



Munich Personal RePEc Archive

**Infantile mortality and life expectancy:
vulnerability indicators in north-western
Transylvanian communities (second half
of the 19th century – beginning of the
20th century)**

Brie, Mircea and Polgar, Istvan

University of Oradea, Romania

2011

Online at <https://mpra.ub.uni-muenchen.de/44554/>

MPRA Paper No. 44554, posted 24 Feb 2013 06:46 UTC

Infantile Mortality and Life Expectancy: Vulnerability Indicators in North-Western Transylvanian Communities (second half of the 19th century – beginning of the 20th century)¹

MIRCEA BRIE
POLGAR ISTVAN

Abstract: Life expectancy at birth or middle age was tightly connected to mortality structure. Major mortality crises in certain years greatly reduced life expectancy in the area. High mortality rate influencing all age groups led to a considerable decrease of average age. From the point of view of life expectancy in the whole region, there was a genuine positive revolution. Mortality rate in the region as well as in Transylvania and Hungary greatly decreased, thus leading to the demographic pattern specific in Central and Western Europe at the time. The number of children dying before reaching the age of 1 and infantile mortality together with the high mortality rate at children aged 1 to 5 show that “young age group was dominant” in mortality analysis. Children were the most exposed to pressure of internal and external factors leading to death. Children were the most vulnerable in front of “death claws” in all seasons and all communities. It was a reality in all Transylvania.

In spite of obvious developments as compared to 1860-1880, in 1910, there still was a high mortality rate amongst children. In Bihor, the percentage of deceased children under 5 out of the total number of children was 34.2%, and of those under 7 was 36.3%. In the Sătmar County, mortality amongst children was even higher, which has been proved by the great number of deceased children in Ghenci: out of the total number of children, 36.3% were children deceased before reaching 5, while 38.4% were under 7 in 1910. In 1900-1910, the average number of newborns was 17,547 in Bihor and 9,655 in Sătmar. In the same period, the annual average of deceased children in Bihor was 4,094 and in Sătmar was 2,198. From the average of deceased children under 1 and the average number of newborns in 1900-1910, the average infantile mortality rate was 232.95‰ in Bihor and 227.65‰ in Sătmar. Thus, there was a very high infantile mortality rate in the two counties. It was above the rate in Transylvania, where average infantile mortality rate was 206.24‰. Despite the high infantile mortality rate, there were counties where infantile mortality rate index was even higher; for instance, in Arad infantile mortality rate was 245.56‰. In the two county seats, average infantile mortality rate for 1900-1910 was lower as compared to the whole of the counties. In Oradea, infantile mortality rate was 213.25‰ and in Satu Mare it was 219.98‰.

This was a world where many were born and many died. Children were the most exposed to social, economic and meteorological hardships. Throughout the second half of the 19th century and at the beginning of the 20th century, there was a high infantile mortality rate. Moreover, as seen in the Principality of Transylvania, infantile mortality rate was even increasing in some regions. There were several complex causes of high infantile mortality. They originated in the precarious living conditions, lack of, or inappropriate, food, lack of hygiene and qualified medical staff, inappropriate housing for newborns, lack of special care for small children; last but not least, the attempt of applying traditional adult medical “treatment” to children, etc. As parish registers show, many children died at birth or immediately after. The lack of qualified and specialised midwives to assist the mother in childbirth to provide some medical assistance to the child was another important cause of infantile mortality. Last but not least, the high infantile mortality originated in a harmful collective mentality of the people concerning physicians and sanitary system.

Keywords: vulnerability, life expectancy, mortality rate, infantile mortality, death crisis

Vulnerability of communities in North-Western Transylvania is shown by several indicators, such as demographics phenomenas. Out of these, we will stress the following: infantile death rate and life expectancy. The approach can be bound to both a direct and an indirect formula:

- *The direct approach:* the premise is that a community with a high infantile death rate and a low life expectancy is more vulnerable than a community with reversed values as compared to the former (low infantile death rate and high life expectancy).

¹ The paper *Infantile Mortality and Life Expectancy: Vulnerability Indicators in North-Western Transylvanian Communities (second half of the 19th century – beginning of the 20th century)* was published in *Romanian Journal of Population Studies*, Cluj-Napoca, 2011, p. 103-122

- *The indirect approach*: a community where the impact of socio-economic crises, epidemics, etc., is higher due to an increasing infantile death rate and a decreasing life expectancy respectively is more vulnerable and exposed to negative effects.

1. Infantile death and community vulnerability

Defined as newborn mortality less than 1 year old (Pădurean, 2003: 191), infantile mortality is calculated (infantile mortality rate index!) as a ratio between the number of deceased people under the age of 1 and the number of newborns in a year. In order to get a picture of the phenomenon, we suggest using the *average infantile mortality rate* as an indicator. The rate is the result of ratio between all deceased children less than 1 out of the total number of newborns at a given time.

By analysing the number of deceased children under 1 out of the total number of deaths in the counties of Bihor and Satmar and in several localities, we can see that at the time infantile mortality rate was steady at a high level. Despite some obvious developments in the medical and socio-economic field, children and particularly newborn age group was the most vulnerable category in front of several wars and epidemics of the time. According to mathematic calculations, towards the end of the period there was a decreasing mortality rate in general and infantile mortality rate in particular. In spite of obvious developments as compared to 1860-1880, in 1910, there still was a high mortality rate amongst children. In Bihor, the percentage of deceased children under 5 out of the total number of children was 34.2%, and of those under 7 was 36.3% (Adam and Pușcaș, 1987: 645)². In the Satmar County, mortality amongst children was even higher, which has been proved by the great number of deceased children in Ghenci: out of the total number of children, 36.3% were children deceased before reaching 5, while 38.4% were under 7 in 1910 (Adam and Pușcaș, 1987: 645)³.

In 1900-1910, the average number of newborns was 17,547 in Bihor and 9,655 in Satmar (Adam and Pușcaș, 1987: 656-659; *Magyar Statisztikai*, 1913: 280-459). In the same period, the annual average of deceased children in Bihor was 4,094 and in Satmar it was 2,198. From the average of deceased children under 1 and the average number of newborns in 1900-1910, the average infantile mortality rate was 232.95‰ in Bihor and 227.65‰ in Satmar. Thus, there was a very high infantile mortality rate in the two counties. It was above the rate in Transylvania, where average infantile mortality rate was 206.24‰ (Adam and Pușcaș, 1987: 660-661)⁴. Despite the high infantile mortality rate, there were counties where infantile mortality rate index was even higher; for instance, in Arad infantile mortality rate was 245.56‰ (Adam and Pușcaș, 1987: 656-657)⁵. In the two county seats, average infantile mortality rate for 1900-1910 was lower as compared to the whole of the counties⁶. In Oradea, infantile mortality rate was 213.25‰ and in Satu Mare it was 219.98‰ (Adam and Pușcaș, 1987: 656-659)⁷.

A high infantile mortality rate was discovered due to the analysis of parish registers. An analysis of villages is surprising due to infantile mortality rate variation from case to case, as well as to the fact that the rate in some villages was much lower than county average or county seats. Were children better looked after

² Somehow paradoxically, death rate in the case of children under 5 (36.1% of total newborns) and 7 (37.3% of total newborns) was even higher in Oradea the same year. At a first glance, the high mortality rate amongst children in the city is quite surprising (considering that there were the first signs of economic development in the city resulting in a higher standard of living. There was also a more present and efficient medical system. This proved that in the city infantile death rate was lower than in the rest of the county – only 36.7% out of the total number of people deceased in Oradea were under 5. In the county, the percentage reached 51.6%). Yet in the city there were other factors relating mostly to the social context and economy of the city despite development. High density of people in one place could increase the negative effects of local epidemic and generally trigger high mortality peaks. In this situation, if our hypothesis proves true, mortality rate amongst children in the city was more fluctuating from one year to another (depending on presence and force of influence factors) and from one city to another.

³ In this county (in 1910!), child death rate was higher in the countryside. In Satu Mare, 34.5% of the total newborns were children under 5 (46.7% of the total number of deceases) and 35.7% were children under 7 (35.7% out of the total number of deceases).

⁴ We have considered all localities in Transylvania belonging to current Romania, including Banat, Crisana and Maramures, where the average number of births was 177,980 children in 1900-1910 and 36,707 died before turning 1.

⁵ High infantile mortality rate in the county was higher than the average in Transylvania and Hungary. It was noticed in Prof. Pădurean's analysis on population in the county. According to his survey, the infantile mortality rate for children aged less than 5 was 475.6‰ in 1893 (Pădurean, 2003: 192).

⁶ This explains the high variation from one year to another as compared to the rates in 1910 (see the abovementioned reference) and vulnerability of children in cities, particularly in poor neighbourhoods.

⁷ The high infantile mortality rate in Satu Mare (as compared to Oradea) was accompanied by a high birth rate. Thus, we consider that there was a tight connection between death rate and birth rate in a community. Numerous deaths naturally led to families' reaction favouring high birth rate. See chapter on birth rate.

in those villages? Were villages relatively isolated and more protected against devastating effects of diseases touching mostly children? We can find possible explanations in socio-economic particularities of the villages and in local cultural and traditional features.

According to the parish register in 1860-1880, in the *Abramut Greek-Catholic parish*, 25.41% (93 cases) out of the total number of 366 deceased were children aged less than 1 (*CRSC BH*, file 7: 37-55). Thus, 93 of 339 children born in the parish (*CRSC BH*, file 7: 6-22) died before turning 1. Average infantile mortality rate index was 274.33‰ (which was over the average of the county). In the same period, in the *Auseu Greek-Catholic parish*, there was a lower mortality rate for children less than 1 (20.92% - 68 cases) (*CRSC BH*, file 71: 40-51). Considering that 472 children were born at the time (*CRSC BH*, file 71: 40-51), the average infantile mortality rate was 144.06‰. Somehow surprising, in the *Beius Greek-Catholic parish*, there was a higher death rate in the case of children aged less than 1 (24.16%) (*CRSC BH*, file 94: 25-49). Out of the 480 children born in 1860-1880 (*CRSC BH*, file 91: 25-45), 144 died before turning 1, which means an average infantile mortality rate (300‰) much over the rate in Bihor. In the *Borod Greek-Catholic parish*, we can notice the same vulnerability of age groups under 5 particularly newborns aged less than 1. Out of the 1,012 deaths, 219 were children aged less than 1 (21.64% out of the total number of deceases) (*CRSC BH*, file 144: 160-164; file 146: 1-47). Compared to the number of 849 children born in the parish (*CRSC BH*, file 144: 49-99), the average infantile mortality rate was 257.95‰ for the period 1860-1880. Shocking through age group distribution of deaths showing an excessively high mortality amongst children is the cruel reality seen in *Ghenci* (*CRSC SM*, file 655-657 passim; Chereji, 2000: 49-53). In 1863-1910, 36.42% of the deceased Greek-Catholics died before turning 1 (33.87% of the total number of deceased Protestants were children under 1). As compared to the number of newborns (839 in Greek-Catholic families and 1,546 in Protestant families), the average infantile mortality rate was 223.48‰ (262.21‰ in the Greek-Catholic parish and 202.45‰ in the Protestant parish). In the 185 families celebrated by the Greek-Catholic vicar in *Suncuius de Beius* in 1860-1910, 679 children were born. At least 46 children died before turning 1 (we mention that the information is not complete – it is according to the notes of the priest⁸). Average infantile mortality rate rose to 67.64‰⁹. Many babies died at an early age, most of them did not reach adulthood. In 1860-1910, the Greek-Catholic vicar in *Ghenetea* celebrated 82 marriages (*CRSC BH* file 461: 64-75; file 463: 1-21). These families had 416 children (*CRSC BH* file 461: 32-50, 64-75; file 462: 4-101; file 463: 1-21; file 464: 1-90). Infantile mortality in these families was very high: 63 children died before turning 1 (15.14% of the total living newborn). Thus, the average infantile mortality was 151.4‰. In 1872-1908, in the *Vascau Orthodox parish*, 657 children were born (17.7 children/year) (*CRSC BH*, file 1407: 53-54; 1408: 1-94). Out of them, 162 died in the first year. The average infantile mortality rate was 246.57‰.

This was a world where many were born and many died. Children were the most exposed to social, economic and meteorological hardships. Throughout the second half of the 19th century and at the beginning of the 20th century, there was a high infantile mortality rate. Moreover, as seen in the Principality of Transylvania¹⁰, the infantile mortality rate was even increasing in some regions. There were several complex causes of high infantile mortality. They originated in the precarious living conditions, lack of or inappropriate, food, lack of hygiene and qualified medical staff, inappropriate housing for newborns, lack of special care for small children; last but not least, the attempt of applying traditional adult medical “treatment” to children, etc. As parish registers show, many children died at birth or immediately after. The lack of qualified and specialised midwives to assist the mother in childbirth to provide some medical assistance to the child was another important cause of infantile mortality. The want for midwives was noticed even at the time. In 1876, the vice-comis of Arad asked the eparchy Consistory to educate people pointing out that “disproportional pause of newborns is caused of harmful use, as the people use unspecialised and unqualified midwives” (Pădurean, 2003: 194). Last but not least, the high infantile mortality originated in a harmful collective mentality of the people concerning physicians and sanitary system.

Causes of infantile death rate originate in: precarious living conditions, insufficient and improper food, lack of hygiene and qualified medical staff, improper living conditions for newborns, lack of special

⁸ The column referring to children’s death and age in those families was not always filled in. Consequently, we cannot accurately say how many children aged less than 1 died; 46 were recorded. (*CRSC BH*, file 1197: 25-33; file 1200: 1-14 - Marriage register; file 1197: 11-24; file 1198: 1-99; file 1199: 1-46 - Baptism register; file 1197: 40-52; file 1201: 1-72 - Death register.

⁹ We have to point out that in this parish were only included cases of children born to families married in 1860-1910 (thus preserving the methodology used in reconstructing families in the parish when analysing marriage and birth in those families) without including children born in families married before 1860.

¹⁰ Infantile mortality rate in Transylvania (without including Banat, Crisana and Maramures) was 178.3‰ in 1865 and reached 193‰ in the first decade of the 20th century. Bolovan, 2000: 156.

care provided to children at that age, applying traditional adult medical “healing treatments” to children, etc. Many children die in childbirth or immediately after, as we can see in the civil records.

2. Life expectancy, death rate crises and vulnerability

Life expectancy at birth or middle age was tightly connected to mortality structure. Major mortality crises in certain years greatly reduced life expectancy in the area. High mortality rate influencing all age groups led to a considerable decrease of average age. Despite all remainders of the former demographic system, the positive evolution in the past two decades of the 19th century and at the beginning of the 20th century contributed to strengthening progresses in this sense. From the point of view of life expectancy in the whole region, there was a genuine positive revolution. As we have noticed before, mortality rate in the region as well as in Transylvania and Hungary greatly decreased, thus leading to the demographic pattern specific in Central and Western Europe at the time. If in the ‘70s, under the effect of a deep economic crisis in the region and the devastating cholera epidemic in 1872-1873 and their negative effects until 1880, life expectancy in Transylvania was of only 27 (Bolovan, 2000: 169). Towards the end of the 19th century, under the positive effect of a decreasing mortality rate, average life expectancy in Transylvania and Hungary reached 38.2. At the same time, in Romania, according to mortality tables in 1899-1901 as calculated by M. Sanielevici, life expectancy was 36.4 (Apud Mureşan, 1999: 75). During all that time, in Western European developed countries, life expectancy reached 48-54 (Bolovan, 2000: 149). Deep economic crises in the ‘70s throughout the monarchy and epidemics (we particularly mention the cholera epidemic in 1872-1873 and its duration) were a great demographic pressure. Cholera epidemic in 1872-1873 had catastrophic effects: in the Bihor County, 30,447 people were sick and 10,980 of them died (1,096 only in Oradea), which was 2.28% of the county inhabitants; in Satmar, 17,330 people were sick and 5,268 of them died, which was 2.13% of the county inhabitants (Adam and Puşcaş, 1987: 243-244). The period with great mortality rate in the region was followed by a short time of rest. The trends on a regional level were often contradicted by case studies on localities or micro-regions. The analysis of parish registers identified a period (different from trends expressed on a regional level) when mortality rate was very high. Certain years, diphtheria, smallpox, malaria and other epidemics haunted several villages and their effects were even worse than the cholera in 1872-1873. That reality highlights the precarious situation of medical assistance in the countryside (Bolovan, 2000: 143).

A special relevance in establishing life expectancy in the region has *death distribution by age group*. Age at death was quite unsteady from case to case. Instead, a research on all inhabitants in a community may lead to identifying an average death age, that is, what most analysts call life expectancy.

In order to settle distribution by age group, we will refer to the same case studies mentioned above. Right from the beginning of our survey, we can notice the shocking distribution by age group not only in few parishes, but in all six of them (although there are significant differences between structure of deaths by age from case to case). As we can see in the tables below, the highest death rate was amongst children. The number of children dying before reaching the age of 1 and infantile mortality (calculated as a ratio between the number of deceased children aged less than 1 and the number of living newborns in a year) together with the high mortality rate at children aged 1 to 5 show that “young age group was dominant” in mortality analysis (Dumănescu, 2006: 139). Children were the most exposed to pressure of internal and external factors leading to death. Children were the most vulnerable in front of “death claws” in all seasons and all communities. It was a reality in all Transylvania (Deteşan, 2005: 89-122). In 1865, 40.8% of deaths was represented by children under 5, while in 1885 the percentage was 47.3% and in 1895, 46.6%¹¹. The high mortality rate amongst children made some researchers speak of a “huge dose of hazard” conditioning the survival of children “at least until generalised developments in medicine and mental blockage hostile to them began to crack” (Dumănescu, 2006: 85).

In the *Greek-Catholic parish of Abramut*, the parish registers of 1860-1880, as seen in the table below, confirm the fact that the number and percentage of deceased children was extremely high. 25.41% (93 cases) out of the 366 deaths were children aged less than 1 (*CRSC BH*, file 7: 37-55). At the same time, the level of deceased children aged 1 to 5 was 22.4% out of the total. Comparatively, the two age groups were followed by other two groups (21 to 30 and 31 to 40) cumulating almost 20%. The great number of deaths from these groups after the “accidents” during the first years (that might turn into a rule or normality

¹¹ In Cluj-Manastur, 57.5% of the deceased people were children under 5 and infantile mortality rate for 1855-1904 was 354.2‰, which was much higher than the average in Transylvania (193‰) for the first decade of the 20th century. Dumănescu, 2006: 136-137.

through its high number) makes us believe that it was the usual death age at persons surviving childhood. Only eight people managed to live over 70 years. Instead, nobody in the parish lived over 80 years¹².

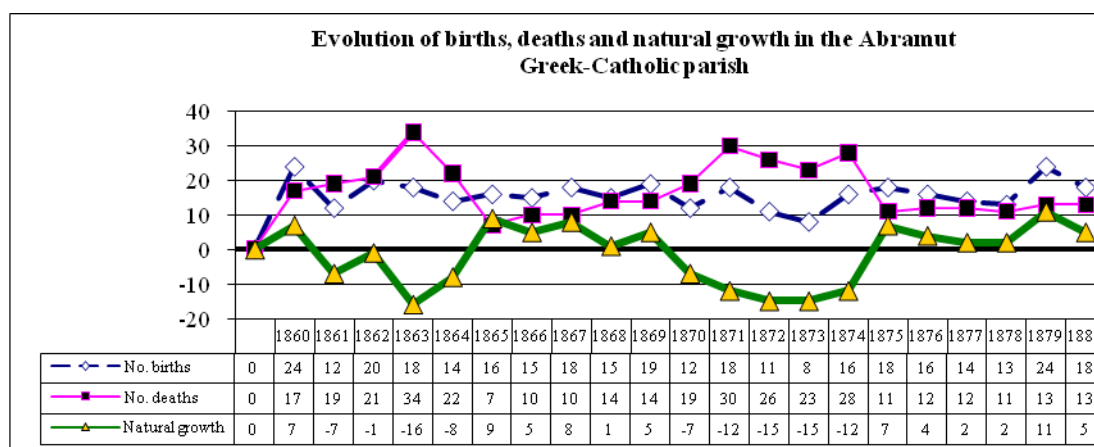
Distribution of deaths by age group in the Greek-Catholic parish of Abramut (1860-1880)

Age at death	Number of cases	Percent (%)	Cumulated percent (%)
Less than 1	93	25.41	25.41
1-5 years old	82	22.40	47.81
6-10 years old	26	7.10	54.92
11-20 years old	13	3.55	58.47
21-30 years old	37	10.11	68.58
31-40 years old	34	9.29	77.87
41-50 years old	26	7.10	84.97
51-60 years old	32	8.74	93.72
61-70 years old	15	4.10	97.81
71-80 years old	8	2.19	100.00
Over 81 years old	0	0.00	100.00
Total	366	100	

Source: *CRSC BH*, file 7: 37-55

Life expectancy, or average age at death, in the parish was 20.24 in 1860-1880. At the same time, median age (when 50% of people died) was 6.5. Practically, as seen in the table above, 47.81% died before reaching the age of 5. Such distribution of average age at death (life expectancy) and of median age undoubtedly diminished by mortality crises hitting mostly children (whose body was less enduring to whims of the time) placed the parish under the average figures in rural settlements in Crisana. Yet there is a shocking comparison with the Protestant parish in the village. In the case of that parish, life expectancy was 27.87 in the same period. At the same time, median age (when 50% of people died) was 25 (*CRSC BH*, file 11: 17-33). What are the explanations for such great difference? Why did Greek-Catholic children die in such a great number? The existence of local epidemics seems to be confirmed by the fact that both communities were afflicted by high mortality rate. Yet the phenomenon was much greater in the case of Greek-Catholic communities, which makes us think that the Greek-Catholic parish was still very traditional by structure and nature of deaths and less receptive to positive changes of modernity at the time. Moreover, provided negative influences of socio-economic pressures and epidemics haunting the region, we are tempted to believe that Greek-Catholic parishioners were vulnerable (possibly they were poorer, less educated and their children less looked after – a subsequent survey will explain the matter).

The vulnerability and the strong influence of mortality crisis can be traced in the chart below. The major effect of high mortality (except for the birth rate that remains high) on the natural increase can be easily seen, especially that the analyzed period surprised some mortality crises whose effects were absolutely devastating.



Source: *CRSC BH*, file 7: 6-22, 37-55

¹² If we continue the comparison with the Protestant parish, we point out that 17.01% (25) out of the 147 deceased people at the time were children under 1. At the same time, 21.09% of the total number of deceased people were children under 5. Comparatively, the two age groups were followed by other two groups (41-50 and 51-60) reaching 25%. Thus, there was a significant difference between the two parishes.

The *Greek-Catholic parish of Abramut*, during 1860-1880, records a negative population growth (the population who died was by 27 greater than the those who were born). The negative growth was not characteristic to the entire period; the main characteristic was the effect of mortality crises captured by us during the death rate investigation of this parish. Thus we can identify two periods with negative levels of natural increase: 1. 1861-1864, when the low natural surplus was due to both lower birth rates and increased mortality, 2. 1870-1874, characterized by major crises of mortality caused by numerous epidemics whose effects were peaked during the cholera epidemic during 1872-1873.

In the *Greek-Catholic parish of Auseu*, the percentage of deceased children aged less than 1 out of the total number of deceased was even higher (20.92% - 68 cases). Instead the percentage of deceased children aged 1 to 5 was lower (16.62%) (*CRSC BH*, file 71: 40-51).

The distribution of the deceased by age group identifies two age intervals (after adolescence characterised by fewer deaths) with higher percentage of deaths. The intervals were 21 to 30 and 31 to 40 just like in Abramut. 23.39% out of the 325 deceased belonged to the two intervals. A great percentage of people dying within this interval corroborated with the high death percentage amongst children make us think that life expectancy was very low in the village.

Average age at death, that is, life expectancy, of Greek-Catholic parishioners was 24.22. This much lower life expectancy than in Transylvania or Hungary was due to local realities resulting in high mortality particularly amongst children. Median age was much lower than in other places, too; it barely reached 18. Practically, only half of the deceased in the parish were older than 18.

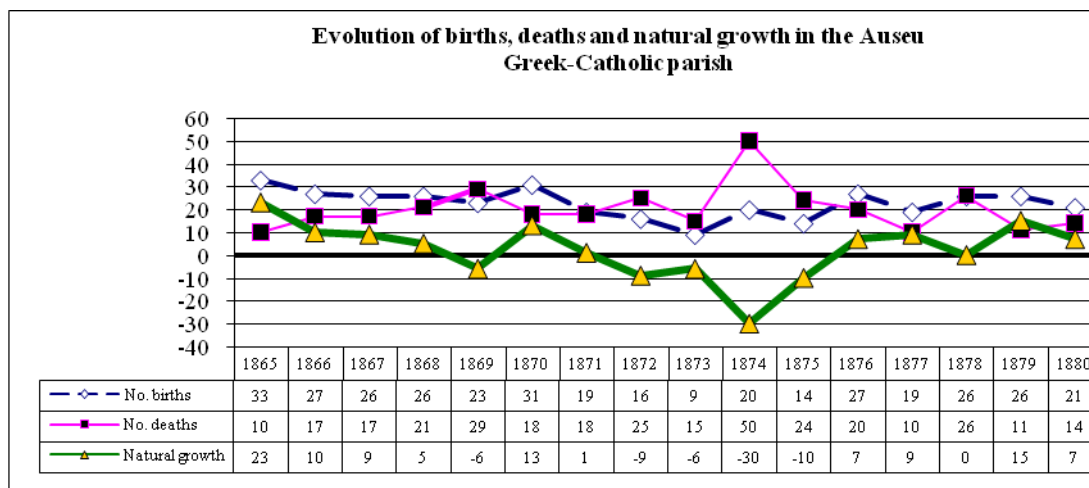
The distribution of the two indicators and the high infantile mortality rate confirm the traditional demographic patten with a genuine demographic “waste”: many children were born and many died. We can afford to launch a working hypothesis in our survey, that is: knowing that they would lose many children, or actually losing them, families had even more children to assure natural descendancy.

Distribution of deaths by age groups in the Greek-Catholic parish of Auseu (1865-1880)

Age at death	Number	Percent (%)	Cumulated percent (%)
Less than 1	68	20.92	20.92
1-5 years	54	16.62	37.54
6-10 years	26	8.00	45.54
11-20 years	21	6.46	52.00
21-30 years	41	12.62	64.62
31-40 years	35	10.77	75.38
41-50 years	25	7.69	83.08
51-60 years	19	5.85	88.92
61-70 years	18	5.54	94.46
71-80 years	12	3.69	98.15
Over 81	6	1.85	100.00
Total	325	100	

Source: *CRSC BH*, file 71: 40-51

Thus, natural growth resulted from *people's wish to defeat death* (through more births than deaths) and less from defeating death itself (by diminishing mortality). Renewal and survival of family was provided by an extraordinary waste of lives. The reality can be seen in the fact that few people reached old age (although we do not doubt that old age was different than as considered nowadays). Only 1.85% (6 people) exceeded 80 years old; at the same time, only 11% exceeded 60 years old (*CRSC BH*, file 71: 40-51).



Source: *CRSC BH*, file 71: 6-22, 40-51

In the *Greek-Catholic parish of Aușeu*, during 1865-1880, the population growth was positive: the number of births was 363, the deceased was only 325 (there is therefore a natural surplus of 38 people). Not even this settlement showed constant evolution of natural growth. The mortality crises of the years 1866-1869 (during these years, the crisis of mortality was associated with a decrease in the number of births) and of 1872-1875 led to negative natural increases for these years in this parish.

Somehow surprisingly, in the *Beius Greek-Catholic parish*, there was an even higher death rate amongst children before reaching the age of 1 (24.16%). Together with the percentage of children dying at 1 to 5, the percentage of children dying under the age of 6 raised to 38.93% out of the total number of deaths in the parish in 1860-1880.

The pre-urban character of the place associated with a significant increase of non-agricultural activities and standard of living did not result in a diminishing mortality rate. Moreover, the infantile death rate index was still very high. Following the same trend, we can also notice that only one person out of the 596 dying at the time (whose age could be reconstructed) was over 80 years old (*CRSC BH*, file 94: 25-49).

The reality can be seized in point of life expectancy in the community (only 25.42). Moreover, median age was only 18. Thus, only 50% of the deceased managed to live more than 18 years. From the point of view of the two indexes, we can see that despite economic development much higher than in other places, the level of expectancy was not confirmed. Most of the Greek-Catholic community was far from those beneficial changes.

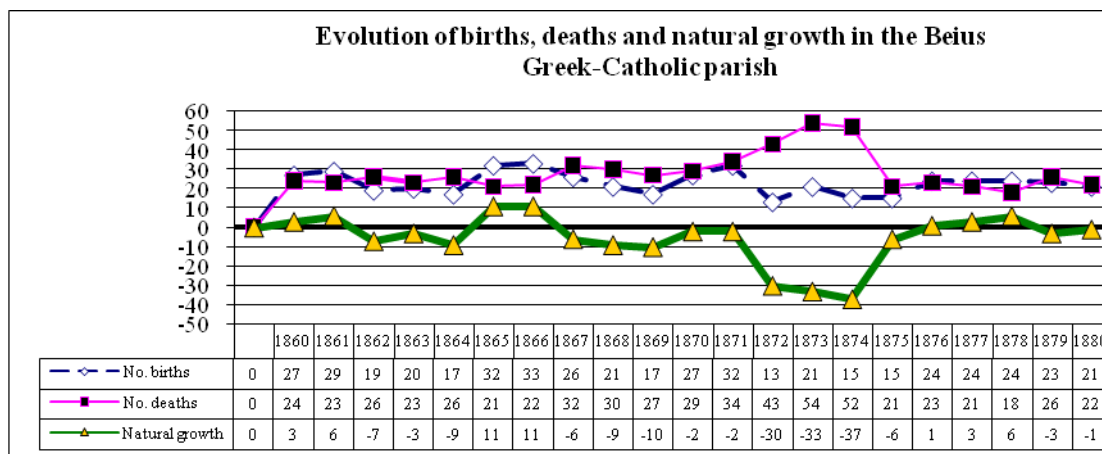
Distribution of deaths in the Beius Greek-Catholic parish by age group (1860-1880)¹³

Age at death	Number	Percentage (%)	Cumulate percentage (%)
Less than 1 year old	144	24.16	24.16
1-5 years old	88	14.77	38.93
6-10 years old	27	4.53	43.46
11-20 years old	48	8.05	51.51
21-30 years old	50	8.39	59.90
31-40 years old	54	9.06	68.96
41-50 years old	66	11.07	80.03
51-60 years old	56	9.40	89.43
61-70 years old	39	6.54	95.97
71-80 years old	23	3.86	99.83
Over 81 years old	1	0.17	100.00
Total	596	100	

Source: *CRSC BH*, file, 94: 25-49

In the Greek-Catholic community of Beius, the population died during 1860-1880 with 117 people more than the number of people who were born. Despite social and economic progress (which most often we would tend to associate with better existence, later on translate into lower mortality), the Greek-Catholic parish of Beius always had in this period more people dying than being born.

¹³ The Greek-Catholic parish priest did not record the age at death for one person (*CRSC BH*, file 94: 25-49).



Source: *CRSC BH*, file 94: 25-49

In the *Greek-Catholic parish of Borod* there was the same vulnerability of the age group under 5 in front of death, particularly newborns under 1. Poor food, lack of efficient medical system, traditionalism and conservatism in treating children's illnesses, lack of hygiene education, etc., were but a few of the causes of a high death rate amongst children (Pădurean, 2003: 194). Out of 1,012 deaths, 219 were children aged less than 1 (21.64% out of the total number of deceased), while 159 were children aged 1 to 5 (15.71% out of the total number of deceased) (*CRSC BH*, file 144: 160-164).

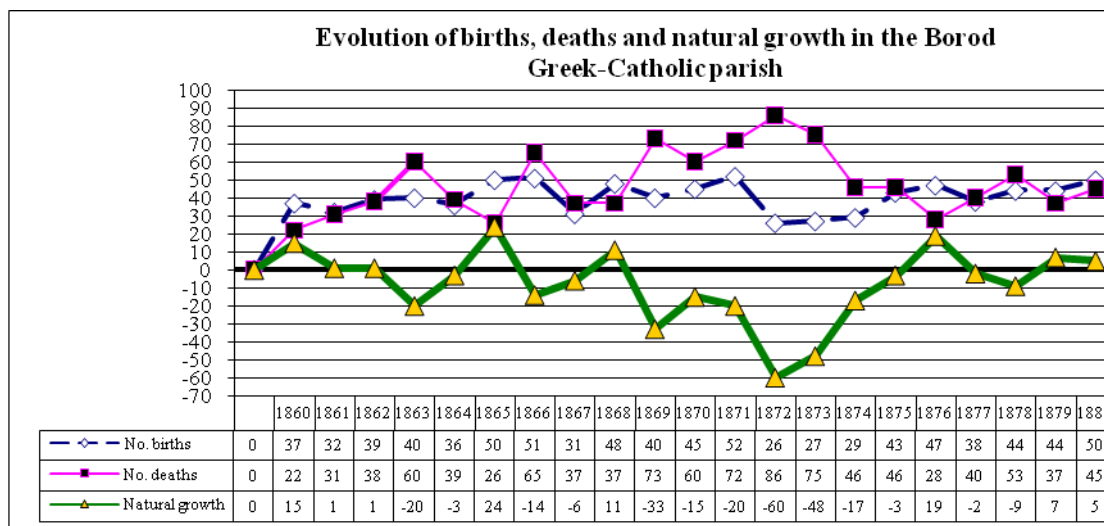
The Greek-Catholic population life expectancy in Borod was much higher than other parishes. Thus, average age at death, or average life expectancy, was 28.53, which is much higher than average life expectancy in Transylvania. In fact, if we analyse death by age groups, we can notice that 158 people representing 15.61% of the deceased were over 60 years old. Out of them, 20 were even over 80 years old (*CRSC BH*, file 144: 160-164; file 146: 1-47). Despite several cases of people dying at an early age, the high life expectancy was facilitated by the numerous cases of people dying at an old age. Marcu Teodoru's widow, Floare, died of "womb pain" at 110, while Moga Omutiu's widow died at the age of 115 on the 29th of November 1863; her name was not recorded by the priest (*CRSC BH*, file 146: 3).

Distribution of deaths by age groups in the Borod Greek-Catholic parish (1860-1880)

Age at death	Number	Percentage (%)	Cumulated percentage (%)
under 1 year old	219	21,64	21,64
1-5 years old	159	15,71	37,35
6-10 years old	42	4,15	41,50
11-20 years old	57	5,63	47,13
21-30 years old	88	8,70	55,83
31-40 years old	101	9,98	65,81
41-50 years old	91	8,99	74,80
51-60 years old	97	9,58	84,39
61-70 years old	91	8,99	93,38
71-80 years old	47	4,64	98,02
over 81 years old	20	1,98	100,00
Total	1.012	100	

Source: *CRSC BH*, file 144: 160-164; file 146: 1-47

The median age (25) was much higher than elsewhere, too: half of the deceased in the parish were over 25. Provided the situation unlike other places where over half of the newborns did not reach adolescence, in the Borod parish we can say that life expectancy for over half of the population was over 25.



Source: CRSC BH, file 144: 49-99, 160-164; file 146: 1-47

During the period analyzed (known for deep demographic crisis), in the Greek-Catholic parish of Borod 278 more people died than those who were born. The recorded negative natural increase was due not only to "accidents", but it was the effect of very high mortality throughout the 21 years span (only 8 years recorded positive values of natural increase). The deepest crisis of mortality in this village was recorded in 1869 and affected this community until 1873. The causes of high mortality (in the 4 years no less than 366 people died – when the entire Greek-Catholic community of this town did not exceed 1,000 people) are multiple and complex. In fact, no stranger to this black period in the history of the city, people from other settlements will find it easy to relocate here, including the colonization of Slovaks communities (the number of Slovaks increased from 178 people recorded in 1880 to 959 in 1900)

The distribution of deaths by age groups shows an excessively high mortality amongst children in *Ghenci*, in the Satu Mare County (CRSC SM, file 655-657 passim; Chereji, 2000: 50-53). There, the median age was merely 4 in the case of Greek-Catholic community and a little higher, we may say, in the case of the Protestant community (7). How was it possible that half of the people dying in the Greek-Catholic parish did not reach the age 5? How was it possible that only half of the 604 Greek-Catholics dying in 1863-1910 reached the age of 4? Although a little better, the situation of the Protestant parish highlights the same cruel reality: only few children managed to get over 10 years old. Out of the total number of deceased people, only 38.58% Greek-Catholics and 46% Protestants lived over 11 years.

The terrible reality and the fact that 36.42% of the deceased Greek-Catholics died before reaching the age of 1 (in the case of the Protestants, 33.87% of the deceased people were children) was undoubtedly due to great mortality amongst children. Many years, even towards the period analysed by us, out of the total number of deaths in the Greek-Catholic parish, over half of the children were less than 1. In 1896, out of the total number of 27 deceased persons, 15 were children under 1. The following year, in 1897, 8 were children under 1 out of the 9 persons deceased. In 1900, 11 people died, out of which 9 were under 1. It was the same situation in 1902, 1905, 1909 and 1910 when at least half of the deceased people were children less than 1. The situation was almost similar in the Protestant parish, where the percentage was a little lower.

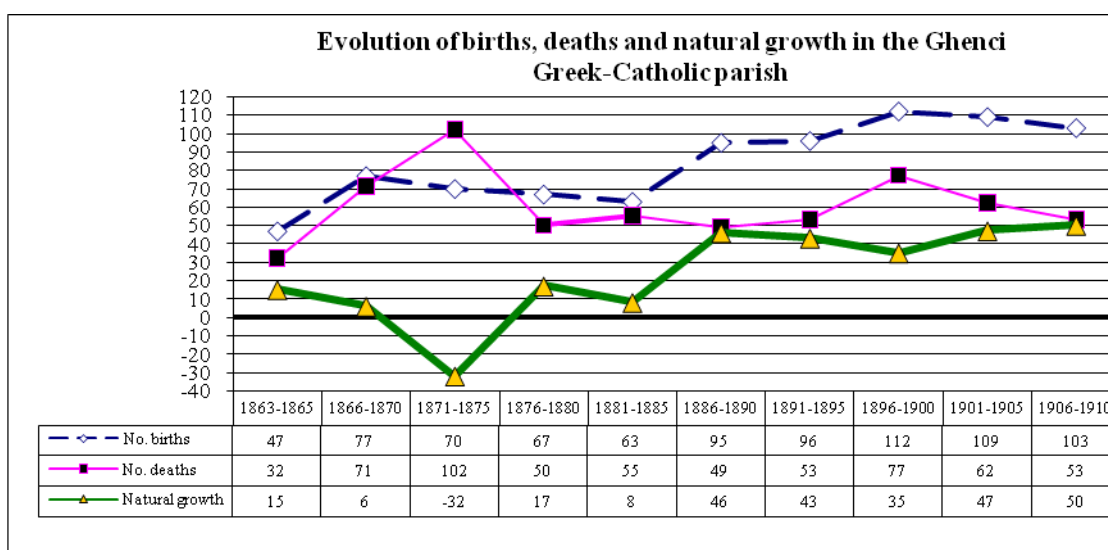
Distribution of deaths by age groups in Ghenci (1863-1910)

Age at death	Greek-Catholic parish			Protestant parish		
	Number	Percentage (%)	Cumulated percentage (%)	Number	Percentage (%)	Cumulated percentage (%)
Less than 1	220	36.42	36.42	313	33.87	33.87
1-5 years	114	18.87	55.30	125	13.53	47.40
6-10 years	37	6.13	61.42	61	6.60	54.00
11-20 years	24	3.97	65.40	58	6.28	60.28
21-30 years	30	4.97	70.36	62	6.71	66.99
31-40 years	25	4.14	74.50	54	5.84	72.84
41-50 years	35	5.79	80.30	49	5.30	78.14
51-60 years	29	4.80	85.10	73	7.90	86.04
61-70 years	52	8.61	93.71	43	4.65	90.69
71-80 years	30	4.97	98.68	51	5.52	96.21
Over 81	8	1.32	100.00	35	3.79	100.00
Total	604	100		924	100	

Sources: CRSC SM, file 655-657 passim; Chereji, 2000: 50-53

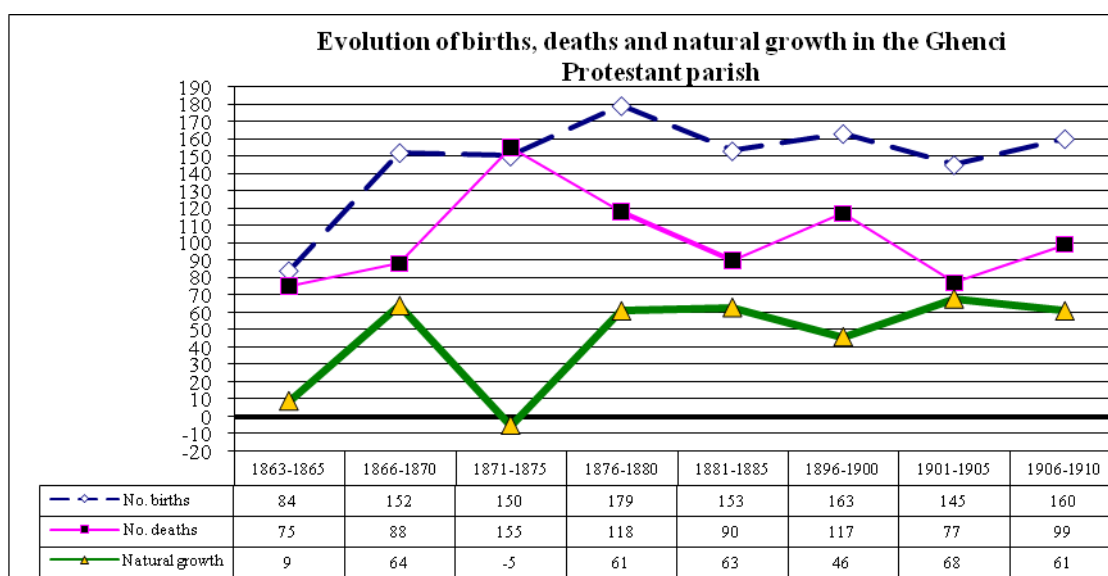
Traditionalism and strong influence of the former demographic regime was highlighted by the life expectancy recorded: 20.52 in the case of Greek-Catholic parish and 23.52 in the case of the Protestant parish. The situation we noticed in the analysis of death was less painful in the case of the Greek-Catholic community where some changes of the demographic pattern could be seen at the end of the 19th century and the beginning of the 20th century. Basic changes were significant, that is, mortality rate diminished at all age groups (and so the cases of deceased children). However, there was also the great number of deceased children amongst the deceased. The conclusion is that, despite obvious development in diminishing mortality rate, there were several years when there were critical mortality crises with multiplying vulnerability effects on the community. The unsteady development in the number of deaths from one year to another is a proof in point.

Despite the high mortality of both parishes, the natural increase values are generally positive. Only in the period of 1871-1875, when the effects of the cholera epidemic of 1872-1873 were fully felt, the natural surplus was below zero.



Sources: CRSC SM, file 655-657 passim; Chereji, 2000: 46-52

By comparison, as it was stated when analyzing birth and death rates, and when the analyzing the mortality of this town, the Greek-Catholic parish is remarkable, in terms of population, by its own traditionalist character. It requires, however, a specification: the evolution of this parish demographic indicators identifies a very high mortality in the early period (but which knows a remarkable decrease process) and a birth rate that ensures an increase in births, also consistent, until towards the late nineteenth century.



Sources: A.N-D.J. SM, *Collection Registers of Civil Staus*, files nos. 655-657 passim; Camelia Chereji, *op. cit.*, p. 46-52

Also the Reformed Church records positive natural growth. An important contribution in this direction and was keeping a significant difference found between the preservation of the births and of the deaths (especially after 1875).

In terms of distribution of demographic phenomena, this town and families here in spite, of strong demographic remnants of the old system characterized inter alia by a very high value of birth, go slightly to the demographic transition model. The constant decrease in mortality (it nevertheless maintains at very high values as seen from running an analysis on mortality) as well as maintaining high birth rates (thus ensuring an increase in the value of natural increase) are strong arguments showing the transition to modern demographic model (characterized by low values of the two demographic indicators).

Conclusions

Life expectancy and infantile death rate varies according to localities, within localities, and from one ethno-religious community to another. Socio-economic crises greatly influence the level of infantile death rate and life expectancy. In certain places, we can notice a higher vulnerability. Rising death rates during epidemics (such as the 1872-1873 cholera epidemic) have a great influence in certain places that are more vulnerable (in this case, the fact that they are integrated to a socio-economic circuit stresses their vulnerability!). The level of infantile death rate has a descendent trend towards the beginning of the 20th century at the same time with an increasing life expectancy. This happens against the background of increasing beneficial effects of modernity in more and more places. Consequently, there is a decreasing vulnerability in these places.

References

- Adam, Iosif I. and Pușcaș, I. (1987), *Izvoare de demografie istorică*, vol. II, *Secolul al XIX-lea – 1914. Transilvania*, București: Direcția Generală a Arhivelor Statului.
- Bolovan, Ioan (2000), *Transilvania între Revoluția de la 1848 și Unirea din 1918. Contribuții demografice*, Cluj-Napoca: Centrul de Studii Transilvane, Fundația Culturală Română.
- Chereji, Camelia (2000), *Familia în satul românesc din nord-vestul Transilvaniei. Studiu de caz: satul Ghenci din comitatul Satu Mare 1863-1918*, dissertation thesis, Oradea: Universitatea din Oradea.
- CRSC BH, National Archives – Bihor County Directorate, *Colecția Registrelor de Stare Civilă*.
- CRSC SM, National Archives – Satu Mare County Directorate, *Colecția Registrelor de Stare Civilă*.
- Dețeșan, Daniela (2005), „Mortalitatea în comitatul Cluj în a doua jumătate a secolului al XIX-lea și începutul secolului XX. Evoluții demografice locale”, in Sorina Paula Bolovan, Ioan Bolovan, Corneliu Pădurean (coord.), *Transilvania în secolele XIX-XX. Studii de demografie istorică*, Cluj-Napoca: Presa Universitară Clujeană, 89-122.
- Dumănescu, Luminița (2006), *Transilvania copiilor. Dimensiunea demografică a copilăriei la românii ardeleni (1857-1910)*, Cluj-Napoca: Argonaut.
- Magyar Statisztikai (1913), *Magyar Statisztikai Közlemények. Új sorozat.*, vol. 46, *A Magyar Szent Korona Országainak 1901-1910. Évi Népmozgalma Községenkint*, Budapest, 280-459.
- Mureșan, Cornelia (1999), *Evoluția demografică a României. Tendințe vechi, schimbări recente, perspective (1870-2030)*, Cluj-Napoca: Presa Universitară Clujeană.
- Pădurean, Corneliu (2003), *Populația comitatului Arad în secolul al XIX-lea*, Arad: Editura Universității „Aurel Vlaicu”.
- Retegan, Simion (1985), „Realități demografice ale satului românesc din Transilvania la mijlocul sec. al XIX-lea (Solnocul Inferior)”, in *Civilizație medievală și modernă românească*, coordinated by N. Edroiu, A. Răduțiu, P. Teodor, Cluj-Napoca.