# RISK FACTORS FOR CARDIOVASCULAR DISEASES IN AGED INDIVIDUALS IN A CITY IN THE STATE OF MINAS GERAIS[1]

*Marina Aleixo Diniz[2], Darlene Mara dos Santos Tavares[3]*

[1] Extract from the dissertation *Prevalência de fatores de risco para doenças cardiovasculares em idosos*, presented at the Health Care Graduate Program of Universidade Federal do Triângulo Mineiro (UFTM), 2009.

[2] Doctoral student at the Fundamental Nursing Graduate Program of the University of São Paulo at Ribeirão Preto College of Nursing. São Paulo, Brazil. E-mail: mafmtm@yahoo.com.br

[3] Ph.D. in Nursing. Associate Professor at the Nursing Undergraduate Program of UFTM. Uberaba, MG, Brazil. E-mail: darlenetavares@enfermagem.uftm.edu.br

**ABSTRACT:** This study had the aim to describe the sociodemographic characteristics of aged individuals in a small city, to identify the prevalence of cardiovascular risk factors and to compare them between genders and age ranges. It consisted of a prevalence study with 134 aged individuals. Data were collected between April and June of 2009 by means of interviews and anthropometric data survey. Simple frequencies and the chi-square test ($p<0.05$) were used for analysis. Among the aged individuals, 50% were between 60 and 70 years, 57.5% were female, 58.2% were married. The most prevalent risk factors were: increased abdominal circumference (77.6%), hypertension (67.2%) and sedentary lifestyle (59.7%). Sedentary lifestyle ($p=0.012$) and increased abdominal circumference ($p<0.001$) presented a higher proportion among older women.

**DESCRIPTORS**: Cardiovascular diseases. Risk factors. Aged. Nursing.

# FATORES DE RISCO PARA DOENÇAS CARDIOVASCULARES EM IDOSOS DE UM MUNICÍPIO DO INTERIOR DE MINAS GERAIS

**RESUMO:** Esta pesquisa objetivou descrever as características sociodemográficas dos idosos de um município de pequeno porte, identificar a prevalência dos fatores de risco cardiovascular e compará-los entre os sexos e as faixas etárias. Tratou-se de um estudo de prevalência, constituído por 134 idosos. A coleta de dados foi realizada de abril a junho/2009 por meio de entrevista e aferição de dados antropométricos. Para análise utilizou-se frequência simples e teste de qui-quadrado ($p<0,05$). Entre os idosos, 50% tinham de 60 ├70 anos, 57,5% sexo feminino e 58,2% casados. Os fatores de risco cardiovascular mais prevalentes foram: circunferência abdominal aumentada (77,6%), hipertensão arterial (67,2%) e sedentarismo (59,7%). O sedentarismo ($p=0,012$) e a circunferência abdominal aumentada ($p<0,001$) apresentaram maior proporção entre as mulheres idosas.

**DESCRITORES**: Doenças cardiovasculares. Fatores de risco. Idoso. Enfermagem.

# FACTORES DE RIESGO PARA ENFERMEDADES CARDIOVASCULARES EN ADULTOS MAYORES EN UN MUNICIPIO EN EL INTERIOR DE MINAS GERAIS

**RESUMEN:** Este estudio tuvo como objetivo describir las características sociodemográficas de los adultos mayores en una ciudad pequeña, identificar la prevalencia de factores de riesgo cardiovascular y compararlos entre el sexo y edad. Fue un estudio de prevalencia, transversal, que consta de 134 adultos mayores. La recolección de datos se llevó a cabo entre abril y junio/2009 a través de entrevistas y de prospección de los datos antropométricos. Para el análisis se utilizaron frecuencias simples y la prueba de chi-cuadrado ($p<0,05$). Entre los adultos mayores el 50% tenían 60-70 años, el 57,5% eran mujeres, y el 58,2% estaban casados. Los factores de riesgo más prevalentes fueron: la circunferencia abdominal aumentada (77,6%), hipertensión (67,2%) y sedentarismo (59,7%). El sedentarismo ($p=0,012$) y el aumento de circunferencia abdominal ($p<0,001$) presentaron una mayor proporción entre las mujeres ancianas.

**DESCRIPTORES**: Enfermedad cardiovasculares. Factores de riesgo. Anciano. Enfermería.

## INTRODUCTION

In light of the expressive increase in life expectancy, age has been related to increased prevalence rates of cardiovascular diseases such as coronary artery disease, peripheral arterial disease, heart failure, heart valve disease, and stroke.[1]

According to the Hospital Information System of the Brazilian National Unified Health System (SUS, as per its acronym in Portuguese), in the year of 2009, the main reason for hospitalization among aged patients were circulatory system diseases (27.5%); which also accounted for the main cause of mortality (40.8%).[2]

The risk factors (RFs) associated with cardiovascular diseases include obesity, alcohol consumption, sedentary lifestyle, arterial hypertension (AH), Diabetes *Mellitus* (DM), age, and genetic factors.[3]

In Brazil, studies on cardiovascular RF among aged individuals remain scarce.[4-5] A study performed with aged individuals in the suburbs of Fortaleza, the capital of Ceará state, showed that the most frequent RFs were family history for AH (59.3%), sedentary lifestyle (41%) and inappropriate food habits, in other words, excessive use of salt (53.8%) and fat (33.1%). The home survey on risk behaviors and morbidity related to non-transmissible diseases and complications conducted in 15 capitals and in the Federal District showed an increased prevalence of cardiovascular RFs in the Brazilian elderly population. Among them, the inappropriate diet (94.4%), AH (50%), sedentary lifestyle (40%) and hypercholesterolemia (33%) stand out. In addition, 71.3% presented two or more concomitant RFs.[5]

The fact that the cited studies were performed in large Brazilian cities,[4-6] added to the lack of studies on cardiovascular RF in the Brazilian elderly population, evidence the need for developing studies with this same population in small cities.

Small cities are believed to have specificities related to lifestyle that differ them from large cities. As the prevalence of RFs may present differences among locations, the knowledge on this theme needs to be broadened with the aim to ground the health care planning for the elderly. In this study, the chronological definition of an older individual is considered, in other words, people aged 60 years or more.[7]

In light of this, this study has the objective to describe the sociodemographic features of aged individuals, to identify the prevalence of RFs for cardiovascular diseases and to compare them between genders and age ranges.

## METHOD

This is a prevalence study, with an observational and cross-sectional design, performed in the urban area of Água Comprida, in the region of Triângulo Mineiro, state of Minas Gerais, Brazil. This city is classified as a small city I, which refers to cities with less than 20,000 inhabitants. Água Comprida has 2,157 inhabitants. From these, 268 (12.4%) are aged individuals; 187 live in the urban area and 81 in the rural area.[8]

Health care in the city is developed by two different services; the Municipal Health Center, which provides specialized medical care, and the Family Health Strategy (FHS), covering 100% of the city. For this reason, the FHS offered support in providing the data for this study and all homes with aged individuals were visited (n=187).

Aged individuals who complied with the following criteria were included in the study: being 60 years or older; living in the urban area of Água Comprida-MG; meeting the minimum score in the cognitive evaluation; not being bedridden. From all aged individuals, 134 met the inclusion criteria.

A meeting was performed before data collection with the Community Health Agents (CHAs) and the FHS nursing team so as to explain the study proposal and to request the company of the researcher during home interviews.

Data were collected by the researcher in the period between April and June of 2009 by means of interviews and the collection of anthropometric measures such as weight, height and Abdominal Circumference (AC), which were measured twice in order to avoid bias.

The data collection instrument was composed by sociodemographic variables (gender, age range, marital status, education, and individual income) and cardiovascular risk factors (smoking, sedentary lifestyle, obesity, increased AC, AH and DM, and alcoholism).

Before data collection, a cognitive evaluation was performed based on the Mini-Mental State Examination (MMSE), an instrument translated and validated in Brazil.[9] The instrument score varies from zero to 30, and the score cut-off was classified as per education, namely, ≤13 points (illiterate); ≤18 points (1 to 11 years of study); and ≤26 points (>11 years of study).[9] Regarding smoking, all the aged individuals were asked about this habit, and

were considered to be smokers if they referred to themselves as such at the time of interview. Sedentary lifestyle was identified for those who practiced no physical activity or who practiced it less than three times a week, for at least 30 minutes a day, in a continuous or accumulated manner.[3]

Obesity was classified as per weight and height, with the calculation of the BMI. The formula BMI=weight(Kg)/[height]$^2$(m) was used, and the aged individuals with BMI ≥ 30 Kg/m$^2$ were considered obese.[10] The weight was measured with the Microlife digital Body Fat Scale WS 100; which was calibrated before the beginning of data collection; and a measuring tape fixed on the wall, in a plane and regular location, was used to measure the height.

The AC was measured on the medium point between the costal margin and the iliac crest, using a non-distensible, but flexible 1.50 meter-long measuring tape, marked every 0.5 centimeter. The AC was considered increased with a value of ≥94cm for men and ≥80cm for women.[11] Regarding AH and DM, self-given information from the aged individuals were considered and whether they used medication.

Alcoholism was measured using a questionnaire denominated Alcohol Use Disorders Identification Test (AUDIT), validated in Brazil.[12] The questionnaire has the objective to detect problems related to alcohol consumption in primary health care, allowing the identification of people at risk due to the use of alcohol in the past 12 months.[12]

Data were saved in an electronic Excel® spreadsheet that was later transferred to the Statistical Package for Social Sciences (SPSS) software, version 17.0, for data analysis.

Data were analyzed by means of frequency distribution and the Chi-Square ($\chi 2$) test was used for gender and age range comparison and prevalence ratio. Significance was reached at 0.05.

Prevalence was calculated by dividing the number of aged individuals with certain risk factors by the total number of aged individuals who participated in the study, multiplied by 100.

The study proposal was approved by the Human Research Ethics Committee of UFTM, under the protocol n. 1299/2008. The aged individuals were contacted at their homes, where they were introduced to the study objectives, the Free and Informed Consent Form and any pertinent information. Data collection was initiated once the aged individual agreed to participate and signed the term.

## RESULTS

### Sociodemographic characteristics of the aged individuals

Among the 134 aged individuals, most were female, 50% were between 60 and 70 years, with a mean age of 70.5 years (sd=7.8), and 58.5% were married. Regarding education, the same percentage was observed for individuals who had never studied and those who had 4 to 8 years of education (31.3%). The mean time of education was 2.8 years (sd=2.9). Income predominance was one minimum wage (48.5%) (Table 1).

**Table 1 - Sociodemographic characteristics in aged individuals living in the city of Água Comprida-MG, 2009 (n=134)**

| Variable | n | % |
|---|---|---|
| **Gender** | | |
| Male | 57 | 42.5 |
| Female | 77 | 57.5 |
| **Age range** | | |
| 60 ├ 70 | 67 | 50.0 |
| 70 ├ 80 | 50 | 37.3 |
| 80 and above | 17 | 12.7 |
| **Marital status** | | |
| Married | 78 | 58.2 |
| Divorced | 9 | 6.7 |
| Widowed | 36 | 26.9 |
| Single | 11 | 8.2 |
| **Education (in years)** | | |
| 0 | 42 | 31.3 |
| 1 ├ 4 | 38 | 28.4 |
| 4 ├ 8 | 42 | 31.3 |
| 8 | 6 | 4.5 |
| 9 or more | 6 | 4.5 |
| **Income* (in minimum wages)** | | |
| No income | 23 | 17.2 |
| < 1 | 4 | 3.0 |
| 1 | 65 | 48.5 |
| 1 ├ 3 | 28 | 20.9 |
| 3 ├ 5 | 7 | 5.2 |
| ≥ 5 | 7 | 5.2 |

* Minimum wage= R$ 465.00.

### Prevalence of cardiovascular risk factors (CVRF)

The most prevalent CVRF observed in aged individuals were increased AC (77.6%), hypertension (67.2%) and sedentary lifestyle (59.7%) (Table 2).

In terms of gender, six CVRF were more prevalent among aged women when compared to men. The sedentary lifestyle factor was significantly higher, with results 1.31 times higher among women than men (p=0.012), and the increased AC presented

a prevalence 1.52 times higher by aged women (p<0.001). Nevertheless, alcoholism was significantly higher among older men with a prevalence 94% higher than aged women (p<0.001)(Table 2).

CVRF were more prevalent in individuals between 60 and 70 years of age when compared to other age ranges, namely smoking (25.4%), increased AC (83.6%) and Diabetes *Mellitus* (17.9%). Obesity presented a significantly higher prevalence in individuals in the age range 60 ├-70 years in relation to 70 ├-80 years (PR=0.37), and 80 years and more (PR=0.22) (p=0.024) (Table 3).

In tables 2 and 3, the prevalence of RF for cardiovascular diseases in aged individuals living in the city of Água Comprida-MG is presented with its distribution as per gender and age ranges.

**Table 2 - Prevalence of cardiovascular diseases risk factors, according to gender, in aged individuals living in the city of Água Comprida-MG, 2009**

| Risk factors | | Gender | | | | PR | p | Total | |
|---|---|---|---|---|---|---|---|---|---|
| | | Male | | Female | | | | | |
| | | n | % | n | % | | | n | % |
| Smoking | Yes | 10 | 17.5 | 15 | 19.5 | 1.11 | 0.776 | 25 | 18.7 |
| | No | 47 | 82.5 | 62 | 80.5 | | | 109 | 81.3 |
| Sedentary lifestyle | Yes | 30 | 52.6 | 53 | 68.8 | 1.31 | 0.012* | 80 | 59.7 |
| | No | 27 | 47.4 | 24 | 31.2 | | | 54 | 40.3 |
| Obesity | Yes | 7 | 12.3 | 17 | 22.1 | 1.79 | 0.144 | 24 | 17.9 |
| | No | 50 | 87.7 | 60 | 77.9 | | | 110 | 82.1 |
| Increased AC | Yes | 34 | 59.6 | 70 | 90.9 | 1.52 | < 0.001* | 104 | 77.6 |
| | No | 23 | 40.4 | 7 | 9.1 | | | 30 | 22.4 |
| Hypertension | Yes | 35 | 61.4 | 55 | 71.4 | 1.16 | 0.222 | 90 | 67.2 |
| | No | 22 | 38.6 | 22 | 28.6 | | | 44 | 32.8 |
| Diabetes *Mellitus* | Yes | 7 | 12.3 | 15 | 19.5 | 1.58 | 0.266 | 22 | 16.4 |
| | No | 50 | 87.7 | 62 | 80.5 | | | 112 | 83.6 |
| Alcoholism | Yes | 11 | 19.3 | 1 | 1.3 | 0.06 | < 0.001* | 12 | 9.0 |
| | No | 46 | 80.7 | 76 | 98.7 | | | 122 | 91.0 |

* $p<0.05$ – Pearson's chi-square test.

**Table 3 - Cardiovascular diseases risk factors, according to the age range, in older individuals living in the city of Água Comprida-MG, 2009**

| Risk factors | | Age range | | | | | | p | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 60 ├-70 | | 70 ├-80 | | 80 or more | | | | |
| | | n | % | n | % | n | % | | n | % |
| Smoking | Yes | 17 | 25.4 | 05 | 10.0 | 3 | 17.6 | 0.107 | 25 | 18.7 |
| | No | 50 | 74.6 | 45 | 90.0 | 14 | 82.4 | | 109 | 81.3 |
| | PR | 1 | | 0.39 | | 0.69 | | | | |
| Sedentary lifestyle | Yes | 42 | 62.7 | 26 | 52.0 | 12 | 70.6 | 0.314 | 80 | 59.7 |
| | No | 25 | 37.3 | 24 | 48.0 | 5 | 29.4 | | 54 | 40.3 |
| | PR | | 1 | 0.83 | | 1.13 | | | | |
| Obesity | Yes | 18 | 26.9 | 5 | 10.0 | 1 | 5.9 | 0.024* | 24 | 17.9 |
| | No | 49 | 73.1 | 45 | 90.0 | 16 | 94.1 | | 110 | 82.1 |
| | PR | 1 | | 0.37 | | 0.22 | | | | |
| Increased AC | Yes | 56 | 83.6 | 35 | 70.0 | 13 | 76.5 | 0.217 | 104 | 77.6 |
| | No | 11 | 16.4 | 15 | 30.0 | 4 | 23.5 | | 30 | 22.4 |
| | PR | 1 | | 0.84 | | 0.91 | | | | |
| Hypertension | Yes | 44 | 65.7 | 35 | 70.0 | 11 | 64.7 | 0.862 | 90 | 67.2 |
| | No | 23 | 34.3 | 15 | 30.0 | 6 | 35.3 | | 44 | 32.8 |
| | PR | 1 | | 1.06 | | 0.98 | | | | |
| Diabetes *Mellitus* | Yes | 12 | 17.9 | 08 | 16.0 | 2 | 11.8 | 0.826 | 22 | 16.4 |
| | No | 55 | 82.1 | 42 | 84.0 | 15 | 88.2 | | 112 | 83.6 |
| | PR | 1 | | 0.89 | | 0.65 | | | | |
| Alcoholism | Yes | 6 | 9.0 | 6 | 12.0 | - | - | 0.326 | 12 | 9.0 |
| | No | 61 | 91.0 | 44 | 88.0 | 17 | 100 | | 122 | 91.0 |
| | PR | 1 | | 1.33 | | 0 | | | | |

* $p<0.05$ – Pearson's chi-square test.

## DISCUSSION

### Sociodemographic characteristics

The higher percentage of aged women in this study is consistent with other studies.[4-5] According to the Brazilian Demographic Survey of 2010, women live, in average, 7.6 years longer than men, which must be considered to justify the higher number of women in studies performed with the elderly population.[13]

The predominance of the 60 to 70 age range in this study is similar to that observed in a survey performed with aged individuals in 15 Brazilian capitals and the Federal District (55.4%).[5] For this reason, younger elderly individuals must be warned regarding the risks for cardiovascular diseases, as morbidity may affect their quality of life and compromise aging performance throughout the years.

Regarding their marital status, most individuals were married or lived with a partner; a similar result (54.5%) to that found in a study on cardiovascular RF developed in Fortaleza.[4] This fact may favor nurses so as to obtain family support in the care of older individuals.

The same percentage was presented for illiteracy (31.3%) and for those who had 4 ├8 years of education (31.3%). In Fortaleza, illiterate individuals corresponded to 50.3%,[4] a higher number than that observed in this study, considering that the study location was a large city.

The monthly income of one minimum wage was similar to that of another study. Low income among older individuals is a factor that may complicate treatment compliance. Thus, nurses can inform the community regarding medications that are provided by programs of the Ministry of Health, and distributed by the health care unit or popular pharmacies. Moreover, it is possible to develop strategies such as physical activity groups and growing community vegetable gardens to improve food habits.

### Prevalence of cardiovascular risk factors

The prevalence of smoking among aged individuals was lower in comparison to the study performed in Fortaleza (27.5%),[4] however, it was higher than the study involving 16 Brazilian capitals (12.7%).[5] Although no statistical difference was observed between gender as for smoking, the highest percentage of smokers among older women diverged from findings of other studies, in which a higher prevalence was observed among men, but these studies were all performed in large cities.[4,6] Age range showed a higher prevalence of smoking in younger elderly individuals, consistently to a study conducted in Goiânia, the capital of Goiás state.[6]

The prevalence of smoking among women and younger elderly individuals point to the need for health interventions aimed at quitting this habit, as this is a fundamental measure in the prevention of cardiovascular diseases. Nurses can discuss the theme with this population, propitiating reflections on both active and passive smoking, and its consequences for health, favoring the development of healthier behaviors. In addition, the approach of the smoking theme in families of older individuals may be worked in their homes.

One of the most prevalent RFs was sedentary lifestyle, however, the percentage of this factor was higher in comparison to other studies performed in large Brazilian cities (41.4%[4] and 40%[5]). The fact that this small city presents a higher percentage of sedentary aged individuals may be related to the few locations to develop physical activities, in addition to low motivation to practice them.

The fact that aged women and individuals over 80 years are more sedentary was also observed in other studies. The physical difficulties that may appear when aging are one of the factors that might be related to having a sedentary lifestyle. Therefore, the recommendation to practice physical activity has been an essential element in the prevention of cardiovascular diseases.

The prevalence of obesity presented low percentages in comparison to the findings in Goiânia (27%)[6] and Pelotas, in the state of Rio Grande do Sul (25.3%),[14] which are considered large cities. Gender showed no significant statistical differences, however, the percentage of aged women was higher, similarly to the findings of a study with older individuals from a FHS in Passo Fundo, Rio Grande do Sul, where older women presented a higher prevalence of obesity than men.[15] The factors contributing to obesity in older women include climacteric changes, the period when hormonal alterations occur, implicating the reduction of lipoprotein lipase, which is responsible, along with estrogen, for regulating fat accumulation and its distribution in the tissues.[16]

This decreased prevalence of obesity in more advanced ages is similar to that observed in other studies.[5-6] Another important RF that

must be investigated in aged individuals is the increased AC, as the accumulation of visceral fat may compromise cardiovascular health.[3] The highest prevalence in women is similar to findings in medium cities.[17] Hormone alterations in women lead to a tendency for the deposit of abdominal fat, developing an androgynous pattern in its distribution.[16] Moreover, a higher percentage of younger enderly individuals with increased AC was observed. Abdominal obesity is another theme that needs to be discussed by nurses with aged individuals and their families, pointing to its relation to morbidities and food habits.

Another highly prevalent RF observed was AH among aged individuals, similar to the findings of a study in small cities (61.5%),[18] and higher than studies in large cities (50.6%).[5] Some factors related to AH such as having a sedentary lifestyle and smoking were observed in aged individuals living in small cities. Nevertheless, the access to health care and the compliance to the treatment must be considered, as they deserve to be approached more broadly by other studies.

The highest percentage of aged women who mentioned having AH agrees with the findings of both studies performed in small[18] and in large cities.[5-6] On the other hand, the highest percentage of the disease in women may be related to their higher frequency in health care services of the city, which favors the access to information on their health condition and the early diagnosis of the disease. Regarding the age range, the highest percentage of AH among older individuals between 70 and 80 years is similar to the findings of another study.[5] Hence, it is important to emphasize the need for interventions oriented specifically towards this age range, with approaches that may facilitate the understanding regarding the main risks of the disease.

Diabetes *Mellitus* presented an inferior result to what was observed in the 16 Brazilian capitals (17.8%)[5] and in Goiania (19.1%).[6] Although statistical differences in gender were not found, aged women presented a higher prevalence. Results were different in a survey performed at the home of patients in a large city, in other words, the prevalence of DM was higher among men in comparison to women.[5] The highest prevalence among individuals between 60 and 70 years was similar to that found in the study performed in Goiânia.[6]

The highest percentage of Diabetes *Mellitus* was observed among women and younger elderly individuals, who are more frequently present in health care services. From this perspective, nurses, mostly those from the Family Health Strategy, can emphasize their action in the homes of patients, aimed to understand the social setting of older individuals and their families, strengthening their actions in health and their co-responsibility in the health care.[19]

In the present study, aged women presented a higher percentage of smoking, sedentary lifestyle, obesity, increased AC, AH, and DM when compared to men. The highest prevalence of risk factors in women makes them more vulnerable to cardiovascular diseases that may evolve to disabilities and dependencies. Given that women present a higher life expectancy and use health care services more often, the health team needs to develop interventions so as to find a way to decrease the risk factors that may be changed, for instance those aforementioned.

The implementation of physical activities in the Family Health Units, in partnership with physical education professionals, as well as the promotion of healthy eating habits in partnership with a nutritionist are strategies that may affect the situation of having a sedentary lifestyle and obesity with increased AC. Moreover, nurses can be closer to aged women who present these features, by means of more frequent appointments and home visits, also aimed to promote education in individual, family and group health.

Regarding the prevalence of alcoholism prevalence and the higher consumption of alcohol among men, this study found similar results to studies developed in large cities.[4-5] On the other hand, the highest consumption of alcohol was detected among men between 70 and 80 years, which diverges from the findings of a study developed in Brazilian capitals, in which the age range between 60 ├-70 years presented the highest consumption.[5]

The presence of alcoholism among aged men may be associated with sociocultural factors, since alcohol consumption was not a habit observed among women in the same age range. Nurses can add this theme to the comprehensive health care of men, by approaching the relationship between alcohol abuse and cardiovascular diseases. In some situations, where more severe cases are found, nurses can refer the aged man to treatment with specific groups. Signs of alcohol abuse must be observed during the home visit, when approaching the family.

## CONCLUSION

This study found a predominance of women between 60 and 70 years, married or living with a partner, with no education or with 4 to 8 years of education, with an income of one minimum wage, and who had no occupation, but were retired or received pensions.

All RFs for cardiovascular diseases were present among aged individuals, and three were more prevalent: increased AC, AH and sedentary lifestyle. From seven RFs investigated in this study, six presented a higher percentage among women: smoking, sedentary lifestyle, obesity, increased AC, AH, and DM. According to the comparison between genders, women presented a higher prevalence of sedentary life style and increased AC whereas men presented prevalent alcoholism.

As for the age range, individuals between 60 and 70 years presented the highest percentage of RFs: smoking, increased AC and DM. The comparison between age ranges showed that individuals between 60 and 70 years present a higher proportion of obesity in relation to the findings of other studies.

The risk factors observed in this study among aged individuals living in small cities were different in some aspects to the scientific literature regarding large cities. Smoking was prevalent among women in small cities, whereas in large cities it was prevalent among aged men. Regarding sedentary lifestyle and AH, the highest prevalence was observed among aged individuals living in small cities, and the opposite was observed as for DM.

## REFERENCE


1. Yazdanyar A, Newman AB. The burden of cardiovascular disease in the elderly: morbidity, mortality, and costs. Clin Geriatr Med. 2009; 25(4):563-84.
2. DATASUS. Caderno de informações de saúde [online]. Brasília (DF): MS; 2009 [acesso 2009 Jul 25]. Disponível em: http://tabnet.datasus.gov.br/tabdata/cadernos/cadernosmap.htm?saude=http%3A%2F%2Ftabnet.datasus.gov.br%2Ftabdata%2Fcadernos%2Fcadernosmap.htm&botaook=OK&obj=http%3A%2F%2Ftabnet.datasus.gov.br%2Ftabdata%2Fcadernos%2Fcadernosmap.htm
3. Sociedade Brasileira de Cardiologia, Sociedade Brasileira de Hipertensão, Sociedade Brasileira de Nefrologia. VI Diretrizes Brasileiras de Hipertensão. Arq Bras Cardiol. 2010; 95(1 supl 1):1-51.
4. Caetano JA, Costa AC, Santos ZMSA, Soares E. Descrição dos fatores de risco para alterações cardiovasculares em um grupo de idosos. Texto Contexto Enferm. 2008; 17(2):327-35.
5. Pereira JC, Barreto SM, Passos VMA. O perfil de saúde cardiovascular dos idosos brasileiros precisa melhorar: estudo de base populacional. Arq Bras Cardiol. 2008; 91(1):1-10.
6. Ferreira CCC, Peixoto MRG, Barbosa MA, Silveira EA. Prevalence of cardiovascular risk factors in elderly individuals treated in the Brazilian public health system in Goiânia. Arq Bras Cardiol. 2010; 95(5):621-8.
7. Brasil. Lei n. 10.741, de 1 de outubro de 2003. Dispõe sobre o Estatuto do Idoso e dá providências. Diário Oficial da República Federativa do Brasil, 3 Out 2003. Seção 1.
8. Instituto Brasileiro de Geografia e Estatística. Contagem da População - Censo 2007 [online]. 2007 [acesso 2009 Ago 2]. Disponível em: http://www.ibge.gov.br/home/estatistica/populacao/contagem2007/MG.pdf
9. Bertolucci PHF, Brucki SM, Campacci SR, Juliano Y. O mini-exame do estado mental em uma população geral: impacto da escolaridade. Arq Neuro-Psiquiatr. 1994; 52(1):1-7.
10. World Health Organization. Anales da 36ª Reunión del Comité Asesor de Investigaciones en salud. Encuesta multicentrica: salud, bien estar y envejecimiento (SABE) en América Latina y el Caribe. Washington (US): World Health Organization; 2001.
11. Sociedade Brasileira de Cardiologia. Departamento de Aterosclerose da Sociedade Brasileira de Cardiologia. IV Diretriz Brasileira sobre Dislipidemias e Prevenção da Aterosclerose. Arq Bras Cardiol. 2007; 88 (supl. I):1-18.
12. Méndez EB. Uma versão brasileira do AUDIT - Alcohol Use Disorders Identification Test [dissertação]. Pelotas (RS): Universidade Federal de Pelotas, Faculdade de Medicina; 1999.
13. Instituto Brasileiro de Geografia e Estatística. Censo demográfico 2010 [online]. 2010 [acesso 2012 Mar 25]. Disponível em: http://www.ibge.gov.br/home/estatística/população/censo2010/default.shtm
14. Silveira EA, Kac G, Barbosa LS. Prevalência e fatores associados à obesidade em idosos residentes em Pelotas, Rio Grande do Sul, Brasil: classificação da obesidade segundo dois pontos de corte do índice de massa corporal. Cad Saúde Pública. 2009; 25(7):1569-77.
15. Kumpel DA, Sodre AC, Pomatti DM, Scortegagna HM, Filippi J, Portella MR, et al. Obesidade em idosos acompanhados pela Estratégia de Saúde da Família. Texto Contexto Enferm. 2011 Jul-Set; 20(3):271-7.

16. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Manual de atenção à mulher no climatério/menopausa. Brasília (DF): MS; 2008.
17. Rigo JC, Vieira JL, Dalacorte RR, Reichert CL. Prevalência de Síndrome Metabólica em idosos de uma comunidade: comparação entre três métodos diagnósticos. Arq Bras Cardiol. 2009; 93(2):85-91.
18. Firmo JOA, Uchôa E, Lima-Costa MF. Projeto Bambuí: fatores associados ao conhecimento da condição de hipertenso entre idosos. Cad Saúde Pública. 2004; 20(2):512-21.
19. Oliveira JCA, Tavares DMS. Elderly attention to health strategy in the family: action of nurses. Rev Esc Enferm USP. 2010; 44(3):763-70.

Correspondence: Marina Aleixo Diniz
Rua Chile, 1469, ap. 21
14020-610 – Jardim Irajá, Ribeirão Preto, SP, Brazil
E-mail: mafmtm@yahoo.com.br

Received: April 04, 2012
Approved: September 12, 2013