

The Impact of Lifestyle and Polypharmacy on the progression of Multimorbidity in Community-Dwelling Older Adults

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Introduction

- Globally, about one-third of community-dwelling older adults suffer from complex multimorbidity.
- Complex multimorbidity (**three or more chronic diseases and affecting three or more different body systems**) have worse outcomes than multimorbidity, such as more frequent hospitalizations, and premature mortality.
- The effect of sociodemographic factors in the progression of multimorbidity has been found, but the lifestyle and polypharmacy remain unclear.
- This study aims to **explore impact of lifestyle and polypharmacy on the progression of multimorbidity among community-dwelling older adults.**

Methods

- The study used data from the health examination records of older adults residing in Southern China in 2017 and 2020 (n=3647). This is a **longitudinal design**.
- The outcome was occurrence of the status of the older adults changed from multimorbidity to complex multimorbidity after 3 years.
- Logistic regression model was used to analyze the influence of **lifestyle (diet, physical activity, smoking and drinking)** and **polypharmacy** of baseline on the progression of multimorbidity. Demographic variables were also included in the model as confounding variables.

Figure 1 The logistic regression results

Variable	β	SE	Wald	P	OR (95%CI)
Marital status			15.431	0.001	
Divorce	-0.072	0.758	0.009	0.924	0.930 (0.211-4.106)
Widowed	0.427	0.116	13.578	0.000	1.532 (1.221-1.923)
Unmarried	0.588	0.368	2.561	0.110	1.801 (0.876-3.702)
Exercise frequency			24.033	< 0.001	
once a week	0.513	0.117	19.267	< 0.001	1.059 (0.995-1.127)
No exercise	0.445	0.120	13.689	< 0.001	1.275 (1.160-1.402)
Smoking			7.506	0.023	
ex-smoker	-0.122	0.245	0.249	0.618	0.885 (0.548-1.430)
smoking	0.492	0.186	7.028	0.008	1.636 (1.137-2.353)

Results

- Totally **13.5% (n=491)** of older adults with multimorbidity had developed into complex multimorbidity.
- The proportion of complex multimorbidity **increased from 32.1% to 45.6%**.
- **The logistic regression analysis indicated that (Figure 1)**
 - (1) compared with who exercise daily, those who don't exercise (OR=1.561, 95%CI:1.233-1.976, p<0.001) and those exercise occasionally (OR=1.670, 95%CI:1.328-2.100, p<0.001) are more possibly to have complex multimorbidity.
 - (2) The smokers have a higher risk than non-smokers (OR=1.636, 95%CI:1.137-2.353, p<0.01).
 - (3) Those widowed are more likely to developing complex multimorbidity than those married (OR=1.532, 95%CI:1.221-1.923, p<0.001).
 - (4) Diet, drinking and polypharmacy had no significant effect on the progression of multimorbidity.

Conclusions and Implementation

- **Lack of exercise, smoking and loss of spouse** can significantly increase risk of the progression of multimorbidity and developing into complex multimorbidity among community-dwelling older adults with multimorbidity.
- Future research could focus on **developing and implementing exercise-based interventions** to delay the progression of multimorbidity.