Association between Occupational stressor and premenstrual dysphoric disorder: Cross Sectional Study

Nanami Nishio (1)
Yuto Maeda (2), Zean Song (1), Midori Takada (1), Hiroshi Yatsuya (1), Takahiro Tabuchi (3)

1 : Department of Public Health and Health Systems, Nagoya University Graduate School of Medicine
2 : Department of Public Health, Institute of Science Tokyo
3 : Division of Epidemiology, School of Public Health, Tohoku University Graduate School of Medicine

Background : Premenstrual dysphoric disorder (PMDD) is a condition characterized by recurrent mood disturbances and associated impairment in social functioning that occur from the premenstrual phase through menstruation. Although PMDD is reportedly associated with worse work productivity, its association with occupational stress remains uncertain.

Methods : We used data from the Japan COVID-19 and Society Internet Survey (JACSIS), conducted in 2023. Occupational stressors were evaluated using the Brief Job Stress Questionnaire consisting of 17 question items regarding job demand, control, interpersonal relationships, work satisfaction and others (total 9 sub-domains). Each domain was rated as favorable or unfavorable. According to the number of sub-domains rated as unfavorable, participants were categorized as follows: 0 = no stressor, 1 = low stressor, 2–3 = moderate stressor, and ≥4 = severe stressor. PMDD was defined using the Japanese version of the PMDD scale. Odds ratios (ORs) and 95% confidence intervals (95% CIs) were estimated using multivariable logistic regression analyses adjusted for age, body mass index, marital status, educational status, physical activity, psychological distress, smoking status, alcohol consumption, working hours, depression, work style (managerial and self-employed, regular employee, non-regular employee, others), job content (desk work, communication, physical), and social support.

Results : A total of 5,023 women were included in the analysis. The prevalence of PMDD was 3.04% (n = 153). Compared with participants reporting no occupational stressors, those reporting moderate stressor or severe stressor showed a higher prevalence of PMDD (moderate stressor: OR 2.24, 95% CI 1.41-3.54; severe stressor: OR 6.70, 95% CI 3.62-12.40).

Conclusion : In this cross-sectional study, a positive association was observed between occupational stressors and PMDD in Japanese women.

Risk Assessment for chronic kidney disease among Patients with Type 2 Diabetes

Lingkan Barua (1)
Umme Tanim Farzana (2), Tahmina Akhter (3), Mithila Faruque (4)
1 : Department of Noncommunicable Diseases, Bangladesh University of Health Sciences (BUHS)

Background : Type 2 diabetes (T2D) has become the 2nd leading cause of CKD and CKD-T2D was associated with 2.6 million incident rate, 126 million patients, 406 thousand deaths and 9.8 million DALYs.

Objective : To assess the risk of CKD among patients with T2D and explore the factors associated with that risk.

Methods : A cross-sectional study was conducted in 2023 among 400 consecutively selected patients with diabetes at the Bangladesh Institute of Health Science General Hospital, Dhaka, a tertiary-level diabetes hospital. Data were collected through face-to-face interviews, collection of urine samples, and medical records review. Urine samples were collected for the assessment of urinary albumin and urinary creatinine. The last record of serum creatinine value (within 03 months) was taken from the diabetes logbook, and the Modification of Diet in Renal Disease equation was used to estimate the glomerular filtration rate. The risk of developing CKD within the next 5 years was assessed by an online 'CKD Risk Tool' developed by the Johns Hopkins Bloomberg School of Public Health.

Results : The mean age of the respondents was 49.1 ± 9.8 years, and more than half (52.3%) were women. Almost half (47.3%) of the respondents had a moderate level of risk of developing CKD, and 29% of the respondents had a high risk. A significant relationship was found between CKD risk level and occupational status ($p = 0.001$), educational status ($p = 0.034$), monthly family income ($p = 0.002$), smokeless tobacco use ($p = 0.001$), added salt intake ($p = 0.015$), fast food intake ($p = 0.001$), proton pump inhibitor intake ($p = 0.001$), and high low-density lipoprotein ($p = 0.029$).

Conclusion : This study found that the proportion of risk for developing CKD among the patients with T2D within the next 5 years is high, with almost half of them having a high CKD risk and more than one-fourth having a moderate CKD risk.

Key words : Proportion, CKD, CKD risk, risk factors, type 2 diabetes, Bangladesh

Marital status and all-cause, cancer, and cardiovascular disease mortality: from the Health Examinees-Gem Study.

Jeeyoo Lee (1)
Sooyoung Cho (2), Aesun Shin (1,2,3,4,5), Daehee Kang (1,3,5)

1 : Department of Preventive Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea
2 : Medical Research Center, Genomic Medicine Institute, Seoul National University, Seoul, Republic of Korea
3 : Cancer Research Institute, Seoul National University, Seoul, Republic of Korea
4 : Interdisciplinary Program in Cancer Biology Major, Seoul National University College of Medicine, Seoul, Republic of Korea
5 : Integrated Major in Innovative Medical Science, Seoul National University Graduate School, Seoul, Republic of Korea

Background and objectives : Previous studies have shown that marital status is associated with mortality; however, in South Korea, where marriage rates are rapidly declining, evidence regarding marital status and mortality remains scares. The objective of this study was to investigate the association between marital status and the risk of all-cause, cancer, and cardiovascular disease (CVD) mortality in the Korean population.

Methods : A total of 113,422 participants aged 40 to 69 years from the Health Examinees Gem Study(HEXA-G) were included in the final analysis. Marital status was categorized as married/cohabited, single, divorced/separated, or widowed. Cox proportional hazards regression model was used to estimate hazard ratios (HRs) and 95% confidence intervals (CIs), adjusting for potential confounders.

Results : During a mean follow-up period of 14.0 years, 5,329 deaths were documented. Compared with married men, unmarried (HR=2.11; 95% CI:1.64-2.72), divorced/separated (HR=1.74; 95% CI:1.42- 2.13), and widowed men (HR=1.42; 95% CI:1.11-1.81) had a higher risk of all-cause mortality. Unmarried divorced/separated men had elevated cancer mortality. Among women, associations were consistent, although the effect sizes were smaller than those observed in men. Unmarried (HR=1.72; 95% CI:1.30- 2.27) and divorced/separated women (HR=1.28; 95% CI:1.04- 1.57) had a higher risk of all-cause mortality compared to married women. Unmarried women also had an increased risk of cancer mortality (HR=1.92; 95% CI:1.36- 2.71).

Conclusion : Marital status was significantly associated with mortality risk, and the protective effect of marriage varied by marital status and sex.

Colloidal gold test strip with catalytic hairpin assembly for clinical detection of influenza A

Shuo Ma (1)
Yuming Yao (1)
1 : Center of Clinical Laboratory Medicine, Zhongda Hospital, Medical School of Southeast University

Background : Influenza A virus causes seasonal epidemics worldwide, imposing heavy healthcare and economic burdens. Reverse transcription-polymerase chain reaction (RT-PCR) is the diagnostic gold standard but requires costly equipment and trained personnel, while antigen-based rapid influenza diagnostic tests are convenient but poorly sensitive.

Objective : This study aimed to establish a rapid, sensitive, and visual nucleic acid detection method for influenza A virus by combining catalytic hairpin assembly (CHA) with colloidal gold immunochromatographic assay (GICA).

Methods : Conserved influenza A sequences were selected as targets for designing hairpin probes. CHA reactions generated biotin- and digoxin-labeled duplexes, which were visualized on colloidal gold strips. Reaction conditions were optimized, and analytical performance was evaluated using simulated and clinical pharyngeal swabs, with RT-PCR as the reference.

Results : The CHA-GICA strips achieved a detection limit of 10 fM with good linearity between band intensity and RNA concentration. No cross-reactivity was observed with mismatched or non-target sequences. In 164 clinical samples, sensitivity, specificity, and accuracy were 81.8%, 100%, and 82.9%, respectively. At room temperature, sensitivity remained 74%. Probes showed stable performance with glycerol protection.

Conclusion : The CHA-GICA strip enables rapid, instrument-free influenza A virus nucleic acid detection within 30 minutes, offering higher sensitivity than conventional antigen-based tests. This method is simple, cost-effective, and suitable for point-of-care applications, potentially improving early diagnosis and epidemic control.

The correlation between secondary transmission of COVID-19 and social norms

Hayato Matsuoka (1)
Hiroshi Nishiura (1)

1 : Kyoto University School of Public Health
2 : Nagasaki University Graduate School of Biomedical Sciences Department of Medical Virology

Introduction : During the COVID-19 pandemic, various public health and social measures were carried out. While social norms vary widely by country, the mechanisms that cultural tightness affects the control of COVID-19 have yet to be explored. The objective of the present study was to examine the relationship between cultural tightness and transmission dynamics across the world.

Methods : We analyzed the epidemic curve by country across the world, backcalculating the incidence of infection from the incidence of death. The effective reproduction number (Rt) was estimated based on the estimated daily incidence. The rate of increase and decrease in Rt under interventions, the length of inter-epidemic period, and the number of days with Rt>1 during the inter-epidemic period were contrasted against cultural tightness, which was measured by the Cultural Tightness Looseness Score (CTLS) for each country.

Result : The decrease in Rt in the 1st wave was positively correlated with CTLS, and the mean of Rt between the 1st wave and the 2nd wave was negatively correlated with CTLS. The results were statistically significant when restricted to OECD member countries only.

Conclusion : Social norms were shown to have had a tremendous impact on the success of PHSM and also the success of control during the inter-epidemic period. Depending on the cultural tightness, the strictness of restrictions and penalties needs to be discussed.