

## Food Consumption in Pregnant Adolescents, Guanujo Parish 2022 (Ecuador)

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### Abstract

*Introduction* Diet during adolescent pregnancy favors maternal and child health, nutritional requirements increase at this stage and both excesses and deficiencies can have repercussions during pregnancy. The objective of the work presented here was to analyze the sociodemographic conditions of pregnant adolescents belonging to the San Juan de Llullundongo and Guanujo Health Centers, as well as the frequency of consumption of their food. *Materials and methods:* The population consisting of 41 pregnant women between the ages of 15 and 19 is taken for the study, to whom a Dietary Guide with an Intercultural approach designed for this purpose is delivered; A cross-sectional, non-experimental field observational descriptive study was carried out by applying a frequency sheet for the consumption of Andean products. *Results:* The analysis showed the predominance of the indigenous ethnic group, being high school students and mostly receiving the support of their families and partners to care for their gestational status. *Discussion:* The identified eating habits are regular and in correspondence with the culture of the region, they show an adequate balance in nutrient intake and normal body mass indices prevail, although a high percentage of pregnant adolescents with daily sugar consumption is identified. and bottled drinks, as well as values that are not suitable for the consumption of greens and vegetables, and for foods rich in vitamins. *Conflict of interest:* None declared.

**Keywords:** pregnancy, adolescent, nutritional status, eating habits, maternal and child nutrition.

### 1. INTRODUCTION

Adolescent pregnancy is a situation that occurs recurrently in the Latin American and Caribbean population, only surpassed by countries in Sub-Saharan Africa, being greater than 12% and with a predominance in young women with lower economic income and low educational level. In 2020, the region came very close to registering the third highest adolescent fertility rate in the world, where the fertility rate for Ecuador was 78 births per 1000 women between 15 and 19 years of age (CEPAL, 2020)(OMS, 2021).

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Eating habits and nutrition during pregnancy influence the growth and development of the fetus and the health of the mother, which is a public health problem since adequate eating habits before and during gestation with balanced nutrients will be key to the proper development of the fetus and the health of the mother. who will have to deal with pregnancy, childbirth and the puerperium, including breastfeeding; Physically, the reproductive system of women aged 10 to 19 is not yet fully developed to facilitate pregnancy and childbirth.(Terán Oña, 2020)

Criteria of authors such as Calvo Gorrioz and et agree that during the pregnancy stage, the woman's health suffers with respect to her micronutrient reserves, which can have negative consequences for her health and that of the developing fetus to prevent premature arrest, newly born with a lack of weight and reduced stature. Particularly for pregnant adolescents, nutritional needs are increasing and it is essential that they follow a balanced and healthy diet that ensures they obtain the necessary nutrients for proper growth and development of the fetus. (2023)

Iron deficiency is one of the most common nutritional deficiencies in pregnant adolescents. A lack of this element can lead to anemia and negatively affect fetal development and maternal health. In addition, young women with this health condition are at increased risk of vitamin D, calcium, and folic acid deficiencies. That is why it is essential that they receive adequate nutritional counseling and education to help them make healthy decisions about their diet at this stage of their life. Balderrama Espinosa (2023)It affirms the need to propose educational strategies in healthy eating habits aimed at pregnant women in order to improve nutritional and health status by consequently developing a better nutritional behavior.

The authors Peralta Becerra and Rubina Panduro expose in their works the sociodemographic circumstances identified in their research, being poverty, low nine years of schooling, predominance in rural areas, growing up in a single-parent household, having a teenage mother or having a sister who became pregnant as a teenager, frequent scenarios in which the occurrence of pregnancies at an early age predominately occurs(2019)(2022).

The study of eating habits is pertinent to public policies, as established in the Organic Law of the Social Regime of Food Sovereignty, which aims to guarantee individuals, communities and peoples self-sufficiency in healthy, nutritious and culturally appropriate food on a permanent basis, as well as the Rights of the National Development Plan in its Objective 1. Protect the Ecuadorian family and eradicate poverty, where the responsibility to help individuals and communities with equality for their personal well-being is manifested. In addition, it responds to Sustainable Development Goal 3: Good Health and Well-being, because it contributes to reducing maternal and infant mortality, improving prevention and promoting health and well-being. On the other hand, the Intersectoral Project on Food and Nutrition Ecuador (PIANE), in which the Ecuadorian Government, through the Ministry of Public Health, in compliance with article 16 of the Organic Law on Health, where the state exposes the need for an intersectoral policy to guarantee food and nutritional security that favors the acquisition of good eating habits in the population. (UNESCO, 2018) (ONU, 2016)(MSP, 2018)(2015)

In recent years in Ecuador there has been a 75% increase in teenage pregnancies, data from the province of Bolívar show that in 2018 there were approximately 11,370 births of young women between 10 and 14 years old, increased by 2% for the year 2019. (INEC, 2019)

In Guaranda, according to Avendaño Castro et al, adolescent pregnancy rates are higher than the national average, according to the Obstetric Census of the Ministry of Public Health in January 2019, 164 pregnant women were captured, of which 52 were adolescents, which represents 31% of the total. (2019)

The work presented shows the results of the research developed that aimed to address the eating habits of pregnant adolescents in the Guanajo canton of the Bolívar province, Ecuador, in order to reflect on the adequate consumption of the recommended food intake based on the training that was done in this regard with the study population.

## **Methodology**

A cross-sectional observational, descriptive, non-experimental field study was conducted. The sample is taken from the universe made up of 41 pregnant adolescents from the health centers of San Juan de Llullundongo and Guanujo.

A form was designed for the collection of information with 58 items, an instrument that was validated with respect to the content of the questions, their clarity and understanding, at the level of related professionals: nutrition specialist from the Ministry of Public Health Zone 5, Guaranda and a teacher from the Polytechnic School of Chimborazo. The information collected was collected at the local level by students and professors of the research group of the Nursing career of the State University of Bolívar (UEB), through the interview technique. Necessary variables were considered for the identification of the frequency of food consumption, data for nutritional assessment and for sociodemographic characterization.

A Dietary Guide with an intercultural approach is designed for pregnant adolescents, which is delivered to the nursing staff of the health centers, as well as to the pregnant women participating in the study.

SPSS software is used for the recording and analysis of the information and its subsequent summary and presentation.

## **RESULTS**

The sample consisted of 41 adolescent mothers from the health centers of Guanujo (51.2%) and San Juan de Llullundongo (48.7%), of which the predominant age range was 16 to 17 years old (53.6%), followed by 18 and 19 years old (46.3%). At the same time, it is reported that all pregnant adolescents are first-timers, that is, they are in their first pregnancy.

There is a predominance of pregnant women in the second trimester of gestation (46.3%), followed by young women in their third trimester (41.4%), with only 12.1% having a first trimester of gestation.

The predominance of young women as indigenous is identified with a percentage of 87.8 per cent, followed by the mestizo ethnic group with 12.1 per cent. It should be noted that in most of the rural communities of Bolívar province, there is a majority of the indigenous ethnic population known as Warankas.

It is reported that for 25 of them, studies are their main occupation, which represents 60.9% who have the support of their relatives and partners, 9 pregnant women, who represent 21.9%, who are engaged in domestic chores, followed by those who carry out agricultural or livestock activities, given 14.6%. while only one young woman is employed in a public or private company, which represents 22.4%.

With regard to the educational level of pregnant adolescents, 80.5 per cent have secondary education and 19.5 per cent have only primary education.

In terms of economic solvency, 87.9% perceive a personal availability that ranges from 0 to 50 dollars per month, this is due to the fact that most of them study and do not work, therefore they only have money provided by their parents or partners. For the remaining 12.1%, they receive only between 60 and 100 USD per month for the work they carry

out.

Common-law status is the marital status with the highest percentage identified in the study (41.5%), followed by single status with 36.6%, with married status being the minority of women (21.9%). It should be noted that in rural communities, when they find out about the pregnancy of young women, parents force them to live with their partner, where most choose to join and not marry.

#### EATING HABITS

Table 1 shows that milk is the food with the highest percentage of daily consumption, which is preferred by 63.4% of the sample, and consumed three or four times a week by 12.1%; 36.5% of young women consume milkshakes daily, and 7.3% consume milkshakes three or four times a week. Cheese is a daily food for 31.7%, while yogurt is only for 17% of pregnant women. Dairy products are considered to be easily accessible foods for the study population since families live in communities that have milk-producing animals.

TABLE 1. FREQUENCY OF DAIRY CONSUMPTION

DAIRY	Does not consume		Daily		A week				%
	Number	%	Number	%	1 to 2		3 to 4		
					Number	%	Number	%	
1. Milk	1	2,4	26	63,4	9	21,9	5	12,1	100,0
2. Smoothies	1	2,4	15	36,5	15	36,5	3	7,3	100,0
3. Cheese	1	2,4	13	31,7	22	53,6	1	2,4	100,0
4. Yogurt	2	4,8	7	17,0	22	53,6	1	2,2	100,0

Source: Own research.

Table 2 shows the behavior of the frequency of consumption of eggs, meat and fish: in the mode of non-consumption, daily consumption, weekly consumption (in ranges of 1 to 2 and 3 to 4 times a week), per month (from 1 to 2 times). The foods with the highest demand that are consumed on a daily basis are chicken meat and eggs, with the same percentage given by 26.8%. Beef and pork are the foods that are frequently eaten up to twice a week by 75% and between three and four times a week by 20% of pregnant women. Fish is consumed up to twice a week by 70% of young women and tuna equally frequently by 60% of them; Consumption between three or four times a week is made by 30% and 35% respectively.

TABLE 2. FREQUENCY OF CONSUMPTION OF EGGS, MEAT AND FISH

EGGS, MEAT AND FISH	Does not consume		Daily		A week				Per month		%
	Number	%	Number	%	1 to 2		3 to 4		1 to 2		
					Number	%	Number	%	Number	%	
6. Chicken Eggs			11	26,8	27	65,8	2	4,8			100,0
7. Chicken			11	26,8	25	60,9	5	12,1			100,0

8. Beef	1	5,0			15	75,0	4	20,0		100,0
9. Pork	2	10,0			15	75,0	3	15,0		100,0
10. Sheep Meat	20	100,0								100,0
11. Rabbit or guinea pig	18	90,0						2	10,0	100,0
12. Processed Meats (Sausage)	14	70,0			6	30,0	cc			100,0
13. Fish					14	70,0	6	30,0		100,0
14. Canned sardines or tuna	1	5,0			12	60,0	7	35,0		100,0

Source: Own research

The consumption of vegetables is shown in Table 3 where the frequency of ingestion is seen three to four times a week by only 25% for chard and spinach, 20% for lettuce and cucumber, and 15% for cabbage, cauliflower, broccoli, carrots, peppers, parsley or coriander. Vegetable intake is highest once or twice a week with percentages of 80 % for cabbage, cauliflower, broccoli, carrots, peppers; lettuce 70%, chard and spinach for 65% and peppers for 55%. The daily consumption of onions (68.2%), potatoes (65.8%), carrots (65%) and garlic (51%) is significant.

TABLE 3. FREQUENCY OF CONSUMPTION OF VEGETABLES

VEGETABLES	Daily		A week						%
	Number	%	1 to 2		3 to 4		5 or more		
			Number	%	Number	%	Number	%	
15. Swiss chard, spinach	4	9,7	13	65,0	5	25,0			100,0
16. Cabbage, Cauliflower, Broccoli	1	5,0	16	80,0	3	15,0			100,0
17. Lettuce	2	10,0	14	70,0	4	20,0			100,0
18. Tomato	15	36,5	7	35,0	2	10,0			100,0
19. Carrot	11	55,0	6	30,0	3	15,0			100,0
20. Cucumber			16	80,0	4	20,0			100,0

21. Peppers	6	30,0	11	55,0	3	15,0			100,0
22. Onion	28	68,2	3	15,0	1	5,0			100,0
23. Garlic	21	51,2	3	15,0	1	5,0			100,0
24. Parsley or cilantro	9	45,0	8	40,0	3	15,0			100,0
25. Potatoes	27	65,8	4	20,0	1	5,0	1	5,0	100,0

Source: Own research.

Strawberries are the fruit of choice for consumption, with 55% of the sample behaving between three and four times a week, followed by oranges and tangerines for 45%; apples, pears, watermelon and cantaloupe for 35%. In terms of daily consumption, bananas are the most accepted, with 24.3%, oranges and tangerines with 12.1%, so only 36.4% include fruits in their daily diet (Table 4).

TABLE 4. FREQUENCY OF FRUIT CONSUMPTION

FRUITS	Daily		A week						Per month		%
	Number	%	1 to 2		3 to 4		5 or more		1 to 2		
			Number	%	Number	%	Number	%	Number	%	
26. Orange or tangerines	5	12,1	9	45,0	9	45,0	1	5,0	1	5,0	100,0
27. Banana	10	24,3	7	35,0	3	15,0					100,0
28. Apple or Pear			13	65,0	7	35,0					100,0
29. Strawberries	1	2,4	9	45,0	11	55,0					100,0

										100,0
30. Watermelon			13	65,0	7	35,0				
31. Melon			12	60,0	7	35,0	1	5,0		100,0
32. Grapes	1	2,4	14	70,0	5	25,0	1	5,0		100,0

Source: Own research.

Table 5 shows the frequency of legumes and cereals, with rice and bread being the most consumed daily with 53.6%, followed by beans for 31.7% of the sample, with noodles accounting for 19.5%. It is the consumption of lentils three or four times a week by 50% of the sample, and noodles and oatmeal by 15% with equal weekly frequency, foods that are nevertheless ingestion by 70% and 75% respectively up to twice a week.

TABLE 5. FREQUENCY OF CONSUMPTION OF LEGUMES AND CEREALS

LEGUMES AND CEREALS	Daily		A week				Per month		%
	Number	%	1 to 2		3 to 4		1 to 2		
			Number	%	Number	%	Number	%	
33. Lentils	2	4,8	9	45,0	10	50,0	1	5,0	100,0
34. Fava beans	13	31,7	9	45,0	1	5,0			100,0
35. Bread	22	53,6	8	40,0					100,0
36. Rice	22	53,6	4	20,0	1	5,0			100,0
37. Noodles	8	19,5	14	70,0	3	15,0			100,0
38. Oatmeal	4	9,7	15	75,0	3	15,0			100,0

Source: Own research.

Regarding the consumption of oils and fats, 5% eat butter five or more times a week, and 45% do it between three or four times, or between one or two times a week, the same as for the ingestion of oils (animal or vegetable). Lard is part of the menu up to twice a week for 70% of the young women in the sample, and between three and four times for 30% of them.

It is customary for tortillas to be part of the usual menu, with preference being given to 65% of the sample who do so frequently three or four times a week, which is done with equal frequency for the ingestion of cookies by 40% of young women. The preference for eating cookies up to twice a week is given by 60.9%, while for cakes it is by 48.7%, and tortillas and chocolates by 36.5% of the sample.

Of the consumption of mayonnaise and tomato sauce, 35% of the sample were identified as frequently ingested three to four times a week, with jams and honey accounting for 30%. The consumption of spices and jams is done by 65% of the sample up to twice a week, while honey is consumed by 55%. Consumption of up to twice a week is 50% for mayonnaise and sugar; 25% of pregnant women consume potato chip snacks as often.

Daily salt consumption is made by 85.3% of the sample, while sugar consumption with equal frequency is made by 65.8%.

The daily consumption of natural fruit juices is made by 65% of the sample, and up to twice a week by 31.7% and the ingestion of bottled beverages is done by 41.4% of pregnant women with the same frequency, while by 15% it is done between three or four times a week. The preference for coffee is 29.2% up to twice a week, and 15% between three or four times a week.

According to anthropometric data, 70% of pregnant women were identified with a normal preconception body mass index (BMI), which is attributed to a correct diet during childhood and part of adolescence, followed by a preconception BMI of low weight in 20% of the sample, with 10% with overweight preconception BMI.

## DISCUSSION

According to the National Health and Nutrition Survey, which mentions that pregnant adolescents in the study, aged 12 to 19, report having their first pregnancy with 57% of the national level, these figures are mostly related to domestic violence and misuse of contraceptive methods, a result that has a similar behavior to the study that is presented.(2018)

The information presented is related to the study published by Cepeda Ruiz in pregnant adolescents treated at the IESS Basic Hospital of Esmeraldas, where of 48 adolescents between 14 and 16 years old, the majority are in the second and third trimester of pregnancy with 62%, which coincides with the study that is presented where pregnant women with the same trimesters of pregnancy predominate.(2021)

In relation to the above-mentioned data, reference is made to the research carried out by INEC, which states that in Ecuador the marital status of pregnant adolescents is described as 55.8% remain in a common-law union, 15.7% are married, 20.2% are single and 7.6% are separated. The data presented in this study are similar to the Ecuadorian national behavior regarding the marital status of pregnant adolescents in common-law unions, differing with respect to single mothers who also appear as the majority.(2022)

From the study that is presented, where it is appreciated that the consumption of fish is done between once or twice a week by 70% of the sample, and the rest do it with a frequency of three or more times, it is understood that there is a good food quality regarding the consumption of this element, taking into consideration Martínez García et al who affirm that this food favors intrauterine growth, as well as to reduce postpartum depressive and anxiety symptoms.(2020)

The results obtained from the intake of beef can be said to behave appropriately if they are associated with what Moraes et al expose in their research "Relationship between maternal consumption of beef during pregnancy and umbilical cord ferritin levels" regarding dietary consumption patterns during pregnancy. who state that the consumption of beef below 100g/day by pregnant women is associated with risks in myelination and neurocognitive development of the fetus. (2021)

On the other hand, the consumption of vegetables identified in the research, although they do not reflect very low percentages, does not take into account ideal values if the importance of these intakes during the pregnancy process is taken into account. Martínez García et al (2020) These foods affect the risk of preterm birth and cardiac malformations for the fetus.

Salazar-Rendón's study identifies a low consumption of foods rich in vitamins, similar to what is described in the study that is presented, there is evidence of an inadequate intake of fruits and vegetables, which affects low vitamin levels for pregnant women, in this



particular it is significantly influenced that the acquisition of these foods is especially associated with seasonal fruits due to their ease of economic access. Rodríguez-Leyton affirms that the consumption of these nutrients intervene in the human metabolism with specific incidence for the immune system. The study identifies a high percentage of adolescent pregnant women with daily consumption of sugar and bottled beverages. (2022)(2019)

## **CONCLUSIONS**

✓ In the 2022 period, adolescent pregnant women in Guanujo are predominantly identified with the indigenous ethnic group in the 16 to 17 age range and marital status of common-law union or single mothers who are in secondary school. In relation to the number of children, all of them are first-timers with a single pregnancy, being in the second or third trimester of gestation. Regarding economic income, the availability of up to 50 dollars per month prevails.

✓ The eating habits identified are regular and in correspondence to the culture of the region, show a balance in the intake of nutrients and allow them to have a weight gain according to their requirements, which is evidenced in the predominance of the normal BMI found; However, a high percentage of adolescent pregnant women with daily consumption of sugar and bottled beverages is identified, as well as values that are not suitable for the consumption of vegetables and foods rich in vitamins.

## **AUTHORS' CONTRIBUTION:**

Janine Maribel Taco Vega, María Rosa Mas Camacho, Mery Rocío Rea Guamán, Silvana Ximena López Paredes, contributed jointly to the idea and design of the study.

Janine Maribel Taco Vega, María Rosa Mas Camacho, Mery Rocío Rea Guamán, Silvana Ximena López Paredes, participated in the data collection, analysis and interpretation of the data.

Janine Maribel Taco Vega, María Rosa Mas Camacho, Mery Rocío Rea Guamán, Silvana Ximena López Paredes, worked together in the writing of the manuscript, as well as in the critical review of its substantial intellectual content, and reviewed the final version that is submitted for publication, giving their approval for it.

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