Dietary behaviors of patients with NCDs who are attending an integrated clinic in southern Santa Catarina

Comportamentos alimentares de portadores de DCNT que frequentam uma clínica integrada no extremo sul catarinense

Comportamientos alimentarios de pacientes con ENT que asisten a una clínica integrada en el extremo sur de Santa Catarina

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REVISA

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RESUMO
Objetivo: verificar os comportamentos alimentares de indivíduos com doenças crônicas não transmissíveis. Método: Estudo descritivo, transversal, quantitativo com coleta de dados primários. Resultados: Sobre os comportamentos alimentares 48,6% (36) relataram realizar refeições em frente às telas, a maioria executa café da manhã, almoço e jantar e grande parte do grupo expôs consumir alimentos protetores e ultraprocessados. Conclusão: Os comportamentos alimentares encontrados entres os indivíduos com DCNT foram em geral desfavoráveis, mesmo com uma divisão adequada e inclusão de alguns bons alimentos, houve prevalência no consumo de biscoitos recheados, doces e bebidas adoçadas, além do péssimo hábito de se alimentar em frente a televisão.
Descritores: Comportamento alimentar; DCNT; Nutrição.

ABSTRACT
Objective: to assess the dietary behaviors of individuals with chronic non-communicable diseases. Method: The study followed a descriptive, cross-sectional, quantitative approach with primary data collection. Results: The results revealed that 48.6% (36) reported having meals in front of screens, and the majority of the participants had breakfast, lunch, and dinner. A significant portion of the group reported consuming both protective foods and ultra-processed foods. Conclusion: In conclusion, the dietary behaviors observed among individuals with NCDs were generally unfavorable. Despite proper meal distribution and the inclusion of some healthy foods, there was a prevalence of consumption of filled cookies, sweets, and sugary beverages, along with the detrimental habit of eating in front of the television.
Descriptors: Dietary behavior; NCDs; Nutrition.

RESUMEN
Objetivo: verificar los comportamientos alimentarios de individuos con enfermedades crónicas no transmisibles que asisten a una clínica integrada en el extremo sur de Santa Catarina. Método: Se llevó a cabo un estudio descriptivo, transversal y cuantitativo con recolección de datos primarios. Resultados: En cuanto a los comportamientos alimentarios, el 48,6% (36) informó realizar comidas frente a las pantallas, y la mayoría de los participantes desayunaban, almorzaban y cenaban. Además, una parte significativa del grupo declaró consumir alimentos protectores y ultraprocesados. Conclusión: Los comportamientos alimentarios encontrados entre los individuos con enfermedades crónicas no transmisibles fueron generalmente desfavorables. A pesar de una adecuada distribución de las comidas e inclusión de algunos alimentos saludables, hubo una prevalencia en el consumo de galletas rellenas, dulces y bebidas azucaradas, además del mal hábito de comer frente al televisor.
Descriptores: Comportamiento alimentario; ENT; Nutrición.

ORIGINAL

Introduction

Chronic Non-Communicable Diseases comprise a set of disorders characterized by an uncertain etiology and multiple risk factors. This group of diseases, such as systemic arterial hypertension and type 2 diabetes mellitus, are the authors of complications associated with high risk of mortality, exhibiting a serious problem for global health.[1] The administration of NCDs is done through changes in the habits of individuals, guidance about the treatment and knowledge of their possible complications, being able to improve the quality and life expectancy of their carriers.[2]

The authors state that currently, the accumulation of abdominal fat has been identified as one of the main responsible for metabolic disorders and risks of cardiovascular diseases such as dyslipidemias, arterial hypertension and type 2 diabetes mellitus. It is known that this excess weight, mainly due to inappropriate eating behaviors, is a risk factor for chronic non-communicable diseases, diseases that represent in Brazil the main cause of recorded deaths.[3]

The nutritional transition resulting from urbanization and industrialization carried out in this century point to a Westernized diet as the main author in the growth of overweight rates. This contemporary diet has high caloric intake, with an increase in the intake of meat, milk and derivatives (rich in fats) and a reduction in the consumption of fruits, cereals, vegetables and legumes, these dietary characteristics associated with physical inactivity result in weight gain.[3] The concern about these practices is essential, since the weight disorder is fundamental in the appearance of NCDs.[4]

The fall in the quality of the Brazilian dietary pattern is a reflection of globalization, and can be observed at all socioeconomic levels, bringing with it transformations in the health status of the population. The excessive consumption of ultra-processed foods grows and is one of the main reasons that explains the worsening in the quality of the diet. Note the decline in the purchase of in natura or minimally processed foods and increase in the consumption of calories available in industrialized and ready-to-eat products.[5]

Regarding the binomial diet and physical activity, investigations indicate that individuals with CNCD have the so-called contemporary Western lifestyle. In it, the diet is based on ultra-processed foods and the priority is the least time spent in the production of meals. Therefore, fast food chains have increasing relevance in terms of food, while the habit of preparing homemade food, a good food source, ends up being abandoned.[4]

The authors also state that the change in the occupational scheme by sectors and the reduction in physical effort in the work processes harm the situation of sedentary lifestyle. Physical inactivity occurs not only due to the lack of scheduled exercises, but also to other modifications in daily activities. Examples of this are leisure, which becomes prolonged periods in front of screens, domestic activities, which were previously performed by man and currently use equipment and displacement, in which there is the majority use of automobiles.[4]

Therefore, it is essential to include in the fight against chronic non-communicable diseases changes in the lifestyle of individuals. Therapeutic

treatment includes changes in health-related behaviors, such as dietary control, changes in conduct, psychological follow-up, if necessary, and medical mediations. Multiprofessional outpatient control is an effective strategy in the monitoring of NCDs, because the interventions passed on as proposed in an individualized way and the bond between team and patient provide direct benefits to the treatment, among them the increase in the individual's commitment.[6]

Based on what has been presented so far, the objective of the present study was to show through a research the eating behaviors of patients with NCDs who attend an integrated clinic in the extreme south of Santa Catarina.

Method

The research qualified as a descriptive, cross-sectional, quantitative study with primary data collection. A telephone interview was conducted to search for data related to eating behaviors of individuals with NCDs. The population consisted of individuals over 18 years of age and under 60 years of age, with NCDs. The sample was non-probabilistic, for the convenience of the researchers, initially consisting of the first 100 medical records of the integrated clinics of endocrinology and cardiology. Of the 100 medical records, telephone contact was made later and 74 individuals agreed to participate in the research and agreed with the ICF. The data collected made it possible to draw parallels with the prevalence of chronic non-communicable diseases surveyed.

A food survey method was used through the SISVAN food consumption markers form, seeking to identify how often NCD patients consume food. The project was submitted to the Research Ethics Committee of the Universidade do Extremo Sul Catarinense, in accordance with Resolution 466/12 of the National Health Council (CNS) and was approved with Certificate of Presentation of Ethical Appreciation CAAE: 64172222.0.0000.0119 and Opinion Number: 5.714.362.

Results and Discussion

Obesity, a disease considered epidemic, has had great repercussions on the world stage. It is known that in 98% of cases obesity has an exogenous cause, that is, derived from an imbalance between energy intake and consumption. With an increasing number of the disease and other associated pathologies, it is important to visualize it as the main cause of NCDs.7

As for table 1, among the adults interviewed, only 2.7% (n=2) can be seen in eutrophy, no case of underweight and the remainder is divided between overweight (n=27) and obesity (n=45), divided between grade I, II and III.

Table 1 - Distribution of the Nutritional Status of adults participating in the research in an integrated clinic in the extreme South of Santa Catarina. St. Catherine, 2023.

Nutritional Diagnosis	Female		Diagnóstico Nutricional		Total	
	n	%	n	%	n	%
Low Weight	-	-	-	-	-	-
Eutrophy	1	1,9	1	4,3	2	2,7
Overweight	18	35,3	9	39,2	27	36,5
Obesity Grade I	12	23,6	10	43,6	22	29,7
Obesity Grade II	13	25,5	1	4,3	14	18,9
Obesity Grade III	7	13,7	2	8,6	9	12,2

As for table 2, it is noteworthy that of the group with obesity only 20% (n=9) have supper, in addition 71.1% (n=32) of this same group showed consumption of stuffed cookies, sweets or treats and 68.9% (n=31) ingest sweetened beverages.

In this item to verify the relationship between obesity and dietary factors, it was necessary to group the degrees of obesity in one variable.

Table 2 – Distribution of food consumption and obesity of adults participating in the research in an integrated clinic in the extreme south of Santa Catarina. St. Catherine, 2023.

Consumption	Obesity				*P Value
	No (n=29)		Yes (n=45)		
	n	%	n	%	
Have meals watching TV					
Yes	14	48,3	22	48,9	0,959
No	15	51,7	23	51,1	
Breakfast					
Yes	19	65,5	41	91,1	0,006*
No	10	34,5	4	8,9	
Morning snack					
Yes	9	31,0	18	40,0	0,434
No	20	68,9	27	60,0	
Lunch					
Yes	26	89,6	45	100,0	0,028*

No	3	10,4	-	-	
Afternoon snack					
Yes	26	89,6	36	80,0	0,271
No	3	10,4	9	20,0	
Dinner					
Yes	24	82,7	39	86,7	0,645
No	5	17,3	6	13,3	
Supper					
Yes	13	44,8	9	20,0	0,026*
No	16	55,2	35	80,0	
Consumed beans					
Yes	19	65,5	32	71,1	0,612
No	10	34,5	13	28,9	
Fresh fruit (do not consider fruit juice)					
Yes	21	72,4	37	82,2	0,317
No	8	27,6	8	17,8	
Vegetables and/or legumes (do not consider potatoes, cassava, cassava, cassava, cará and yams)					
Yes	21	72,4	35	77,8	0,600
No	8	27,6	10	22,2	
Hamburger and/or sausages (ham, mortadella, salami, sausage, sausage)					
Yes	13	44,8	23	48,9	0,598
No	16	55,2	22	51,1	
Sweetened beverages (soda, box juice, juice powder, coconut water box, guarana/gooseberry syrups, fruit juice with added sugar)					
Yes	18	62,1	31	68,9	0,545
No	11	37,9	14	31,1	
Instant noodles, packaged snacks or savory cookies					
Yes	9	31,0	13	28,9	0,844
No	20	68,9	32	71,1	

Stuffed biscuits, sweets or treats (candies, lollipops, gum, caramels, gelatin)					
Yes	20	31,0	32	71,1	0,844
No	9	68,9	13	28,9	

*Pearson's chi-square test. p-0.05.

Obesity is linked to eating habits, which are associated with cultural, socioeconomic and psychological aspects that encompass the environment in which the person is inserted. In addition, characteristics of eating habits are used in studies to qualitatively and quantitatively evaluate the human diet, with the purpose of analyzing nutrient intake and its relationship with morbidities.[8]

Table 3 shows that 48.9% of the adults with obesity interviewed eat meals in front of screens. It is worth noting that the difference between the group with obesity and without was only 0.6%. According to the guidance of the SISVAN food consumption markers, carried out by the Ministry of Health, it is suggested the consumption of food regularly, in quiet environments, without speed and without principles that take the focus, avoiding the compromise of the biological mechanisms that signal satiety.[9]

Among the factors in which the practice of watching television can affect weight/nutritional status are physical inactivity and higher consumption of processed foods when eating in front of screens. Another factor observed is that the distraction provoked interferes with the physiological signals of hunger and satiety, and leads to inadequate food choices, with exaggerated consumption of products that have high calorie content and low nutrient content.[10]

Regarding the consumption of beans, the present study showed that 71.1% of the interviewees have the habit of consuming it, thus being a positive factor. Beans are a type of legume rich in protein, dietary fiber, B vitamins, iron, calcium and zinc.[9] In a study[11] it was seen that beans, being one of the foods in the diet of the Brazilian population with a high amount of dietary fiber, when opposed to other foods, have relevance in a healthy food consumption. In addition, there is evidence that the consumption of legumes is associated with protective effects, especially for cardiovascular diseases.

In the present study, the population studied reported eating at least three meals, dividing them between breakfast 91.1% (n=41), lunch 100% (n=45) and dinner 86.7% (n=39). These are considered the three main meals presented by the Food Guide for the Brazilian population, and can be complemented by small snacks. The results of our study pointed positively about the fractionation of meals, which may contribute to a greater insertion of healthy foods and ensure a nutritionally favorable lifestyle.[12]

The consumption of fruits and vegetables is considered a marker that signals healthy eating, and may reduce the risk of deaths caused by NCDs, a drop that occurs due to the vitamins, minerals, fiber and low energy density that the group provides. These foods help in the formation of more complete, varied, colorful and attractive meals, with less presence of ultra-processed foods, as recommended by the Food Guide for the Brazilian Population.[13]

A research[14] has observed that the consumption of foods rich in sugars and fats are inversely related to that of fruits, vegetables and greens. In our collection, 71.1% of people reported consuming stuffed cookies, sweets or treats and 68.9% sweetened beverages, an alarming factor for NCDs. Analyzing the household availability of food, it was found that there was a 400% increase in the consumption of industrialized products and a persistence in sugar intake. [15]

Ultra-processed foods are, in general, made by large industries, which include in their manufacture several stages and processing techniques, inserting ingredients such as salt, sugars, oils and fats in their preparation.[9] Researchers[16] highlight that the increase in energy in ultra-processed products causes health problems associated with NCDs, having to be avoided mainly by people with diseases of this group.

In general, NCDs develop over the years and come from inappropriate habits. Foods rich in fats and simple sugars, for example, contribute to overweight and obesity and are risk factors for the development of T2DM and SAH, illustrating the relationship between dietary factors and NCDs.[17]

In this item, to verify the dietary factors related to NCDs, we used the forms to evaluate food consumption markers that indicate the evaluation of foods consumed on the previous day, which mitigates possible memory biases, that is, forgetfulness in relation to the food performed.[9] In table[3], both men and women have the habit of eating meals watching TV, using a computer and/or cell phone in 48.6% (n=36).

Table 3 – Habit of eating meals on TV, using a computer and/or cell phone of adults participating in the research in an integrated clinic in the extreme south of Santa Catarina.

Habit when eating meals watching TV	**Female** (n=51)		**Male** (n=23)		**Total** (n=74)	
	n	%	n	%	n	%
Yes	25	49,0	11	47.8	36	48,6
No	26	51,0	12	52,2	38	51,4

The habit of watching TV has shown great influence on the food consumption of individuals, it increases caloric intake by promoting inattentive consumption of food, without attention to the quantity and quality ingested. This practice contributes to a disconnection of the physiological signals of hunger and satiety and stimulates the consumption of ultra-processed foods (UPA), which are nutritionally inadequate, usually consumed in excess and are associated 21% with excessive weight gain and the development of NCDs.[18]

In a cross-sectional study[19], done in 2015 that observed higher consumption of refined foods among those who watch more TV, in addition they saw lower consumption of vegetables among women who spend more time in front of screens. It was then possible to visualize the relationship between the habit of watching television and food inadequacy. In our collection, about half of the interviewed group eats in front of screens, a worrying fact since they have DM2 and/or SAH and need an adequate diet to control these NCDs.

In a study[20], it was observed that there is a lower frequency of indicators of healthy food consumption among people who watch TV for more than three hours/day than those who do not have this habit. In addition, it showed that people who eat watching television do not pay attention to what they eat, do so in greater quantities and do not chew properly, increasing caloric consumption consequently.

The Ministry of Health advises that you eat regularly, in quiet environments, without haste and without factors that take away your focus, and, whenever possible, in pleasant company. Not stopping to eat meals with tranquility can compromise the biological mechanisms that signal satiety, increasing the amount ingested and, consequently, increasing caloric consumption and weight. That is why the habit of eating in front of screens should be avoided.[9]

Regarding the distribution of meals throughout the previous day, it was observed in Table 4 that most of the adults in the research perform the 3 main meals such as breakfast, lunch and dinner, 81.1% (n=60), 95.9% (n=71) and 85.1% (n=63) respectively.

Table 4 – Distribution of meals taken during the previous day of adults participating in the research in an integrated clinic in the extreme south of Santa Catarina.

What meals do you eat throughout the day?	Female		Male		Total	
	n = 51	%	n = 23	%	n = 74	%
Breakfast	41	80,4	19	82,6	60	81,1
Morning snack	19	37,2	8	34,8	27	36,5
Lunch	49	96,0	22	95,6	71	95,9
Afternoon snack	43	84,3	19	82,6	62	83,8
Dinner	41	80,4	22	95,6	63	85,1
Supper	12	23,5	10	43,5	22	29,7

Recognizing the importance of food for the well-being of the individual, the Food Guide for the Brazilian Population considers healthy the meal prepared with varied foods, with appropriate types and quantity. It is also recommended at least three meals a day: breakfast, lunch and dinner.[21] In the present study, it is positively seen that most of the interviewees ate ate the three main meals. The regular consumption of meals has been allied to a good state of health, especially in the prevention of overweight, obesity and other metabolic risk factors.[17]

Regarding the fractionation of meals, the Ministry of Health also recommends, in the form of a nutritional guideline contained in the "Ten Steps to Healthy Eating", the realization of the three daily meals, including, however, snacks interspersing them. There are indications that a greater distribution of the diet helps in the control of serum glucose concentration, cholesterol and in the maintenance of adequate body weight.[12]

The authors also state that the lower dietary fractionation and the greater volume of food consumed in the main meals demarcate an increase in the stock of body fat, this occurs as a result of the greater absorption of glucose and greater lipogenesis contributing to a worse state of health.[12] There are indications of the positive impact of dietary fractionation on health, however, they are only observed when other healthy eating habits are seen, such as energy restriction and the inclusion of healthy foods with a large supply of micronutrients in meals.[22]

Generally, people with obesity do not usually practice fractionation of meals, choosing to perform the three main meals with high caloric content. However, our research results revealed a different situation, as 83.8% (n=62) included afternoon coffee in the middle of the main meals. This difference can be attributed to the orientations that the interviewees received when treating the existing NCDs, since fractionation of meals is one of them.

Table 5 presents the distribution of food consumption for the previous day according to SISVAN markers, which observes the consumption of protective and ultra-processed foods between females and males. In general, there is a good consumption of protective foods such as beans, fruits, vegetables and legumes, but it is also evident the consumption of ultra-processed foods, more specifically sweetened beverages and stuffed cookies, sweets and sweets, 66.2% and 70.3% respectively.

Table 5 – Distribution of food consumption on the previous day by SISVAN markers, by sex, of adults participating in the research in an integrated clinic in the extreme south of Santa Catarina.

Consumption the day before	Female		Male		Total	
	n=51	%	n=23	%	n=74	%
Bean	34	66,7	17	73,9	50	67,5
Fresh fruit (do not consider fruit juice)	40	78,4	18	78,2	58	78,4
Vegetables and/or legumes (do not consider potatoes, cassava, cassava, cassava, cará and yams)	39	76,5	19	82,6	56	75,7
Hamburger and/or sausages (ham, mortadella, salami, sausage, sausage)	22	43,1	14	27,4	36	48,6
Sweetened beverages (soda, box juice, juice powder, box coconut water, guarana/gooseberry syrups, fruit juice with added sugar)	32	62,7	17	73,9	49	**66,2**
Instant noodles, packaged snacks or savory cookies	13	25,5	9	39,1	22	29,7
Stuffed biscuits, sweets or treats (candies, lollipops, gum, caramel, gelatin)	38	74,5	14	27,4	52	**70,3**

An adequate and healthy diet is guided mainly by the origin of the food ingested and plays a crucial role in promoting health and well-being. It then becomes essential to consume natural foods such as beans, fruits and vegetables, which are traditionally valued for offering significant protection against disease. These foods, rich in fiber and essential nutrients, in addition to having low energy density, which contributes to the preservation of health and weight maintenance, are considered protective foods.[23]

In contrast, growing evidence has shown the relationship between chronic diseases and consumption of unhealthy foods, such as ultra-processed foods. Examples include cookies, candies, treats, packaged snacks, and soft drinks, products with high energy density, high in sugar and sodium. The habit of replacing meals with snacks has increased and with this consequently there is excessive consumption of salt, these customs have a negative effect, especially for patients with NCDs, and justify the high number of overweight and chronic conditions.[23]

In a National Health Survey conducted by IBGE[24] in 2019, it was seen that in Brazil 9.2% of people aged 18 years or older reported regularly consuming soft drinks, being more frequent among men. In our data collection, the same male prevalence was found regarding the consumption of sweetened beverages, an aspect that influences overweight and is a risk factor for chronic non-communicable diseases.

Health research released in 2020 concluded that the consumption of ultra-processed foods increases the risk of obesity by 26% and raises the threat of overweight and cardiovascular disease. The role of appropriate food choices is therefore extremely important, so the Food Guide guides the consumption of in natura, minimally processed foods and culinary preparations to the detriment of ultra-processed ones, increasing the intake of vitamins, minerals and other nutrients fundamental for the proper functioning of the body, avoiding diseases.[23]

Conclusion

Environmental factors are the main causes of chronic non-communicable diseases, so maintaining positive practices is paramount to maintaining human health. The habit of eating in front of screens, the consumption of ultra-processed foods rich in fats and sugars, for example, are habits that compromise the well-being of individuals.

The eating behaviors of the CNCD patients interviewed include the intake of the three main meals, the consumption of both protective foods, such as beans and vegetables, and ultra-processed foods, such as sweetened beverages and stuffed cookies, and the habit of eating in front of screens by almost half of the group is also observed, a behavior that directly affects the quantity and quality of the food consumed.

Therefore, the care about food is highlighted, especially by the group with NCDs, because among the risk factors of these diseases, eating behaviors have relevance. To treat the disease and improve quality of life, it is suggested the multidisciplinary follow-up of medical specialists, to control medications,

nutritionist, to correct inadequate eating habits, and other health professionals who assist in the treatment of obesity and its adjacent diseases.

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