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Food Preference and Food Consumption of Primary Grade Students

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A B S T R A C T
This study investigated the food preferences and consumption of elementary school pupils and the factors that influence them. A stratified random sampling with equal allocation was used to determine the respondents of the study from among the pupils in an elementary school in Palo, Leyte. The 3-point hedonic food preference scale and the 3-point hedonic food consumption scale were also used in the study to determine which foods were preferred and consumed by the pupils. The scale used in this study was based on the foods available in the respondent's environment and the factors reported in the relevant research literature. The gathered data were subjected to different statistical treatments in order to answer the research questions. This study was able to determine the food preferences and food consumption of basic education students. Moreover, the study findings may provide deeper insights into food preference and food consumption among elementary school pupils and contribute useful information to future research.

INTRODUCTION

Food is the third most important thing for living beings in terms of providing energy, development, and growth. Any substance consumed to provide nutritional support to the body is referred to as food. It is vital to human beings because it provides us with energy and allows us to develop and grow. Human survival depends on food (Bosco, 2020). According to Mahtab Alam Quddusi, (2018), foods impact physical, mental, and social health because they include specific nutrients necessary for physical and mental growth. Food, on the other hand, plays a significant part in the lives of everyone, particularly in the promotion of health. Healthy foods contain a variety of nutrients.

Research suggests that healthy food has benefits for both mental and physical health, and it could be an investment in one's future well-being in the long run (Deborah R. Wahl et al., 2017). Nutrition is thought to have an impact on individual behavior (Sorhaindo & Feinstein, 2021). These behaviors have the potential to negatively impact academic achievement and peer interactions, as well as jeopardize self-esteem. According to Public Charter Schools, (2019), kids who are well-nourished and eat wholesome meals tend to do better academically, have better memory and attention, and process information more quickly. Several studies have found that adequately fed children can learn more effectively. In this regard, students can enhance their grades, thinking skills, and enthusiasm for listening, engaging in various school activities, and, most importantly, easily study more and gain information.

Making a food choice based on what a person enjoys the most, finds depending on the body's needs and desires, the most satisfying feel best eating, etc. is known as food preference (Collen et al., 2021). Meal preference, according to Evolutionary Psychologist (2021), is when a person expresses a personal fondness or distaste for a specific dietary or food group. NCI Thesaurus defines food consumption as a gauge of a subject's dietary intake. According to Encyclopedia, (2022), the importance given to various foods (or to ideal body shapes linked with diets), the quantity and quality of food consumed, whether people "graze" or eat discrete meals, and the behaviors around eating have evolved with time and between countries.

Food preference and consumption are complex human behaviors influenced by a number of interconnected factors. Due to several emerging challenges, as well as our society's increasing complexity and diversity, students' food preferences and consumption have been set aside and not previously explored. In response, the Department of Education (DepEd) released DepEd Order No. 13 s, which contains regulations and recommendations for offering healthy food and drink options in DepEd offices and schools. 2017.

To determine how much food and drink the Filipino people consume, the Department of Science and Technology's (DOST) Food and Nutrition Research Institute (FNRI), one of the government's research and development institution's primary research arm for food and nutrition, conducts nationally representative National Nutrition Surveys (NNS). However, the population representativeness of other researchers' studies on food preferences and consumption is constrained.

The goal of this study was to learn more about the preference and consumption of children in basic education, especially those in elementary school.

THEORETICAL REVIEW

Developmental factors are the first factor that influence a person's food preferences, according to the study that was published (Nursing, 2020), which is based on the food choice model. Over the course of a person's developmental lifespan, exposure frequently shapes and influences their food preferences. A child's family serves as the main source of exposure to and socialization about the food that he eats from the moment of his birth. Typically, the food eaten would come from the culture that the child's family originated from. Rarely would the child be given freedom to choose their own meals (Fieldhouse, 1998). When a child first enters school, they become familiar with their peers' eating patterns and are exposed to media advertisements for food. As a result, they start to observe what their peers are eating and change their eating habits (Fieldhouse, 1998; Ogden, 2010). Our cognition serves as the second media. According to the Theory of Reasoned Action (Ogden, 2010, p. 44), a person's attitude and subjective norms determine whether or not he will really engage in the conduct the behavior. Psychophysiological is the third medium. The five senses of sight, smell, taste, hearing, and touch can be used to make food decisions. (Ogden, 2010) Hearing food sizzle enhances the likelihood that people would eat it, along with smell and sight. When food comes into contact with the tongue, the texture, apparent sweetness, or saltiness of the food all give rise to pleasure. Stress and mood can also have an impact on a person's food choices. Extreme stress from school would lead to mindless eating as a mood booster (Ogden, 2010). Additionally, biological determinants such as hunger, appetite, and taste are some other factors that influence meal choice, according to Healthy Living (2006). The three main economic determinants are price, income, and accessibility. The four main physical variables are time, access, education, and skills (like cooking). Among the social determinants include one's culture, family, friends, and eating habits. Mood, stress, guilt, and attitudes, beliefs, and food knowledge are examples of psychological determinants. Cost also has an impact food choices. It is relevant to each person's socioeconomic situation because they can make more food choices if they have access to more money (Nursing Essay, 2020).

The thoughts that were presented addressed the variables that affect a person's food preferences and food consumption. These theories are relevant to the study "Food Preference and Food Consumption of Basic Education Students" because it aimed to ascertain the food preferences and consumption of elementary school students in basic education, as well as the factors influencing these behaviors.

METHODOLOGY

The study utilized a survey scale particularly the hedonic scale that is utilized to collect data on likings for consumer research (Stone and Siddel, 1985). It consists of three (3) parts. The first part of the research instrument collected

information about the respondents' profiles, or the basic profile, such as their name, grade, section, age, and sex. The second part of the research instrument gathered information about the respondent's food preferences using a 3-point hedonic scale wherein, different choices were indicated like very much, neither like nor dislike, and dislike very much. On food consumption, the three-point hedonic scale was used to indicate the different choices most of the time, sometimes, and rarely. The study also applied the 3-smiley face scale from the second part of the instrument in the checklist table. The purpose of using the smiley face scale was to make sure that all of the respondents would be able to understand the choices. Lastly, the third part of the research instrument includes the factors that influenced the food preference and food consumption of the elementary pupils. In this part, the respondents checked the factors that influenced their food preference and frequency of food consumption by using the yes and no frequency. This part used an italicized translation of each term used so that the respondents would understand the meaning of each factor listed. To check the validity and reliability of the instruments used, the instrument which made use of the survey scale was evaluated by three (3) teachers, all of whom have earned a bachelor's degree in education. The instrument was pilot tested on thirty (30) elementary pupils at an elementary school in Palo, Leyte which had the same characteristics as the population of the study. The validators' recommendations were considered and included in the instrument. To assess the internal consistency or reliability of the research instrument, this study also used the Cronbach Alpha reliability test. The internal consistency of the results in Cronbach alpha was 0.99 which is equivalent to excellent.

The study utilized a descriptive method of research. It aims to describe a phenomenon, situation, or population which is in line with the main objective of this study, which is to identify the food preferences and consumption of students in basic education and the factors influencing the pupil's food preference and food consumption among elementary pupils. Stratified Random Sampling with Equal Allocation was used in this study. The total population of elementary students is one thousand seven hundred and fifty-two (1,752). For convenience, Krejcie & Morgan (1970) developed a table for calculating the sample size for a certain population. In the krejcie-morgan-sample-size-table, the sample size of 1,752 total population is three hundred and thirteen (313). Therefore, 313 was the sample size of this study. The sample size of this study was divided into six (6) (elementary grade levels). There were fifty-two (52) pupils selected from Grade 1, Grade 2, Grade 4, Grade 5, and Grade 6. While fifty-three (53) pupils from Grade 3 were chosen as the respondents of the study through the application of the fishbowl draw method. The gathered data were subjected to different statistical treatments in order to respond to the research questions. The computation of the results was done using Microsoft Excel. For research question 1, on the preferred foods by the elementary pupils; the frequency, percentage (proportion), and ranking were used. For research question 2, on the consumed foods by the elementary pupils; the frequency, percentage (proportion), and ranking were used. For research question 3, on the factors that influenced the

food preference and food consumption of elementary pupils; the frequency, percentage (proportion), and ranking were used.

RESULT
Food Preference of the Elementary Pupils

To determine the food preference of the pupils, frequencies, percentages, and ranking was computed to determine the extent of the pupils' food preference by grade level.

The Grade 1 pupils liked very much meat was *fish* (frequency = 48). In contrast, their disliked very much *meat* was *chicken*. *Papaya* and *pineapple* were the fruits that the Grade 1 pupils liked very much (frequency = 50). *Cotton fruit* was revealed to be their disliked very much fruit (frequency = 38). For the vegetables the Grade 1 pupils liked very much were *monggo* and *talong* (frequency = 48). Meanwhile, the Grade 1 pupils disliked very much various vegetables were *ampalaya, beans, cabbage* and *kangkong* (frequency = 40). The Grade 1 pupils also liked very much a variety of snacks were *champorado, chicharon, fishball, pizza* and *siomai* (frequency = 47). *Siopao* and *suman* on the other hand, were the snacks that the pupils disliked very much (frequency = 35). Among the drinks, the Grade 1 pupils liked very much were *milk* and *water* (frequency = 50) and their disliked very much was *milktea* (frequency = 36).

The Grade 2 pupils liked very much meat was *beef* (frequency = 35) and their disliked very much meat were *pork* and *chicken* (frequency = 13). Meanwhile, *avocado* and *pineapple* were the fruits the that the Grade 2 liked very much (frequency = 38), while *langka* was the disliked very much fruit. *Pechay* was the liked very much vegetable (frequency = 35) of Grade 2, while *okra* was the disliked very much vegetable (frequency = 22). *Bread* was the liked very much snack (frequency = 38), while *siomai* was the disliked very much (frequency = 15). *Juices, coffee* and *water* were the drinks that the Grade 2 pupils liked very much (frequency = 2.54), while *milk tea* was the disliked very much drink (frequency = 14).

The Grade 3 pupils liked very much meat was *chicken* (frequency = 50), while the disliked very much meat was *beef* (frequency = 12). For the fruits, the liked very much fruit was *mango* (frequency = 52), while the disliked very much fruit was *durian* (frequency = 30). For the vegetables, the liked very much vegetable was *talong* (frequency = 48), while the disliked very much was *okra* (frequency = 50). For the snacks, the like very much snack were *bread* and *doughnut* (frequency = 50), while the disliked very much snack was *siomai* (frequency = 19). For the drinks, the liked very much drink was *water* (frequency = 49), while the disliked very much was *soft drinks* (frequency = 11).

The Grade 4 pupils liked very much meat was *beef* (frequency = 41), while *pork* was their disliked very much meat (frequency = 36). However, *mango* was their liked very much fruit (frequency = 50). Meanwhile, *lanzones* was their disliked very much fruit (frequency = 40). In vegetables, *carrot* was their liked very much (frequency = 49), while *cabbage* was their disliked very much vegetable (frequency = 31). *Ice cream* was the liked very much snacks (frequency = 49), while *kutsinta* and *suman* (frequency = 39) were the disliked very much. *Water* was the

Grade 4 pupils liked very much drink (frequency = 52), while *milktea* was their disliked very much.

While the Grade 5 pupils liked very much meat was *chicken* (frequency = 45), while *pork* was the disliked very much meat (frequency = 5). The liked very much fruit was *banana* (frequency = 49), while the disliked very much fruit was *durian* (frequency = 28). Meanwhile, *kalabasa* (frequency = 43) was the liked very much vegetable, while *okra* (frequency = 10) was the disliked very much. The liked very much snack was *ice cream* (frequency = 50), while *chocolate* (frequency = 4) was the disliked very much. *Water* was the liked very much drink (frequency = 51), while *milk* and *soft drinks* were the disliked very much (frequency = 3).

The liked very much meat among the Grade 6 pupils was beef (frequency = 41), while chicken was the disliked very much (frequency = 8). *Mangos* was the liked very much fruit (frequency = 46), while *guyabano* was the disliked very much fruit (frequency = 19). Meanwhile, *kalabasa* was the liked very much vegetable (frequency = 46), while *ampalaya* was the disliked very much (frequency = 22). *Banana cue* and *bread* were the liked very much snack (frequency = 46), while *taho* was disliked very much (frequency = 8). *Water* was the liked very much drink (frequency = 51), while *coffee* was the most disliked very much (frequency = 10).

Food Consumption of the Elementary Pupils

To determine the food preference of the pupils, frequencies, percentages, and ranking was computed to determine the extent of the pupils' food consumption by grade level.

Fish was consumed most of the time by the Grade 1 pupils (frequency = 48) while the pupils consume chicken rarely (frequency = 40). Meanwhile the Grade 1 pupils consume lanzones most of the time (frequency = 49) and cotton fruit was consumed rarely (frequency = 40), while, the vegetable that the Grade 1 pupils consumed most of the time was monggo (frequency = 48). At the same time ampalaya and cabbage were consumed rarely of the Grade 1 pupils (frequency = 23). Pizza and siomai were the snacks that were consumed most of the time (frequency = 47), while, banana cue was consumed rarely by the Grade 1 pupils (frequency = 23). Lastly, the Grade 1 pupils consumed water most of the time (frequency = 49) and milk tea was consumed rarely (frequency = 36).

Fish was the most consumed meat most of the time (Frequency=40), while *Beef* rarely consumed (most consumed=18) by the Grade 2 pupils. In fruits, the most consumed most of the time was Apple (Frequency=38), while Guyabano was consumed rarely (Frequency=9). Meanwhile Cabbage was the most consumed most of the time (Frequency=39), while Beans was consumed rarely (Frequency=22). However, Bread was the most consumed snacks most of the time (Frequency=38), while Hotcake and Siopao were rarely consumed (Frequency=28). In drinks, water was the most consumed most of the time (Frequency=45), while softdrinks was consumed rarely (Frequency=32).

The Grade 3 pupils most consumed meat most of the time was chicken (Frequency=40), while beef was rarely consumed (Frequency=12). For the fruits, the most consumed most of the time was mango (Frequency=42), while fruit that was consumed rarely was durian (Frequency=30). Meanwhile, talong was the

vegetable that was consumed most of the time by the grade 3 pupils (Frequency=38), while okra was consumed rarely (Frequency= 50). In snacks, bread was most consumed most of the time (Frequency=33), while siomai was rarely consumed (Frequency=19). Meanwhile water was the drinks consumed most of the time by the grade 3 (Frequency=50), while soft drink was rarely consumed (Frequency=11).

The Grade 4 pupils consumed meat most of the time was Beef (Frequency=41). However, chicken and pork were consumed rarely (Frequency=38). In fruits, mangoes was the most consumed most of the time (Frequency=50), while durian was rarely consumed (Frequency=32). Meanwhile, pechay was the most consumed most of the time (Frequency=48), Beans was rarely consumed (Frequency=33). In snacks, fishball was the most consumed most of the time (Frequency=48), while siomai consumed rarely (Frequency=37). However, water was the most consumed drink most of the time (Frequency=52), while milk tea was rarely consumed (Frequency=42).

The Grade 5 pupils' consumed meat most of the time was chicken (frequency = 44), while beef consumed rarely of the time (frequency = 4). Meanwhile, banana and mangoes were consumed most of the time (frequency = 49), were durian consumed rarely of the time (frequency = 28). However, the kalabasa consumed most of the time (frequency = 43), while consumed ampalaya and okra were rarely of the time (frequency = 10). Meanwhile, halo-halo and siomai consumed most of the time (frequency = 47), while pancit, peanuts, siopao and taho (frequency = 3) is consumed rarely of the time. The water consumed most of the time (frequency = 51), while soft drinks is consumed rarely of the time (frequency = 6).

The most consumed meat most of the time by the Grade 6 pupils was beef (Frequency=41), Meanwhile the rarely consumed meat was chicken (Frequency=8). However, Mango was the most consumed fruit most of the time (Frequency=46), while durian was the fruit that consumed rarely (Frequency=25). In vegetables, kalabasa was the most consumed most of the time (Frequency=46), on the other hand ampalaya was consumed rarely (Frequency=22). For the snacks it was observed that chips was the most consumed most of the time (Frequency=46), Meanwhile taho was rarely consumed (Frequency=8). In drinks, water was the Grade 6 pupils most consumed most of the time (Frequency=51), while coffee was consumed rarely (Frequency=10).

Factors that Influence the Food Preference and Food Consumption of Elementary Pupils

To determine the possible underlying reasons why pupils preferred and consumed the foods identified in the previous sections, the frequency and percentage for the factors, as well as their rankings were computed to determine which had the most influence.

Price mainly influenced the Grade 1 pupils' food preference, while their appetite had the least influence on their food preference. The price of food was also found to be the most influential factor on Grade 2 pupils' food preferences,

while exposure to advertising had the least influence on their food preferences. The Grade 3 pupils' community/environment was found to be the most influential factor on their food preferences, while the price of food had the least influence on their food preferences. The senses of the Grade 4 pupils were revealed to be the most influential factor on their food preferences, while their food preferences were least influenced by availability, meal structure, meal size, and price. The appetite of the Grade 5 pupils was revealed to be the most influential factor on their food preferences, while meal size had the least influence. The foods' availability and the pupil's dietary behavior were found to be the most influential factor in the Grade 6 pupils' food preferences, while their community/environment had the least influence on their food preferences.

Price was also the most influential factor in the Grade 1 pupils' food consumption, while the factor with the least influence on their food consumption was their mood. Price was also the most influential factor in the food consumption of Grade 2 pupils, while exposure to advertising was also the factor with the least influence on food consumption. The Grade 3 pupils' dietary behaviors were the most influential factor in their food consumption, while their community/environment had the least influence on their food consumption. Senses and price were the most influential factors in Grade 4 pupils' food consumption, while their food consumption was influenced the least by availability, family/parents, meal structure, appetite, and meal size. The price of the food was the most influential factors in food consumption of the Grade 5 pupils whereas food consumption was least influenced by the size of the meal. The availability of the food was the most influential factor in Grade 6 pupils' food consumption, while their community/environment also had the least influence on their food consumption.

DISCUSSION

Overall, the foods that the Grade 1 pupils liked very much were rice, fish, papaya and pineapple, monggo, champurrado, chicharron, fishball, pizza, siomai, water, and milk. Meanwhile, the foods that were liked very much by the Grade 2 pupils were rice, beef ,avocado and pineapple, pechay, bread, coffee, juice and water . Whilst the foods that were liked very much by the Grade 3 pupils were rice, chicken, mango, talong, bread, donut, ice cream, water, Grade 4 pupils liked very much foods were rice, beef, mango, carrot, ice cream and water and Grade 5 pupils liked very much foods were rice, chicken, banana, kalabasa, ice cream, water, while the Grade 6 pupils liked very much foods were rice, beef, mango, kalabasa, banana cue and bread, and water.

Overall, the foods that the Grade 1 pupils consumed most of the time were rice, fish, lanzones, monggo, fishball, pizza, siomai, and water. Meanwhile, the foods that were consumed most of the time by the Grade 2 pupils were rice, fish, apple, cabbage, bread, and water. For the Grade 3 pupils the consumed most of the time were rice, chicken, mango, talong, bread, and water, while the Grade 4 pupils consumed of the time were rice, beef, mango, carrot and pechay, fishball and water and Grade 5 pupils consumed most of the time were rice, chicken, banana and mango, kalabasa, halo-halo and ice cream, water, while the Grade 6

pupils consumed most of the time were rice, beef, mango, kalabasa, banana cue and chips, and water.

Price was the main influence on the Grade 1 and Grade 2 pupils' food preference, the Grade 3 pupils' community/environment was found to be the most influential factor on their food preferences, whereas the senses of the Grade 4 pupils were revealed to be the most influential factor on their food preferences, appetite of the Grade 5 pupils was revealed to be the most influential factor on their food preferences, while the foods' availability and the pupil's dietary behavior were found to be the most influential factor in Grade 6 pupils' food preferences.

Food price was the most influential factor in the Grade 1, Grade 2, and Grade 5 pupils' food consumption, Grade 3 pupils' dietary behavior was the most influential factor in their food consumption. Senses and price were the most influential factors in Grade 4 pupils' food consumption, while the availability of food was the most influential factor in Grade 6 pupils' food consumption.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this study it was revealed that pupils in the primary grades have diverse preferences and consumption of food depending on grade levels as well as the factors that are influencing their food preference and food consumption.

Among the factors that were listed; price, community/environment, senses, appetite, food availability, and the pupil's dietary behavior were the factors influencing the pupil's food preference and food consumption.

FURTHER STUDY

The results of this study offered that a future study may be conducted and should include a wider scope and include more respondents. There should also be a follow-up study in order to determine the latest food preference and food consumption of the pupils. Future researchers may also conduct a similar study by applying different statistical tools and may test further advanced hypotheses.

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