

SOCIOECONOMIC AND NUTRITIONAL PROFILE AND CARDIOMETABOLIC RISK FACTORS OF SCHIZOPHRENIC PATIENTS TREATED WITH ANTIPSYCHOTICS: A REFLECTION FOR NUTRITIONAL INTERVENTION

Perfil socioeconômico, nutricional e fatores de risco cardiometabólico de pacientes esquizofrênicos em uso de antipsicóticos: uma reflexão para intervenção nutricional

Perfil socioeconómico, nutricional y factores de riesgo cardiometabólico de pacientes esquizofrênicos que usan antipsicóticos: una reflexión para la intervención nutricional

Original Article

ABSTRACT

Objective: To characterize the socioeconomic and nutritional profile and cardiometabolic risk factors of patients with schizophrenia treated with antipsychotics at a public hospital in Fortaleza, Ceará. **Methods:** Quantitative descriptive cross-sectional study of 146 individuals with schizophrenia treated with antipsychotics in a tertiary health care facility in Fortaleza, Ceará. Data were collected in August and September 2012. Sociodemographic interviews and assessment of antipsychotics, clinical examination and anthropometric measurements (weight, height and waist, hip and abdominal circumferences) were carried out. **Results:** Among the respondents, 44.52% (n=65) were women and 55.48% (n=81) were men. The majority were 20-39 years old, white (n=47; 32.19%), single (n=117; 80.14%), had 1-9 years of education (n=51; 34.93%), were unemployed (n=110; 75.34%) and had an income of up to 1 wage (n=72; 49.32%). According to BMI classification, 25.34% were overweight (n=37) and 28.08% (n=41) were obese. A total of 78.32% of men (n=65) and 92.06% of women (n=58) were at very high risk of cardiovascular disease. In all, 51.22% of men (n=42) and 67.19% (n=43) of women were at risk of developing metabolic diseases. **Conclusion:** The study showed that most patients were in the productive period of life, were unemployed and had low income. It can be inferred that the majority were overweight and were more likely to develop metabolic disorders.

Descriptors: Schizophrenia; Antipsychotic Agents; Health Profile.

RESUMO

Objetivo: Caracterizar o perfil socioeconômico, nutricional e os fatores de risco cardiometabólico de pacientes com esquizofrenia em uso de antipsicóticos atendidos em um hospital público de Fortaleza/CE. **Métodos:** Estudo transversal, descritivo, com abordagem quantitativa, envolvendo 146 indivíduos com esquizofrenia em uso de antipsicóticos, acompanhados numa unidade de saúde terciária em Fortaleza/CE. A coleta dos dados foi realizada nos meses de agosto e setembro de 2012. Realizou-se entrevista contendo aspectos sociodemográficos, avaliação dos antipsicóticos, fatores de risco, exame clínico e medidas antropométricas (peso, altura, circunferências da cintura, do quadril e abdominal). **Resultados:** Dentre os entrevistados, 44,52% (n=65) eram mulheres e 55,48% (n=81) homens. A idade prevalente foi de 20 a 39 anos, 32,19% brancos (n=47), 117 solteiros (80,14%), que tiveram de 1 a 9 anos de estudo (n=51; 34,93%), sem ocupação (n=110; 75,34%) e com renda de até 1 salário (n=72; 49,32%). Pela classificação do IMC, 25,34% (n=37) apresentavam sobrepeso e 28,08% (n=41) obesidade. Dos homens, 78,32%

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(n=65) apresentavam risco muito alto de doença cardiovascular e 92,06% das mulheres (n=58). Da amostra, 42 homens (51,22%) e 43 (67,19%) mulheres apresentaram risco de desenvolver doenças metabólicas. **Conclusão:** O estudo demonstrou que os pacientes se encontravam, em sua maior parte, na fase produtiva da vida, não tinham ocupação e apresentavam baixa renda. Pode-se inferir que a maioria estava com excesso de peso e apresentava maior probabilidade de desenvolver distúrbios metabólicos.

Descritores: Esquizofrenia; Antipsicóticos; Perfil de Saúde.

RESUMEN

Objetivo: Caracterizar el perfil socioeconómico, nutricional y los factores de riesgo cardiometabólico de pacientes con esquizofrenia que usan antipsicóticos y están asistidos por un hospital público de Fortaleza/CE. **Métodos:** Estudio transversal, descriptivo de abordaje cuantitativo con 146 individuos con esquizofrenia que utilizan antipsicóticos y son asistidos por una unidad de salud terciaria de Fortaleza/CE. La recogida de datos se dio entre los meses de agosto y septiembre de 2012. Se realizó una entrevista sobre los aspectos sociodemográficos, la evaluación de los antipsicóticos, los factores de riesgo, el examen clínico y las medidas antropométricas (peso, altura, circunferencias de la cintura, del cuadril y abdominal). **Resultados:** De los entrevistados, el 44,52% eran mujeres y el 55,48% hombres. La franja de edad más prevalente fue entre los 20 y 39 años, el 32,19% eran de color blanco (n=47), 117 solteros (80,14%) que estudiaron en un periodo entre 1 y 9 años (n=51; 34,93%), sin ocupación (n=110; 75,34%) y con la renta de hasta 1 sueldo (n=72; 49,32%). A través de la clasificación del IMC, el 25,34% (n=37) presentaban sobrepeso y el 28,08% (n=41) obesidad. De los hombres, el 78,32% (n=65) presentaban riesgo muy elevado para la enfermedad cardiovascular y de las mujeres el 92,06% (n=58). De la muestra, 42 hombres (51,22%) y 43 mujeres (67,19%) presentaron el riesgo de padecer enfermedades metabólicas. **Conclusión:** El estudio ha demostrado que los pacientes estaban, en su mayoría, en la fase productiva de la vida, sin ocupación y con baja renta. Se puede inferir que la mayoría tenía exceso de peso y presentaba más probabilidad de padecer disturbios metabólicos.

Descritores: Esquizofrenia; Antipsicóticos; Perfil de Salud.

INTRODUCTION

Schizophrenia is a severe mental disorder that affects about 1% of the world population^(1,2). Approximately 24 million people worldwide, mostly aged between 15 and 35 years, live with this disease, whose prevalence occurs equally among men and women – although women with schizophrenia may have a better course of the disease than men⁽³⁾.

Currently, the most effective treatment for patients with schizophrenia is the use of antipsychotics (AP). However, the use of these drugs – both first generation (FGAs) and second generation (SGAs) – involves important adverse effects such as weight gain, changes in lipid profile and glucose metabolism, resulting in increased metabolic and cardiovascular risk⁽⁴⁾. This treatment may have led patients with chronic psychoses to be two or three times more likely to die from cardiovascular and metabolic diseases than the general population⁽⁵⁾. Added to this, psychotic disorders have been associated with significant comorbidities, such as android obesity, type 2 diabetes, dyslipidemia, hypertension, metabolic syndrome, myocardial infarction and stroke in the long term^(5,6).

Of the comorbidities listed in the literature, obesity stands out as a frequent event among people who use AP⁽⁴⁾. Thus, risk factors such as sedentary lifestyle and unbalanced diet contribute to weight gain, which is linked to decreased basal metabolic rate, increased calorie influx and reduced physical activity⁽⁷⁾.

Data from a meta-analysis⁽⁸⁾ identified that these patients presented weight gain compared to those receiving placebo within only ten weeks of treatment. Another study⁽⁹⁾ showed that the first 12 weeks of use of antipsychotic agents were critical for weight gain. These data demonstrate that this change is an early phenomenon in the pharmacological treatment.

The explanation for weight gain caused by antipsychotic drugs is not well understood; however, there are explanatory reports in the literature: anticholinergic and antihistaminergic effects, antagonism of serotonin receptors, and also the interference of genetic predisposition⁽¹⁰⁾. The anticholinergic effect causes dry mouth, leading to the consumption of high-calorie liquids, which consequently increase weight. On the other hand, the antihistaminergic effects can lead to sedation, reducing the activities and movement and leading to weight gain. The 5-HT_{2A} antagonism leads to increased consumption of high-calorie foods, which influence the body mass gain⁽¹¹⁾.

A Brazilian study investigated metabolic changes in 126 outpatients with schizophrenia and found a prevalence of approximately 80% of dyslipidemia and 40% altered glycemia⁽¹²⁾. APs produce the elevation of serum lipid levels, especially in triglyceride levels – associated or not with weight gain. The mechanisms of this effect are not well elucidated⁽¹³⁾. Such drugs also increase total cholesterol and LDL (Low Density Lipoprotein) levels and decrease HDL (High Density Lipoprotein) levels, which are factors that increase the risk of coronary heart disease⁽¹⁴⁾.

Given the weight gain and the high risk of cardiovascular disease presented by patients using antipsychotics, it is understood that there is a need for adequate nutritional planning; however, it is necessary to know the socioeconomic and nutritional profile of this population. Studies on this issue enable the development of new proposals for intervention in order to improve the quality of life, provide greater longevity and support the public system for the provision of effective health promotion measures. This study aimed to characterize the sociodemographic and nutritional profile and cardiometabolic risk factors of patients with schizophrenia treated with antipsychotics at a public hospital in Fortaleza, Ceará.

METHODS

This is a quantitative descriptive cross-sectional aimed at determining the socioeconomic and nutritional profile and cardiometabolic risk factors of patients with schizophrenia treated with antipsychotics at a tertiary health center in Fortaleza, Ceará.

The research took place from August to September 2012 at the Messejana Mental Health Hospital (*Hospital de Saúde Mental de Messejana - HSMM*) in Fortaleza, Ceará. Participants were selected based on the following criteria: individuals over 18 years old, regardless of gender, diagnosed with schizophrenia and treated with typical and/or atypical antipsychotics for at least three months.

Of the 153 users found during the study period, three did not agree to participate and four were under 18 years old – therefore, they were not included. The total sample comprised 146 individuals attending the HSMM during the research period who agreed to sign the Free Informed Consent Form (FICF). Data were collected using a semi-structured interview containing sociodemographic aspects, anthropometric measurements and waist circumference (WC), hip circumference (HC) and abdominal circumference (AC) measurements.

Body weight was measured in kilograms (kg) using a Filizola® digital scale with a maximum capacity of 180 kg and 100 g graduation. The measurement was performed with the individual standing barefoot and wearing minimal clothing, with their back to the scale screen and their feet apart in the central region of the scale in order to keep the body weight evenly distributed. Height was measured in meters (m) by means of a stadiometer attached to the Filizola® digital scale with a capacity of 2 m and 0.5 m graduation. The measurement was performed with the individual in the anatomical position standing upright.

The BMI was determined by dividing the body mass measured in kilograms by the height in meters squared ($BMI = \text{weight} / \text{squared height}$)⁽¹⁵⁾. The results were compared to reference values provided by the World Health Organization⁽¹⁶⁾. Waist, hip⁽¹⁷⁾ and abdominal circumference measurements⁽¹⁸⁾ were performed using a Sanny® inelastic measuring tape. They are measurements that allow the identification of the location of body fat, since the pattern of fat distribution in adults is directly related to the risk of morbidity and mortality⁽¹⁵⁾. Waist-to-hip ratio (WHR) was measured by dividing the waist circumference in centimeters (cm) by the hip circumference in centimeters, i.e., $WHR = \text{waist} / \text{hip}$. The present study adopted the reference values standardized by the Ministry of Health⁽¹⁵⁾.

Data underwent descriptive analysis and are described as absolute and relative frequencies. The variables were grouped in tables and graphs for a better presentation of results and identification of relationships between them.

The study was approved by the Human Research Ethics Committee of the University of Fortaleza (*Universidade de Fortaleza - UNIFOR*) under Opinion No. 111.587 in order to meet the requirements of the National Health Council with regard to the guidelines and regulatory standards for research involving human beings⁽¹⁹⁾.

RESULTS

Regarding sociodemographic data, Table I shows that the age between 20 and 39 years was the most prevalent in the study, corresponding to a percentage of 57.53% (n=84) of patients interviewed. As to gender, 81 (55.48%) of the participants were men and 65 patients (44.52%) were women.

In all, 73 (50.00%) participants were *pardos*, 117 (80.14%) were single, 51 (34.93%) had 1 to 9 years of study, 36 (24.66%) were employed, and 72 had a household income of up to one minimum wage (49.32%).

With regard to the characterization of the nutritional status according to the BMI, Table II shows that 41 (28.08%) patients were at normal weight, 41 presented grade I obesity (28.08%) and 37 (25.34%) were overweight.

Based on the WHR, which assesses the risk of cardiovascular diseases, it was observed that the majority of men – 65 (78.32%) – presented very high risk of cardiovascular disease (Table III), and so did women – 58 (92.06%).

Data on the abdominal circumference shows that most men and women – 42 (51.22%) and 43 (67.19%), respectively – are at “very high risk of metabolic diseases” (Table IV).

Table I - Distribution of patients with schizophrenia in the Messejana Mental Health Hospital (*Hospital de Saúde Mental de Messejana - HSMM*) treated with antipsychotics regarding their sociodemographic profile. Fortaleza, Ceará, 2012.

Characteristics	n	Percentage (%)
Age (years)		
18-19 years	08	5.48
20-39 years	84	57.53
40-59 years	44	30.14
60 years and older	10	6.85
Gender		
Men	81	55.48
Women	65	44.52
Race		
White	47	32.19
Black	07	4.79
Mixed-race	11	7.53
Mulatto	08	5.48
Pardo	73	50.00
Marital Status		
Single/	117	80.14
Married	16	10.96
Common-law marriage	08	5.48
Widowed	05	3.42
Education (years of study)		
0 years	29	19.86
1-9 years	51	34.93
10-12 years	29	19.86
13 years or more	37	25.34
Profession/occupation		
Yes	36	24.66
No	110	75.34
Monthly Household Income in MW		
Up to 1 wage	72	49.32
1-2 wages	57	39.04
3-6 wages	16	10.96
7-10 wages	01	0.68

MW: current minimum wage R\$ 622.00.

Table II - Distribution of patients with schizophrenia in the Messejana Mental Health Hospital (*Hospital de Saúde Mental de Messejana - HSMM*) treated with antipsychotics regarding their body mass index. Fortaleza, Ceará, 2012.

Characteristics	n	Percentage (%)
Mild Thinness	2	1.37
Normal	41	28.08
Overweight	37	25.34
Obesity Class I	41	28.08
Obesity Class II	21	14.38
Obesity Class III	4	2.75

Table III - Distribution of patients with schizophrenia in the Messejana Mental Health Hospital (*Hospital de Saúde Mental de Messejana - HSMM*) treated with antipsychotics regarding waist-to-hip ratio. Fortaleza, Ceará, 2012.

Characteristics WHR	Men		Women	
	n	Percentage (%)	n	Percentage (%)
Moderate	3	3.61	0	0.00
High risk	15	18.07	5	7.94
Very high risk	65	78.32	58	92.06

WHR: Waist-to-hip Ratio.

Table IV - Distribution of patients with schizophrenia in the Messejana Mental Health Hospital (*Hospital de Saúde Mental de Messejana - HSMM*) treated with antipsychotics regarding abdominal circumference values. Fortaleza, Ceará, 2012.

Characteristics CA	Men		Women	
	n	Percentage (%)	n	Percentage (%)
Normal	16	19.51	12	18.75
Moderate risk	2	2.44	3	4.69
High risk	22	26.83	6	9.37
Very high risk	42	51.22	43	67.19

AC: Abdominal circumference.

DISCUSSION

In the present study, most respondents were in the age group 20-39 years. Similar results were found in other studies involving patients with schizophrenia^(16,20) and an older age group – 22 to 50 years (47.3%) – was found in another scientific research⁽²¹⁾.

The analysis of the distribution of gender among patients revealed a similarity between the frequencies of male and female subjects. The same results were found in other studies^(22,23) that reported a similar distribution of the overall prevalence of schizophrenia among men and women.

There was a higher number of *pardos* and single individuals in the findings of the present study, a result that is consistent with a descriptive analysis⁽²²⁾ conducted in Feira de Santana, Bahia, which confirms the results reported by our study regarding these aspects.

Most participants in the present study had 1 to 9 years of study, were unemployed and had a household income of up to 1 minimum wage. A study conducted with 178 patients with schizophrenia found similar results – the majority of respondents (69.2%) did not complete primary school, 20% were illiterate and 96.3% were unemployed⁽²⁴⁾. However, in another study⁽²⁵⁾, a slightly lower percentage – 58.8% – of patients were unemployed and had an income of up to 1 minimum wage. These data are in line with the sociodemographic indicators of the Brazilian population – the average education of Brazilian individuals for the year

2012 was 8.8 years of study⁽²⁶⁾; however, such similarity was not observed in income – the monthly household income of the Brazilian individuals is a little more than two minimum wages⁽²⁷⁾ and the household income of the study sample was of up to one minimum wage.

Given the above, it is clear the precariousness of sociodemographic conditions of individuals living with schizophrenia, which appears as a barrier to the implementation of educational activities for the patient and family as an essential support to changes in lifestyle in these people, who are vulnerable to metabolic and cardiovascular diseases. These patients have a mortality rate that is two times higher than that of the general population given the higher prevalence and severity of clinical conditions and the life expectancy 20% lower compared to the average of people who do not have the disease⁽²⁸⁾.

The assessment of the nutritional status of patients treated with antipsychotics revealed that most patients were overweight or presented some degree of obesity, suggesting a higher risk of metabolic disorders. It was found, in the study sample, a very high risk of cardiovascular disease when assessing WHR and very high risk of metabolic disorders when assessing the AC. In addition to weight gain, a similar study highlights glucose intolerance, diabetes mellitus, hypertension, and lipid disorders as changes found in these individuals⁽²⁹⁾.

A cohort study conducted in the UK with 46,000 people with severe mental illness, particularly schizophrenia, and 300,000 controls revealed rates of risk of death from

cardiovascular disease (CVD) three times higher in the age group 18-49 years and two times higher in the age group 50-75 years⁽²²⁾. In a recent national prospective study conducted in Sweden with 8,300 people with schizophrenia, the rates of risk of death from CVD was 3.3 among women (decreased life expectancy by 12 years) and 2.2 among men (decreased life expectancy by 15 years)⁽²¹⁾; additionally, the increase in the rates of death from CVD associated with schizophrenic has been confirmed in autopsy studies⁽²⁴⁾.

There is contemporary evidence of an increase in mortality rate in schizophrenia, and this increase is in large part related to CVD. The exact origin of vulnerability to this clinical situation in schizophrenia remains unclear and probably cannot be attributed to a single mechanism. The interpretation of the findings shows that there are little studied issues such as the assessment of naive patients treated with antipsychotics and those with a long term use. Therefore, it is a problem that should be more investigated given its multifactorial causality⁽³⁰⁾.

Overweight and obesity are common comorbidities among patients with schizophrenia treated with AP; in addition, these patients have presented a higher BMI compared to psychiatric patients who are not treated with antipsychotics and the general population^(4,31,32).

In Brazil, data from Ministry of Health show a prevalence of 32% for overweight and 8% for obesity⁽³³⁾. On the other hand, the reported prevalence of obesity in the population of patients with schizophrenia treated with drugs ranges between 40% and 60%⁽³⁴⁾. These indicators reveal a close scientific relationship between the present study and the results already presented by researchers in this area. This draws attention to a multidisciplinary approach and non-pharmacological interventions as an alternative⁽³⁵⁾.

In addition to the excessive weight observed, another parameter that was altered was the AC, which was increased in 80% of women and 81% of men in our sample. Such finding was similar to that of another study, which found that AC was increased in 50% of the sample, reinforcing the theory that denotes the prevalence and the associated deleterious effects⁽³⁶⁾. However, these values were superior to that found in another study⁽³²⁾ that assessed 80 patients with schizoaffective disorder.

The sedentary lifestyle may be justified by the unemployment, low income and other unfavorable sociodemographic conditions that have been found in our study and also the treatment with AP, which can lead to or aggravate metabolic disorders⁽³⁷⁻⁴¹⁾.

Thus, it is important that non-pharmacological measures are implemented in order to reduce its negative effects⁽⁷⁾. Therefore, it is necessary to develop a weight gain prevention program based on the specificities of patients, adapting

physical activity and nutrition guidance to the limitations imposed by the disease⁽⁷⁾. In this line of thought, it is worth noting that physical activity as an interventionist measure should be aimed at social integration and improvement of physical performance as a routine strategy⁽⁴²⁾.

A literature review⁽⁴¹⁾ shows that these patients are more likely to develop metabolic syndrome because the use of AP, in addition to causing weight gain, can trigger lipid abnormalities such as elevated levels of LDL cholesterol and triglycerides⁽²⁸⁾. This is because the chronic treatment, especially with atypical AP, promotes the antagonism of 5-HT_{2C} receptor (5-HT_{2C}R), and this can contribute to the development of metabolic syndrome⁽³⁷⁾.

Thus, assuming that there is a risk of cardiovascular disease and metabolic syndrome induced by AP, this research points to the need for actions aimed at the factors – whether biomedical or sociodemographic – that lead to the onset of these disorders. Thus, simple attitudes, such as measuring patients' weight, asking them to write a food diary, encouraging them to do regular physical activity and referring them to a nutritionist, appear as promising interventions⁽²⁸⁾.

CONCLUSION

The study showed that most patients were in the productive stage of life, were unemployed and had low income. It can be inferred that most of them were overweight and more likely to develop metabolic disorders.

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