

The Impact of Socioeconomic Status on Elderly Well-Being in Guangdong, China: The Chain Mediating Effect of Social Support and Healthcare Conditions

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Abstract: This study adopted a random sampling approach to distribute questionnaires among permanent residents aged 60 and above, covering both urban and rural regions across the Pearl River Delta, Eastern Guangdong, Western Guangdong, and Northern Guangdong. Grounded in the social determinants of health framework and the health belief model, the study employed SPSS 27.0 software and the Bootstrap method to conduct an empirical investigation into how socioeconomic status shapes older adults' well-being, with a specific focus on verifying the chain mediating effect of social support and healthcare conditions. Correlation analysis results revealed significant positive pairwise associations between older adults' well-being and three key variables: socioeconomic status, social support, and healthcare conditions. Statistical analysis further demonstrated that the direct effect of socioeconomic status on well-being is relatively limited, accounting for merely 10% of the total effect. This suggests that socioeconomic status rarely influences elderly well-being directly; instead, its impacts are mainly realized via the parallel mediating roles of social support and healthcare conditions. Importantly, the findings confirmed a valid and significant chain mediating pathway, structured as follows: "socioeconomic status → social support → healthcare conditions → well-being". In addition, demographic factors including age, gender, and marital status were found to have no statistically significant effect on the well-being of older adults in the sample. This research addresses the insufficient localized empirical studies on Guangdong's elderly population. It also offers reliable empirical evidence to inform targeted improvements in regional healthcare resource allocation and the construction of more comprehensive social support systems for older adults in Guangdong Province..

Keywords: socioeconomic status; elderly well-being; social support; healthcare conditions; mediating chain effect; Guangdong.

Introduction

Global societies are currently experiencing widespread population aging, with an ever-increasing percentage of older adults across all age groups. Among all countries worldwide, China faces particularly severe aging pressures (Fan et al., 2021). Rising life expectancy and declining birth rates have jointly driven the continuous growth of the elderly population. Given such demographic shifts, academic circles have gradually paid more attention to older adults' subjective well-being, which has now become a core research hotspot in social governance and public health domains (Zhang et al., 2020). As a comprehensive and multi-dimensional subjective index, elderly well-being integrates physical fitness, psychological emotions, social interaction experiences and overall life satisfaction. It comprehensively evaluates how elderly individuals perceive and judge their later-life quality (Lewis, 2019). Entering the elderly stage will bring tremendous transformations to people's physical and mental states, as well as their social needs and living demands. These personalized subjective perceptions are affected by multiple intertwined factors, presenting sophisticated and unique influential rules. As one of China's most populous and economically developed provinces, Guangdong is undergoing accelerated population aging. Statistical data show that the proportion of local older adults has exceeded 15% and is still growing year by year (Jin et al., 2021). Although local economic prosperity has substantially improved residents' living standards, many developmental drawbacks still exist. Typical problems include unbalanced urban and rural development, uneven household income distribution, and inequitable allocation of health and medical resources (Han et al., 2020a). Most elderly residents in Guangdong live with chronic diseases and have substantial care and service needs. Meanwhile, insufficient social support further restricts their ability to achieve better well-being outcomes (Li & Luo, 2021). Accordingly, it is essential and practically meaningful to explore relevant issues concerning elderly well-being in the regional context.

Socioeconomic status defines an individual's standing in the social hierarchy and consists of three key dimensions: income, education, and occupation. As a crucial independent variable, it shapes older adults' capacity to access various social and health resources (Ding et al., 2021; Navarro Carrillo et al., 2020), which in turn directly determines their material security level, health awareness, and availability of social resources. In this research, social support serves as the first variable in the chain mediating pathway, covering both family and friendship support. It enables older adults to obtain emotional comfort, daily life assistance, and diverse resource guarantees (Antonucci et al., 2003; Simon et al., 2021). As the second chain mediating variable, healthcare conditions fully reflect the overall performance of regional health services, including service accessibility, service quality, medical treatment burden, and resource availability for older residents (Carmel, 2019; Søvold et al., 2021; Ceri & Cicek, 2021). The specific chain mediating mechanism works in a sequential manner: socioeconomic status helps improve social support conditions and optimize local healthcare resources in turn, which ultimately enhances older adults' well-being. This forms a complete sequential pathway: "socioeconomic status—social support—healthcare conditions—well-being" (Papapanou et al., 2018). Nevertheless, most existing studies only discuss the direct influence of socioeconomic status and fail to construct a systematic chain mediation framework with dual mediating variables. In particular, empirical evidence regarding such sequential mechanisms among Guangdong's elderly population remains scarce.

Against the backdrop of deepening population aging, the socioeconomic development landscape of Guangdong Province has undergone profound changes, with the proportion of residents aged 65 and above maintaining a steady upward trend (Goldthau et al., 2020). Significant heterogeneity exists within the elderly group. Older adults with low income, low educational attainment, and manual occupational backgrounds often encounter multiple life difficulties, such as economic constraints, limited access to high-quality medical services, and a lack of daily emotional companionship (Nordbakke & Schwanen, 2014). Current academic research still has noticeable deficiencies. First, few studies distinguish the differentiated effects of diverse socioeconomic status dimensions on elderly well-being. Second, insufficient attention has been paid to the chain mediating effect jointly exerted by social support and healthcare conditions. Third, the sequential progressive relationship between these

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two mediating variables has rarely been empirically verified. Fourth, most relevant conclusions are derived from national samples, with little targeted empirical analysis focusing on Guangdong's unique regional characteristics (Cheng & Yan, 2021). On this basis, this study establishes a chain mediation model and centers on three core research questions to carry out empirical testing. It aims to explore the predictive effect of socioeconomic status on older adults' well-being and further verify the chain mediating roles of social support and healthcare conditions in this relationship. The research findings are expected to provide empirical references for improving local elderly care services, optimizing medical security coverage, and refining the social support system for older adults in Guangdong.

This study formulates four targeted research objectives and three corresponding research questions to guide its empirical analysis. The research participants are permanent residents aged 60 and older in Guangdong Province, covering multiple geographical regions, urban and rural areas, and diverse demographic groups across the province. This research adopts a cross-sectional research design, setting socioeconomic status as the sole independent variable, social support and healthcare conditions as chain mediating variables, and older adults' well-being as the dependent variable. It focuses on exploring the intrinsic correlation and functional mechanisms between the aforementioned variables within a specific research period.

The research conclusions are mainly applicable to the elderly population in Guangdong Province and can provide valuable references for other provinces facing similar aging challenges, rather than being generalized to the entire national population. Theoretically, this study adopts the Social Determinants of Health Framework and the Health Belief Model as its foundational theoretical basis (Abraham & Sheeran, 2007; Marmot & Wilkinson, 2005). On this basis, it further refines the dimensional division of core variables, systematically validates the underlying chain mediation mechanism, enriches the theoretical research system concerning influential factors of elderly well-being, and fills the research gap in localized elderly health studies in Guangdong. Practically, the empirical findings can offer reliable data evidence for local governments to optimize regional medical resource allocation, improve elderly-oriented medical insurance policies, and assist elderly care institutions in building comprehensive social support networks. Additionally, the research results can provide practical guidance for local older adults to elevate their overall life quality and actively engage in social activities (Ku et al., 2008).

Literature Review and Research Hypotheses

2.1 Definition of Core Concepts

Socioeconomic status: In this study, socioeconomic status is operationalized along three dimensions: income level, educational attainment, and occupation. These dimensions jointly characterize individuals' economic resources, cultural endowments, and occupational standing in the social hierarchy (Navarro-Carrillo et al., 2020).

Elderly well-being: Defined as a multidimensional subjective construct, older adults' well-being covers physical health, psychological and emotional well-being, and life satisfaction, representing older individuals' comprehensive evaluation of their overall later-life experience (Lewis, 2019).

Healthcare Conditions: This study defines healthcare conditions as a comprehensive indicator that reflects the overall accessibility, service quality, resource convenience, and financial burden of healthcare services for older adults (Søvold et al., 2021).

Social Support: Social support in this research consists of two dimensions: family support, which includes children's care, emotional support, and financial assistance, and friendship support, which involves peer social interaction, emotional companionship, and participation in community social activities (Antonucci et al., 2003).

2.2 Literature Review

2.2.1 Socioeconomic Status and Elderly Well-being

Empirical studies have consistently verified a positive association between socioeconomic status

and elderly well-being. Elderly individuals with higher income tend to experience fewer financial pressures, more comprehensive retirement protection and healthcare security, and consequently report higher life satisfaction (Ghosh & Dinda, 2020). In terms of educational attainment, better-educated older adults usually possess higher health literacy, enabling them to make full use of medical and social resources and maintain favorable psychological status (Wang et al., 2018). Additionally, those who held higher-status occupations before retirement can access more sufficient pension benefits and stable social networks, which further strengthen the security of their later-life living conditions (Yeung & Zhou, 2017). Overall, the three core dimensions of socioeconomic status, namely income, education, and occupation, all play positive roles in promoting elderly well-being.

2.2.2 The Mediating Role of Healthcare Conditions

Superior social support resources can help older adults efficiently acquire medical information and connect with various health services, greatly facilitating their access to high-quality healthcare resources (Read et al., 2016). Optimized healthcare conditions are conducive to alleviating the aggravation of chronic diseases and reducing health-related psychological anxiety, which ultimately contributes to improved elderly well-being. Within the whole research pathway, social support exerts predictive effects on healthcare conditions, which acts as the second-step mediating variable in the chained relationship.

2.2.3 Social Support and Elderly Well-being

Socioeconomic status is an important determinant of the social support resources available to older adults. Elderly residents with advantageous economic conditions, higher educational backgrounds and superior occupational experience generally maintain stable family interactions and sound interpersonal connections, allowing them to accumulate more diversified social support resources (Berkman & Glass, 2000). Reliable family care and peer friendship support can provide timely emotional comfort and practical daily assistance, which effectively improves older adults' physical and mental conditions. Therefore, socioeconomic status can indirectly affect subsequent research variables through social support, confirming that social support functions as the first-order mediating variable in the overall influencing pathway. Synthesizing the above logical relationships, this study validates a complete chain mediation mechanism: "socioeconomic status – social support – healthcare conditions – elderly well-being" (Papapanou et al., 2018).

Research Methods

3.1 Research Subjects

This research targeted permanent older residents aged 60 and above in Guangdong Province, China. Questionnaire data were collected through a random sampling approach, covering urban and rural communities across four major geographical regions, including the Pearl River Delta, Eastern Guangdong, Western Guangdong, and Northern Guangdong. A total of 483 questionnaires were initially distributed. After eliminating 27 invalid and incomplete responses, 456 valid samples were retained for final analysis, yielding an effective response rate of 94.4%. In terms of demographic composition, the sample consisted of 241 male participants and 215 female participants. Regarding age distribution, 95 respondents were aged 60 to 64, 116 were aged 65 to 69, 126 were aged 70 to 74, 63 were aged 75 to 79, and 56 were aged 80 and above. In terms of marital status, 259 participants were currently married, 70 were single, 52 were divorced, and 75 were widowed.

3.2 Research Tools

The survey tool adopted in this study was a self-designed questionnaire developed on the basis of mature and widely validated existing scales. All measurement items were rated with a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The variable settings strictly followed the research framework of this study: the independent variable was socioeconomic status, covering three core dimensions of income level, educational level, and occupation. The two chain mediating variables included social support (encompassing family support and friendship support) and healthcare conditions. Elderly well-being was set as the dependent variable, while age, gender, and

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marital status were selected as control variables. Prior to formal data collection, a pre-survey was conducted to verify the questionnaire's reliability and validity. The results showed that all Cronbach's α values were higher than 0.7, demonstrating that the questionnaire possessed satisfactory and stable psychometric properties for subsequent empirical analysis (Nunnally & Bernstein, 1994).

3.3 Data Collection and Processing

Data were collected via face-to-face household visits in local communities and on-site questionnaire distribution. For older adults with low educational levels, one-on-one interview assistance was provided to help them complete the questionnaires. After data entry, systematic data cleaning was conducted, including tests for missing values, outliers, normality, and multicollinearity, to guarantee overall data reliability (Tabachnick & Fidell, 2019).

3.4 Statistical Methods

All statistical analyses in this study were performed using SPSS 27.0. Descriptive statistics were adopted to characterize sample demographic profiles and examine the mean values and distribution patterns of all study variables. Correlation analysis was further applied to preliminarily explore the pairwise associations between socioeconomic status, social support, healthcare conditions, and elderly well-being. Based on Hayes' PROCESS Macro Model 6, a chained mediation analysis was conducted. The bias-corrected percentile Bootstrap method with 5,000 resamples was used to generate 95% confidence intervals (CIs) for significance testing. A p-value of less than 0.05 was defined as the threshold for statistical significance (Preacher & Hayes, 2008).

Data Analysis

4.1 Test for Common Method Bias

This study employed Harman's single-factor test to assess common method bias. Five factors with eigenvalues greater than 1 were extracted. The first factor accounted for 32.68% of the total variance, below the 40% threshold. Thus, no substantial common method bias was present in this study.

4.2 Correlation Analysis of Various Variables

There is a significant positive correlation between socioeconomic status and elderly well-being ($r = 0.69$, $p < 0.001$), between healthcare conditions and elderly well-being ($r = 0.80$, $p < 0.001$), and between socioeconomic status and healthcare conditions ($r = 0.71$, $p < 0.001$). (See Table 1)

Table 1: Descriptive statistics and correlation analysis of socioeconomic status, healthcare conditions, elderly well-being, and social support.

variables	$\bar{x} \pm s$	r			
		1	2	3	4
1 Socioeconomic Status	3.35±0.72	--			
2 Healthcare Conditions	3.66±0.84	0.71***	--		
3 Elderly Well-being	3.71±0.80	0.69***	0.80***	--	
4 Social Support	3.61±0.80	0.70***	0.65***	0.75***	--

4.3 Analysis of the Chain Mediation Effect

This study adopted Hayes' PROCESS Model 6 to perform a chained mediation analysis. With age, gender and marital status controlled for, this study explored the chained mediating roles of social support and healthcare conditions in the relationship between socioeconomic status and elderly well-being. A bias-corrected bootstrap method was used to generate 95% confidence intervals via 5,000

resamples. Multivariate regression results showed that socioeconomic status significantly and positively predicted social support ($\beta = 0.64$, $p < 0.001$) and healthcare conditions ($\beta = 0.46$, $p < 0.001$), and that social support exerted a significant positive predictive effect on healthcare conditions ($\beta = 0.30$, $p < 0.001$). After the mediating variables were included, the direct predictive effect of socioeconomic status on elderly well-being became non-significant ($\beta = 0.06$, $p > 0.05$), while both social support and healthcare conditions significantly and positively predicted elderly well-being ($\beta = 0.36$ and 0.48 , respectively; both $p < 0.001$). (See Table 2)

Table 2: Test of the chain mediation model

Regression Equation		Fitting metrics			Coefficients and Significance	
Outcome variable	Predictor variables	R	R-sq	F	β	t
Elderly Well-being		0.70	0.49	107.17** *		
	Age				0.17	3.10***
	Gender				0.02	0.87
	Marital Status				-0.03	-1.14
	Socioeconomic Status				0.61	20.27***
Social Support		0.71	0.50	113.66** *		
	Age				0.15	2.75***
	Gender				0.03	1.34
	Marital Status				-0.02	-0.68
	Socioeconomic Status				0.64	21.08***
Healthcare Conditions		0.74	0.55	111.42** *		
	Age				0.11	2.05**
	Gender				0.04	1.64
	Marital Status				-0.02	-0.98
	Socioeconomic Status				0.46	11.18***
Elderly Well-being	Social Support				0.30	6.63***
		0.86	0.73	205.55** *		
	Age				0.04	0.98
	Gender				-0.01	-0.81
	Marital Status				-0.02	-1.04
	Socioeconomic Status				0.06	1.83
	Social Support				0.36	10.24***

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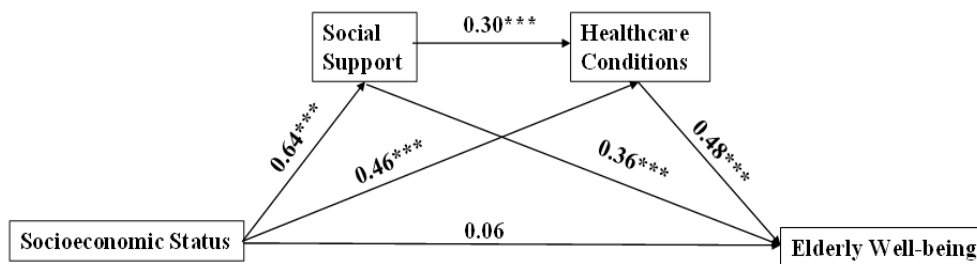
	Healthcare Conditions				0.48	13.79***
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Note: "***" indicates $p < 0.05$; "****" indicates $p < 0.001$.

Bootstrap results revealed that the 95% CIs for all three indirect effects excluded zero. The effect size of the parallel mediation path socioeconomic status \rightarrow social support \rightarrow elderly well-being was 0.23, with a 95% CI of [0.17, 0.30]. The effect size of the parallel mediation path socioeconomic status \rightarrow healthcare conditions \rightarrow elderly well-being was 0.22, with a 95% CI of [0.15, 0.29]. The effect size of the chained mediation path socioeconomic status \rightarrow social support \rightarrow healthcare conditions \rightarrow elderly well-being was 0.10, with a 95% CI of [0.05, 0.14]. These findings confirmed that social support and healthcare conditions exerted a significant chained mediation effect between socioeconomic status and elderly well-being, and that the association between socioeconomic status and elderly well-being was mainly mediated via the above pathways. (See Table 3 and Figure 1)

Table 3: Breakdown of total effects, direct effects, and total indirect effects

Projects	Effect Size	SE	95%CI		Effect Size
			Lower Limit	Upper Limit	
Total effects	0.61	0.03	0.55	0.67	
Direct Effects	0.06	0.03	0.005	0.131	10%
Total Indirect Effects	0.55	0.04	0.47	0.63	90%
Path 1	0.23	0.03	0.17	0.30	42%
Path 2	0.22	0.04	0.16	0.29	40%
Path 3	0.10	0.02	0.05	0.14	18%



Note: "***" indicates $p < 0.05$; "****" indicates $p < 0.001$.

Discussion of the Results

5.1 Analysis of Research Results

Based on the Social Determinants of Health framework (Marmot & Wilkinson, 2005) and the Health Belief Model (Abraham & Sheeran, 2007), this study recruited rural and urban older adults from four major regions of Guangdong Province: the Pearl River Delta, Eastern Guangdong, Western Guangdong and Northern Guangdong. Using this sample, we empirically examined the relevant research hypotheses. We also combined local regional features and elderly care realities across the province to conduct an in-depth discussion of the findings.

Correlation analysis showed pairwise positive associations among socioeconomic status, social support, healthcare conditions and elderly well-being, with all correlations reaching statistical significance. These results supported Hypothesis H1, and healthcare conditions stood out as the strongest predictor of elderly well-being (Søvold et al., 2021; Ceri & Cicek). Guangdong has long faced obvious gaps in economic development and medical resource distribution. High-quality medical services are highly concentrated in the Pearl River Delta, whereas other areas struggle with inadequate primary healthcare facilities and a shortage of professional staff. For elderly residents living with chronic diseases, this translates to limited access to medical care and a heavy financial burden (Han et al., 2020a; Li & Luo, 2021). Older adults with higher socioeconomic status benefit from better income, educational attainment and occupational background. These advantages help them build stronger health literacy, and make it easier to seek and afford medical services (Ding et al., 2021; Ghosh & Dinda, 2020). Meanwhile, they are more likely to gain steady care and companionship from family members and friends (Berkman & Glass, 2000), which in turn improves their elderly well-being (Wang et al., 2018; Yeung & Zhou, 2017).

Results from the chained mediation analysis revealed that socioeconomic status exerted only a weak direct effect on elderly well-being, which accounted for just 10% of the total effect. Its influence was mainly delivered through two separate parallel mediation pathways involving social support and healthcare conditions. This outcome confirmed Hypothesis H2. Beyond parallel paths, we also identified a sequential chained pathway: socioeconomic status → social support → healthcare conditions → elderly well-being, which lent evidence to Hypothesis H3. Driven by rapid urbanization across Guangdong, local families have gradually become smaller in size, and the number of solitary and empty-nest elderly people continues to grow. Improving economic conditions alone cannot make up for the lack of emotional support and basic medical services for this group (Cheng & Yan, 2021; Jin et al., 2021). Quality family care and regular interactions with peers can help the elderly obtain more health information and enjoy better medical services. In this way, socioeconomic resources can be effectively converted into better elderly well-being in later life (Read et al., 2016; Simon et al., 2021; Papapanou et al., 2018).

When looking at control variables, age only had a minor influence on elderly well-being, while gender and marital status showed no significant impact. From the perspective of aging sociology, older adults tend to focus more on health maintenance and social engagement in their later years. Compared with demographic traits such as age, gender and marital status, acquired resources including healthcare conditions and social support have become key factors shaping elderly well-being (Lewis, 2019). In Guangdong, community-based elderly care and senior social services have seen steady development in recent years. Solitary and widowed older adults can now turn to public services for emotional and practical help, which further lessens the influence of marital status and other demographic characteristics (Nordbakke & Schwanen, 2014).

5.2 Conclusions

First, clear correlations exist between socioeconomic status, social support, healthcare conditions and elderly well-being among older adults in Guangdong. Among these factors, healthcare conditions produce the strongest effects.

Second, socioeconomic status only weakly predicts elderly well-being in direct terms. Its positive effects largely operate indirectly via social support and healthcare conditions.

Third, social support and healthcare conditions function as both parallel and chained mediators. Together they form a layered influencing mechanism and explain most variations in elderly well-being.

Fourth, demographic factors including age, gender and marital status exert limited effects on elderly well-being. Compared with these inherent traits, acquired social resources and healthcare conditions play a much more critical role.

Fifth, Guangdong is now facing a rapidly aging population. Uneven distribution of medical resources between urban and rural areas, together with inadequate social support for the elderly, have become increasingly noticeable. Simply boosting economic growth cannot effectively improve elderly well-being; targeted improvements in social services and healthcare delivery are equally indispensable.

5.3 Limitations and Future Directions

This study adopted cross-sectional data, which only captures variable relationships at a single time point. For this reason, it cannot reflect long-term dynamic changes or draw definitive causal inferences. All participants were recruited within Guangdong Province, a region with unique local features, so the research findings cannot be easily extended to other parts of China. In addition, this study did not carry out subgroup comparisons across urban and rural groups, age brackets or income levels, leaving the heterogeneity among different elderly populations unexplored. The current research model also covers a relatively narrow set of variables, excluding factors like living habits and community services, which means the model can be further optimized and expanded.

For follow-up studies, longitudinal surveys are recommended to clarify temporal trends and causal links between variables. Expanding the research scope to more provinces will help improve the generalizability of findings and strengthen their reference value for policy making. Researchers may also conduct in-depth subgroup analysis based on residence, age and income, so as to offer practical evidence for differentiated elderly care arrangements. More indicators such as lifestyle and community-based elderly care services can be added to enrich the analytical framework. Combined with the actual situation in Guangdong, future work can also explore practical solutions including balanced allocation of medical resources, senior-friendly social platforms and medical aid for disadvantaged older adults, to support local elderly care management..

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