Evolution of the nutritional status of patients at a nutrition school clinic in Southern Brazil

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ABSTRACT

Chronic Non-Communicable Diseases (NCDs) are currently the leading cause of death and disability in the world. In view of this, nutritional monitoring and changes in lifestyle habits are essential for its prevention and management. The objective of this research was to characterize the evolution of the nutritional status of patients treated at a Nutrition School Clinic in Southern Brazil. This is a retrospective analytical study, with data from the medical records of adult patients treated at the Nutrition School Clinic of the University of Passo Fundo/Rio Grande do Sul, between 2014 and 2016. Sociodemographic, anthropometric, behavioral and clinical characteristics were investigated and the outcome of the study was the variation in weight, waist circumference and Body Mass Index (BMI) between the first and last nutritional consultation. Of the 130 patients, 79.1% were female, with a mean age of 40.09±11.86 years. The presence of NCDs was reported by 36.2% of the respondents. There was significant variation in body weight reduction and BMI during the follow-up period (p = 0.011 and 0.012, respectively). Thus, the results demonstrate the importance of nutritional guidance and the insertion of the nutritionist in the outpatient environment to improve the nutritional status of the population, reducing and preventing the occurrence and consequences of chronic diseases.

Keywords: Outpatient Care, Nutritional Status, Chronic Non-Communicable Diseases, Obesity.

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INTRODUCTION

Currently, structural changes are evident in the eating behavior of the Brazilian population. Urbanization has increased and globalization has universalized access to ultra-processed foods rich in simple carbohydrates, saturated fats and salt, so that the excessive consumption of these components, to the detriment of the lower consumption of natural foods rich in fiber, has directly influenced the development of Chronic Non-Communicable Diseases (NCDs) (BARROS et al., 2021).

Thus, NCDs are one of the biggest public health problems today, and have caused a large number of premature deaths, degrees of disability, and loss of quality of life (SIMÕES et al., 2021). In Brazil, they are also a health problem of great relevance, corresponding to 72% of the causes of death, with an impact on the country's health systems, society and economy (MALTA et al., 2015).

Over the years, the marked reduction in the level of physical activity and the changes in the dietary and nutritional patterns of the Brazilian population of all social classes and age groups have been analyzed in the process of nutritional transition. This nutritional transition is characterized by a reduction in the prevalence of nutritional deficits and a significant increase in cases of overweight and obesity (SOUZA, 2010).

Corroborating these findings, data from the 2019 Vigitel study (Surveillance of Risk and Protective Factors for Chronic Diseases by Telephone Survey) point out that overweight and obesity affect more than 50% of the Brazilian population and the consequences of this have been catastrophic, as weight gain in adulthood presents a favorable configuration for the development of NCDs such as Diabetes Mellitus, cardiovascular diseases, some types of cancer, among others (BRASIL, 2020; National Supplementary Health Agency, 2017).

In view of the early diagnosis of NCDs, the increase in the prevalence of overweight individuals and the recognition of the influence of diet on them, the demand for outpatient nutritional services for nutritional monitoring and care has grown a lot in recent years (OLIVEIRA et al., 2008). However, patients undergoing nutritional interventions, both in the short and long term, often have low adherence to dietary programs, difficulty in losing weight and poor maintenance of results (INELMEN et al., 2005). According to the same authors, the percentage of abandonment of outpatient treatment reaches 69.7%. And among the factors that can hinder adherence to treatment are personal problems, the absence of family support and lack of motivation during treatment.

In this context, the present study aims to evaluate the evolution of the nutritional status of patients treated at a Nutrition school clinic in Southern Brazil.

METHODOLOGY

This is a retrospective analytical study, with data from the medical records of patients treated at the Nutrition School Clinic of the University of Passo Fundo (UPF), in Passo Fundo, Rio Grande do Sul, between 2014 and 2016. The Nutrition clinic sees about 20 patients with various pathologies weekly, offering evaluation services, nutritional guidance and dietary therapy prescription with individualized follow-up. The consultations are carried out by students in curricular internship, with direct supervision of a UPF nutritionist .

This study was approved by the UPF Research Ethics Committee, under opinion number 3,855,950.

Adult patients of both sexes who sought the service on demand or through medical referral for dietary therapy follow-up and who remained in nutritional treatment for 90 days or more were included in the study. Children, adolescents, the elderly, and pregnant women were excluded from the study.

The outcome of the study was the variation in weight, waist circumference (WC) and Body Mass Index (BMI) between the first and last follow-up visits, and the exposure variables investigated were sociodemographic, anthropometric, and behavioral characteristics, and family and current clinical history.

The sociodemographic characteristics collected in the medical records were: sex (male/female), age (categorized every 10 years), marital status (with/without a partner), education (incomplete and complete elementary school/incomplete and complete high school/undergraduate/postgraduate) and income (up to one minimum wage/1 to 2.5 minimum wages/above 2.5 minimum wages). The anthropometric variables were: body weight, BMI, and WC at the beginning and end of the follow-up. Regarding behavioral and clinical findings, the following were obtained: practice of physical activity (yes/no), family history of NCDs (obesity/diabetes/hypertension/cardiovascular diseases/cancer) and current presence of NCDs (yes/no).

The data were entered into Microsoft Excel® software and the statistical analyses were performed through a statistical package. For the qualitative variables, the absolute and simple relative frequencies were presented, and for the quantitative variables, the measures of central tendency and dispersion and the Kolmogorov-Smirnov normality test were calculated. To compare the means of the measurements in the first and last consultations, the Wilcoxon test was applied, as the variables did not present a normal distribution by the Kolmogorov-Smirnov test. Significance levels of 5% ($p<0.05$) were considered.

RESULTS

The medical records of 130 patients who sought care at the school clinic between 2014 and 2016 were analyzed, of which 79.1% were female. The mean age found was 40.09±11.86 years, with a minimum age of 20 and a maximum of 59 years. Regarding the level of education, 46.5% had an undergraduate/graduate degree, 58.6% had a salary income of less than 2.5 minimum wages, and the presence of a partner was reported by 58.1% of the adults in the sample (Table 1).

Regarding the family history of CNCD, the most prevalent pathologies were systemic arterial hypertension, reported by 71.3% of the patients, followed by diabetes mellitus (60.8%), and 36.2% of the patients reported having CNCD. Also, in the first consultation, 62.2% reported practicing some type of physical activity (Table 1).

Table 1. Characterization of the sample of patients treated at the Nutrition School Clinic of the University of Passo Fundo, Passo Fundo/RS, between 2014 and 2016 (n=130).

Variables	Categories	n	%
Sex	Female	103	79,1
	Male	27	20,9
Age group	20 to 29 years old	26	19,8
	30 to 39 years old	37	28,6
	40 to 49 years old	30	23,0
	50 to 59 years old	37	28,6
Schooling	EF Incomplete/Complete	18	14,0
	MS Incomplete/Complete	51	39,5
	Undergraduate/Graduate	61	46,5
Income	≤ 2.5 minimum wages	76	58,6
	> 2.5 minimum wages	54	41,4
Marital status	No companion	54	41,4
	With partner	76	58,6
DCNT Family History	Hypertension	93	71,3
	Diabetes mellitus	79	60,8
	Obesity	69	53,1
	Cancer	68	52,3
	Cardiovascular disease	64	49,2
Current History of NCDs	No	83	63,8
	Yes	47	36,2
Practice of physical activity	No	49	37,8
	Yes	81	62,2

EF: Elementary School; EM: High School; NCDs: Chronic Non-Communicable Disease.

Regarding the initial and final anthropometric data, the mean weight, BMI and WC were: 80.66 kg±19.69 kg and 79.89 kg±19.15 kg; 30.12 kg/m²±6.49 kg/m² and 29.84 kg/m²±6.33 kg/m²; and 102.70cm±18.61 cm and 100.74±18.67 cm, respectively. Regarding the evolution of nutritional status from the first visit to the end of follow-up, there was a statistically significant association with body weight reduction (-0.770 g; p = 0.011) and BMI (-0.28 kg/m2; p = 0.012). The initial and final WC did not differ statistically at the two time points (p = 0.071) (Table 2).

Table 2. Comparison between anthropometric data at the beginning and end of the follow-up of patients treated at the Nutrition School Clinic of the University of Passo Fundo, Passo Fundo/RS, between 2014 and 2016 (n=130).

Variables	Average	DP	Minimal	Maximum	p-value
Initial body weight	80,66	19,69	50,90	160,70	0,011
Final Body Weight	79,89	19,15	49,50	154,60	
Starting BMI	30,12	6,49	18,49	55,94	0,012
IMC final	29,84	6,33	19,69	53,66	
Initial CA	102,70	18,61	70,0	180,0	0,071
Final CA	100,74	18,67	36,0	171,0	

SD: standard deviation; BMI: Body Mass Index; CA: Abdominal circumference.

The median time of nutritional follow-up was 210 days, with a minimum period of 90 and a maximum of 861 days.

DISCUSSION

The data obtained in the present study are similar to those found in the research by Pereira (2021) in a school clinic of a Higher Education Institution in Maranhão, where there was a predominance of female individuals, aged 20 to 60 years. Other studies (OLIVEIRA, 2008; KOEHNLEIN, 2008) who evaluated nutritional care also found that most patients who attend this type of service are adult women. In general, gender differences in health care use are already well defined. For Viudes (2014), studies that address morbidity and the use of health services found that women report more symptoms than men, in addition to having greater access to information about health and aesthetics, and are therefore more likely to seek specialized care for nutritional treatment.

Considering the level of education of the public in question, it was observed that most of the individuals had or were undergraduates or postgraduates. This result was also found by Lima (2019), who demonstrated that most of the professions presented by patients who sought nutritional care were also university-level (69.34%). It is worth mentioning that the identification of the educational level is of paramount importance so that nutritional education, also provided in consultations at nutrition outpatient clinics, is adapted to the public in question, thus avoiding the use of technical terms or concepts that are often complex and generate difficulty in understanding the patient, increasing the time to achieve the objective of the consultation (OLIVEIRA et al., 2014).

With the higher incidence of NCDs such as hypertension, diabetes and cardiovascular diseases, as well as the increase in the prevalence of overweight people in Brazil, the demand for outpatient nutritional services is growing (COSTA et al., 2005). In the study by Pereira, Mendes, Dias and Coimbra (2021), what motivated individuals to seek nutrition services was the existence of some type of chronic disease. Also in our study, more than one third of those evaluated had this condition or had a family history of these morbidities, demonstrating that NCDs present in the population constitute a public health problem. According to the World Health Organization, NCDs generate a high number of premature deaths, loss of quality of life, with a high degree of limitation in work and leisure activities, and also bring economic impact to families, communities and society in

general, aggravating inequities and increasing poverty (WHO, 2014). Thus, lifestyle modifications and dietary re-education are important in the different stages of life in order to reduce the risks of the emergence of diseases related to poor diet, as well as for their adequate management when present (COSTA et al., 2008).

Regarding anthropometric data, in this sample it was identified that the mean BMI and WC values were high. According to Abeso (2016), excess weight and, in particular, the deposition of fat in the abdominal region is a cardiovascular risk factor and a disturbance in glucose-insulin homeostasis and lipid metabolism, with a greater consequence on the increase in blood pressure levels, which demands from the nutritionist a greater concern with the process of dietary re-education and health promotion of the patient and the population in general.

Regarding the evolution of the nutritional status of the patients from the first to the last visit, weight loss and change in degrees of obesity to overweight were observed according to the median variation in weight and BMI. In the study by Vieira, Valle and Ramos (2019), 76.2% of patients assisted at the Nutrition Outpatient Clinic of the Federal University of Pelotas (UFPel) also had a reduction in body weight in the last consultation when compared to the first (-5.8 kg). In addition, BMI and WC were statistically lower at the last visit when compared to the first visit (37.3±7.5 kg/m2 *vs* 39.5±8.1kg/m2 *vs* 114.8±13.7 cm *vs* 118.3±13.2 cm, respectively) (VIEIRA et al., 2019).

Similarly, Saccon (2015) also found the effectiveness of nutritional monitoring in patients seen in the time interval between the first and last consultation, with a weight variation also higher than that found among our patients (-1.8 kg). However, although weight reduction has not reached a satisfactory degree in the individuals of our school clinic, it should be highlighted, because according to Vieira, Valle and Ramos (2019), for the patient with obesity, each achievement must be recognized, no matter how small. In addition, it is of great relevance to investigate the reasons that discourage the patient from fully adhering to treatment, with the aim of improving the conducts and nutritional support provided. And in this scenario, the nutritionist needs qualities such as empathy, welcoming, true interest in the patient and competence to be an agent of change for the adoption of new eating patterns (ALVARENGA et al., 2015)

It is known that obesity and overweight are considered global problems and among the most likely reasons for their occurrence are poor diet and sedentary lifestyle (SIMÕES et al., 2021). In this context, a positive finding of this study was the predominance of patients who reported performing some physical activity (62.2%), differing from the results found by Castanheira (2002) also in the southern region of Brazil, where 69.8% reported being sedentary. This finding is probably justified by the fact that many people start physical activity because they are overweight. Even so, these individuals would benefit from this practice, since physically active individuals have improved WC measurements, sensitivity to insulin action, glucose tolerance, and lower morbidity and mortality

than sedentary individuals. In addition, physical exercise also favors mental health, preventing symptoms of depression, anxiety and when associated with diet contributes to maintaining adequate weight, maintaining health and general well-being (POLEZES et al., 2020).

The median follow-up time presented in this study (7 months) was higher than that found by Polezes (2020) and Saccon (2015), suggesting that patients recognize the need for help and seek a solution for the treatment of their eventual diseases. However, it should be noted that adherence to nutritional treatment involves several circumstances and not only the appropriate dietary prescription. Changing an individual's behavior does not happen only through education, persuasion and does not depend exclusively on willpower. It is a long process and requires time and dedication from both parties (SANTOS et al., 2019).

Finally, as these are secondary data, among the possible limitations of this study are the absence of biochemical data, intervals between consultations, dietary prescription and non-evaluation of adherence to the prescribed interventions, showing that more studies on this theme are needed in order to increasingly improve the care provided to the population that seeks outpatient nutrition services.

CONCLUSION

It was found that the patients treated at the school clinic were mostly adult women, with higher education, married, with an income of up to 2.5 salaries, practicing physical activity, with some degree of obesity, excess abdominal adiposity and expressive presence of NCDs.

Throughout the nutritional treatment, there was a decrease in mean body weight and BMI, demonstrating that the nutritional intervention performed was positive. However, free nutritional care is still scarce, and it is essential to include the professional nutritionist in Basic Health Units and in public outpatient clinics to strengthen actions to promote and protect the health of the population.

REFERENCES

Alvarenga, M., & Koritar, P. (2015). Atitude e comportamento alimentar – determinantes de escolhas e consumo. In M. Alvarenga, C. Antonaccio, F. Timerman, & M. Figueiredo (Eds.), Nutrição Comportamental (1st ed., pp. 23–45). Manole.

Agência Nacional de Saúde Suplementar. (2017). Manual de diretrizes para o enfrentamento da obesidade na saúde suplementar brasileira [Electronic resource]. ANS.

Associação Brasileira para Estudo da Obesidade e da Síndrome Metabólica. (2016). Diretrizes Brasileiras de Obesidade (4th ed.). São Paulo.

Barros, D. de M., et al. (2021). A influência da transição alimentar e nutricional sobre o aumento da prevalência de doenças crônicas não transmissíveis. Brazilian Journal of Development, 7(n. 2525-8761), 1–18. https://doi.org/10.34117/bjdv7n10-183

Brasil, Ministério da Saúde, Secretaria de Vigilância em Saúde, Departamento de Análise em Saúde e Vigilância de Doenças Não Transmissíveis. (2020). Vigitel Brasil 2019: vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico. Ministério da Saúde.

Costa, R. P., & Silva, C. C. (2005). Guias de nutrição: nutrição clínica no adulto (2 vols.). São Paulo.

Castanheira, M. (2002). Associação de variáveis sócio-demográficas e comportamentais com a gordura abdominal em adultos: estudo de base populacional no Sul do Brasil. Cadernos de Saúde Pública, 18(1), 55–65. https://doi.org/10.1590/S0102-311X2002000100007

Inelmen, E. M., Toffanello, E. D., Enzi, G., Gasparini, G., Miotto, F., Sergi, G., & Busetto, L. (2005). Preditores de abandono em ambulatórios com sobrepeso e obesidade. International Journal of Obesity (Lond.), 29(1), 122–128. https://doi.org/10.1038/sj.ijo.0802846

Koehnlein, E. A. (2008). Adesão à reeducação alimentar para perda de peso: determinantes, resultados e a percepção do paciente. Revista Brasileira de Nutrição Clínica, 23(1), 56–65.

Lima, A. P. de. (2019). Avaliação do perfil nutricional e prevalência de doenças crônicas em pacientes atendidos em uma escola de nutrição do Município de São Paulo. Revista Brasileira de Obesidade, Nutrição e Emagrecimento, 13(82), 898–904.

Malta, D. C., Stopa, S. R., Szwarcwald, C. L., Gomes, N. L., Silva Júnior, J. B., & Reis, A. A. C. (2015). A vigilância e o monitoramento das principais doenças crônicas não transmissíveis no Brasil - Pesquisa Nacional de Saúde, 2013. Revista Brasileira de Epidemiologia, 18(2), 3–16. https://doi.org/10.1590/1980-5497201500020001

Oliveira, A. F. de. (2008). Perfil de pacientes que procuram atendimento nutricional. Revista Salus, 1(1980-2404), 13–21.

Oliveira, T. R. P. R. (2014). Perfil de pacientes que procuram a clínica de nutrição da PUC MINAS e satisfação quanto ao atendimento. Percurso Acadêmico, 4(8), 268–282.

Pereira, V. F. G. de B., Mendes, R. de S. O., Dias, L. P. P., & Coimbra, L. M. P. de L. (2021). Perfil de pacientes atendidos no ambulatório de nutrição de uma clínica escola em uma universidade particular de São Luís – MA. Revista Cereus, 13(1), 127–137. https://doi.org/10.1590/2236-88132021v13n1a16

Polezes, T. P. (2020). Eficácia de um programa de intervenção nutricional como estratégia para controle da obesidade e comorbidade. Revista Brasileira de Obesidade, Nutrição e Emagrecimento, 14(86), 370–381. https://doi.org/10.5935/1678-9741.20200027

Simões, T. C., et al. (2021). Prevalências de doenças crônicas e acesso aos serviços de saúde no Brasil: evidências de três inquéritos domiciliares. Ciência & Saúde Coletiva, 9(269), 3991–4006. https://doi.org/10.1590/1413-81232021299.13862020

Saccon, T. D. (2015). Perfil e evolução do estado nutricional de pacientes que frequentam um ambulatório de nutrição do Sul do Brasil. Nutrición Clínica y Dietética Hospitalaria, 3(35), 74–82. https://doi.org/10.1016/j.nutcli.2015.05.004

Souza, E. B. de. (2010). Transição nutricional no Brasil: análise dos principais fatores. Cadernos UniFOA, 5(13), 1–20.

Santos, G. C. (2019). Adesão às consultas de retorno em pacientes de ambulatório universitário de nutrição clínica. Revista Brasileira de Obesidade, Nutrição e Emagrecimento, 12(76), 1129–1134. https://doi.org/10.5935/1678-9741.20190077

Viudes, D. R., Brecailo, M. K., Silva, J. S., Levinske, L. C., Freitas, A. R., & Kuhl, A. M. (2014). Perfil nutricional e consumo alimentar de pacientes com excesso de peso atendidos por um ambulatório de nutrição. Publicatio UEPG: Ciências Biológicas e da Saúde, 20(2), 115–124. https://doi.org/10.5212/publ.biologicas.v.20i2.0003

Vieira, J. B., Valle, S. C., & Ramos, C. I. (2019). Adesão à terapia nutricional por pacientes obesos com e sem comorbidades de um ambulatório de Pelotas/RS. Saúde (Santa Maria), 45(3), 1–12. https://doi.org/10.5902/2236583437831

World Health Organization. (2014). Global status report on noncommunicable diseases 2014. Geneva.