Life Expectancy in North-Western Transylvania (latter half of the 19th century – beginning of the 20th century)

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Life Expectancy in North-Western Transylvania (latter half of the 19th century – beginning of the 20th century)[1]

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Abstract. *Our research on life expectancy started from analysing mortality in the counties of Bihor and Sătmar. We focused on different elements influencing mortality rate. The frequent mortality crises and daily life in the countryside in north-western Transylvania resulted in a low life expectancy at the time. The differing life expectancy by sex was influenced by the communities' socio-economic and mental-cultural conditions at the time. There was also a considerable influence of meteorological conditions on life expectancy.*

Key words*:* life expectancy, mortality rate, parish, infantile mortality, death crisis, countryside

Our survey on life expectancy is structured as a research resembling classic historical demography though without neglecting particularities and specific features of the phenomenon. Thus, our attention is focused on connected interdisciplinary fields. We would like to identify certain connections between life expectancy and lifestyle in the area relating to mortality.

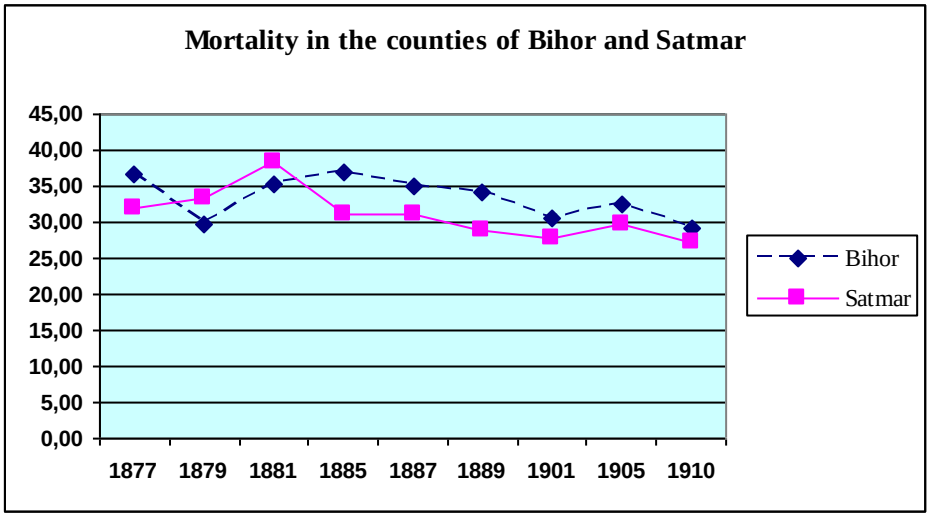
1. Evolution of mortality in the counties of Bihor and Sătmar

In order to determine *mortality gross rate* (ratio between the number of deceased and the average population in a year[1]) and mortality in general, we will use information provided by official statistics and parish registers (deceased register) written down by (parish) priests chosen as samples (Greek-Catholic parishes of Abrămuț, Beiuș, Borod and Ghenci to which the Protestant parish of Ghenci was added).

In 1866-1870 in the Bihor County, we can notice an unsteady evolution of deaths. In 1866, 13,885 persons died in the county (7,331 males and 6,544 females). The following year, the number of deaths increased to 15,525 out of which 8,006 were males and 7,519 were females. One year later, in 1868, the number of deaths lowered to 14,941 (7,762 males and 7,179 females). The descendent trend was preserved in 1869, when 14,239 deaths were recorded (7,619 males and 6,620 females). The decreasing number of deaths in 1868-1869 was followed by a slight increase in 1870 (15,005 deaths – 7,958 males and 7,047 females[2]).

A pretty similar evolution can be seen in the case of the Sătmar County. If in 1866, 8,555 persons died (4,427 males and 4,128 females), the following year their number increased to 9,216 persons (4,914 males and 4,302 females). The increasing number of deaths can be seen in the county in 1868, when 10,149 persons died (5,166 males and 4,983 females). In 1869, the number of deaths decreased to 9,344 (4,924 males and 4,420 females). In 1870, the number of deaths grew to 10,433 (5,454 males and 4,979 females)[3].

Comparatively, in the two counties, mortality was somehow similar. However, there were a few differences in the evolution in the two counties due to regional elements.



* For the years 1901, 1905 and 1910 only deaths on the current Romanian territory are included

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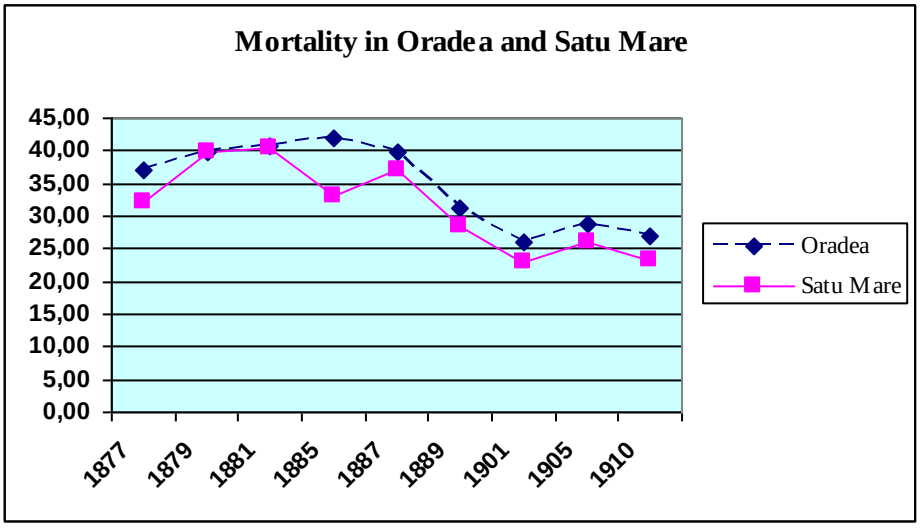
In 1877-1910[4], the raw mortality index was over the figures recorded in Transylvania. If in the former Principality, in 1876-1910, the average mortality rate was 28.86‰[5], in the two counties, the average mortality rate in the period was 33.3‰ in Bihor and 31.09‰ in Sătmar.

The significant difference between average figures in the counties of the Principality as well as the average in Bihor and Sătmar identifies some micro-regions where mortality was much higher than the average in the whole region. On the whole, mortality rate was higher in Bihor. Except for two years (1879 and 1881), when mortality rate was higher in Sătmar, there was a higher rate in Bihor in the other years.

In time there was a significant decreasing mortality rate trend (considering the short duration and period) in both counties[6]. Moreover, towards the span we approached, we can notice that mortality rate in the two counties was almost similar and closer to the average in the counties of Transylvania. Such trends can be due to remarkable developments in medical assistance; thus, mortality was more and more seldom met. The obvious mortality rate decrease in the two counties was due to an obvious progress in Oradea and Satu Mare.



Comparatively, mortality rate in the two cities was according to county trends. The higher mortality rate in Oradea was equalled by Satu Mare in only two years (1879 and 1881), when mortality rate was higher in the Sătmar County. The significantly diminishing mortality rate was due to the increasing number of inhabitants in the two cities due to immigration besides actual decrease of mortality rate. Many young people[7] looking for a job settled in the two cities. The population increased more than death rate; consequently, we witness an artificial decrease of mortality rate. Then the growing population of the two cities was owed to the steady high birth rate. The political, socio-economic, cultural, religious or mental context must be considered in this survey. Certain ethnic or religious groups evolved differently even from the demographic point of view[8]: the Romanian inhabitants in Transylvanian cities for instance had the lowest birth rate amongst all ethnic groups[9]. Such an association can be made from the point of view of the analysis of life expectancy or rate of natural increase.

2. Structure of mortality. Life expectancy and cause of death

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. 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[10]. 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[11]. During all that time, in Western European developed countries, life expectancy reached 48-54[12].

2.1. Life expectancy by sex

From the point of view of *distribution by sex*, women's life expectancy was higher than men's by 1-2 years. This originated in a high male mortality rate. From this perspective, we can notice certain symmetry

between the higher male birth and mortality rate. When approaching the topic of "male over-death", Ioan Bolovan spoke about "compensation" by natural movement of population, that is, by birth.

The high male mortality rate was as obvious in the study cases. Thus, in the Greek-Catholic parish of Abrămuț, out of the total number of deaths, 193 were males (52.73%) and 173 were females (47.27%)[13]. In the Greek-Catholic parish of Borod, 597 individuals died in the period studied by us, out of which 290 were females (48.6%) and 307 were males (51.4%). In the Greek-Catholic parish of Beiuş, out of the total number of deceases, 290 were females (48.6%) and 307 were males (51.4%). Thus, besides the Hungarian censuses and statistics, the case studies back up the theory of high male mortality rate.

In this way, we can confirm that male life expectancy was lower than female's by up to two years. The phenomenon was largely due to male over-mortality. On the current territory covered by the Satu Mare County for instance, although the number of male births was greater, in 1900 the number of women settled in the area (124,188) was higher than that of men (121,667)[14]. This reality together with the fact that in Bihor the number of females was not high, although it was close to that of men, highlights a higher male death rate than in Bihor. What could be the reasons for this high male death rate? It is difficult to find the reasons at peace[15]. Several specialists mention premature exhaustion, exposure to diseases because of the high mobility of males, accidents caused by hard physical labour, alcohol abuse or other excesses, etc. All these real reasons are associated to a lower immunity amongst male firstborns (there was a higher mortality rate amongst male newborns[16]).

2.2. Death distribution by age group

A special relevance in establishing life expectancy in the region has *death distribution by age group*. 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.

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[17]. 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[18]. 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%[19]. 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"[20].

In the Greek-Catholic parish of Abrămuț, the parish registers of 1860-1880, 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[21]. 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 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 years[22].

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

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

Source: A.N-D.J. BH, *Colecția Registrelor de Stare Civilă*, 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.

Somehow surprisingly, in the Beiuş 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[23].

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 Beiuş Greek-Catholic parish by age group (1860-1880)[24]

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

Source: A.N-D.J. BH, *Colecția Registrelor de Stare Civilă*, file. 94, f. 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[25]. 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)[26].

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[27].

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

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

Source: A.N-D.J. BH, *Colecția Registrelor de Stare Civilă*, file 144, f. 160-164; file 146, f. 1-47

The distribution of deaths by age groups shows an excessively high mortality amongst children in Ghenci, in the Satu Mare County[28]. There, 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, over half of the children were less than 1.

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: A.N-D.J. SM, *Colecția Registrelor de Stare Civilă*, file 655-657 passim; Camelia Chereji, *op. cit.*, pp 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 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.

2.3. Infantile mortality – indicator of life expectancy

Tightly related to death structure by age groups is infantile mortality analysis. 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%[29]. 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[30].

In 1900-1910, the average number of newborns was 17,547 in Bihor and 9,655 in Sătmar[31]. In the same period, the annual average of deceased children in Bihor was 4,094 and in Sătmar 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 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‰[32]. 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‰[33]. In the two county seats, average infantile mortality rate for 1900-1910 was lower as compared to the whole of the counties[34]. In Oradea, infantile mortality rate was 213.25‰ and in Satu Mare it was 219.98‰[35].

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. According to the parish register in 1860-1880, in the Abrămuț Greek-Caholic parish, 25.41% (93 cases) out of the total number of 366 deceased were children aged less than 1[36]. Thus, 93 of 339 children born in the parish[37] died before turning 1. Somehow surprising, in the Beiuş Greek-Catholic parish, there was a higher death rate in the case of children aged less than 1 (24.16%)[38]. Out of the 480 children born in 1860-1880[39], 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)[40]. Compared to the number of 849 children born in the parish[41], 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[42]. 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).

This was a world where many were born and many died. Children were the most exposed to social, economic and meteorological hardships. Throughout the latter 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[43], 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. 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"[44]. Last but not least, the high infantile mortality originated in a harmful collective mentality of the people concerning physicians and sanitary system.

2.4. Regional mortality crises and their influence on life expectancy

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 Sătmar, 17,330 people were sick and 5,268 of them died, which was 2.13% of the county inhabitants[45]. The period with great mortality rate in the region was followed by a short time of rest (ending around 1880, as seen in the charts). 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[46]. In the Beiuş Greek-Catholic parish for instance, in 1872 there was no decease caused by cholera[47]. But the following year, the terrible epidemic resulted in 15 deaths in the parish[48].

The abovementioned cholera epidemic was not the only one causing a high mortality rate at the time. In the Borod Greek-Catholic parish, 19 people died of cholera in 1866 (in October, 17 people died of the disease)[49]. In 1863, 12 people died of dysentery and 12 of tuberculosis[50]. In 1869, 18 people died of malaria (14 in March-April and 4 in August). Other 8 people died of pneumonia[51]. Because of *ague* (possibly malaria), 19 people died in 1871 and 12 other people died the following year[52]. These are but a few examples of the numerous diseases we could classify as epidemics due to their devastating effects. In 1874, a year with several casualties, in the Beiuş Greek-Catholic parish died 11 people of "smallpox", a contagious disease, which confirms the vulnerability of the medical system[53].

To this we may add socio-economic crises occurring at the same time with families' torment caused by numerous deaths. Several women were widows, children had no parents; they were all associated to losing social and material support because of man's death. Thus, we can notice a long and complex range of causes outlining the bleak periods with excessively high mortality. Besides diseases, daily wants and needs together with precarious hygiene and living conditions largely contributed to increasing mortality and decreasing life expectancy. Considering socio-economic vulnerability and the community in general, several deaths occurred either directly or indirectly because of a weakened body after meteorological "accidents". Long winters, hot summers, long rains, drought, etc., could be strong external factors increasing mortality amongst the inhabitants of these exposed villages devoid of support.

2.5. Life expectancy and season vulnerability to death

If we make a comparison with the situation in Transylvania, where most deaths occurred in winter and spring months (11% in March and 6.5% in June-July)[54], there were certain small tones. In 1860-1880, in the analysed parishes, the average monthly number of deaths confirms the high death rate in March-April (22.3%) and October-November (16.93%). Although there was a slight trend to diminish the number of deaths, at the beginning of winter (December), the level of deaths was still high. The lowest number of deaths was in May-September as well as February. The season distribution of deaths confirm the hard time of spring, when the organism was weaker and food as well; they were all associated with the exhausting spring agricultural labour. Physical exhaustion towards the end of the agricultural season and the change of air temperature in October-December favoured several diseases often causing death.

If we analyse the whole range of external determinisms and conditions favouring increasing death rate from one month to another, from one season to another, we notice the high variety of trends throughout the year. The cold air in wintertime associated with labour in the woods could lead to lung diseases. The lack of appropriate food and exhausting toil in spring, as well as the fact that both parents would go to work in the field and thus several children were in the care of crippled old people or their brothers who could not go to the field also led to a high mortality rate in spring. The high mortality rate also originated in the spreading of several diseases once the air was warmer and most of them were weaker. In summer and autumn, several people mostly children died because of stomach diseases caused by overeating unripe and unwashed fruit and vegetables. Dysentery and typhoid fever were widespread in summer and autumn. To these was added the lack of care for children. Last but not least, the poor vegetarian food during fasting periods (in many cases, they did not have that either) contributed to weakening the body; hence there was an increasing death rate after long fasting periods.

Notes:

[1] Ioan Bolovan,"*Transilvania între Revoluţia de la 1848 şi Unirea din 1918. Contribuţii demografice* (Cluj-Napoca: Centrul de Studii Transilvane, Fundaţia Culturală Română, 2000), 117; Fernand Braudel, *Structurile cotidianului*, vol. I (Bucureşti: 1984), 145.

[2] Iosif I. Adam and I. Puşcaş, "*Izvoare de demografie istorică*, vol. II, *Secolul al XIX-lea – 1914. Transilvania* (Bucureşti: Direcţia Generală a Arhivelor Statului, 1987), 240.

[3] *Ibid.*, 241.

[4] The sources of information were the yearbooks *Magyar Statistikai Évkönyv. Szerkeszti és kiadja. Az országos Magyar Kir. Statistikai. Hivatal* (hereinafter "*Magyar Statistikai Évkönyv*"), I Füzet (*1877* – Budapest: 1878; *1879* – Budapest: 1881; *1881* – Budapest: 1883; *1885* – Budapest: 1887; *1887* – Budapest: 1889; *1889* – Budapest: 1891).

[5] Cf. Bolovan, "*Transilvania între Revoluţia*", 145.

[6] All through the latter half of the 19th century, gross mortality rate was pretty high. Beyond average rate, there were peaks of mortality culminating with the devastating cholera epidemic in the whole region. Moreover, 1870-1874 was a time with the highest gross mortality rate in both counties: 58.6‰ in Bihor and 46‰ in Sătmar. Adriana Florica Muntean, "Mortalitate şi morbiditate în nord-vestul Transilvaniei (în a doua jumătate a secolului al XIX-lea şi la începutul secolului al XX-lea)", in Ioan Bolovan (coord.), *Transilvania în epocile modernă şi contemporană. Studii de demografie istorică* (Cluj-Napoca: Presa Universitară Clujeană, 2002), 205.

[7] Newcomers' mortality rate normally was lower as those usually involved in migration belonged to the age group less exposed to mortality unlike children and old people.

[88] For instance, the growth of Jew population in cities and other localities is significant. See Ladislau Gyémánt, "Les Juifs de Transylvanie à l'époque du dualism (1867-1918), *Transylvanian Review*, vol. XVIII, no. 2, (summer 2009): 44-48

[9] Ioan Bolovan, Sorina Paula Bolovan, "Transylvania until World War I. Demographic Opportunities and Vulnerabilities (II)", *Transylvanian Review*, vol. XVIII, no. 2, (summer 2009): 140

[10] Bolovan, "*Transilvania între Revoluţia*", 149; Simion Retegan, "Realităţi demografice ale satului românesc din Transilvania la mijlocul sec. al XIX-lea (Solnocul Inferior)", in *Civilizaţie medievală şi modernă românească*, coordinated by N. Edroiu, A. Răduţiu, P. Teodor, (Cluj-Napoca: 1985), 169.

[11] Apud Cornelia Mureşan, *Evoluţia demografică a României. Tendinţe vechi, schimbări recente, perspective (1870-2030)* (Cluj-Napoca: Presa Universitară Clujeană, 1999), 75.

[12] Bolovan, "*Transilvania între Revoluţia*", 149.

[13] Arhivele Naţionale Direcţia Judeţeană Bihor (hereinafter A.N-D.J. BH), *Colecţia Registrelor de Stare Civilă*, file 7, f. 37-55.

[14] Traian Rotariu (coord.), *Recensământul din 1900. Transilvania*, (Cluj-Napoca: Editura Staff, 1999), 618.

[15] At the time of military conflicts, there was an increasing number of deceased people (mainly males). For instance, during the revolutionary events in 1848 – 1849 in Transylvania, according to some Romanian historians, about 40,000 Romanians died. See Ioan Bolovan, Sorina Paula Bolovan, "Transylvania until World War I. Demographic Opportunities and Vulnerabilities (I)", *Transylvanian Review*, vol. XVIII, no. 4 (winter 2009): 37

[16] In the Borod Greek-Catholic parish for instance, out of the 219 children that died before turning 1, 130 were boys (59.36%) (A.N-D.J. BH, *Colecţia Registrelor de Stare Civilă*, file 144, f. 160-164; file 146, f. 1-47). It was the same situation in the Auşeu Greek-Caholic parish, where 37 (54.41%) of the 68 deceased children were boys (*Idid.*, file 71, f. 40-51). Out of the 93 children deceased before turning 1 in the Abrămuţ Greek-Catholic parish, 56 (60.2%) were boys (*Idid.*, file 7. f. 37-55). In the Beiuş Greek-Catholic parish instead, only 49.3% of the deceased children were boys (71 out of 144). The relation changed to the disadvantage of boys in the community when calculating the number of deceased children under 2: out of the 175 children that died before reaching the age of 2, 89 were boys (50.86%) and 86 were girls (49.14%) (*Idid.*, file 94, f. 25-49).

[17] Luminiţa Dumănescu, *Transilvania copiilor. Dimensiunea demografică a copilăriei la românii ardeleni (1857-1910)* (Cluj-Napoca: Argonaut, 2006), 139.

[18] Daniela Deteşan, "Mortalitatea în comitatul Cluj în a doua jumătate a secolului al XIX-lea şi începutul secolului XX. Evoluţii 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, 2005), 89-122.
[19] Dumănescu, 136-137. In Cluj-Mănăştur, 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.
[20] *Idid.*, p. 85.
[21] A.N-D.J. BH, *Colecţia Registrelor de Stare Civilă*, file 7, 37-55.
[22] 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.
[23] *Idid.*, file 94, f. 25-49.
[24] *Idid.*.The Greek-Catholic parish priest did not record age at death for one person.
[25] Corneliu Pădurean, *Populaţia comitatului Arad în secolul al XIX-lea* (Arad: Editura Universităţii "Aurel Vlaicu", 2003), 194.
[26] A.N-D.J. BH, *Colecţia Registrelor de Stare Civilă*, file 144, f. 160-164.
[27] *Idid.*, file 144, f.160-164; file 146, f. 1-47.
[28] Arhivele Naţionale, Direcţia Judeţeană Satu Mare (hereinafter A.N-D.J. SM), *Colecţia Registrelor de Stare Civilă*, file 655-657; Camelia Chereji, *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, 2000), 50-53.
[29] Adam and Puşcaş, 645. 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.
[30] *Idid.*. 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).
[31] *Idid.*, p. 656-659; *Magyar Statisztikai Közlemények. Új sorozat.*, vol. 46, *A Magyar Szent Korona Országainak 1901-1910. Évi Népmozgalma Községenkint* (Budapest: 1913), 280-459.
[32] We have considered all localities in Transylvania belonging to current Romania, including Banat, Crişana and Maramureş, where the average number of births was 177,980 children in 1900-1910 and 36,707 died before turning 1. Cf. Adam and Puşcaş, 660-661.
[33] *Idid.*, p. 656-657. High infantile mortality rate in the county was higher than the average in Transylvania and Hungary. It was noticed in Prof. Padurean's analysis on population in the county. According to his survey, infantile mortality rate for children aged less than 5 was 475.6‰ in 1893. Pădurean, 192.
[34] 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.
[35] Adam and Puşcaş, 656-659. 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.
[36] A.N-D.J. BH, *Colecţia Registrelor de Stare Civilă*, file 7, f. 37-55.
[37] *Idid.*, f. 6-22.
[38] *Idid.*, file 94, f. 25-49.
[39] *Idid.*, file 91, f. 25-45.
[40]*Idid.*, file 144, f. 160-164; file 146, f. 1-47.
[41] *Idid.*, file 144, f. 49-99.
[42] A.N-D.J. SM, *Colecţia Registrelor de Stare Civilă*, dosar 655-657 passim; Chereji, 49-53.
[43] Infantile mortality rate in Transylvania (without including Banat, Crişana and Maramureş) was 178.3‰ in 1865 and reached 193‰ in the first decade of the 20th century. Bolovan, "*Transilvania între Revoluţia*", 156.
[44] Apud Pădurean, 194.
[45] Adam and Puşcaş, 243-244.
[46] Bolovan, "*Transilvania între Revoluţia*", 143.
[47] A.N-D.J. BH, *Colecţia Registrelor de Stare Civilă*, file 94, f. 38-40.
[48] *Idid.*, f. 40-42.
[49] *Idid.*, file 146, f. 9-12. In 1872 there was no record on death caused by cholera just like in the Beiuş parish. However, 19 deceases were caused by the terrible epidemic in the parish the following year.
[50] *Idid.*, f. 1-4.

[51] *Idid.*, f. 17-20.
[52] *Idid.*, f. 23-30.
[53] *Idid.*, file 94, f. 42-44.
[54] Bolovan, "*Transilvania între Revoluția*", 154.