



International Journal of Aging Research (ISSN:2637-3742)



INTEGRATIVE REVIEW STUDY: FACTORES RELATED TO METABOLIC SYNDROME IN THE ELDERLY

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ABSTRACT

Introduction: Metabolic Syndrome (MS) is a set of pathological and physiological changes, defined by pre-established parameters, such as dyslipidemia, central adiposity, arterial hypertension and diabetes. Objective: To identify the scientific production of associated cardiovascular risk factors in elderly patients with MS.

Methodology: This is an integrative review of the literature obtained by searching scientific articles in the LILACS, MEDLINE, SCIELO and BDNF databases, by crossing the descriptors Metabolic X Syndrome, Aged and Risk Factors. Inclusion criteria were articles that had a summary available online, published in the period from 2013 to 2017, focusing on the proposed theme. Review articles, books, book chapters, opinion articles, editorials, dissertations, theses, programs and government reports were excluded, and 8 articles were selected. **Results:** The findings showed that the regular practice of physical activity associated with a diet rich in fruits, vegetables and whole grains contributes to the metabolic syndrome control. In addition to other important factors such as the diagnostic criteria that may vary according to the severity of MS. The criteria were established from some associations that work with the theme such as: National Cholesterol Education Program/Adults Treatment Panel - NCEP - ATP III (ATPIII) and International Diabetes Federation (IDF), the first most used because it is not necessary to evaluate insulin resistance, thus making it more viable for the development of research. **Conclusion:** The study showed that there is a lack of knowledge regarding MS, since there are few organs that treat and study this problem, thus reflecting on the search for research on this topic, because the subject is little discussed, especially in the elderly.

Keywords: Metabolic syndrome; Aged; Risk factors.

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How to cite this article:

Ana Cláudia Cavalcante da Silva, Analucia de Lucena Torres, Luana Bertoldo Freitas de Andrade, Mariana Carolini Oliveira Faustino, Mariana Isabel Alexandre Moura, Thayse Andressa Nascimento Silva. INTEGRATIVE REVIEW STUDY: FACTORES RELATED TO METABOLIC SYNDROME IN THE ELDERLY. International Journal of Aging Research, 2020, 3:58

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INTRODUCTION

Over the years, the profile of the world's population has undergone a series of transformations, thanks to technological and socioeconomic advances and the new formulation of the age pyramid⁵. The sedentary, unregulated and malnourished lifestyle that this generation leads has generated the increasingly early onset of chronic diseases, such as cardiovascular diseases or type II diabetes mellitus⁷. In this context, if we take into account the rapid aging of the population, there is an even greater concern that would be the planning of public policies and the direction of multiprofessional teams to meet the moment of demand in the health system¹. Aging is a natural process of life and involves several neuronal, structural, functional and chemical changes.

These changes in the human body result in inherent characteristics of the aging process, such as: fat accumulation, calcification and degeneration of coronary valves, increased blood pressure, increased gastric emptying time, which interferes with the time of drug absorption and decline in immune function^{3,2}. From these changes the elderly becomes more susceptible to the appearance of chronic diseases, especially metabolic syndrome that generates cardiovascular diseases, which cause higher mortality in the population⁸. Metabolic Syndrome is a set of pathological and physiological changes, such as dyslipidemia, obesity, hypertension and diabetes that will increase the risk of cardiovascular diseases². Insulin resistance, a triggering factor of this process, is developed by weight gain or related to type 2 diabetes. The most common cause is weight gain, which consequently leads to increased blood pressure, the development of type 2 diabetes, and changes in triglycerides and cholesterol. There is a difficulty in diagnosing and treating metabolic syndrome, and especially in stimulating patients to fight the disease, because besides being a new expression it is little known, especially in the elderly population. However, in order to identify the main factors

that generate such comorbidity, one should associate them with those that lead to weight gain, such as excessive carbohydrate and saturated fat intake, sedentary lifestyle, smoking, in addition to considering the family history of heart problems⁷.

The aging process is demarcated by several physiological changes that contribute to the development of precursor alterations of the Metabolic Syndrome (MS), such as, for example: deposition of abdominal fat, alteration in both lipid and glycemic levels and, mainly, high pressure levels³. Associated with this, metabolic MS aggregates several risk factors for the triggering of cardiovascular diseases, such as obesity or overweight, sedentarism, smoking, hypertriglyceridemia, dyslipidemia, Systemic Arterial Hypertension (SAH), hypercholesterolemia, Diabetes mellitus type II (DM II) or insulin resistance, which demonstrate great impact on the appearance of MS^{6,2}. Given the increasing number of cardiovascular disease cases related to metabolic disorder, the need for measures to treat this public health problem becomes evident¹.

The early identification of this syndrome has become increasingly necessary in order to delay and prevent comorbidities linked to this pathology, especially in the elderly, a group that usually have multiple pathologies due to lack of health prevention. To develop effective care and encourage the implementation of public policies that work to raise awareness of a healthy lifestyle^{1,4}. Thus, nursing care that should be provided according to health priorities systematically and recorded in line with the health information system of the service from a standardized language through a classification system^{1,8}. Thus, to promote and prevent health in relation to metabolic syndrome is to emphasize the importance of lifestyle change, through the practice of physical exercises and food re-education cooperate significantly for the prevention of this syndrome^{1,4}.

OBJECTIVE

To analyze the elaboration of scientific studies in relation to cardiovascular risk factors associated with elderly patients with metabolic syndrome.

METHODOLOGY

This study is an integrative literature review, a method that promotes the analysis and synthesis, in an ordered manner, of the results obtained on a topic. Therefore, it allows the formation of conclusions about a certain content and, thus, better use of the evidence found in the studies under study⁹. The steps for its development were based on the formulation of the problem, delimitation on the literature search, evaluation and analysis of data, presentation and interpretation of results¹⁰. Data collection was performed in July and

August 2019 through the online search for articles that answered the following research question: What are the risk factors associated with MS in the elderly? Thus, the integrative literature review was obtained by searching for scientific articles in the LILACS, MEDLINE, SCIELO and BDNF databases, using the crossing of the descriptors Metabolic X Syndrome, Elderly and Risk Factors. Regarding the inclusion criteria, it was established articles that had abstract available online, published in the period from 2009 to 2019, focusing on the proposed theme and, target audience, the elderly. Review articles, books, book chapters, opinion articles, editorials, dissertations, theses, programs and government reports were excluded. Therefore, 14 articles were selected.

Table 1: Description of the scientific articles that addressed the study objectives.

Author	Year	Title	Goal
Elix NDC, Nobrega MML.	2019	Metabolic syndrome: conceptual analysis in the context of nursing.	To analyze the concept metabolic syndrome and identify its essential attributes, antecedents and consequences in the nursing context.
Franco GPP. Scala LCN, Alves CJ, França GVA, Cassanelli, T, Jardim PCBV.	2009	Metabolic syndrome in hypertensive patients from Cuiabá - MT: prevalence and associated factors.	To estimate the prevalence of MS and associated factors in a sample of hypertensive patients from the urban area of Cuiabá - MT.
Nascimento, JPS et al.	2015	Factors associated with metabolic syndrome in the elderly: an integrative review.	To identify risk factors associated with Metabolic Syndrome in the elderly, through an integrative review, performed in the LILACS, MEDLINE and BDNF databases, from 2003 to 2013.
Penteado FR, Gomes NM.	2008	Physical activity and metabolic syndrome: a review study. Digital magazine.	It sought, from a bibliographic survey, to gather general information about the Metabolic Syndrome, including its relationship with the practice of physical activities.
Penteado FR, Gomes NM.	2011	Prevalence of metabolic syndrome and its associated factors in rural Minas Gerais.	To estimate the prevalence of metabolic syndrome (MS) and its associated factors in rural Minas Gerais.
Ricci GPI, Tomassoni D, Sirignano A, Grappasonni I.	2017	Metabolic syndrome, hypertension, and nervous system injury: Epidemiological correlates.	To analyze medico-social aspects related to MS, considering the reduction of work capacity and the disability condition that it involves.
Silva AO.	2015	Association of aging with insulin resistance, metabolic syndrome and sarcopenic obesity: investigation of inflammatory, metabolic parameters and body composition.	To verify the association of aging with insulin resistance, metabolic syndrome and sarcopenic obesity.
Soares LM.	2016	Lipid accumulation product: accuracy for identification of patients with metabolic syndrome in adults.	To evaluate the ability of the Lipid Accumulation Product (LAP) Index to identify individuals with Metabolic Syndrome (MS) diagnosed through different definitions.
Souza MT, Silva, MD, Carvalho R.	2010	Integrative review: what it is and how to do it.	To present the constituent phases of an integrative review and the relevant aspects to be considered for the use of this methodological resource.
Crossetti MGO.	2012	Integrative Review of Nursing Research the scientific rigor required of it.	Inform what is integrative review.

RESULTS

The present abstract was performed after the survey of articles in the databases: LILACS, MEDLINE, SCIELO and BDNF searching for articles published for a maximum of 10 years, with the following descriptors: 1) Metabolic syndrome; 2) Aged; 3) Risk factors. The inclusion criteria for the search were: complete articles online and available for access. Those excluded were those limited to the study in non-age populations, articles with a publication date of less than 2009 and articles that were repeated or that did not fit the objective of the study, even entering the search through the descriptors. In total, 62 articles were retrieved, and of these, 23 with a publication date of less than 2009. At the end, 10 articles were selected to compose the expanded abstract of the integrative review, read and analyzed in full. They were examined as to the nationality and region of the study, the method and the relationship with the theme in question, seeking to deepen the association between the epidemiological characteristics of metabolic syndrome.

MS is defined as the association of several pathophysiological changes, which can be reflected in metabolic disorders that directly perpetuate in the quality of life of the elderly, through the emergence of associated chronic conditions¹. It is evident that there is a consortium of MS with obesity, overweight, high BMI and/or altered abdominal circumference, as well as the literature indicates that these are shown as risk factors for cardiovascular impairment². In consonance, excess abdominal fat and reduced muscle mass are predisposing to the development of insulin resistance^{4,7}, and are identified as risk factors for MS⁵. In addition, through the theoretical framework used, it was identified that there is an extensive variation in the prevalence of MS in the elderly, which is intrinsically associated with the criteria used for diagnosis, as well as the ethnic and regional characteristics of the population studied, due to the profile of this population⁵. Thus, MS emerges as a public health problem that requires planning

based on the investment of public policies, with the direction of multiprofessional teams, which demand care and increased accessibility of this population to the health system³. The findings showed that the regular practice of physical activity associated with a diet rich in fruits, vegetables and whole grains contributes to the metabolic syndrome control. In addition to other important factors such as diagnostic criteria that may vary according to the severity of MS⁴. The criteria were established from some associations that work with the theme such as: National Cholesterol Education Program/Adults Treatment Panel - NCEP - ATP III (ATPIII) and International Diabetes Federation (IDF), being the first most used because it does not need to evaluate insulin resistance, thus making it more viable to conduct research.

CONCLUSION

With the study, it was evidenced the existence of a knowledge gap in relation to MS, since there are few organs that treat and study this problem, thus reflecting in the search for research with this theme, because the subject is little discussed, especially in the elderly. In this perspective, the following were identified as risk associations for the development of MS: socioeconomic factors; age group; self-assessment/self-health perception; history of chronic disease; and irregular physical exercise. Thus, a high prevalence of MS in the elderly was found, making health care to this patient essential, from the identification and early control of risk factors for injury, in order to promote the effectiveness of care in MS.

REFERENCES

1. Elix NDC, Nobrega MML. Síndrome metabólica: análise conceitual no contexto da enfermagem. *Rev. Latino-Am. Enfermagem*. 2019; v. (27): 3154.
2. Franco GPP, Scala LCN, Alves CJ, França GVA, Cassanelli T, Jardim PCBV. Síndrome metabólica em hipertensos de Cuiabá - MT: prevalência e fatores associados. *Arquivos Brasileiros de Cardiologia*. 2009; v. 92(6): 472-478.
3. Nascimento, JPS et al. Fatores associados à síndrome metabólica em idosos: uma revisão

- integrativa. Revista Kairós Gerontologia. 2015; v. (18): 283-297.
4. Penteadó FR, Gomes NM. Atividade física e síndrome metabólica: um estudo de revisão. Revista Digital. 2008; v. 13 (125).
 5. Pimenta AM, Gazzinelli A, Velásquez-Meléndez G. Prevalência da síndrome metabólica e seus fatores associados em área rural de Minas Gerais. Ciência & Saúde Coletiva. 2011; v. 16(7): 3297-3306.
 6. Ricci GPI, Tomassoni D, Sirignano A, Grappasonni I. Metabolic syndrome, hypertension, and nervous system injury: Epidemiological correlates. Clin Exp Hypertens. 2017; p. 10.
 7. Silva AO. Associação do envelhecimento com a resistência insulínica, síndrome metabólica e obesidade sarcopênica: investigação de parâmetros inflamatórios, metabólicos e composição corporal. Brasília: Dissertação (Mestrado em Educação Física) - Universidade Católica de Brasília; 2015.
 8. Soares LM. Produto de acumulação lipídica: acurácia para identificação de portadores da síndrome metabólica em adultos. Biblioteca J Baeta Vianna. 2016; p. 12 .
 9. Souza MT, Silva, MD, Carvalho R. Revisão integrativa: o que é e como fazer. Einstein. 2010; v. 8(1): 102-106.
 10. Crossetti MGO. Revisão Integrativa de Pesquisa na Enfermagem o rigor científico que lhe é exigido. Revista Gaúcha de Enfermagem. 2012; v. 33 (2): 8-9.

