Eating habits and nutritional status of alcohol users admitted to a hospital unit

Hábitos alimentares e estado nutricional de alcoolistas internados em uma unidade hospitalar

DOI:10.34117/bjdv7n3-720

Recebimento dos originais: 08/02/2021
Aceitação para publicação: 25/03/2021

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ABSTRACT

Aims: To verify eating habits prior to hospitalization and the nutritional status of alcoholic patients during the period of abstinence

Methods: This is a longitudinal, quantitative study, with data collection at hospitalization and 15 days after the first evaluation. Anthropometric measures were taken and a food frequency questionnaire was applied to assess eating habits prior to hospitalization.

Results: Twenty-six alcoholics participated in the study, aged 49.3 ± 7.3 years. At hospitalization, 65% of individuals were overweight or obese and, after treatment, had significantly increased weight (2.7 ± 2.1 kg; $P<0.001$), body mass index and waist circumference ($P<0.05$). Regarding the food frequency data, high consumption of simple carbohydrates and low protein were identified, with the following frequency of daily

consumption: milk (23.1% of patients), cheese (15.4%), eggs (19.2) and meat (7.6%). Half of the individuals consumed sausages almost daily. The daily consumption of vegetables (30.7%) and fruits (42.3%) were below recommendations.
Conclusions: The significant increase in weight, body mass index and waist circumference after treatment and the inadequate eating habits, when compared to recommendations, demonstrated a necessity for interventions in these patients' lifestyle in order to avoid the development of chronic non-communicable diseases.

Keywords: Alcoholism, Anthropometry, Body composition, Food consumption.

RESUMO
Objetivos: Verificar os hábitos alimentares anteriores à internação hospitalar e o estado nutricional de pacientes alcoolistas durante o período de abstinência. Metodos: Estudo longitudinal, quantitativo, com coleta de dados na internação e 15 dias após a primeira avaliação. Foram realizadas medidas antropométricas e aplicado questionário de frequência alimentar para avaliar hábitos alimentares anteriores à internação. Resultados: Participaram do estudo 26 alcoolistas, com idade de 49,3 ± 7,3 anos. Na internação, 65% dos indivíduos apresentavam sobrepeso ou obesidade e, após o tratamento, apresentaram aumento significativo de peso (2,7 ± 2,1 kg; P <0,001), índice de massa corporal e circunferência abdominal (P<0,05). Em relação aos dados de frequência alimentar, identificou-se alto consumo de carboidratos simples e baixo teor de proteína, com a seguinte frequência de consumo diário: leite (23,1% dos pacientes), queijo (15,4%), ovos (19,2) e carnes (7,6%). Metade dos indivíduos consumia embutidos quase diariamente. O consumo diário de hortaliças (30,7%) e frutas (42,3%) foi abaixo do recomendado. Conclusões: O aumento significativo do peso corporal, índice de massa corporal e circunferência da cintura após o tratamento e os hábitos alimentares inadequados, quando comparados às recomendações, demonstraram a necessidade de intervenções no estilo de vida desses pacientes, a fim de evitar o desenvolvimento de doenças crônicas não transmissíveis.

Palavras-chave: Alcoolismo, Consumo Alimentar, Antropometria, Composição Corporal.

1 INTRODUCTION

The use of psychoactive substances (PAS) is common in several populations and has both historical and cultural origins. One of the PAS, generally called "drugs", is alcohol [1]. Alcohol abuse / use can cause several kinds of damage to the body, such as neurological, cardiovascular, gastrointestinal, liver diseases, and some types of cancer [2,3]. In addition, changes in eating habits and nutritional status are also observed in this population [4–7].

Ethanol is a readily oxidizable substrate that is often present in the population's diet, representing the most widely and abusively used PAS [8]. The alcoholic beverages consumption is a social behavior inserted in the context of values, norms and attitudes throughout human history [1,9]. Because it is considered a legal drug, alcohol is socially accepted by a large proportion of the population [1]. Moreover, drinking is so intimately integrated into the country's culture that it is considered a normal way of socializing,

resulting in alcohol being the most commonly consumed drug by Brazilians and, consequently, causing harms when consumed in excess [9].

Because it has a high energy density (7.1 kcal / g), it is possible to assume that the usual excessive alcohol consumption, associated with food intake, increases the risk of increasing body weight and fat mass and, consequently, the development of obesity [7,8,10–12].

Among the various pathologies that are associated with excessive and chronic alcohol intake, alcoholic liver disease stands out and is considered an important public health problem, since alcohol is so widely used by the population [13]. Alcoholic liver disease is a lesion characterized by several liver changes that arise over years of alcohol abuse; it is a multifactorial disease with pathologies ranging from steatosis to progressive fibrosis and cirrhosis [13,14].

Despite its high-energy content, alcohol can be associated with malnutrition. Calories from alcohol are what is called “empty calories”, which means that they are deficient in nutrients like proteins, vitamins and minerals [7,12,15]. In addition, the body is inefficient in how it utilizes ethanol because the Microsomal Ethanol Oxidizing System (MEOS) is activated [12,16].

Ethanol is detoxified and eliminated, mainly in the liver, through metabolic reactions. In the first reaction, ethanol is catalyzed by the enzyme alcohol dehydrogenase. From there, there are two more potential metabolic routes, the MEOS, which expresses the CYP2E1 enzyme, and the catalase route [17]. MEOS is a pathway of ethanol oxidation that depends on cytochrome P450 to generate acetaldehyde. This pathway is more developed in the hepatocytes of alcoholics and becomes the main route of ethanol metabolism for them. However, it has significant energy requirements, and in other words, it is a reaction that consumes energy instead of providing it. In addition to acetaldehyde, this metabolic pathway also produces reactive oxygen species, which increase the risk of tissue damage due to oxidative stress [12,16,17].

Alcohol-dependent individuals prioritize substance use over food consumption, causing several important nutritional deficiencies. Micronutrient deficiency is identified not only in patients with established liver disease caused by alcohol but also in alcoholics without evidence of the disease [18]. Insufficient food consumption is a risk factor for malnutrition and micronutrient deficiencies, in the same way that excess food consumption is related to the development of obesity and its comorbidities [10,19,20].

Alcohol intake alters the body's use of nutrients and, consequently, the individual's nutritional status. These changes may be related to the pathologies associated with this substance abuse [21]. The main deficiencies observed in this population are for Vitamin B complex (especially thiamine, folate and pyridoxine), vitamins A and E, and minerals such as copper, zinc and selenium [5]. Among the consequences of these deficiencies are anemia, Wernicke-Korsakoff syndrome, hepatic steatosis, immunosuppression, and others [18].

Changes in eating patterns, overweight and obesity are observed in people during recovery and treatment for substance use disorders (SUD) [7,22,23]. The beginning of treatment for SUD, including alcohol, is the period in which the greatest weight gain occurs. After a period of food restriction or inadequate food intake during PAS use, energy deficiency can be quickly restored with proper nutrition and, thus, weight gain occurs. This weight gain can overcome the weight lost during the period of active substance use [6,24]. Considering this, the objective of the study was to verify eating habits prior to hospitalization and the nutritional status of alcoholic patients during the period of abstinence.

2 METHODS

This was a longitudinal, quantitative study, with data collection at hospitalization and 15 days after the first evaluation. Men aged 18 to 60 years who declared alcohol to be the main drug related to their SUD were included. Alcoholic patients who used tobacco were included in the study. These, in turn, used nicotine replacement therapy through skin patches. On the other hand, patients using crack, cocaine and marijuana were excluded, as well as those who did not have the clinical and / or cognitive conditions to participate in the study and / or to respond to questionnaires.

To assess nutritional status, weight and height measurements were performed to calculate the Body Mass Index (BMI). Waist circumference (WC) was measured with an inelastic tape, Cescorf®, recording the midpoint between the last costal arch and the iliac crest. Anthropometric measurements were performed within 48 hours after hospitalization and 15 days after the first evaluation.

The Nutritional Risk Screening (NRS 2002) instrument was used to screen and identify whether or not the individual was at risk of malnutrition, depending on pathological condition, BMI, weight loss and disease severity.

Body composition was evaluated by electrical bioimpedance (BIA, Byodinamics®, model 450). Phase angle, body capacitance, mass distribution and water compartments

were measured. The evaluation was performed with the patient lying down with his legs and arms parallel to the body and away from the trunk. The electrodes were placed in recommended locations, according to the manufacturer's guidance: one electrode on the dorsal surface of the right wrist; a second electrode on the third metacarpal; a third electrode on the anterior surface of the right ankle between the prominent portions of the bones; and a fourth electrode placed on the dorsal surface of the third metatarsus. All procedures were performed by a trained professional.

The research instrument for assessing food consumption was a validated Food Frequency Questionnaire (FFQ) [19]. It was administered within two days after hospital admission.

This research is in accordance with the ethical concepts of anonymity, voluntary participation, awareness of the research objectives, care for the physical, psychological and social integrity of the participants, in accordance with the provisions of Resolution Nº 466/12 of the National Council Health and in accordance with CNS Resolution Nº 510 of 2016, on research involving human beings. It was approved by the Institutional Research Ethics Committee (CAAE nº 80099317.6.0000.5327), all volunteers included in the study were previously informed and clarified about the study and signed the informed consent form, which was printed in two copies, one delivered to the patient and the other to the researcher.

Descriptive statistics and multivariate data analysis were performed to interpret the variables simultaneously and analyze their dependency relationships. Levene's test was used to assess normality, Student's t-test was used for parametric variables and McNemar test analyzed the difference in the classification of nutritional risk (assessed by NRS 2002). A significance level of 5% ($p<0.05$) and a 95% confidence interval were established. The data were analyzed using the statistical program Statistical Package for the Social Sciences version 21.0.

3 RESULTS

Sociodemographic characteristics

The sample consisted of 26 alcoholics undergoing treatment in a hospital unit for addiction. The average age of the participants was 49.3 ± 7.3 years. For occupation, 30.8% of individuals were unemployed or receiving benefits (19.2%) during the survey period. It

was observed that 22 individuals (84.6%) were white and half were single and had incomplete elementary education (Table 1).

Table 1 Sociodemographic characteristics of alcohol users (n=26)

Variáveis	n (%)
Age years mean (SD)	49.3 (7.3)
Etnicity	
Caucasian	22 (84.6)
Black	4 (15.4)
Occupation	
Unemployed	8 (30.8)
In benefit	5 (19.2)
Concierge	3 (11.5)
Construction worker	3 (11.5)
Therapeutic community monitor	1 (3.8)
Waiter	1 (3.8)
Salesman	1 (3.8)
Caretaker	1 (3.8)
Administrative assistant	1 (3.8)
Retired	1 (3.8)
Teacher	1 (3.8)
Marital status	
Single	13 (50.0)
Married	9 (34.6)
Divorced	3 (11.5)
Widower	1 (38)
Education	
Incomplete elementary school	13 (50.0)
Complete elementary school	3 (11.5)
Incomplete high school	2 (7.7)
Complete high school	4 (15.4)
Incomplete higher education	1 (3.8)
Complete higher education	3 (11.5)

SD: standard deviation.

Characteristics Related to Alcohol and Tobacco Use

The type of alcoholic beverage most consumed by users was “cachaça”, a sugarcane liquor (84.6%). The majority reported daily consumption (92.3%) with 42.3% and 26.9% consuming 1,000 mL and 2,000 mL, respectively. The tobacco use concomitant with alcohol was reported by 15 (57.7%) individuals (Table 2).

Table 2 Characteristics related to alcohol and tobacco use (n=26)

Variables	n (%)
Alcoholic beverage type	
Sugarcane liquor	22 (84.6)
Vodka	1 (3.8)
Beer	1 (3.8)
Multiple	2 (7.7)
Frequency	
Daily	24 (92.3)
4 times a week	2 (7.7)
Amount (ml)	
500	3 (11.5)
1,000	11 (42.3)
1,500	2 (7.7)
2,000	7 (26.9)
3,000	2 (7.7)
4,000	1 (3.8)
Ethanol (g/day), mean (SD)	464.7 (241.4)
Associated drugs	
Alcohol and tobacco	15 (57.7)

mL: milliliters; g: grams; SD: Standard Deviation

Nutritional Evaluation

Most patients (53.8%) were overweight at hospitalization and this percentage remained the same after 15 days of the first evaluation (Table 3). However, the number of obese patients increased in the second evaluation, showing a significant difference between the initial and final BMI ($p < 0.05$). Patients' body composition via BIA demonstrated a significant increase in lean mass ($p < 0.05$).

Table 3 Nutritional assessment of alcohol users (n=26)

Variables	Reference value	Initial	Final	*P* value (<0.05)
Body weight (Kg)	-	74.2 ± 12.8	76.9 ± 12	0.000
Body mass index (BMI)				
Malnutrition	<18.5	1 (3.8%)	0	-
Eutrophic	18.5 – 24.9	8 (30.8%)	8 (30.8%)	-
Overweight	25 – 29.9	14 (53.8%)	14 (53.8%)	-
Obesity	≥ 30	3 (11.5%)	4 (15.4%)	-
*** BMI difference**	-	25.8 ± 3.7	26.8 ± 3.5	0.000
	-			
Waist circumference				
With Risk	≥ 94.0	14(53.8%)	16 (61.5%)	-

Without risk	-	12 (46.2%)	10 (38.5%)	-
*** Difference in waist circumference**	-	93.4 ± 7.9	95.4 ± 7.9	0.000
NRS2002 Classification				
With Risk	-	9 (34.6%)	1 (3.8%)	
Without risk	-	17 (65.4%)	25 (96.2%)	0.008[a]
Lean mass (Kg)	-	53.8 ± 9.4	56.8 ± 8.4	0.000
Fat mass (Kg)	-	20.6 ± 5.5	20.5 ± 5.3	0.785
Phase angle	-	6.9 ± 0.8	6.9 ± 0.7	0.814
Total body water (L)	-	38.8 ± 6.8	40.6 ± 6.4	0.000

Kg: kilograms; L: Liters; BMI = Kg/m^2: Body mass index, was classified according to the cutoff points described by the WHO (1995).
The Waist circumference was classified according to the cutoff points described by WHO (WHO 1998).
Student's t-test was used and considered a significant difference for the $P<0.05$.
[a]To assess nutritional risk (NRS2002) the Mcnemar test was used.
*The differences in BMI and waist circumference were obtained by subtracting the initial data from the final data.

Food Consumption Frequency

Reduced dairy foods intake was identified, such as milk and cheese, representing 46.2% and 30.8% reductions, respectively, consumed by most individuals 2 to 4 times a week (Table 4). Protein consumption was an inadequate pattern, where daily consumption of eggs and meat represented, respectively, 19.2% and 7.6% of total daily consumption. In contrast, the consumption of sausages was considered usual in 50% of the population, who reported consuming it five times a week. The frequency of oil intake, especially margarine (data not shown in the table), was considered high, as 73.1% of the sample reported a daily intake of products from this food group. Regarding snacks, most participants reported consuming them rarely or never. There was a low frequency of cake and cookie consumption, with only 15.3% reporting consumption at least five times a week. A high consumption of simple carbohydrates was identified: 57.7% consumed pasta up to four times a week; 65.4% consumed rice at least once a day; and 88.5% consumed bread at least once a day. For vegetables, there was a low daily consumption of this food, with only 30.7% of the study population reported their consumption at least once a day. Daily fruit intake was reported by 42.3% of the patients. Coffee consumption was usual (53.8% of the sample), as they reported drinking it at least once a day. The natural juice consumption frequency was unusual (69.2% of individuals reported consuming it rarely or never). However, a usual frequency for “artificial juice” consumption was observed, as 53.9% of

the population reported consuming this at least five times a week. Diet and light foods were rarely consumed by the sample studied.

Table 4 - Food consumption frequency by alcohol users

FOOD	Food Consumption Frequency													
	Once a day		2 or more times a day		5 to 6 times a week		2 to 4 times a week		Once a week		1 to 3 times a month		Rarely or never	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Milk	2	7.7	4	15.4	2	7.7	12	46.2	2	7.7	1	3.8	3	11.5
Cheese	4	15.4	0	0.0	1	3.8	8	30.8	7	26.9	2	7.7	4	15.4
Egg	2	7.7	3	11.5	1	3.8	12	46.2	6	23.1	1	3.8	1	3.8
Meat	1	3.8	1	3.8	12	46.2	11	42.3	1	3.8	0	0.0	0	0.0
Sausages	6	23.1	2	7.7	5	19.2	6	23.1	4	15.4	1	3.8	2	7.7
Oils	10	38.5	9	34.6	2	7.7	3	11.5	0	0.0	1	3.8	1	3.8
Snacks	0	0.0	0	0.0	0	0.0	5	19.2	1	3.8	6	23.1	14	53.8
Rice	7	26.9	10	38.5	6	23.1	3	11.5	0	0.0	0	0.0	0	0.0
Bread	12	46.2	11	42.3	0	0.0	2	7.7	0	0.0	1	3.8	0	0.0
Biscuit / Cake	0	0.0	1	3.8	3	11.5	6	23.1	5	19.2	4	15.4	7	26.9
Pasta	0	0.0	0	0.0	8	30.8	15	57.7	3	11.5	0	0.0	0	0.0
Bean	4	15.4	9	3.6	6	23.1	6	23.1	0	0.0	1	3.8	0	0.0
Vegetables	7	26.9	1	3.8	2	7.7	11	42.3	3	11.5	0	0.0	2	7.7
Tubercle	1	3.8	0	0.0	3	11.5	5	19.2	11	42.3	4	15.4	2	7.7
Fruit	7	26.9	4	15.4	3	11.5	8	30.8	1	3.8	3	11.5	0	0.0
Dessert	2	7.7	0	0.0	1	3.8	7	26.9	5	19.2	5	19.2	6	23.1
Coffee	3	11.5	11	42.3	4	15.4	4	15.4	1	3.8	0	0.0	3	11.5
Natural Juice	1	3.8	0	0.0	2	7.7	4	15.4	0	0.0	1	3.8	18	69.2
Artificial Juice	2	7.7	6	23.1	6	23.1	4	15.4	3	11.5	1	3.8	4	15.4
Soft drink	4	15.4	1	3.8	0	0.0	5	19.2	5	19.2	5	19.2	6	23.1
Diet/Light	2	7.7	2	7.7	0	0.0	0	0.0	0	0.0	0	0.0	22	84.6

4 DISCUSSION

This study clearly showed the consumption of high alcohol amounts and the individuals' eating habits evaluated were responsible for the high BMI and WC identified on the hospitalization day. The body weight and WC of these alcohol users increased even more after fifteen days of abstinence. Regarding BMI, 65% of the individuals had been overweight or obese since the beginning of the study. The same was observed by other studies with alcohol and other psychoactive substance users [4,21,25]. In a study carried out in Pernambuco state, Brazil, the authors found a high unemployment rate, as well as low

education and income among the alcoholics evaluated [26]. Researchers who assessed alcohol consumption and weight gain identified those consumers of high alcohol amounts had higher BMIs on average compared with individuals classified as light consumers. However, occasional consumers showed greater weight loss than those with heaviest consumption patterns. The authors concluded that the consumption of 30g or more of ethanol per day may have significantly contributed to weight gain and obesity, justifying the higher incidence of excess weight at hospital admission [11]. Another survey also identified significantly higher WC values among abstinent patients compared to non-abstinent [7]. These results corroborate the hypothesis of other authors who described changes in body fat distribution linked to alcohol abuse and WC increased [27]. Therefore, we can suggest that abstinence among patients who ordinarily use alcohol may result in anthropometric changes, and therefore, may be related to the increased risk of developing noncommunicable chronic diseases (NCDs). Since the abdominal adipose tissue synthesizes and secretes several mediators and cytokines that participate in mechanisms that can lead to dyslipidemia, hypertension, atherosclerosis and insulin resistance, greater attention should be given to this anthropometric change and its influence on the development of NCDs [28]. In addition, obesity multiplies the risk of incident hepatocellular carcinoma among alcohol users [29]. Since alcohol use and obesity are modifiable risk factors, lifestyle interventions, such as reducing alcohol intake and maintaining normal body weight, are needed to decrease the incidence of hepatocellular carcinoma.

In the screening performed to classify the individuals' nutritional risk, a significant improvement was observed in the score obtained after hospitalization. This may be related to the food availability improvement during the hospitalization period and, consequently, the recovery of body weight. The diet offered to patients during the hospitalization was hypercaloric and hyperproteic, consisting of five meals a day. The hospital diet was, in most cases, different from a usual diet, favoring an improvement to the possible nutritional risk presented at hospitalization. The improvement in nutritional status during alcohol withdrawal may be due to the reduced action of MEOS and, therefore, decreased caloric expenditure [30]. It is important to remember that this system is the main hepatic pathway for ethanol oxidation in alcoholics and has large energy requirements. However, after a period of abstinence, this pathway is halted and consequently normalization of energy expenditure occurs. Therefore, there may be an increase in anthropometric variables such as weight, WC, and others [10].

Regarding the BIA data, an increase in lean mass was observed and this significant difference was similar to results from a study by Martín-González and collaborators [31], who analyzed body composition variables, especially lean mass and fat mass, among alcohol users. The authors observed an association between abstinence from alcohol and an increase in lean mass. Therefore, they related this variable to patient survival. In the present study, patients had a moderate protein-containing foods consumption before hospitalization. However, during hospitalization, protein consumption was high, as the diet offered by the hospital was hyperproteic. Thus, abstinence from alcohol in conjunction with eating a diet rich in protein may be related to the increase in lean mass of these individuals. In addition, another significant result was in relation to body water, in which there was an increase at the last data collection. However, there are no conclusive studies encourage the use of BIA to evaluate fluid changes, due to its high variability. The BIA has a limited ability to quantify fluid volume over time. Effects such as simultaneous changes in the electrolytes' concentration, changes in the diameter of the cylinder (leg), and skin temperature, in addition to changes in impedance, may be responsible for the inability to measure changes in hydration [32].

In the sample's eating habits analysis, low consumption of calcium (milk, cheese) and proteins (egg, meat), that is, essential nutrients for proper bodily functions such as cellular metabolism, immune system, and hormonal responses, were identified. On the other hand, the consumption of sausages and carbohydrates were high. According to a previous study [33], most alcoholics and dependents of other psychoactive substances have a preference for high sugar concentrations foods, suggesting that their consumption promotes the endorphins and dopamine release in the nucleus accumbens, mimicking the effect of the drug. Changes in the brain's reward circuit induced by excessive hyper-palatable foods consumption have been reported, similar to those seen in SUD [34], because they are high glycemic load foods (rich in sugar and/or in other refined carbohydrates), or rich in fat, or both. The hyperpalatability of these foods results from the sweet, salty or umami flavor associated with high caloric density [35].

Research conducted with drug addicts[5] demonstrated the most commonly consumed foods were rice, coffee, beans, and bread. Among the sporadically consumed foods were raw vegetables, cooked vegetables, fruits, fish, chicken, pork and beef, milk, cheese, eggs, and fried foods, similar to those found in the present study and the work of Silva and collaborators[36]. Besides, the authors also observed the consumption of ultra-processed food was frequent, showing the need for attention concerning this population's

eating habits [36]. Thus, there is a need to understand what influences food choices among individuals with SUD, that is, what subjective aspects of food such as social and cultural issues are involved and, from that, think about an approach that would address these variables.

Regarding the limitations of this research, the sample size was small and limited to a specific population of male alcoholics. It is important to emphasize that there was a decrease in the admission of alcoholics during data collection at the hospital where the study was conducted. In other studies that were carried out during the hospitalization period of alcoholics, or in other places for detoxification and treatment, a reduced number of patients was also identified [6,16,37]. In addition, this study was carried out in an inpatient unit with voluntary hospitalizations, that is, the individual remains on treatment if he desires. Studies carried out in health network services, such as outpatient and primary care services, tend to have a greater number of included patients [1,21]. Among the limitations of the FFQ are the impairment of the interviewee's memory due to alcoholism. In addition, the complexity of the interview and the difficulty in precisely remembering the amount ingested increases the method's limitations. There is an absence of more precise and accurate instruments that assess the food intake, so FFQ is used by researchers as the best tool to date [6,25,37]. Therefore, it is necessary to emphasize that, despite these limitations, it is essential to assess this population diet in order to propose improved treatments.

We observed a significant increase in weight, BMI and WC at the end of the follow-up period of hospitalized alcoholics. Patients' eating habits, considering the ingestion frequency of certain food groups, were inadequate. The simple carbohydrates and sausages consumption were frequent, demonstrating that these patients seek these hyperpalatable foods as a reward mechanism. On the other hand, proteins, vegetables and fruits consumption were low, characterizing a low quality of food choices (considering macro and micronutrients) and the possible eventual development of NCDs.

Alcohol users require multidisciplinary assistance throughout the whole detoxification process as well during follow-up treatment in order to meet their specific needs. It is important to educate this population regarding food habits, aiming guidance and education around new way of making food choices. A nutrition professional must be involved in this process to provide adequate nutritional counseling to aid a patient's effective recovery and to promote healthy actions together with other members of the care team.

In light of these results, effective actions aimed towards the recovery and nutritional status maintenance is essential to enhance the comprehensive care of this population, avoiding possible future health complications. Because alcoholics demonstrate several aspects of vulnerability, identified as nutritional status and eating habits, enabling access to health and good quality food is an economic and social issue.

ACKNOWLEDGMENTS

This study was funded by Fundo de Incentivo à Pesquisa do Hospital de Clínicas de Porto Alegre (Project approval number 2017-0612).

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