Medical University
“Prof Dr. Paraskev Stoyanov” - Varna
Faculty of Public Health

Department of Social Medicine and Healthcare Organization

NADEZHDA BOZHIDAROVA MIHAYLOVA-GEORGIEVA

INFANT MORTALITY IN BULGARIA - HEALTH, POLITICAL, CULTURAL AND HISTORICAL ASPECTS

THESIS SUMMARY

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PROF. KLARA DOKOVA, MD

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The thesis is presented on 155 pages and contains 10 tables, 19 figures, and 6 appendixes. 218 were cited, 79 in Cyrillic, and 139 in Latin.

The thesis work was discussed and approved at a meeting of the departmental council of the Department of Social Medicine and Healthcare Organization.

Scientific Jury:

Prof. Tatyana Ivanova, MD
Prof. Elena Shipkovenska, MD
Assoc. prof. Gena Penkova (Grancharova), MD
Assoc. prof. Nataliya Usheva, MD
Assoc. prof. Desislava Vankova, MD, DSc

Content

Introduction

The infant mortality rate (IM) has long been recognized as an essential measure of health and social well-being in a country. The twentieth and early twenty-first centuries have been marked by extraordinary declines in total and infant mortality worldwide. In the countries of the European region, in 120 years, infant mortality has decreased from 35 to 60 times, with very low values being achieved for both general and specific indicators.

The enormous progress of medical science, the creation of universal health systems, the increase of access to health care for wider sections of the population, the improvement of the position of women, анд the elevation of priority to maternal and child health are factors that contribute to this extraordinary success of against the backdrop of more or less rising living standards in a significant number of countries.

The unprecedented decline in IM creates a new environment in which to plan, conduct, and interpret infant mortality studies in the 21st century. Thematically, they are focused on the specific older indicators - neonatal (early and late), perinatal, and post-neonatal infant mortality and their relationship with social, demographic, and health-organizational conditions. The second direction of research is the inequalities in infant mortality, and not only between countries but also across the entire social spectrum within them. The disclosure of inequalities in infant mortality, apart from theoretical importance, also has the potential for public action to reduce them at different levels.

A third, surprising at first glance, direction of research is the publications on historical demography, which have become more frequent since the beginning of the 21st century, and provide a new analysis of old facts. They contain "new lessons from the past" that are always timely and useful due to the need for families, resp. mothers to synchronize their efforts to raise infants with rapidly changing conditions in society. Deficits in knowledge and skills are

established constantly or cyclically, and to fill them, one must think and act.

The demographic situation in Bulgaria, characterized by a second wave of urbanization, with the establishment of several large cities and a declining periphery, reduced marriage and birth rates, high mortality, and intensive emigration among young age groups, reinforces the importance of policies and practices to reduce infant mortality.

Despite the great decline in infant mortality in Bulgaria, from 155‰ in 1922 to 5.1‰ in 2020, our country has been in the last place on this indicator for nearly 20-25 years in the EU. Therefore, studies on this important indicator of public health for Bulgaria should be related to the search for reasons for lagging behind other European countries, which should be based on health-political, demographic, socio-economic, and ethno-cultural analysis for a long historical period.

Knowing the inequalities in infant mortality by region, social, and organizational-health characteristics would enrich the process of improving early child health. Focusing public health interventions on families/mothers to prepare for childbirth and early child rearing is promising for individual and community development. The understanding of the current directions of research work in the field of infant mortality is decisive for the topic of the present dissertation work and its development.

I. OBJECTIVE, TASKS, METHODS

Objective: To examine the dynamics of infant mortality in Bulgaria in a health-policy context for the period 1950-2020 and assess the role of cultural and organizational factors in achieving favorable trends

Tasks:

1. Study the historical aspect of the infant mortality problem focusing on practices to reduce rates in Bulgaria, Europe, and the USA.
2. Trace the dynamics of infant mortality indicators in Bulgaria and European countries in a health-policy context for the period 1950-2020.
3. Analyze regional differences in the dynamics of infant mortality indicators in Bulgaria for the period 2000-2019.
4. Investigate the readiness of women from different educational and ethnic groups in Bulgaria for childbirth and care in early childhood.
5. Evaluate the potential of cultural and health organizational factors to improve infant mortality trends.

Hypotheses:

1. Bulgaria follows the European trend of a significant reduction in infant mortality in the period 1950-2020, with the transition period 1990-2000 expected to be problematic.
2. After 1990, Bulgaria lags behind other European countries in terms of overall and specific infant mortality indicators.

3. Persistent regional inequality in infant mortality exists in Bulgaria, both overall and specific.
4. Determinants of inequalities in residence and between regions are equally conditioned by socio-economic, cultural, and organizational factors.
5. The primary factor influencing mothers' readiness for childbirth and care for children under 1 year in Bulgaria is the healthcare system.
6. Educational, ethnic, and cultural differences in mothers' awareness and behavior exist.

Material and Methods: To achieve the goal and tasks of the dissertation, the following studies were conducted:

- Theoretical-historical study focusing on identifying trends in infant mortality in connection with the development of the concept of the child in different historical periods.

Descriptive review of scientific literature on the topic, including searching for scientific publications in various databases with keywords related to infant mortality and the history of the child.

Methods: A descriptive review of the scientific literature on the subject of trends in infant mortality was made, and for this purpose, a search was made for scientific publications in magazines, books, reports of state institutions and scientific organizations published in English, French, Spanish, Russian and Bulgarian languages. The following scientific databases were searched: PubMed, Google Scholar, Research Gate, and Web of Science with the following keywords (in relevant languages): infant mortality, child, concept of childhood, attitude, infant mortality (all indicators), stillbirth, dying, vital event registries, history, historical, mothers, education, position of women, status, child laws. Articles with attractive

scientific titles are grouped by historical periods and geographical regions - European countries and the USA. A systematic analysis of the development of public understanding of childhood and the position of children in societies and of historical health-demographic data concerning IM was carried out.

➢ Second study: analysis of infant mortality in Bulgaria in a European context

Objective: to track the trends in infant mortality - general and age-specific for Bulgaria in a comparative aspect:

- with selected European countries for the period 1950-2020.

- and between the regions in our country (NUTs 2), to study the regional differences for the indicators of IM - general and older in Bulgaria for the 20 years - 2000-2020.

Methods: Trends were analyzed for the following indicators:

Infant mortality rate: m_0 - the number of deceased children aged up to 1 year per 1000 live births. It is calculated per thousand as the ratio of deceased children under the age of 1 year M_0 to the number of live births N.

$$m_0 = \frac{M0}{N}.1000$$

Neonatal mortality m_{neo} - number of deceased children from the 1st to the 27th day incl. from their birth, per 1,000 live births (НСИ, н.д.).[1]

$$m_{neo} = \frac{number\ of\ deceased\ children\ aged\ 1-27\ day\ incl.}{\text{number of live births for the same year and territory}}.1000$$

[1] https://ncpha.government.bg/uploads/pages/126/HealthInd.pdf

Early neonatal mortality - the mortality of live-born infants in the first 7 full days of life (Министерство на здравеопазването).

$$m_{eneo} = \frac{\text{number of deceased children aged } 1-6 \text{ days inclusive at birth}}{\text{number of live births for the same year and are}} . 1000$$

Postneonatal IM – covers children who die from the 28th day to the first year after birth.

$$m_{post} = \frac{\text{deceased children } 29- \text{ 365th day (1st year) after birth}}{\text{number of live births for the same year and territory}} . 1000$$

Perinatal IM - ratio of the sum of the number of stillbirths and the number of live-born children who died in the first 6 days of their lives to the number of children born

$$m_{peri} = \frac{\text{number of stillborn} + \text{deceased children to the } 6- \text{th day}}{\text{number of children born at the same year and teritory}} .1000$$

The stillbirth rate is calculated as the ratio of the number of stillbirths to the total number of births (live births and stillbirths) per 1,000.

$$\mathcal{M} = \frac{\text{number of stillbirths}}{\text{number of born children (live births and stillbirths)}} . 1000$$

The main source of the data for the described indicators is the Eurostat database. The analysis includes data for Bulgaria and the following 28 countries: Austria, Belgium, Great Britain, Germany, Greece, Denmark, Estonia, Ireland, Spain, Italy, Cyprus, Latvia, Lithuania, Luxembourg, France, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Hungary, Finland, Croatia, Czech Republic, and Sweden.

The indicators were chosen to track the impact of the health system on the life and health of the newborn while in the hospital, immediately after birth (early neonatal mortality), as well as the role of the family in the home through the analysis of the post-neonatal mortality indicator.

The data on IM - general and age-specific indicators at the regional level NUTs- 2, for the period 2000-2019 were obtained from the National Statistical Institute. They include the number of live and stillborn children and deaths in the following age groups: early neonatal 0-6 days, late neonatal 7-27 days, post-neonatal (28 days to 1 year of age) for the second level of regional distribution (planning regions). Based on these data, the IM indicators were calculated.

A geographical comparison was made between the six regions in Bulgaria, at the second level of regional distribution (Nomenclature des Unités Territoriales Statistiques 2 NUTS 2), including North-East, North-Central, North-West, South-East, South-Central, and South-West regions.

The general, and age-specific indicators of infant mortality are presented and analyzed for four periods, with a five-year duration (2000-2004; 2005-2009; 2010-2014, and 2015-2019), thus presenting the entire studied period of 20 years.

The ratio between the values of the general and specific indicators for IM is calculated and presented with a relative difference:

RR = Infant mortality (maximum reg.) / IM (minimum reg.) for relative comparisons of differences between regions

RR = IM (2020)/ IM (2000) for comparisons of relative differences over the period 2000-2020.

➢ Third survey - structured questionnaire survey

Objective: Assessment of mothers' readiness for childbirth and child care for up to 1 year. This study is part of research project 21024 of the "Science" Fund on the topic of Infant mortality in Bulgaria - a source of new approaches for optimizing children's health care. The study was approved by the Research Ethics Committee with Protocol No. 116 dated 04/28/2022

The object of the research are mothers of children up to 1 year old. Their participation in the study is voluntary and anonymous.

Methods: A survey method was applied, based on the principle of respondents.

Instrumentation: A questionnaire with 30 questions was developed for the needs of the study, four of which were open-ended. The process of preparing the tool went through the following phases: 1. initial preparation in discussion with experts in early childhood development and organization of maternal and child health care. 2. Pilot testing among potential respondents. 3. Actual collection of the information.

The questionnaire includes the following main parts: 1. Invitation and explanatory information about the purpose of the study and how to complete it. 2. Informed consent. 3. The main part is systematized in the following main groups of questions:

Preparation of the mother for the period of pregnancy and childbirth. This includes questions about the course of pregnancy, self-assessment of women's readiness to become mothers, sources of information about normal pregnancy and the birth process, participation in training, gaining access to information on meeting the needs of the newborn by health professionals, type of hospital where they gave birth. When conducting the study and analysis of the results regarding monitoring and care during normal and pathological pregnancy, the term "female consultation" was also

used, established in medical practice and scientific literature over the years.

Care of the newborn after discharge from the maternity ward. Visit by a doctor or other medical person - availability, terms, nature, and volume of advice received for raising the child - medical, non-medical, assessment, and need for contacts with the health service.

Family involvement in raising the child: sources of support and the father's role;

Demographic data: age, education, marital status of the mother.

The questionnaire was prepared in GOOGLE forms and distributed in virtual space through social networks to parents with children up to 1 year; through e-mail addresses, and over 15 groups in a social network.

Statistical methods: The data were grouped depending on the type of variables into nominal (categorical), degree (ordinal), and interval statistical series.

Descriptive methods were used:

✓ Alternative analysis - presenting the structural distribution of qualitative variables with absolute number and relative shares.
✓ Analysis of Variance – summarizing numerical variables with central tendency and variance by mean and SD or median and IQR, respectively.
✓ Tabular and graphic method

In hypothesis testing, the level of significance of the null hypothesis was set as alpha=0.05. The following non-parametric methods were applied:

- z test to check differences between relative shares;
- $\chi 2$ (chi-square) Pearson test to analyze the relationship between two qualitative variables

The software product Excel for Microsoft Windows was used to enter the data from the questionnaire surveys and to create the figures. The IBM SPSS for Windows statistical package, version 23.0.0, was used for the statistical analysis.

➢ Fourth study – a qualitative study of the importance of ethnocultural factors

Objective: to investigate cultural specificity in prenatal behavior and early childhood care among mothers of Roma ethnicity.

Selection: To ensure the diversity of the selection of participants, several nests (populated places, including neighborhoods) were determined in advance, in which to conduct the survey, based on the known territorial distribution of the various Roma communities. Among the nests of choice are: the city of Dulgopol and the Varna districts of Vladislavovo, Maksuda, and Asparuhovo.

Toolkit: The following topics for discussion have been identified to conduct the survey.

✓ Preparation for the role of mother before and during pregnancy - the role and participation of the school, family, community, and others;
✓ Contacts during pregnancy with the health service, respectively the "women's consultation" - type, frequency, content, home visit. Perceptions of the accessibility of health services - facilitations, barriers;
✓ Relationships between respondents and the health team (doctor - midwife). Attitudes to understand and accept recommendations and advice; satisfaction - criteria;

- ✓ Preparation for raising the child - psychological, material (room, bed, clothing), areas of preparation (breastfeeding/feeding, regimen, skincare, vaccinations, etc.);
- ✓ Sources and channels of information regarding preparation for welcoming and raising the child. Assessment of the role of the close environment and dominant personalities, of medical personnel, of the community, Facebook groups, etc. Comparing actual and desired sources and channels of information;
- ✓ Advice and recommendations regarding nutrition and care of the newborn received in the maternity hospital;
- ✓ Contacts with the health service after discharge: first visit to the doctor at home, received advice, attitudes towards their implementation. First visit to DK. Regularity of visits - content. Accessibility of DK - barriers. Attitude towards DC - satisfaction or not. Opinion on patronage visits, patronage nurse. Access to medical care - directly or through a mediator? Health status of the child. Self-assessment of child-rearing knowledge;
- ✓ Role of informal contacts in the community to improve knowledge and skills of raising a child.
- ✓ Attitudes towards using Internet sources;
- ✓ Conditions under which the child is raised: income (covering needs, paying bills), housing, sanitary, and household amenities (water supply, sewage, household furniture).

Data from the interviews were prepared for analysis by transcribing the audio recordings of the interviews by the researcher. This was followed by a thematic analysis of the resulting text, a method commonly used to "identify, analyze and report themes (patterns) emerging within the qualitative data" (Braun & Clarke, 2006). The method allows to achieve an in-depth analysis in response to specific research questions. It allows for analysis from two main perspectives: 1) that of the data, based on inductive, open coding of themes, and 2) that of the research questions.

The method proceeds in three main stages:

- Maximum detailed familiarization with the data through repeated reading of the text.
- Identification of themes common to respondents. Themes were coded following the principle of open inductive coding. The data coding process was accompanied by a search for answers to the following questions:

  - ❖ What question/problem does this data discuss?
  - ❖ What explanation of the topic/problem does this data suggest?

- There follows a process of generating more general categories by grouping and logically linking related topics.

II. RESULTS AND DISCUSSION

Analysis of infant mortality data in Bulgaria in a European context for the period 1950-2020.

General IM - introductory historical notes

In the second half of the 20th century, IM was characterized by a strong decline in all European countries. Each of them marked significant progress, both in comparison with the period before the WCC and in the period under consideration. In pre-war 1935 the best indicators for IM are Norway - 41‰, the Netherlands - 40‰, and Sweden - 47.1‰. In 1955 the same countries retained leading positions, but with twice reduced indicators, respectively 20.5‰, 21‰, and 18.4‰, and for 60 years, in 2020 they are 9 and 10 times reduced, respectively. 2.29‰, 3.09‰, and 2.3‰ per 1000 live births. In the same year 1935 Bulgaria, together with Hungary, Portugal, and Romania, formed the group of countries with high values of the IM indicator - from 150‰ to 192‰, i.e. 4 - 4.5 times higher than that of the prosperous countries in terms of IM. After 20 years, in 1955, the indicators were reduced twice on average: Hungary - 65‰, Bulgaria - 78‰, Romania - 86.6‰, Portugal - 90.2‰. The distance between them and the leading low IM countries from the pre-war years remains significant. The gap narrowed only at the beginning of the 21st century (Table 1).

The decline in the IM indicator in the first 10 years after WWI is associated with the post-war revival of economies, reduction of unemployment, improved post-WWII living conditions, stabilization of health systems, as well as the progress of medical technologies and improvement of the ability to deal with infectious diseases.

IM - 1960-2020 the lowest IM indicator in 1960 was Norway - 16‰, followed by the Netherlands and Sweden with close 16.5‰ and 16.6‰. The most unfavorable indicators are Portugal, Romania, and Croatia (around and above 70‰).

Table 1 Total infant mortality in European countries for the period 1960-2020.

	states/vear	1960	1990	1995	2020
1.	*UK*	22,5	7,9	6,2	3,6
2.	*France*	27,7	7,3	4,9	3,4
3.	*Estonia*	31,1	12,3	14,9	1,4
4.	*Norway*	16,0	6,9	4,0	1,7
5.	*Finland*	21,0	5,6	3,9	1,8
6.	*Cyprus*	:	12,9	8,5	2,1
7.	*Slovenia*	35,1	8,4	5,5	2,2
8.	*Czech Republic*	20,0	10,8	7,7	2,3
9.	*Sweden*	16,6	6,0	4,1	2,4
10.	*Italy*	43,9	8,1	6,1	2,4
11.	*Portugal*	77,5	10,9	7,4	2,4
12.	*Spain*	35,4	7,6	5,5	2,6
13.	*Lithuania*	38,0	10,2	12,5	2,8
14.	*Ireland*	29,3	8,2	6,4	3,0
15.	*Germany*	35,0	7,0	5,3	3,1
16.	*Austria*	37,5	7,8	5,4	3,1
17.	*Denmark*	21,5	7,5	5,1	3,2
18.	*Greece*	40,1	9,7	8,1	3,2
19.	*Belgium*	31,4	8,0	6,0	3,3
20.	*Hungary*	47,6	14,8	10,7	3,4
21.	*Latvia*	27,0	13,7	18,8	3,5
22.	*Poland*	56,1	19,4	13,6	3,6
23.	*Netherlands*	16,5	7,1	5,5	3,8
24.	*Malta*	38,3	9,1	8,9	3,9
25.	*Croatia*	70,4	10,7	8,9	4,0
26.	*Luxembourg*	31,5	7,3	5,5	4,5
27.	*Slovakia*	28,6	12,0	11,0	5,1
28.	***Bulgaria***	**45,1**	**14,8**	**14,8**	**5,1**
29.	*Romania*	75,7	26,9	21,2	5,6

Table 1 shows that Bulgaria, with its 45.1‰, ranks 24th out of 29 countries. Before it, but with close indicators, are Greece and Italy with 40.1‰ and 43.9‰. It is followed by: Hungary, Poland, Croatia, Romania, and Portugal.

During the decade 1960-1970, now the group with the highest IM experienced the largest reduction in IM. In first place in this process is Croatia with an impressive decrease of 36.2 percentage points, followed by Romania - with 26.3. Bulgaria has a drop of

18.8 percentage points and is in the group of Portugal and Poland, which gravitate towards a 20% decrease. With an indicator of 27.3‰ in 1970, Bulgaria was in 21st place among 29 countries, followed by Malta, Italy, Greece, Croatia, Hungary, Poland, Romania, and Portugal. The tendency of the countries of Central, Eastern, and Southern Europe to be at the bottom of the IM ranking is maintained.

At the end of the next decade (1980), with 20.2‰ IM, Bulgaria remained in twenty-third place.

In the decade 1980-1990, a wave-like nature of IM was observed in Bulgaria. In 1985, Bulgaria was in 23rd place with 15.4‰. In 1990, the minor reduction of the IM to 14.8‰ left Bulgaria in 26th place together with Hungary, also at 14.8‰, with only Poland and Romania behind them.

According to Asandului et al. (2014), the period 1990-1995 (in our opinion, even from 1985) is key to understanding the trends in total infant mortality in the last 30 years, because for the countries of Central and Eastern Europe it coincides with serious political and social -economic changes referred to as a "transition period". Focusing the analysis on the countries in transition - Bulgaria, the Czech Republic, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia, and Slovakia - makes it possible to assess trends and factors influencing Bulgaria's place in the rankings, as well as for the general, as well as the older infant mortality (Mihailova & Petrova, 2020).

The comparison of Bulgaria with other Eastern European countries shows that it lags in the rate of decline, in contrast to the significant downward movement of IM in Estonia, Latvia, and Hungary. In the analysis of IM in the EU for the period 1994-2015, Onambele et al. (2019) found that the decline in the indicator was steepest in the countries of Eastern Europe and the former Soviet republics of the Baltic region (Onambele, et al., 2019). Bulgaria does not fit into this type of decline Figure 1

Figure 1 Infant mortality in Bulgaria, Hungary, and Sweden for the period 1960-2020.

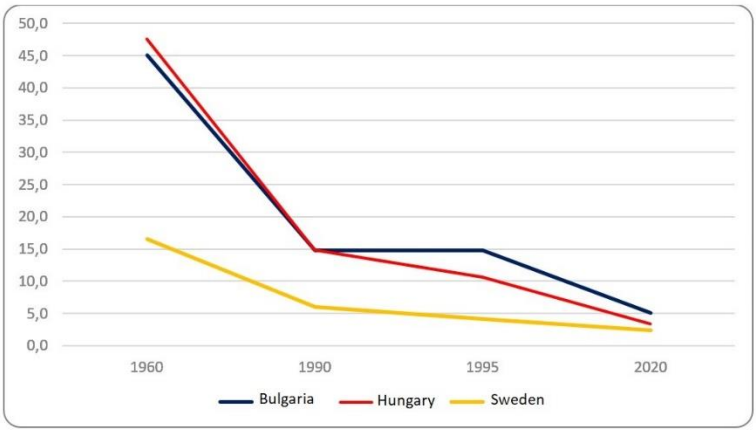


Figure 1, showing the dynamics of IM in three selected countries, clearly shows the point of "reversal" of the trend for Bulgaria, compared to one of the countries that had previously lagged - Hungary. Until 1990, Bulgaria had a better indicator than the average for the WHO European Region, which was 15.2‰ (WHO, 2022), as well as Hungary. The rates of change of the indicator, however, in the two countries in the period after 1988 diverge significantly: Hungary maintains a high rate of decrease from - 4.8% to - 6.9% in the period 1988-2008, (Nyári, Nyári, & McNally, 2015) (Onambele, et al., 2019), after which the rate decreased but was sustained and in 2020 an IM of 3.4‰ was reached.

For the entire observed period, Bulgaria decreased the value of the indicator about nine times, while there are countries with a bad start such as Portugal, Croatia, and Poland (the last two are from the group "countries in transition"), but they decrease their indicator 32, 17, 15 times, respectively. Thus, they are ahead of Bulgaria in the final year of 2020, showing the advantage of the rate of decrease of the indicator over its unfavorable level in the base year.

In addition, there is unevenness in the evolution of the indicator for Bulgaria: a steep decline from 1960 to 1975, a significant decline until 1990, followed by stagnation and deterioration in the 1990s, and only after 2000 - a slow decline. The comparison with other countries in "transition" shows the different behavior of Bulgaria about IM.

In Bulgaria since 1989. a rate of increase of DS of about +1.6% per year was observed until 1993, followed by stagnation until 1999. (WHO, 2022) and only in 2001. reaches and surpasses its indicator since 1988.

Neonatal infant mortality (NIM). The examination of VAT indicates that in 1960 Bulgaria, with 19.4‰, is in 18th place in descending order out of 29 European countries, with the best indicator again being the Scandinavian countries, as well as the Czech Republic, Slovakia, Latvia, and Lithuania. The most unfavorable indicators are Croatia, Hungary, and Portugal (the first two gravitate around 27, but "southern" Portugal has values above 35‰).

For the first decade 1960-1970. Bulgaria recorded the largest decrease in the values of the neonatal infant mortality indicator - by over 6 percentage points; maintains an average good position - 18th place with 19.4‰, followed by Greece, Slovenia, Ireland, Belgium, Germany, Italy, Austria, Hungary, Portugal and Croatia. At the end of 1970, Bulgaria had already moved to 11th place out of 26 countries with 13.2‰, passing the Czech Republic, Slovakia, and Luxembourg.

In the following decade, 1970–1980, the challenge of reducing neonatal mortality continued. During this period, Bulgaria, despite the downward movement, moves to a more backward position and from 11th place at the beginning, ranks 16th out of 26 countries with 10.4‰.

This backward movement is due to the faster improvement of VAT in countries such as Ireland, Spain, Italy, Austria, which at the start are in a worse position than Bulgaria. After 1985, the reduction of VAT in Bulgaria has been slower. The decade 1990-2000 for Bulgaria was a period of slight deterioration and retention of the indicator, while other countries in transition managed to control the indicator and reduce it.
After 1985, the reduction of VAT in Bulgaria has been slower. The decade 1990-2000 for Bulgaria was a period of slight deterioration and retention of the indicator, while other countries in transition managed to control the indicator and reduce it.

Figure 2 Neonatal mortality in Bulgaria, Hungary, Sweden, 1960-2020.

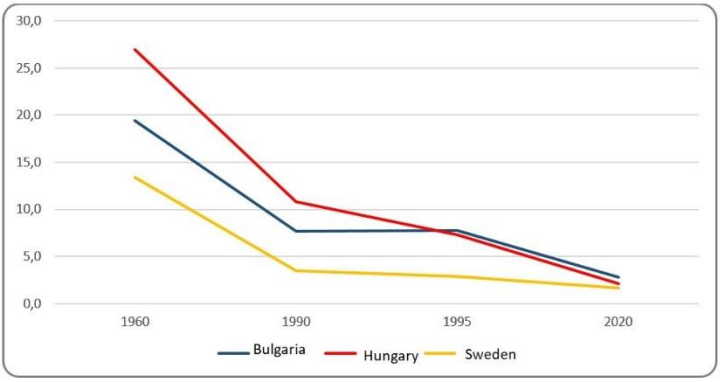


Figure 2 illustrates the evolution in NIM for three selected countries - Sweden, Bulgaria and Hungary. While in the 1970s Hungary strongly differed from the other two countries in terms of the high level of NIM, between 1990 and 1995 a "rollover" occurs. Bulgaria retains and worsens the levels of the indicator, and Hungary slowly but surely reduces its.

In 2020, Bulgaria together with Croatia and Slovakia occupy 25th to 27th place out of 29 countries. Before them is a large group of

11 countries with indicators from 2.1‰ to 2.7‰, i.e. the difference with Bulgaria is not as big as with IM.

Table 2 Neonatal mortality for European countries 1960-2020.

	countries/year	1960	1990	1995	2020
1.	*Estonia*	:	8,0	10,3	0,9
2.	*Slovenia*	20,4	5,1	3,1	1,2
3.	*Norway*	11,7	3,9	2,7	1,3
4.	*Finland*	14,4	3,7	2,6	1,4
5.	*Sweden*	13,4	3,5	2,9	1,4
6.	*Cyprus*	:	:	:	1,6
7.	*Czech Republic*	13,1	7,7	4,9	1,6
8.	*Italy*	23,9	6,3	4,6	1,7
9.	*Spain*	20,2	5,0	3,5	1,7
10.	*Luxembourg*	19,1	4,3	3,5	1,7
11.	*Portugal*	27,9	7,0	4,7	1,8
12.	*Lithuania*	13,4	6,5	8,0	1,9
13.	*Ireland*	20,4	4,8	4,7	2
14.	*Hungary*	27,0	10,8	7,3	2,1
15.	*Germany*	23,2	3,7	3,2	2,2
16.	*Austria*	24,6	4,4	3,4	2,3
17.	*Latvia*	10,9	8,5	12,7	2,3
18.	*Belgium*	20,5	4,2	:	2,4
19.	*Greece*	19,5	6,5	5,8	2,4
20.	*Denmark*	16,1	4,6	3,7	2,5
21.	*France*	17,7	3,6	2,9	2,6
22.	*UK*	16,0	4,5	4,2	2,7
23.	*Poland*	:	:	10,1	2,7
24.	*Netherlands*	13,5	4,8	3,8	2,7
25.	***Bulgaria***	**19,4**	**7,7**	**7,8**	**3**
26.	*Slovakia*	14,1	8,4	7,9	3
27.	*Croatia*	35,1	7,5	6,0	3
28.	*Romania*	:	:	9,5	3,5
29.	*Malta*	:	:	:	4,3

Source: (DATABASES, 2021) (DataBank, 2021)

Early neonatal mortality (NEM) is an important part of neonatal mortality, which is affected by both medico-biological and organizational factors related to pregnancy monitoring, the birth process and the first care of the newborn child. And in terms of RNS in 1960, Bulgaria has a relatively good position - 10.9‰ and is in 6th place out of 24 countries. In 1970, with 9.1‰, it was in 8th place out of 28 countries. In 1980, of the 29 countries shown, 22 have a value below 10‰, among which is Bulgaria; half of them already have a value below 5‰. Bulgaria slows down the rate of

decrease of the indicator and remains in a lower position - from 8th it falls to 18th place with a value of 7.5‰, which it shares with Austria (also with 7.5‰).

In the period before the changes, a large number of European countries were ahead of Bulgaria. The critical period occurred around 1990.

Table 3 Early neonatal mortality for European countries 1960-2020

1.	countries/year	1960	1990	1995	2020
2.	*Estonia*	9,6	6,1	7,9	0,4
3.	*Norway*	9,9	3,2	2,2	0,9
4.	*Finland*	12,6	3,1	2,0	1,0
5.	*Slovenia*	15,6	4,1	2,6	1,0
6.	*Lithuania*	7,3	4,8	5,6	1,1
7.	*Portugal*	15,0	5,7	3,6	1,1
8.	*Czech Republic*	10,7	5,8	3,2	1,2
9.	*Sweden*	11,8	3,0	2,2	1,2
10.	*Spain*	15,9	3,6	2,6	1,2
11.	*Hungary*	22,1	8,7	5,5	1,3
12.	*Italy*	17,8	5,1	3,4	1,4
13.	*Greece*	12,3	4,8	4,1	1,6
14.	*Ireland*	16,1	4,1	3,8	1,6
15.	*Cyprus*	:	:	:	1,6[2]
16.	*France*	14,6	2,5	2,2	1,8
17.	*Belgium*	17,1	3,4	:	1,8
18.	*Germany*	19,7	2,7	2,4	1,8
19.	*Poland*	:	:	8,0	1,9
20.	***Bulgaria***	***10,9***	***5,1***	***5,5***	***1,9***
21.	*Austria*	20,2	3,3	2,5	1,9[3]
22.	*Slovakia*	10,3	6,7	5,5	2,0
23.	*Latvia*	:	6,2	8,4	2,1
24.	*Romania*	:	:	6,3	2,1
25.	*Netherlands*	11,9	3,9	3,1	2,2
26.	*UK*	13,7	3,5	3,3	2,2
27.	*Denmark*	13,9	3,6	3,0	2,4
28.	*Croatia*	21,0	5,9	4,9	2,5
29.	*Malta*	:	:	:	2,7
30.	*Luxembourg*	16,3	2,6	2,6	3,4

[2] Data for Belgium, Ireland, Italy, Cyprus are for the closest available year 2018
[3] Data for France, Estonia, Austria, and UK are for the closest available year - 2019

Figure 3 Early neonatal mortality in Bulgaria, Hungary, Sweden 1960-2020.

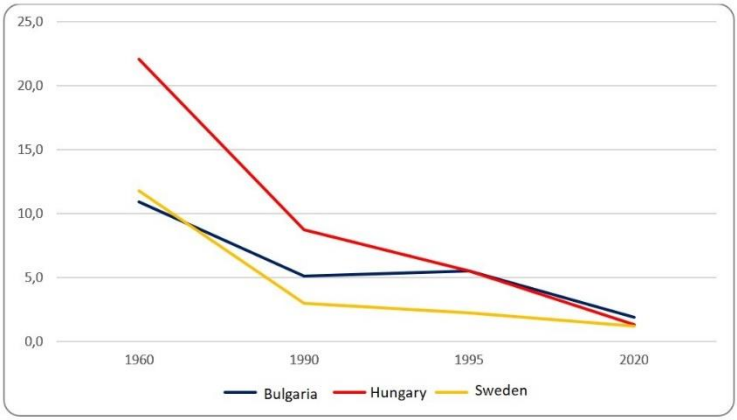


Figure 3 shows the close to each other low values of the indicator (about 11‰) for Sweden and Bulgaria in the 1970s and very far from them, with 22.1‰, is Hungary. The very rapid decline of the indicator for Hungary and the slight increase at the beginning of the 1990s of that for Bulgaria led to the "tipping point" again between 1990 and 1990. and 1995, when Hungary overtook Bulgaria. It is noteworthy that Hungary managed to reduce its early neonatal mortality by 17 times.

For the considered period (1960-2020), Bulgaria reduced the value of RNS more than 5 times. In 2020 Bulgaria already has values of 1.9‰, placing it in twentieth place out of 29 countries.

The analysis of the ENM of the countries in transition from 1990 to 2020 shows that between 1990 and 1995 only Bulgaria, Romania, and the Baltic states Estonia, Lithuania, and Latvia worsened their indicator. But while the last three since 1995 have rapidly improved it, Bulgaria needs nearly 15 years to achieve a 2

percentage point reduction, after which its value quickly starts to decline.

The importance of the transition period is also revealed in the ENM, but Bulgaria manages to cope with its challenges and is not in the last positions, as it is with the ODS. The asymmetric changes of ODS on the one hand and of NIM and RNS on the other point to a search for links with Postneonatal Mortality (PostNeoM), also in the transition period.

Due to the easier influence of PostNeoM by organizational and behavioral practices, it is usually defined as a reserve for reducing IM. Its values and slower reduction over the years is one of the reasons why in Bulgaria it fails to play the role of a reserve for reducing IM.

Figure 4 Post-neonatal mortality in countries in transition for the period 1990-2010.

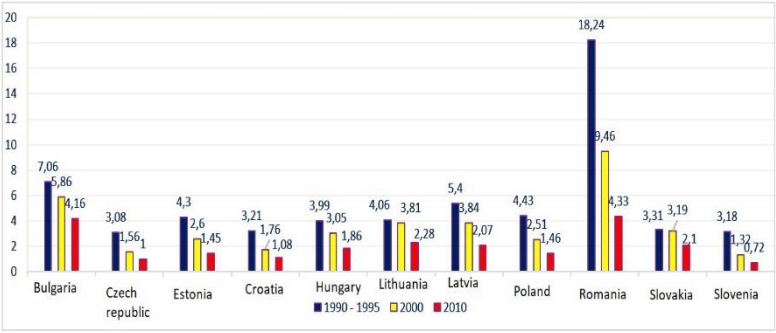


Figure 4 clearly shows that Bulgaria with its indicator of 7.1‰ in 1990. is in second place in the negative list, after Romania, which is 2.5 times higher than Bulgaria. Over a 20-year period, although

Romania (over 4 times) and Bulgaria (over 1.5) have reduced their indicators, they remain in the same unfavorable positions. In 2010, Romania with 4.3‰ and Bulgaria with 4.2‰ stand out significantly from the rest of the countries in transition, which achieve PoNS from 2.3‰ in Lithuania to 0.7‰ in Slovenia.

It becomes clear that PostNeoM participates in the mechanism of Bulgaria's lagging behind in the ranking list of the IM. Considering the nature of PostNeoM, the deterioration and retention of the indicator puts Bulgaria in the position of a country where the organization of health care for children cannot deal with preventable IM. A smooth reduction of the PostNeoMDS could favorably affect the level of the indicator of the total IM in Bulgaria for the entire period under consideration.

Analysis of infant mortality in Bulgaria in a health-policy and organizational context

When discussing infant mortality (IM) in Bulgaria, two key periods deserve special attention:

1. The period of intense decline from 1950 to the early 1970s.
2. The period of stabilization and slight increase in overall IM from 1990 to 2000.

Until the 1970s, Bulgaria was a typical rural country with 72.5% rural population. Only after 1968 did a rapid process of urbanization begin, with the urban population, although slightly, predominating over the rural population.

In this sense, the high IM in the first period is largely due to infant mortality in the villages, as it had been in previous periods (Zahariev Z., 1939). Poor living conditions, lower household and

health culture, as well as inadequate provision of health personnel in rural areas, are significant factors determining the disparities in IM between cities and villages (Petrova, Petrov, & Feschieva, 2017).

IM by place of residence consistently shows higher rates in rural areas, with the urban/rural differences being particularly dramatic between 1950 and 1965: for 1960 - 34.6‰ for cities and 50.4‰ for villages, gradually decreasing thereafter. See Table 4.

Table 4: Total Infant mortality in Bulgaria by Place of Residence 1950-2020 (per 1,000 live births)

	TOTAL	URBAN	RURAL
1950	94,5	74,3	101,9
1955	82,4	60,8	91,4
1960	45,1	34,6	50,4
1965	30,8	25,6	35,0
1970	27,3	22,7	33,5
1975	23,1	19,9	29,7
1980	20,2	18,0	24,9
1985	15,4	14,0	18,4
1990	14,8	13,8	17,1
1995	14,8	14,0	16,7
2000	13,3	12,4	15,5
2005	10,4	8,9	14,6
2010	9,4	8,1	13,4
2015	6,6	5,2	10,9
2020	5.1	4.5	6.9

During the period from 1950 to 1970, two groups of factors played an important role in reducing infant mortality (IM). The first group is associated with the creation of a legislative framework for the social protection of motherhood and childhood (Tsonev, 1979). A series of laws were adopted, including those providing free medical

care for pregnant women and children. In 1953, the Ministry of Health issued Instruction No. 15/19.04.53 to ensure qualified health preventive care for children. With Order A-10/1957/MHS, aiming to reduce the inequality of children from rural areas, the establishment of mobile child-health consultations was regulated to conduct preventive work (immunizations, observation and screening, nutritional advice) in small and/or remote settlements (Milev, Vulchev, & Golemanov, 1958). For the same reason, children's milk kitchens were established in villages, which not only saved mothers personal resources and time but also popularized principles of proper child nutrition and provided practical education to mothers. Child and women's consultations were strengthened, and annual average norms for preventive check-ups were established for pregnant women (8-9 check-ups) and children (12 check-ups) (Tsonev, 1979).

The second group of factors relates to the establishment of a centralized national healthcare system prioritizing care for mothers and children, which strategically contributes to the overall positive trend of reducing infant mortality (IM). Bulgaria was one of the first countries to create micro-pediatric/neonatology departments attached to obstetrics and gynecology clinics and departments in the 1950s and early 1960s, where newborns at increased risk—premature and low birth weight—are hospitalized. These departments significantly contribute to saving critically ill children (Hristova & Feschieva, 2014) (Tsonev, 1979).

Collaborative work and responsibility among obstetricians-gynecologists, pediatricians, and local authorities are established to reduce IM. An example of shared responsibility is the mandatory discussion and analysis of the medical and social history of each child who dies before the age of 1 by a competent commission at

the "Public Health" departments of the District People's Councils, considering the involvement of medical specialists in its healthcare (Mihaylova, 2018). Specific deficiencies, if any, and lessons learned, through district specialists, can influence normative behavior within the healthcare system and its practitioners—doctors and nurses (Feschieva & Kondova, 2014). Identified gaps in social services for the child and the family are addressed to the Municipal People's Councils (Tsonev, 1979).

During this period (until the end of 1960), the work of child and women's consultations was fully developed, with continuity established with the activities carried out by the Bulgarian Child Protection Union in the 1920s and 1930s through the Children's Health Advisory Stations (Petrova & Petrov, 2014). Mandatory home monitoring by a doctor and a nurse for newborns is introduced for all children during their first year of life. The territorial principle of medical care for children is introduced through the establishment of pediatric districts and an increase in pediatric specialists (Mihaylova, 2018) (Vulchev, 1975).

In terms of health policy, it is of immense importance to prioritize IM in health policy. Its reduction becomes a major task at both national and local levels. Successful cooperation between the healthcare system, local authorities, and the public in the fight against infant mortality and for quality child healthcare develops in this context (Mihaylova, 2018). Our earlier studies (through in-depth interviews) showed consensus on the importance of shared responsibility among local authorities, health institutions, and society regarding IM: social elements such as the establishment of children's milk kitchens, including in rural areas, support for working mothers through the establishment of childcare centers,

with seasonal childcare centers being opened in villages (Tsonev, 1979).

Despite efforts, researchers in this period—the 1950s and 1960s—note significant differences regarding urban and rural areas, obstetric and pediatric services. M. Tsonev notes that the percentage of rural children served by pediatricians was 12.5% in 1965, 10.6% in 1970, and 7.2% in 1975; annually, one urban child had 5.6 check-ups, while one rural child had only 0.6 check-ups.

To overcome the inequality in child healthcare based on residence—urban/rural—various initiatives were developed after 1975 to bring qualified and specialized pediatric care closer to the population. For example, teams of specialists, including pediatricians, were organized to work periodically (weekly or monthly) in type IV and V outpatient clinics, i.e., in smaller settlements (Proykova, 1983).

The second key period for the development of infant mortality in Bulgaria is the so-called transition period. Bulgaria holds a particular position among transition countries, as it experienced a more prolonged period of stagnation and deterioration in indicators. Economically, Bulgaria lags behind in GDP size compared to other countries. For example, in 1995, Slovenia had a GDP four times higher than Bulgaria's, with infant mortality rates over 2.5 times better than those in Bulgaria (5.5‰) (Mihaylova & Petrova, 2020) (WHO, Gross domestic product, 2020).

During the transition period, changes occur in some indicators that may affect infant mortality:

- Changes in the healthcare system: in the 1990s, there were partial changes, eroding the existing system, and from 2000 onwards, the

health insurance model was introduced, which means children are served by the mandatory health insurance fund, which may not necessarily involve a pediatrician. There is no longer a district nurse, which automatically excludes home visits. Adapting to the new rules takes time for both patients and doctors, adding several problematic years to child healthcare. There is a regression from previous achievements—by 2003, the immunization coverage for children up to 2 years of age is 92.9% overall, significantly lower for Roma children at 83.1%, while for Bulgarian and Turkish children, it is almost equal at 95.2% (Tomova & Stoychev, 2022).

- Immediately after 1990, there was a sharp increase in early childbirths (EB) – under 19 years old and under 15 years old. Bulgaria, along with Romania, led the ranking on this issue in Europe for quite some time (Feschieva, 1997) (Chalakova, 2004) (Tomova & Stoychev, 2022).
- In the early 1990s, the frequency of preterm and low birth weight newborns increased, which carry a higher risk for IM (Carlsona & Tsvetarsky, 2000) (Feschieva, 1997).
- The proportion of mothers with low education significantly increased—from 6.09% per 100 births in 1986 to 11.09% per 100 births in 1994. Among them, the frequency of low birth weight infants was higher compared to other educational groups (Feschieva & Popova, 1993) (Feschieva, Popova, & Tsvetarsky, 1996).
- Extramarital childbirth increased, and families rapidly transitioned from a marital model to cohabitation based on marital principles, which initially had a negative impact (Feschieva, Popova, & Tsvetarsky, 1996) (Feschieva & Popova, 1996) (Popova & Feschieva, 1989) (Bennett, Braveman, Egerter, & Kiely, 1994). Data for the entire country from 1986 to 1994 indicate that the worsening point was in 1990, with a culmination of unfavorable factors for IM.

• Tracking IM, preterm birth (PTB), and low birth weight (LBW) indicators show their stabilization and increase around 1990-1995 and even up to 2000, which can be associated with the period of major socio-economic and political changes throughout Eastern and Central Europe, including Bulgaria. The thesis of several authors regarding the strong and rapidly emerging vulnerability of perinatal indicators during socio-economic crises is confirmed (Biegelholt, Bonita, & Kelstrom, 1994). Bulgarian researchers found that the transition period was associated with an increase in the frequency of low birth-weight infants (Feschieva, Popova, & Tsvetarsky, 1996). The increase in the number of low birth-weight newborns is considered a mechanism by which early neonatal mortality can increase.

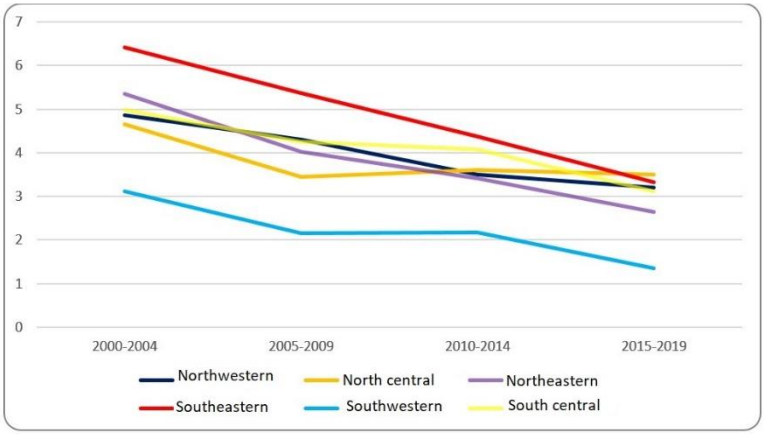
• Interregional Differences in IM Indicators

• The analysis of regional disparities in infant mortality and all age-specific indicators at the regional level (NUTS 2) in Bulgaria for the period 2000-2019 reveals the processes and factors operating at the community level in additional depth. The choice of the regional level corresponds to the European approach to studying regional health inequalities. The comparative analysis sequentially presents the indicators of early, late, post-neonatal IM, and stillbirth rates, seeking similarities and differences in trends among the six regions in Bulgaria.

Regional differences in trends in Early Neonatal Mortality

Early Neonatal Mortality (ENM) decreased from 4.7 to 2.6 per 1000 births for the entire country, with the magnitude of differences between regions with the highest and lowest values **slightly increasing to two to 2.6 times (Figure 5).**

Figure 5 Early Neonatal Mortality by Regions in Bulgaria



The Southwest region (which includes Sofia) exhibited the most favorable ENM values throughout the twenty-year period. By the end of it, ENM stood at 1.3 per 1000, which is twice as low as in France - 1.8‰, Denmark - 2.4‰, Luxembourg - 3.4‰, indicating that regions in our country perform better than Western European states (WHO European Data Warehouse, 2021). Achievements made by one region should be attainable in the rest of the country.

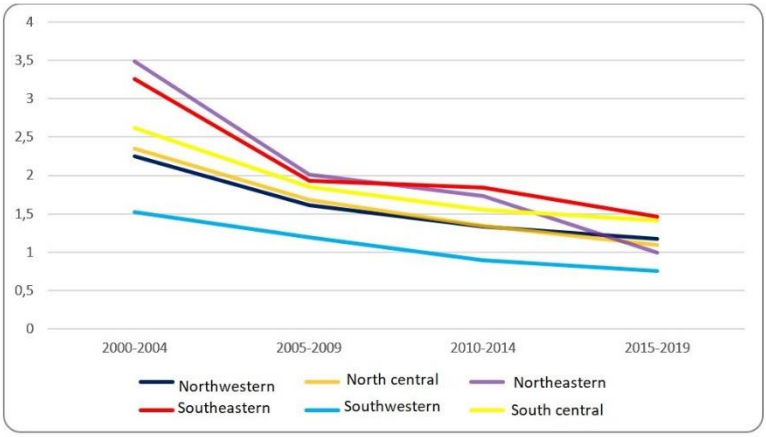
The Southeast region consistently had the highest ENM values throughout the interval. After 2015, it was surpassed by the North Central region, with ENM values reaching 3.5‰ in 2019, higher than all 28 European countries considered.

The Southeast and Northeast regions showed the most intense trend of decreasing ENM throughout the twenty-year period, with ENM halving. In other regions, there was also a decrease from the beginning to the end, but it was accompanied by periods of ENM stagnation in the middle of the period between 2005-2015. This stagnation in four of the regions also caused a reshuffling of rankings among them. The Northeast region, starting from the second unfavorable position, reached the second favorable position.

The explanation for the stagnation in ENM levels between 2005-2015 may lie in the ongoing significant structural changes in hospital care, affecting both obstetric and neonatal and pediatric care. Many neonatal teams were understaffed and lacked equipment, compromising the quality of their services, even transitioning from the second In the Southwest region (city of Sofia), neonatology units of the highest (third) level have been established in five private and three university hospitals. In three of these units, the most advanced intensive care therapy, including life-saving surfactant therapy, is provided, offering a chance of survival for high-risk newborns with very low and extremely low birth weights. The establishment of modern neonatology departments within private hospital structures, equipped with an adequate number of neonatologists and healthcare specialists, enhances competition and improves the levels of neonatal care. All these positive changes contribute to a sharp decrease in neonatal mortality and account for the favorable position of this region. However, in other regions, such as the North Central region, opposite trends are observed, characterized by a shortage of healthcare specialists—midwives—and lower levels of specialized neonatal care, as seen in Veliko Tarnovo, Razgrad, and Ruse.

Regional Disparities in Late Neonatal Mortality Trends Late Neonatal Mortality (LNM) is the only specific indicator of infant mortality where some convergence of values is observed among the six regions in Bulgaria at the end of the studied twenty-year period. Figure 6 depicts this trend.

Figure 6 Late Neonatal Mortality by Region for Bulgaria, 2000-2019



In 2000, the difference between the Northeast region (with the highest Late Neonatal Mortality - 3.5‰) and the Southwest region (with the lowest Late Neonatal Mortality - 1.5‰) is over two times, RR=2.3. By the end of the period, the relative difference between the region with the highest Late Neonatal Mortality and the one with the lowest - the Southwest region - is RR=1.94.

Late Neonatal Mortality significantly improves, but variably, over the 5-year subperiods and across the six regions. The greatest improvement, almost a 40% decrease, occurs between the first and second subperiods in the Northeast and Southeast regions. In the

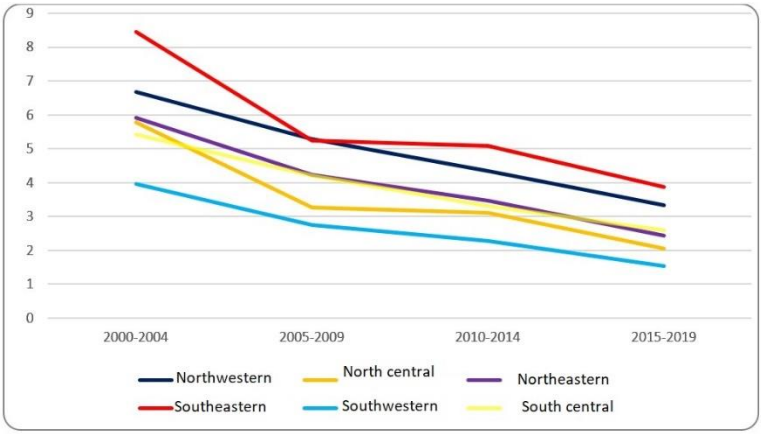
other four regions, there are also positive processes for reducing the indicator, so the ranking between the regions does not change. The pace of positive changes in Late Neonatal Mortality decreases to 20% between the second and third decades and less than 20% between the third and fourth subperiod, except for the Northeast region.

The Northeast region is a special case regarding Late Neonatal Mortality, which decreases 3.5 times over the period, and the region overtakes several others as it again (as with Late Neonatal Mortality) assumes a more favorable position at the end compared to the beginning of the period. The arrangement of the region changes - from the worst values of the indicator at the beginning to second with the lowest values (favorable) at the end of the period - with 0.9‰ late neonatal mortality in 2019.

In recent years, the Northeast region has demonstrated very good organization of pediatric activities. It is a leading unit not only in medical standards for pediatrics but also with better staffing and the implementation of protocols for good pediatric practice.

Regional Disparities in Trends in Postneonatal Mortality
Postneonatal mortality over the past four decades has had the highest values compared to Late Neonatal Mortality and Neonatal Mortality. Regional comparisons show that Postneonatal Mortality decreases at similar rates in all regions, with reductions ranging from 2 times (in the Northwest) to 2.8 times in the North Central region.

Figure 7 Postneonatal Mortality by Region in Bulgaria, 2000-2019



With this specific indicator, there is no change in the ranking of the regions. The Southwest region has the most favorable values throughout the period for Postneonatal Mortality, while the Southeast region has the highest values again. After 2010, the differences between the regions begin to deepen, reaching RR=2.5.

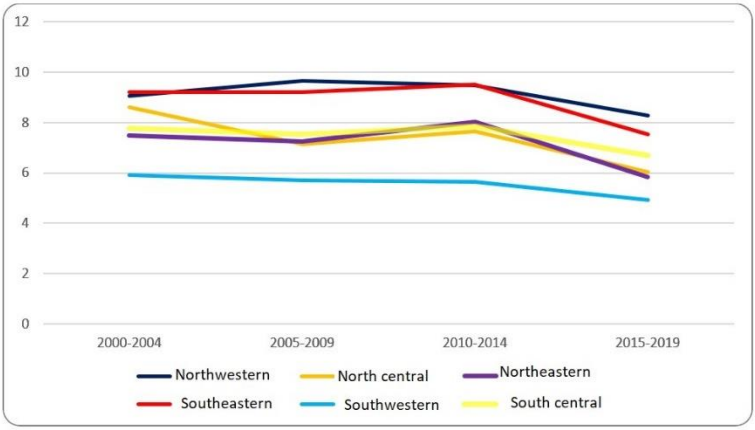
One possible explanation is the reduction in coverage, insufficient volume of actions targeting families at risk, as well as the characteristics of the region with a large number of scattered small settlements, often with limited or difficult access to primary health care, and low socioeconomic status.

Regional Disparities in Trends in Stillbirth Rates Stillbirth rates (SB) are an indicator assessing the activity of prenatal care, which exhibits specific trends over the study period. While Neonatal Mortality Rate (NMR) and Late Neonatal Mortality (LNM) show clear decreases, stillbirth rates maintain stability for most of the 20-year period. Even during two-thirds of the period (the first 15

years), a slight increase in stillbirth rates is observed in two of the regions. This stability is combined with interregional differences.

At the beginning of the period, the Southeast region has the highest stillbirth rate at 9.2‰, while the Southwest region has the lowest at 5.9‰, indicating a difference of 1.5 times. By the end of the period in 2019, the Northwest region has the highest stillbirth rate at 8.3‰, while the Southwest region consistently has a low rate at 4.9‰.

Figure 8 Stillbirth Rates by Region in Bulgaria, 2000-2019



The relative difference between the regions regarding Stillbirth Rates (SB) becomes slightly larger compared to the beginning – 1.7 times.

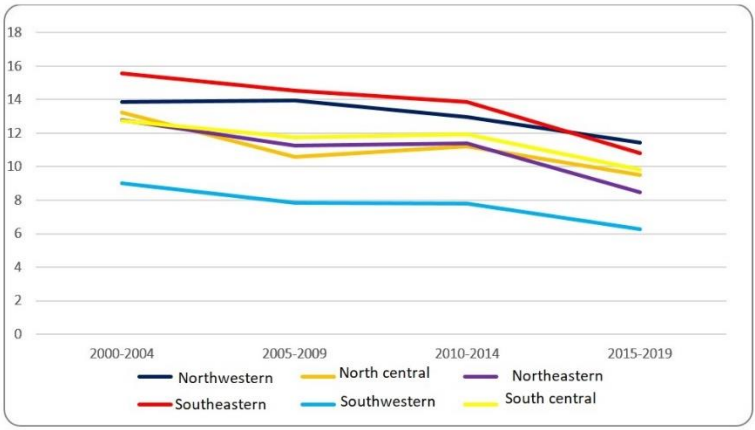
The reasons for the deepening interregional disparities in Stillbirth Rates should be sought in the organization and quality of active surveillance of pregnant women carried out by obstetricians in medical centers or hospital facilities. A large contingent of

pregnant women from rural areas, Roma or Turkish regions, and neighborhoods remain without active surveillance. Reorganization of prehospital care, limited access to women's consultations, adversely affects the indicator for the birth of a healthy, full-term child.

Stillbirth remains a concerning indicator. The lack of specialized pregnancy surveillance, timely diagnosis of high-risk pregnancies by specialists, the high percentage of births among girls before reproductive age necessitate serious changes in the organization of care for future mothers in the two risky regions in Bulgaria – the Northwest and Southeast.

Regional Disparities in Trends in Perinatal Mortality Perinatal mortality is a key medical-demographic indicator characterizing the quality, structure, and organization of comprehensive maternal and neonatal health care. This indicator reflects the quality of care in obstetric and neonatal care in the first few days after birth. The regulation of neonatology as a separate specialty after 1991, the development of medical standards for good neonatal practice, the equipping of resuscitation corners in all maternity hospitals, the introduction of protocols for first care for the newborn in the first five "golden" minutes, the presence of a neonatal team at birth, reflect favorably and reduce the risk of early neonatal mortality, respectively perinatal (Hristova, 2008).

Figure 9 Perinatal Mortality by Region in Bulgaria, 2000-2019



The lowest values of perinatal mortality are observed in the southwest region – 6.3‰. Its antipode and the region with the worst indicator – almost 2 times above the low values – is the northwest region. Interestingly, only one region (northeast) at its best values (8.5‰, 2019) manages to reach the most unfavorable values of the Southwest (9‰) in 2000. High levels of perinatal mortality largely depend on and reflect the problems accompanying the numerous reorganizations of prehospital and hospital care and the significant shortage of personnel: both pediatricians, neonatologists, and healthcare specialists.

In summary, for the period from 2000 to 2019, there is a region that maintains consistently favorable levels for all indicators, the Southwest, and two regions stand out in an unequal position regarding infant mortality indicators – the Northwest and Southeast. If there is a significant decrease in indicators such as early neonatal mortality, stillbirth rates, there is no such trend in perinatal mortality. There, a delay is noted with an increase in some

of the subperiods, which provides evidence that pregnancy observations are not sufficient in volume and quality of care. A field for intervention is emerging. Interregional inequalities are largely the result of organizational problems in regions with problematic high indicators and organizational successes for regions with low indicator levels. In this sense, interregional differences reflect the unfair influence of poor management of the healthcare system at the national and regional levels. They are unwanted but entirely reversible and preventable if they become the focus and priority of health and social policy.

Maternal Readiness for Birth and Care for the Child in the First Year

The third study aims to uncover the role of different elements of the healthcare system in preparing mothers to provide full care for their children and thus on their health and infant mortality levels. After selecting respondents, the total number of participants is 249 (Table 5).

Table 5 Features of the Study Subjects

		NUMBER	*RELATIVE SHARE*
AGE	Up to 29 yaers old	56	22,5%
	30-39	155	62,2%
	Over 40 years old	38	15,3%
	Total	249	100%
EDUCATION	High school	42	16,9%
	Bachelor	72	28,9%
	Master	135	54,2%
	Total	249	100,0%
MARITAL STATUS	Single parent	7	2,8%
	Married	128	51,4%
	Live in a family setting	114	45,8%
	Total	249	100,0%
EMPLOYMENT	Permanent employment contract	206	82,7%
	Student	9	3,6%
	Unemployed	20	8%
	Other	14	5,6
	Total	249	100%
PARTNER'S EMPLOYMENT	Permanent employment contract	225	90,4%
	Student		
	Unemployed	7	2,8%
	Other	10	4%
	Total	242	
MOTHER TONGUE	Bulgarian	239	96%
	Russian	2	0,8
	Turkish	7	2,8
	Armenian	1	0,4
	Total	249	100%

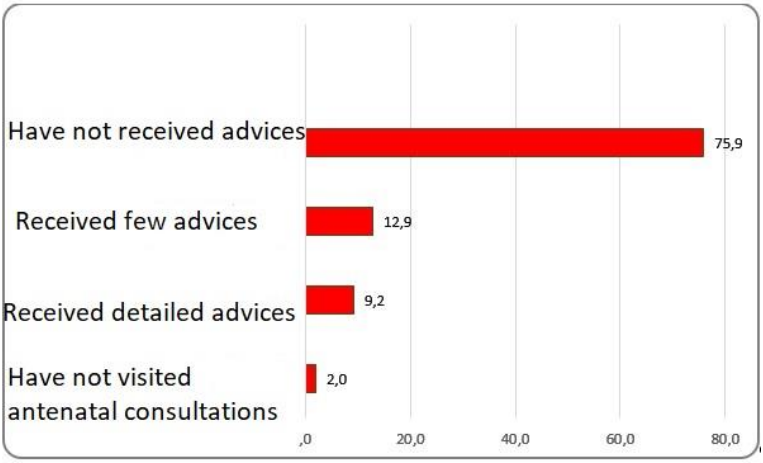
The average age of the participants is 34 (SD 6.2) years, with two-thirds of them (62.2%) being aged between 30 and 39 years old. The participants are highly educated, with over 80% having a higher education; 96% have indicated Bulgarian as their mother tongue. The largest proportion of parents entered into marriage (51.4%), while another 45.8% live in a family setting (Table 5).

The first link in the healthcare system involved in preparing the mother through pregnancy monitoring is the obstetrics and gynecology consultation. Almost all respondents, 94%, report regularly visiting their attending physician and receiving advice on

proper prenatal behavior. At the same time, more than three-quarters (76%) have not received advice and guidance on caring for the expected child (Figure 10).

For impending motherhood, all respondents have used a significant number of other sources of information. Participants in the study provided between 1 and 5 (maximum specified number) responses, with a total of 613. The most preferred source of information (28%) is relatives/friends, 23% indicated media, including television, magazines, and the internet. Social media forums rank third with 19% of responses, and parent schools rank fourth with 15%, while other medical personnel are mentioned by 7%; only then, with 5% of all responses, are the advice received from obstetrics and gynecology consultations.

Figure 10: Advice Received During Pregnancy Monitoring



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The first link in the healthcare system involved in preparing the mother through pregnancy monitoring is the obstetrics and gynecology consultation. Almost all respondents, 94%, report regularly visiting their attending physician and receiving advice on proper prenatal behavior. At the same time, more than three-quarters (76%) have not received advice and guidance on caring for the expected child (Figure 10).

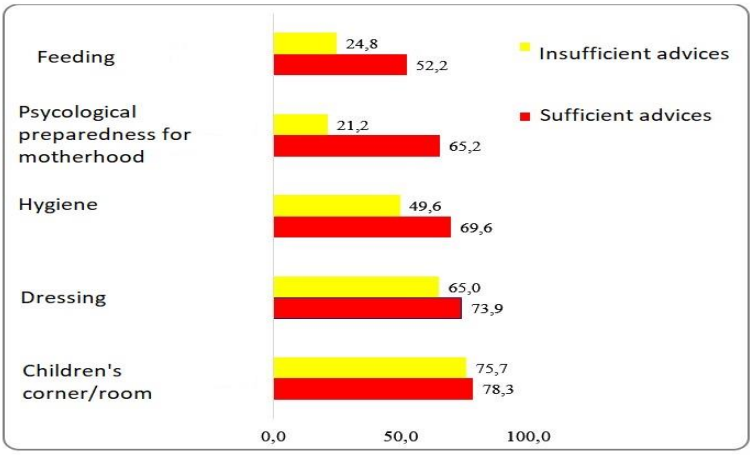
For impending motherhood, all respondents have used a significant number of other sources of information. Participants in the study provided between 1 and 5 (maximum specified number) responses, with a total of 613. The most preferred source of information (28%) is relatives/friends, 23% indicated media, including television, magazines, and the internet. Social media forums rank third with 19% of responses, and parent schools rank fourth with 15%, while other medical personnel are mentioned by 7%; only then, with 5% of all responses, are the advice received from obstetrics and gynecology consultations.

Even if the responses "Obstetrics and Gynecology Consultation", "Other Medical Personnel", and "Parent School" are grouped together, they have a smaller overall weight than the trust that future mothers place in advice from parents and friends, media, social networks, and the internet.

In this context, the responses regarding readiness for parenthood at the end of pregnancy are logical and expected. Immediately before birth, respondents feel most prepared in terms of household arrangements – 76% have prepared a children's corner; 67% are ready in terms of the hygiene of the expected child, 66% for clothing, and 50% for bathing. Significantly less readiness is observed regarding feeding, with less than 1/3 of mothers reporting readiness. One-fourth (25.3%) felt psychologically prepared to welcome the newborn child, while 1/5 felt entirely unprepared.

Respondents who attended and received advice in the Obstetrics and Gynecology Consultation (22.2%) define communication with this structure as beneficial precisely because of this.

Figure 11: Level of Preparedness for Parenthood - Advice Received at the Women's Consultation



Among them, 65.2% feel psychologically prepared for motherhood compared to 21.2% (pc <0.001) who rate the information as insufficient or lacking (Figure 11). There is a positive effect of full communication between healthcare professionals and parents regarding the readiness of expectant mothers for feeding their newborn (52.2% vs. 24.8% (pc = 0.019). No statistical correlation was found with the remaining pieces of advice.

We believe that preparing mothers for future parenthood should begin in the Women's Consultation, even though this is not normatively regulated.

The next contact with the healthcare service is the maternity hospital. Three-quarters (73.5%) of mothers preferred to give birth in a state or municipal hospital, with no correlation found between the choice of hospital and education level (p = 0.664), but there is one with age. As age increases, the proportion of those choosing a private hospital decreases (p = 0.024).

Particular attention deserves questions related to breastfeeding – training, benefits of exclusive breastfeeding, and potential issues. During their stay in the maternity ward, which represents a transition to caring for the newborn at home, nearly half of the respondents - 44.2% (n = 110) - were not trained in breastfeeding. Almost 75% (n = 186) were not advised on how to deal with any breastfeeding problems, and just as many - 75.1% (n = 187) - were not explained the benefits of exclusive breastfeeding. Many hospital structures are "Baby-Friendly Hospitals" and are required to educate pregnant women about exclusive breastfeeding, emphasizing the benefits of breastfeeding in preventing socially significant diseases. There is a difference in breastfeeding initiation training depending on the type of hospital where the child was born

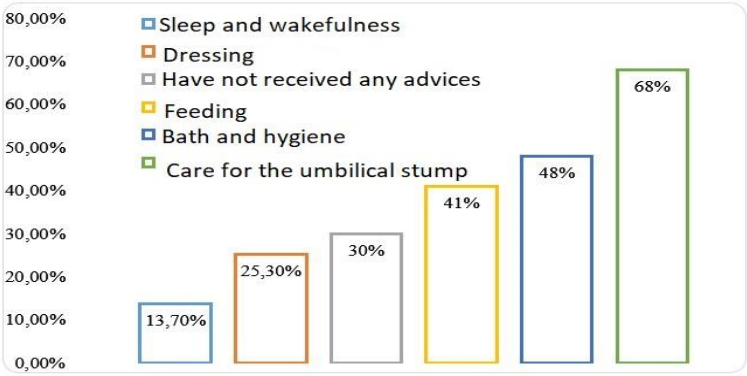
- mothers in private hospitals receive more guidance than those relying on municipal or state hospitals (p <0.01) (Table 6).

Table 6 "Breastfeeding education in the maternity ward, according to the type of hospital."

	breastfeeding	Exceptional breastfeeding	Potential breastfeeding problems
State / county hospital	51,4%	20,7%	21%
Private hospital	68,2%	29,7%	32,8%

Upon discharge from the maternity ward, the majority of mothers received instructions on how to care for the newborn regarding umbilical cord care - 68%; followed by guidance on diaper changing/bathing the newborn - 48% (n=119); guidance on feeding - 41%; dressing the baby - 25.3%; sleep and wakefulness - 13.7%. Nearly 30% (n=73) of respondents did not receive any instructions on newborn care upon discharge from the maternity ward.

Figure 12 Instructions Received upon Discharge from the Maternity Ward



In addition to breastfeeding education, private hospitals perform much better in terms of instructions given upon discharge of the newborn (Table 7).

Table 7 Instructions Received upon Discharge from the Hospital by Hospital Type

	Feeding	Bathing	Care for the umbilical stump	Dressing	Sleep and wakefulness
State / county hospital	34%	39%	62%	19%	13%
Private hospital	59%	71%	85%	42%	17%
P value	0,001	>0,001	0,001	>0,001	0,406

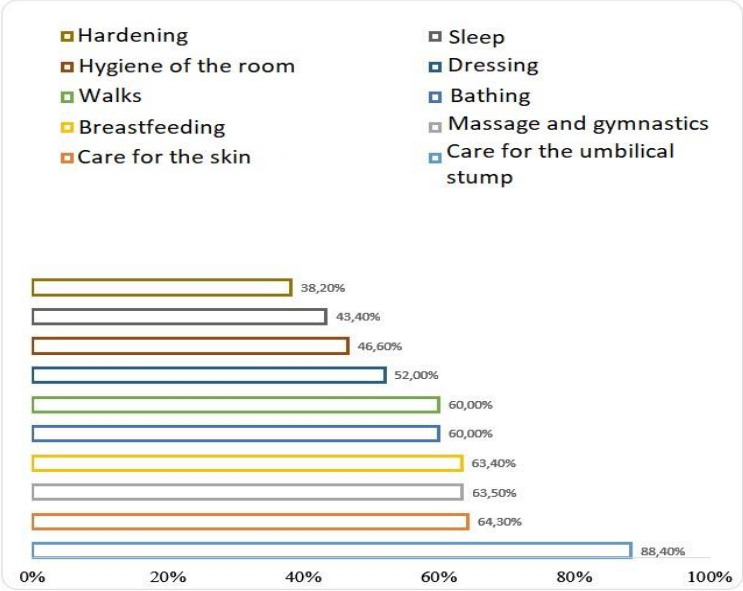
The next set of questions is related to the care of the newborn after discharge from the maternity ward.

Home Visits by Medical Personnel: A large percentage of postpartum mothers are visited at home by a general practitioner/pediatrician - 85.5% (n=213), while a very small percentage are visited by a nurse or midwife - 0.8% (n=2). A total of 34 individuals (13.7%) were not visited by any medical personnel at all. In the age group over 40 years old, the highest percentage of visits by a general practitioner/pediatrician in the home was observed - 95%. There is no correlation between the education level of the mothers and visits by medical personnel to their homes.

Timing of Home Visits: The visit by medical personnel was conducted within 24 hours after discharge in 27% (n=67) of cases, within the first 3 days in another 47.4% (118), totaling 74.3% (185) within the first 3 days, and after the third day in 12% (n=30).

Advice Given by the Doctor During the First Home Visit: The majority of mothers received guidance regarding umbilical cord care - 88% (n=220) (Figure 13)

Figure 13 Received advices at first home visit by a doctor



Conclusion can be drawn that the first home visit by a medical professional, typically a doctor according to the "Child Health Care" program, is rich in information, advice, and guidance regarding the initial care of the newborn. Priority is given to advice related to the first days after discharge.

Different sources are consulted by respondents in case of difficulties during the first year of the child: 45% rely on medical

professionals, nearly 40% seek advice from friends and relatives, and 16% rely on the media, including the internet or articles.

When analyzing by the education level of the respondents, a correlation is found between the education level of the mothers and finding solutions to problems in child rearing. Mothers with higher education most often seek advice from medical professionals - 48%, while mothers with secondary education rely on friends and relatives - 64%. The statistical differences between the two groups are significant (p=0.002).

Confidence in Knowledge about Child Rearing: Mothers feel most confident about immunizations - 58%, followed by "skin care" and "communication" - 55%, and "feeding" - 53%. They feel least confident about "hardening" - 32% and "psychomotor development" - 36%. Confidence levels between 40% and 50% are observed for physical development of the child - 49%, care during teething - 45%, and gymnastics - 43%.

Confidence in knowledge is particularly important in areas such as immunizations, feeding, and physical and psychomotor development. Although no statistically significant correlation was found between confidence and the sources that shape it, the fact that:

- Confidence in "Immunizations" is primarily shaped by the media/internet - 62%, followed by friends and relatives (59%), and medical professionals - 56%.
- Regarding "Feeding," 59% of mothers have built their confidence based on what they read in the media/internet, 55% based on advice from friends and relatives, and 50% from medical professionals.

- Skin care - the highest percentage - 49% are informed by the media (internet, social networks, forums), and 41% - by medical professionals.

No correlation was found between education/age and each of the areas. The importance of these sources of information, especially the media and medical professionals, is likely undergoing change and should be dynamically monitored.

The Child Consultation. It enjoys high authority among mothers, with 97.6% regularly attending it. Regarding its usefulness (to a great extent), 85% of respondents define the Child Consultation as such; 13% find it not particularly useful; only 1% (n=3) do not find it useful at all.

Opinions about satisfaction with the Child Consultation sharply divide into two groups – the satisfied group is much larger, comprising 89.6%, compared to 10.4% who find no benefit. There is a strong correlation between satisfaction with the Child Consultation and the mothers' opinions of its usefulness (p=0.000).

It can be assumed that the high trust in the Child Consultation extends to the healthcare system: 94% of those who find it useful seek advice from medical professionals, followed by 85% who trust advice from friends/relatives. In third place are parents who seek solutions through the media, comprising 63%.

The usefulness of the Child Consultation should be associated with the opportunity for dialogue between parents and medical staff, manifested through the free asking of questions. 76% feel free to ask their questions, 14% refrain from asking despite feeling no discomfort, and 8% who feel uncomfortable asking their personal doctor.

Factors believed to improve communication with pediatricians/general practitioners include: longer examination/contact time and a sense of greater responsiveness from the general practitioner. Those who feel uncomfortable asking questions suggested that the presence of a nurse would facilitate their communication ($p<0.001$).

Nearly half of the respondents, 49% (n=121), believe that visits by a community nurse to their homes (community nursing) would be useful for enhancing their knowledge and skills in caring for a young child, while 41% (n=108) are firmly convinced that such a practice should be introduced. Only 10% do not believe that this would be particularly beneficial for young parents. No correlation was found between the age of the respondents and their opinion on the introduction of community nursing ($p=0.681$).

Support from the family circle and friends: In caring for the child, 69% of respondents rely mainly on their partner, 23% receive support from their parents, and only 6% raise the child without external support.

The preparation of mothers for childbirth and caring for a child up to 1 year of age is discussed in the main points of contact between the mother and the healthcare system: Antenatal Clinic (AC), maternity ward, child consultation, and home care.

From the above results, the following deficits deserve attention, which can be taken into account in future research and in formulating recommendations to the healthcare service:

• In the Antenatal Clinic:

→ 76% of regular attendees at the AC did not receive advice on caring for the newborn;
→ The AC is not a preferred source of information for impending parenthood. •

In the maternity ward:

→ 30% did not receive instructions for caring for the newborn upon discharge; ⎫
→ 44.2% were not trained in breastfeeding;

There is a difference between private and public/state hospitals in training for newborn care at home, in favor of private hospitals. •

Home care for children up to 1 year:

→ 14% of newborns were not visited by medical personnel at home;
→ Medical personnel are on the periphery as sources of information regarding important issues such as feeding and immunizations, with preference given to the Internet and social networks.

Qualitative research on the influence of ethnocultural factors on mothers of Roma origin.

A total of 11 women of Roma origin participated, interviewed in various places within Roma communities. The duration of interviews ranged from 45 to 65 minutes, with questions focused on different aspects of pregnancy, readiness for childcare, and the postpartum period, within the context of family and community.

Table 8 Features of Participants in the Study

	Age	Location of growing up	Place of residence	Main occupation	Number of children	Marital status	Education	Bulgarian language knowledge	Mother's age at first birth
P1	30	Zhitnitsa village	Dalgopol	Maternity leave	4	Married	Tenth degree	excellent	18
P2	27	Dalgopol	Dalgopol	Maternity leave	2	Married	High school	excellent	19
P3	21	Dalgopol	Dalgopol	Maternity leave	1	Married	High school	excellent	21
P4	23	Dalgopol	Dalgopol	Maternity leave	2	Married	Tenth degree	excellent	17
P5	30	Asparuhovo, Varna	Asparuhovo, Varna	Social worker	2	Married	High school	excellent	19
P6	38	Cooperative market, Varna	Asparuhovo, Varna	Maternity leave	3	Married	High school	excellent	20
P7	28	Maksuda, Varna	Asparuhovo, Varna	Housewife	4	Married	Second degree	poor	15
P8	37	Vladislavovo, Varna	Maksuda, Varna	Housewife	4	Widow	Sixth degree	excellent	18
P9		Village, near Dobrich	Maksuda, Varna	Housewife	2	Married	Sixth degree	excellent	Didn't answer
P10	39	Vladislavovo, Varna	Vladislavovo, Varna	Maternity leave	7	Separated	Not educated	excellent	18
P11	37	Vladislavovo, Varna	Vladislavovo, Varna	Housewife	5	Married	Second degree	excellent	17

The average age of the participants is 29.5 years (min. 21 - max. 39).

Regarding *education*, the group is diverse: 4 women have completed secondary education; one mother returned to school after giving birth and is currently in the 11th grade; one has completed 10th grade; two have completed 6th grade; 2 have completed 2nd grade, and one has not attended school at all.

Opportunities for returning to school exist, but they are not very significant. Mothers who have only completed 2nd or 6th grade are more burdened with children, became mothers at an early age, and do not receive enough support from their families to return

to school and continue their education. Only one of the women who did not finish school was encouraged by her partner to complete secondary education and to enroll in a driving course. The rest do not see a way to study or work due to childcare responsibilities.

In terms of *employment status,* one woman works with (cares for) elderly people, six are on maternity leave, and the remaining four are homemakers. Regarding *marital status*, 9 of the respondents raise their children together with their partners, 1 is widowed, and 1 is separated from the father of the children.

In terms of the *number of children,* one woman has seven children, one has five, two have four each, two have three each, four have two each, and one has one child.

The earliest age of first childbirth among our participants is 15 years old. This mother expressed regret about giving birth at such a young age and hopes her daughter does not have the same fate. Several more educated women expressed the opinion that Roma people no longer want to have children at such a young age and are increasingly attending school.

Regarding ***religious affiliation***, the interviewed women adhere to two of the most common religions – Islam and Christianity. Christianity is represented by several denominations, including Eastern Orthodoxy, and Jehovah's Witnesses, and seven women belong to the evangelical Protestant denomination.

Women with higher education (mostly from Dolgopol) emphasize the positive role of their affiliation with evangelical Protestants in communication, mutual assistance, and participation in important health campaigns. On the other hand, those with lower

education (mostly from Vladislavovo) speak respectfully of the pastor and highlight the influence of the church community on their lives and their children's education.

Language barriers: The interviews were conducted in Bulgarian, but not all participants spoke well. The greatest difficulties with the language were experienced by two women who grew up in the "Gavrosh" institution in Varna, where they were exclusively among Roma children. In these cases, the mediator intervened to explain the question or the interviewer had to rephrase until the respondent understood the meaning. Typically, the brief stay in school is associated with poorer knowledge and limited opportunities for free conversation in Bulgarian among the respondents.

During the interviews, a 19-year-old pregnant woman was encountered in the last days of her pregnancy (living in Maksuda - a neighborhood and not included in the interviews), who did not speak Bulgarian, and communicated with the mediator in Roma. The mediator explained that there are other young women like her. According to him, Christian women usually speak Bulgarian, while Muslim women speak Turkish or Roma.

The socio-economic conditions of the respondents vary considerably: women from Dolgopol shared that they live in two- or three-story houses inhabited by relatives. One young family lives on a separate floor, while the others live on the same floor with their spouse's parents. They have indoor toilets, sewage, and running hot water. They do not report serious financial difficulties in raising their children, and all families have working partners without complaining about low income.

The interviewed women from Varna also live in houses, but smaller ones, some of which have outdoor toilets. They lack running hot water, and bathing the child takes place in a heated room. Only one of the families has both spouses employed. One family (with four children) is in a very difficult financial situation, especially since they moved from the Maksuda neighborhood a few years ago, where their house was demolished due to the construction of Levski Boulevard. They still do not have address registration, and the consequences of this fact are significant: inability to find permanent employment, choose a personal doctor, etc.

Unsettled address registrations are a barrier to obtaining medical care. One of the women is registered in Dobrich, where her personal doctor is located, and for this reason, she had to travel to Dobrich every month during pregnancy monitoring and childbirth. Her eldest child currently lives with her maternal grandparents (i.e., the child's great-grandparents) so that she can attend school. There are cases where women do not want more children, but their partners do not comply with this. *"I have seven children. I didn't want more. My husband promised to take care of me. And here, look at the little one. I want to get an IUD."* (R10). *"I have five. I don't know how the last one happened. When my husband found out I was pregnant again, he kicked me out. We didn't want a child."* (R11)

Forced to stay at home, women become isolated, and only family and neighborly ties in the community partly mitigate the negative impact of isolation. When asked if they wanted to return to school or start working, respondents answered: *"I want to, but who will take care of them? I stay at home all day, it's good that my mother-*

in-law is with me." (R7); *"Oh, I want to study, but who will I leave them with?"* (R8).

The women's consultation as an institution and term is well known to the interviewees, having become permanently ingrained in their lives. The reorganization of antenatal care has entrusted this activity to general practitioners, who must monitor pregnant women and refer them for consultation with obstetricians and gynecologists.

All pregnant women have attended the women's consultation for prescribed tests and examinations: *"With both children, I went to the women's consultation for all tests, examinations."* (R5); *"I went to consultations with all three children."* (R6); *"I am very satisfied with the Maternity Home. Too much, I spent my whole pregnancy there."* (R1).

Some received verbal advice, while one of the women received a brochure on proper breastfeeding. *"In Provadia, we went to the same doctor. We paid for it, we have insurance, but we paid for it ourselves. He told us everything and explained... he even gave me a leaflet on how to breastfeed, the same month I was due to give birth."* (R3).

The majority of the interviewees who attended the women's consultation are satisfied with the way it is conducted: prescribed tests, received information, and the attitude of the attending doctor.

Only one respondent shared negative experiences during the women's consultation and dissatisfaction with the attitude of the attending physician: *"During the first pregnancy, confusion, you don't know what to do and what to expect." ... 'Sit down! Lift your legs! His d*ck is visible! Her p**ssy is visible.' Full vulgarity everywhere. They sent me to the N-th hospital."* (R5);

Regarding the *location of the women's consultation*, for two participants from Dolgopol, it took place in Provadia, in Dobrich - for one woman, due to her address registration, and for all others - Varna.

None of the women, respectively, the families (i.e., the partners), have attended private courses/schools for parents. For Dolgopol, they were categorical that such courses do not exist: *"A school for parents? No, here in Dolgopol there are no such things."* (R2; R3).

The places where they gave birth are SHOGAT - Varna, MHAT - Varna, MHAT Dobrich, MHAT Burgas, a hospital in the Republic of Poland; in two cases, home birth was necessary - due to premature birth in one and for unclear reasons in the other. They usually gave birth naturally, with only one woman having planned cesarean sections for both her deliveries. All women preferred their first delivery to be in ***a state or municipal hospital***. Some of them share negative experiences: they were dissatisfied with the staff's attitude towards them, felt moments that they define as discriminatory: *"Shut up, Gypsy, b****! ...There are hospitals where, when they see that you are Roma, they don't pay attention to you."* (R1); *"Being from minorities plays a bad role..."* (R5) *"In Dobrich, they didn't treat me well. After the c-section, I had to take my luggage and carry it myself, without a trolley, down the long corridor."* (R9); *"During my first delivery, it was hell. A lot of pain. I couldn't bear the pain and screamed. The doctor came, slapped me on the thighs, and shouted at me: 'Stop screaming! Aren't you alone here?!' During delivery, he said to me: 'Now I'll teach you!' And he pinched me, gave me 7 stitches, and then I asked him why he did it. And he replied to me that I was imagining things"* (R5). This is also the explanation for the decision made for the next delivery to turn to a private hospital. *"And people pay attention to you. A lot. Starting from the toilet, the water, everything... to*

breakfast. It's like you're at a hotel... They explained everything, how to do massages, how to bathe." (R1). *"I can't describe the attitude of the staff, nurses, cleaners. They took care of us, massages, brushing... A woman came every morning, explaining how to hold him [the baby], what to do."* (R5).

Guidelines for caring for the baby given at the hospital: A maternity ward is a place saturated with emotions that can be conflicting: fears, uncertainties, and joy. Events unfold intensively in a short period. The usefulness of care in the maternity ward has two dimensions - a healthy mother and a healthy baby. It is assumed that upon leaving the medical institution, the mother will receive instructions and advice. Our interest is focused on the advice given to the mother for caring for the newborn.

Those responsible for educating the young woman in the first care for the newborn - breastfeeding, dressing, sleep routine, and wakefulness - are the midwives at the hospital, as this is included in their job description. Advice on caring for the baby in the hospital was received by only 3 women, with one of them receiving it in Poland, where she lived at the time of childbirth: *"In the hospital, they explained to me, not at the women's consultation: how to hold her, how to pick her up, to sleep in her crib, they explained about the umbilical cord to me in both hospitals. It was paid."* (R9).

Some of the respondents indicated that they received ***advice, guidance, and information on caring for the newborn in a private hospital***. There, they had the opportunity to ask questions without being neglected and received the necessary information for baby care. The attending or on-call doctor encouraged them to ask questions: *"In the private hospital, a doctor came every morning who asked me, 'What questions do you have for me today?' And I asked my questions. Despite it being my second child, I felt like I wanted to ask them."* The same woman, during her previous

childbirth in a hospital in Varna, tried to ask questions: "*There [in the hospital] they asked me if I had a mother. I replied that I had a mother, I had a grandmother, and I had a mother-in-law. 'Yes, they will teach you how to bathe him, how to take care of him.' And then he said: 'Take out this nipple! 'He grabbed my breast,' Put it in his mouth! 'He pressed me and said, 'Here! That's it!'"* (R5). One of the women shared about giving birth to her first child in Dobrich: *"They didn't teach me anything"* (R9).

Only one of the women stated that she felt free to ask questions in the maternity ward (at the hospital) during all three of her deliveries and received information and guidance: *"I am satisfied. They explained to me, told me: Watch now how to bathe the baby. They explained to me how to breastfeed it... The third time again there... And they asked me how I was - if I was okay."* (R6).

The next link in the chain of "preparing the mother for caring for the newborn and the infant" is the **home**. According to the "Child Health Program," the general practitioner visits and performs a thorough examination of the newborn baby within the first 24 hours after discharge from the maternity ward, and the next visit is between the 14th and 20th day (NHIF).

None of the 11 women are aware that the child's doctor should make a home ***visit to the newborn after discharge from the maternity ward***. One woman, a mother of four, is unaware that the doctor should come for a home visit: *"No, I took him. It was at 2 months. They told me when the 40th day passes to bring him in to be weighed."* (R8).

Differences are observed regarding the first examination of the newborn after discharge from the maternity ward. In two cases, the doctor came *"immediately"* (R4; R10), while in 2 cases, it was *"after the 20th day*" (R2; R3). Another woman shared her experience with both her children. The one she gave birth to in

Dobrich and lives in a village was visited by the doctor before the 20th day after discharge, while the one born in Varna was not visited but was brought in for a consultation after the 40th day. *"No, we took her, after the 40th day. For the first one, we were in the village, and the personal doctor came to see her before the 20th* day. I am very pleased when they explain things nicely to me." (R9).

One of the women shared differences in practice regarding the sequence of children. *"After the birth of my first child, the doctor did not come home,"* but with the second child, *"He called me and told me not to go out on the street and that he would come to the house... and for a month, this person came to see my child..."* (R5). *"For the second child, the doctor explained everything to me, about breastfeeding, bathing, about the baby's hormones."* (R5).

Regarding visits to the **Child Consultation**, 10 out of the 11 women stated that they take their young children to the Child Consultation. One child was born in another country, and upon returning to Bulgaria, the system did not allow the child to be registered with a personal doctor. Despite these shortcomings, the mother managed to occasionally take the child to the personal doctor of her other children because *"I know that the child should see the doctor every month."* (R10).

All interviewed women prioritize their children's health. They carefully monitor when the baby needs to go for a check-up and whether all vaccines have been administered: *"I took him every month. To be weighed, to be measured. To get immunizations." (R8). "I took them. They have all the vaccines."* (R7). *"I pay attention. When it's time for a vaccine, I call [the doctor]."* (R1). In the minds of these interviewees, Child Consultation is primarily associated with measuring weight, and height, and administering vaccines.

If a health problem arises with their child, all interviewed women are ready to immediately take their child to a doctor/pediatrician or the Emergency Department. *"I would rather start my Peugeot and go to the Emergency Center. I drive."* (R6). *"When they need it, I take them to the doctor."* (R7); *"I called [the doctor] to the house."* (R2). The youngest child (7 months old) of one of the women, born in Poland, was born with a heart problem. She draws a parallel between healthcare in Poland and Bulgaria. Healthcare monitoring for the child abroad is provided from birth. Upon their return, the child does not have a personal doctor, respectively, a pediatrician for observation. The child at risk is examined, but the examinations are limited only to the Child Consultation, without specialized monitoring of the heart problem (R10).

Family support: ***Partners*** provide ***support*** to their wives, mainly by providing sustenance. However, there is also mention of shared daily care for the new family member. This assistance is not seen as unusual but rather as "part of the course." *"Well, he helps, rocks them, cradles them."* (R6); *"Our father feeds, changes diapers. When I bathe [the baby], he [the father] immediately prepares the milk."* (R3).

A significant portion of the interviewees rely on assistance in raising their children, mainly from parents and relatives, not only in terms of physical support but also regarding advice, guidance, and information in caring for the child: *"I rely on the grandparents, on her [points to the woman next to her - their husbands are cousins]."* (R3); *"My mother-in-law was alive at the time and she told me how to bathe, how to care for [the baby]."* (R4); *"On my mother and father."* (R6). Usually, advice comes from two sources - medical professionals and authoritative figures and/or relatives within the community. Sometimes, these two sources compete, but in decisive moments, the advice of professionals prevails.

However, there are also examples where guidance from professionals is entirely absent. This is illustrated by the response of one of the women, living in the Maksuda neighborhood, which is located near the central part of Varna. When asked if she received guidance while in the hospital and if a doctor visited her at home after discharge, she replied negatively: *"No one explained to me in the hospital… No doctor came to my house. I learned everything from my husband's sister"* (R 7).

From the responses to various questions, a trend emerges: it seems that doctors in the examined units rely heavily on family ties and mutual learning methods for teaching breastfeeding and caring for newborns. An illustration of this trend is the aforementioned statement by R5 that she turns to her older relatives - mother, grandmother, mother-in-law *"to teach her."* Could the limitation of instructions and advice be due to the prejudice that Roma women will not follow them? Two of the interviewees rely not only on relatives but also on articles on the internet - they have a secondary education. *"Now there's the internet, we also search from there."* (R2). Only one has read a book related to breastfeeding, in addition to the advice received from her mother-in-law; her education is at the tenth grade level. *"I read a little book about breastfeeding. It was useful."* (R4).

Diverse advice is evident in one of the most important topics - feeding: *"From the second month - a little apple juice and so on."* (R7); *"From the second month, apple juice, the next day carrot juice. From the third month, mashed potatoes with milk. From the fourth month, fruit purees with milk. From the fifth month - porridge. But everything in very diluted form."* (R6); *"I started purees at three months. The doctor told me."* (R8); *"I breastfed the eldest until a year and 4 months, and the youngest is 2 and I still breastfeed him. No adapted milk and no lie. I fed the oldest at seven months, only with homemade purees. The doctor told me."* (R9). It

turns out that some mothers traditionally start feeding as it was accepted in the years when their mothers, grandmothers, and mothers-in-law learned to be parents and feed from an early age with fruit juice. They are unaware that these recommendations are no longer valid.

Informal communication within the community and family may have a contradictory role in childcare. In one of the cases, the adult, following the family's moral values, managed to persuade parents in a large, financially troubled family not to abandon the child in the hospital for adoption: *"Well, my husband told me to leave her in the hospital because we don't have money and the possibility. Otherwise, he would have left me. When we came back after giving birth, and his father asked where his baby was, we explained. When his father scolded my husband, we immediately went back to take her."* (R11). The word of the older parent, the respect for them, leading in such a closed community, are prerequisites for the child to stay with their parents.

Besides guidance on feeding, dressing, and bathing, the elderly impose some outdated practices on the young and inexperienced: *"Until the 40th day, massage with lard; in the water with egg and salt..."* (R6); in some cases, the myths imposed by relatives are risky for the child's health. One of the women shares with pain *"My mother-in-law rubbed my first child's body with salt, and they got big wounds and then there was an infection on the head. I didn't give for the others."* (R11).

Almost all consider their belonging to the Roma ethnicity as a reason for experiencing mistreatment by medical personnel before, during, and after childbirth. This breeds some distrust towards the healthcare system and sometimes reluctance towards the information received from medical sources, as well as a desire

to seek support from relatives and friends: *"I don't always listen to what [the doctors] tell me"* (R8).

Some of the women share that to receive appropriate treatment and understanding, they *"have to pay"* (R1; R 5). For this reason, the family preferred that the next childbirth be either in a private hospital or they would pay for the team. It is a fact that they remained more satisfied: *"They asked for 50 levs. And I said to them: Why should I give 50 levs when I am insured? I will go to Mother's Home, I'll also see my kids on the video zone"* (R1); *"For the nth time, I realized that Money is very important. I paid 1200 levs for the birth of the little one. ...but when Money got involved, we're already clients!"* (R5); *"For the third birth, they called me and told me to sign faster (to choose the team)"* (R8).

Preparation of young girls for motherhood within the family/school:

A portion of the mothers, who themselves come from large families, have already participated in caring for their younger brothers, sisters, or nieces: *"And I had experience. I looked after my brothers' children from a very young age. My mother died, and they just drank their coffees, and I looked after them."* (R8); *"I helped my mother take care of my brothers and sisters. I am the oldest."* (R10); *"How we looked after the others with my sister, we helped our mother."* (R11). Sometimes their encounter was with practices that have already passed, but the contact with young children has taught them about attitude and care.

Regarding preparation in school as an institution - almost all women share that the idea of being acquainted with practical elements of motherhood in school is of utmost importance. *"Yes, they should talk [in schools] about what pregnancy is, they should learn"* (R4).

There are arguments that the girls themselves are not mature enough for education during school. Several of the interviewees suggested, *"Why don't they gather in the neighborhood?"* (R9) *"Here [in the neighborhood] if they gather, more people will come to listen"* (R6). *"It will be easier, more convenient here"* (R8). *And a few shared the opinion that even in school, "there should be something to prepare them"* (R1; R2; R3; R5; R8) *"maybe even for boys - because I have a son, he will be a father someday."* (R8).

Needs for training of mothers, of families, were expressed on various occasions by the interviewees. In what way would this be appropriate in today's context? Everyone notes that if there is someone *"to come and show and advise on the little child," they would be satisfied. They will be able to ask their questions and improve their knowledge in this area calmly* (R5; R6; R1; R4, R8, R9). The positive experience with district nurses in Child Consultation Centers in past periods of successful coping with high infant mortality prompted us to ask about the possibility of introducing such a practice nowadays.

In the round of questions we asked whether they need closer and more frequent contact with representatives of the health service, almost all answered affirmatively, each according to their views and culture. *"If someone comes, I will ask questions"* (R6); *"It would be very nice if someone comes to tell us if we are taking care of them properly."* (R5) *"We need someone to come, to tell us how it is, not to learn by ourselves, otherwise it is very difficult."* (R7); *"Why wouldn't I want? I want! I want my child to be well."* (R9)

We refrained from asking directly whether they would approve of the introduction of a "visiting nurse," due to the risk of unfamiliarity with this institution, but from their statements, we can

indirectly judge that the practice of home visits and individualized training could be well-received.

From the words of the interviewees, several characteristics of this potential contact stand out: family-oriented, in the usual environment - the home, a role as an educator connected with medical advice, but also slightly broader**.**

Summary (Discussion):

The dissertation work was planned to address contemporary trends in studies on infant mortality in the 21st century and the specific conditions in Bulgaria. Each of the four specific studies conducted is associated with certain trends.

Central to this is the examination of trends in infant mortality in Bulgaria (1950-2020), in a European context, and the differences between indicators for the six regions of Bulgaria over twenty years (2000-2019).

The asymmetry observed in Bulgaria's position in the European ranking, on the one hand regarding overall infant mortality (since 1995, always second to last), and on the other hand, more favorable regarding neonatal and early neonatal mortality (8th and 11th until 1975; 18th-19th place at the end), can be explained by several factors:

1. The early establishment in Bulgaria of hospital structures to deal with newborns at increased risk - preterm, low birth weight, multiple pregnancies, and infants of diabetic mothers. The care provided to high-risk newborns had a positive impact on neonatal mortality rates in the 1960s and 1970s.

2. The disrupted downward trend in infant mortality rates during the transition period, accompanied by phenomena such as early births, low socioeconomic status, and worsening educational structures for young mothers.

3. The high infant mortality rate throughout the period studied and its stagnation during the transition period, which is a significant factor in the unfavorable course of overall infant mortality, especially after 1990.

4. Symptoms of erosion in the healthcare system around 1990, followed by a change in the healthcare model from general practitioners to pediatricians. This led to negative changes in the healthcare services provided to pregnant women and children. The role of the community nurse as a member of the pediatric healthcare team was eliminated, resulting in the cessation of home visits and individual work with families, which was crucial for those with increased vulnerability.

In conclusion, the observed trends in infant mortality in Bulgaria are influenced by various factors, including healthcare infrastructure, socioeconomic status, healthcare policy changes, and healthcare provider dynamics. Addressing these factors comprehensively is essential for improving child health outcomes in Bulgaria**.**

The first two hypotheses have been confirmed: Bulgaria follows the European trend of a significant reduction in infant mortality from 1950 to 2020, but the period of socio-economic transition proves problematic; it is precisely after 1990 that our country lags significantly behind a large group of European states.

The influence of managerial and organizational factors is also evident in the study of disparities in types of infant mortality across the six regions of Bulgaria. The dynamics for the period 2000-2019 show improvement in indicators in all regions, but with varying strength and pace.

The clear leader in low indicators, the Southwest region (with Sofia as its center), has better achievements than those of leading Western European countries, most pronounced in terms of neonatal mortality rate (NNMR). This is explained by the favorable influence of all factors: the availability and effective management of necessary resources combined with the rational organization of

medical and preventive care for pregnant women and children up to 1 year old.

The two regions that are at the opposite pole, with significant differences from the leader, are the Southeastern, followed by the Northwestern. In the case of NNMR, the Northern Central region after 2010 shows almost no improvement, which is related to unfavorable changes in the organization of hospital care - reduction in the level of neonatology departments in regional cities like Razgrad, Ruse, Silistra, and a shortage of midwives in them.

The differences between the highest and lowest values in the first part of the period are greatest in terms of post-neonatal mortality rate (PNMR), where we believe the changes associated with the introduction of a new healthcare model, which for children are accompanied by more disruptions, have the strongest impact. By the end of the period, in 2019, the problematic Southeastern region retained high values of infant mortality indicators, and the differences with the lowest ones increased by 2.5 times. The adverse effects of political-administrative actions are exacerbated by the effects of systemic ethnic and cultural differences acting in the same direction and deepening regional disparities in post-neonatal infant mortality.

The deepening of interregional differences in stillbirths and the deficit of specialized pregnancy surveillance in lagging regions again emphasize the influence of health system management as a factor in improving this indicator and reducing disparities.

Our third hypothesis has also been confirmed: there is persistent regional inequality in infant mortality - both overall and age-specific - in Bulgaria.

Interregional differences in infant mortality are a perennial topic on the international stage. Often, they do not refer to administratively distinct regions, such as those examined by us, but to geographical areas. Simeoni, Frova, & De Curtis, 2024, and Dallolio, Lenzi, & Fantini, 2013, find that differences between three major geographical regions in Italy persist even during periods of intensive decline in all infant mortality indicators. The significant disparities between the higher rates in the South and very low levels in the North are due to the unfavorable socio-economic situation in the Italian South - a less developed economy, income inequalities, and high unemployment rates. Geographical and/or interregional differences will continue to be the subject of research. Ideas for further exploration can be found in both older and newer studies from various parts of the world, such as the works of Olsen & Madsen (1999), Schellekens (2021), and Green & Hamilton (2019), focusing on the influence of maternal education on various age-specific infant mortality indicators and their variation by ethnicity and country of origin of the mothers. Enriching the characteristics of regions in socio-economic and cultural terms may be a direction for future research.

Current studies reveal a unidirectionality in the effect of socio-economic, cultural, and organizational factors in different periods and regions of the country but do not allow for quantitative measurement of individual groups, hence conclusions regarding the equality of their influence are not possible. The fourth hypothesis is partially confirmed. Nevertheless, comparative analysis unequivocally demonstrates the positive results of the favorable effects of more than one group of factors - provision of material and human resources, higher socio-economic status of the population, and better education contribute to favorable trends in infant mortality indicators. Socioeconomic difficulties in disadvantaged regions increase the need for good management in

the healthcare system to compensate for the adverse effects of factors outside it. This was the reason the question of the role of the healthcare service in preparing mothers for early childcare was included in the further studies of this dissertation.

The quantitative study "Mothers' Preparedness for Childbirth and Care for Children from 0 to 1 Year Old" is based on the dominant view from the early 20th century that the mother plays a crucial role through which all factors affecting the health of the young child pass and are modified (Newman, 1906), (Garrett, Galley, Shelton, & Woods, 2006), (Hibbs, 1916). Newman's view that "infant mortality is not a question of hygiene and housing, but of ... the standard of motherhood" is well-known. Numerous studies over the years confirm the role of mothers in reducing infant mortality (Bennett, Braveman, Egerter, & Kiely, 1994), (Ding, et al., 2017), (Green & Hamilton, 2019), (Hibbs, 1916), (Kiross, Chojenta, Barker, Tiruye, & Loxton, 2019), (Kim, Choi, Kim, Park, & Kwon, 2021). This applies to both developed and developing countries. Cutler, Daeton, and Lleras-Muney (2006) formulate the triad of factors valid for reducing infant mortality at the end of the 20th century and the beginning of the 21st century: improvement in living conditions, progress in medical care for pregnant women and children, and better education for mothers (Cutler, Deaton, & Lleras-Muney, 2006). Maternal education is a factor of increasing importance according to several authors. With better maternal education, 15% of the decline in infant mortality in Indonesia from 1980 to 2015 is explained (Schellekens, 2021). Maternal education is positively associated with favorable child health outcomes, including lower rates of preterm births, low birth weight infants, and infant mortality (Makate & Makate, 2016), (Chou, Jin-Tan Liu, & Joyce). These and other data are the reason for focusing research interest on inequalities in maternal education

as a potential pathway to early child survival (Fuchs, Pamuk, & Lutz, 2010), (Pamuk, Fuchs, & Lutz, 2011), (Fischetti, 2011).

Our study, from its planning stage utilizing a questionnaire distributed via Google Forms and disseminated through social media to parents of children aged 0 to 1 year, assumes certain limitations. The group of respondents (249 individuals) turned out to be too homogeneous in terms of education, with 83.1% having higher education, and the rest having secondary education. Other characteristics that emphasize the "favorable homogeneity" of the sample, in the sense that the respondents have a higher status than the average population, include the high percentage of those employed under a permanent employment contract - 82.7%, and the high percentage of their partners also being employed - 90.4% working under a permanent employment contract. Only 2.8% of mothers raise their children alone, without a partner. These limitations of the sample allow us to assess how the healthcare system influences such a relatively favorably positioned, homogeneous group in preparing mothers for childbirth and childcare. The study of mothers' contacts with the most important structures of the healthcare system for their preparation showed:

- The antenatal clinic is respected and has an important contribution to the quality of the prenatal period and the preparation of women for childbirth, but it provides almost no advice and recommendations regarding the care of the newborn.

- The maternity hospital offers a few guidelines, advice, and recommendations for home care, including breastfeeding training and clarification of the benefits of exclusive breastfeeding.

- The Child Health Program is followed for home visits by a doctor and advice on child care. An exception is made for 13.7% of newborns who are not visited by a doctor in the first month after birth.

- The child consultation has an extremely high coverage of children aged 0 to 1 year and is an important source of knowledge for their proper care. The established satisfaction of mothers from the Child Consultation can be increased through improved organization for full communication between the healthcare team and the parents, with the possibility of individualized advice.

Conclusions based on a relatively homogeneous group as in our study presuppose expanding the research to other groups of women - mothers, to encompass the real diversity of childcare models for young children. For this purpose, the developed methodology for quantitative research has the potential to be applied in different areas of the country and to enrich the knowledge about the readiness of modern mothers to raise a child to the age of one year.

The less favorable health indicators, combined with (or assumed by) specific characteristics such as prolonged segregation, poverty, early school dropout, teenage marriages, and early childbirth among the Roma ethnic group, (Tomova & Stoychev, 2022), directed us to conduct qualitative research with representatives of this ethnicity. The choice of research method - in-depth interviews - was dictated by our desire to assess the role of the healthcare service in preparing mothers for childcare in a broader ethno-cultural context, within the community, and to reflect on their experiences in encounters with the structures and representatives of the healthcare system. Our study is positioned among qualitative research in the field of child health/infant mortality, but at the same time, it belongs to research on the Roma minority in our country.

Since the beginning of the 21st century, studies on infant mortality depending on the ethnic affiliation of the mother have

increased. Often discussed are the levels and dynamics of neonatal and post-neonatal mortality in multinational countries where ethnicity is associated with maternal education and poverty. Issues related to monitoring child and maternal health (He, Akil, Aker, Hwang, & Ahmad, 2015), (Martin, et al., 2011), poverty reduction, and the need for early interventions during pregnancy to prevent stillbirths (Ramirez Varela, et al., 2019), (Menezes, et al., 2019) have been raised. In countries with relatively homogeneous populations like Italy, emphasis is placed on differences in overall and neonatal mortality rates among children of foreign citizens (higher rates) compared to locals (Simeoni, Frova, & De Curtis, 2024). We did not find a study using in-depth interviews to make comparisons, but there is a perspective for further development of the topic.

The conclusions from both studies, both quantitatively and qualitatively, unequivocally emphasize the significance of the healthcare service in shaping mothers' readiness for parenthood. The Antenatal and Child Health Consultations hold important and established roles in both practices and mothers' awareness. In both groups, there is a demonstrated need for early steps in providing information and training to mothers regarding newborn care, particularly within Antenatal Care; issues arise in this regard with maternity wards/departments.

Despite the wide range of informational sources utilized on pregnancy and childcare matters, healthcare services, and medical professionals respectively, remain the most authoritative for the respondents in both studies. The results support our fifth hypothesis: The primary factor in shaping readiness for childbirth and caring for a child up to the age of 1 is the healthcare service, which can utilize the opportunities presented by modern media and social networks.

Identified deficits in the organization of essential components should be addressed by their management for more effective time and human resource management. For the relatively short stay in maternity wards, there could be mandatory contact time for information/training for the mother, fulfilling the duties outlined in the midwife's job description.

In the qualitative study, interviewees noted discriminatory moments in their interactions with certain healthcare structures, which could act as barriers to access and utilization of healthcare services by pregnant women and children. They deeply believed that the negative attitude displayed in some medical facilities (maternity wards) was due to their belonging to the Roma ethnicity. Within our educationally diverse group, we found that for some interviewees, there exists a language barrier in communication with medical specialists, which could be demotivating for both parties.

Positive changes in attitudes towards girls' education and encounters with young Roma mothers with secondary education, as well as a noticeable trend against early childbirth, are encouraging signs of ongoing processes within the Roma ethnic group. Statistical data also supports these impressions from the interviews – over just 10 years from 1992 to 2001, early (adolescent) childbirth among Roma girls decreased from 693.3‰ to 508.8‰, and the extraordinary early childbirth rate (per 1000 girls under 15) halved from 70.1‰ to 35.6‰ (Tomova, 2009). Of contemporary interest in this regard is the UNICEF Handbook on "Changing Attitudes of Roma Men Regarding Child Marriage" (Žunić, 2020).

Living in large families with significant intrafamilial support is an important characteristic for the Roma ethnicity, with the potential for conflicting influences on young mothers. Excessive protection from adults, imposition of unhealthy and

outdated childcare practices are examples of negative influences. However, better education for mothers and broader health interventions in the community can strengthen potential positive trends in family support. In the qualitative study, we encountered a new phenomenon – the spouse/partner being involved in specific childcare activities. This aligns with modern trends valid globally and in Bulgaria, for greater involvement of fathers in childcare. As a particularly positive symptom, we can consider the activity demonstrated by the interviewees on the topic of "Preparation for the Role of Motherhood Before Pregnancy." Suggestions extended to both school possibilities and later, in the community, through the creation of an educational "interest group" or "circle." It turned out that none of the interviewees had attended a parenting school, although some had heard of it. Almost all expressed a desire for more frequent and individualized contact with healthcare professionals after the birth of their child. The characteristics of this contact correspond to home visits by qualified nurses, a "visiting nurse" type. The expressed needs for training in childcare at an early age are based on the strong desire of mothers to do everything possible for their children's health, which is also linked to their future prosperity.

We find confirmation of our sixth hypothesis that there are educational, ethnic, and cultural differences in mothers' knowledge and behavior. During the completion of the tasks of the dissertation, perspectives for further research emerged:

- Further enrichment of parameters for analyzing interregional differences to reveal factors that would support national and regional actions to reduce inequalities.

- Deepening the topic of the role of the healthcare service in preparing the mother/family for successful parenthood in the first year of the child's life.

- Research on generational parenting models and their impact on health among some groups in Roma communities.

- Development of historical-theoretical studies on the socio-health problem "Fighting Infant mortality in Bulgaria in the Last Century - Lessons."

- Development of methodological approaches for intervention studies in Roma communities.

III. CONCLUSIONS, CONTRIBUTIONS

Conclusions

1. Child Health became a public health issue (since the early 19th century) influenced by two essential factors: a change in attitudes towards children - from complete disregard to recognizing them as a societal and familial value - and the introduction of mandatory registration of vital events (births, deaths, marriages) with the possibility of measuring the group indicators of Infant mortality.
2. Increased societal sensitivity leads to the emergence of movements in many European countries to combat high infant mortality rates, significant research efforts, and the establishment of institutions, policies, and specific practices to reduce infant mortality. Many of these practices focus on the mother's personality - her health literacy, culture, and childcare skills. They are in line with the predominant late 19th-century view that a complex set of factors influences Infant mortality, but they all pass through the mother's personality.
3. Research on Infant mortality, ongoing over the years, forms the problematic circle of "Determinants of Infant mortality," in which inequalities occupy an important place - by place of residence (urban-rural), mother's educational level, socioeconomic status of families, etc.
4. In the first half of the 20th century, Bulgaria adopted good European practices for healthcare for young children, adapted them to local conditions, and enriched them, most notably through the introduction of special structures - Child Health Consultation Centers.

5. There has been a significant decrease in overall infant mortality in the period 1950-2020, with Bulgaria ranking fairly well in 1985 at 15.4‰, and at the end, it ranks 27th with 5.14‰. However, from 2000-2020, it consistently remains second to last in the rankings. Regarding Neonatal and Early Neonatal Infant mortality, Bulgaria performs better and is among the group of countries with average levels of these indicators.

6. In the process of reducing infant mortality in Bulgaria, two opposite key periods are identified:

- A period of ascent (from 1950 to 1974), characterized by an intensive decline in infant mortality, marked by significant health-policy changes. Legislation for the protection of motherhood and childhood is adopted, combating infant mortality becomes a national priority, births are exclusively conducted in healthcare facilities, and strict monitoring of pregnant women and children up to 3 years of age is introduced. Against the backdrop of a general decrease in infant mortality, significant inequalities between urban and rural areas exist.
- A period of decline (from 1990 to 2000), coinciding with the so-called "Socio-Economic Transition" period, characterized by healthcare-policy, social, and organizational erosion accompanied by deep economic recession. Bulgaria remains permanently second to last in Infant mortality indicators.

7. Significant and lasting interregional differences in overall and age-specific infant mortality between the six regions of Bulgaria are observed in the last two decades. Two poles emerge - the prosperous Southwest with Sofia as the center, and the disadvantaged peripheries - Northwest with Vidin as the center, and Southeast with Yambol and Sliven as centers. The Southwest region consistently shows very good indicators, comparable to the favorable indicators of European countries. In the two lagging regions, the values are comparable to the worst in Europe. Despite

improvements in all regions, differences remain persistent and represent an area for interventions to reduce these indicators.
8. Respondents in the survey (over 95%) express satisfaction with the scope and quality of preventive work provided by the National Programs for Women's and Children's Health.
9. The problematic link in maternal and child health care, according to study participants, is the maternity departments in state and municipal hospitals.
10. The qualitative study among Roma mothers highlights key points:

- Discriminatory treatment
- Children are a priority, and their care is not neglected
- Fathers are involved in childcare
- They seek but do not receive answers to the questions that concern them.

Contributions

A. Theoretical and Epistemological Contributions:

1. Examination of Infant Mortality in the Context of Changing Concepts of Childhood

2. Analysis of Movements to Fight Infant Mortality in the 19th and 20th Centuries: The research explores significant movements in various European countries and the USA aimed at reducing infant mortality, highlighting similarities and differences, and establishing a standard for public care for children at an early age, which quickly became established as a European practice.
3. Investigation of Overall and Age-specific Infant mortality in Bulgaria: The study conducts a comprehensive analysis of infant mortality in Bulgaria over 60 years (1960-2020) within a European

context and identifies Bulgaria's position in terms of each infant mortality indicator, shedding light on trends and challenges.

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4. Identification of Two Contrasting Key Periods in Bulgaria: The research identifies and characterizes two key periods – one of ascent and one of decline – and proposes an explanatory hypothesis for their impact on infant mortality indicators in Bulgaria, providing valuable insights for understanding historical trends.
5. Examination of Interregional Disparities in Infant Mortality in Bulgaria: For the first time, the study investigates interregional differences in overall and age-specific infant mortality in Bulgaria over 20 years (2000-2019), revealing regional rankings and persistent inequalities between urban centers and peripheral areas.

B. Practical and Methodological Contributions:

1. Quantitative and Qualitative Research on Maternal and Child Health: Through both quantitative surveys and qualitative interviews with Romani mothers of young children, the study provides insights into the influence of ethno-cultural factors and health service components on their readiness for childbirth and childcare, offering potential pathways for improving maternal and child healthcare practices in Romani communities.
2. Methodological Rigor for Future Research: The methodologies employed in both quantitative and qualitative investigations are deemed suitable for application in future studies and the advancement of research on maternal and child health topics.