Demographic Challenges in Serbia

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Abstract

The present chapter focuses on fertility and mortality problems as the two big demographic challenges facing Serbia. The trend of the average number of live births to women who were past the reproductive age in 2011, considered by age cohorts, indicates an early below-replacement fertility and a long period in which the number of live births per woman was stable at the value of 1.8. Although younger cohorts have yet to age beyond their reproductive years, markedly lower average number of live births by women aged between 36 and 40 compared to women aged 41 and over in 2011 will probably deepen due to completed fertility declining below the 1.8 mark. At the same time Serbia is struggling with high premature mortality. Premature deaths of middle-aged people, but also younger, reproductively capable people, has effect on the economy, childbearing and depopulation. In Serbia men are dying more prematurely then women. About half of all deaths of men younger than 75 in 2015 could have been avoided by either prevention or adequate and timely healthcare. Big urban centers are much better off in this regard, unlike more remote regions which often lack good healthcare services.

Serbia is facing a multitude of serious population challenges. The most notable ones are childbearing far below the replacement level, resulting in depopulation and intensive population ageing, the relatively high death rate and the negative migration balance. The present chapter focuses on fertility and mortality problems as the two big demographic challenges Serbia is

facing. Due to the lack of reliable data for Kosovo, it is excluded from this chapter.

The childbearing crisis in Serbia is considered from a long-term perspective, including the trends of completed fertility in the immediate future, based on the selected micro, meso and macro factors influencing the low fertility levels. To that end, the first part of this chapter gives an overview of research results that are important for understanding low fertility in Serbia. In addition to the 2011 Population Census results, the first part of this chapter also examines the findings of a series of quantitative or qualitative studies, which directly or indirectly relate to the causes of below-replacement fertility in Serbia.

Premature mortality, as a relatively new concept that helps us view the mortality in Serbia through two lenses: that of age and of specific causes of death. The second part of this chapter gives an overview of avoidable mortality which in Serbia is happening prematurely. The data used in that analysis comes from Serbia's vital statistics and population estimates made by Statistical Office of the Republic of Serbia (2018).

11.1. Childbearing crisis

11.1.1. Completed fertility stabilised at a low level

None of the analysed 33 age cohorts of women who were past their reproductive age in 2011 had an average number of live births greater than two children (Fig. 11.1). Even the registered women in the oldest analysed age cohort (generation born in 1930) had given birth to 1.88 children on average. This is clearly the largest registered average number of live births. The age cohorts that were past the reproductive age in 2011 had, on average, between 1.85 children (generation born in 1931) and 1.75 children (generations born in 1937, 1938, 1939, 1940 and 1941), while the most frequently recorded average number of live births was about 1.8. The youngest age cohort of women who were past the reproductive age in 2011 (the generation born in 1962) had 1.82 children on average.

The trend of the average number of live births to women who were past the reproductive age in 2011, considered by age cohorts, indicates an early appearance of the phenomenon of below-replacement fertility in Serbia and a long period in which the number of live births per woman was stable at the value of 1.8. The socialist type of accelerated modernisation process, abrupt transition from rural to urban areas, a significant share of women in the labour market with full-time jobs during their reproductive period, fast secularisation, as well as widespread economic hindrances for meeting reproductive needs were certainly the most important factors contributing to early occurrence of the phenomenon of below-replacement fertility and its persistence in Serbia. Serbia's political and economic institutions and experience as a constituent republic of the Socialist Federal Republic of Yugoslavia differed from most of the other countries of the Soviet bloc since the late 1940s. In 1948, the Moscow-dominated Cominform denounced the relatively independent socialist policies of President Tito and expelled Yugoslavia. Yugoslav socialism shifted from central decision-making toward a policy of economic self-management organized around workers' councils and decentralized local governments. Moreover, unlike other socialist countries, Yugoslav society was considerably more open to the Western system of values and to a greater extent facilitated the satisfaction of individual needs. This contributed to an increase in the economic and psychological cost of children (Rašević and Petrović 1995).

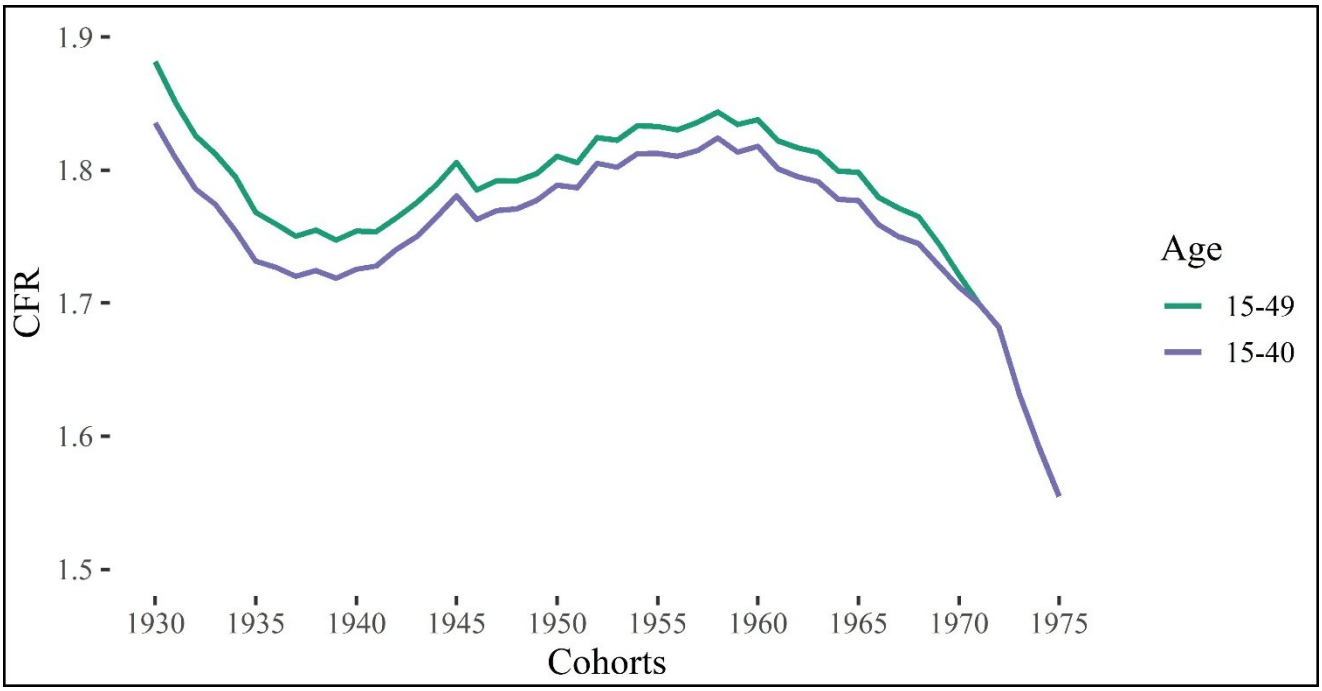

Fig. 11.1 Cohort total fertility rate in Serbia, birth cohorts 1930-1975
Source: authors' calculation based on additional processing of the 2011 Census results

The different societal conditions to some extent affected the childbearing behaviour not only during the 1960s, 1970s and 1980s, but possibly even later (Basten and Frejka 2015). One of the explanations for the childbearing stabilization is the preservation of the universality of marriage, which was contracted at a relatively early age, whereas alternative forms of cohabitation were practically non-existent (Rašević and Petrović, 1995).

In 1945, the Federal Government introduced child allowance and one-off financial assistance for new-born children (1945–1967), as employment-based entitlements. Child allowance had both social welfare and population policy elements almost from the very beginning. Namely, means testing was introduced as an additional eligibility criterion for child allowance, and parents could receive this entitlement until their child's 20th birthday (or 26th for children in regular education), while its amount directly depended on the number of children in the family. Child allowance amounts were substantial until the late 1950s. For instance, in 1958 they ranged between 16% of the average wage for the first child in the family to 59% for the fifth child. The respective proportions in 1967 were 7% and 31% (Gavrilović 2005). Parental leave was introduced in 1946 (84 days), and was continuously extended, (90 days in 1949, 105 days in 1957, 133 days in 1965, 180 days in 1974, 210 days in 1977, 270 days in 1984) (Gavrilović 2005). The reimbursement of the costs of childcare in preschool institutions was also introduced immediately after the Second World War.

The analysis of the average number of live births to women under 40 years of age, in age cohorts 1930–1962, shows that it is expectedly the largest in the oldest generation of women (1.84 children per woman). The same generation is also associated with the biggest difference (0.05 children per woman) between the cohort total fertility rate, which includes live births until age 45, and the rate that refers to live births until 40 years of age (Fig. 11.1). Despite being the biggest, this difference is insignificant and, for younger considered age cohorts, it is minimal and shows unambiguously that Serbian women who were past their reproductive age in

2011 rarely gave birth to children after turning 40.

The 2011 Census results also facilitated ascertaining the mean age of women at birth, by age cohorts. The value of this family planning indicator did not vary substantially among the considered generations of women who were past the reproductive age at the time of the Census (Fig. 11.2). Thus, in the generation born in 1930, the mean age of women at birth was slightly less than 3 months lower than that of the cohort born in 1962 (25.30 years and 25.53 years, respectively).

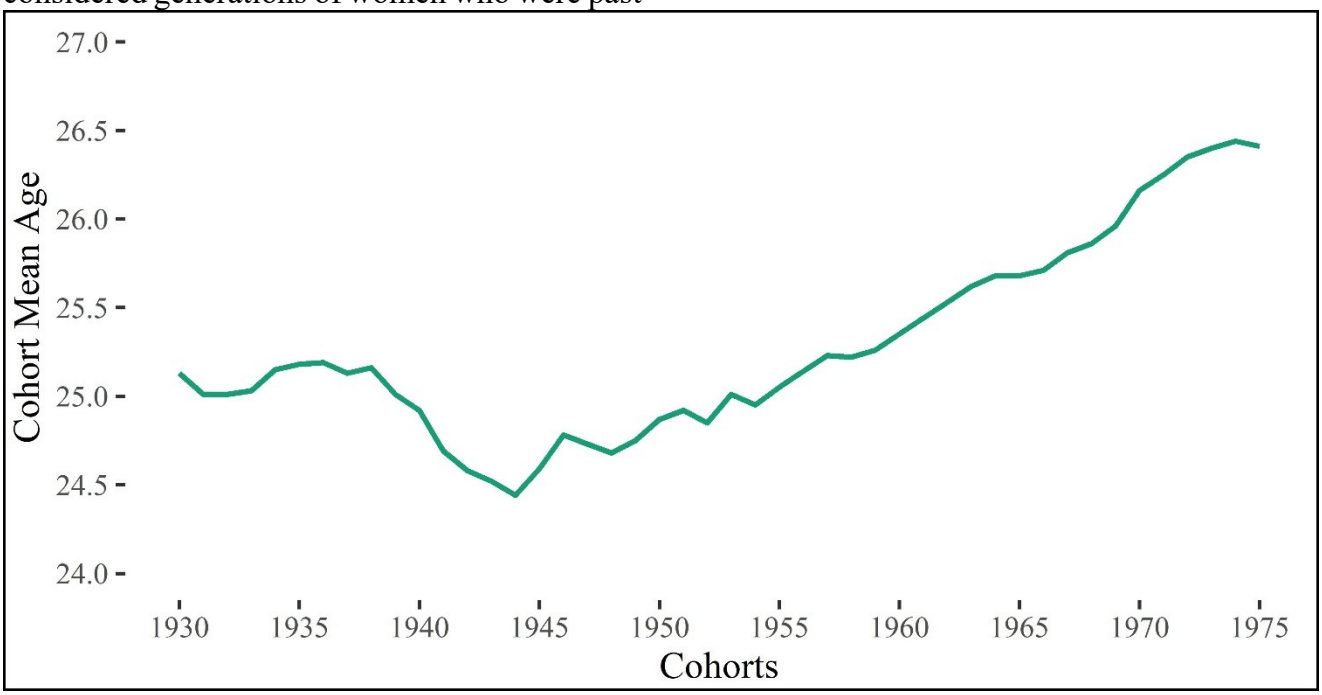

Fig. 11.2 Cohort mean age of women at birth in Serbia, birth cohorts 1930-1975
Source: authors' calculation based on additional processing of the 2011 Census results

11.1.2. Deepening childbearing crisis

The average number of live births by women who were approaching the end of their reproductive age at the time of the 2011 Census (Fig. 11.1) continuously decreased from 1.81 (the generation of 1963) to 1.55 (the generation of 1975). The registered difference of 0.26 children per woman is substantial. The mean age of women at childbirth increases from older to younger generations (Fig. 11.2). For the generation born in 1963, the value of this family planning indicator was 9.5 months lower than for the cohort born in 1975 (25.62 years and 26.41 years, respectively).

The generations of women who were aged between 36 and 41 at the time of the 2011 Census were in their optimum childbearing period in the 1990s and 2000s. In Serbia, those two decades were marked by crisis and turbulence. The 1990s were an exceptionally complex period for the population of Serbia. In addition to the impact of long-term factors, various tumultuous events affected its demographic development, such as the dissolution of former Yugoslavia, armed conflicts in the neighbouring countries, sanctions imposed by the international community, deep economic crisis, the collapse of social stratification, political problems, institutional crisis and the NATO military intervention. Maladaptation to the changed system of values and norms, a lower level of personal attainment, the feeling of insecurity, and living under permanent stress are the main features of life at an individual, psychological level. Deprivation or living at the subsistence level are the

main elements of the economic cost sustained by the majority of the population (Rašević 2004).

In the 1990s, the government attempted to mitigate the influence of irregular factors by imposing a pronatalist climate which entailed, above all, the introduction of working mothers' entitlement to paid maternity leave, where an allowance in the amount equal to mother's earnings is paid for 12 months after the birth of the first and second child, or for a period of 24 months after the birth of the third child. Working women were entitled to 12 months of maternity leave for the fourth and every subsequent child, with maternity pay in the amount of 80% of their wage (Rašević 1999).

It is difficult to explain the low birth level after the year 2000 without an in-depth investigation of this phenomenon. In contrast to a large number of European countries, no significant demographic surveys have been conducted in Serbia. Not only was the *Fertility and Family Survey* not conducted in the 1990s; the authorities also failed to carry out more recent surveys, such as the *Population Policy Acceptance Study* and the *Generations and Gender Survey.* Despite this lack of information, in trying to identify the factors of low birth levels after the year 2000, the logically most prominent seem to be the ones related to and/or resulting from the severe economic and social crisis which has been affecting Serbia for a prolonged period of time. The list of distinct structural barriers to childbearing has included new elements of individual passivation, such as e.g. the feeling of economic and psychological insecurity or social anomie, as well as women's dissatisfaction with their status in partner relationships, family and society. In addition to these factors, the low birth levels can be explained by a deep transformation of the society, corresponding to the changes that began earlier in the developed European countries, which are a cause of low fertility (Sobotka 2004). These include, on the one hand, the promotion of individualism, the desire for self-actualisation, changed concept of family, different partner relationships, insisting on the quality of one's own life and the life of a child, while, on the other hand, there is strong inclination towards consumption and leisure **(**Government of the Republic of Serbia 2008).

At the same time, there is no comprehensive response of the state to the childbearing crisis. There have been two direct population policy measures significant for birth promotion at the national level since 2002. These are birth grants and maternity/parental leave. Birth grant was initially designed as a one-off allowance paid to the mother, in the amount of EUR 1,000 for the second child, EUR 2,000 for the third and EUR 4,000 for the fourth child. After 2006, the model also included a one-off allowance for the first child, in the amount of about EUR 300. As a result, the amount of the birth grant for the second-born and every subsequent child remained the same, but it was paid in 24 equal monthly instalments until the mid-2018. The expenditures for this measure in Serbia were approx. 0.2% of the Gross Domestic Product (GDP) – greater than any European Union countries' expenditures on birth-related grants, expressed as a proportion of the GDP (Matković et al. 2018).

However, the sum of the GDP shares spent on child allowance (0.29% of the GDP in 2016) and on birth grant (0.17%) was still smaller than the EU-28 average GDP share spent on child allowance alone (1.1% in 2014), since this social transfer is not means-tested in many of the countries, unlike Serbia, and is usually given to all children (Matković et al. 2018).

Since 1 July 2018, the design of the birth grant has changed considerably in Serbia. It amounts to EUR 830 for the birth of the first child (paid as a lump sum), EUR 2,000 for the second child (paid in 24 equal monthly instalments), EUR 12,000 for the third child (paid in 120 equal monthly instalments) and EUR 18,000 for the fourth child (also paid in 120 equal monthly instalments) (Kabinet ministra bez portfelja zaduženog za demografiju i populacionu politiku 2018).

The law also provides for a maternity pay equal to the employed mother's earnings, during

maternity leave and childcare leave for a period of one year for the first and second child, or a period of two years for the third and any subsequent child. A comparative analysis (2016) of the duration of the maternity and childcare leave with a maternity pay equal to the employed mother's earnings shows that this system in Serbia is more generous that in most EU countries, although not extremely generous, except in the case of third and any subsequent child when mothers are entitled to two years of childcare leave (Matković et al. 2018).

Although younger cohorts still have a chance of participating in reproduction, the identified markedly lower average number of live births by women aged between 36 and 40 compared to women aged 41 and over in 2011 raises doubts whether the completed fertility in Serbia will remain stable or if it will actually decline below the 1.8 mark despite the newly introduced significant financial birth incentives. Especially considering that the postponement of childbearing is widespread and has intensified among women between 20 and 34 years of age.

11.1.3. Postponement of parenthood

The postponement of first birth until increasingly older age has been a significant factor in the low fertility rate, which is nowadays a concern for many (or all) European countries. The problem is even greater when the population includes a relatively large share of women aged 30–34 who are still childless. The majority of women who postpone childbearing will eventually have children. However, it is reasonable to expect that a number of them will not be able to achieve the desired number of children owing to various reasons, such as physiological decrease of fertility, secondary infertility, higher psychological cost of marriage and childbearing at an older age, or not entering into a marriage owing to illness. In addition, the postponement of childbearing until advanced reproductive age entails numerous risks of unfavourable course and outcome of pregnancy (Schmidt et al. 2012).

A large number of women in the 20–24 age bracket (82%), more than a half (55%) of women aged 25–29 and about a third (31%) of those aged 30–34 were childless in Serbia at the time of the 2011 Population Census (Table 11.1). The 2011 Census results do not give insight into the age at which men engage in reproduction in Serbia, because the question regarding the number of live-born children was posed only to women.

Table 11.1 The share of women without live-born children in respective age cohorts, by regions in the Republic of Serbia, 2011 Census

Region	Women's age cohort (years)		
	20–24	25–29	30–34
Republic of Serbia	*82.1*	*55.3*	*30.6*
Belgrade Region	88.6	69.1	42.8
Vojvodina Region	82.4	54.9	29.2
Šumadija and Western Serbia Region	80.0	48.4	24.6
Southern and Eastern Serbia Region	77.4	45.9	23.0

Source: authors' calculation based on additional processing of the 2011 Census results

There are also distinct regional disparities of the share of women of various age cohorts without live-born children. Among women aged 20−24 years, the greatest proportion of childless women is registered in the Belgrade Region (89%), while the smallest was in the Southern and Eastern Serbia Region (77%).

The disparities among the regions in terms of the share of women without live-born children are even more pronounced in the age cohort 25–29 years. The share is still the largest in the Belgrade Region, where more than two in three women of the said age were childless, whereas it was the smallest in the Southern and Eastern

Serbia Region, where almost half of the women aged 25–29 years had no children.

Compared to the other large regions of Serbia, the proportion of women aged 30–34 years who do not participate in reproduction is the largest in the Belgrade Region, at 43%. The share of childless women in this age cohort is smaller in the Vojvodina Region (29%) and the Šumadija and Western Serbia Region (25%), and the smallest in the Southern and Eastern Serbia Region (23%).

The analysis of the share of women aged 30–34 years who were childless at the time of the 2011 Census shows that, at the municipal level (Fig 11.3), the largest share was registered in Belgrade's central municipalities of Stari Grad, Vračar and Savski Venac (64%, 58% and 55%, respectively).

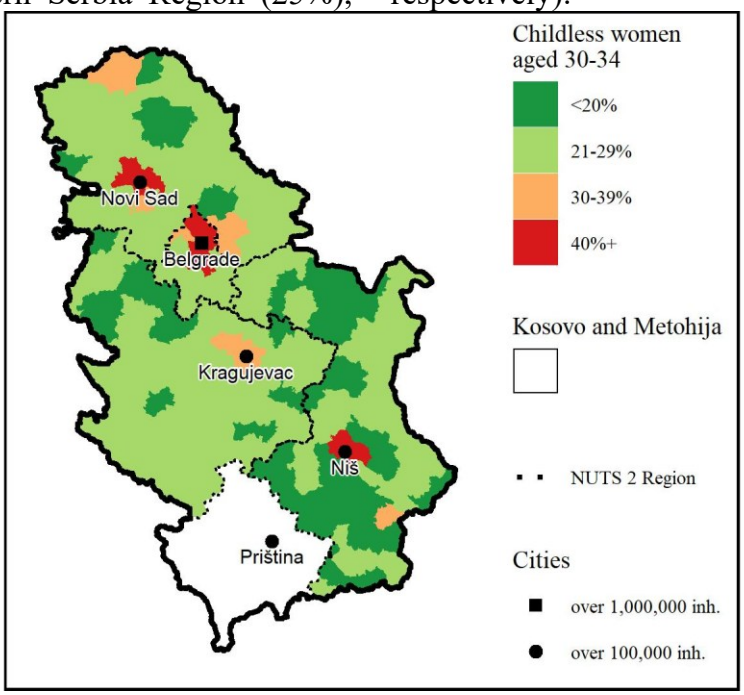

Fig. 11.3 Percent of childless women aged 30–34 (Census 2011)

Between 1981 and 1991, a trend of a slight increase in the number of women who did not give birth to any children in their optimum childbearing period was recorded in Serbia (Rašević and Penev 1995). This trend intensified in the period 1991–2002 and it is considered to be the heaviest toll of the 1990s in demographic terms (Rašević 2006a). The share of childless women also continued to grow between the last two population censuses. This trend was perceived in all three age cohorts. In 2002, the respective shares of women who did not participate in reproduction for age cohorts 20–24, 25–29 and 30–34 were 75%, 43% and 21% (Rašević 2006b).

Unemployment, housing issues, low standard of living, young parents' childcare-related problems, as well as the sense of insecurity and social anomie undoubtedly play a major role in the decision to postpone parenthood in Serbia. However, in addition to the above economic factors, there are also factors that influence the postponement of childbearing in the developed European countries, too. The factors relevant to the postponement of childbearing in contemporary societies include increased female education and female economic autonomy; rising and high consumption aspirations that created the need for a second income in households and equally fostered female labour force participation; increased investments in career developments by both sexes, in tandem with increased competition at the workplace; rising 'post-materialist' traits such as self-actualization, ethical

autonomy, freedom of choice and tolerance for the non-conventional; a greater stress on the quality of life with a rising taste for leisure; a retreat from irreversible commitments and a desire for maintaining an 'open future'; rising probabilities of separation and divorce, and hence a more cautious 'investment in identity' (Lesthaeghe 2001).

The Population Census data and the findings of various studies with various target groups indicate the increasing prominence of the above factors in the deterministic cause of sub-replacement fertility and/or the postponement of childbearing in Serbia, as well. The 2011 Census identified a total of 74,666 childless women between 30 and 34 years of age. Targeted processing of the socio-demographic census data yielded the information about their profile, which is defined as a set of characteristics most frequently found among the respondents. An average respondent from this subpopulation declared to be of Serbian ethnicity (86%), lived in a city (78%), outside of a union (73%), was employed (64%) and had non-university or university-level higher education (48%).

A number of research studies have been conducted in the recent years which addressed, either directly or indirectly, the cause of childbearing postponement in Serbia. Their findings have indicated the significance of economic factors, as well as of the factors of other nature, in the deterministic cause of postponed parenthood in Serbia. They will be presented in chronological order.

Research in 2009 dealt with the attitudes towards parenthood taken by female students of medicine, pharmacy and political sciences at the University of Belgrade. The findings are based on the responses obtained in an anonymous survey conducted on a randomised sample of a total of 504 female students in the second and fourth year of studies. About four fifths (79%) of the respondents considered the period of life between age 25 and 29 to be the optimum period for having the first child, 11% of them thought the optimum period was 20–24 years, while 10% said it was 30–34 years of age. Almost all respondents (99%) stated that they wanted to have children in the future. Among the factors considered as important preconditions for having the first child, out of thirteen proposed variables, the students identified "good health" and "desire to have children" as the most important, followed by "financial independence", "employment" and "stable relationship". "Marriage" and "career" were assessed as less important for engaging in reproduction, and "supportive environment" and "social support programme" ranked even lower (Sedlecky et al. 2011).

Two qualitative research studies were conducted in 2014. The first research was based on the discussion on this phenomenon in two heterogeneous focus groups organised in Belgrade in mid-2014, each consisting of seven childless women over 25 years of age. The discussion revealed several social and personal reasons related to the postponement of childbearing. The most commonly cited reason in both groups was the fact that respondents felt like members of the "lost generation", who had lived in chaos for a long time and had no motivation for parenthood. The personal reasons most frequently stated by focus group participants were that they did not feel ready for the challenges and expectations associated with motherhood and that they did not have a partner with whom they wanted to have a child (Veljović 2015).

The other research considered the key causes of the postponement of childbearing in Serbia based on a qualitative analysis of the opinions of the readers of the respectable daily newspaper *Politika* on this issue, posted online as comments on a published article on childbearing postponement. In addition to general opinions regarding to roots of this problem in Serbia, many readers also cited personal reasons for postponing parenthood until a later stage of their lives. The authors of the research identified 251 individual reasons among the readers' comments, of which 43% were at the macro-level, 26% at the meso-level, and 31% at the micro-level. The problem of finding a suitable partner

stands out as the most frequently cited reason, and accounts for almost a fifth of all identified reasons for the postponement of parenthood. Readers underlined livelihood problems, dissatisfaction with the socio-political context and uncertain future as the crucial considerations influencing the postponement of childbearing at the national level. Among the meso causes, emphasis was placed on the difficulties in achieving a stable relationship, women's heavy burden of family duties and the lack of belief in the institution of marriage. Individualism, hedonism and consumer mentality were identified as the key micro causes of the postponement of childbearing (Rašević and Sedlecki 2016).

11.1.4. Predominance of conservative birth control

Motherhood at an advanced childbearing age in Serbia is additionally put at risk by the fact that women's health and fertility are compromised by predominantly conservative birth control practices. Namely, the low fertility level in Serbia goes hand in hand with its integral aspect – the predominantly traditional approach to birth control, most often based on the reliance on *coitus interruptus*, and consequently, in cases when pregnancy is unwanted or unacceptable, resorting to induced abortion. Hence the long history of induced abortions in Serbia.

This sphere has not achieved progress in the 21st century, either. The most recent representative research showed that condoms, combined oral contraceptives or intrauterine devices were used by only 18.4% of women who are married or in a stable union and do not want children (Fig. 11.4). At the same time, according to the Westoff (2007) method, the estimated total induced abortion rate was 2.9 (Sedlecky and Rašević 2015).

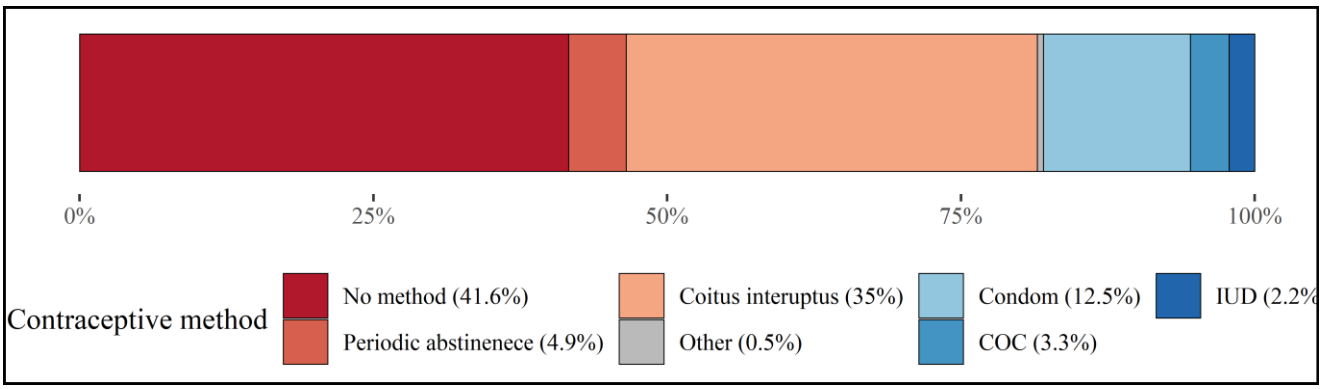

Fig. 11.4 Use of contraception in Serbia: Percentage of women aged 15-49, married or in union, who were using (or whose partner was using) a contraceptive method in 2014

Source: Statistical Office of the Republic of Serbia and UNICEF 2014.

Research findings have identified a series of factors related to the lack of acceptance of modern values in the sphere of birth control. The main ones are easy access to induced abortion coupled with substantial obstacles to efficient use of contraception, insufficient relevant knowledge about and resistance to modern contraceptives among women and men in need and health care providers, a firm social basis for traditional birth control, and limitations in the family planning programme (Rašević and Sedlecky 2009).

Reproductive health preservation is also threatened by the absence of screening for sexually transmitted infections causing pelvic inflammatory disease. The most common among these is genital chlamydia, which usually causes subclinical chronic infections resulting in damaged fallopian tubes. A study conducted among sexually active adolescents in Belgrade detected the presence of chlamydia in the uterine cervix in 30% of examinees (Sedlecky et al. 2001).

Young women from higher social strata in Serbia also threaten their reproductive health

with their behavioural patterns. A study that included a large number of women aged 19–20 years, who visited the website of the Serbian Association for Reproductive Health in 2011, showed that about one in four respondents engaged in sexual intercourse before turning 17, had four or more partners, had sexual contact in relationships shorter than one week, and were exposed to unplanned pregnancy and sexually transmitted infections (Rašević and Sedlecky 2013).

11.1.5. Consequences of sub-replacement fertility as the cause of the childbearing crisis

The prolonged presence of the phenomenon of sub-replacement fertility is the principal cause of depopulation and extensive changes in the age structure of Serbia's population (See Chapter 10). An intrinsic part of this process is the smaller fertile population, especially the one in the period of optimum fertility. Thus, the number of women aged 15–49 years in Serbia decreased from 1,632,708 to 1,537,044 between 2011 and 2017, i.e. by 95 thousand in only six years. At the same time, the population of women aged 20–34 years shrunk by 60 thousand (from 702,107 in 2011 to 641,941 in 2017) (Statistical Office of the Republic of Serbia 2018). This is a typical example of how the consequence of a phenomenon becomes one of its causes.

11.1.6. Emigration from Serbia contributes to the childbearing crisis

Serbia is traditionally a country of emigration. In addition to the effects on the size of the population, emigration has also affected the scope of insufficient childbearing and population ageing in Serbia. Namely, it is in the nature of the emigration process that predominantly young people leave the country of origin (See Chapter 12).

In the context of considering the fertility trends in the immediate future, it is vital to underline that Serbia's emigration potential is still substantial. The results of a representative survey conducted in 2010 (Baćević et al. 2011) showed that, in a hypothetical situation that Serbia has already become an EU member state, one in four respondents (26.4%) from the general sample would "surely" look for employment in another EU country. "Probably", the next offered modality as an answer to the question asked, was chosen by one in six surveyed persons (15.2%) from the general sample. In other words, 41.6% of the respondents from the general sample demonstrated manifest or latent preparedness to look for employment outside of Serbia. Returnees to Serbia from abroad expressed manifest preparedness to look for employment in a different country (one in three respondents), compared to somewhat lesser preparedness of the general population (one in four participants). However, if we look at the cumulative manifest and latent preparedness, there is almost no difference between the general sample and the special sample in terms of the preparedness of the respondents to seek employment outside Serbia (41.6% and 42.4%, respectively).

Particular preparedness to do so was notably expressed by respondents under 30 years of age (high school and university students), active persons, the unemployed, persons from large and poor families, those who believed that staying abroad had positive effects on the people from Serbia, as well as pro-West oriented respondents (Baćević et al. 2011).

A study conducted in 2018 on a sample of about 11,000 students confirmed that a significant share of them (32.4%) planned to search for better living and working conditions outside Serbia (Bjelobrk 2018). More than 90% of the students said that they enjoyed full support from their parents to leave the country. About 70% of the students who intended to leave Serbia upon graduation had relatives and friends who lived abroad. It is also important to underline that, when asked about possible motivation to stay in Serbia, one in four students (25.6%) responded: "There is nothing that can reverse my decision to leave the country".

11.1.7. More recent insights into low fertility and the policy response

The results of the 2011 Population Census and the findings of a number of relevant studies suggest that the childbearing crisis in Serbia will not only continue, but will probably deepen, as well. The findings on the non-participation of younger age cohorts of women in reproduction indicate to decision-makers that it is vital to make efforts to mitigate the barriers to bearing and raising one's first child during the optimum period. To that end, it is essential to reduce not only the economic, but also the social and psychological cost of parenthood through support to modern forms of union between women and men and assistance in reconciling family and work, as well as childbearing and education (Rašević 2018). At the same time, it is important to raise the public awareness of the health concerns related to the postponement of childbearing. This includes the promotion of the modern family planning concept with a view to preserving reproductive health. Actions taken towards these outcomes would also be an incentive to giving birth to a second and/or third child in the family.

11.2. Premature mortality

11.2.1 Mortality Circumstance in Serbia

While Serbia is faced with a plethora of demographic problems, one that is probably the most often overlooked is the problem of high mortality rates, especially among those relatively young. High mortality rates are to be expected in a country with a high proportion of old people, however problems with mortality that Serbia faces are only exacerbated by its age structure, whilst having different causes. Most of these causes revolve around quality and availability of timely and effective healthcare (Galjak 2018a). Current life expectancy at birth in Serbia (2016 data) is 75.7 years (Statistical Office of the Republic of Serbia 2018). This places Serbia among countries of Europe with lower life expectancy, while on the global scale it ranks similar to other middle-income countries.

Being that mortality circumstances, most often expressed through life expectancy at birth, have a strong positive correlation with economic development, the future of premature mortality in Serbia is tied to its economic prospects (Galjak 2014; Preston1975).

When considering mortality situation in Serbia it is important to consider a couple of factors, each of which is not exclusive for Serbia, but their combination is very unique to Serbia. One of these factors is the legacy of Yugoslavia and Communism, which affected almost all demographic aspects, but especially mortality in the countries of Europe where it was present (Billingsley 2010; Mesle and Vallin 2002; Minagawa 2013; Sobotka 2003). The mortality situation in Yugoslavia was not as bad as it was in the other former Communist countries of Eastern Europe. The marks Communism have made are present even now, with a clear East-West divide in Europe (Galjak 2018b). Another factor was the extremely difficult period during the 1990s which was marked by three wars that followed the dissolution of Yugoslavia, and the various sanctions which brought about deep economic recession. This is important in two ways – the obvious one is the correlation between the mortality levels and GDP/c, but another one concerns the timing of this recession. Namely, right after the crisis came was the period when other demographically similar countries could reap the rewards of the second demographic dividend, while in Serbia all the pension funds and savings were depleted during the 1990s marked by wars, economic sanctions, hyperinflation and corruption (Guardiancich 2010; Lyon 1996; Wallace and Latcheva 2006). The third special factor that is affecting Serbia is its unreformed healthcare system designed to serve much smaller population of old people. This is becoming more apparent with *boomers* reaching the critical age of sharply increasing death and hospitalisation rates. This is only exacerbated with the *healthcare brain-drain* which has

intensified to a such a degree that a recent survey found that more than two thirds of medical students want to emigrate (Marušić and Marković-Denić 2018).

Economically more developed countries went through the cardiovascular transition and are now experiencing very low mortality rates from cardiovascular diseases, especially France (Vallin and Meslé 2004). Unlike them Serbia has yet to transition fully from high cardiovascular mortality to low cardiovascular mortality, which is currently very high not only among elderly but also among middle-aged people (Marinkovic 2012). The tragedy of countries at the similar stage of cardiovascular transition as Serbia is that many *younger elderlies* die too early of avoidable cardiovascular events.

11.2.2 Gauging premature mortality in Serbia

Gauging premature mortality is not an easy task. The fuzziness and relativity of the concept makes it difficult to determine exactly what premature mortality means. There are at least two important components of premature mortality as a concept. First, the chronological age component, but also the qualitative component when it comes to classifying discrete instances of death. A measurement for premature mortality including only this one facet concerning chronological age exists in terms of years of potential life lost (YPLL) indicator. This indicator is relevant when the emphasis of chronologically young people's mortality (see: Marinković 2012). When we are taking into account chronological age only, and disregard the cause of death, we are ignoring a very pertinent facet of mortality. For example, a young person (e.g. 25-year-old) dying of stroke will be considered premature in any society. However, with the recent advances made in last decades in tackling cardiovascular diseases, a death of a 60-year-old caused by stroke can also be considered premature. Nolte, E. and McKee, M (2004) working on the shoulders of Walter W. Holland (1986) devised a list of causes of death which, with current standards of healthcare practices, methods and technologies, can be considered avoidable. They further break down this list by listing the causes of death they consider *preventable* and *amenable* in the presence of timely and effective healthcare in specific age ranges (Nolte and McKee 2004). A cause of death can be considered both preventable and amenable, so these two lists overlap. Most of causes belong to either or both categories for only certain age ranges, and almost all of them are amenable or preventable only when they occur in those younger than 75. For calculations done in this chapter the most recent classification made by UK Office of National Statistics was used (Olatunde et al. 2016). This list totals 723 individual causes of death, 338 amenable, 437 preventable, and 52 that are both preventable and amenable.

Causes of avoidable death that are the most prominent in Serbia (Fig. 11.5) belong to the cardiovascular diseases, which is not surprising considering that Serbia still has very high cardiovascular mortality, as over half of all mortality in Serbia is caused by cardiovascular disease (Galjak 2018a). Among the cardiovascular diseases the biggest contributors to avoidable mortality are acute myocardial infarction and cerebral infarction, i.e. heart attack and stroke. This is very unfortunate since as far as avoidable deaths go, curbing this kind of mortality can be considered *low-hanging fruit*. Same goes for the biggest contributor to avoidable deaths when it comes to tumours. Even though the cardiovascular causes of death are the main culprit in the avoidable mortality, the most common cause of avoidable deaths does not belong to this category. Namely, lung cancer, a preventable cause of death is the single biggest cause of death among all avoidable causes of death in Serbia. Curbing deaths caused by smoking can also be considered as *low-hanging fruit*, considering that many countries drastically reduced this kind of mortality by reducing their smoking prevalence (Islami et al. 2015). Smoking is a problem that causes many of the preventable diseases and

its higher prevalence among men is a major factor in sex differences when it comes to this kind of mortality (Marinkovic 2017).

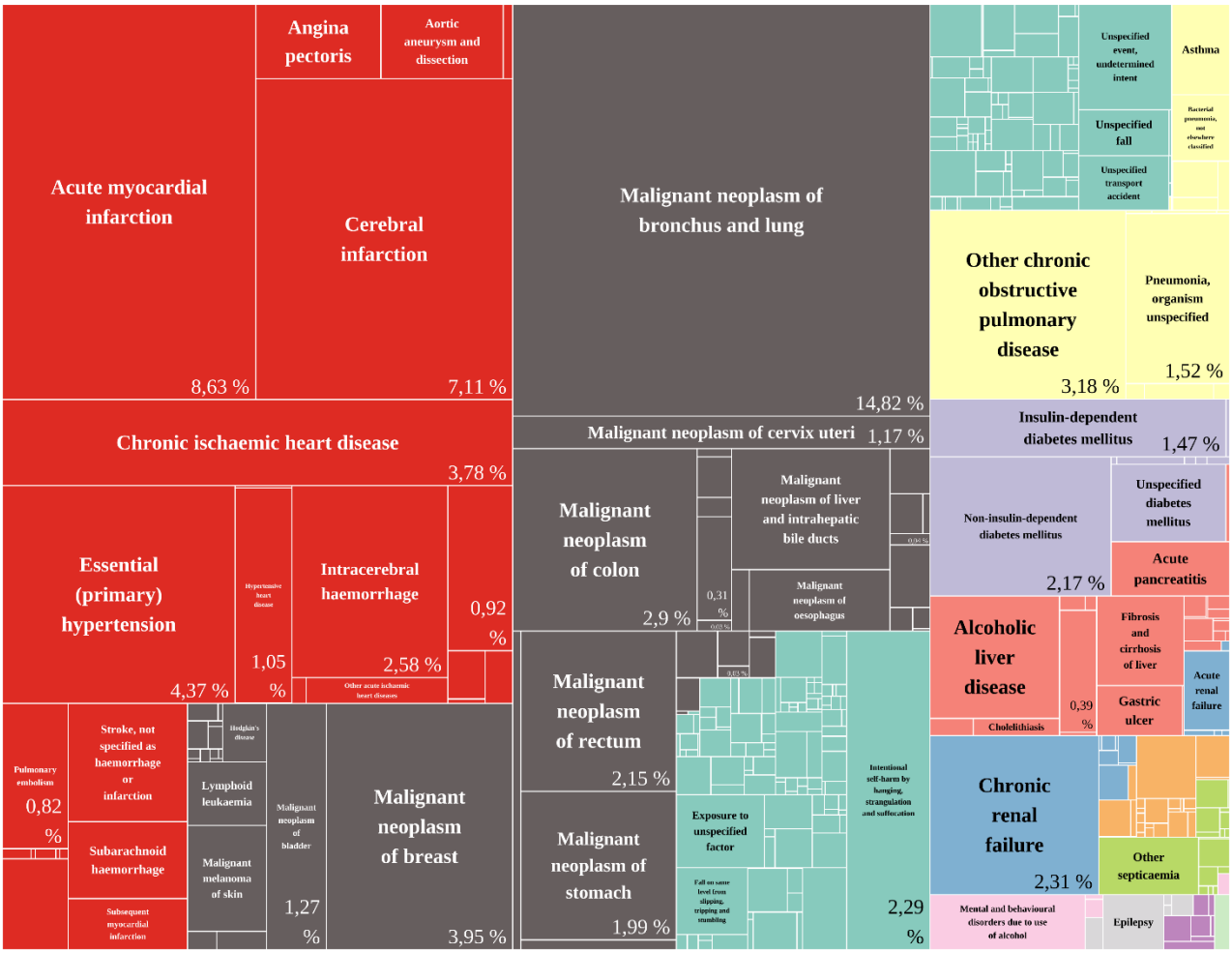

Fig. 11.5 Causes of avoidable death in Serbia 2015.
Data Source: (World Health Organization 2018)

11.2.3 Sex and age differences in avoidable mortality

Age and sex structure of a population are best comprehended by taking a view at a classic population pyramid that shows sex and age structure of the population. A mortality pyramid shows the age and sex structure of population that died in a particular year. The mortality pyramid additionally outlines the mortality that could have been avoided (Fig. 11.6). The main takeaway from this death structure is that avoidable mortality in Serbia is not equally distributed among sexes, not only when it comes to the age groups leading up to the 75 years old mark, but also at much younger ages. The mortality pyramid shows similar number of total deaths among men and women for ages younger than 75, but we must keep in mind that the older the age the more sex structure is skewed. The fact that the mortality pyramid is so heavily skewed to the right at the oldest ages is a testament to the fact of big sex differences among men and women, which are well known and seem not to be changing much in the last 50 years (Marinković 2018). The fact that men die prematurely, from avoidable causes, is evident, since about half of deaths of men younger than 75 could have been

avoided. The sex imbalance exists with the ages older than 75, but as total proportion of deaths these differences are negligible.

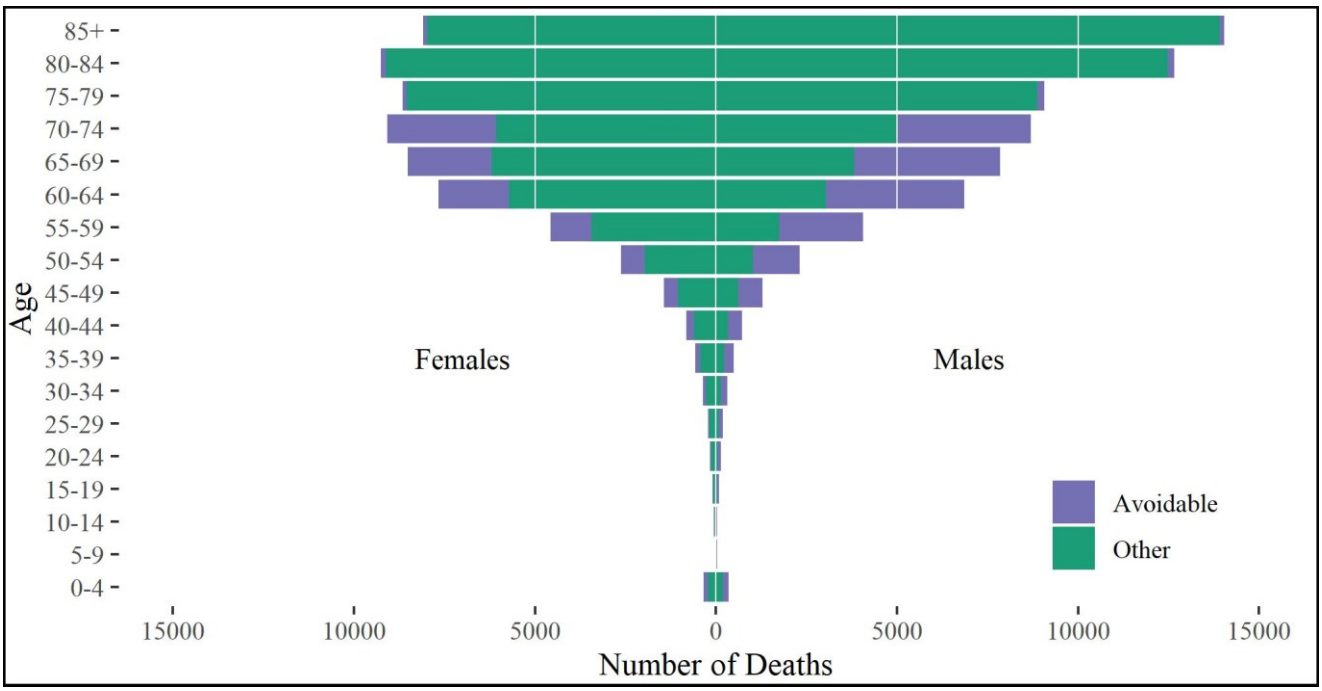

Fig. 11.6 Mortality Pyramid of Serbia 2015.
Data source: (World Health Organization 2018)

11.2.4 Geographical distribution of premature mortality

Prevalence of avoidable mortality is not uniform across Serbia (Fig. 11.7). Municipalities with high amenable mortality tend to have high preventable mortality as well (ρ=0.756). This high correlation is expected, not only since the two indicators partially overlap when it comes to causes, but also because it comes down to chronological age. In other words, older populations exhibit higher rates of both amenable and preventable mortality. Municipalities of Serbia that are marked by high amenable and preventable mortality are also marked by an aging population, with municipalities of Eastern Serbia being the most prominent example (Magdalenic and Galjak 2016). Those parts of Serbia are more rural, and it does not come as a surprise that amenable mortality is much higher in rural parts of Serbia than in the big urban centres, since much of the amenability of amenable mortality rests on *timely* effective healthcare, which is almost impossible to get in remote parts of the country with bad infrastructure.

Overall variability of amenable mortality, with 0.31 coefficient of variation (CV), is significantly higher than variability of preventable mortality in Serbia which has CV of 0.24. Preventable, as less variable kind of avoidable mortality is more deeply woven into the mortality pattern that is affected by so much more than just healthcare system, things like diet and behaviour. This also means that it is more difficult to affect its change by economic development or by targeted special programmes.

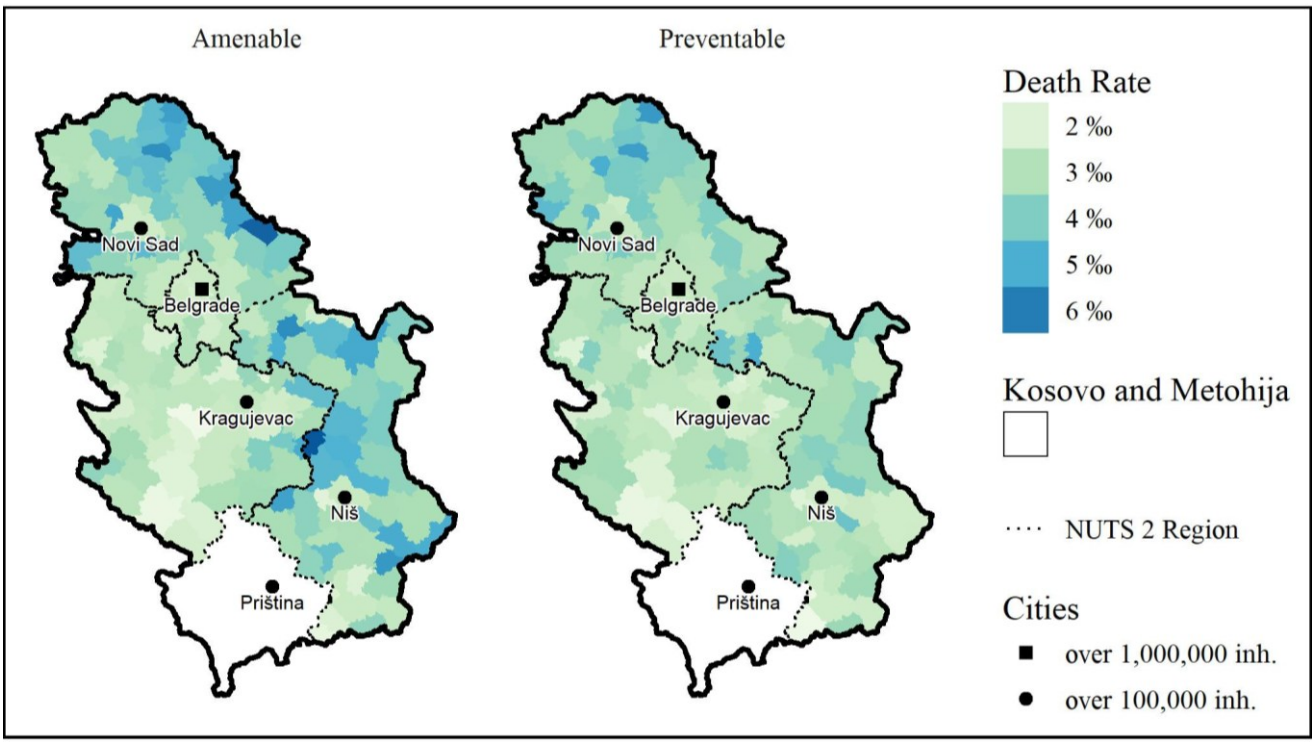

Fig. 11.7 Geographical distribution of preventable and amenable mortality in Serbia 2017
Data source: (Statistical Office of the Republic of Serbia 2018a)

11.2.5 Trends in avoidable mortality

Avoidable mortality rates are currently very high, compared to economically more developed countries (Galjak 2014). However, avoidable mortality has been falling in Serbia in the last decade (Fig. 11.8). Amenable more so than preventable. Reason for this is that there were a lot of gains to be made when it comes to *low hanging fruit* with basic upgrades of the healthcare system which has been financially deprived and neglected for decades and especially during the turbulent 1990's. Gains in the preventable mortality department are more difficult to reap, since the effects of current efforts take more time to realize due to the nature of *prevention*. Consider anti-smoking campaigns, where full benefits of lowering prevalence of smoking would be seen throughout the longer period in the future, but less so immediately. That's why amenable mortality reached the levels of preventable mortality in 2011.

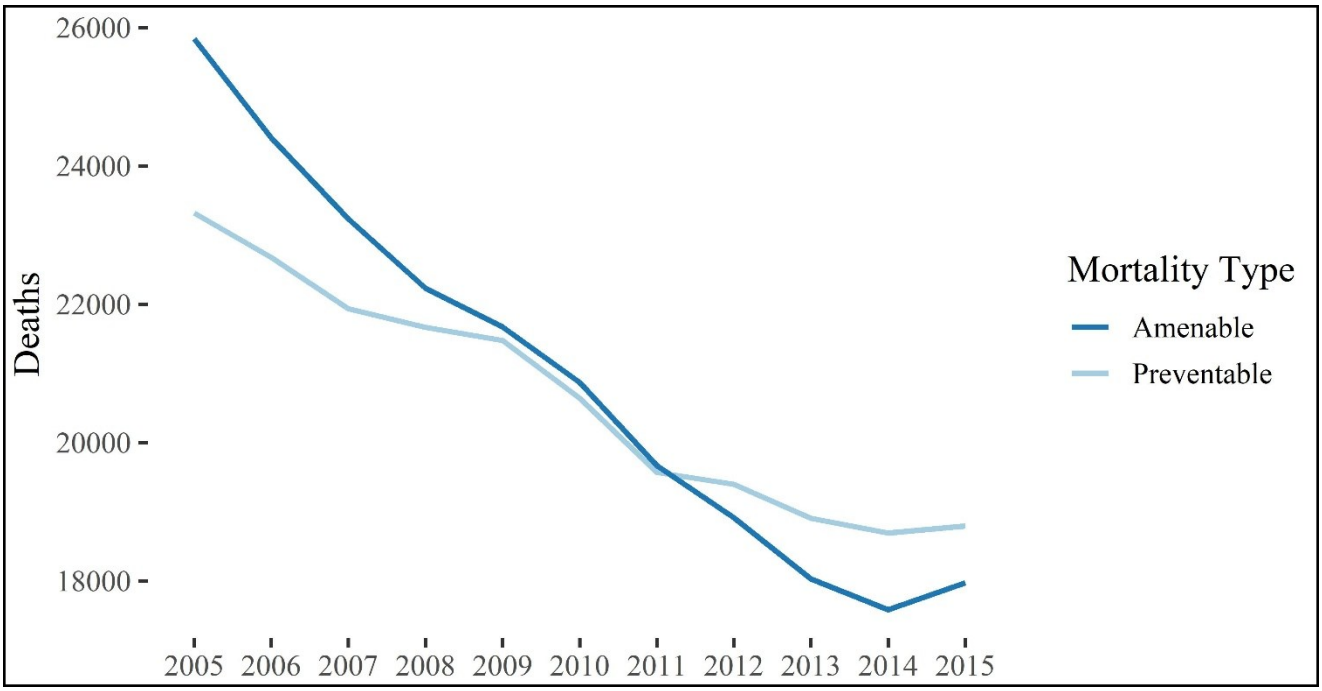

Fig. 11.8 Trend of preventable and amenable mortality in Serbia between 2005 and 2015
Data source: (World Health Organization 2018)

The countries in Europe that have much lower avoidable mortality rates, like France and Finland, show the pattern of significantly higher preventable than amenable mortality rates (Galjak 2018b). The trend for most recent years shows sign of reaching a plateau for both amenable and preventable mortality, but 2014 and 2015 were atypical years regarding mortality because of an especially deadly flu season which managed to lower over overall life expectancy in Serbia and many other countries of Europe (. Ho and Hendi 2018)

Future gains in tackling premature mortality will be realized with further economic development. However, recent economic stagnation means that catching up and converging with the most developed European countries will be difficult. Improving the quality of the healthcare system and changing unhealthy habits in the general populous does follow economic growth, but much can be achieved with clever policy and special programmes, especially in tackling the long-term problem of preventable death.

Together with other demographic challenges, principally the childbearing crisis and negative net migration, premature mortality puts Serbia in a demographically problematic spot. This *demographic dark triad* is by no means isolated from the other socioeconomic problems Serbia is currently facing. With all demographic phenomena there are multitudes of feedback loops. Early mortality has been recognized as feedback loop with poverty in the context of infectious diseases in the developing countries (Lim et al. 2012).

However, the effects of premature mortality in the more developed economies must be considered. Premature deaths of middle-aged people, but also younger, reproductively capable people, affects both the economy and childbearing. Furthermore, high premature mortality means that many potential mothers cannot count on support of the child's grandparents which is important in countries with high proportion of multigenerational households like Serbia (Glaser et al. 2018). Therefore, it is important to consider mortality as an element in the overall socioeconomic and demographic dynamics, and not just as some isolated end of the line phenomena. With shifting paradigm of ageing, and people staying productive well into their advanced age, the prominence of premature mortality

challenge will only continue to grow. In ageing countries like Serbia, which have much catching-up to do with curbing premature mortality, overcoming this demographic challenge will become even more urgent in the years to come.

References

Baćević Lj et al (2011) Democracy in unstable social spaces: Serbia-report on the survey conducted in November 2010 in Serbia. Institute for the Danube Region and Central Europe, University of Vienna, Institute of Social Sciences, Belgrade

Billingsley S (2010) The Post-Communist Fertility Puzzle. Popul Res Policy Rev 29:193–231. doi: 10.1007/s11113-009-9136-7

Basten S, Frejka T (2015) Fertility and family policies in Central and Eastern Europe. Barnett Papers in Social Research 1:1−74

Bjelobrk G (2018) Istraživanje o migracijama studenata. Demografski pregled 69:1-8.

Galjak M (2018a) Fight against the early mortality in Serbia: Finland as an example of good practice. Zb Matice Srp Za Drustvene Nauke 585–595. doi: 10.2298/ZMSDN1867585G

Galjak M (2014) Predupredіv mortalitet u Srbiji i Evropskoj uniji - komparativna analiza. Demogr - Međunar Časopis Za Demogr Ostala Druš Istraživanja 11:135–146

Galjak M (2018b) East-west demographic divide in the EU: A regional overview. Stanovnistvo 56:1–21. doi: 10.2298/STNV181003004G

Gavrilović A (2005) Evolucija populacione politike u sistemu društvene brige o deci. In: Macura M, Gavrilović A (eds) Evolucija populacione politike u Srbiji 1945−2004. Srpska akademija nauka i umetnosti, Beograd, 105−195

Glaser K, Stuchbury R, Price D, et al (2018) Trends in the prevalence of grandparents living with grandchild(ren) in selected European countries and the United States. Eur J Ageing 15:237–250. doi: 10.1007/s10433-018-0474-3

Guardiancich I (2010) Pensions and social inclusion in three ex-Yugoslav countries: Slovenia, Croatia and Serbia. Acta Oeconomica 60:161–195. doi: 10.1556/Aoecon.60.2010.2.3

Holland WW (1986) The 'avoidable death' guide to Europe. Health Policy 6:115–117. doi: 10.1016/0168-8510(86)90001-1

Ho JY, Hendi AS (2018) Recent trends in life expectancy across high income countries: retrospective observational study. BMJ k2562. https://doi.org/10.1136/bmj.k2562

Islami F, Torre LA, Jemal A (2015) Global trends of lung cancer mortality and smoking prevalence. Transl Lung Cancer Res 4:327–338. doi: 10.3978/j.issn.2218-6751.2015.08.04

Kabinet ministra bez portfelja zaduženog za demografiju i populacionu politiku (2018) Mere populacione politike. http://www.mdpp.gov.rs/latinica/populaciona-politika-mere.php

Lesthaeghe R (2001) Postponement and recuperation: Recent fertility trends and forecasts in six Western European countries. Paper presented at IUSSP seminar International perspectives on low fertility: Trends, theories and policies, Tokyo, 21–23 March

Lim SS, Vos T, Flaxman AD, et al (2012) A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. The Lancet 380:2224–2260. doi: 10.1016/S0140-6736(12)61766-8

Lyon J (1996) Yugoslavia's Hyperinflation, 1993-1994: a Social History. East Eur Polit Soc Cult 10:293–327. doi: 10.1177/0888325496010002005

Magdalenic I, Galjak M (2016) Ageing map of the Balkan Peninsula. J Geogr Inst Jovan Cvijic SASA 66:75–89. doi: 10.2298/IJGI1601075M

Marinkovic I (2012) Causes of death in Serbia since the mid-20th century. Stanovništvo 50:89–106. doi: 10.2298/STNV1201089M

Marinkovic I (2017) Smoking as the main factor of preventable mortality in Serbia. Stanovništvo 55:87–106. doi: 10.2298/STNV170610001M

Marinković I (2018) Demographic analysis of the sex mortality differences. Demografija 15:1–17. doi: 10.5937/demografja1815001M

Markinković I (2012) Prerana smrtnost: Potencijalno izgubljene godine života stanovništva Srbije, 1950-2010. In: Pomeraćemo Granice. Institut društvenih nauka

Marušić V, Marković-Denić L (2018) Attitudes of the final year medical students towards emigration. Med Cas 52:91–97. doi: 10.5937/mckg52-18237

Matković et al (2018) Politike usmerene na smanjenje ekonomske cene roditeljstva u Srbiji. In: Kostić VS, Đukić Dejanović S, Rašević M (eds) Ka boljoj demografskoj budućnosti Srbije. Srpska akademija nauka i umetnosti, Institut društvenih nauka, Beograd, 67–93.

Mesle F, Vallin J (2002) Mortalite en Europe: la divergence Est-Ouest. Popul Fr Ed 57:171. doi: 10.2307/1534789

Minagawa Y (2013) Inequalities in Healthy Life Expectancy in Eastern Europe. Popul Dev Rev 39:649–671. doi: 10.1111/j.1728-4457.2013.00632.x

Nolte E, McKee M (2004) Does health care save lives?: avoidable mortality revisited. Nuffield Trust, London

Olatunde O, Windsor-Shellard B, Campbell A (2016) Review of Avoidable Mortality Definition

Preston SH (1975) The Changing Relation between Mortality and Level of Economic Development. Popul Stud 29:231. doi: 10.2307/2173509

Rašević M (1999) Populaciona politika: stanje i očekivanja. In: Rašević M (ed) Razvitak stanovništva Srbije 1991–1997 (Population development of Serbia 1991–1997). Institut društvenih nauka, Beograd, 191–213

Rašević M (2004) Fertility trends in Serbia during the 1990s. Stanovništvo 42(1–4):7−29. doi:10.2298/STNV0404007R

Rašević M (2006a) Odlaganje rađanja u optimalnoj dobi života – osnovna demografska cena 1990-ih u Srbiji. Zbornik Matice srpske za društvene nauke 121:141−149

Rašević M (2006b) Fertilitet ženskog stanovništva In: Penev G (ed) Stanovništvo i domaćinstva Srbije prema popisu 2002. godine. Republički zavod za statistiku, Institut društvenih nauka, Društvo demografa Srbije, Beograd, 53-70

Rašević, M (2015) Fertilitet ženskog stanovništva. In: Nikitović V (ed) Populacija Srbije početkom 21. veka. Republički zavod za statistiku, Beograd, 74−95

Rašević M (2018) Kriza rađanja u Srbiji: noviji uvidi. In: Kostić VS, Đukić Dejanović S, Rašević M (eds) Ka boljoj demografskoj budućnosti Srbije. Srpska akademija nauka i umetnosti, Institut društvenih nauka, Beograd, 24-51

Rašević M, Penev G (1995) Fertilitet ženskog stanovništva. In: Stanovništvo i domaćinstva Republike Srbije prema popisu 1991. Republički zavod za statistiku, Institut društvenih nauka, Beograd, 71−125

Rašević M, Petrović, M (1995) Rađanje i obnavljanje stanovništva. In: Rašević, M (ed) Razvitak stanovništva Srbije 1950–1991. Institut društvenih nauka, Beograd, 45–68

Rašević M, Sedlecki K (2016) O fenomenu odlaganja rađanja dece u Srbiji. In: Radunović N (ed) Rađanje ili odumiranje Srbije. SANU, Beograd, 146–155

Rašević M, Sedlecky K (2009) The abortion issue in Serbia. The European Journal of Contraception and Reproductive Health Care 14(6):385–390. doi:10.3109/13625180903215422

Rašević M, Sedlecky K (2013) Seksualno i reproduktivno zdravlje korisnica interneta u Srbiji. Srpski arhiv za celokupno lekarstvo 141(9−10):654–659. doi:10.2298/SARH1310653R

Schmidt L et al (2012) Demographic and medical consequences of the postponement of parenthood. Human Reproduction 18(1):29–43. doi: 10.1093/humupd/dmr040

Sedlecky K et al (2001) Činioci rizika za nastanak hlamidijske infekcije genitalnih organa u seksualno aktivnih adolescentkinja. Srpski arhiv za celokupno lekarstvo 129 (7–8):169–174

Sedlecky K, Rašević M, Topić, V (2011) Family planning in Serbia – The perspective of female students from the University of Belgrade. European Journal of Contraception and Reproductive Health Care 16:469–479. doi:10.3109/13625187.2011.614027

Sedlecky K, Rašević M (2015) The abortion culture issue in Serbia. Paper presented at ESC seminar Removing medical, social, cultural and religious barriers to effective and safe contraception, Tel Aviv, 2–4 September

Sobotka T (2003) Le retour de la diversité: La brusque évolution de la fécondité en Europe centrale et orientale après la chute des régimes communistes. Popul Fr Ed 58:511. doi: 10.2307/3271307

Sobotka T (2004) Postponement of childbearing and low fertility in Europe. Dutch University Press, Amsterdam

Statistical Office of the Republic of Serbia (2018) Demographic Yearbook 2017. Statistical Office of the Republic of Serbia, Belgrade

Statistical Office of the Republic of Serbia (2018a) Unpublished vital statistics and total population estimates data.

Statistical Office of the Republic of Serbia, UNICEF (2014) Serbia multiple indicator cluster survey and Serbia Roma settlements multiple indicator cluster survey final reports. Statistical Office of the Republic of Serbia and UNICEF, Belgrade.

Vallin J, Meslé F (2004) Convergences and divergences in mortality: A new approach of health transition. Demogr Res Special 2:11–44. doi: 10.4054/DemRes.2004.S2.2

Veljović R (2015) Društveni okvir odlaganja rađanja u Srbiji (Social framework of childbearing postponement in Serbia). Zadužbina Andrejević, Beograd

Vlada Republike Srbije (2008) Pronatalitetna strategija (Pronatalist strategy). Vlada Republike Srbije, Beograd

Wallace C, Latcheva R (2006) Economic Transformation Outside the Law: Corruption, Trust in Public Institutions and the Informal Economy in Transition Countries of Central and Eastern Europe. Eur-Asia Stud 58:81–102. doi: 10.1080/09668130500401707

WHO (2018) Download the raw data files of the WHO Mortality Database. In: World Health Organ. http://www.who.int/healthinfo/statistics/mortality_rawdata/en/. Accessed 27 December 2018