

## **A STUDY ON THE EVOLUTION OF DEMOGRAPHIC CHANGES WITHIN THE ELDERLY POPULATION OF BIHOR COUNTY**

**Bonta Marinela\*, Daina Lucia\***

\*University of Oradea, Faculty of Medicine and Pharmacy, Oradea, 1 December Street, nr.10,  
Romania, e-mail:bontamarinela@yahoo.com

### ***Abstract***

*The evolution of a population is assured by its renewal through births, deaths and migratory movements. Demography studies phenomena and processes that unfold within a population, for its geographical allotment, its structure and movements, as well as for the detection of the laws that rule it and the tendencies of its further development. The constant increase of the number of older persons within the general structure of the population is determined by a phenomenon called population aging, which is characteristic to Romania and Bihor County. The demographic study of the Bihor County population reveals a decline of general population within 2005-2009, while, during this period, the number of the elders is slightly increased in relation to the entire population.*

**Key words:** elderly population, demography, state of health

### **INTRODUCTION**

Over the last decades, a series of changes have been produced within the general structure of the population in our country. Due to the social and economic development, the boost of the living standards, the measures that have been taken to improve the sanitary system and the overall development of the medicine, the life expectancy, which is the median age of our country, has increased (MS – CCSSDM, 2008). By reason of these factors, a series of changes have bechanced within the age group structure of the population, showing an increase of the elders balance within the general population. **Aim:** The aim of the present work is to follow the various demographic aspects that regard the elder population, leading to the identification of some specific peculiarities of this population group.

### **MATERIAL AND METHOD**

The present work is a demographic study which regards the evolution of the number of elders in Bihor County within a period between 2005 and 2009, both in urban and rural areas, by sexes. Given that O.N.U. recommendation of the lower age limit by which a person could be called an elder is 65 years old (Enachescu D., et al, 1998), we have respected this recommendation in our study and thus all the materials and methods used in the present study of the elder population refer to the population elder than 65 years old. In order to measure the aging degree of the Bihor County population we have used the following methods: the relation between the

number of the elders and the number of the children, the balance of the population that has crossed the age of 65 within the entire population of the country.

## RESULTS AND DISSCUSIONS

The study of demographic evolution of the elder population in Bihor County underlines a few peculiar aspects. The analysis of the statistic data regarding the demographic evolution of the elder population in Bihor County revealed the following results, inserted in the tables below:

Table 1

The elderly population between 2005-2009, in Bihor County

Year	General population	Elderly population lder population that has crossed the age of 65	The balance of elder population(%)	The relation between the number of elders and number of children
2005	595685	85545	14,36	0,59
2006	594982	85529	14,37	0,60
2007	594131	85252	14,34	0,618
2008	593431	85381	14,38	0,625
2009	593055	84819	14,30	0,63

Table 2

The elderly population by age groups and sexes, between 2005 and 2009 in Bihor County

Year	Overall number of persons by group			Sex					
				M			F		
	65-69 years	70-79 years	80 years and more	65-69 years	70-79 years	80 years and more	65-69 years	70-79 years	80 years and more
2005	29290	42334	13931	12404	17439	5175	16886	24822	8756
2006	28710	42581	14238	12190	17458	5280	16520	24895	8958
2007	27441	42917	14894	11474	17519	5465	15679	25123	9429
2008	27059	43122	15200	11410	17452	5596	15649	25398	9604
2009	25580	43362	15877	10866	17383	5885	14714	25979	9992

Table 3

The evolution of the number of elderly population by age groups, in urban areas and by sexes between 2005-2009

Year	Overall number of persons by group in Urban Areas			Sex					
				M			F		
	65-69 years	70-79 years	80 years and more	65-69 years	70-79 years	80 years and more	65-69 years	70-79 years	80 years and more
2005	11980	15420	5038	5008	6207	1672	6951	10213	3366
2006	11833	15744	5255	5029	6298	1712	6838	9446	3510
2007	11936	16131	5491	5019	6460	1799	6917	9671	3692
2008	11838	16390	5623	5016	6491	1866	6822	9899	3757
2009	11400	16781	5881	4841	6566	2005	6559	10215	3876

Table 4

The evolution of the number of elderly population by age groups, in rural areas and by sexes between 2005-2009

Year	Overall number of persons by group in Rural Areas			Sex					
				M			F		
	65-69 years	70-79 years	80 years and more	65-69 years	70-79 years	80 years and more	65-69 years	70-79 years	80 years and more
2005	17310	26914	8893	7375	6980	3503	9935	15682	5390
2006	16877	26837	8983	7195	11160	3535	9682	15677	5448
2007	15505	26786	9403	6455	11059	3666	9050	15727	5737
2008	15221	26732	9577	6394	10961	3730	8827	15771	5847
2009	14180	26581	9996	6025	10817	3880	8155	15764	6116

The number of elderly population in Bihor County is subject to a decline between 2005-2009, but in relation to the entire population of the county, it is noticeable that this decrease is not that significant, as well the decrease of the number of the entire population (MS-CCSSDM 2007-2008).

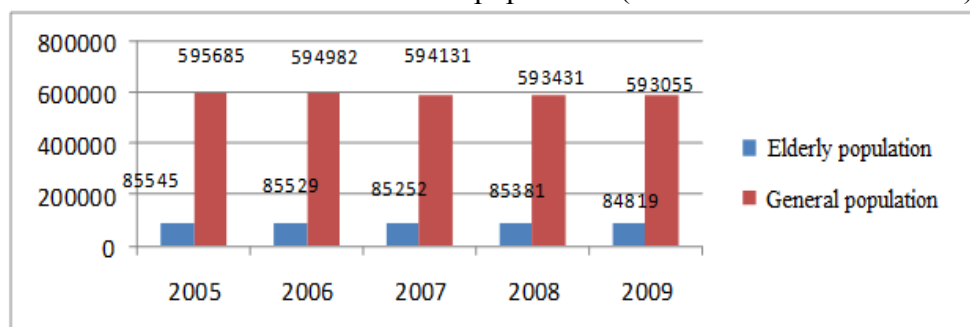


Fig.1. Evolution of the general and elderly population in Bihor County between 2005-2009

As for the age groups, it is also found that the elderly population is subject to a decrease. Thus, within the 65-69 age group, the number of the elders decreases from 29492 in 2005 to 25580 in 2009. The latter group reveals a decrease of the number of male elders in relation to the number of female elders. In 2005 the rate of male elders from this group was 42%, meanwhile the female population represented 58% of the overall population within the 65-69 age group. Regarding the two descent areas: urban and rural; the number of elderly population from within this group is higher in rural areas, where the number of women is also higher than the number of men from this group (fig.2).

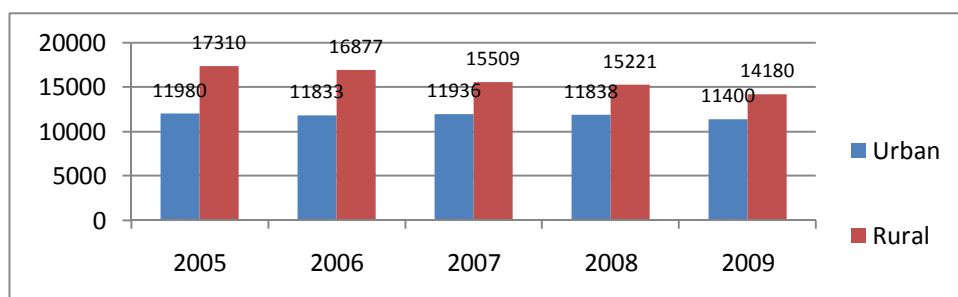


Fig. 2. The evolution of the population from within 65-69 age group in Bihor County between 2005-2009

The study reveals that generally the elderly population from urban areas is lower than that of the rural areas. The rate of the elder population from urban areas within the 65-69 age group is that of 40,9%, meanwhile the rural areas population represented 59,1% in 2005. In 2009 the elderly population from the urban areas has increased to 44,5% while the rural areas population has decreased to 55,5%.

The evolution of the number of elders from the two descent areas reveals a decrease of population, both in urban and in rural areas.

The elderly population from the 70-79 age group is characterized by an ascending evolution during the period 2005-2009. Thus, while in 2005 it represented a 7,1% from the entire population of the County, in 2009 it represented 7,3%. As for the evolution of the number of elders by sexes, it turns out that the male population registers a steady 41,1% - 40,7%, with a slight decrease, while the female population increases progressively from 24822 in 2005 to 25979 in 2009. As to dynamics of the population according to its descent area, an increase of urban population between 2005-2009 is revealed. Both in urban and in rural areas the female population exceeds the male population (fig. 3).

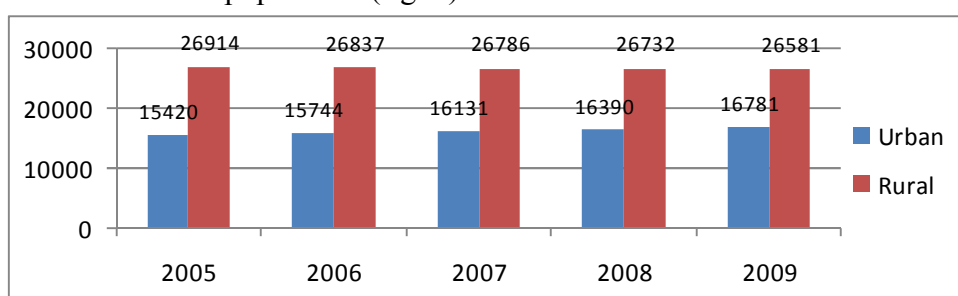


Fig.3. The evolution of the elderly population of the 70-79 age group, in Bihor County between 2005-2009

The analysis of the balance of population that has crossed the age of 80 years reveals an increase from 2,33% in 2005 to 2,67% in 2009 from the general population of Bihor County.

Within this age group the difference between the two sexes is conserved; thus the female population is higher in both rural and urban areas (fig 4).

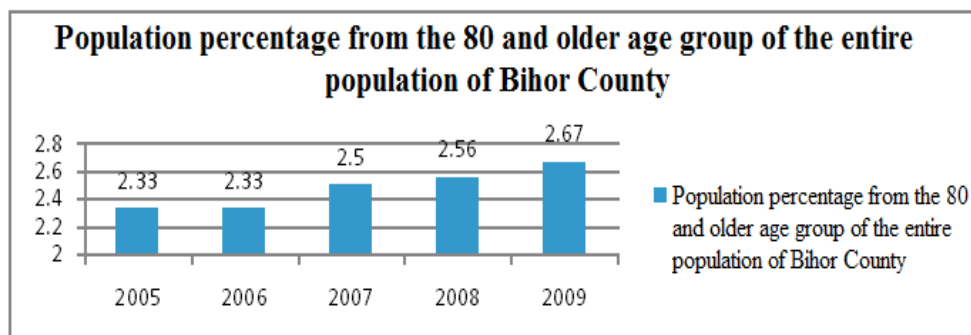


Fig.4. The evolution of the elderly population from the 80 and older age group in Bihor County between 2005-2009

Regarding the two descent areas, urban and rural, the demographic study reveals a more consistent representation of elders from within this group in the rural areas (fig. 5).

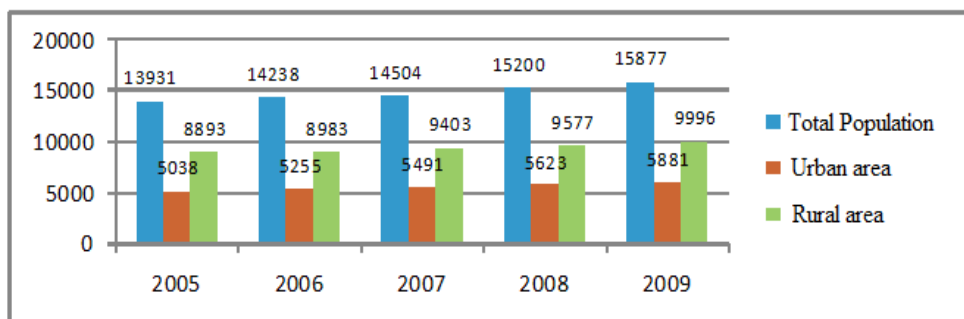


Fig.5. The balance of the elderly population from the 80 and older age group, according to areas of descent, in Bihor County between 2005-2009

As the population ages, a progressive increase of the number of elders is being revealed, which appears from the study of the demographic data of 80 and more age group in Bihor County. This increase is mirrored both in the overall number of persons belonging to this group, and in the number of elders from urban and rural areas.

These demographic data underline the fact that the 80 and more age group has the most accelerated growth pace, which is also mentioned in specialty studies.

Our County is also particularly careful with the elderly population (MS- DSP Bihor, 2004). The development of the sanitary service in Bihor County, the increase of the number of medical units, both public and private, the endowment with high technology equipment of some units, the emphasis on importance of the preventive medicine, the various programs involving the health of the elders, the interest of some charity societies shown in the medication of elders, certain programs and measures taken in the integration of the elders into society have lead, during these last years, to the increase of life expectancy, which is also mirrored by the high number of persons that have crossed the age of 80 years (Drugus L., 2002).

***Discussions on the change of the relation between the number of the elders and the number of children in Bihor County between 2005-2009***

One of the methods for measurement of the population aging is the analysis of the relation between the number of elders and the number of children (fig.6).

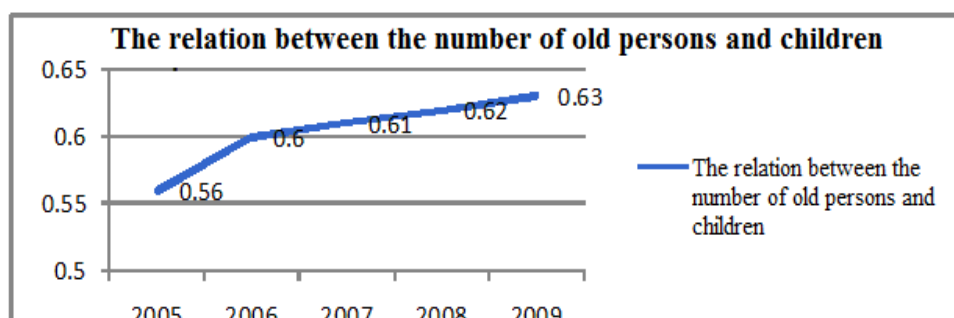


Fig.6. The relation between the number of old persons and children

The results of this analysis mirror the degree of population aging in Bihor County, between 2005-2009. It shows a slight increase of the aging degree, thus while in 2005, the value of the relation was 0,59, in 2009 it reached 0,63. It is estimated that the degree of the population aging has been constantly increasing in every year by 0.01, between 2005-2009.

It might be assumed that the aging pace and the ratio of the numerical increase of the elders in Bihor County is higher than in other regions of the country. In Bihor County is also revealed by the available demographic data that the number of children decreases from 144259 in 2005 to 133745 in 2009, while the number of elders has increased to 85382 in 2008.

### Discussions on the balance of the elderly population within the general population of the County

The balance of the elderly population within the general population is another method for measuring the population aging.

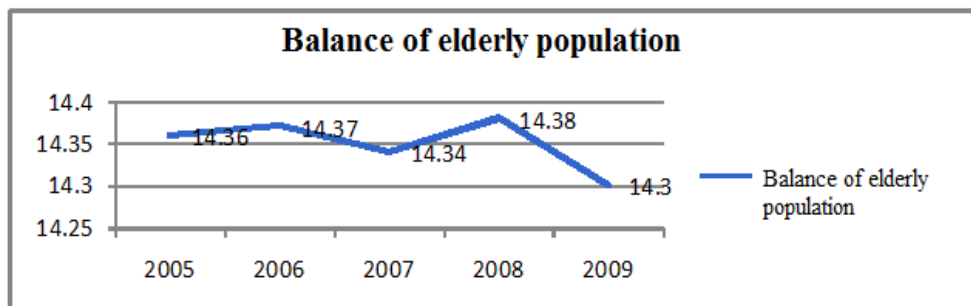


Fig.7. The balance of the elderly population within the general population

During the studied period: 2005-2009, the population aging expressed by the balance of the elders within the general population has a peculiar evolution (fig 7).

In 2005, the balance of elders was 14,36% from the general population. In 2006 this ratio increases slightly to 14,37%, while in 2007 a decrease of the rate is being registered – 14,34%. The balance of the elders increases in 2008 reaching a rate of 14,38%, while in 2009, by the end of the studied period, the balance of the elders is therefore decreased to 14,30%.

### *The evolution of the mortality of elders in Bihor County between 2005-2009*

Another important demographic phenomenon that affects the elders' ratio is mortality. The mortality of the persons over 65 years old in Bihor County has decreased from 2005 to 2009 (fig.8).

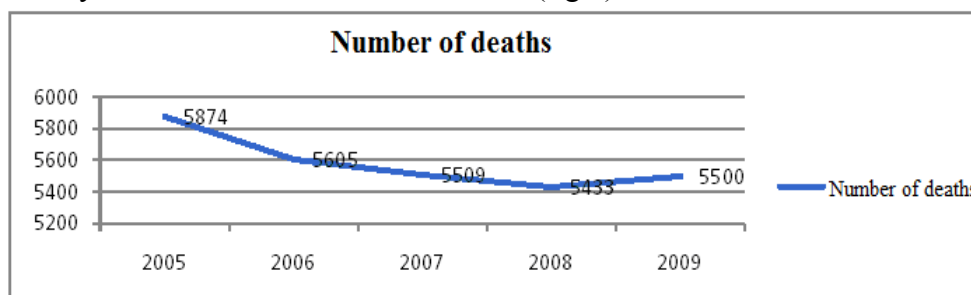


Fig.8. The evolution of the mortality of old persons over 65 years old in Bihor County between 2005-2009

A slight increase of the mortality of elders in 2009 is mirrored by the decrease of the balance of elders in 2009, thus the two demographic parameters are correlated (fig. 9).

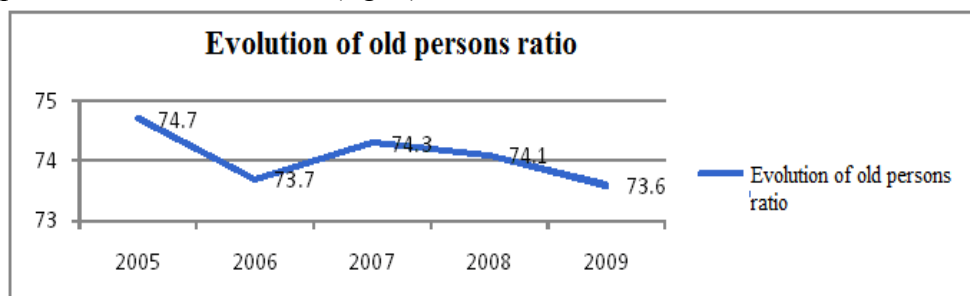


Fig.9. The evolution of old persons' ratio within the general mortality

The mortality of the elder persons is much higher than the general mortality in Bihor County. The eventuality of a decease increases along with aging, thus the percentage values reveal that the ratio of the mortality of elders is rather high and varies between 74,7% in 2005 and 73,6% in 2009, from the overall deceases within the County. The population aging process shows high values, but during the last five years it is kept around a ratio of 14,35%, hence lower than in other regions of Romania (Duda R, 1996).

## CONCLUSIONS

The demographic study of the population of Bihor County reveals a decrease of the general population during 2005-2009, while the number of old persons slightly increases in this period.

The 65-69 age group registers a decrease of the number of old persons during the period between 2005 and 2009. The decrease affects both sexes.

Within every age group comprised in our study, the number of women is bigger than the number of men.

The demographic study reveals a higher number of elders in rural areas rather than in urban ones during the studied period, i.e. 2005-2009.

The measurement of the population aging degree in Bihor County, by means of the relation between the number of elders and the number of children, has revealed a progressive increase of elderly population, mirrored through the values of this relation, which increase slightly throughout the period 2005-2009.

The balance of elderly population within the general population of Bihor County between 2005-2009 shows, through the results of the demographic study, an increase of population aging degree.



## REFERENCES

1. Drugus L., 2002, Managementul sănătății, Editura Sedcom Libris, Iași
2. Duda R.C., 1996, Sănătate publică și management, Editura Moldotip, Iași
3. Enachescu D., Marcu M. Gr., 1998, Sănătate publică și management sanitar, Editura All, București
4. Ministerul Sanatatii - Centrul De Calcul, Statistica Sanitara si Documentare Medicala, 2008, Aspecte demografice de sănătate și sociale ale populației vârstnice din România, Februarie
5. Ministerul Sanatatii - Centrul De Calcul, Statistică Sanitară Și Documentare Medicală, 2008, Anuar de statistică sanitară 2007-2008
6. Ministerul Sanatatii, DSP- Bihor, 2009, Analiza Stării de Sănătate a populației din Municipiul Oradea în anul 2009, 25-41

