



四川省老年人日常生活能力城乡差异及影响因素分析

宋婷¹, 许欢¹, 唐雪薇¹, 张雪莉², 黄琳雅², 郭冰¹, 张菊英^{1△}

1. 四川大学华西公共卫生学院/四川大学华西第四医院 流行病与卫生统计学系(成都 610041);

2. 四川省卫生信息中心/四川省医疗大数据中心(成都 610041)

【摘要】目的 了解四川省城市和农村老年人日常生活能力的差异及其影响因素,为促进老年人的健康和政策制定提供依据。**方法** 利用四川省第七次卫生服务调查的数据资料,纳入7369名60岁及以上的城乡老年人作为研究对象,分析其日常生活能力现状及其影响因素,并采用卡方检验和多因素logistic回归进行影响因素分析。**结果** 四川省城市老年人日常生活能力受损率为17.7%,高于农村老年人日常生活能力受损率13.8%。多因素logistic回归分析结果表明年龄 ≥ 80 岁[比值比(odds ratio, OR)=3.725, 95%置信区间(confidence interval, CI): 2.460~5.639]、意外伤害(OR=2.375, 95%CI: 1.597~3.532)、睡眠质量好(OR=0.420, 95%CI: 0.289~0.612)等是城市老年人日常生活能力的影响因素;年龄 ≥ 80 (OR=1.867, 95%CI: 1.459~2.390)、已婚(OR=0.805, 95%CI: 0.664~0.976)、意外伤害(OR=1.936, 95%CI: 1.564~2.397)、参加社会活动(OR=0.417, 95%CI: 0.352~0.495)等是农村老年人日常生活能力的影响因素。**结论** 四川省城乡老年人日常生活能力受损率及影响因素不同,采取相关政策和措施时应考虑到城乡差异。

【关键词】 老年人 日常生活活动 影响因素

Urban-Rural Disparities in Activities of Daily Living Among Older Adults in Sichuan Province and the Influencing Factors

SONG Ting¹, XU Huan¹, TANG Xuewei¹, ZHANG Xueli², HUANG Linya², GUO Bing¹, ZHANG Juying^{1△}

1. Department of Epidemiology and Health Statistics, West China School of Public Health and West China Fourth Hospital, Sichuan University, Chengdu 610041, China; 2. Sichuan Health Information Center and Sichuan Medical Big Data Center, Chengdu 610041, China

△ Corresponding author, E-mail: juying109@163.com

【Abstract】Objective To investigate the disparities in the activities of daily living (ADL) among older adults living in urban and rural areas of Sichuan Province, China and the influencing factors, and to provide a basis for promoting the health of older adults and formulating relevant policies. **Methods** Using data from the Seventh Health Services Survey of Sichuan Province, we enrolled 7369 older adults from urban and rural areas and analyzed their ability to perform ADL and the relevant influencing factors. All participants were aged 60 years or older. Chi-square tests and logistic regression were performed to identify the influencing factors. **Results** The ADL impairment rate among older adults living in urban areas of Sichuan Province was 17.7%, which was higher than the rate of 13.8% among older adults living in rural areas. According to the results of logistic regression analysis, age ≥ 80 years (odds ratio [OR] = 3.725; 95% CI, 2.460-5.639), accidental injuries (OR = 2.375; 95% CI, 1.597-3.532), and good sleep quality (OR = 0.420, 95% CI: 0.289-0.612) were factors influencing ADL among older adults living in urban areas, while age ≥ 80 years (OR = 1.867; 95% CI, 1.459-2.390), being married (OR = 0.805; 95% CI, 0.664-0.976), accidental injuries (OR = 1.936; 95% CI, 1.564-2.397), and participation in social activities (OR = 0.417; 95% CI, 0.352-0.495) were factors influencing ADL among older adults living in rural areas. **Conclusion** There are differences in ADL impairment rates and the relevant influencing factors between urban and rural older adults in Sichuan Province. These findings underscore the need to consider urban-rural differences when adopting relevant policies and measures.

【Key words】 Older adults Activities of daily living Influencing factors

到2050年,中国60岁以上的老年人口将达到4.8亿,约占总人口的30%^[1]。人口老龄化带来的慢性病流行、经济负担和劳动力短缺等公共卫生问题已引起人们的高度关注,并成为我国公共卫生面临的巨大挑战^[2]。四川省城乡

差异显著,经济发展水平不均衡,尤其是农村地区的老年人群体面临许多挑战。目前,虽然已有研究对老年人健康相关现状及影响因素进行分析^[3-4],但对于城乡居住地老年人失能情况的差异研究相对较少。本研究通过了解四川省城市和农村老年人的日常生活能力(activities of daily living, ADL)及其影响因素,以期改善老年人的生活

△ 通信作者, E-mail: juying109@163.com

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质量和为制定相关政策提供参考依据。

1 资料和方法

1.1 对象

本研究数据来源于四川省第七次全国卫生服务调查,采用多阶段随机整群抽样方法共抽取14个样本县(市、区),每个样本县(市、区)随机抽取5个样本乡镇(街道),每个样本乡镇(街道)随机抽取2个样本村(居委会)。每个样本村(居委会)抽取60户。本次研究选取年龄 ≥ 60 岁的7369名城乡居民作为研究对象。

1.2 方法

1.2.1 调查方法

根据第七次全国卫生服务调查方案,由统一培训的调查员对被访者进行面对面访谈式问卷调查。每个县(市、区)设立质量考核小组,全程监控调查质量,调查完成后进行复查考核。

1.2.2 调查内容

一般情况调查表包括年龄、性别、文化程度、婚姻状况、家庭收入、社会医疗保险、睡眠质量、慢性疾病、社会活动、运动及周围活动设施/组织情况等。其中社会医疗保险是指被调查者参加城市职工基本医疗保险、城乡居民基本医疗保险、其他社会医疗保险的情况,将“均未参加”定义为“无社会保险”,否则为“有社会保险”。其他慢性疾病根据先前的文献进行定义^[5]。意外伤害是指被调查前1年内有发生过非故意伤害,包括道路交通伤、跌倒等。锻炼频率是指被调查前1个月内每周锻炼次数,将“每周3次及以上”定义为“经常锻炼”,将“每周不到1次”或“每周1~2次”定义为“偶尔锻炼”,0次为“从不锻炼”。周围活动设施是指以受访者住所为中心,1~1.5 km范围内有无健身步道或骑行道、露天健身器材、室内运动场所等。签约家庭医生是指与医生或者医生团队签订过长期、稳定的服务关系,在基本医疗、公共卫生和约定的健康管理等方面提供包括常见病和多发病的中西医诊治、合理用药、就医路径指导和转诊预约以及涵盖国家基本公共卫生服务项目和规定的其他公共卫生服务。ADL的评估:采用由LAWTON和BRODY制定的ADL量表,包括穿衣服、吃饭、洗澡、上下床、上厕所、控制大小便等6个条目。各项按1~4级评分,1分为没有困难,2分为有困难,但仍可以独立完成,3分为需要帮助,4分为无法完成,总分6~24分。单项得分1分为正常,2~4分为功能低下。总分6分为ADL无受损,6分以上为ADL受损。

1.3 统计学方法

采用R 4.3.3版本进行一般描述性分析, χ^2 检验用于单

因素分析,将单因素分析中差异有统计学意义的变量纳入多因素logistic回归模型进行影响因素分析,为验证多因素分析结果的稳健性,补充双向逐步回归进行敏感性分析。检验水准 $\alpha=0.05$ 。

2 结果

2.1 四川省城乡老年人一般情况

在7369名城乡老年人中,城市居民2362人,农村居民5007人。性别、年龄、文化程度、距医疗机构的距离、自评健康状况、年收入、婚姻状况、吸烟、糖尿病、其余慢性疾病、意外伤害、睡眠质量、锻炼频率、周围活动设施、社会活动、签约家庭医生在城乡间的分布差异有统计学意义($P<0.05$)。四川省老年人ADL受损率为16.4%(1212/7369),其中农村老年人ADL受损率为17.7%,高于城市老年人13.8%(表1)。

2.2 四川省老年人日常生活能力影响因素分析

以四川省城市/农村老年人ADL是否损伤作为因变量(ADL未受损=0,ADL受损=1),将单因素分析中差异有统计学意义的变量纳入多因素logistic回归模型进行分析。结果显示,年龄70~79岁或 ≥ 80 岁、糖尿病、患其他慢性疾病、经历意外伤害是四川省城市老年人日常生活能力受损的危险因素;年收入 ≥ 12000 元、自评健康状况较好、睡眠好、经常锻炼、参加社会活动是保护因素。在农村老年人中年龄 ≥ 80 岁、文盲/半文盲、糖尿病、患其他慢性疾病、经历意外伤害是四川省农村老年人日常生活能力受损的危险因素;年收入20000~59999元、在婚、自评健康状况较好、睡眠好/一般、饮酒、参加社会活动是保护因素(表2)。双向逐步回归与多因素logistic回归模型结果相似,同时发现了周围活动设施是农村老年人的保护因素(表3)。

3 讨论

本调查结果表明,四川省老年人日常生活能力受损率为16.45%,高于北京市老年人日常生活活动能力受损的12.10%^[6]以及张雪等^[7]测算的28个省份的老年人日常生活能力受损率为11.09%,低于一项贵州省老年人队列的调查结果(38.37%)^[8]。这可能跟国内各个省市的经济发展、医疗卫生水平、生活习惯和年龄结构等方面的差异有关。本研究中,城市老年人的日常生活能力受损率低于农村老年人失能率,与既往的研究一致^[9],这可能是由于以下几点原因,首先,城乡社会经济资源分布不均衡,城市老年人普遍享有更完善的医疗保障体系。其次,城乡活动设施配置差异很大,城市周围居住地方配备有

表 1 四川省城乡老年人基本情况 (n=7369)

Table 1 Basic information on older adults from urban and rural areas of Sichuan Province (n = 7369)

Characteristic		Urban residents/case (%) (n = 2 362)	Rural residents/case (%) (n = 5 007)	χ^2	P
Sex	Male	1 125 (47.6)	2 601 (52.0)	11.800	0.001
	Female	1 237 (52.4)	2 406 (48.0)		
Age/yr.	60-69	973 (41.2)	2 266 (45.3)	13.462	0.001
	70-79	1 013 (42.9)	2 063 (41.2)		
	≥ 80	376 (15.9)	678 (13.5)		
Educational attainment	Illiterate/Semi-illiterate	374 (15.8)	1 582 (31.6)	556.206	< 0.001
	Primary school	918 (38.9)	2 433 (48.6)		
	Junior high school and above	1 070 (45.3)	992 (19.8)		
Distance to medical facilities	≤ 1 km	1 825 (77.3)	2 406 (48.0)	582.917	< 0.001
	2-<5 km	487 (20.6)	2 077 (41.5)		
	≥ 5 km	50 (2.1)	524 (10.5)		
Health insurance	No	28 (1.2)	84 (1.7)	2.279	0.131
	Yes	2 334 (98.8)	4 923 (98.3)		
Self-assessment of health status	Poor	466 (19.7)	1 206 (24.1)	99.990	< 0.001
	Fair	424 (18.0)	496 (9.9)		
	Good	1 472 (62.3)	3 305 (66.0)		
Family income /yuan	< 12000	302 (12.8)	3 147 (62.9)	2 452.005	< 0.001
	12 000-19 999	400 (16.9)	1 141 (22.8)		
	20 000-59 999	1 330 (56.3)	619 (12.4)		
	≥ 60 000	330 (14.0)	100 (2.0)		
Marital status	Not married	485 (20.5)	1 173 (23.4)	7.542	0.006
	Married	1 877 (79.5)	3 834 (76.6)		
Smoking	Current smoker	458 (19.4)	1 376 (27.5)	72.620	0.001
	Former smoker	318 (13.5)	464 (9.3)		
	Never smoker	1 586 (67.1)	3 167 (63.2)		
Drinking	No	1 637 (69.3)	3 429 (68.5)	0.467	0.495
	Yes	725 (30.7)	1 578 (31.5)		
Diabetes	No	1 917 (81.2)	4 591 (91.7)	171.487	< 0.001
	Yes	445 (18.8)	416 (8.3)		
Remaining chronic illnesses	No	1 621 (68.6)	3 123 (62.4)	27.114	< 0.001
	Yes	741 (31.4)	1 884 (37.6)		
Accidental injury	No/Don't remember	2 174 (92.0)	4 379 (87.5)	33.770	< 0.001
	Yes	188 (8.0)	628 (12.5)		
Sleep quality	Poor	367 (15.5)	849 (17.0)	15.936	< 0.001
	Fair	821 (34.8)	1 918 (38.3)		
	Good	1 174 (49.7)	2 240 (44.7)		
Exercise frequency	Never	511 (21.6)	2 854 (57.0)	998.123	< 0.001
	Occasionally	150 (6.4)	498 (9.9)		
	Frequently	1 701 (72.0)	1 655 (33.1)		
Surrounding activity facilities	No/Don't know	789 (33.4)	3 369 (67.3)	747.959	< 0.001
	Yes	1 573 (66.6)	1 638 (32.7)		
Social activities	Not participated	1 253 (53.1)	1 459 (29.1)	393.426	< 0.001
	Participated	664 (28.1)	763 (15.2)		
Contracted family doctors	No	664 (28.1)	763 (15.2)	169.501	< 0.001
	Yes	1 698 (71.9)	4 244 (84.8)		
ADL	Not impaired	2 036 (86.2)	4 121 (82.3)	17.421	< 0.001
	Impaired	326 (13.8)	886 (17.7)		

ADL: activities of daily living.

表 2 四川省城乡老年人日常生活能力影响因素 logistic 回归分析

Table 2 Logistic regression analysis of influencing factors of ADL among older adults from urban and rural areas of Sichuan Province

Variable		Urban residents			Rural residents		
		Wald χ^2	OR (95% CI)	P	Wald χ^2	OR (95% CI)	P
Age (60-69 yr.)	70-79 yr.	4.974	1.477 (1.048-2.081)	0.026	0.504	1.071 (0.887-1.292)	0.478
	≥ 80 yr.	38.606	3.725 (2.460-5.639)	< 0.001	24.610	1.867 (1.459-2.390)	< 0.001
Sex (Male)	Female	0.018	1.022 (0.741-1.409)	0.894	14.709	0.631 (0.499-0.799)	< 0.001
Educational attainment (Junior high school and above)	Illiterate/Semi-illiterate	1.323	1.269 (0.845-1.906)	0.250	23.710	2.037 (1.530-2.712)	< 0.001
	Primary school	0.159	1.071 (0.766-1.497)	0.690	3.450	1.279 (0.986-1.658)	0.063
Marital status (Not married)	Married	0.019	0.977 (0.698-1.366)	0.890	4.872	0.805 (0.664-0.976)	0.027
Family income (< 12000 yuan)	12000-19999 yuan	4.473	0.598 (0.371-0.963)	0.034	0.637	0.917 (0.742-1.134)	0.425
	20000-59999 yuan	10.567	0.528 (0.359-0.776)	0.001	4.233	0.740 (0.555-0.986)	0.040
	≥ 60000 yuan	8.659	0.410 (0.226-0.742)	0.003	0.372	0.807 (0.405-1.608)	0.542
Self-assessment of health status (Poor)	Good	18.080	0.335 (0.203-0.499)	0.001	49.112	0.206 (0.132-0.320)	< 0.001
	Fair	42.285	0.370 (0.274-0.606)	< 0.001	148.271	0.345 (0.290-0.409)	< 0.001
Diabetes (No)	Yes	4.479	1.419 (1.026-1.962)	0.034	8.858	1.496 (1.148-1.951)	0.003
Other chronic illnesses (No)	Yes	18.293	1.846 (1.394-2.445)	< 0.001	65.287	2.001 (1.691-2.368)	< 0.001
Sleep quality (Poor)	Good	20.501	0.420 (0.289-0.612)	< 0.001	41.384	0.470 (0.374-0.592)	< 0.001
	Fair	1.980	0.335 (0.203-0.499)	0.159	6.906	0.756 (0.614-0.931)	0.009
Drinking (No)	Yes	0.559	0.878 (0.623-1.236)	0.455	11.746	0.698 (0.568-0.857)	0.001
Exercise frequency (Never)	Frequently	73.666	0.266 (0.196-0.360)	< 0.001	2.652	0.856 (0.710-1.032)	0.103
	Occasionally	1.095	0.762 (0.458-1.268)	0.295	0.017	0.981 (0.738-1.305)	0.897
Social activities (No participation)	Participated	31.332	0.423 (0.313-0.572)	< 0.001	101.328	0.417 (0.352-0.495)	< 0.001
Accidental injury (No)	Yes	18.262	2.375 (1.597-3.532)	< 0.001	36.854	1.936 (1.564-2.397)	< 0.001

OR: odds ratio.

表 3 四川省城乡老年人日常生活能力影响因素逐步回归分析

Table 3 Stepwise regression analysis of factors affecting daily living ability of urban and rural elderly in Sichuan Province

Variable		City			Village		
		Wald χ^2	OR (95% CI)	P	Wald χ^2	OR (95% CI)	P
Age (60-69 yr.)	70-79 yr.	6.207	1.527 (1.097-2.136)	0.013	0.354	1.059 (0.877-1.278)	0.552
	≥ 80 yr.	49.903	3.975 (2.716-5.846)	< 0.001	25.233	1.875 (1.466-2.395)	< 0.001
Sex (Male)	Female	—	—	—	11.751	0.715 (0.590-0.866)	0.001
Educational attainment (Junior high school and above)	Illiterate/Semi-illiterate	—	—	—	28.116	2.154 (1.627-2.870)	< 0.001
	Primary school	—	—	—	4.574	1.325 (1.027-1.721)	0.032
Marital status (Not married)	Married	—	—	—	4.728	0.809 (0.668-0.980)	0.030
Family income (< 12000 yuan)	12000-19999 yuan	5.201	0.578 (0.359-0.923)	0.023	—	—	—
	20000-59999 yuan	13.677	0.497 (0.343-0.722)	< 0.001	—	—	—
	≥ 60000 yuan	12.687	0.359 (0.202-0.624)	< 0.001	—	—	—
Self-assessment of health status (Poor)	Good	18.234	0.336 (0.200-0.546)	< 0.001	53.495	0.191 (0.120-0.292)	< 0.001
	Fair	44.414	0.364 (0.271-0.491)	< 0.001	152.598	0.339 (0.285-0.402)	< 0.001
Diabetes (No)	Yes	4.626	1.425 (1.028-1.961)	0.031	7.806	1.458 (1.116-1.895)	0.005
Other chronic illnesses (No)	Yes	19.662	1.879 (1.421-2.483)	< 0.001	67.013	2.015 (1.704-2.383)	< 0.001
Sleep quality (Poor)	Good	23.116	0.404 (0.279-0.585)	< 0.001	42.491	0.468 (0.372-0.588)	< 0.001
	Fair	2.280	0.762 (0.536-1.087)	0.131	6.410	0.765 (0.622-0.942)	0.011
Drinking (No)	Yes	—	—	—	15.493	0.666 (0.544-0.815)	< 0.001
Exercise frequency (Never)	Frequently	77.902	0.261 (0.194-0.352)	< 0.001	—	—	—
	Occasionally	1.204	0.753 (0.448-1.237)	0.273	—	—	—
Social activities (Not participated)	Participated	32.330	0.418 (0.309-0.563)	< 0.001	105.799	0.411 (0.347-0.487)	< 0.001
Accidental injury (No)	Yes	18.441	2.377 (1.595-3.519)	< 0.001	40.520	2.001 (1.614-2.476)	< 0.001
Surrounding activity facilities (No/Don't know)	Yes	2.685	0.788 (0.594-1.049)	0.101	6.755	0.780 (0.647-0.940)	0.009

OR: odds ratio.

活动设施或活动组织比例是农村的两倍。社区活动场地或组织可以为老年人提供重要的生理和心理益处^[10]。最后,农村青壮年劳动力外流导致留守老人缺乏照护支持也可能导致农村老年人失能率高于城市老年人^[11]。

本研究发现,高龄、患糖尿病及其他慢性疾病、发生意外伤害是城市和农村老年人ADL受损的共同危险因素。在本研究中,四川省城乡老年人年龄 ≥ 80 岁占比均超过10%,且70~79岁老人ADL受损风险是60~70岁老人的一倍以上。高龄不仅带来了生理退化,增加了老年人的心理负担,从而加剧健康负担^[12]。而意外伤害不仅直接影响老年人的身体健康,还深刻影响他们的生活质量和心理状态,造成巨大的经济负担^[13]。此外,糖尿病和其他慢性疾病诸如慢性肝炎、记忆相关疾病会逐渐影响老年人生理功能和社会功能,进而导致躯体功能障碍^[14-15]。收入较高、自评健康状况较好、睡眠质量好、参加社会活动是城乡老年人共同的保护因素。经济条件较好的老年人ADL受损率的风险更低。这可能是因为较高的家庭收入通常与较高的社会经济地位相关,而这有助于改善老年人的健康水平^[16]。虽然自评健康状况受到人群的健康认知、期望和判断标准的差异影响,但李久芬等^[17]的研究表明自我健康状况能在一定程度上反映客观健康状况。同时积极的自我健康状况评价也间接体现良好的心态,有助于降低身体功能障碍的风险。既往研究表明良好的睡眠质量会促进大脑代谢废物的清除、提高机体新陈代谢和免疫能力,降低老年人ADL受损率^[18]。积极参加社会活动不仅可以提高身体机能,还有助于消解负面的情绪,有利于日常生活能力障碍的预防。

本研究中农村女性ADL受损的风险低于男性,与既往研究不一致^[19],可能是由于农村女性劳动强度相对低,多从事温和家务与家禽照料,不像男性长期承担高强度农田劳作与重物搬运致身体磨损。另外农村女性较男性不良生活习惯少。低文化程度极大地限制了农村老年人的健康知识和自我管理的能力,使他们ADL受损的风险更高。饮酒是农村老年人ADL受损的保护因素,这与先前的研究结果不一致^[20],可能是因为大部分老年人受身体疾病影响不再喝酒,但ADL在调查前已经出现了受损的情况。在婚的农村老年人ADL受损风险更低。一项对中国老年人的跟踪调查显示有婚姻老年人的身体健康状况更好^[21],婚姻提供社会支持,使夫妻间能够相互缓解压力^[22]。另外,敏感性分析结果表明周围活动设施是农村老年人的保护因素,作为农村地区稀缺的公共社交空间,活动场地通过增加留守老人在社会交往中获得的幸福感与社会参与感^[23-24],从而促进身体健康。适当的体育锻炼可以提

升城市老年人的心肺能力、增强骨骼和肌肉力量,维持健康的体质量,并降低心血管疾病的发生概率,从而进一步降低ADL受损的风险^[25]。

综上所述,四川省城乡老年人ADL受损率较高,应重点关注高龄、收入低、自评健康状况较差、睡眠质量差、过去一年发生意外伤害、患慢性疾病的老年人的日常生活功能情况,特别关注文化程度不高、独居或离异的农村老人。建议可以在农村地区利用社区中心、卫生服务站等平台开展简单易懂的健康知识宣传,定期举办健康知识讲座,提高老年人的健康意识和自我管理的能力;在偏远地区增设公共交通,确保老年人能够方便地前往医疗机构;鼓励社区或乡镇建立老年人活动小组,组织丰富多彩的文体活动,增强老年人的社会交往,提升其心理健康;改善社区或农村内的公共空间和活动设施,创造一个有利于老年人社交和锻炼的环境。

本研究也存在一定的局限性,一方面,由于影响因素的潜在性和复杂性,本研究无法考虑所有的因素;另一方面,本研究采用了横断面设计,限制了研究确定因果关系的能力,还需要进一步的纵向研究来证实。

* * *

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Author Contribution SONG Ting is responsible for conceptualization, formal analysis, methodology, software, visualization, writing--original draft, and writing--review and editing. XU Huan is responsible for supervision and validation. TANG Xuewei is responsible for software and supervision. ZHANG Xueli and HUANG Linya are responsible for project administration and resources. GUO Bin is responsible for supervision. ZHANG Juying is responsible for funding acquisition, project administration and resources. All authors consented to the submission of the article to the Journal. All authors approved the final version to be published and agreed to take responsibility for all aspects of the work.

利益冲突 所有作者均声明不存在利益冲突

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参 考 文 献

- [1] 杜鹏,李龙.新时代中国人口老龄化长期趋势预测.《中国人民大学学报》,2021,35(1):96-109. doi: 10.3969/j.issn.1000-5420.2021.01.010.
- DU P, LI L. Long-term trends projection of China's population aging in the new era. *J Renmin Uni China*, 2021, 35(1): 96-109. doi: 10.3969/j.issn.1000-5420.2021.01.010.
- [2] FANG E F, SCHEIBYE-KNUDSEN M, JAHN H J, et al. A research agenda for aging in China in the 21st century. *Ageing Res Rev*, 2015, 24(Pt B): 197-205. doi: 10.1016/j.arr.2015.08.003.

- [3] 冉光权, 王延, 刘帅, 等. 多维社会剥夺感对老年人衰弱的影响-抑郁的中介效应分析. *四川大学学报(医学版)*, 2024, 55(4): 925-931. doi: 10.12182/20240760601.
RAN G Q, WANG Y, LIU S, *et al.* Multidimensional social deprivation impacts on frailty in the elderly: the mediating effect of depression. *J Sichuan Univ (Med Sci)*, 2024, 55(4): 925-931. doi: 10.12182/20240760601.
- [4] 任青蔓, 任晓晖. 子女代际支持对老年人就医行为的影响研究. *四川大学学报(医学版)*, 2023, 54(3): 614-619. doi: 10.12182/20230560505.
REN Q M, REN X H. Effect of intergenerational support from children on older adults' healthcare seeking behaviors. *J Sichuan Univ (Med Sci)*, 2023, 54(3): 614-619. doi: 10.12182/20230560505.
- [5] 张露文, 陆翹楚, 赵洋. 中国中老年人慢病共病组合及其健康结局差异. *中山大学学报(医学科学版)*, 2023, 44(1): 159-168. doi: 10.13471/j.cnki.sun.yat-sen.univ.med.sci.20221215.001.
ZHANG L W, LU Q C, ZHAO Y. Association of multimorbidity with health outcomes in the Chinese middle-aged and elderly population. *Journal of Sun Yat-Sen University (Medical Sciences)*, 2023, 44(1): 159-168. doi: 10.13471/j.cnki.sun.yat-sen.univ.med.sci.20221215.001.
- [6] 刘森, 王建华, 杨姗姗, 等. 北京市社区老年人日常活动能力状况及城乡比较. *中华流行病学杂志*, 2018, 39(3): 268-272. doi: 10.3760/cma.j.issn.0254-6450.2018.03.004.
LIU M, WANG J H, YANG S S, *et al.* Evaluation of activities of daily living and related factors in community elderly people in urban and rural areas of Beijing. *Chinese Journal of Epidemiology*, 2018, 39(3): 268-272. doi: 10.3760/cma.j.issn.0254-6450.2018.03.004.
- [7] 张雪, 李伟, 戴璟, 等. 老年人口日常生活自理能力城乡差异分析——基于CHARLS(2018)数据的实证分析. *人口与发展*, 2022, 28(4): 129-142.
ZHANG X, LI W, DAI J, *et al.* An analysis of urban-rural difference of self-care ability of seniors-an empirical analysis based on CHARLS (2018) data. *Population and Development*, 2022, 28(4): 129-142.
- [8] 赵奕, 杨敬源, 杨星, 等. 农村老年人多维度衰弱与日常生活活动能力受损的关联性研究. *中国全科医学*, 2024, 27(1): 79-84. doi: 10.12114/j.issn.1007-9572.2023.0428.
ZHAO Y, YANG J Y, YANG X, *et al.* The relationship between multi-dimensional frailty and impairment of activities of daily living in rural elderly. *Chin Gen Prac*, 2024, 27(1): 79-84. doi: 10.12114/j.issn.1007-9572.2023.0428.
- [9] 任晓虹, 吴大鹏, 何萍, 等. 四川西部地区老年人功能状态及影响因素分析. *中国医药科学*, 2023, 13(14): 129-132. doi: 10.20116/j.issn2095-0616.2023.14.31.
REN X H, WU D P, HE P, *et al.* Analysis of functional status and impacting factors of the elderly in western Sichuan area. *China Medicine and Pharmacy*, 2023, 13(14): 129-132. doi: 10.20116/j.issn2095-0616.2023.14.31.
- [10] The role of physical activity and community engagement in understanding mental health among community-dwelling seniors. *Comput Inform Nurs*, 2023, 41(8): 628. doi: 10.1097/CIN.0000000000001067.
- [11] 康姣姣, 吴方卫. 中国农村劳动力稳态流动对乡村老龄化的影响——基于2009—2021年千村调查数据的实证分析. *财经研究*, 2024, 50(2): 78-92. doi: 10.16538/j.cnki.jfe.20231120.401.
KANG J J, WU F W. The impact of steady flow of rural labor force in China on rural aging: empirical analysis based on the data from 2009-2021 thousand-village survey. *Journal of Finance and Economics*, 2024, 50(2): 78-92. doi: 10.16538/j.cnki.jfe.20231120.401.
- [12] 谢云天, 钟美珠, 朱芬. 老龄化背景下老年人死亡焦虑及和中老年人的比较. *中国卫生事业管理*, 2019, 36(3): 215-218.
XIE Y T, ZHONG M Z, ZHU F. Comparatively studying on the death anxiety between the elderly and the middle-aged under the background of aging. *Chinese Health Service Management*, 2019, 36(3): 215-218.
- [13] 邹亚明, 郝元涛. 我国伤害所致死亡损失生命年和经济负担分析. *中华疾病控制杂志*, 2016, 20(5): 495-499. doi: 10.16462/j.cnki.zhjbkz.2016.05.016.
ZOU Y M, HAO Y T. Analysis on years of life lost and economic burden caused by injury in China. *Chinese Journal of Disease Control Prevention*, 2016, 20(5): 495-499. doi: 10.16462/j.cnki.zhjbkz.2016.05.016.
- [14] YOUNOSSI Z, AGGARWAL P, SHRESTHA I, *et al.* The burden of non-alcoholic steatohepatitis: a systematic review of health-related quality of life and patient-reported outcomes. *JHEP Rep*, 2022, 4(9):100525. doi: 10.1016/j.jhepr.2022.100525.
- [15] 崔珑严, 丁珂, 王明慧, 等. 不同类型日常生活活动能力与老年人抑郁的关联. *中华疾病控制杂志*, 2023, 27(6): 717-721. doi: 10.16462/j.cnki.zhjbkz.2023.06.017.
CUI L Y, DING D, WANG M H, *et al.* The relationship between different types of daily living abilities and depression among older adults. *Chinese Journal of Disease Control Prevention*, 2023, 27(6): 717-721. doi: 10.16462/j.cnki.zhjbkz.2023.06.017.
- [16] 王雪辉, 彭聪. 老年人社会经济地位对健康的影响机制研究——兼论生活方式、公共服务和社会心理的中介效应. *中国卫生政策研究*, 2020, 13(3): 21-30. doi: 10.3969/j.issn.1674-2982.2020.03.004.
WANG X H, PENG C. Study on the impact mechanism of elderly socioeconomic status on health: the mediating effects of lifestyle, public service and social psychology. *Chinese Journal of Health Policy*, 2020, 13(3): 21-30. doi: 10.3969/j.issn.1674-2982.2020.03.004.
- [17] 李久芬, 陆丽明, 喻良文, 等. 中国劳动力自评健康状况及其影响因素分析. *中国卫生统计*, 2019, 36(6): 901-902.
LI J F, LU L M, YU L W. Analysis of self-assessment of health status by Chinese labor force and its influencing factors. *Chinese Journal of Health Statistics*, 2019, 36(6): 901-902.
- [18] BARANWAL N, YU P K, SIEGEL N S. Sleep physiology, pathophysiology, and sleep hygiene. *Prog Cardiovasc Dis*, 2023, 77: 59-69. doi: 10.1016/j.pcad.2023.02.005.
- [19] 时通, 潘超平, 吴淑琴, 等. 中国高龄老年人失能的性别差异. *医学与社会*, 2022, 35(11): 44-49. doi: 10.13723/j.yxysh.2022.11.009.
SHI T, PAN C P, WU S Q, *et al.* Gender differences in disability of the oldest-old in China. *Medicine and Society*, 2022, 35(11): 44-49. doi: 10.13723/j.yxysh.2022.11.009.
- [20] 赵泽润, 李菲. 我国农村地区老年人失能现状及影响因素研究. *中国卫生事业管理*, 2024, 41(3): 300-306.
ZHAO Z R, LI F. Study on the current situation and influencing factors of the elderly disability in rural China. *Chinese Health Service Management*, 2024, 41(3): 300-306.
- [21] NG Y T, FINGERMAN K. Older adult's marital status, support exchanges and psychological well-being in everyday life. *Innovation in Aging*, 2021, 5(Supplement_1): 919-919. doi: 10.1093/geroni/igab046.3330.
- [22] SCAFATO E, GALLUZZO L, GANDIN C, *et al.* Marital and cohabitation status as predictors of mortality: a 10-year follow-up of an Italian elderly cohort. *Soc Sci Med*, 2008, 67(9): 1456-1464. doi: 10.1016/j.socscimed.2008.06.026.
- [23] KEMPERMAN A, TIMMERMANS H. Green spaces in the direct living environment and social contacts of the aging population. *Landscape and Urban Planning*, 2014, 129: 44-54. doi: 10.1016/j.landurbplan.2014.05.003.
- [24] 穆跃喧, 杜本峰. 社区室外活动场地对中国老年人抑郁变化的影响研究. *中国卫生统计*, 2024, 41(5): 667-670. doi: 10.11783/j.issn.1002-3674.2024.05.007.
- [25] MU Y X, DU B F. The effect of neighborhood outdoor activity space on depression among Chinese older adults. *Chinese Journal of Health Statistics*, 2024, 41(5): 667-670. doi: 10.11783/j.issn.1002-3674.2024.05.007.
- [25] KERAMAT S A, ALAM K, SATHI N J, *et al.* Self-reported disability and its association with obesity and physical activity in Australian adults: results from a longitudinal study. *SSM Popul Health*, 2021, 14: 100765. doi: 10.1016/j.ssmph.2021.100765.

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