

ORIGINAL

Level of dietary practices and frequency of physical activity

Nivel de prácticas alimentarias y frecuencia de actividad física

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ABSTRACT

Introduction: dietary practices have been a fundamental issue in the area of public health, because they play a vital role in the prevention of deficiency or excess diseases.

Objective: this research aims to determine the level of dietary practices and the frequency of physical activity in the province of Santo Domingo de los Tsáchilas - Ecuador 2021.

Method: a quantitative, non-experimental, descriptive and correlational, and cross-sectional study was applied with a simple probabilistic sample of 692 inhabitants.

Results: the majority of respondents are men (59,5 %) and single (68,8 %). Protein consumption is mostly medium (65,5 %), while carbohydrate consumption is high (76,3 %), which can increase the risk of being overweight. Vegetable consumption is medium (55,4 %), and dairy consumption is also mostly medium (44,4 %). Liquid consumption is similar between medium (41,5 %) and high (42,1 %) levels. As for fruit, 52,6 % consume it regularly. Healthy eating habits are medium (40,9 %), and 45,2 % engage in physical activity, although there is a notable risk of sedentary lifestyle (36,7 %).

Conclusions: The study shows a male and single profile among the respondents. Although protein and vegetable intake is medium, high carbohydrate consumption and low fluid intake pose risks of overweight and dehydration. Most consume fruit, but eating habits are medium. It is recommended to promote healthier habits and increase physical activity.

Keywords: Eating Habits; Physical Activity; Well-Being.

RESUMEN

Introducción: las prácticas alimentarias han sido un tema fundamental en el área de la salud pública, debido a que juegan un papel vital en la prevención de enfermedades carenciales o por exceso.

Objetivo: esta investigación pretende determinar el nivel de prácticas alimentarias y la frecuencia de actividad física en la provincia Santo Domingo de los Tsáchilas - Ecuador 2021.

Método: se aplicó un estudio de enfoque cuantitativo, no experimental, de alcance descriptivo y correlacional, y de corte transversal con una muestra probabilística simple de 692 habitantes.

Resultados: la mayoría de los encuestados son hombres (59,5 %) y solteros (68,8 %). El consumo de proteína es mayormente medio (65,5 %), mientras que el de carbohidratos es alto (76,3 %), lo que puede aumentar el riesgo de sobrepeso. El consumo de verduras es medio (55,4 %), y el de lácteos también es mayormente medio (44,4 %). El consumo de líquidos es similar entre niveles medio (41,5 %) y alto (42,1 %). En cuanto a frutas, el 52,6 % consume regularmente. Las prácticas alimentarias saludables son medianas (40,9 %), y el 45,2 % realiza actividad física, aunque hay un riesgo notable de sedentarismo (36,7 %).

Conclusiones: el estudio muestra un perfil masculino y soltero entre los encuestados. Aunque la ingesta de proteínas y verduras es media, el alto consumo de carbohidratos y la baja ingesta de líquidos plantean riesgos de sobrepeso y deshidratación. La mayoría consume frutas, pero las prácticas alimentarias son medianas. Se

recomienda promover hábitos más saludables y aumentar la actividad física.

Palabras clave: Prácticas Alimentarias; Actividad Física; Bienestar.

INTRODUCTION

Malnutrition, overweight, and obesity have a direct impact on the health of underdeveloped people and in developing countries as well, so while malnutrition causes a decrease in growth and physical and cognitive development, overweight and obesity can trigger diseases such as hypertension, type 2 diabetes, various types of cancer with different etiology, etc., This impedes the correct development of people and prevents them from achieving a correct and healthy lifestyle, since food plays a fundamental role in a healthy life, which is related to eating habits. However, these habits manifest in family, the media, and education.^(1,2,3)

The World Health Organization determines that inadequate eating habits begin in the first years of life, which is why proper nutrition contributes to the healthy growth of the human body. Moreover, it provides long-term benefits to human beings, among them the reduction of the risk of suffering from being overweight and obesity; on the other hand, eating habits are fostered in the family and have a strong influence on the diet of children and adults, and the behaviors related to food; however, current socioeconomic changes have led parents and children to eat inadequately, and this has led to several diseases related to eating habits.

It is essential to understand that a healthy diet is fundamental for a person's lifespan and helps prevent malnutrition, non-communicable diseases such as diabetes, cancer, chronic respiratory diseases, and cardiovascular diseases, which in general are the cause of 63 % of deaths, thus killing more than 36 million people each year. Eighty percent of deaths are concentrated in low- and middle-income countries. Alcohol consumption, smoking, physical inactivity, and unhealthy diets are also responsible for human mortality.⁽⁴⁾

Pereira-Chávez⁽⁵⁾ refers to nutrition as the intake of food into the body. It is the process by which a series of substances in the foods that make up the diet are ingested since these substances or foods are essential for proper nutrition. Likewise, food is a physiological need for the body. It is an essential social and cultural dimension, linked, on the one hand, to satiate the appetite and, on the other hand, to the exquisite taste. The combination of both factors can generate a taste for food. It is necessary to emphasize that during eating, senses such as sight, smell, taste, and touch are activated, and, finally, hearing can intervene when receiving advertising messages about food.

Vilaplana and Batalla^(6,7) comment that most people like to eat some food every 3 or 4 h. Separating food intake throughout the day into three intakes and 2 to 3 snacks helps to reduce the risk of overheating when it is time for the main meal. However, the food eaten should not be neglected, as snacks can constitute an essential contribution of calories to the total amount of energy that the body needs, and this could cause anxiety to continue eating during the day, causing the nutritional status of the body to be unbalanced due to overweight.

Sanchez and Aguilar,⁽⁸⁾ in their research work Eating Habits and Health-related Behaviors in a University Population in Catalonia-Spain, aimed to analyze eating habits and behaviors in a university population in Catalonia as a starting point to develop effective strategies for health promotion, with an observational, cross-sectional, descriptive methodological approach to eating habits and eating-related behaviors. In conclusion, they state that food is one of the most significant influences on health. Eating a complete, sufficient, balanced, and adequate diet that is adequate to the different needs of life ensures correct physical and psychological growth, helps prevent diseases, and benefits an optimal state of health.

According to the Pan American Health Organization (PAHO) and the United Nations (FAO), Ecuador's food system has the following characteristics:

Ecuador is undergoing a progressive transformation of eating habits. Moving from consuming natural or minimally processed foods to foods rich in processed fats, salt, or simple sugars has led to a transition or epidemiological accumulation characterized by the double burden of malnutrition. That is, in addition to stunting and micronutrient deficiencies, there is a growing increase in the prevalence of overweight and obesity in all age groups.^(9,10)

Overweight and obesity in Ecuadorian adults exceed 60 %, and it is established that this has influenced the increase in non-communicable diseases that are the cause of poor eating habits.⁽⁹⁾ According to Vélez,^(1,11) he comments that diabetes mellitus is one of the main reasons for mortality in Ecuadorians; hypertensive diseases are the second cause due to inadequate eating habits and sedentary lifestyles; these pathologies are preventable by performing physical activity for at least 30 minutes a day and having a healthy diet.

According to Lucero,⁽¹²⁾ in his article comments that Ecuador has the second highest rate of malnutrition and obesity; there are factors such as poverty, scarce access to nutritious food, and limited academic

education of the population, which indicate that these are the causes of this food problem in Ecuadorians. It is considered that adults (19 to 59 years old) who are overweight and obese refer to 64,4 % of the total, i.e., most of them do not have adequate weight concerning their height. Although food production in Ecuador is sufficient, it is identified that people follow a diet low in nutritional quality due to limited access to adequate and varied food by the population and the lack of knowledge about nutritious eating habits since the traditional diet of Ecuadorians consists of carbohydrates (bread, potatoes, rice, noodles, among others), being insufficient nutritionally.

In general, the Ecuadorian population consumes an energy diet that is based on combating the sensation of being hungry without considering that these products do not provide any positive health benefits; this is due to the lack of knowledge of healthy eating habits; it is recognized that there are serious health problems in Ecuadorian citizens.⁽¹²⁾

In Ecuador, 1 out of every four children under five years of age has low height for age, 3 out of every ten children between 5 and 11 years old are overweight or obese, 1 out of every four adolescents between 12 and 19 years old are overweight or obese, and 6 out of every ten adults between 20 and 59 years old are overweight or obese.⁽¹⁰⁾

In the province of Santo Domingo de los Tsáchilas, the food base is based on agriculture; therefore, some families have the possibility of sowing and harvesting their food and also tend to raise animals such as tilapia, cattle, and pigs, which are the familiar food sources for families in the area. Jiménez,⁽¹³⁾ comments that lentils, beans, or chickpeas provide the body with significant protein. Some grains can replace ground meat in terms of flavor. With them (including beans), hamburgers and vegetarian tacos can be prepared. With this option, people in the community usually replace proteins of high biological value (white and red meat) with carbohydrates, resulting in an unbalanced nutrition dish. The few options range from refined flour to rice and some grains mixed with fried foods. For this reason, the researchers seek to answer the following question.

Objective: To determine the level of dietary practices and physical activity in the province of Santo Domingo de los Tsáchilas-Ecuador 2021.

METHOD

The present research applied a quantitative approach and a non-experimental design because it was based on the quantification and analysis of data, which made it possible to identify the level of dietary practices and the frequency of physical activity of the sample obtained from the inhabitants of the province of Santo Domingo de los Tsáchilas. It was descriptive since statistical tables were used to identify the characteristics of the variables under study. In addition, it was correlational because the association between the two variables in the last specific objective was identified, cross-sectional because data collection was performed, and according to the data sample, it was a prospective study because the data were of primary type. According to the study of the object, it belongs to basic research because the results provide information for future research.

According to the last census, the Santo Domingo de los Tsáchilas has 450,000 inhabitants. The sample was of a simple, randomized, quantitative, probabilistic type of 660 people; we worked with 692 people who answered the survey.

Inclusion criteria

- Male and female persons between the ages of 18-55 years old.
- Residents living in the province of Santo Domingo de los Tsáchilas.

Exclusion criteria

- Persons who do not wish to participate in the survey.
- Minors.
- Older adults.
- People with a serious illness.

The data collection technique used was a survey created in Google Forms to obtain statistical data to measure the variables under study. The instrument was called the “Eating Habits and Physical Activity Frequency” questionnaire, comprising 60 items.

The instrument used was a quantitative questionnaire of scaled questions with two variables; the first one of eating habits in which there were eight dimensions which were: protein consumption, with items 1-8; carbohydrate consumption, with items 9-16; vegetable consumption, with items 17-23, dairy consumption, with items 24-31, liquid consumption, with items 32-36, consumption of high caloric density foods, with items 37-44, consumption of fruits, with items 45-52, consumption of sauces and condiments, with items 53-60 and the other variable is physical activity with the dimension frequency of physical activity, with

items 61-63. Each question has four options to answer; the data was collected and compiled according to the number of responses for each one, thus to assess better the nutritional status and frequency of physical activity that the residents of the sample under study have. The time it took the person to fill out the survey was approximately 15 minutes. The survey had Likert scale-type questions where the answers ranged from never, one time a week, 2 to 4 times a week and every day, and then divided into low, medium, and high levels for better understanding of the reading of tables. The data from the 692 participants from the Santo Domingo de los Tsáchilas, Ecuador, were recorded.

The instrument's reliability was evaluated using the SPSS program version 2022, and the reliability of the instrument was measured using Cronbach's Alpha statistic, which was 0,862.

According to the reliability analysis, which is 0,862 points, and according to the reliability coefficient rating scale, it is determined that the assessment instrument is of "high" internal consistency.

Ethical Aspects

The basic principles of ethics that were taken into account in this research were justice, non-maleficence, and autonomy of the Constitution of the Republic of Ecuador; consequently, before executing the project "Level of dietary practices and physical activity in the province of Santo Domingo de los Tsáchilas - Ecuador 2021", the objective of the study was explained, without forcing the participation of the people, respecting the confidentiality of the data obtained and the ethical aspect, without affecting the group to be investigated.

RESULTS

Table 3 shows that most respondents are male (59,5 %), while the female is represented by (40,5 %). On the other hand, the prevalent marital status of the participants of this research is single (68,8 %) and married (31,2 %).

According to the participant's perception, protein consumption mostly has a medium level (65,5 %), which, within the standards, people meet the required consumption, and a low level (17,3 %), indicating that this small group could suffer from anemic conditions.

It was observed that there is a high level (76,3 %) of carbohydrate consumption in the participants, which follows a higher risk of weight gain; on the other hand, there is a low level (2,3 %) of people who tend to take care of their health by lowering these consumption frequencies.

A medium level (51,2 %) of the participants consumed vegetables continuously. On the other hand, the high level (19,2 %) do not frequently consume vegetables in their regular diet. From the sample of 692 people, it was verified that the consumption of vegetables is medium, with 55,4 %.

Dairy consumption, according to the participants' perception, has a medium level (44,4 %) and a low level (29,2 %), indicating that this small group avoids its consumption.

There was a low level (80,1 %) of dairy substitute consumption, namely (Soy beverages), and only a high level (3,5 %) of dairy substitute consumption, thus avoiding possible lactose intolerance.

Regarding the perception of fluid consumption, it was determined that the medium (41,5 %) and high (42,1 %) levels have a similar percentage; however, the data that draws attention is the low level (16,5 %) because it can lead to pathologies due to lack of fluid consumption such as general dehydration.

Regarding the perception of the consumption of food with high caloric density (fast food), it was verified that the consumption of this type of food is low (51,9 %), which indicates that there is a good number of people who watch their diet and avoid excessive consumption of saturated fats, and with a medium level (39,7 %) of consumption of food with high caloric density.

A high level (52,6 %) of fruit consumption frequency indicates that these are people who want to eat better. On the other hand, it should be noted that there is a low level (11,6 %), which indicates that this group of people does not regularly consume fruits.

It could be observed that there is a high (40,2 %) and medium (40 %) level, which denotes equality in the consumption of condiments and sauces, taking into account the high risk of suffering gastric pathologies, while it is well known that there is a low level (19,8 %) of the participants who consume almost little of these condiments and sauces, preferring healthier prepared foods.

It was observed that there is a medium level (40,9 %) of people who have healthy eating practices. However, it should also be noted that there is a low level (29,5 %) of people who have an inadequate diet, which can cause the risk of suffering from diseases related to poor diet.

It was observed that there is a medium level (45,2 %) of the participants who perform physical activity, thus achieving better physical performance, and it should also be noted that there is a low level (36,7 %) who are at risk of falling into a sedentary lifestyle.

Table 1. Sociodemographic data and dietary habits of the sampled subjects

Parameter	Values	n	%
Sex	Female	280	40,5
	Male	412	59,5
Marital Status	Single	476	68,8
	Married	216	31,2
Frequency of Protein Intake	Low	120	17,3
	Medium	453	65,5
	High	119	17,2
Frequency of Carbohydrate Consumption	Low	16	2,3
	Medium	148	21,4
	High	528	76,3
Frequency of Vegetable Consumption	Low	205	29,6
	Medium	354	51,2
	High	133	19,2
Frequency of Dairy Consumption	Low	202	29,2
	Medium	307	44,4
	High	183	26,4
Frequency of Dairy Substitute Consumption	Low	554	80,1
	Medium	114	16,5
	High	24	3,5
Frequency of Fluid Consumption	Low	114	16,5
	Medium	287	41,5
	High	291	42,1
Frequency of High Calorie Density Food Consumption	Low	359	51,9
	Medium	275	39,7
	High	58	8,4
Frequency of Fruit Consumption	Low	80	11,6
	Medium	248	35,8
	High	364	52,6
Frequency of Consumption of Condiments and Sauces	Low	137	19,8
	Medium	277	40,0
	High	278	40,2
Healthy Eating Practices	Low	204	29,5
	Medium	283	40,9
	High	205	29,6
Frequency of Physical Activity	Low	254	36,7
	Medium	313	45,2
	High	125	18,1

Table 2 shows that while physical activity has a low level (13,7 %), it is related to the eating habits of the participants who are at a medium level (40,9 %), concluding that almost half of the group takes care of their diet, but lacks more physical activity.

Table 2 indicates with a 95 % confidence level and a 5 % error that the variables of eating habits and physical activity are related to each other with Kendall's tau b statistic = 0,244 and a $(p=0,000)$.

Table 2. Frequency of Physical Activity vs. Eating Habits: cross-tabulation

Frequency of Physical Activity		Frequency of Healthy Eating Practices			Total
		Under	Medium	High	
Slight	n	95	117	42	254
	%	13,7	16,9	6,1	36,7
Moderate	n	93	126	94	313
	%	13,4	18,2	13,6	45,2
Intense	n	16	40	69	125
	%	2,3	5,8	10,0	18,1
Total	n	204	283	205	692
	%	29,5	40,9	29,6	100,0

Note: Kendall's tau-b = 0,244; $p=0,000$.

DISCUSSION

The purpose of this research was to determine the level of dietary practices and the frequency of physical activity in the province of Santo Domingo de los Tsáchilas based on the results obtained from the questionnaire conducted by the authors of this research, in which the following dimensions were evaluated: frequency of consumption of proteins, carbohydrates, vegetables, dairy products, dairy substitutes, liquids, foods with high caloric density, fruits, condiments and sauces, in addition to the fact that physical activity plays a fundamental role in having an adequate lifestyle, this allowed establishing the objectives set out in this research.

Regarding the frequency of carbohydrate intake, in the Santo Domingo de los Tsáchilas population, people consume highly carbohydrate-rich foods (76,3 %). Therefore, this indicates that weight gain is probable, in addition to the fact that they have a greater possibility of acquiring diseases, leaving, as a consequence, an unstable state of health. These foods benefit people's health, considering that they should be consumed in portions, which within the healthy plate is represented with 25 %. Using what was presented, it was possible to determine an inadequate consumption of carbohydrates in the evaluated sample, considering that this is a risk factor for developing diseases such as overweight or obesity that deteriorate the lifestyle.

It was possible to identify that the frequency of water consumption corresponds to the medium (41,5 %) and high (42,1 %) levels; however, the data that draws attention is the low level (16,5 %), considering it to be a high-risk group since it can lead to pathologies due to lack of fluid intake such as general dehydration. This is by what Iglesias Rosado,⁽¹⁴⁾ in his article, says that water is the primary component of the human body, in addition to contributing to the realization of physiological digestion processes, absorption, and proper elimination of non-digestible metabolic wastes. This does not agree with the informative web page Clínica Los Andes,⁽¹⁵⁾ which recommends a daily water consumption of 2 to 3 glasses, taking into consideration that the organism demands to ingest this liquid, according to the factors that may develop, such as physical activity, temperature, among others. However, the WHO4 recommends that water consumption be 2 liters, that is, eight glasses daily.

The frequency of vegetable consumption in Santo Domingo de los Tsáchilas was analyzed. According to the results obtained, it was possible to identify an average level of (51,2 %) of participants who consume vegetables continuously. However, some samples do not consume these foods regularly, presenting a low (19,2 %) level. A group of Mexican professionals and researchers in their blog Alianza por la salud alimentaria,⁽¹⁶⁾ agrees that vegetables are one of the most critical components of a healthy diet since their consumption contributes to the prevention of various diseases, such as heart disease, cancer, obesity, and diabetes.

The results obtained showed that the frequency of high-calorie density foods (junk food) was low (51,9 %), which indicates that an adequate number of people watch their diet and avoid excessive consumption of saturated fats; a better percentage corresponds to the medium-level (39,7 %). The WHO,^(4,17) mentions that the workplace is an essential environment for promoting health and adopting changes in the lifestyle of the adult population.

The results allowed us to observe that the levels of good eating habits are represented by 40,9 % of applicability in the sample studied, in addition to the frequency of physical activity at 45,2 %. This shows that the Santo Domingo de los Tsáchilas population engages in physical activity, and their eating practices are medium. Therefore, it would not be satisfying the nutritional and energetic insufficiencies of each individual in its totality, thus interfering in maintaining an optimal state of health; this is related to what the WHO17 states that physical activity is considered to be any bodily movement produced by skeletal muscles that requires energy expenditure.

In conclusion, the level of dietary practices and the frequency of physical activity according to the sample taken from the Santo Domingo de los Tsáchilas population are related since they are at a midpoint. These factors allow for a balanced state of health, complemented by habits both in the nutritional area and in the practice of physical activity. They should go hand in hand, considering that they provide benefits such as preventing diseases, keeping the body active, regulating sleep, improving the quality of life, and actively contributing to people's emotional and psychological aspects. The lack of physical activity causes energy levels to drop, added to this, an inadequate diet; the consequences are dire and could even cause an alteration in the functioning of the human body.

CONCLUSIONS

This study revealed a predominantly male and single demographic profile among the respondents. In terms of diet, it is noted that the majority report an average consumption of protein and vegetables, which poses a risk of being overweight. In addition, dairy intake is mostly average. Fluid intake is also of concern: subjects are at risk of dehydration. On the other hand, most show a good habit of consuming fruits regularly. However, healthy eating practices are only average, and some show inadequate habits, which increases the risk of disease. Finally, although a large percentage engage in physical activity, there is a risk of sedentary lifestyles. Taken together, these findings suggest the need for interventions to promote healthier eating habits and increase physical activity among the population studied.

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FINANCING

None.

CONFLICT OF INTEREST

None.

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