

RESULTS

We demonstrated that AGF is expressed in proopiomelanocortin (POMC)-positive neurons located in the arcuate nucleus (ARC) of the hypothalamus. AGF expression was stimulated by leptin-induced STAT3 phosphorylation. Notably, intracerebroventricular injection of AGF significantly reduced food intake by stimulating phosphorylation of CREB in the POMC and increasing α -melanocyte-stimulating hormone (α -MSH) content in the hypothalamus. We also found that hypothalamic injection of AGF significantly suppressed food intake and decreased body weight in high-fat-diet-induced obese mice, which exhibit leptin insensitivity.

CONCLUSION

Collectively, our findings demonstrate that hypothalamic AGF provokes the anorectic melanocortin pathway and mediates leptin signaling to prevent obesity.

KEY WORDS

Obesity, AGF, Hypothalamus, Leptin signaling

OA-GE-09

DETERMINANTS OF INSULIN RESISTANCE AMONG PEOPLE LIVING IN A RURAL AREA OF INDONESIA

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INTRODUCTION

Worldwide prevalence of obesity has increased rapidly, of which the main driver is the rising of body weight among people living in the rural area. While obesity is one of the main risk factors for the development of type 2 diabetes (T2DM), in a rural area, other environmental factors might also play a role. This study aims to assess the determinants of insulin resistance (IR), the main pathogenesis of T2DM, among people living in a rural area of Indonesia.

METHODOLOGY

We analyzed the baseline data of the Sugarspin study (n=1669) which was conducted in Nangapanda, Flores Island, Indonesia. The influence of each risk factors to HOMA-IR, was analyzed using linear regression analysis.

RESULTS

The prevalence of IR was 27.8% and 28.2% for men and women respectively. Increasing BMI and waist circumference were associated with increasing IR. Increasing age was also associated with increasing IR, however, in men after the age of 55, further increment in age was not associated with increasing IR. Progressive increase in BMI was observed until the age of 40, which then plateau until the age of 55, and then decline afterward. Interestingly, helminth infection was independently associated with a lower IR.

CONCLUSION

In a rural area, the main determinant of IR was similar to the one we observed in an urban area, which is obesity. However, the more prevalent infectious disease in a rural area might also directly or indirectly influence IR by its impact on obesity or other factors which need to be elucidated further.

KEY WORDS

insulin resistance, determinants, Indonesia, obesity, environments, rural

OA-GE-10

ASSOCIATION OF BODY MASS INDEX AND ALL CAUSE MORTALITY IN A TERTIARY REGIONAL HOSPITAL

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INTRODUCTION

This study is conducted to provide further clinical evidence to determine whether there is a significant association between body mass index and all-cause mortality risk. At present, there are no existing studies done in the Philippines regarding exploring BMI as risk factor for mortality among patients with existing illnesses.

METHODOLOGY

This prospective cohort study was conducted from September 2016 until September 2017. Analysis of BMI and mortality was done and logistic regression was performed to determine confounding variables.

RESULTS

There was a significant association between BMI and mortality. Among the 700 cases, 26% were underweight, 26% overweight, and 21% pre-obese ($p < 0.0001$) while in logistic regression, odds of mortality is higher in patients who were obese class I (OR 10.50 CI 4.25-25.95), obese type II (OR 7.85 CI 3.93-15.70), and underweight (OR 6.76 CI 3.37-13.58). Mortality risk is increased when the patients were cigarette smokers (OR 1.27 CI 1.05-1.53), had upper gastrointestinal bleeding (OR 3.55 CI 2.34-5.38), chronic obstructive pulmonary disease (OR 0.30 CI 0.15-0.60), coronary artery disease (OR 0.04 CI 0.02-0.08), pneumonia (OR 1.67 CI 1.12-2.49), and cerebrovascular disease (OR 0.04 CI 0.02-0.08).

CONCLUSION

The patients' BMI is associated with all-cause mortality. Furthermore, the risk of mortality is increased further by intervening factors of body mass index such as patients' lifestyle and type of co-existing diseases. Mortality risk among underweight patients is increased by tobacco consumption as well as having related diseases such as upper gastrointestinal bleeding, chronic obstructive pulmonary disease, and pneumonia while obesity mortality risk could occur among those with concurrent coronary artery disease and cerebrovascular disease.

KEY WORDS

Body Mass Index, all-cause mortality, obesity, underweight

OA-GE-11

EFFECTIVENESS OF HEALTHY FOODIE NUTRITION GAME APPLICATION AS REINFORCEMENT INTERVENTION TO STANDARD NUTRITION EDUCATION OF SCHOOL-AGED CHILDREN: A RANDOMIZED CONTROLLED TRIAL

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INTRODUCTION

Games promoting nutrition education are helpful tools to improve nutrition knowledge. Healthy Foodie is an interactive web-based nutrition game for Filipino children. This study aimed to determine the effectiveness of Healthy Foodie on the nutrition knowledge of 7 to 10-year-old children.

METHODOLOGY

This was a randomized controlled trial conducted in two schools in Manila. This study had two phases. Phase one was the development and validation of the Healthy Foodie nutrition game application and Nutrition Knowledge Questionnaire involving 46 participants. The Nutrition Knowledge Questionnaire was composed of two 15-item questionnaires, namely: Food Group Knowledge questionnaire and Food Frequency Knowledge questionnaire. The Healthy Foodie game included topics on the three basic food groups, Filipino food plate, traffic light food groups, and food pyramid. Prior to each game play, a short discussion on the significance and examples of each food group was given.

Phase two was the implementation of the game and questionnaire involving 360 participants. Both the control and the experimental groups took the posttest Nutrition Knowledge Questionnaire one week after completion of the pretest and/or Healthy Foodie Nutrition Game Application.

RESULTS

For phase 1, internal consistency of the questionnaire using the Kuder-Richardson Formula 20 was 0.75 for part 1 and 0.70 for part 2.

In phase 2, comparing the adjusted posttest mean Food Group Knowledge scores, there was statistically higher score ($F=111.84$, $p=0.0001$) in the experimental (11.57 ± 0.20) than the control (8.51 ± 0.20). In the adjusted posttest mean Food Frequency Knowledge scores, there was a statistically higher score ($F=56.12$, $p=0.0001$) in the experimental (10.70 ± 0.15) than the control (9.07 ± 0.15).

CONCLUSION

A nutrition game-based intervention such as Healthy Foodie is effective as a reinforcement intervention to previous standard nutrition education of school-aged children.

KEY WORDS

Healthy Foodie, nutrition, health education, video games, nutrition questionnaire