Association of Long Sleep Duration with Prevalence of Cognitive Impairment: the Suita Study

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Background : Although sleep disturbances are recognized risk factors for cognitive decline, the specific association between sleep duration and the prevalence of mild cognitive impairment (MCI) and dementia has not been sufficiently studied in the general Japanese population. This cross-sectional study aimed to clarify the association in a large urban cohort.

Methods : We analyzed data from 6,150 participants (2,952 men, 3,198 women) aged 50 years or older from the Suita Study (1990-1999). Participants were categorized according to Mini-Mental State Examination (MMSE) scores into normal cognition, MCI, and dementia. Self-reported sleep duration was grouped as <6, 6 (reference), 7, or ≥8 hours. We used a multivariable logistic regression model to calculate the odds ratios (ORs) and 95% confidence intervals (CIs).

Results : Among 6,150 participants, 551 (9.0%) were identified as having MCI and 92 (1.5%) were diagnosed with dementia. After adjusting for potential confounding factors, long sleep duration was positively associated with higher odds of developing MCI and dementia. Compared to 6 hours of sleep, the multivariable-adjusted ORs (95% CIs) for MCI were 1.16 (0.93–1.44) for <6 hours, 1.45 (1.14–1.84) for 7 hours, and 2.40 (1.59–3.61) for ≥8 hours of sleep. The corresponding multivariable-adjusted ORs (95% CIs) for dementia were 0.59 (0.32–1.10), 1.24 (0.72–2.13), 4.22 (2.16–8.23), respectively. Similar associations were observed in both sexes, although the association with dementia did not reach statistical significance in women.

Conclusion : Long self-reported sleep duration was associated with a higher prevalence of MCI and dementia in the general Japanese population. Due to the cross-sectional design, it is unclear whether long sleep is a risk factor for, or a consequence of, cognitive decline. Nevertheless, clinicians should consider long sleep durations as a potential indicator of cognitive screening in older adults.

Association Between Alcohol-Related Motorcycle Crashes and Temperature: A Case Study in Taiwan

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Background : Comparatively little research has been conducted to examine the association of motorcycle crashes with extreme weather. This study aims to assess the association between alcohol-related crashes and temperatures among motorcyclists in Taiwan.

Methods : A population-based analysis was conducted using the data from the Taiwan National Traffic Crash Dataset between 2018 and 2022, with focuses on alcohol-related motorcycle crashes (defined as BAC (blood alcohol concentration) level ≥0.03%). Weather data from the Central Weather Bureau were categorized into five levels: extremely cold (<10° C), cold (10–18° C), normal (19–25° C), hot (26–36° C), and extremely hot (>36° C). Logistic regression models were employed to examine the associations between temperature and alcohol-related crashes. Subgroup analyses further distinguished binge drinking (BAC ≥0.08%) from non-binge drinking crashes.

Results : A total of 1,873,807 motorcycle crashes were included, of which 22,089 (1.18%) were alcohol-related crashes. The results revealed that alcohol-related crashes were 14.2% more likely to occur in cold temperatures compared to normal and warmer conditions (AOR=1.142; CI=1.102–1.183). Furthermore, the likelihood of binge-related crashes was more pronounced in extremely cold conditions, particularly among unhelmeted riders (AOR=1.491; CI=1.015–2.211).

Conclusion : This study found that cold temperatures significantly increased the likelihood of alcohol-related motorcycle crashes, while extremely cold conditions increased the risk of binge-level crashes among unhelmeted riders. These findings highlight the importance of enhancing traffic safety warnings and strengthening sobriety checkpoints during colder seasons to help reduce alcohol-related crashes.

Keywords : Motorcyclists; Alcohol-related crashes; Temperature; Weather effect.

Exploring factors influencing "achieving a desirable death" using covariance structure analysis

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I examined factors influencing the achievement of a “Good Death” among cancer patients using Structural Equation Modeling (SEM). In Japan, cancer has been the leading cause of death since 1981, making end-of-life care a critical issue. Palliative care seeks not only to relieve symptoms but also to support patients and families in achieving a meaningful death. The Good Death Scale (GDS), assessed by healthcare providers, evaluates awareness of dying, acceptance, preparation, timing, and physical comfort. Data came from the EASED study, a multicenter cohort of 1,896 patients admitted to 23 palliative care units between 2017 and 2018. After excluding incomplete cases, 1,136 were analyzed. Variables included symptoms, treatment burden, communication, and family and staff relationships. Confirmatory factor analysis identified four latent variables: objective symptoms, physicians’ evaluation, patient communication and awareness, and relationships with families and providers. SEM was then performed using total and item GDS scores. Results showed that older patients, those with less pain and treatment burden, and those maintaining daily activities closer to baseline achieved higher GDS scores. Absence of delirium and preserved communication strongly supported acceptance, preparation, and appropriate timing of death. Supportive relationships with healthcare professionals also contributed. Early palliative care was associated with better symptom control and improved comfort. In conclusion, I identified age, symptom relief, preserved function, absence of delirium, communication, and supportive relationships as key contributors. These findings stress the importance of symptom management, delirium prevention, family support, and early palliative care. Future research should integrate psychosocial and cultural factors to refine the definition of Good Death in Japan.

Association of Late Menarche and Menopause with Lower Risk of CVD Events: A 25-Year Cohort in Taiwan

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Backgrounds : Cardiovascular health has been a major concern in recent years. However, evidence remains limited regarding how the timing of menarche and menopause influences the risk of coronary artery disease (CAD) and stroke. This study aimed to investigate whether early or late age at menarche and menopause, categorized by tertiles, was associated with cardiovascular outcomes in long-term cohort follow-up.

Methods : We enrolled 1,859 women from the Chin-Shan Community Cardiovascular Cohort with 15- and 25-year follow-up. Age at menarche and menopause was analyzed in relation to CAD and stroke. Participants were divided into tertiles (early, normal, late). For menarche, cut-off points were ≤15, 16, and ≥17 years (n=423, 680, 596); for menopause, <48, 48–49, and ≥50 years (n=311, 365, 300). Using the normal group as reference, Cox proportional hazards models estimated hazard ratios for early and late groups.

Results : In this cohort, early menarche showed no significant association with CAD risk at either 15 years (HR=0.54, 95% CI: 0.25–1.18) or 25 years (HR=1.03, 95% CI: 0.58–1.83). In contrast, late menarche was associated with a significantly reduced risk of CAD at both 15 years (HR=0.27, 95% CI: 0.11–0.67) and 25 years (HR=0.49, 95% CI: 0.25–0.95). For stroke, early menopause showed no significant effect (15 years: HR=0.81, 95% CI: 0.44–1.48; 25 years: HR=0.87, 95% CI: 0.54–1.41), whereas late menopause was consistently protective, with significant reductions observed at both 15 years (HR=0.34, 95% CI: 0.15–0.75) and 25 years (HR=0.42, 95% CI: 0.24–0.75).

Conclusion : Late menarche was associated with reduced CAD risk, and late menopause conferred protection against stroke.

Explaining Attractiveness of Medical Areas in Japan: A Gravity Model Approach Using Patient Flows

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Background : Japan has long pursued the policy goal of "equitable distribution of healthcare services," aiming to reduce regional disparities. Nevertheless, such disparities persist, and patients in smaller medical areas often travel to larger ones seeking advanced care. This study explores the structural components of the ability of secondary medical areas (SMAs) to attract patients.

Methods : We analyzed nationwide patient flow data from the Japanese Patient Survey and estimated inter-SMA travel times using geographic information. These datasets were combined within a constrained gravity model to calculate the Relative Intrinsic Attractivity (RIA) of each SMA, estimated separately for Japan's nine regions. Aggregated indicators—including the number of large hospitals (≥500 beds), physician-to-bed ratios within these hospitals, and average intra-SMA travel time—were incorporated into a regression-based model of RIA. Rival indices representing resources in competing SMAs, weighted by travel time, were also tested. Regional classifications and interaction terms were included to assess heterogeneity across areas.

Results : The best-fitting model explained approximately 72% of the variance in RIA. Significant predictors were the number of hospitals with ≥500 beds, physician density within such hospitals, and intra-SMA travel time, with notable regional variation. Rival indices became non-significant once internal SMA factors were accounted for.

Conclusions : Applying a constrained gravity model to patient flow data, this study demonstrates structural determinants of RIA at the SMA level. Both large-scale hospital and physician density in those hospitals were critical in explaining RIA. The model provides a scalable framework for cross-regional comparison and healthcare policy planning, offering direct implications for regional healthcare design, and equitable access to advanced medical services in Japan.