Prevalence and factors of food insecurity in rural Senegalese households with under-five children

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Introduction : Global food insecurity has been exacerbated by overlapping crises, with Africa being the most severely affected region. Children under five are highly vulnerable to its consequences, yet research focusing on this demographic remains limited. This study aimed to assess the prevalence of Food Insecurity and its determinants among households with young children in rural Senegal.

Methods : A cross-sectional survey was conducted in Bambey Department, Senegal, using structured questionnaires administered to 228 households. Food Insecurity was measured using the Food Insecurity Experience Scale developed by the Food and Agriculture Organization and validated through the Rasch model. Additional information was collected on sociodemographic characteristics, agricultural practices, and exposure to shocks.

Results : A total of 225 households completed the survey. The prevalence of moderate-to-severe Food Insecurity was 46.4%, and severe Food Insecurity was 3.6%. Multivariable logistic regression revealed that Food Insecurity risk increased with decreasing socioeconomic status: middle (aOR 3.69, 95% CI: 1.24–10.99, p=0.019), poor (aOR 8.07, 95% CI: 2.73–23.88, p<0.001), and poorest (aOR 16.46, 95% CI: 5.22–51.86, p<0.001). Exposure to shocks was also associated with Food Insecurity (aOR 3.05, 95% CI: 1.62–5.77, p<0.001).

Discussion : The prevalence of Food Insecurity among households with children under five (46.4%) was substantially higher than national estimates. Shock exposure emerged as a major predictor of Food Insecurity, comparable to socioeconomic disadvantage. These findings highlight the need for interventions that both address structural inequalities and strengthen household resilience to external shocks.

Associations between continuous high stress and physical outcomes in workers: JNIOSH cohort study

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Background and purpose : Mental distress is a widely recognized risk factor for poor physical health, the link between mental health and physical conditions is an important issue for occupational health management. We present the preliminary findings about the impact of continuous high stress over two years on physical health outcomes in workers from the JNIOSH Cohort Study data.

Method : The JNIOSH Cohort Study is an ongoing, large-scale occupational cohort study of workers in Japanese companies. An annual survey has been conducted and has collected monthly work records, medical check-ups and occupational stress, etc. Two years of survey data in 2020 and in 2021 were used for analysis. Of those who participated continuously in both years (n=21,439), workers who had data from stress checks and medical check-ups in both years and had no abnormal findings in their physical condition in 2020 survey were included in analysis (n=15,121). Continued stress status was classified into LL (low stress state continued) and HH (high stress state continued). The physical health outcome was defined as one or more abnormalities in blood pressure, blood glucose or blood lipid levels measured by 2021 medical check-ups. Logistic regression was used to estimate the association of HH and physical health outcome, adjusted for potential confounders.

Results : The adjusted OR (AOR) [95% CI] was 1.19［1.01-1.40］for HH　referenced to stress status LL in overall. Background characteristics that showed significance for physical health outcome were in women aged 40s, non-regular employees, and working with variable working schedule (AOR=1.66, 95%CI 1.15-2.41; AOR=1.24, 95%CI 1.00-1.55; AOR=1.26, 95%CI 1.01-1.58, respectively).

Conclusion : The results showed that workers' backgrounds had a strong association with physical health abnormalities due to continuous high stress conditions, and workers with such background may be a high-risk group that needs special attention in health care.

Detection of mild cognitive impairment using administrative health data

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Introduction : Alzheimer's disease and related disorders progressively impair cognitive function, whick highlights the importance of the early detection of the stage of mild cognitive impairment (MCI). This study aimed to develop MCI screening models in community settings using administrative health data.

Methods : This study retrospectively analyzed data from 1,763 community-dwelling adults aged 70 years or older living in Nobeoka City. This was a secondary analysis of survey data collected by Nobeoka City as part of its public health services between July 2021 and December 2021. MCI was assessed using the Memory Performance Index score from the MCI Screen. Age, sex, and the Kihon Checklist (KCL), a self-administered yes/no questionnaire regarding instrumental and social activities of daily living, physical functions, nutritional status, oral function, cognitive function and depressive mood, were used as explanatory variables. We developed MCI prediction models by applying the extreme gradient boosting decision tree algorithm using data from 1,234 participants. The prediction performances were tested using the area under the curve (AUC) in the remaining 529 participants.

Results : Of the 1,763 participants (mean age, 78.4±5.3 years), 449 (25.5%) participants were identified as having MCI. The AUC for the of the reference model ("age and sex model") was 0.780 for predicting MCI, and 0.805 for the KCL addition model ("age, sex, and KCL model"). Adding the KCL variables significantly improved the AUCs in the testing dataset (p=0.018, by DeLong's test).

Conclusions : KCL was identified as a useful variable for detecting MCI status in older adults. Our model will enable screening of citizens at higher risk of MCI.

Prevalence and associated factors of excessive dietary supplementuse in Japanese adults

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The use of dietary supplements (DS) carries the risk of excessive nutrient intake. This study aimed to investigate factors associated with DS consumption exceeding manufacturer-recommended doses and to examine the prevalence of excess nutrient intake from DS among DS users. An online survey was conducted from November to December 2024 among 2002 adults (aged 18–74 y) who had a history of buying one of 25 major DS products and used it in the previous month. Self-reported daily DS consumption was assessed using a questionnaire and compared with the manufacturer-recommended doses indicated on the package. Using multivariate logistic regression analysis, the associations between consuming DS in excess of the manufacturer-recommended doses and socio-demographic or lifestyle factors were examined, with adjustments for sex, age, weight status, educational level, employment status, medical history, smoking status, drinking habit, and form of dietary supplement. Prevalence of DS users exceeding tolerable upper limits (ULs) defined according to the Dietary Reference Intake for Japanese was calculated based on vitamin and mineral intake from DS only. As a result, 371 (18.5%) of the participants consumed DS in amounts above the manufacturer-recommended dose. Consuming DS above the recommended dose was associated with being aged 50–64 y, part-time or full-time job, using tablet-form DS, especially single water-soluble vitamin tablets, using DS for 6 months or more, and intentional consumption above the recommended dose. For DS containing nutrients with ULs, 297 individuals exceeded the manufacturer-recommended dose. Of these, 58% individuals (172/297) surpassed the UL for at least one nutrient. In conclusion, middle age, part-time or full-time job, using tablet-form DS, and using DS for 6 months or more were associated with DS consumption exceeding the manufacturer-recommended dose, which may lead to excessive nutrient intake.

Association between obesity and incidence of hematological malignancies: the JACC study

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Obesity is a significant global health issue, linked to higher incidence of cancers, including hematological malignancies. However, the evidence for this association among Japanese adults is not well established. Therefore, this study aims to investigate the association between obesity and the incidence of hematological malignancies in this population.

Based on the Japan Collaborative Cohort (JACC) study, 60,501 adults were included in the analysis. The body mass index was calculated using self-reported height and weight and characterized into four categories: underweight (<18.5 kg/m^2), normal-weight (18.5-24.9 kg/m^2), overweight (25.0-29.9 kg/m^2), and obesity (≥30.0 kg/m^2). Cancer incidence data were collected simultaneously using population-based cancer registries or by reviewing hospital records and death certificates. Cause-specific hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated using Cox proportional hazards models, adjusted for sex, age, survey area, childhood living area, smoking status, drinking status, exercise habit, walking habit, working status and educational attainment.

A total of 987 (1.6%) participants were classified as obesity, whereas 44,280 (73.2%) participants were categorized as normal-weight. The mean duration of follow-up was 13.2 years. During the follow-up period, 332 individuals were diagnosed with hematological malignancies, including lymphoma (n = 154), multiple myeloma (n = 75), and leukemia (n = 100: 63 myeloid leukemia). Compared to the people with normal-weight, those with obesity had significantly higher risks for incidence of all hematologic malignancies (HR [95% CI] 2.47 [1.40-4.37]), multiple myeloma (4.57 [1.74-11.99]), and myeloid leukemia (4.29 [1.42-12.92]). No significant association was found for the incidence of lymphoma and overall leukemia.

In conclusion, obesity is significantly associated with increased incidence of hematological malignancies among Japanese adults.