Body roundness index vs body mass index for predicting 9-year mortality: SKDB study

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Background : Body roundness index (BRI)—calculated from height and waist circumference—is a novel metric of obesity, proposed as an alternative to body mass index (BMI). Although BRI is reportedly associated with the risk of mortality or non-communicable diseases, little is known on the comparative performance of these two metrics.

Methods : We used data from the SKDB, a regional healthcare database in Shizuoka, Japan that involves >2 million people from 2012 to 2022. Individuals aged 40 to 74 years who resided in Shizuoka Prefecture and received a Specific Health Checkup in 2013 were included, and they were followed for up to nine years. We investigated the associations of BRI and BMI with future risk of all-cause death, and compared their predictive value using the net reclassification index (NRI) and c-statistics.

Results : The study cohort comprised 200,133 individuals (a median age, 66 years; female, 64.5%; a median BMI, 22.3 kg/m2). Over a median follow-up of eight years, death occurred in 10,336 individuals (5.2%). BRI, as well as BMI, showed a J-shaped association with the risk of mortality in age- and sex-standardized population. As compared to the age- and sex-adjusted model (modelbase), both the NRI and c-statistics improved in models further adjusted for BRI (modelbri) or BMI (modelbmi). The NRI for modelbase vs. modelbri and modelbase vs. modelbmi was 5.7% (3.8–7.3%) and 7.9% (5.9–9.7%), respectively, with overlapping 95% confidence intervals. Each c-statics in modelbase, modelbri and modelbmi was 70.3% (70.3-70.3%), 70.8% (70.8-70.8%), and 71.0% (70.9-71.0%), respectively. Differences in c-statistics were 0.48% (0.48–0.49%) in modelbase vs modelbri and 0.66% (0.65–0.66%) in modelbase vs modelbmi, whereas it was –0.17% (–0.16 to –0.18%) in modelbmivs modelbri, indicating a poorer performance of BRI.

Conclusions : Although both BRI and BMI were useful for predicting the risk of death, BRI did not outperform BMI in our population.

Social interaction and participation with esports participation in SHOP: One year longitudinal study

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Background : In Japan, serviced housing for older people (SHOP) is expanding with population ageing. Moving to SHOP often means leaving familiar neighborhoods and increasing the risk of isolation. Recently, eSports have been introduced in SHOPs to promote social participation. However, evidence remains limited. This study aims to examine the effects of eSports in SHOP residents' social interaction and social participation.

Methods : A baseline survey was conducted in April 2024 among 329 SHOP residents (≥65 years) in four facilities. Followed by a one-year survey in April 2025. The analytic sample is 175 SHOP residents. Outcomes were social interaction (meeting with friends in person) and social participation (sport group in SHOP). Exposure is eSports participation, assessed in the 2025 follow-up by asking frequency between April 2024 and March 2025 in four facilities. Responses of "1, 2–3, 4–5, 6–10, or ≥10 times" were classified as participation; "none" as non-participation. We examined the association between esports participation in 2024 and social interaction and participation in 2025 using logistic regression analysis (Odds Ratio[OR], 95% Confidence Interval[95%CI]). In crude model, only included exposure and outcome. In adjusted Model, adjusted baseline social interaction and participation. Missing data were excluded from the analysis.

Results : Across the four facilities, 30.3% of residents participated in eSports. Adjusted model results show that participation in eSports in 2024 was associated with both social interaction (OR:22.6, 95%CI:2.5–205.0) and participation (OR:6.4, 95%CI:2.6–15.7) in 2025.

Conclusions : The introduction of eSports to the SHOP was associated with social interaction and participation. Those socially active at baseline were more likely to participate in eSports. The findings suggest eSports might promote social interaction and participation and reduce isolation among SHOP residents.

Perceived Social Support and Mortality: A Mediation Through Depressive Symptoms, J-MICC Study, Japan

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Background : Social determinants increasingly impact health promotion and disease prevention. While perceived social support protects against depression, which dimensions affect mortality and their mechanisms remain unclear. This study examined multiple perceived social support dimensions and their pathways to mortality through mediation analysis.

Methods : This study used prospectively collected data from the Japan Multi-Institutional Collaborative Cohort (J-MICC) Study. We analyzed 12,068 residents of Saga City aged 40-69 years enrolled in 2005-2007, with 5-year follow-up surveys (2010-2012) and mortality tracking through December 2022. Four perceived support dimensions were assessed: care during illness, emotional listening, encouragement, and help in need, rated 1-4 to reflect subjective expectations of receiving support. Analyses included Cox regression and mediation analysis.

Results : Among the four perceived social support dimensions examined, only perceived availability of care during illness showed significant association with mortality in simultaneous models (β =-0.0089, p=0.012), while other dimensions were non-significant (emotional listening: p=0.298, encouragement: p=0.283, help in need: p=0.262). Cox regression revealed a dose-response relationship with mortality risk (HR per unit increase: 0.93, 95%CI: 0.87-0.99). Mediation analysis demonstrated that 19.1% of the association between lack of perceived care availability and mortality was mediated through depressive symptoms. Sensitivity analysis showed the strongest mediation effect (42.6%) among participants experiencing declining support over 5 years.

Conclusion : Perceived care during illness was the sole mortality predictor among perceived support dimensions. One-fifth of this relationship operated through depressive symptoms, amplified in those experiencing declining perceived support. These findings highlight the importance of perceived instrumental support in mortality prevention strategies.

Pressure Ulcer Management and LIFE Add-ons: Are They Interconnected?

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Background : Bedridden older adults are at high risk of developing pressure ulcers. Facilities may claim the Pressure Ulcer Management Add-On II if effective prevention is achieved for at-risk residents.

Methods : This study was deemed exempt by the institutional Research Ethics Committee. We used data from Long-Term Care Welfare Facilities (Tokuyo) in the SCUEL Database of Mecompany, Inc. Facility-level characteristics were adjusted using inverse probability of treatment weighting (IPTW). A weighted generalized linear mixed model (GLMM) with a binomial distribution and logit link was applied, incorporating prefecture-level population density as a random effect. Fixed-effect covariates included facility structure and a key explanatory variable that categorized facilities into four groups according to their LIFE-related add-on status: no add-ons, scientific only, other only, and scientific + other.

Results : The primary outcome was whether the facility received a pressure ulcer management add-on payment. Among the 8,418 facilities, 200 were excluded because of missing data on the outcome variable. The final analytical sample comprised 8,218 facilities. The distribution of facilities and outcome frequencies across the four groups was as follows: “no add-ons” (25/2,365; 1.06%), “other only” (72/654; 11.0%), “scientific only” (115/1,202; 9.57%), and “scientific + other” (1,389/3,997; 34.8%).After IPTW adjustment, the GLMM revealed that the odds of receiving the pressure ulcer management add-on were significantly higher in all other groups than in the “no add-ons” (reference) group: “other only” (odds ratio [OR] = 11.34; 95% confidence interval [CI]: 7.11–18.09), “scientific only” (OR = 10.01; 95% CI: 6.44–15.54), and “scientific + other” (OR = 48.65; 95% CI: 32.55–72.71).

Conclusion : These findings indicate a strong association between facility engagement in LIFE and the use of outcome-based add-ons.

Assessment of cost-effectiveness threshold using double-bounded dichotomous choice model

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Background : Willingness to pay (WTP) for one quality-adjusted life year (QALY) is highly variable by survey methodology and can change over time even within the same population. The objective of our study was to assess Japanese WTP per QALY gain using double-bound dichotomous choice (DBDC) method for a scenario in the post-COVID-19 pandemic.

Methods : This was an online survey to elicit the mean WTP per QALY gain using the DBDC method for 2,500 Japanese adults in 2024. Four scenarios were prepared (three scenario for non-fatal disease from different three perspectives and one scenario from an individual perspective) to ask two series of questions regarding willingness to pay for the disease.

Results : The mean WTP per QALY gain with moderate and severe health status were 3.30 [2.38－4.36] and 3.36 [2.62－4.36] for non-fatal disease from individual perspective scenario, 7.34 [5.61－9.33] and 4.43 [3.45－5.57] for non-fatal disease from societal perspective scenario including individual, 8.44 [6.49－10.56] and 5.58 [4.49－6.87] for non-fatal disease from societal perspective scenario excluding individual, 8.41 [5.78－9.66] for fatal disease as treatment for 6 months, 9.95 [7.45－12.71] for fatal disease as prevention for 6 months, 3.38 [2.78－5.42] for fatal disease as treatment for 18 months, 4.18 [3.29－6.65] for fatal disease as prevention for 18 months, respectively.

Conclusion : Although the WTP per QALY gain did not seem to increase, compared with that in the pre-COVID-19 pandemic, the larger WTP per QALY gain values in the societal perspective excluding individual compared with that including individual as well as in moderate health status compared with severe health status were evident in our study.