Happiness status of the slum population in Dhaka city, Bangladesh: a cross-sectional study

Palash Chandra Banik (1)

Rijwan Bhuiyan (2), Tahmina Akhter (3), Halima Akter Sathi (4), Saidur Rahman Mashreky (5), Md. Anower Hussain (6)

1 : Department of Noncommunicable Diseases, Faculty of Public Health, Bangladesh University of Health Sciences (BUHS)
2 : Bangladesh University of Professionals, Dhaka, Bangladesh

Objective : The aim of the study was to assess the level of happiness of the slum population in Dhaka city, Bangladesh.

Methodology : A census was conducted in 2024 among slum population in Dhaka city. All adults slum population from Kallyanpur pora slum were approached for inclusion in this study; among them 3877 were interviewed. Information regarding socio-demographic, co-morbidities and well-being index were collected using a semi-structured questionnaire. Well-being related questions were adapted from WHO-5 Well-being Index questionnaire. Data were analyzed using SPSS software version 25.0. Ethical approval for the study was obtained from the Ethical Review Committee of Bangladesh University of Health Sciences. The Level of happiness was categorized as low well-being: <25th percentile, medium well-being: 25th – 75th percentile and high well-being: >75th percentile.

Results : The mean age of slum populations was 37.0 ± 14.4 years; among them 57.4% were female and about six in 10 (63.0%) were 18-39 years old. Half (50.9) of the slum populations had no formal schooling, and the majority (83.8%) were currently married. Among the total slum population, nearly two-thirds (62.4%) of the slum population had medium level of happiness and one-fifth (20.1%) had low level of happiness; and mean score of the well-being 5 index was 66.0 ± 18.2. Age group (p=0.001); sex (p=0.001); educational status (p=0.001); extra salt intake (p=0.001); occupational status (p=0.001); co-morbidities (DM, HTN, central obesity; p=0.001) were significantly associated with the level of happiness of the slum population.

Conclusion : One out of five slum adults were not happy that needed urgent public health intervention.

Key words : Level of happiness, mental health status, Slum population, Bangladesh

Income volatility and risk of mortality and cause-specific hospitalization in adults with depression

Yerin Hwang (1)

Dong Keon Yon (1)

1 : Center for Digital Health, Medical Science Research Institute, Kyung Hee University College of Medicine

Background : Depression and personal income volatility are associated with adverse health outcomes through shared and distinct pathways. However, their combined long-term impact remains poorly understood.

Methods : This nationwide cohort study used South Korea's National Health Insurance Service claims database, including 735,922 adults aged 19-80 years newly diagnosed with depression during 2008-2012. Depression was identified using ICD10 codes F32, F33, and F341. Income volatility was measured as intraindividual standard deviation of annual percent income change and categorized into tertiles. Individuals were followed from Jan 1, 2013 to Dec 31, 2023 for all-cause mortality and hospitalizations across 15 major disease categories and 80 specific conditions. Cox proportional hazards regression and negative binomial regression were used, applying overlap propensity score weighting.

Results : During 7,622,456 person-years (mean 10.3years), 1,770,856 hospitalizations and 90,087 deaths occurred. Higher income volatility was associated with increased mortality (high vs. low tertile: HR 1.18 [95% CI,1.16–1.19]) and hospitalization (IRR 1.07 [95% CI,1.06–1.08]). Mortality associations were stronger among men (HR 1.26 [1.24-1.28]) and adults aged 30-49 years (HR 1.17 [1.14–1.21]). Hospitalization associations were stronger among men (IRR 1.08 [1.07–1.10]) and those aged 50-80 years (IRR 1.09 [1.08–1.10]). Among 15 disease categories, highest hospitalization risks were observed for blood disorders, endocrine diseases, respiratory diseases, and mental disorders; lowest for cancer. Among 80 conditions, highest risks were seen for hypertensive heart disease, epilepsy/seizures, malnutrition, and nutritional anemia.

Conclusion : Income volatility, independent of baseline income, contributes to higher risks of mortality and hospitalization in individuals with depression. These results highlight its role as a significant yet underrecognized factor influencing health in this group.

Mediation of the association between poor oral health and functional decline by protein intake

Urara Taguchi (1)

Sachiko Ono (2), Minami Sugimoto (3), Jun Aida (4), Hiroyuki Hikichi (5), Satoshi Sasaki (6), Ichioro Kawachi (7)
Kazuto Hoshi (1)

1 : Department of Oral-Maxillofacial Surgery and Orthodontics, Graduate School of Medicine University of Tokyo
2 : Department of Eat-loss Medicine, Graduate School of Medicine, University of Tokyo
3 : Department of Environmental and Occupational Health, School of Medicine, Toho University
4 : Department of Dental Public Health, Graduate school of Medical and Dental Sciences, Institute of Science Tokyo
5 : School of Medicine, Kitasato University
6 : Department of Social and Preventive Epidemiology, School of Public Health, The University of Tokyo
7 : Department of Social and Behavioral Science, Havard T. H. Chan School of Public Health

Introduction : Poor oral health has been associated with reduced protein intake and decline physical function among older adults. However, the direct and indirect effects of protein intake in the relationship between oral health and functional decline remain unclear. We investgited whether the association between oral health and functional decline in older Japanese adults was mediated by protein intake.

Methods : We used data from a cohort study of community-dwelling older adults to conduct a 6-year longitudinal analysis. The analysis included participants aged $\geq$ 65 years. Based on the number of teeth ($\geq$ 20, 10–19, and 0–9), oral health was evaluated. The primary endpoint was defined as functional decline or death, and the secondary endpoint was body weight change. Protein intake was evaluated using a brief self-administered diet history questionnaire. Mediation analysis was conducted to assess both the indirect effect of oral health through protein intake and its potential direct infuluence on the outcomes.

Results : Among the 1,400 participants included in the analysis, the mean ages were 76.3, 76.6, and 78.9 years in the groups with $\geq$20, 10-19, and 0-9 teeth, respectively. Individuals with fewer teeth were more likely to experience functional decline or death, and weight loss. However, the relationship between poor oral health status and functional decline was not mediated by protein intake. In contrast, the association between oral health and weight loss was was mediated by protein intake, particularly in the group with 10–19 teeth compared to those with $\geq$ 20 teeth(indirect effect: -0.09% [-0.20, -0.01]).

Conclusions : The association between oral health and weight loss preceding functional decline was mediated by protein intake. Interventions focusing on improving oral health and protein intake may reduce the risk of care dependence.

Interaction between blood ASC methylation and physical activity on circulating inflammatory markers

Yuichiro Nishida (1)

Takuma Furukawa (2), Chisato Shimanoe (3), Mikako Horita (1), Keitaro Tanaka (1), Megumi Hara (1), J-MICC Study Group

1 : Department of Preventive Medicine, Faculty of Medicine, Saga University
2 : Clinical Research Center, Saga University Hospital
3 : Department of Pharmacy, Saga University Hospital

Elevated circulating inflammatory markers are associated with increased risks of non-communicable diseases, such as diabetes, cardiovascular diseases, and cancer. In contrast, higher physical activity (PA) is linked to lower levels of these markers. Apoptosis-associated speck-like protein containing a caspase recruitment domain (ASC) is involved in inflammatory cytokine production in leukocytes, and DNA methylation of ASC gene may influence the relationship between PA and inflammatory markers. However, no prior study has examined this potential interaction. The present study aimed to investigate the interaction between PA and ASC methylation on circulating inflammatory markers. Among the 12,068 participants aged 40–69 years in the baseline survey of the Japan Multi-Institutional Collaborative Cohort (J-MICC) Study in the Saga region (2005–2007), up to 1,851 with available data on accelerometer-measured PA, peripheral blood ASC methylation, and circulating inflammatory markers (IL-4, IL-5, IL-6, IL-8, IL-15, IFN-γ, TNF-α, TNF-β, adiponectin, SPARC, ferritin, and hs-CRP) were included in the present cross-sectional analyses. Multiple regression analyses assessed interactions, using inflammatory markers as dependent variables, and total PA and ASC gene methylation (categorized as low, medium, and high) as independent variables, adjusting for sex, age, accelerometer wear time, BMI, and other covariates. Significant interactions were found between total PA and ASC methylation for IL-15, TNF-α, and hs-CRP ($P_{interaction}$ = 0.0001, 0.002, and 0.0045). Stratified analyses revealed that inverse associations between total PA and these three markers were more evident in the high ASC methylation group (P_{trend} = 0.04, 0.097, and 0.002) than in the low and medium methylation groups. The present results suggest that peripheral blood ASC methylation may modify the association between total PA and circulating levels of IL-15, TNF-α, and hs-CRP in a middle-aged population.

Sports-related out-of-hospital cardiac arrest due to external causes at school: A descriptive study

Kosuke Kiyohara (1)

Mamoru Ayusawa (2), Masahiko Nitta (3,4,5), Taku Iwami (6), Ken Nakata (7), Yuri Kitamura (8), Tetsuhisa Kitamura (8)

1 : Otsuma Women's University / Faculty of Home Economics / Department of Food Science
2 : Kanagawa Institute of Technology / Faculty of Health and Medical Science / Department of Nutrition and Health Science
3 : Osaka Medical and Pharmaceutical University / Department of Emergency Medicine
4 : Osaka Medical and Pharmaceutical University / Department of Pediatrics
5 : Osaka Medical and Pharmaceutical University / Division of Patient Safety
6 : Kyoto University School of Public Health / Department of Preventive Services
7 : Graduate School of Medicine, The University of Osaka / Medicine for Sports and Performing Arts / Department of Health and Sports Sciences
8 : Graduate School of Medicine, The University of Osaka / Division of Environmental Medicine and Population Sciences / Department of Social and Environmental Medicine

Background : A comprehensive understanding of the epidemiology of pediatric out-of-hospital cardiac arrest (OHCA) due to external causes during sports activities at school is lacking.

Objective : We aimed to describe the characteristics and outcomes of sports-related OHCA due to external causes among students in elementary schools, junior high schools, high schools, and technical colleges in Japan.

Methods : OHCA data from 2008–2022 were obtained from the SPIRITS study, a nationwide database of OHCAs occurring under school supervision across Japan. We identified cases of sports-related OHCA with an external cause and analyzed their characteristics, bystander interventions, and outcomes.

Results : During the study period, 30 cases of sports-related OHCA due to external causes were identified. The most frequently involved sports were soccer (n=8) and baseball (n=8), followed by swimming (n=4). The most common cause was commotio cordis, accounting for half of the cases (n=15), followed by drowning (n=8). In the 15 cases of commotio cordis, all had an initial rhythm of ventricular fibrillation (VF). An automated external defibrillator (AED) was applied by bystanders in 14 cases, and 13 patients actually received a shock. Twelve of the 15 patients achieved one-month survival with a favorable neurological outcome. Among the 15 patients with other causes, only 4 presented with VF. An AED was applied in 8 cases, but only 2 patients actually received a shock. Only one patient achieved one-month survival with a favorable neurological outcome.

Conclusion : Commotio cordis showed favorable outcomes that were likely due to a high incidence of shockable rhythms treatable by bystander AEDs. In contrast, other external causes such as drowning had poorer outcomes, likely related to non-shockable rhythms. Therefore, while prompt emergency response with AEDs is highly effective for commotio cordis, proactive prevention remains the most vital strategy for other external causes.