Young Carers in Japan: Household/Family Care Roles and Impacts on Health and School Life

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Background : Young carers providing informal family care may face health and school-related challenges, yet evidence from Japan remains limited. This study examined associations between caregiving roles and health and school problems among fifth-grade (G5) and second-grade middle school (G8) students in Japan, comparing carers and non-carers by role and age.

Methods : We used cross-sectional data from G5 and G8 students and parents via the *Child Living Condition Survey* (Tokyo 2016, Hiroshima 2017). Young carers were defined as Household Young Carers (HYCs; household tasks >1 h/day) or Family Care Young Carers (FCYCs; direct care for siblings/grandparents >1 h/day). Outcomes were self-rated health, depressive symptoms (DSRS-C) and school-related problems (reluctance to attend school, school absenteeism >1 month, unsupervised late nights). Multiple imputation addressed missing data. Logistic regression adjusted for prefecture, gender, family structure, household economic status, parental physical/mental health, estimating odds ratios (ORs) with 95% confidence intervals (CIs).

Results : Prevalence rates were: HYC 7.1% of G5 (n = 9,383), 7.2% of G8 (n = 9,199); FCYC 13.4% of G5 (n = 8,014), 7.7% of G8 (n = 7,802). G5 HYCs showed strong associations with absenteeism (OR: 2.54, 95% CI: 1.67–3.87) and late nights (OR: 2.57, 95% CI: 2.00–3.31). G8 HYCs increased odds for depressive symptoms (OR: 1.31, 95% CI: 1.10–1.57), school reluctance (OR: 1.17, 95% CI: 1.00–1.38), absenteeism (OR: 1.73, 95% CI: 1.13–2.61) and late nights (OR: 1.56, 95% CI: 1.23–1.97). G5 FCYCs had no significant associations. G8 FCYCs showed increased odds for absenteeism (OR: 2.06, 95% CI: 1.33–3.19) and late nights (OR: 1.67, 95% CI: 1.27–2.07).

Conclusion : Daily household/family care exceeding one hour may adversely affect young carers' health and school life. The effects may worsen with age, suggesting the need for early identification and targeted household- and school-based support.

Work intervals and the prevalence of depressive symptoms among daytime workers

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Background : The relationship between short work intervals and depressive symptoms has been studied among shift workers. However, evidence regarding this relationship among daytime workers is limited, despite indications that short work intervals may disrupt their sleep.

Objectives : This study examined the association between work intervals and depressive symptoms among daytime workers, and whether lifestyle behaviors might help explain this association.

Methods : A cross-sectional analysis was conducted on 8,007 daytime workers who participated in a survey of the Japan Epidemiology Collaboration on Occupational Health Study. Work intervals—both including and excluding commuting time—were calculated based on the participants' self-reported work departure and arrival times. Depressive symptoms were assessed using the 11-item Center for Epidemiological Studies Depression Scale. Multilevel robust Poisson regression models were used to estimate the prevalence ratio (PR) and 95% confidence interval (CI) for depressive symptoms across work intervals. Lifestyle factors (sleep duration, breakfast consumption, dietary balance, dinner timing, and leisure-time physical activity) were added to the main model to explore the extent to which these factors account for the association.

Results : The adjusted PRs (95% CIs) for depressive symptoms were 1.41 (1.12–1.77), 1.23 (1.12–1.35), 1.03 (0.96–1.11), 1.00 (reference), and 1.08 (1.04–1.12) for those with work intervals of <11.0, 11.0–12.9, 13.0–13.9, 14.0–14.9, and ≥15.0 hours, respectively. A substantial proportion of the association between shorter work intervals and depressive symptoms was explained by the lifestyles above: 61.0% for <11.0 h and 34.8% for 11.0–12.9 h. Similar results were obtained when the commuting time was subtracted from the work interval.

Conclusions : Shorter work intervals are associated with depressive symptoms, at least in part, through deteriorating health-related lifestyles.

Promoting Social Connection and Diet Quality through an AI App-Based Intervention among Older Adults

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Background : The COVID-19 pandemic has increased social isolation among older adults, particularly those unfamiliar with information and communication technologies (ICT). Social connection is recognized as a key determinant of health, while dietary quality is essential for preventing frailty. This study aimed to evaluate the effects of an ICT-based dietary intervention designed to enhance social connection and improve dietary quality in older adults.

Methods : A quasi-experimental study was conducted among 29 community-dwelling older adults (≥65 years) in a Tokyo municipality, who were not under current dietary treatment or restricted from app use. Participants were assigned to an intervention group (n=11) or control group (n=18). From December 2024 to March 2025, the intervention group received a 3-month program. Intervention group uploaded one day's meals per week via photo-sharing dietary app, with AI-based dietary diversity analysis and weekly feedback supervised by dietitians. Main outcomes included Japanese Food Guide Spinning Top (JFGS) score and UCLA loneliness scale, and sub-outcomes included body weight, BMI, and skin carotenoid score. Paired and unpaired t-tests were used for analysis.

Results : The intervention group showed a significant improvement in JFGS score (+3.05 points, p=0.02 vs. control). UCLA loneliness scores significantly decreased in the intervention group (p=0.045). Additionally, both body weight (p=0.03) and BMI (p=0.04) in the intervention group increased significantly compared to controls.

Conclusion : This ICT-based group intervention using a photo-sharing dietary app and AI feedback effectively improved dietary quality and social connection among older adults. Such technology-assisted programs may offer a promising approach to frailty prevention in aging populations.

Issues in designing and managing inflammatory bowel disease registries in Japan: An interview study

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Background : Disease registries are essential for characterizing patient populations, understanding treatment patterns, and evaluating disease prognosis. However, establishing and maintaining comprehensive, research-oriented registries for rare diseases such as inflammatory bowel disease (IBD) is challenging when budgets and human resources are limited. This study aimed to highlight the issues faced in designing and managing IBD registries in Japan.

Methods : Using a semi-structured interview, we conducted a qualitative descriptive study of two registries supported by Health and Labour Sciences Research Grants (HLSRGs) for Intractable Diseases: (1) a registry for newly diagnosed cases using the “Rare Disease Data Registry of Japan” (Nanbyo Platform), and (2) a registry focusing on molecular-targeted therapies not using the Nanbyo platform. The principal investigator of these registries was interviewed through written questionnaire responses and a one-hour web-based meeting.

Results : The interviewee played a central role in registry design and development, preparation for ethical review by institutional review boards, and data entry. Although the platform provides standard templates, the interviewee reported high costs, complex system operations, and burdensome administrative requirements. Data entry and coordination were managed internally without external specialist assistance, such as clinical research coordinators and data managers. The interviewee emphasized the need for affordable, user-friendly electronic data capture (EDC) systems.

Conclusion : Sustainable rare disease registries require multifaceted support, including the sharing of standard templates, specialist assistance, low-burden EDC systems, and enhanced research networks. Sharing these experiences may contribute to the development of research infrastructure for rare diseases.

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Evaluate the Efficacy of One-time Low-dose CT Screening for Lung Cancer in China: Based on the population-based prospective study

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Objective : Lung cancer is the most common cancer and the leading cause of cancer death in China. Because of low health resource accessibility in China, the implementation of one-time low-dose CT (LDCT) screening is more realistic and there is little evidence on its effectiveness in population-based lung cancer screening. This study aims to evaluate the effectiveness of one-time low-dose CT for lung cancer screening in areas with limited medical resources.

Methods : This study was a multicenter, population-based, prospective cohort study in the North China. A total of 228265 eligible participants 40-74 year-old who had no cancer history were enrolled in the study from 2013 to 2019. The effectiveness of one-time LDCT was evaluated by comparing lung cancer incidence, mortality, and all-cause mortality between the screened and non-screened groups from the time of cohort entry until January 18, 2023.

Results : In 228265 eligible participants, 54754 were classified into high risk group. There were 28864 participants who underwent LDCT scan accounting for 57.72% of the high risk group and 25890 did not. Total of 1215 patients were newly diagnosed with lung cancer. And the proportion of early stage of lung cancer accounted for 70.19% in screened group and 45.10% in non-screened group. Using weighted Cox regression after inverse probability weighting, the screened group had a 66.1% higher lung cancer incidence density , 36.3% lower lung cancer mortality density and 35.3% lower all-cause death density than those in non-screened group.

Conclusion : One-time LDCT screening was verified to be effective in reducing the burden of lung cancer in China, significantly decreasing lung cancer mortality and all-cause mortality and improving the proportion of early diagnosis. Our study provides a database for the prevention and control of lung cancer, particularly in regions with limited medical resources.