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Anthropometric profile and the risk of cardiovascular diseases among food handlers

Perfil antropométrico y riesgo de enfermedades cardiovasculares en los manipuladores de alimentos

Perfil antropometrico e o risco de doenças cardiovasculares entre manipuladores de alimentos

ABSTRACT

Objective: To characterize the anthropometric profile of food handlers. Methods: Weight, height and waist circumference (WC) were measured and related to the parameters determined by the World Health Organization (WHO) for the risk of cardiovascular diseases (CR). A questionnaire was conducted containing questions about education level, physical exercise and the diagnosis of chronic diseases. Results: The study involved the participation of 28 employees at the unit. The calculation of the Body Mass Index (BMI) showed that 12 employees (42.85%) had a Classification of Obesity Degree. The RC was high for 17 employees (60.71%). Conclusion: The food handlers surveyed presented serious risk factors for the development of cardiovascular diseases according to the criteria determined by the WHO. We hope that works like this help to characterize the nutritional profile of workers and to develop proposals that improve their quality of life.

DESCRIPTORS: Worker's health; Chronic Noncommunicable Diseases; Collective Food.

RESUMEN

Objetivo: caracterizar el perfil antropométrico de los manipuladores de alimentos. Métodos: Se midieron el peso, la talla y la circunferencia de la cintura (CC) y se relacionaron con los parámetros determinados por la Organización Mundial de la Salud (OMS) para el riesgo de enfermedades cardiovasculares (RC). Se realizó un cuestionario con preguntas sobre nivel educativo, ejercicio físico y diagnóstico de enfermedades crónicas. Resultados: El estudio contó con la participación de 28 empleados de la unidad. El cálculo del Índice de Masa Corporal (IMC) mostró que 12 empleados (42,85%) tenían un Grado de Clasificación de Obesidad. El RC fue alto para 17 empleados (60,71%). Conclusión: Los manipuladores de alimentos encuestados presentaron graves factores de riesgo para el desarrollo de enfermedades cardiovasculares según los criterios determinados por la OMS. Esperamos que trabajos como este ayuden a caracterizar el perfil nutricional de los trabajadores y a desarrollar propuestas que mejoren su calidad de vida.

DESCRIPTORES: Salud del trabajador; Enfermedades crónicas no transmisibles; Alimentación colectiva.

RESUMO

Objetivo: Caracterizar o perfil antropométrico de manipuladores de alimentos. Métodos: Foram aferidos: o peso, altura e a circunferência da cintura (CC) e relacionadas com os parâmetros determinados pela Organização Mundial de Saúde (OMS) para o risco de doenças cardiovasculares (RC). Foi realizado um questionário contendo perguntas sobre o nível de escolaridade, a prática de exercícios físicos e o diagnóstico de doenças crônicas. Resultados: O estudo contou com a participação dos 28 colaboradores da unidade. O cálculo do Índice de Massa corpórea (IMC) demonstrou que 12 colaboradores (42,85%) apresentaram classificação de Obesidade Grau. O RC foi alto para 17 colaboradores (60,71%). Conclusão: Os manipuladores de alimentos pesquisados apresentaram graves fatores de risco para o desenvolvimento de doenças cardiovasculares de acordo com os critérios determinados pela OMS. Esperamos que trabalhos como este auxiliem na caracterização do perfil nutricional dos trabalhadores e na elaboração de propostas que melhorem sua qualidade de vida.

DESCRITORES: Saúde do trabalhador; Doenças Crônicas Não Transmissíveis; Alimentação Coletiva.

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INTRODUCTION

The Food and Nutrition Units (FNU) are characterized by the elaboration of meals for healthy or sick communities, according to the purpose of the establishment. Food handlers is the name given to workers who manipulate and transform the raw material, from its receipt to the distribution of the meal. [1,2]

Several studies report that a large part of these manipulators are subject to an excessive workload in different work shifts. Strenuous working conditions, together with little care for health, subject these workers to various risks, including those resulting from poor quality food. [3]

Overweight, smoking, physical inactivity; as well as low levels of education and income are some of the factors that interfere with the quality of life of workers and are related to the risk of chronic non-communicable diseases such as diabetes, obesity and hypertension. [4]

The World Health Organization (WHO) proposes anthropometric parameters that relate the risk of affliction of these diseases in the population. These parameters are inexpensive, easy to measure and must be related to the care and health of workers. [5,7]

> The Food and Nutrition Units (FNU) are characterized by the elaboration of meals for healthy or sick communities, according to the purpose of the establishment.

This study aims to characterize the anthropometric profile of the employees of a hospital Food and Nutrition Unit in Fortaleza-CE and, thus, to estimate the risk of cardiovascular diseases according to WHO recommendations.

METHODS

This is a cross-sectional, quantitative and descriptive study, carried out at the Nutrition Center of the Professor Frota Pinto Mental Health Hospital (HSM - Hospital de Saúde Mental), located in the city of Fortaleza-Ce from November to December 2020. The unit had a total 28 employees, all in the adult age group (between 18 and 59 years old). There were no pregnant employees during the research period.

The nutritional profile was analyzed using the variables: weight, height, hip and waist circumference (WC), Waist/Hip Ratio (WHR) and Body Mass Index (BMI). The weight was collected with a Tanita® digital scale, with a capacity of 150 kg and precision of 100 g.

Height was measured with a Alturaexata® stadiometer, accurate to 0,1 cm; and the circumference measurements obtained with Sanny® inelastic measuring tape. All measurements

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were collected in duplicate, following the technical standards described in the literature. [6] The measurements were performed by a single evaluator/researcher, always with the same equipment, which are properly calibrated.

The structured questionnaire containing information on age, function performed, diagnosis of chronic non--communicable diseases (type 2 diabetes, dyslipidemia or hypertension), physical activity and education level was completed by the researcher after an interview with the research participants. This interview took place during the intervals of the work shift in a separate place from the production unit, individually.

WHO suggests evaluating the anthropometric profile as an effective measure to assess the risk of chronic non-communicable diseases [5,7], as I said earlier. Indicative reference values are separated by sex according to the table below.

After collection, the data obtained were compiled and tabulated in and subsequently submitted to simple percentage calculation for quantification of variables and exposed in the form of graphs and tables.

The research respected the ethical aspects established by Resolution No. 466/2012 of the National Health Council (CNS), which regulates research involving human beings.

The general sample of t he study counted with the participation of 28 UAN employees, representing all the manipulators of the place, being 19 (67,85%) female and 9 (32,14%) male.

The participants signed the Free and Informed Consent Form (ICF) containing all the necessary information in a clear, objective and easy to understand language. The present study was evaluated by the Ethics and Research Committee of the Hospital de Saúde Mental Professor Frota Pinto to release the term of consent and to the Ethics Committee of the University of Fortaleza (OPINION N ° 24279719.7.0000.5038).

RESULTS

The general sample of the study counted with the participation of 28 UAN employees, representing all the manipulators of the place, being 19 (67,85%) female and 9 (32,14%) male.

As it is a hospital food unit, the manipulators' functions are divided into: butler (n= 8), cook (n= 6), kitchen assistants (n= 10), stockist (n= 1) and general services (n= 3).

Regarding the level of education of employees, half of the sample (n= 14) had elementary school and the other high school (n= 13). Only one employee had technical education (n= 1).

Regarding the presence of chronic diseases, 21,42% (n= 6) of the employees answered that they already had a confirmed diagnosis of diabetes and/or hypertension. Regar-

Chart 1. Classification of overweight and obesity according to BMI, waist circumference and associated risk of disease. WHO, 2008.

CLASSIFICATION	BMI (KG/M2)	OBESITY CLASS	RISK FOR TYPE II DIABETES, HYPERTENSION AND CARDIOVASCULAR DISEASE	
			WAIST	WAIST
			< 102 (M)	> 102 (M)
			< 88 (F)	> 88 (F)
Low weight	18.5			
Normal	18.5-24.9			*
Overweight	25.0-29.9		Aumentado	Alto
Obesity	30.0-34.9	I	Alto	Muito alto
	35.0-39.9	II	Muito alto	Muito alto
Extreme obesity	>40	III	Extremamente alto	Extremamente alto

* Identifies risk in normal people. Source: WHO, 2008.

ding the regular practice of physical activity, only 28,57% (n= 8) stated that they performed at least 3 times a week with a minimum duration of 30 minutes.

The assessment of the anthropometric profile according to the Body Mass Index (BMI) according to WHO parameters (2008) is shown in table 1.

Table 2 shows the risk classification for the emergence of chronic diseases such as diabetes and hypertension in food handlers in the hospital according to the criteria established by WHO (2008).

As for the risk of developing cardiovascular diseases by measuring waist circumference, the highest percentage was female, which showed that 12 collaborators (42,85%) were at high risk. In addition, 4 employees of both sexes were at moderate risk.

DISCUSSION

The increased knowledge about the health of workers in general, has been improved with the advancement of epidemiology. Through it,

> **Through it, we seek to understand the health-disease process not only in each individual in isolation (clinical view), but also how this process is distributed among workers as a collectivity and social class.**

we seek to understand the health-disease process not only in each individual in isolation (clinical view), but also how this process is distributed among workers as a collectivity and social class. [6,19]

Overweight, obesity and physical inactivity are important risk factors for the emergence of chronic diseases such as diabetes, hypertension and cardiovascular accidents. Thus, the attention of health professionals in devising strategies that reduce and prevent these factors in the Brazilian population are treated as priorities. [8,16,17]

Data from the Vigitel survey carried out by the Ministry of Health in 2016 and released in 2017 point out that obesity went from 11,8% in the Brazilian population in 2006 to 20,3% in 2016. The same survey pointed out the alarming data that 55,4% of the population is overweight. [10]

Measuring BMI and measuring waist circumference are simple strategies used to characterize the anthropometric profile of the population that can be easily applied in any work environment. Information from these variables may indicate the urgency of measures to prevent chronic diseases in the population. [5,6,10]

From the measurement of the waist circumference it is possible to assume the possible risks of developing cardiovascular diseases. The higher the measurement, the greater the likelihood of the individual's biochemical tests showing high cholesterol, diabetes and/or hypertension. [7,8,10.]

The research showed that more than half of the sample composed of food handlers was overweight and/or obese. This data confirms the information by Paiva and Cruz (2009) who suggest that weight gain is common in this class of workers as a result of the nature of work, together with the change in eating habits. [11]

A study carried out in São José do Rio Preto-SP with 54 food handlers

Table 1 BMI classification by sex in food handlers of a hospital nutrition unit in Fortaleza-CE, 2020.

		CLASSIFICATION BY SEX		TOTAL
		MAN	WOMAN	
BMI	Low weight	0	0	0
	Eutrophy	03 (10,71%)	09 (32,14%)	12 (42,85%)
	Overweight	02 (7, 14%)	07 (25%)	09 (32,14%)
	Obesity	04 (14,28%)	03 (10,71%)	07 (25%)

* The percentage values were calculated taking into account the total number of employees, n= 28.

Table 2 Classification of Waist Circumference (WC) and the risk of developing chronic diseases according to WHO criteria (2008) in food handlers. Fortaleza-CE, 2020.

		WORK SHIFTS		TOTAL
		MEN	WOMEN	
WC	High risk	1 (3,57%)	12(42,85%)	13 (46,42%)
	Moderate Risk	4 (14,28%)	4 (14,28%)	8 (28,57%)
	Eutrophic	4 (14,28%)	3 (10,71%)	7 (25%)

* The percentage values were calculated taking into account the total number of employees, n=28.

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from an institutional UAN in 2019, reported that 59% (n= 32) of the sample was overweight and/or some degree of obesity, according to the WHO criteria. [12] As in the present study, most of the overweight participants were female.

Education in constant health is one of the strategies used by health managers to prevent health problems for workers. Food handlers must have constant access to educational activities that encourage physical activity and change eating habits. [13,14,15]

CONCLUSION

The anthropometric profile of food handlers at the unit studied showed a high risk for the appearance of injuries related to excess weight.

We suggest improving research that characterizes the anthropometric profile, including factors related to eating habits, consumption of low nutritional quality foods, alcohol consumption and smoking; items not covered in this research and which may expand the characterization of the health profile of these workers.

Research like this can assist in the implementation of public and regulatory policies that encourage and strengthen health education, thus improving the quality of life of food handlers. ■

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