EVOLUTION OF LONGEVITY IN THE PREDOMINANTLY CATHOLIC POPULATION OF BUTEA (IASSY DISTRICT) ALONG THE XX-TH CENTURY

BY

MARIA ȘTIRBU¹, MARIA ISTRATE¹, MONALISA STUPU¹

Key words: average age of decease, longevity, mortality

Starting from the data provided by the death certificates filed in the archives of the Butea village, the authors have calculated, for each decade of the XXth century, the average age of death, as well as mortality, on groups of age - both separately, on sexes, and for both sexes, taken together. The results obtained evidenced that, in time, longevity increased, although not perfectly linearly, the stagnation, or even its decreases being determined mainly by the two World Wars and also by the post-December transition period in the last decade of the XXth century.

Introduction

Longevity, estimated by the average age of death, i.e. by mortality, representing one of the two bipolar aspects of natural movements, offers - if viewed retrospectively - valuable information both for the evaluation of the adaptive capacity specific to each population, and for the dynamics of the modifications brought about by civilization.

The present paper analyzes the evolution of longevity in the population of Butea along the whole XXth century, as an aspect of the complex anthropological study developed on this predominantly Catholic population, unproperly defined as „ceangăi”, a population with a highly disputed ethnics.

Materials and method

The material considered for the study has been taken over from the civil Status records - of the Butea archives, kindly provided by the village magistrate - to whom the authors of the study extend their thanks.

Statistical processing, according to the classical methods [3, 8], assumed calculation of the frequency of deceases - on age and sex groups, as well as at the level of both sexes, for each decade of the XXth century. There have been also calculated, for each sex and at the level of each decade, the average age of death, both for the whole number of deceased people (0-x year old) and for the deceased ones having reached an adult age (20-x year old). The results obtained have been illustrated as graphs.

¹ Romanian Academy, Department of Anthropology
Results and discussion

On analyzing first the evolution - in time - of the deceases' frequency, on large groups of age (0-19, 60-x and 20-59 years), the observation was made that the population in Butea is characterized - as all the other populations taken into study, either by the present or by other authors - by a classical behaviour [1, 2, 4-6].

Indeed, the curve of deceases in the young (0-19 years) generations is generally descending in time, while that of the old generations deceases is ascending and, finally, that of the 20-59 year old adults oscillates from one decade to another (Figs. 1 and 2).

A more detailed analysis of the phenomenon evidences that, in the young (0-19 year old) generations, the frequency of deceases increases from the first to the fourth decade, when a maximum frequency of 68% is recorded, followed by a progressive decrease until the last decade, in which a minimum frequency, of about 4%, is registered (Fig. 1).

If taking into consideration each of the ages belonging to the 0-19 years stage, mention should be made of the fact that infantile mortality is the highest, followed by the mortality of the 1-4 year old children. As to frequency, the mortality of children, teen-agers and 5-19 year old young ones occupies the last position, with the exception of the last two decades, in which the percent values of the deceases are slightly higher in this group of age, comparatively with the 0-1 year and 1-4 year old groups (Fig. 3).

Analysis of infantile (0-1 year) mortality permits the observation that it increases from the first to the fourth decade, when the maximum percent value - of about 42% - is recorded, followed by a progressive decrease up to the last decade, when the frequency of deceases is of only 1.39% (Fig. 3). Also, the descending tendency of infantile mortality is well illustrated by the values of the infantile mortality index (Fig. 5). Indeed, its values increase from the first to the third decade (Fig. 5), when a maximum value of 293.66‰ is recorded, followed by an ample decrease until the 9th decade, when the percent rate recorded is of 10.59‰, and, in the last decade, by an about 1‰ increase (11.4‰).

In the 1-4 year old level of age, the frequency of deceases evidences, generally, an ascending tendency from the first to the fourth decade, when the maximum percent value - of about 19% (Fig. 3), followed by a diminishing, in time, up to the last decade when only one decease is recorded (0.23). In the 5-19 year old group of age, the maximum frequency of deceases, of about 9%, occurs between 1910-1919, followed by a decrease, in time, the minimum frequency (2%) being attained in the last decade (Fig. 3).

As to sexual dimorphism, it has been observed that, at the level of the whole 0-19 year old group of age, and also at the 0-1 year old one, with only a few exceptions, mortality is higher in boys than in girls (Fig. 4) while, in the 1-4 year old category (Fig. 6), the situation is reversed; again, in the 5-19 year old group of age, mortality of the males is - with a few exceptions - slightly higher than that of females (Fig. 7).

In the cohort of the 60-x year old deceased ones (Fig. 1), the frequency of mortality oscillates slightly from one decade to another until 1939, between percent
values of 17 and 23%, followed by an ample increase, up to a maximum value of 73% along the 1980-1989 decade. In the last decade of the century, a slight diminution, of about 1%, should be mentioned.

A thorough analysis of the deceases recorded with each category of age, as components of the 60-x year old category (Fig. 8), evidences some important modifications.

Thus, until the 3rd decade, the highest frequency of deceases occurs in the 60-69 year old cohort. Starting with the 4th decade, most of the deceases are recorded in 70-79 year old people, although the differences are attenuated until the 6th decade, followed by their amplification, up to a maximum value around 13% in the 1980-1989 decade. In the last decade, an about 6% increase of mortality in the 60-69 year old category is observed, alongwith an about 7% decrease in the 70-79 year old one, so that the frequency of deceases is equal (23.77%) within these two groups of age. In the case of octogenarians, mortality (Fig. 8) remains at percent values ranging between 3 and 4% up the sixth decade, then increases up to a maximum value of 22.37% in the last decade, which is a slightly lower value than that recorded in the 60-69 and 70-79 year old groups. Worth mentioning here is the fact that, in decades 8 and 9, the frequency of deceases in octogenarians is higher than that of the 60-69 year old group (Fig. 8).

As to the nonagerians (in which centenarians had been also included, as they are only 6-2 men and 4 women), their mortality is low, the highest percent value, of about 2.80, being recorded in the last 2 decades.

For the 60-x year old cohort, the sexual differences are, with the exception of decade 4, in favour of women. Analysis of sexual dimorphism at the level of each category of age evidences a higher mortality in men than in women - in the 60-69 year old group (Fig. 9) yet higher in women than in men - for the 70-79 year old one (Fig. 10) and - with only few exception - for the 80-89 year old group (Fig. 11).

There results from here that women’s longevity is higher than that of men - which is not quite surprising, as it appears in all populations taken into study [1, 2, 4-6].

In the 20-59 year old cohort (Fig. 2), the frequency of deceases decreases slightly from the first up to the 4th decade, when a minimum percent value around 14% is recorded, followed by higher values in the following two decades, when a maximum percent value of about 26% is registered, after which it slightly decreases in the 7th and 8th decades, increasing once again in the last two decades.

Special mention should be made here of the fact that, for this category of age, the frequency of deceases in the last decade is practically equal to that recorded for the 60-69 and 70-79 year old categories. The conclusions to be drawn from here is that, in the last decade, a decrease in longevity is to be observed, a situation reflected, too, by the average age of decease.

As to sexual dimorphism, one should observe that, with the exception of the first three decades, in which mortality is slightly higher in women than in men, in all the others, mortality is higher in men than in women, the differences recorded being ample in the last three decades of the century (Fig. 2).
Evolution of mortality in time, on groups of age, is well reflected, too, by the values of the average age of decease.

Indeed, if taking into consideration the whole series of deceased people (0-x years), it is to be observed that, after a slight diminution from the first to the 4th decade - in women -, along with a certain alternance of slight diminutions and increases - in men -, starting with the 5th decade, the average age of death increases linearly and progressively, until the end of the century - in the former, yet until the end of the 9th decade - in the latter ones (Fig. 12). In this latter case, in the 1990-1999 decade, the average age of decease is reducing with 1.30 years. The impressive increase of the average age of decease, with about 43 years in men and 47 years in women is mainly, explained by the reduction of mortality in the young generations (the most spectacular diminution occurring in infantile mortality), as well as by the increase of mortality in people older than 60. In this respect, mention should be made of the fact that the most reduced average age of decease is of 20.65 years in the masculine sex and of 22.70 years in the feminine one, being recorded, much to our surprise, in the decade 1930-1939, when the country’s economic development attained a maximum. In this case, the assumption may be made that, involved here could have been some infectious maladies which had affected the younger generations, the newly-born ones, especially, as the only plausible explanation for the maximum frequency of mortality in young generations, recorded in this decade.

The highest average age of decease is of 63.80 years, in the case of men, recorded in the decade 1980-1989 while, in women, the value of 70.50 years was recorded in the last decade of the century.

In the 20-x years cohort of deceased people (Fig. 13), the difference between the maximum and the minimum average age of decease is much more attenuated (16-17 years).

However, worth mentioning here is the fact that the minimum value, of 51.90 years, in men, is recorded between 1940-1949 (i.e., exactly during the second World War) while for women, of 55.40 years, is registered in the first decade (1900-1909). The maximum values of the 68.40 years in men and of the 72.40 years in women is registered in the decade 1980-1989. In the last decade, the average age of decease decreases with 3.20 years in men, but with only 0.30 in women. Ap a matter of fact, one should underline that, both in the 0-x year and the 20-x year cohort of deceased ones, the values of the average age of decease are, along the whole century and with only few exceptions, higher in women than in men, which permits the general conclusion that, in all populations, longevity is higher in women than in men [1, 2, 4-6].

Conclusions

Analysis of longevity’s evolution in the population of Butea, along the whole Xxthe century, evidenced its increase in time, although not in a linear manner. The stagnations and even diminutions recorded have been influenced mainly by the two World Wars, but also by the post-December transition period of the last decade. In this
respect, one should mention that both the two world conflagrations and the revolution of 1989 affected mostly men, and not women. Actually, the studies developed on phenomena of growth have shown that boys are more sensible to precarious conditions of life than girls [7].

The increase in longevity is due, as demonstrated in the present study - to a spectacular reduction in the mortality of the young generations (0-19 years) and especially in infantile mortality (0-1 year), as well as to a higher mortality of the old generations - septuagenarians and octogenarians, especially - as a consequence of the better economic and, equally, hygiencio-sanitary conditions of life.

As a matter of fact, the higher mortality recorded in the first 3 decades in women, in the 20-59 years category of age, comparatively with men, should be explained mainly by the deceases at birth, a consequence of the unsuitable hygienico-sanitary conditions of those times.

Curves of the deceases evolution in time, on groups of age and sexes

![Fig. 1. 0 - 19 years and 60 - x years](image1)

![Fig. 2. 20 - 59 years](image2)
Fig. 3. Curves of the time evolution of deceases at 0-1 year, 1-4 years and 5-19 years

Fig. 4. Curves of the time evolution of deceases on sexes at 0 - 1 year

Fig. 5. Curves of the evolution, in time, of the indices of infantile mortality
Curves of the evolution, in time, of deceases, on sexes at: 1-4 years and 5-19 years

Fig. 6. 1 - 4 years

Fig. 7. 5 - 19 years

Fig. 8. Curves of the evolution, in time, of deceases on decades of age at 60-89 years

Curves of the evolution, in time, of the deceases, on decades and age and sexes

Fig. 9. 60 - 69 years

Fig. 10. 70 - 79 years
Fig. 11. 80 - 89 years

Curves of the evolution, in time, of the average age of decease, on sexes, at: 0-x years and 20-x years

Fig. 12. 0-x years

Fig. 13. 20-x years

Bibliography

1. Cristescu, Maria and collab., 1982 - St. cerc. antropol., 19, 28-34.