

Research Article

ASSOCIATIVE FACTORS ON THE VEGETABLE CONSUMPTION AMONG THE STUDENTS OF NUEVA ECIJA UNIVERSITY OF SCIENCE AND TECHNOLOGY

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ABSTRACT

Vegetables form an essential part of a healthy diet. A survey showed that the average consumption of vegetables is low in the Filipino diet. It remains challenging to improve vegetable intake among students, especially when they are in school, despite increased awareness of vegetable consumption for health. Therefore, it is essential to understand more about why students do not eat enough vegetables. The study used a descriptive research design and the analysis of the resulting survey data included descriptive statistics such as frequencies, percentages and mean. A total of 89 students participated in the study. The majority of them were female, had height between 5'0 – 5'11, had weight between 40 – 49 kg and had normal body mass index value. In terms of how often they eat vegetables, most of them sometimes eat vegetables each day. In terms of the statements about why they do not want to eat vegetables, the average weighted mean obtained was 3.07 with verbal interpretation "Sometimes". Meanwhile, in terms of their perceived harmful effects of not eating vegetables, the average weighted mean obtained was 3.17 with verbal interpretation "Sometimes". Last, they believe that their family can encourage them to eat vegetables. Therefore, the researcher concludes that factors affect vegetable consumption in the respondents' life. The research study implied to all the students the importance of good nutrition to develop good eating habits that will support a lifetime of maximizing their full potential.

Keywords: Vegetable consumption, vegetable, body mass index.

INTRODUCTION

Vegetables have historically been an important requirement for human dietary processes and are mostly recommended for their health-promoting properties. Vegetables form an essential part of a healthy diet. Apart from fulfilling quantitative needs with delicious taste and flavor, vegetables are also rich sources of some essential dietary micronutrients and dietary fibers; vitamins, especially electrolytes, improve the quality of the diet and maintain health. Vegetables are generally consumed for their nutritive value and bioactive compounds (Sagar *et al.*, 2018). Several reports have revealed that an adequate quantity of vegetables in a regular diet helps prevent the risk factor for chronic diseases like coronary heart diseases, stroke, several forms of cancer, and cataract formation (Oguntibeju *et al.*, 2013). According to the Dietary Guidelines for Americans 2010, daily consumption of two and a half cups of vegetables is associated with a reduced risk of cardiovascular disease and many cancers (Arbuckle, 2015). Scientific evidence indicates that vegetables contain various antioxidant compounds (phenolics and carotenoids), which are essential to cope with oxidative stress induced by free radicals and reduce the risk of developing chronic diseases (Alissa and Ferns, 2017). Numerous surveys have reported that consumption patterns are considerably low than the recommended amount. However, due to the many health benefits of vegetables, the national recommendation is increased consumption. The Food and Nutrition Research Institute-department of Science and Technology (FNRI) (DOST) conducted a survey about food consumption in the Philippines. The results showed that the average consumption of green, leafy, and yellow vegetables is low in the Filipino diet (Gonzales *et al.*, 2016). It remains challenging to

improve vegetable intake among students, especially when they are in school, despite increased awareness of vegetable consumption for health. Therefore, it is important to understand more about why students do not eat enough vegetables. This study aimed to determine the vegetable intake among Nueva Ecija University of Science and Technology students. Specifically, it sought to determine how often the students eat vegetables, why they do not want to eat vegetables, the harmful effects of not eating vegetables, the beneficial effects of eating vegetables, and the alternative ways to encourage them to eat vegetables.

BACKGROUND OF THE STUDY

Reasons Why Children Do Not Want to Eat Veggies

The psychological notion of Paired Associative Learning may be one of the reasons why children dislike veggies. This link between a stimulus and a specific response (in this case, a sensation associated with a vegetable) does not favor veggies. Children tend to associate processed foods that are high in fat and sugar (ice cream, cake) with positive memories such as parties, celebrations, and rewards (Gerber, 2016). They tend to associate vegetables with less positive memories, such as nagging parents and unpleasant meals when they are forced to eat green stuff. This causes children to view junk foods as a reward and vegetables as a chore (Povey *et al.*, 2016).

Effects of Not Eating Vegetable

A vitamin or mineral deficit could be one of the first side effects of skipping fruits and vegetables. Produce contributes B-vitamins that help you derive energy from your diet, vitamin C to assist wound healing, vitamin A to keep your skin and eyes healthy and vitamin K to support blood clotting. Minerals in fruits and vegetables include, for

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example, calcium, magnesium, iron and potassium, which contribute to your skeletal, nerve and cardiovascular health. Avoiding these foods can impact these functions (Annigan, 2018). As it passes through your gut, soluble fiber expands, slowing the absorption of substances like glucose and cholesterol. As a result, it can help manage the quantities of these chemicals in your blood, thereby lowering your risk of diabetes or high cholesterol. In addition, fruits and vegetables are rich in phytochemicals, plant-based substances that contribute color to these foods and may reduce inflammation and even slow or prevent tumor growth (Annigan, 2018). Fruits and vegetables have a low energy density, which means they contain a low number of calories per unit of weight. They add heft to your diet without adding calories, and their high water and fiber content keeps you full and prevents overeating, which is especially beneficial if you're attempting to lose weight. Excluding fruits and vegetables in favor of foods with a high energy density, such as cheese or fatty meat, can hinder your efforts to maintain healthy body weight (Annigan, 2018).

Benefits of Fruit and Vegetable Intake

Energy density is defined by the Centers for Disease Control and Prevention (CDC) as the number of calories in a given weight of food (CDC, n.d.). The ability to maintain current body weight may be influenced by energy density, which affects the balance of energy intake and expenditure. Foods that are low in energy density, such as fruits and vegetables, may help people decrease their energy intake and promote a healthy weight (Hackett, 2012). Foods with high energy density may cause consumption of excess calories, therefore promoting weight gain and leading to obesity (Prentice and Jebb, 2003). Increasing the fruits and vegetables in a meal may lower the energy density and permit the consumption of more significant, more satisfying portions while maintaining or decreasing the energy level, thus improving weight management. Meals with fruits and vegetables can help reduce the energy density of meals. The inclusion of water-rich foods like fruits and vegetables in diets with lower energy density has been linked to significant weight loss (Rolls, 2009). People tend to reduce their calorie intake despite the lack of consumption limitations on these lower-energy-density diets, which may help them lose weight (Rolls, *et al.*, 2004). People tend to eat foods of similar weight; lowering the energy density may also lower caloric consumption (Rolls, 2009). According to studies, pureed vegetables also reduced the calorie density of foods and reduced energy consumption (Spill *et al.*, 2011). Consumption of fruits and vegetables may reduce the chance of developing various chronic diseases. Increased fruit and vegetable consumption has been linked to a lower incidence of obesity-related chronic diseases such as type 2 diabetes and cardiovascular disease (Alissa and Ferns, 2017). Furthermore, Bellavia *et al.*, (2013) discovered a link between consuming fewer than five servings of fruits and vegetables per day and having a higher overall mortality risk. According to possible data, higher intakes of fruits and vegetables may lessen the incidence of dementia and prevent weight gain. According to this study, an increase in fruit and vegetable consumption is also linked to a lower risk of various eye illnesses, rheumatoid arthritis, osteoporosis, asthma, and COPD. According to a recent study looking into the recommended consumption levels for the general population in England, people who eat at least seven servings of veggies have the lowest mortality rate. In this study, the servings were defined as 80 grams (little more than half a cup) as decided by NHS England (Oyebode *et al.*, 2014). Meanwhile, (Lambrinou *et al.*, 2012) emphasized the relevance of eating patterns high in vegetables as part of a valuable balanced diet in the prevention of type 2 diabetes (T2D) and other chronic diseases in the context of type 2 diabetes. Furthermore, two meta-analyses discovered a link between higher consumption of leafy green

vegetables and a considerable reduction in the incidence of T2D. (Carter *et al.*, 2010). Vegetables reduce the risk of cardiovascular disease and stroke, according to research. Boeing, *et al.*, (2012) found compelling evidence that vegetable eating may help reduce hypertension, heart disease, and stroke in a review of considerable research. Bhupathiraju *et al.*, (2013) discovered an inverse connection between vegetable consumption and heart disease risk. Bendinelli *et al.*, (2011) found that people who consume more leafy green vegetables have a lower risk of coronary heart disease in an Italian cohort study. Oxidative stress is a term used to describe a condition that occurs when there are more free radicals and reactive species than antioxidants can protect against, oxidative stress occurs, thereby increasing the risk of chronic diseases like coronary artery disease and cancer. Cocate *et al.*, (2014) found that a higher vegetable diet was linked to lower oxidative stress markers in a recent cross-sectional study. Fiber, vitamin C, and magnesium from vegetables were also discovered to decrease oxidative stress markers. Other recent study reported similar results (Meyer, 2013). There is much-contradicting evidence about cancer and its relationship to vegetable intake when it comes cancer. Some malignancies appear to be less common in people who eat many vegetables, while others seem to be unaffected. The fact that cancer comes in so many various forms and sites could explain the seeming lack of consistency in findings. Couto *et al.*, (2011) discovered a tiny link between eating many veggies and having a lower risk of cancer overall. However, this was very weak evidence. Conversely, Boeing, *et al.*, (2012) reported probable evidence that cancer risk decreases as intake of vegetable increases. Ovarian cancer is another type of cancer whose link to vegetable eating has yielded mixed results in studies. When vegetable intake was increased, Tang *et al.*, (2014) showed a decrease in the incidence of ovarian cancer in southern Chinese women. Lung cancer research yields a wide range of results. Fruits were found to be protective against lung cancer in one Iranian study (Hosseini, *et al.*, 2014). In terms of bone health, studies have looked into the effects of vegetable diet in a variety of ways. As a measure of bone strength and stability, studies may employ osteoporosis, osteoporotic fracture, bone mineral content, bone mineral density, or other bone metabolism indicators. Boeing, *et al.*, (2012) found possible evidence that a high intake of vegetables may improve bone health. Other studies reviewed for this research examined the impact of vegetable intake during childhood as well as the influence of maternal intake during pregnancy. These factors highlight the complexity of assessing the relationship between diet and bone health. In terms of eye diseases and conditions, there are a variety of eye diseases and conditions that may be influenced by the intake of vegetables, such as age-related macular degeneration (AMD), glaucoma, cataracts, and diabetic retinopathy. Islam *et al.*, (2014) evaluated how food frequency data related to AMD. Based on this data, it was determined that a diet including high amounts of fruits, vegetables, chicken, and nuts paired with limited red meat decreased the risk of advanced AMD (Islam *et al.*, 2014). Less severe AMD was not associated with any pattern of consumption (Islam *et al.*, 2014). Another study found a significant relationship between diet and AMD based on Oriental (more fruits, vegetables, legumes, whole grains, tomatoes and seafood) and Western (more red meat, processed meat, high-fat dairy, French fries, refined grains, and eggs) dietary patterns. Participants in the study who consumed a diet close to the Western diet had a greatly increased risk of AMD, whereas the odds of AMD continued to decrease as the diet pattern moved closer to an Oriental diet (Chiu *et al.*, 2014). In terms of bone health, studies have looked into the effects of vegetables in various ways. As a measure of bone strength and stability, researchers may look at osteoporosis, osteoporotic fractures, bone mineral content, bone mineral density, or other bone metabolism indicators. According to Boeing *et al.*, (2012), a high vegetable intake may promote bone

health. Other studies looked at the impact of vegetable consumption during childhood and mother consumption during pregnancy for this study. These variables emphasize how difficult it is to evaluate the link between food and bone health.

STATEMENT OF THE PROBLEM

This study aimed to determine the associative factor on vegetables consumption among the students of Nueva Ecija University of Science and Technology, San Isidro Campus.

Specifically, it sought to answer the following questions:

1. How may the profile of the respondents be described in terms of the following:
 - Sex
 - Height
 - Weight
 - Body mass index
2. How often the students eat vegetables?
3. What are the reasons why students do not want to eat vegetables?
4. What are the harmful effects of not eating vegetables?
5. Who are the persons that can encourage the students to eat vegetables?

METHODOLOGY

This portion presented the research design, respondents of the study, sampling and sampling procedure, the instrument used, procedure for data collection and statistical treatment and analysis of data.

Research Design

This research study used a descriptive design to determine associative factors on vegetable consumption among Nueva Ecija University of Science and Technology students, San Isidro Campus. Descriptive research described a certain present condition the vegetable consumption among the students.

Respondents of the Study

The respondents of this study are the eighty-nine students of Nueva Ecija University of Science and Technology, San Isidro Campus.

Sampling Procedure

The research was based on the purposive sampling technique. The alternative used of probability sampling was not considered due to limited time and sources. The researcher contacted the respondents with the use of a questionnaire. The main goal of purposive sampling was to focus on the characteristics of a population.

Research Instrument

This study utilized the use of a survey questionnaire as the primary source of data. The researchers prepared the instruments used through reading questionnaire-checklist of other studies to obtain other ideas. The first part includes the profile of the respondents, such as their sex, height, weight and body mass index. The second part was focused on how often the respondents eat vegetables. The third part comprised statements regarding why the respondents do not want to eat vegetables. The fourth part includes the statements about the harmful effects of not eating vegetables. The last part was about the person who can encourage the respondents to eat vegetables.

Data Gathering Procedure

In determining the associative factors on the consumption of vegetables among the respondents, the researchers undertook the following steps: First, the researchers constructed a questionnaire for the students to collect the necessary data. Second, the researchers ask permission from the Campus Director. Third, the questionnaire was distributed to the respondents after securing the permit. Copies of the approved questionnaire were distributed in order to gather the relevant data. The instruments were retrieved after they were finished answering. To support the relevant data from the questionnaire, the data gathered were scored, tallied and tabulated.

Statistical Treatment and Data Analysis

Frequency count and percentage distribution were used to interpret the profile of the respondents, the person who can encourage them to eat vegetables and how often they eat vegetables. On the other hand, the weighted mean was used to interpret why they do not want to eat vegetables and the harmful effects of not eating vegetables.

RESULT AND DISCUSSIONS

This portion presents the presentation, analysis and interpretation of data that gathered by the researchers from the questionnaire distributed to the respondents. In order to have clear and more organized presentations the data are presented following the arrangement of the specific problems stated in the Statement of the Problem.

Table 1. Profile of the Respondents

Socio-Demographic Profile		Frequency (f)	Percentage (%)
Sex	Male	38	42.70
	Female	51	57.30
Height (ft)	4'0 – 4'11	15	16.85
	5'0 – 5'11	72	80.90
	6'0 – 6'11	2	2.25
Weight (kg)	30 - 39	6	6.74
	40 - 49	49	55.06
	50 - 59	21	23.60
	60 - 69	10	11.24
	70 and above	3	3.37
	Severely Underweight	9	10.11
Body Mass Index Value	Underweight	25	28.09
	Normal	46	51.69
	Overweight	8	8.99
	Obese	1	1.12

Table 1 shows the profile of the respondents. A total of 89 students participated in the study. Out of 89 respondents, 38 or 42.70% were male, while 51 or 57.30 % were female. It illustrates that majority of the respondents were female. Meanwhile, in terms of their height, 15 or 16.85% were 4'0 – 4'11 feet in height, 72 or 80.90 % were 5'0 – 5'11 feet in height and 2 or 2.25% were 6'0 – 6'11 feet in height. It depicts that many of the respondent's height was between 5'0 – 5'11 feet. Next, in terms of their weight, 6 or 6.74% were 30 – 39 kilograms of weight, 49 or 55.06% were 40 – 49 kilograms of weight, 21 or 23.60% were 50 – 59 kilograms of weight, 10 or 11.24% were 60 – 69 kilograms of weight and 3 or 3.37% were 70 – 95 kilograms of weight. It illustrates that majority of the respondent's weight was between 40 - 49 kilograms. Last, in terms of their Body Mass Index, the data revealed that 9 or 10.11% were severely underweight, 25 or 28.09% were underweight, 46 or 51.69% were normal, 8 or 8.99% were

normal body mass index.

Table 2. How Often Respondent Eat Vegetables

Choices	Frequency (F)	Percentage (%)
Almost always	10	11.24
Always	27	30.34
Sometimes	46	51.69
Not very often	5	5.62
Never	1	1.12
Total	89	100%

Table 2 shows how often the respondents eat vegetables. Ten or 11.24% respond to almost always, 27 or 30.34% respond to always, 46 or 51.69% respond to sometimes, 5 or 5.62% respond to not very often and 1 or 1.12% respond to never. It implied that most of the respondents sometimes eat vegetables.

Table 3. Possible reasons of the students for not eating vegetables.

Item Statements	Weighted Mean	Verbal Interpretation
1. I don't like the taste of the vegetables.	3.31	Sometimes
2. I don't like the texture of the vegetables.	3.25	Sometimes
3. I feel like eating grass when I eat vegetables.	3.02	Sometimes
4. I hate vegetables.	2.73	Sometimes
5. Many of the vegetables looks like grass.	3.12	Sometimes
6. The price of the vegetables is too expensive.	2.97	Sometimes
7. The smell of the vegetables makes me vomit.	3.06	Sometimes
8. The vegetables are easy to be rotten.	3.10	Sometimes
9. Vegetables tend to have a natural astringent and bitter taste whether eaten raw or cooked.	3.26	Sometimes
10. Vegetable might scratch my throat.	2.92	Sometimes
Average Weighted Mean	3.07	Sometimes

The table above shows the weighted mean of each item statement on why students do not want to eat vegetables. Out of 10 statements in this category, item statement number 1 obtained the highest weighted mean, 3.31, while item statement number 4 obtained the lowest weighted mean, which is 2.73. The Average Weighted Mean was 3.07, which has a verbal interpretation of "Sometimes". It implies that most of the respondents do not like the taste of vegetables. "According to Archer (2017), most people don't like foods with a bitter taste, and there is a good reason for all of these preferences. The sour and bitter flavors alert us to foods that might be toxic or harmful to us."

Table 4. Harmful effects of not eating vegetables

Item Statements	Weighted Mean	Verbal Interpretation
1. I feel so weak and lazy all the time.	3.38	Sometimes
2. I get different kinds of disease.	3.10	Sometimes
3. I'd influence my friends to not eat vegetables.	2.89	Sometimes
4. I skipped meals when vegetables are being served.	3.06	Sometimes
5. It can affect the intelligent development and bone growth.	3.46	Sometimes
6. Underweight.	3.29	Sometimes
7. I take consequences before I eat vegetables.	3.22	Sometimes
8. I treat eating vegetable as one of my trials.	3.25	Sometimes
9. I throw meals when vegetables are being served.	2.83	Sometimes
10. It might scratch my throat.	3.25	Sometimes
Average Weighted Mean	3.17	Sometimes

Table 4 shows the weighted mean of each item statement on the harmful effects of not eating vegetables. Out of 10 statements in this

mean, 3.46, while item statement number 9 obtained the lowest weighted mean, which is 2.83. The Average Weighted Mean was 3.17, which has a verbal interpretation of "Sometimes". It implies that there are harmful effects of not eating vegetables. Not including vegetables as part of a well-balanced diet can result in significant health consequences, including digestive issues, nutrient deficiencies, disease risk, cardiovascular health and weight gain (Slavin and Lloyd, 2012).

Table 5. Persons who can encourage the respondents to eat vegetables

Choices	Frequency (F)	Percentage (%)
Family	79	88.76
Friends	5	5.62
Teachers	1	1.12
Classmates	3	3.37
Boyfriend/Girlfriend	1	1.12
Total	89	100%

Table 5 shows which encourages the respondents to eat vegetables. Out of 89, 79 or 88.76% were families, 5 or 5.62% were friends, 1 or 1.12% were teachers, 3 or 3.37% were classmates and 1 or 1.12% were boyfriend/girlfriend. It illustrates that most respondents are encouraged to eat vegetables by their families. "According to Raising Children Article, it reviewed that family meals are a good time to teach your child about healthy eating, including eating vegetables, also family meals are a chance for parents to introduce kids to new foods and to be role models for healthy eating (Ben-Joseph, 2018).

CONCLUSION

According to this research study, the researcher found that factors affect their consumption of vegetables. The statements why they do not want to eat vegetables and their perception of the harmful effects of not eating vegetables may affect their view about vegetables. Therefore, the researcher concludes that factors affect vegetable consumption in the respondents' life. The research study implied to all the students the meaning and importance of good nutrition to develop good eating habits that will support a lifetime of maximizing their full potential.

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REFERENCES

Alissa, E. M., & Ferns, G. A. (2017). Dietary fruits and vegetables and cardiovascular diseases risk. *Critical reviews in food science and nutrition*, 57(9), 1950-1962.

Annigan, Jan. (2018, December). Consequences of not eating fruits & vegetables. *Healthy Eating | SF Gate*. <https://healthyeating.sfgate.com/consequences-not-eating-fruits-vegetables-6202.html>

Arbuckle, Jeanne, "The Effect of a Fruit and Vegetable Program on Diet Quality and Produce Consumption" (2015). *Theses and Dissertations*. Paper 334

Archer, N. (2017, July 4). Curious kids: Why do some people find some foods yummy but others find the same foods yucky? *The Conversation*. <https://theconversation.com/curious-kids-why-do>

- same-foods-yucky-77671.
- Bellavia, A., Larsson, S. C., Bottai, M., Wolk, A., & Orsini, N. (2013). Fruit and vegetable consumption and all-cause mortality: a dose-response analysis. *The American journal of clinical nutrition*, 98(2), 454-459.
- Bendinelli, B., Masala, G., Saieva, C., Salvini, S., Calonico, C., Sacerdote, C., ... & Panico, S. (2011). Fruit, vegetables, and olive oil and risk of coronary heart disease in Italian women: the EPICOR Study. *The American journal of clinical nutrition*, 93(2), 275-283.
- Ben-Joseph, Elana Pearl. (2018, June). Healthy eating. Nemours Kids Health - the Web's most visited site about children's health. <https://kidshealth.org/en/parents/habits.html>
- Bhupathiraju, S. N., Wedick, N. M., Pan, A., Manson, J. E., Rexrode, K. M., Willett, W. C., ... & Hu, F. B. (2013). Quantity and variety in fruit and vegetable intake and risk of coronary heart disease. *The American journal of clinical nutrition*, 98(6), 1514-1523.
- Boeing, H., Bechthold, A., Bub, A., Ellinger, S., Haller, D., Kroke, A., ... & Watzl, B. (2012). Critical review: vegetables and fruit in the prevention of chronic diseases. *European journal of nutrition*, 51(6), 637-663.
- Carter, P., Gray, L. J., Troughton, J., Khunti, K., & Davies, M. J. (2010). Fruit and vegetable intake and incidence of type 2 diabetes mellitus: systematic review and meta-analysis. *Bmj*, 341.
- Chiu, C. J., Chang, M. L., Zhang, F. F., Li, T., Gensler, G., Schleicher, M., & Taylor, A. (2014). The relationship of major American dietary patterns to age-related macular degeneration. *American journal of ophthalmology*, 158(1), 118-127.
- Cocate, P. G., Natali, A. J., de Oliveira, A., Longo, G. Z., Rita de Cássia, G. A., Maria do Carmo, G. P., ... & Hermsdorff, H. H. M. (2014). Fruit and vegetable intake and related nutrients are associated with oxidative stress markers in middle-aged men. *Nutrition*, 30(6), 660-665.
- Couto, E., Boffetta, P., Lagiou, P., Ferrari, P., Buckland, G., Overvad, K., ... & Trichopoulou, A. (2011). Mediterranean dietary pattern and cancer risk in the EPIC cohort. *British journal of cancer*, 104(9), 1493-1499.
- Gerber, R. (2016, April 20). The scientific reason why you hated vegetables as a kid. Spoon University. <https://spoonuniversity.com/lifestyle/the-scientific-reason-why-you-hated-vegetables-as-a-kid>
- Gonzales, J. T., Raaij, J. V., & Narciso, Z. V. (2016). Consumption pattern for fruits and vegetables of some Filipino adolescents in selected public schools in the city of Manila. *J Nutr Disorders Ther*, 6(4), 1-7.
- Hackett, R. (2012). The IGD report 'Energy density and its role in helping consumers make healthy choices': a resource for food businesses.
- Hosseini, M., Naghan, P. A., Jafari, A. M., Youseffard, M., Taslimi, S., Khodadad, K., ... & Masjedi, M. R. (2014). Nutrition and lung cancer: a case control study in Iran. *BMC cancer*, 14(1), 1-9.
- Islam, F. M. A., Chong, E. W., Hodge, A. M., Guymer, R. H., Aung, K. Z., Makeyeva, G. A., & Robman, L. D. (2014). Dietary patterns and their associations with age-related macular degeneration: the Melbourne collaborative cohort study. *Ophthalmology*, 121(7), 1428-1434.
- Lambrinou, I., Ceasu, I., Depypere, H., Erel, T., Rees, M., Schenck-Gustafsson, K., ... & Pérez-López, F. R. (2013). EMAS position statement: diet and health in midlife and beyond. *Maturitas*, 74(1), 99-104.
- Meyer, K. A. (2013). Dietary patterns are associated with plasma F(2)-isoprostanes in an observational cohort study of adults. *Free radical biology & medicine*, 57, 201-209. DOI:10.1016/j.freeradbiomed.2012.08.574
- Oguntibeju, O. O., Truter, E. J., & Esterhuysen, A. J. (2013). The role of fruit and vegetable consumption in human health and disease prevention. *Diabetes Mellitus-Insights and Perspectives*, 3(2), 172-180.
- Oyebode, O., Gordon-Dseagu, V., Walker, A., & Mindell, J. S. (2014). Fruit and vegetable consumption and all-cause, cancer and CVD mortality: analysis of Health Survey for England data. *J Epidemiol Community Health*, 68(9), 856-862.
- Pastor-Valero, M. (2013). Fruit and vegetable intake and vitamins C and E are associated with a reduced prevalence of cataract in a Spanish Mediterranean population. *BMC ophthalmology*, 13(1), 1-15.
- Povey, R., Cowap, L., & Gratton, L. (2016). "They said I'm a square for eating them": Children's beliefs about fruit and vegetables in England. *British Food Journal*.
- Prentice, A. M., & Jebb, S. A. (2003). Fast foods, energy density and obesity: a possible mechanistic link. *Obesity reviews*, 4(4), 187-194.
- Rolls, B. J., Ello-Martin, J. A., & Tohill, B. C. (2004). What can intervention studies tell us about the relationship between fruit and vegetable consumption and weight management?. *Nutrition reviews*, 62(1), 1-17.
- Rolls, B. J. (2009). The relationship between dietary energy density and energy intake. *Physiology & behavior*, 97(5), 609-615.
- Sagar, N. A., Pareek, S., Sharma, S., Yahia, E. M., & Lobo, M. G. (2018). Fruit and vegetable waste: Bioactive compounds, their extraction, and possible utilization. *Comprehensive Reviews in Food Science and Food Safety*, 17(3), 512-531.
- Spill, M. K., Birch, L. L., Roe, L. S., & Rolls, B. J. (2011). Hiding vegetables to reduce energy density: an effective strategy to increase children's vegetable intake and reduce energy intake. *The American Journal of Clinical Nutrition*, 94(3), 735-741.
- Slavin, J. L., & Lloyd, B. (2012). Health benefits of fruits and vegetables. *Advances in nutrition*, 3(4), 506-516.
- Tang, L., Lee, A. H., Su, D., & Binns, C. W. (2014). Fruit and vegetable consumption associated with reduced risk of epithelial ovarian cancer in southern Chinese women. *Gynecologic Oncology*, 132(1), 241-247. DOI:10.1016/j.ygyno.2013.10.020 Tina Dovito, (n.d.) Reader's Digest
