepts and gradually weakened family-based care functions, shifting the burden toward society [**?**] and increasing demand for socialized services [**?**]. Public health emergencies and their long-term effects may accelerate this shift toward more professional institu-

tional care. Therefore, while strengthening policy promotion and guidance, we should fully consider urban-rural differences in elderly care demand tendencies, scientifically plan and allocate resources, actively develop inclusive and mutual-aid elderly care services tailored to urban and rural characteristics, support families in assuming more care functions, build coordinated home-community-institution care systems based on local conditions, and promote diversified socialized elderly care development to address and meet the elderly care needs of urban and rural residents.

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Note: Figure translations are in progress. See original paper for figures.