Association between alcohol consumption as a sleep aid and MCI: A cross-sectional study

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Background : With the aging of the Japanese population, the prevalence of mild cognitive impairment (MCI) is increasing. Previous studies have examined the association between alcohol consumption and cognitive decline, focusing on the amount and frequency of consumption. However, the specific association between alcohol consumption as a sleep aid and MCI has not been fully elucidated. In the present study, we investigated the association between alcohol consumption as a sleep aid and MCI in a cross-sectional study of regional residents.

Methods : Data were collected from 684 residents aged 60–79 years who participated in a comprehensive health examination conducted in Naraha Town, Fukushima Prefecture, in 2022. The Japanese version of the Montreal Cognitive Assessment (MoCA-J) was used to evaluate MCI, with a score of 25 or below indicating MCI. Age, sex, medical history, and lifestyle factors (e.g., smoking, alcohol consumption, physical activity) were collected using a questionnaire. Alcohol consumption as a sleep aid was defined as 'drinking alcohol' in response to the question, "What do you do to help you sleep?'. Logistic regression analysis was performed with MCI as the outcome, alcohol consumption as a sleep aid as the exposure, and sex, age, educational level, medical history (diabetes mellitus and hypertension), smoking status, physical activity, depressive symptoms, number of teeth, frailty, and sleep quality as covariates.

Results : Of the 684 residents, 363 were assessed as MCI (194 men). Alcohol consumption as a sleep aid was observed in 81 people (70 men), with a significant increase in MCI odds ratio in men (OR: 2.80, 95% CI: 1.34-5.84). Although the association was not statistically significant in women, a trend toward increased MCI odds ratio was observed among occasional heavy drinkers (OR: 4.62, 95% CI: 0.99–21.60).

Conclusion: Alcohol consumption as a sleep aid may lead to cognitive impairment in men.

Population Attributable Fractions of Modifiable Risk Factors for Depressive Symptoms in Older Adults

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Background : Depressive symptoms among older adults are associated with reduced quality of life and increased mortality. Identifying the population attributable fraction (PAF) of modifiable risk factors is crucial for targeted interventions; however, evidence remains limited. This study aimed to quantify the impact of modifiable risk factors on depressive symptoms among older adults using PAF calculation from multivariable logistic regression models.

Methods : This cross-sectional study included 20,144 community-dwelling older adults (mean age 74.5±6.2 years, 54.1% women) who participated in the National Center for Geriatrics and Gerontology-Study of Geriatric Syndromes in Aichi, Japan. Depressive symptoms were assessed using the Geriatric Depression Scale (cutoff ≥6). Multivariable logistic regression was performed, including smoking, alcohol habits, polypharmacy, physical activity, sleep satisfaction, and household income as explanatory factors. PAFs of each significantly related factor were estimated using R code provided by Simon et al. A sub-analysis of ever-smokers was conducted to examine the PAF of continued smoking.

Results : The prevalence of depressive symptoms was 11.9% (mean GDS 2.6±2.5). Significant risk factors included low household income (<3 million JPY, adjusted odds ratio [AOR]: 1.70), poor sleep satisfaction (AOR: 2.83), inactivity (<1 exercise session/week, AOR: 1.87), polypharmacy (≥6 medications/day, AOR: 1.61), and smoking history (AOR: 1.34), all $p<0.001$. The PAFs were 19.9% for low household income, 15.9% for poor sleep satisfaction, 9.0% for inactivity, 7.5% for polypharmacy, and 6.2% for smoking history. Among ever-smokers, the PAF for continued smoking was 4.8%.

Conclusions : Several modifiable risk factors substantially contributed to depressive symptoms in older adults. Interventions to improve sleep, promote regular exercise, reduce polypharmacy, and prevent smoking may effectively reduce the burden of depression.

Interaction between Built Environment and Intrinsic Capacity for Mobility-Related Functional Ability

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Background : The World Health Organization defines healthy ageing as developing and maintaining functional ability, shaped by intrinsic capacity (IC), environments, and their interaction. However, few studies have quantitatively examined the environment/IC interaction for functional ability. We evaluated the interaction focusing on one of the fundamental functional ability: mobility.

Methods : We used three-wave panel data (2016–19–22) from 42,116 functionally independent adults aged ≥65 in the Japan Gerontological Evaluation Study. Functional ability in 2022 was assessed with a 9-item scale on basic needs and mobility, dichotomised at the median. Six built environments and IC were assessed in 2019 using self-reports and the Kihon Checklist, a national frailty screening tool. Multilevel modified Poisson regression was used to estimate prevalence ratios (PRs) of optimal functional ability using those without each built environment as the reference. P for interaction was assessed by inserting a multiplicative interaction term between IC and each built environment.

Results : PRs for optimal functional ability were tended to be higher among people with low IC: 1.05 (0.93–1.18) for *Public facilities*; 1.12 (1.00–1.26) for *Accessible transport*; 1.01 (0.90–1.14) for *Path*; 1.12 (0.99–1.26) for *Station or bus stop*; 1.15 (1.03–1.29) for *Parks*; and 1.06 (0.95–1.19) for *Shops*. Among those with high IC, PRs were 1.01 (0.99–1.03) for *Public facilities;* 1.01 (0.99–1.04) for *Accessible transport*; 1.02 (1.00–1.04) for *Path*; 1.03 (1.00–1.05) for *Station or bus stop*; 1.01 (0.99–1.03) for *Parks*; and 1.02 (1.00–1.04) for *Shops*. An interaction was observed only for *Parks* (*P* for interaction = 0.03).

Conclusion : Ensuring accessible transport and walkable environments may contribute to fair functional ability among older adults with low IC, highlighting the importance of inclusive and equitable community design.

Trajectories of Functional Capabilities from Ages 65 to 90 Vary by Sociodemographic Factors

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Background : As the global population ages, maintaining functional capabilities is critical. The aim of this study was to examine how sociodemographic factors influence changes in functional capabilities from ages 65 to 90.

Methods : This longitudinal study was conducted in Tsuru, Yamanashi, Japan. All residents aged ≥65 years without functional disabilities were eligible to participate. Mail surveys were conducted in 2016, 2018, 2019, 2022, and 2024. Those who provided data on functional capabilities at ≥2 time points were included in the analyses (n=4429; 12,651 observations). Functional capabilities were assessed using the Kihon checklist, which comprises six domains: mobility, nutrition, social activity, cognition, depression, and oral health. Sociodemographic factors included sex, educational attainment, employment status, marital status, and living arrangement. Mixed-effects models were used to estimate trajectories of functional capabilities and examine associations between sociodemographic factors and functional decline.

Results : From ages 65 to 90, functional capabilities remained relatively stable until age 75, followed by a gradual decline. Mixed-effects models showed that women and those with higher educational attainment had better functional capabilities. Additionally, the rate of decline varied by subgroup: women, non-workers, unmarried individuals, and those living with others experienced a faster decline, while those with higher educational attainment showed a slower rate of decline.

Conclusions : Our findings suggest that disparities in functional capabilities between individuals with higher and lower educational attainment have emerged by age 65 and may widen with advancing age. These results underscore the need for targeted intervention programs to help at-risk groups mitigate functional decline and improve their quality of life.

Impact of repeated influenza vaccination on hospitalization and mortality among older adults

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Background : Influenza is a major cause of hospitalization and death among older adults. Vaccination reduces the risk of pneumonia and influenza (P&I)-related hospitalization and mortality. However, the effectiveness of repeated annual vaccination remains inconclusive. This study aimed to evaluate the impact of repeated vaccination on hospitalization and mortality, as clinical indicators of disease severity, among older adults in South Korea.

Methods : We constructed a cohort from the Health Insurance Review & Assessment Service database, including individuals ≥ 65 years diagnosed with influenza or pneumonia between 1 January and 30 June of the 2018/19 influenza season. Vaccination history was categorized across three seasons (2016/17–2018/19). Propensity scores (PSs) were estimated using multinomial logistic regression models. Inverse probability treatment weighting based on PSs was applied to adjust for age, sex, and the Charlson Comorbidity Index. We assessed the effect of repeated vaccination on P&I-related hospitalization and mortality, in terms of hazard ratios (HRs), using weighted Cox proportional hazard regression.

Results : A total of 212,641 cases were analyzed, with 81.6% vaccinated in all three seasons. Vaccination in all three seasons significantly reduced the risk of P&I-related outcomes compared with current-only vaccination (HR = 0.67 [95% CI 0.64-0.71] for hospitalization; HR = 0.47 [95% CI 0.40-0.55] for mortality). Current and previous season vaccination was associated with lower risk compared with current-only vaccination (HR = 0.87 [95% CI 0.83-0.91] for hospitalization; HR = 0.66 [95% CI 0.57-0.76] for mortality), and current and prior season vaccination showed similar reductions (HR = 0.86 [0.82-0.90] for hospitalization; HR = 0.66 [95% CI 0.58-0.76] for mortality).

Conclusion : Repeated annual vaccination demonstrated beneficial effects in this large cohort of older adults, supporting the evidence for continued annual vaccination.