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Rate and Time Trend of Perinatal, Infant, Maternal Mortality, Natality and Natural Population Growth in Kosovo

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ORIGINAL PAPER

ABSTRACT

Aim: The aim of work has been the presentation of the rate and time trends of some indicators of the health condition of mothers and children in Kosovo: fetal mortality, early neonatal mortality, perinatal mortality, infant mortality, natality, natural growth of population etc. The treated patients were the newborn and infants in the post neonatal period, women during their pregnancy and those 42 days before and after the delivery. **Methods:** The data were taken from: register of the patients treated in the Pediatric Clinic of Prishtina, World Health Organization, Mother and Child Health Care, Reproductive Health Care, Ministry of Health of the Republic of Kosovo, Statistical Department of Kosovo, the National Institute of Public Health and several academic texts in the field of pediatrics. Some indicators were analyzed in a period between year 1945-2010 and 1950-2010, whereas some others were analyzed in a time period between year 2000 and 2011. **Results:** The perinatal mortality rate in 2000 was 29.1‰, whereas in 2011 it was 18.7‰. The fetal mortality rate was 14.5‰ during the year 2000, whereas in 2011 it was 11.0‰, in 2000 the early neonatal mortality was 14.8‰, in 2011 it was 7.5‰. The infant mortality in Kosovo was 164‰ in 1950, whereas in 2010 it was 20.5‰. The most frequent causes of infant mortality have been: lower respiratory tract infections, acute infective diarrhea, perinatal causes, congenital malformations and unclassified conditions. Maternal death rate varied during this time period. Maternal death in 2000 was 23 whereas in 2010 only two cases were reported. Regarding the natality, in 1950 it reached 46.1 ‰, whereas in 2010 it reached 14‰, natural growth of population rate in Kosovo was 29.1‰ in 1950, whereas in 2011 it was 11.0‰. **Conclusion:** Perinatal mortality rate in Kosovo is still high in comparison with other European countries (Turkey and Kyrgyzstan have the highest perinatal mortality rate), even though it is in a continuous decrease. Infant mortality considerably decreased (from 164‰ in 1950 to 20.5‰ in 2010). The causes of infant mortality have still been tightly related with the causes of the developing countries. Next to this, natality and the natural population growth have experienced a considerably decrease in Kosovo. Even though there have been some improvements within the health care in Kosovo, there is still a lot to be done with the aim of constant improvement of health care in order to promote the health care for mothers and children.

Key words: Perinatal, infant and maternal mortality, natality and natural growth of population.

1. INTRODUCTION

The evaluation of the health condition of children and mothers within one particular community is based on several indicators: evaluation of the natural movement of population (birth rate, mortality rate, natural population growth, age structure), evaluation of the mortality rate and its causes, analysis of the ill health and following the changes of those factors during a particular time period. The evaluation of the success of different intervention programs (prevention, depistation and treatment of the diseases and different disorders) for example: immunization, prevention

of rickets, sideropenic anemia, caries, and different screening tests for different metabolic diseases are also important indicators for evaluation of the health condition of children and mothers (1, 8, 9, 12).

2. AIM

The aim of work was to present the time trend and rate of health indicators of mothers and children in Kosovo during the particular time periods: perinatal mortality, fetal mortality, early neonatal mortality, maternal mortality, infant mortality, natality, and natural population growth.

3. MATERIALS AND METHODS

The data for this research work were obtained from: World Health Organization (WHO), United Nations International Children’s Emergency Fund (UNICEF); Ministry of Health of Kosovo, National Institute of Public Health of Kosovo, Clinic for Gynecology and Obstetrics, Pediatric Clinic, Statistical Department of the former Yugoslavia and the Statistical Department of Slovenia and Croatia.

4. RESULTS

Perinatal mortality: It presents the number of stillbirths (fetal mortality) and the number of the children that died at the early neonatal stage (0 -7 days) in 1000 children that were born alive or dead in one particular territory during one calendar year.

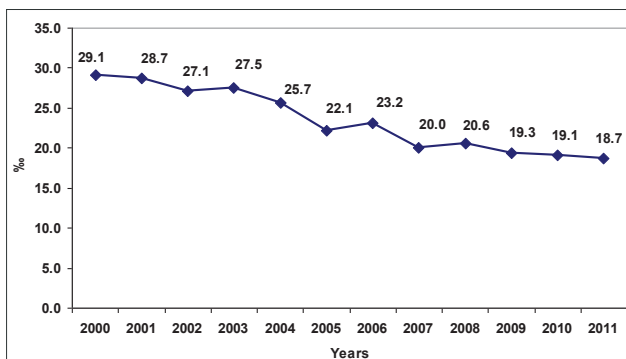


Chart 1. The perinatal mortality rate in Kosovo during the time period 2000-2011

The chart 1 represents the time trend and the perinatal mortality rate in Kosovo during the time period 2000 – 2011. It is obvious from the chart that during this time period the perinatal mortality rate in Kosovo marked considerable drop in the perinatal mortality rate (from 29.1‰ in 2000 to 18.7‰ in 2011, it decreased approximately per 1‰ per year).

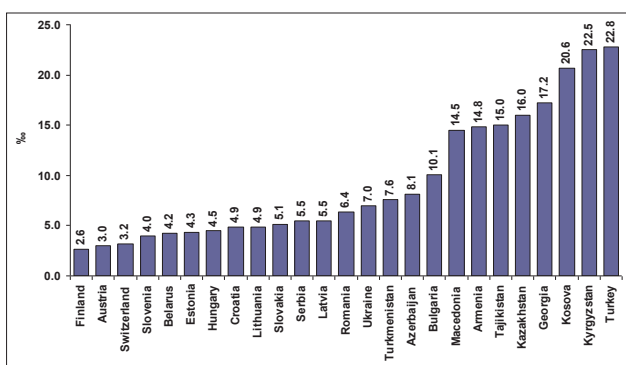


Chart 2. The perinatal mortality rate in several European and Asian countries in 2008 (body weight >1000g)

The comparison of the perinatal mortality rate in Kosovo with the perinatal mortality rate in some countries in Europe and Asia is presented in the chart 2. It is obvious that Kosovo (20.6‰) has the highest perinatal mortality rate in Europe, whereas Finland has the lowest one (2.6‰). The mortality rate of Turkey (22.8‰) and Kyrgyzstan (22.5‰) is higher than that of Kosovo.

Fetal mortality rate in Kosovo in 2000 was 14.5‰, whereas during 2011 it was 11.0‰ (Chart 3).

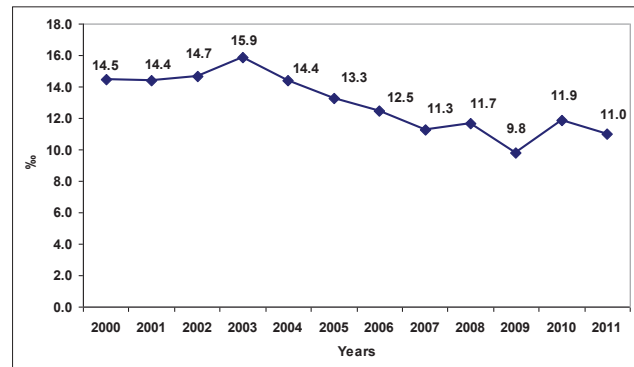


Chart 3. The fetal mortality rate in Kosovo during the time period 2000-2011

The chart 4 shows clearly that the early neonatal mortality rate in 2000 was 14.8‰, whereas in 2011 it reduced by half (7.5‰).

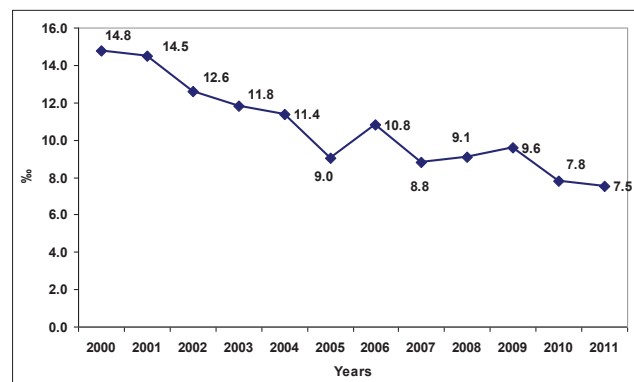


Chart 4. The early neonatal mortality rate in Kosovo during the time period 2000-2011

The table 1 contains the number of mothers in 100.000 of newborns that died during the pregnancy and during the first 42 days after giving birth. It is obvious that the number of mothers that died during the time period 2000–2010 varies, but the average mortality rate among mothers is 16.5 : 100.000 of newborns and that is still high in comparison with the European average of 5.5:100.000 of newborns and with the average mortality rate in several countries of the region: Croatia (4.4:100.000), Slovenia (3.5 : 100.000), Hungary (3.0:100.000) of newborns, but in many other cases it

Years	Reported number of births	Reported number of maternal deaths	Maternal mortality rate in 100.000 newborns
2000	30.091	9	23
2001	39.578	5	12.6
2002	35.391	7	20
2003	31.932	7	22
2004	30.935	3	9.7
2005	29.056	2	6.88
2006	28.404	2	7
2007	27.856	3	10.8
2008	28.178	8	28.4
2009	27.718	12	43.31
2010	27.517	2	7.2
Total	336.656	57	Average 16.5

Table 1. Maternal mortality rate in Kosovo during the time period 2000-2010

is much lower in comparison with several countries of sub-Saharan Africa (900:100.000) and southern and central Asia (490:100.000) of newborns.

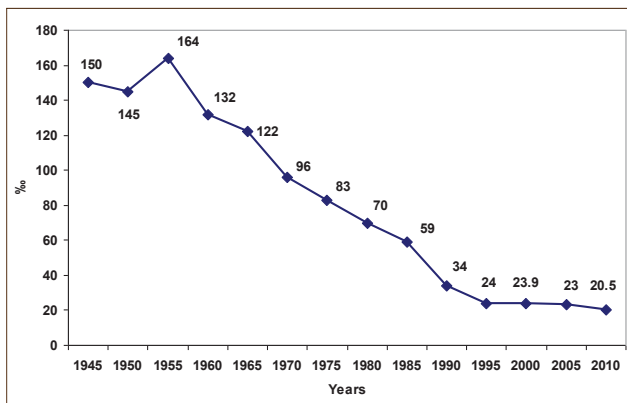


Chart 5. The infant mortality rate in Kosovo during the time period 1945-2010

The chart 5 shows that Kosovo had a high infant mortality rate in 1000 newborns, in 1955 was 164‰, whereas the mortality rate did considerably decrease until 2010 with 20.5‰.

Continent - Country	Infant mortality rate ‰
USA	7 ‰
Europe	9 ‰
Singapore	2.4 ‰
Guatemala	40 ‰
Finland	3.5 ‰
Austria	4.8 ‰
Slovenia	4.9 ‰
Italy	5.3 ‰
Croatia	7.7 ‰
Hungary	9.2 ‰
Bosnia and Herzegovina	15 ‰
Kosovo	20.5 ‰
Albania	31.8 ‰ (2001)

Table 2. Comparison of infant mortality rate in Kosovo and several countries and continents

The table 2 shows that Singapore has the lowest infant mortality rate in the world (2.4‰), in Europe it is Finland (3.5‰), and according to the data from 2001, the country that has the higher mortality rate that Kosovo is Albania (31.8‰), Europe has the average of 9‰, whereas USA 7‰ (2008).

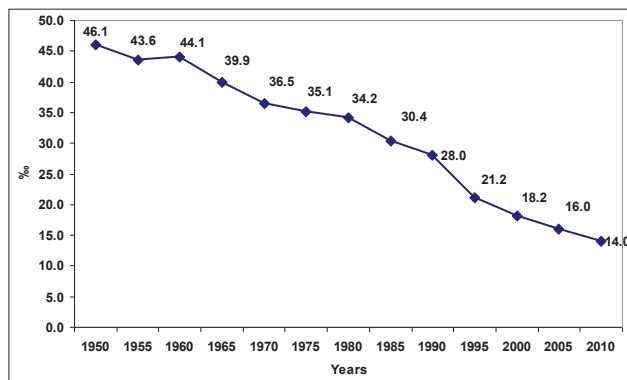


Chart 6. The natality rate in Kosovo during the time period 1950-2010

The number of newborns in 1000 inhabitants during one calendar year in Kosovo during the time period 1950-2010 was presented on the chart 6. In 1950 the natality in Kosovo was 46.1‰, whereas in 2010 it decreased considerably (14.0‰).

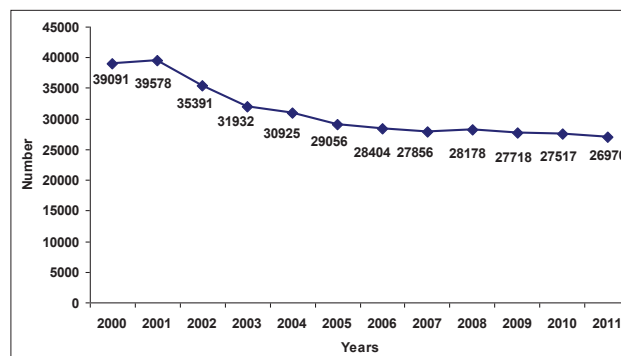


Chart 7. The reported number of births in Kosovo in time period 2000-2011

The chart 7 shows that the number of births in Kosovo in 2000 reached 39,091, whereas in 2011 it reached 26,970 births.

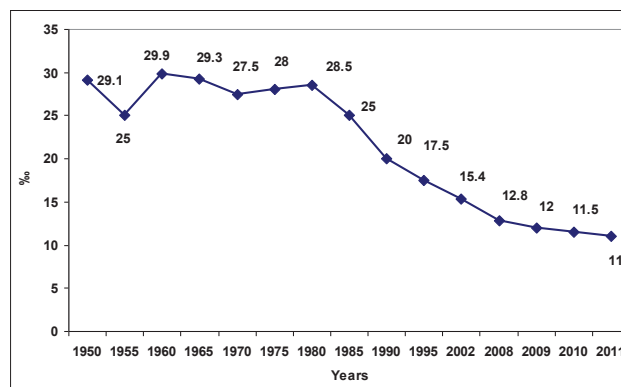


Chart 8. The natural population growth rate in Kosovo during the time period 1950-2011

The natural population growth presents the difference between the general natality and mortality. In Kosovo in 1950 it was 29.15 ‰, whereas in 2011 it was 11.0‰ (chart 8).

Table 3.

The table 3 presents that the developed countries have the negative natural population growth rate (Croatia, Hungary, Italy and Austria). The positive natural population growth rate is present in the developing countries (Kosovo, Albania, Bosnia and Herzegovina and Macedonia). Europe has negative natural population growth rate (-2.4 ‰), whereas Slovenia has zero natural population growth rate.

5. DISCUSSION

In regard with the perinatal mortality in Kosovo, we possess the correct data from 2000 – 2011. During this period, we witnessed a considerable drop in perinatal mortality from 29.1‰ to 18.7‰, meaning that the perinatal mortality dropped per 1‰ every year. However, it is still the highest in the Europe. According to the data of WHO for 2008, Finland has the lowest perinatal mortality rate in Europe (2.8‰), followed by Austria (3‰) etc., whereas the highest perinatal mortality rate in comparison with

Country-Continent	Natality ‰	Mortality ‰	Natural population growth ‰
Croatia	9.2	11.2	-2
Slovenia	9.2	9.2	0
Hungary	9.7	13.5	-3.8
Bosnia and Herzegovina	10.35	6.7	+3.65
Macedonia	14.5	8.51	+5.99
Albania	16.1	28	11.9
Italy	9.4	9.9	-0.5
Austria	9.7	9.5	-0.2
Europe	9.4	11.8	-2.4
Kosovo	16 (2011)	27	11

Table 3. Comparison of natural population growth in Kosovo (2011) with several countries of the region and European average (2008)

Kosovo have Turkey (22.8‰) and Kyrgyzstan (22.5‰) and the others (4, 5).

Based on the reported number of fetal deaths in 2000, the fetal mortality rate was 14.5‰, whereas in 2011 it was 11.0‰ (4, 9). It is obvious that during the period of 11 years, the fetal mortality marked the steady decrease. The cause lies in the frequent appearance of intrauterine infections, the common birth defects, premature babies, intrauterine growth retardation and complications that occur during delivery (asphyxia, intracranial bleeding etc).

The early neonatal mortality rate got reduced by half during the period 2000 – 2011. It was 14.8‰ in 2000, whereas in 2011 it was 7.5‰. However, it is still high. The early perinatal and neonatal protective measures have still not been developed as much as they should be. The early neonatal deaths in Kosovo are caused by intrauterine infections, asphyxia, early neonatal sepsis, premature babies etc. These causes are typical for developing countries (1). In comparison with Croatia (developed country) the causes of neonatal mortality are: dyspnea syndrome among newborns, bronchopulmonary dysplasia, congenital anomalies etc (3, 4, 14).

Maternal mortality in Kosovo varies from 2000 – 2010. From the total number of deliveries in Kosovo (336.656) during this time period, 57 mothers died which makes the average 16.5:100.000 in newborn children. The countries of the region (Hungary, Slovenia, Croatia) have two even three times lower maternal mortality rate than that of Kosovo, and it is due to a better organisation of health care of pregnant women and mothers during the first 42 days after delivery (2, 3, 6, 10, 14).

In regard with the infant mortality rate in Kosovo, we possess only the data up to 2010. It decreased considerably in comparison with 1955 (164‰), but it is still the average 20.5‰ (according to the scale done by WHO). Singapore has the lowest infant mortality rate (2.4‰), whereas in Europe it is Finland that has the lowest infant mortality rate (3.5 ‰), followed by Austria (4.8‰) etc. The average of Europe is 9‰, whereas of USA it is 7 ‰ (1, 4, 5, 10, 14). The causes of still high infant mortality rate in Kosovo are: social factors, hygiene, undernourishment, malnutrition, infections, poverty, poor health education, etc., meaning all those causes that are characteristics of the developing countries (2, 12, 15, 16).

The natality rate in Kosovo decreased considerably in 1950 (46.1‰) in comparison with the year 2010 (14.0‰). This is obvious from the numbers of births reported in Kosovo from 2000 (39091 births) up to 2011 (26970 births). Kosovo has positive natural population growth (11.9‰) in comparison with several countries in the region in which the natural population growth is zero (Slovenia) or negative in Croatia (-2.4‰). Several countries of the region (5, 6, 7, 11, 13, 14), have positive natural population growth for example Macedonia (+5.99‰) and Bosnia and Herzegovina (+3.65‰).

6. CONCLUSION

The perinatal mortality rate in Kosovo has still been high, although the reports from 2000–2011 show a constant fall. The fetal mortality rate from 2000–2011 decreased gradually (14.5‰–11.0‰), whereas the early neonatal mortality rate decreased rapidly (14.8‰–7.5‰). The number of maternal deaths decreased in 2011 in comparison with 2009, but it is still high and varies from one year to another. According to the WHO, the infant mortality rate in Kosovo is the average one, but in comparison with the rate from the previous periods it showed a considerable decrease. The natality rate decreased rapidly during the last ten years regardless the positive natural population growth rate. The lack of demographic and statistic data that are essential regarding the health of mother and child still present an obstacle for everyone. It is incontestable that there has been a significant improvement in the health care in Kosovo, but there is still a lot to be done with the aim of further improvement of the health care for a mother and a child. The health care for mother and child shall be a closed circle consisting of: health care before conception, prenatal and perinatal health care, health care of infants, preschool children and health care of school children and adolescents.

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