

## MAIN CAUSES OF MALE MORTALITY AND POTENTIAL YEARS OF LIFE LOST DUE TO THOSE DISEASES<sup>1</sup>

Jeane Cristina Anschau Xavier de Oliveira Fraga\*  
Áurea Christina de Paula Corrêa\*\*  
Roseanne Montargil Rocha\*\*\*  
Luanna de Arruda e Silva\*\*\*\*  
Renata Marien Knupp Medeiros\*\*\*\*\*  
Isabele Torquato Mozer\*\*\*\*\*

### ABSTRACT

The objective of this study was to describe the male mortality rate of Cuiabá-MT between the years 2002-2012 according to the main causes of male mortality and the years of potential life lost (YPLL) by that population. This is an ecological study, based on 5,135 death records of men aged 20 to 59 years old, living in Cuiabá-MT. The descriptive analysis occurred through the absolute and relative frequencies of data and calculation of the Health Indicators. Among the results, deaths due to violent causes and chronic and degenerative diseases stand out, in addition to the early mortality, expressed by the large loss of YPLL in the population from 20 to 29 years of age. In view of this panorama, there is need for actions in conjunction with all segments of society, public and health agents for the effort to promote the change of that scenario through educational actions aiming at encouraging the reduction of mortality with the sensitization of the male population regarding risk behaviors such as violence and dangerous management, as well as the adoption of healthier habits.

**Keywords:** Mortality. Men's Health. YPLL.

### INTRODUCTION

Currently, national studies that have been investigating human health issues have been demonstrating that men fall ill and die more than women do, from all types of causes, and across all age groups. The international literature shows a similar context in which women present a higher life expectancy than men<sup>(1,2)</sup>.

Despite the scenario of health conditions unfavorable to men, there is still a relative scarcity in the discussion about how the socio-cultural aspects influence the health-disease process and, consequently, the morbi-mortality of the male population, as well as the formation/development of professionals who work in primary care for the adoption of strategies/actions to implement aiming at improving the epidemiological profile of that population.

In order to understand the complexity related to men's health, the concept of hegemonic masculinity has been used, linked to the idea that man must express behaviors that demonstrate his strength and invulnerability, just as the demand for health services should only occur when he is already ill, generating negative results for his own health<sup>(3)</sup>. That concept has been widely used to understand health practices of men, helping to understand the reasons that lead men to exposure to risk behaviors and their difficulties in dealing with their illnesses.

The exercise of hegemonic masculinity has influenced the mortality profile of that population, verified by the increased mortality rates among men. The number of male deaths accounted for 57.2% of all deaths, which is higher than the percentage of deaths among women in almost all age groups<sup>(4)</sup>. The panorama was even more severe in the population that was in the age group from 20 to

\*Nurse. Doctorate student in the Post graduation Program in Nursing at the Federal University of Mato Grosso. Cuiabá, Mato Grosso, Brazil. jeane.anschau@hotmail.com

\*\*Nurse. Doctor in Nursing. Professor in the Post graduation Program in Nursing at the Federal University of Mato Grosso. Cuiabá, Mato Grosso, Brazil. aureaufmt@gmail.com

\*\*\*Nurse. Postdoctoral. Pós-doutorado. Full professor in the State University of Santa Cruz. Ilhéus, Bahia, Brazil. roseannemontargil@gmail.com

\*\*\*\*Nurse. Doctorate student in the Post graduation Program in Nursing at the Federal University of Mato Grosso. Cuiabá, Mato Grosso, Brazil. luannaarruda5@gmail.com

\*\*\*\*\*Nurse. Master in Nursing. Doctorate student in the Post graduation Program in Nursing at the Federal University of Mato Grosso. Cuiabá, Mato Grosso, Brazil. renataknupp@globo.com

\*\*\*\*\*Nurse. Master in Nursing. Professor of the undergraduate course in Nursing at the Federal University of Mato Grosso. Cuiabá, Mato Grosso, Brazil. isabele.mozer@gmail.com

24 years old, which showed a percentage of 80.8% of the deaths in the male population<sup>(4)</sup>.

Data from the Department of Informatics of SUS (DATASUS), and researches on male mortality in Brazil, reveal that the External Causes (EC), along with Circulatory System Diseases (CSD) and Malignant Neoplasms (MN), are the main causes of mortality among Brazilian men aged from 20 to 59 years<sup>(5,6)</sup>.

Faced with the obvious disadvantage in the health conditions of the male population, the Ministry of Health published, in 2008, the principles and guidelines of the National Policy for Comprehensive Health Care for Man (PNAISH)<sup>(7)</sup> and, in 2009, it officially launched the policy with the publication of the Ministerial Order<sup>(8)</sup>. The PNAISH was created with the objective of promoting comprehensive health care for men, reducing morbidity and mortality rates and expanding access to health, privileging the Family Health Strategy (FHS) as a preferential care model, considered the gateway to the Unified Health System (SUS).

The National Action Plan for PNAISH marks the effective start of its implementation, and provides the preparation and financing of 26 Pilot Projects in selected municipalities<sup>(8)</sup>.

The municipality of Cuiabá-MT was one of those municipalities selected for the implementation of the pilot project and for the implementation of the PNAISH. However, a study conducted in Cuiabá-MT, with the objective of verifying the policy implementation process in that municipality, found that its implementation occurred without the study of the morbidity and mortality profiles of the male population, that is, there was no previous understanding of the actions necessary for the recognition of the health conditions of that public before implementing the PNAISH<sup>(9)</sup>. The lack of knowledge on the morbidity and mortality profile by the management also extends to health professionals who work in primary health care, who, in addition to ignoring the goals of PNAISH, often end up reducing the health of men to the prevention of prostate cancer<sup>(8)</sup>.

In view of this panorama, one verified the need to carry out studies aimed at the male population, in order to know the main causes of death and to point out possible ways and

solutions to change that scenario. With that information, both managers and primary care professionals will have subsidies to direct their actions in order to qualify attention to the health needs of that population. In addition, this study may contribute to researchers from places with contexts similar to those of Cuiabá-MT.

The Years of Potential Life Lost (YPLL) is a health indicator of great importance, since, from it, it is possible to measure the early mortality and health inequities. That indicator allows reordering the main causes of death and establishing greater weight for deaths that occurred at premature ages, considering the risk of dying and, especially, the risk of dying early<sup>(10)</sup>.

Therefore, the following questions arise: what are the main causes of death in the male population of Cuiabá-MT and what is the impact of the deaths caused by those causes on the number of years lost by those diseases on male mortality in Cuiabá-MT?

In this sense, the present study aims to describe the main causes of death of men in Cuiabá-MT between the years 2002 to 2012 and to estimate the YPLL resulting from those deaths.

## METHODOLOGY

An ecological study was carried out based on the records of deaths of men who lived and died in Cuiabá-MT between the ages of 20 and 59 years, from January 1, 2002 to December 31, 2012. In order to identify which were the three main groups of causes of mortality in the male population in Cuiabá-MT, firstly, there was a descriptive analysis of all the male deaths in Cuiabá-MT, in the age group of interest, totaling 6,050 records, which were categorized into: Some infectious and parasitic diseases (SIPD), with 579 deaths; Diseases of the Circulatory System (DCS), with 1,339 deaths; Respiratory System Diseases (RSD), with 336 deaths; Malignant Neoplasms (MN), with 814 deaths and external causes (EC), with 2,982 deaths.

After that, the three groups with the highest death frequency, composed by EC, DCS and MN, were analyzed, composing the sample of 5,135 deaths from this study. Mortality data were collected on the DATASUS website, in the

Mortality Information System (MIS). First, the mortality files were downloaded from year to year. The files were initially in the .dbc (compressed) version and were decompressed to the .dbf (expanded) version with the aid of the TABWIN program, available in DATASUS, and later converted to the Excel version. In those files, there was all the information of the death certificates.

For this study, the used information was the date of birth and date of death, which enabled to select individuals in the age group of interest; the code of the municipality of residence and the code of the municipality where the death occurred, which allowed selecting the men who lived and died in Cuiabá-MT during the period of interest, and, finally, the basic causes of deaths.

For the analysis of death records, the variables were categorized as: type of EC (traffic accidents, other accidents, suicides, homicides, cause whose intentionality and other external causes); Types of DCS (ischemic heart disease, cerebrovascular diseases and other diseases of the circulatory system); and types of MN (lung, trachea and bronchi, esophagus, stomach, colon, rectum, rectum-sigmoid junction and anus, prostate and other locations). The categorization of those variables was performed based on the qualification cards of the Inter-managerial Health Information Network (RIPSA)<sup>(11)</sup>.

Information on the total population by age group was obtained from the Brazilian Institute of Geography and Statistics (IBGE), made available by the Department of Informatics of the Brazilian National Health System (DATASUS). The Standardized Mortality Coefficients were calculated according to the following formula:  $SMC = (\text{number of deaths due to cause X, from Area A, in period } t / \text{population of area A, in the middle of period } t) \times 100,000$ . The standardization of Mortality Coefficients was performed through the direct method<sup>(10)</sup>, which consists of using a standard population (in this study, the Brazilian population was considered as the standard according to the 2000 demographic census) in order to eliminate the effects of age differences, which will allow comparisons between populations. The standardization calculation consists of the multiplication between the values of the standard population (A) and the specific mortality coefficients (B) that compose

the number of expected cases (A x B). Subsequently, the number of expected cases of each population is divided by the total number of people in the standard population, obtaining the standardized mortality coefficients.

Variations in the Mortality Coefficients between 2002 and 2012 were calculated using the formula:  $\Delta\% = [(\text{standardized mortality coefficient in 2002} - \text{standardized mortality coefficient in 2012}) / \text{standardized mortality coefficient in 2002}] \times 100$ . For obtaining the Years of Potential Life Lost (YPLL), the calculation method was used to calculate the number of deaths at each age (between one and 69 years) for a cause or group of causes of death multiplied by the remaining years of life up to the age of 70 years. Thus, if:  $d_i =$  number of deaths between ages  $i$  and  $i + 1$  and  $a_i =$  years of life remaining until age 70, when death occurs between ages  $i$  and  $i + 1$ , there is  $a_i = 70 - (i + 0.5)$ , then YPLL will be given by formula:  $APVP = \sum_{i=1}^{69} a_i d_i$ . The upper age limit of 70 years was chosen because it approximates the life expectancy in Cuiabá of 70.7 years in 2000 and, in Brazil, the life expectancy was of 68.6 years in 2000. For calculating the YPLL Rate (YPLLR) by cause and age group, the following formula was used:  $YPLLR = YPLL \text{ by cause and age group} \div \text{age group population} \times 100$  thousand. The mean YPLL by cause and age group was obtained by dividing the YPLL by cause and age group by the number of deaths by cause and age group. For the treatment of the data, the programs Excel and Epi Info 3.2.1 were used.

This research was approved by the Research Ethics Committee of the Júlio Muller University Hospital under the number CAAE: 41468814.7.0000.5541, opinion nº 953.428.

## RESULTS AND DISCUSSION

The records of 5,135 male deaths occurred in the period from 2002 to 2012 were studied, of which, 2,982 deaths were from EC, 1,339 deaths were caused by DCS, and 814 deaths were from MN. Table 1 shows the absolute frequency, the proportion, the standardized mortality coefficient according to the EC types and the percentage variation of the coefficients between 2002 and 2012.

**Table 1.** Absolute frequency (n=2,982), proportion (%), percentage variation ( $\Delta\%$ ) and standardized mortality coefficient (per 100 thousand men) according to the type of EC, Cuiabá-MT, 2002-2012.

Basic Cause of Death	Frequency	Proportion	SMC	SMC	SMC	$\Delta\%*$
	N	%	2002 a 2012	2002	2012	
Transportation Accidents	644	21.6	246.5	52.6	36.8	-29.9
Other Accidents	276	9.3	105.6	20.8	11.6	-44.1
Suicides	144	4.8	55.1	7.7	8.6	+11.1
Homicides	1,548	51.9	592.6	111.4	86.5	-22.2
Undetermined Int. C.	151	5.1	57.8	8.5	9.8	+15.4
Other Causes	219	7.3	83.8	3.8	13.5	+249.2

\* Percentage variation in mortality coefficients standardized by type of EC between 2002 and 2012.

Traffic accidents were the second cause of men's mortality by EC, and, in that group, there was also a reduction, from 52.6 in 2002 to 36.8 deaths per 100,000 men in 2012.

The increase in male mortality has been a worrying situation, with a sharp increase in avoidable violent deaths and injuries. National studies(12,13) have also confirmed that scenario, pointing out to EC, CAD and NM as the main causes of death in the male population of Brazil in the 20-59 age group.

In this research, deaths from homicides and transportation accidents were the causes that most victimized men between 2002 and 2012. Violence has intensified in almost all Brazilian regions, affecting especially men, in which the incidence is, sometimes, higher than the female gender<sup>(13)</sup>. The magnitude of the problem is even greater in the younger age groups, in which the main cause of death has been the violent causes.

Factors related to the biological, social, behavioral conditions and to the constructions of gender expressed by hegemonic masculinity have been used to explain the higher mortality in the

male population. In this sense, the dangerous direction of vehicles and the aggressive behavior produced by men may be contributing to a higher mortality rate for EC, for both transportation accidents as homicides<sup>(14)</sup>. In addition, behavioral aspects such as the search for emotions, pleasure in experiencing situations of risk, impulsivity and abuse of psychoactive substances are attitudes usually produced by the male population, especially the younger population.

Aging may contribute to DCS and MN, but behavioral factors such as smoking may contribute to a higher incidence of lung cancer and cardiovascular diseases<sup>(14)</sup>.

Table 2 describes the distribution of the absolute frequency and the standardized mortality coefficient according to the types of DCS and the percentage variation of the coefficients between 2002 and 2012. It is possible to verify a high concentration of deaths due to diseases caused by Ischemic Heart Diseases 30.8% (n = 412), with an increase of 5.1%, rising from 28.3 in 2002 to 30.0 deaths per 100,000 men in 2012.

**Table 2.** Absolute frequency (n = 1,339), proportion (%), percentage variation ( $\Delta\%$ ) and standardized mortality coefficients (per hundred thousand men) according to the type of DCS, Cuiabá-MT, 2002-2012.

Basic Cause of Death	Frequency	Proportion	SMC	SMC	SMC	$\Delta\%*$
	N	%	2002 a 2012	2002	2012	
Ischemic Heart D.	412	30.8	157.7	28.6	30.0	+5.1
Cerebrovascular D.	359	26.8	137.4	29.4	11.6	-60.3
Other D. of the Circulatory System	568	42.4	217.4	45.6	35.6	-21.9

\*Percentage variation in mortality coefficients standardized by DCS between 2002 and 2012.

In relation to DCS, this study found a higher absolute frequency of deaths due to ischemic heart diseases, as well as the reduction of Mortality Coefficients for cerebrovascular

diseases, which is similar to what has been identified in some regions of Brazil.

A study carried out in the states of Rio de Janeiro, Rio Grande do Sul and São Paulo, with

the objective of correlating mortality rates from DCS with socioeconomic indicators, between 1980 and 2008, found that the mortality reduced in the three states, with a decrease in mortality from DCS, especially cerebrovascular diseases. That reduction was preceded by an improvement in socioeconomic indicators (infant mortality, increase in gross domestic product per capita and increase in education). Those relationships signal the importance of improving the population's living conditions in order to reduce cardiovascular mortality<sup>(15)</sup>.

Some aspects that may influence the reduction of Mortality Coefficients from DCS include the improvement of the Brazilian economy and the increase in the Gross Domestic Product (GDP) per capita, which promoted advances in socioeconomic indicators such as: education, health infrastructure and reduction of exposure to infectious diseases in the early stages of life<sup>(15)</sup>. The improvement of socioeconomic indicators is relative and varies according to the studied region and period.

Table 3 shows the analysis of the distribution of deaths according to the absolute frequency, the proportion and the Mortality Coefficients standardized by MN. The results showed a large proportion of MN located in the lung, trachea and bronchi (14.4%; n=117) with a standardized mortality coefficient of 44.8 deaths per 100,000 men. Those diseases increased 138% in the studied period. In Cuiabá, the mortality coefficient for neoplasms located in the lungs, trachea and bronchi were the most representative (44.8 deaths per 100,000 men); such finding resembles large Brazilian cities, such as Rio de Janeiro, with 37.7, and Porto Alegre, with 51 deaths per 100,000 men<sup>(14)</sup>.

MNs located in the organs of the digestive system (esophagus, stomach, colon, rectum, rectum-sigmoid junction and anus) presented expressive values. Together, those diseases accounted for 23.4% of deaths. In this group, the standardized Mortality Coefficients for MN located in the intestine and anus increased 58%, from 3.09 in 2002 to 4.9/100,000 men in 2012.

**Table 3.** Absolute frequency (n=814), proportion (%), percentage variation ( $\Delta\%$ ) and standardized mortality coefficients (SMC) per one hundred thousand men according to the type of MN, Cuiabá-MT, 2002-2012.

Basic Cause of Death	Frequency n	Proportion %	SMC 2002 a 2012	SMC 2002	SMC 2012	$\Delta\%*$
Lung, trachea and bronchi	117	14.4	44.8	3.8	9.2	+138.1
Esophagus	53	6.5	20.2	2.3	1.8	-20.6
Stomach	69	8.5	26.4	3.0	3.0	-0.7
Colon, rectum, rectum-sigmoid junction and anus	68	8.4	26.0	3.0	4.9	+58.7
Prostate	21	2.6	8.0	0.0	0.0	-
Other Places	486	59.7	186.0	19.3	30.7	+58.7

\*Percentage variation of Standardized Mortality Coefficients according to type of MN between 2002 and 2012..

In Rio Branco, capital of Acre, a research carried out aiming at analyzing the trend of mortality from MN in the male and female population, between 1980 and 2006, found results similar to those observed in Cuiabá-MT. In Rio Branco, from 2002 to 2004, cancer mortality rates increased 16.1% in the lungs, trachea and bronchi in men. Despite that increase, at the end of the historical series, the coefficients remained in decline<sup>(16)</sup>. In relation to MNs located in the stomach, the male population of Rio Branco-AC showed a 4.1% decrease in their mortality rates.

In Volta Redonda-RJ, from 1981 to 2008, the average mortality rate from MN located in

the stomach was 27 deaths per 100,000 men<sup>(17)</sup>. That research points out that mortality rate from stomach cancer has decreased at the national and world level, a fact attributed mainly to the decrease in the incidence of that disease and also to the modification of eating habits (greater consumption of fruits and vegetables and reduction of salt consumption), as well as better food conservation, improved sanitation, and greater access to electricity. On the other hand, the increase of cancer located in the respiratory system, mainly lung cancer, has associated with smoking and aspects related to occupational and environmental factors<sup>(16)</sup>. Although there is a decreasing trend

in mortality, the MN of the stomach requires attention, since it still figures as the second leading cause of cancer death in the world<sup>(17)</sup>.

In Cuiabá-MT, prostate cancer had a mortality coefficient of eight men per 100,000, not the most frequent in the population aged 20 to 59 years. That result may relate to the age of the studied population (20 to 59 years), since the highest incidence of prostate cancer occurs in the population aged 65 years or more. In this sense, men's health, especially men in the 20- to 59-year-old age group, cannot be summed up to actions related to prostate cancer, since, as in this study and in similar studies in other Brazilian places<sup>(14)</sup>, the results indicate other causes of mortality in that population, which are more epidemiologically worrisome than prostate cancer. Risk factors related to MN include age (in the case of prostate cancer, more common in men over 65 years); ethnicity (more common in black men, probably related to lifestyle and conditions, and factors associated with late detection of the disease); family history of diseases; diets based on animal fat, red meat, sausage and calcium, as well as obesity, which have associate with increased risk of developing MN; smoking; occupational exposure to carcinogenic agents and repeated pulmonary infections that are configured as risk factors for

the development of MN of the Respiratory System<sup>(18)</sup>.

For prevention of mortality from MN, specific measures can be stimulated with the purpose of reducing the risk of presenting the disease, such as strategies to control smoking and occupational exposure to carcinogens to prevent lung cancer<sup>(19)</sup>; and the adoption of healthier lifestyles, such as adequate diet and physical activity, which allow preventing and better controlling prostate, stomach and bowel cancers.

Moreover, actions to perform the early diagnosis (initial phase of the disease), broadening access to treatment in a timely manner; health education of society, formation of public opinion and strengthening of actions at schools and work environments have also been pointed out as beneficial practices<sup>(18)</sup>.

As observed in Table 4, the EC was responsible for the highest number of deaths (2,982) and the highest number of YPLL, with 107,380 lost years when considering all age groups. Furthermore, among the external causes, the age group from 20 to 29 years presented the highest proportion of deaths and the highest rates of YPLL, evidencing the premature overmortality of that population when compared to the other age groups and groups of causes.

**Table 4.** Deaths and YPLL, according to causes and age groups, Cuiabá-MT, 2002-2012.

		<i>Óbitos</i>		<i>YPLL</i>			
	<i>Age Group</i>	<i>Number of deaths</i>	<i>Proportion %</i>	<i>YPLL</i>	<i>YPLLR</i>	<i>Proportion % YPLL</i>	<i>Mean YPLL</i>
<i>External Causes</i>	20 - 29	1,417	47.5	63,765.0	122.0	59.3	45.0
	30 - 30	764	25.6	26,740.0	63.8	24.9	35.0
	40 - 49	486	16.3	12,150.0	38.1	11.3	25.0
	50 - 59	315	10.5	4,725.0	23.3	4.4	15.0
	<b>Total</b>	<b>2,982</b>	<b>58.0</b>	<b>107,380.0</b>	<b>73.4</b>	<b>100.0</b>	<b>36.0</b>
<i>Diseases of the Circulatory System</i>	<i>Age Group</i>	<i>Number of deaths</i>	<i>Proportion %</i>	<i>YPLL</i>	<i>YPLLR</i>	<i>Proporção %</i>	<i>Mean</i>
	20 - 29	53	3.9	2,385.0	4.5	8.2	45.0
	30 - 30	157	11.7	5,495.0	13.1	19.0	35.0
	40 - 49	405	30.2	10,125.0	31.7	35.0	25.0
	50 - 59	724	54.0	10,860.0	53.6	37.6	15.0
<b>Total</b>	<b>1,339</b>	<b>26.0</b>	<b>28,865.0</b>	<b>19.7</b>	<b>100.0</b>	<b>21.5</b>	
<i>Malignant Neoplasms</i>	<i>Age Group</i>	<i>Number of deaths</i>	<i>Proportion %</i>	<i>YPLL</i>	<i>YPLLR</i>	<i>Proportion %</i>	<i>Mean</i>
	20 - 29	43	5.2	1,935.0	3.7	11.2	45.0
	30 - 30	81	9.95	2,835.0	6.7	16.4	35.0
	40 - 49	215	26.4	5,375.0	16.8	31.1	25.0
	50 - 59	475	58.3	7,125.0	35.2	41.2	15.0
<b>Total</b>	<b>814</b>	<b>15.8</b>	<b>17,270.0</b>	<b>11.8</b>	<b>100.0</b>	<b>21.2</b>	

**Subtitle:** YPLL – Years of Potential Life Lost; YPLLR – YPLL Rate per 100 thousand inhabitants.

In Rio Grande do Norte, a study that aimed at verifying the YPLL by EC, between 2003 and 2012, found that, the male gender presented 15,827 deaths in the period, with 578,892 YPLL, predominantly due to aggressions, and the young male population (15 to 39 years old) had a significant loss of 447,317 YPLL<sup>(20)</sup>.

Despite the alarming context of the statistics of male mortality in Cuiabá-MT, the actions and strategies are still incipient, focused on the prevention of prostate cancer and the actions linked to the screening through the HIPERDIA program. In addition, the PNAISH was not yet implemented in the municipality during the period analyzed in this study, since, in 2012, the actions contained in the PTA of the municipality for the thematic area of human health were the dissemination in primary care of the Municipal Policy for Comprehensive Health Care for Man, the elaboration of a Municipal Protocol for Health Care for Man, the promotion of men's access to health services, the screening of prostate cancer in Primary Care and the guarantee of exams for the prevention of prostate cancer<sup>(9)</sup>.

Finally, it is necessary to point out that the causes that presented the highest coefficients of mortality were also those that exhibited a greater number of YPLL, reinforcing the importance of those causes in the unfolding of the epidemiological profile and the quality of life of the studied population.

## FINAL CONSIDERATIONS

In Rio Grande do Norte, a study that aimed at verifying the YPLL by EC, between 2003 and 2012, found that, the male gender presented 15,827 deaths in the period, with 578,892 YPLL, predominantly due to aggressions, and the young male population (15 to 39 years old) had a significant loss of 447,317 YPLL<sup>(20)</sup>.

Despite the alarming context of the statistics of male mortality in Cuiabá-MT, the actions and strategies are still incipient, focused on the prevention of prostate cancer and the actions linked to the screening through the HIPERDIA program. In addition, the PNAISH was not yet implemented in the municipality during the period analyzed in this study, since, in 2012, the actions contained in the PTA of the municipality for the thematic area

of human health were the dissemination in primary care of the Municipal Policy for Comprehensive Health Care for Man, the elaboration of a Municipal Protocol for Health Care for Man, the promotion of men's access to health services, the screening of prostate cancer in Primary Care and the guarantee of exams for the prevention of prostate cancer<sup>(9)</sup>.

Finally, it is necessary to point out that the causes that presented the highest coefficients of mortality were also those that exhibited a greater number of YPLL, reinforcing the importance of those causes in the unfolding of the epidemiological profile and the quality of life of the studied population.

## Conclusion

The analyzed information regarding the mortality of the male population, living in the municipality of Cuiabá-MT, between 2002 and 2012, suggest that their distribution patterns and characteristics are similar to those of populations in other regions of Brazil, where over-mortalities by violent causes (traffic accidents and homicides) and preventable causes, as well as the early mortality of men, expressed by the great loss of years of potential life lost in the younger population (20-29 years).

In addition to biological factors, that scenario also stems from social and behavioral factors linked to gender issues, especially hegemonic masculinity, which increase the risks of falling ill and dying among men. That dictatorial sociocultural model encourages men to adopt hostile and risky behavior by withdrawing from the aspects and attitudes of peace, sensitivity and frailty, considered feminine characteristics. Therefore, there is an attitude of contempt for one's own health, expressed by the poor use of health services, which makes that population vulnerable to the occurrence of violence, illness and early death.

Based on the situation presented in this research, it is important to draw the attention of the public agents, managers, politicians and health professionals of the municipality of Cuiabá to the serious public health problem, mainly due to violence, in order to foment the formulation of effective and joint coping strategies, mainly aimed at preventing those deaths.

Among the possible strategies, one expects to subsidize the improvement of education in schools

and in the work environments of the male population, in order to encourage behavior change, with a view to sensitizing that group on the importance of care with one's own health. In addition, this research contributes to professional practice, especially to Nursing, when presenting, in its results, the premature mortality of the male population of Cuiabá-MT, evidenced by the large number of YPLLs for external causes, data that are

relevant for the reordering of the main causes of death, allowing the establishment of planning and priority in the health actions of those professionals and services, who should direct attention to that population group.

This study presents as a limitation the use of secondary data that may have deficiencies in its filling, as well as underreporting.

## PRINCIPAIS CAUSAS DA MORTALIDADE MASCULINA E OS ANOS POTENCIAIS DE VIDA PERDIDOS POR ESTES AGRAVOS

### RESUMO

Esta pesquisa teve como objetivo descrever o perfil da mortalidade masculina de Cuiabá-MT entre os anos de 2002-2012 segundo as principais causas de mortalidade masculina e os anos potenciais de vida perdidos (APVP) por esta população. Trata-se de um estudo ecológico, realizado a partir de 5.135 registros de óbitos de homens com idades entre 20 e 59 anos, residentes em Cuiabá-MT. A análise descritiva foi feita através da frequência absoluta e relativa dos dados e cálculo dos Indicadores de Saúde. Dentre os resultados, destacam-se as mortes em decorrência de causas violentas e doenças crônicas e degenerativas, além da mortalidade precoce, expressa pela grande perda de APVP na população de 20 a 29 anos de idade. Diante deste panorama, ressalta-se a necessidade de ações conjuntas entre seguimentos da sociedade, agentes públicos e agentes de saúde no sentido de promover a mudança deste cenário através de ações educativas com intuito de fomentar a redução da mortalidade com a sensibilização da população masculina em relação aos comportamentos de risco como a violência e a direção perigosa, bem como a adoção de hábitos mais saudáveis.

**Palavras-chave:** Mortalidade. Saúde do Homem. APVP.

## PRINCIPALES CAUSAS DE MORTALIDAD MASCULINA Y LOS AÑOS POTENCIALES DE VIDA PERDIDOS DEBIDO A ESTOS AGRAVIOS

### RESUMEN

Esta investigación tuvo como objetivo describir el perfil de la mortalidad masculina de Cuiabá-MT, Brasil, entre los años de 2002-2012, según las principales causas de mortalidad masculina y los años potenciales de vida perdidos (APVP) por esta población. Se trata de un estudio ecológico, realizado a partir de 5.135 registros de óbitos de hombres con edades entre 20 y 59 años, residentes en Cuiabá-MT, Brasil. El análisis descriptivo fue hecho a través de la frecuencia absoluta y relativa de los datos y cálculo de los Indicadores de Salud. Entre los resultados, se destacan las muertes debido a causas violentas y enfermedades crónicas y degenerativas, además de la mortalidad precoz, expresada por la gran pérdida de los APVP en la población de 20 a 29 años de edad. Ante este panorama, se resalta la necesidad de acciones conjuntas entre segmentos de la sociedad, agentes públicos y agentes de salud en el sentido de promover el cambio de este escenario a través de acciones educativas con el objetivo de fomentar la reducción de la mortalidad con la sensibilización de la población masculina con relación a los comportamientos de riesgo como la violencia y la conducción temeraria, así como la adopción de hábitos más saludables.

**Palabras clave:** Mortalidad. Salud del Hombre. APVP.

## REFERENCIAS

- Cracium C, Montgomery A. Mens health: exploring vulnerabilities and maximizing opportunities. *Eur Health Psychol* [online]. 2016. [citado 2016 maio 20] 2016;18(1):3-6. Disponível em: <http://www.ehps.net/ehp/index.php/contents/article/viewFile/1408/18%201%20Editorial>
- White A, McKee M, de Sousa B, de Visser R, Hogston R, Madsen SA, Raine G. An examination of the association between premature mortality and life expectancy among men in Europe. *Eur J Public Health* [online]. 2014. [citado 2016 maio 22];24(4):673-9. Disponível em: <http://eurpub.oxfordjournals.org/content/eurpub/24/4/673.full.pdf>
- Silva LA, Corrêa ACP, Fraga JCAXO, Rodrigues TC, Divino EA. Percepções de homens trabalhadores sobre suas necessidades de saúde em um serviço universitário de saúde. *Cienc Cuid Saude* [online]. 2016. [citado 2016 maio 22]; 15(1):133-40. Disponível em:
- Instituto Brasileiro de Geografia e Estatística. Censo demográfico 2000 [online]. Brasília; 2000.[citado 2016 maio 22]. Disponível em: <http://www.ibge.gov.br/home/estatistica/populacao/censo2000/>
- Ministério da Saúde (BR). Departamento de Informática do SUS – Datasus. Indicadores de mortalidade [online]. Brasília (DF); 2015. [citado 2016 maio 24]. Disponível em: <http://tabnet.datasus.gov.br/cgi/idx2012/matriz.htm#Mort>
- Paz EPA, Guimarães RM, Muzi CD, Tavares MAS, Bahia CA, Ayres ARG. Análise da tendência da mortalidade masculina no Rio de Janeiro: contribuição da enfermagem. *Esc Anna Nery* [online]. 2014.[citado 2016 maio 25];18(4):593-99. Disponível em: [http://www.scielo.br/scielo.php?pid=S1414-81452014000400593&script=sci\\_arttext&tIing=en](http://www.scielo.br/scielo.php?pid=S1414-81452014000400593&script=sci_arttext&tIing=en)



7. Ministério da Saúde (BR). Secretaria de atenção à saúde. Departamento de ações programáticas estratégicas. Política nacional de atenção integral à saúde do homem: Princípios e Diretrizes [online]. Brasília (DF); 2009. [citado 2016 maio 1]. Disponível em: [http://www.unfpa.org.br/Arquivos/saude\\_do\\_homem.pdf](http://www.unfpa.org.br/Arquivos/saude_do_homem.pdf)
8. Leal AF, Figueiredo WS, Nogueira-da-Silva GS. O percurso da Política Nacional de Atenção Integral à Saúde dos Homens (PNAISH), desde a sua formulação até sua implementação nos serviços públicos locais de atenção à saúde. *Ciênc Saúde Coletiva* [online]. 2012. [citado 2016 maio 25];17(10):2607-16. Disponível em: <http://www.scielo.br/pdf/csc/v17n10/10.pdf>
9. Correa ACP, Mozer IT. Gestão do processo de implementação da política de saúde do homem. *Rev Enferm UERJ*[online]. 2016. [citado 2016 jun 25 jun]; 24(1):e9483. Disponível em: <http://www.facef.uerj.br/v24n1/v24n1a20.pdf>
10. Laurenti R, Mello-Jorge MHP, Lebrão ML, Gotlieb SLD. Estatísticas de saúde. 2ª ed. rev. e atual. São Paulo: EPU; 2005.
11. Rede Intergenerencial de Informações da Saúde. Fichas de qualificação dos indicadores de saúde [online]. Brasília (DF); 2012. [citado 2016 jun 2]. Disponível em: [http://fichas.ripsa.org.br/2012/category/mortalidade/?l=pt\\_B](http://fichas.ripsa.org.br/2012/category/mortalidade/?l=pt_B)
12. Paixão LMMM, Gontijo ED, Drumond EF, Friche AAL, Caiaffa WT. Acidentes de trânsito em Belo Horizonte: o que revelam três diferentes fontes de informações, 2008 a 2010. *Rev Bras Epidemiol*. [online]. 2015. [citado 2016 jun 27];18(1):108-22. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S1415-790X2015000100108&lng=pt&nrm=iso&tlng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1415-790X2015000100108&lng=pt&nrm=iso&tlng=en)
13. Souza LGS, Siviero PCL. Diferenciais de mortalidade entre homens e mulheres: Sul de Minas Gerais, 2002 e 2012. *Cad Saúde Coletiva*[online]. 2015. [citado 2016 jun 27];23(1):24-31. Disponível em <http://www.scielo.br/pdf/cadsc/v23n1/1414-462X-cadsc-23-01-00025.pdf>
14. Luizaga CTM, Gotlieb SLD. Mortalidade masculina em três capitais brasileiras, 1979 a 2007. *Rev Bras Epidemiol*. [online]. 2013. [citado 2016 maio 27];16(1):87-99. Disponível em: [http://www.scielo.br/scielo.php?pid=S1415-790X2013000100087&script=sci\\_abstract&tlng=pt](http://www.scielo.br/scielo.php?pid=S1415-790X2013000100087&script=sci_abstract&tlng=pt)
15. Soares GP, Brum JD, Oliveira GMM, Klein CH, Silva NAS. Evolução de Indicadores Socioeconômicos e da Mortalidade Cardiovascular em três Estados do Brasil. *Arq Bras Cardiol*. [online]. 2013 fev. [citado 2016 maio 29];100(2):147-56. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0066-782X2013000200007](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0066-782X2013000200007)
16. Nakashima JP, Koifman S, Koifman RJ. Tendência de mortalidade por Neoplasias Malignas selecionadas em Rio Branco, Acre, Brasil, 1980 a 2006. *Cad Saúde Pública*[online]. 2011 jun. [citado 2016 jun 15];27(6):1165-74. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-311X2011000600013&lng=en&nrm=iso&tlng=pt](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2011000600013&lng=en&nrm=iso&tlng=pt)
17. Lacerda KC, Rocha RC, Melo MM, Nunes LC. Mortalidade por câncer de estômago em Volta Redonda-RJ, 1981-2008. *Epidemiol Serv Saúde*[online]. 2014 jul/set. [citado 2016 jun 15];23(3):519-26. Disponível em: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S2237-96222014000300519](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S2237-96222014000300519)
18. Nascimento FSM, Góis DNS, Almeida DS, Nascimento AL, Almeida TC, Guedes VR. A importância do acompanhamento nutricional no tratamento e na prevenção do câncer. *Ciênc Biol Saúde* [online]. 2015 mar. [citado 2016 jun 1];2(3):11-24. Disponível em: [file:///D:/Downloads/1787-6662-1-PB%20\(1\).pdf](file:///D:/Downloads/1787-6662-1-PB%20(1).pdf)
19. Ministério da Saúde (BR). Instituto Nacional de Câncer. Estimativa/2014 – Incidência de Câncer no Brasil [online]. Rio de Janeiro; 2014 [citado 2016 jun 15]. Disponível em: [http://www.saude.sp.gov.br/resources/ses/perfil/gestor/homepage/outros-destaques/estimativa-de-incidencia-de-cancer-2014/estimativa\\_cancer\\_24042014.pdf](http://www.saude.sp.gov.br/resources/ses/perfil/gestor/homepage/outros-destaques/estimativa-de-incidencia-de-cancer-2014/estimativa_cancer_24042014.pdf)
20. Moura, LA, Cruz NM, Oliveira LCA, Gurgel PKF, Teixeira MC, Soares WLP. Anos potenciais de vida perdidos por causas externas no Rio Grande do Norte, 2003 a 2012. *Unopar: Ciênc Biol Saúde* [online]. 2015. [citado 2016 jun];17(2):101-6. Disponível em: <http://pgsskroton.com.br/seer/index.php/JHealthSci/article/viewFile/295/276>

**Corresponding author:** Jeane Cristina Anschau Xavier de Oliveira Fraga. Rua c n65, Condomínio Garden, apto 905, torre 1. Bairro: Bosque da saúde, Cuiabá-MT, CEP:78050320. E-mail: [jeane.anschau@hotmail.com](mailto:jeane.anschau@hotmail.com)

**Submitted:** 01/09/2015

**Accepted:** 14/11/2016