

## 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

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### 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 ( $11.57 \pm 0.20$ ) than the control ( $8.51 \pm 0.20$ ). In the adjusted posttest mean Food Frequency Knowledge scores, there was a statistically higher score ( $F=56.12$ ,  $p=0.0001$ ) in the experimental ( $10.70 \pm 0.15$ ) than the control ( $9.07 \pm 0.15$ ).

## 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