

CHANGES IN THE NATURE OF POPULATION REPRODUCTION AND THE COMPOSITION OF BELARUSIAN FAMILY IN THE 20TH–21ST CENTURIES

DOI: <http://doi.org/10.26758/10.1.16>

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Abstract

Objectives. The aim of this study was to determine the variability of socio-demographic aspects of the family in Belarus during the 20th and at the beginning of the 21st centuries, based on the analysis of the survey results.

Material and methods. In the early 1980s and in 2017, by questioning young women, information was obtained about them, their spouses, children and two generations of ancestors (in all 6406 individuals born from 1885 to 2017). Five generations were divided: of the early 20th century, of the 1930s, the 1950s, of the 1980s and of the early 21st century.

Results. For the considered period the generation time reduced from 28 to 24 years. During 20th century the mean number of children in families decreased by more than 2.5 times, the mean age of women at birth of first child increased, the age of birth of last child decreased, the proportion of women whose first birth was under the age of 20 has decreased. In difficult socio-economic conditions, in conditions of war (the generation of the 1930s), the childbearing is delayed. During the 20th century the influence of urbanization on the formation of the structure of generations increases and the influence of immigration decreases.

Conclusions. The composition of the family in Belarus from the beginning of the 20th to the beginning of the 21st century changes in an unfavorable direction and the natural decrease is not compensated by migration processes.

Keywords: demography, birthrate, migration, urbanization, Belarusian family.

Introduction

Demographic and social processes in populations directly relate to many aspects of human biological variability. Place of birth, nationality, confessional affiliation, place of residence, marital status, education and social status, indicators of socio-professional and qualification character, family structure, number of children, brothers and sisters and others may affect the indicators of physical development, health status of individuals and population as a whole. The intensity of migration, the vital rate (natality and mortality) are associated with the

intergenerational transfer of biological and cultural information. They determine the total population and the proportion of people of reproductive age, the ratio of the indigenous and alien populations. Long-lasting unfavorable socio-economic conditions impede the formation and the growth of the size of families, becoming factors that reduce the reproductive volume of the population (Spicina, 2006; Dubkova, 2008). Social changes contribute to the age structure of childbearing (Sifman, 1974). The study of socio-demographic processes is becoming the basis for determining the socio-economic policy of the state in the short and long term (Shakhotko, 2010; Kasperovich, 2018). To assess the composition of the family and the population reproduction, such demographic indicators are used as the age at first marriage, the age of women at birth of first child, the childbearing age, the parity etc. (Tegako et al., 2006; Marfina, 2015).

According to official statistics in 2018, the number of inhabitants in the Republic of Belarus was 9491.8 thousand people (National Statistical Committee of the Republic of Belarus, 2018), since 1994 it has decreased by 874.0 thousand people. Since 1995, in the country, a natural decrease was fixed. In developed countries migration makes an important contribution to maintaining the total population (United Nations, Department of Economic and Social Affairs, Population Division, 2017). Migration gain in Belarus in 2018 was only 9.4 thousand people. The result was the increase in demographic burden: the reduction in the proportion of the working age population. Rate of natural decrease (the ratio of the number of deaths to the number of births) was 1.2 in 2017. At the same time, the urbanization continues in the republic, the population moves from villages to cities: from 1897 to 2018 the proportion of the urban population increased from 13.5% to 78.1%, and the rural population decreased from 86.5% to 21.9%. This process was most active from the 1950s to the 1980s (Demographic yearbook of the Republic of Belarus, 2015; Demographic yearbook of the Republic of Belarus, 2016).

The purpose of the work is to analyze the evolution of the socio-demographic aspects of the family in Belarus throughout the 20th and the early 21st centuries, based on an analysis of the results of the questioning.

Material and methods

The materials were the results of a questioning of young women. In the early 1980s through an individual questioning of Marfina collected detailed information about families uniting 3377 people and in 2017, Skryhan received information about families uniting 3029 people. The survey covered the whole territory of Belarus. According to the approach adopted in demography, the material is grouped by conditional (hypothetical) generations of people of different ages living at the same time (Nikitenko, 1975; Sifman, 1974, p. 9). The term "generation" was used as a genetic concept: generation is all the direct progeny of individuals of the previous generation (Timofeev-Resovsky, Yablokov and Glotov, 1973, p. 139). The traditional frequency of fixation of population changes is 25-year intervals correlated with the division into generations.

The questionnaire developed will allow collecting information about the relatives (ancestors) and children of the women being interviewed and their spouses (Marfina, 1981). Based on the information provided in the questionnaires, the chronologic age was calculated, data on sex, nationality, level of education, age at marriage, age of women at birth of first and subsequent children were highlighted. In total, as a result of the survey, information was obtained on residents born from 1885 to 2017. The children of the women surveyed formed one

generation. The women themselves, their husbands, brothers and sisters made up the next generation. A separate generation was made up of the mothers and fathers of the women and their spouses surveyed, another one – grandmothers and grandfathers, and the eldest – great-grandmothers and great-grandfathers. In all 5 generations were singled out.

With regard to the complex nature of the research, the methods of biological and social scientific disciplines were used in the work: genealogical and demographic information was obtained (Marfina, 2017; Skrigan, 2018). Some of the information from the questionnaires could not be used in the study due to the incompleteness of the data. This fact affected the different populations of the groups at different stages of the analysis.

Results

The numerical content of the generations and the mean year of birth for each generation is showed in the Table 1: V generation – generation of the beginning of the 20th century, IV – of the 1930s, III – of the 1950s, II – of the 1980s and I – of the beginning of the 21st century.

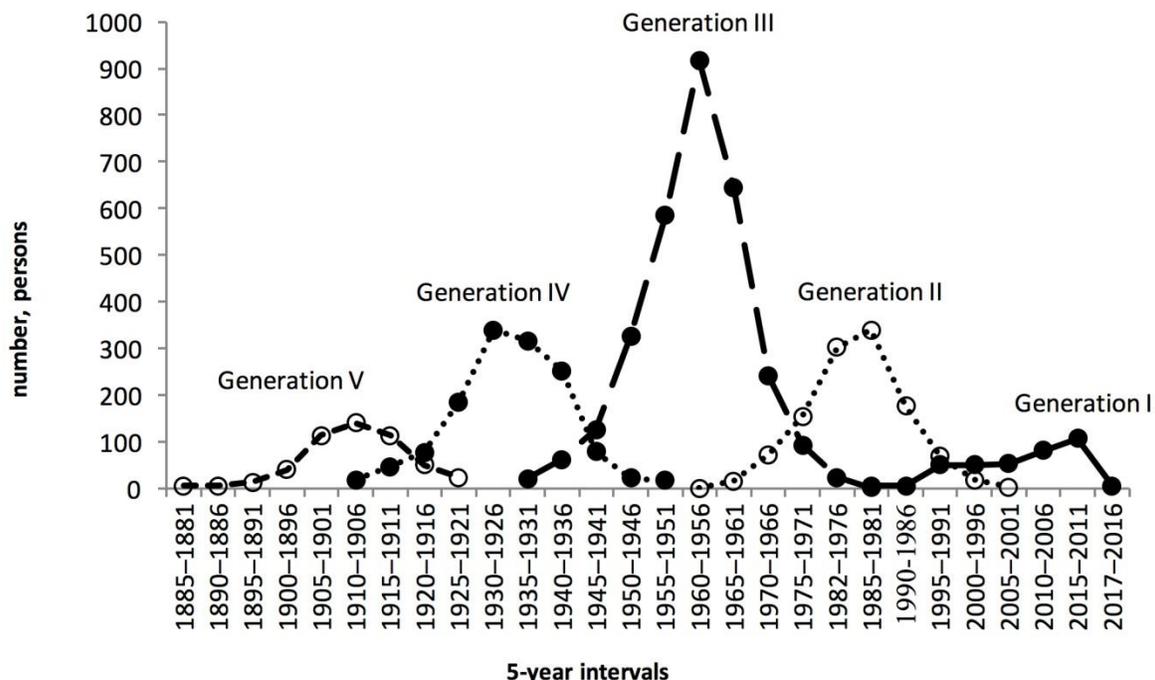
Table 1. The number of people per generation V–I

Generation	The number of individuals, genealogically related to this generation, men	Year of birth (mean value)
V	502	1904
IV	1358	1932
III	3044	1957
II	1151	1981
I	355	2005

Intergenerational intervals by mean year of birth were: between V and IV – 28 years, IV and III – 25 years, III and II, II and I – 24 years. As already noted, the measure of the length of a generation in demographic studies is conventionally taken 25 years. Usually, the smaller this interval, the shorter the cycle of generations' renewals, the more rapidly the population grows.

Within each generation, individuals were distributed over 5-year intervals depending on the year of their birth. This made it possible to assess the filling of each generation by individuals of a certain age (figure 1). The tops of the distributions and intersections of generations were identified quite clearly.

Figure 1. Quantitative distribution of individuals within generations V-I (over five-year intervals)



The determination of the generational renewal interval was performed by calculating the mean age of women at birth of first child. During the 20th century, from the oldest generation V (on average, born in 1904) to generation II (born on average in 1981), there was a slight increase in the mean age of women at birth of first child (figure 2). Amongst men, the opposite tendency is observed – a decrease of the age at which their first child appears. A decrease in the age of birth of last child is identified, both in women and men. The interval between the births of the first and last child were: for women in generation V – 12.5 years, in generation IV – 7.5 years, in generation III – 5.6, in generation II – 5.7 years; for men – 12.5, 7.3, 6.1 and 6.2 years, respectively.

Figure 2. The average age of women and men of the generations V-II at the birth of the first and last children

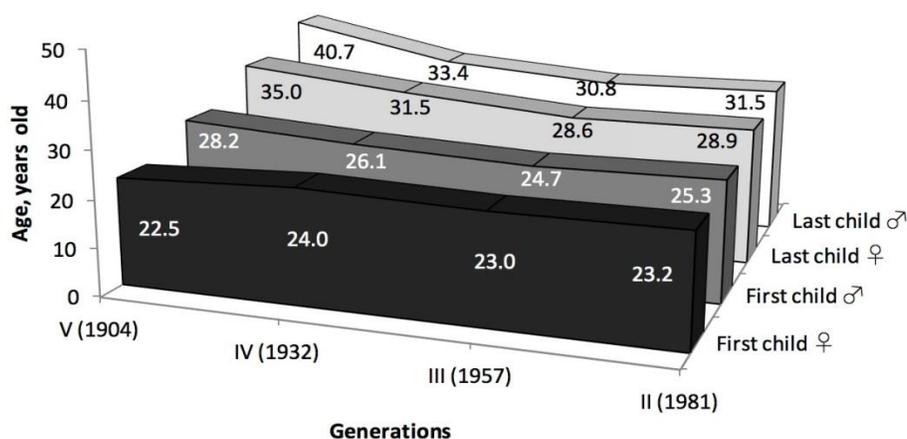
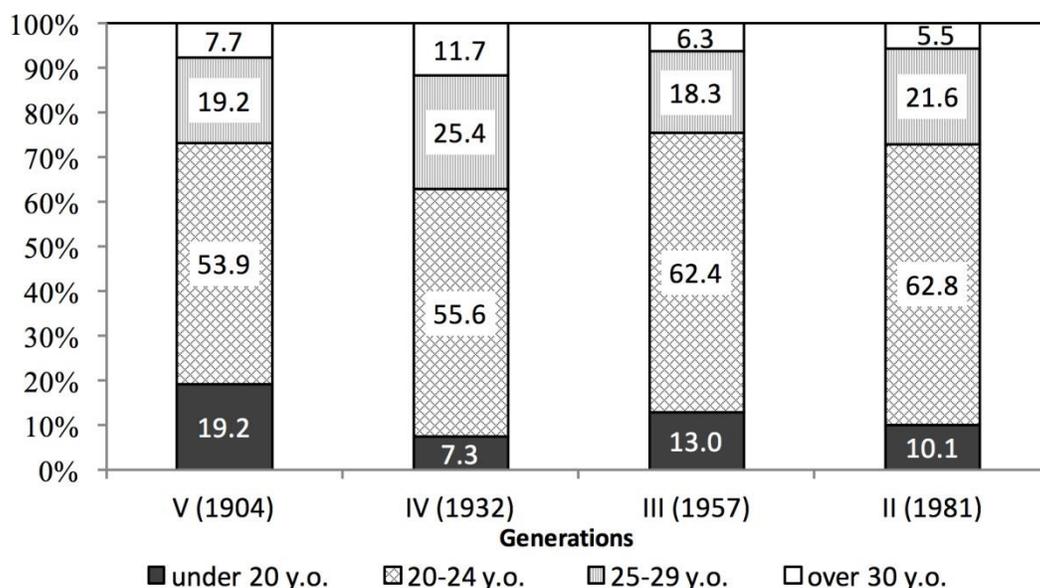


Figure 3 presents the results of the distribution by age intervals (up to 20 years, 20-24 years, 25-29 years and over 30 years) of women of the V-II generations depending on the age of the first childbirth.

Figure 3. The distribution of women of the V – II generations depending on the age of the first childbirth by intervals (up to 20 years, 20-24 years, 25-29 years, over 30 years)

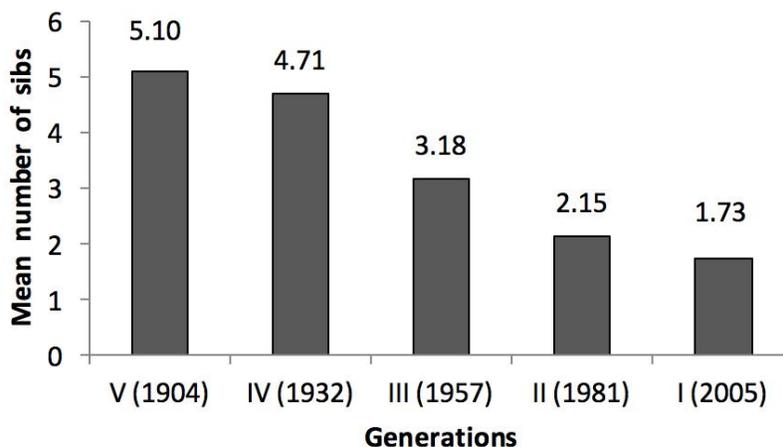


The highest frequency of firstborn births by women in the age up to 20 years is in the oldest generation V, in the age range 20-24 years – in generation II (on average born in 1981),

and in age intervals 25-29 years and over 30 years old – in generation IV (average birth year 1932). In general, over the course of the 20th century, the firstborn birth frequency by women up to the age of 20, as well as women aged 30 years and older, decreases, while in cases of women aged 20-24 years and 25-29 years gradually increases. In generation IV (on average born in 1932) the proportion of women whose first birth was under the age of 20 was reduced, and the proportion of those who gave birth in age of 25 and older was increased. The average interval between the birth dates of children (if a woman has more than one child) at the beginning of the 20th century was 4 years, in generation IV – 4.6 years, in generation III – 4.7 years, at the end of the 20th century – 5.2 years.

The average birthrate (the average number of children born by one woman) decreased by more than 2.5 times from the beginning of the 20th century to the beginning of the 21st century. Figure 4 shows the number of siblings in each generation. From generation IV to III, the indicator decreased by 1.6 times, from III to II – 1.25 times. It should be noted that at the time of the research among the representatives of generation II some women were in reproductive age and probably did not complete the realization of reproductive potential, thus an increase in the average number of siblings in generation feasible. The mean chronologic age of women in group II was 35 years and 10 months, while the proportion of women under 30 years old is 26.6%, up to 40 years old is 40.4% and up to 50 years old is 33.0%.

Figure 4. The average number of siblings in a family, generation V-I



The change in the structure of Belarusian family relative to the number of children is presented in Table 2. The proportion of large families (having 3 or more children) from the beginning of the 20th century to the beginning of the 21st century has decreased more than 4 times. From IV to III generation, the indicator decreased by 2.3 times, from III to II – 1.9 times. In the younger generations (both in II and III), families with more than 6 children were not observed, while in generation IV their proportion was 8.5% and in generation V – 24.2%.

Table 2. The occurrence frequency of families with different number of children, %

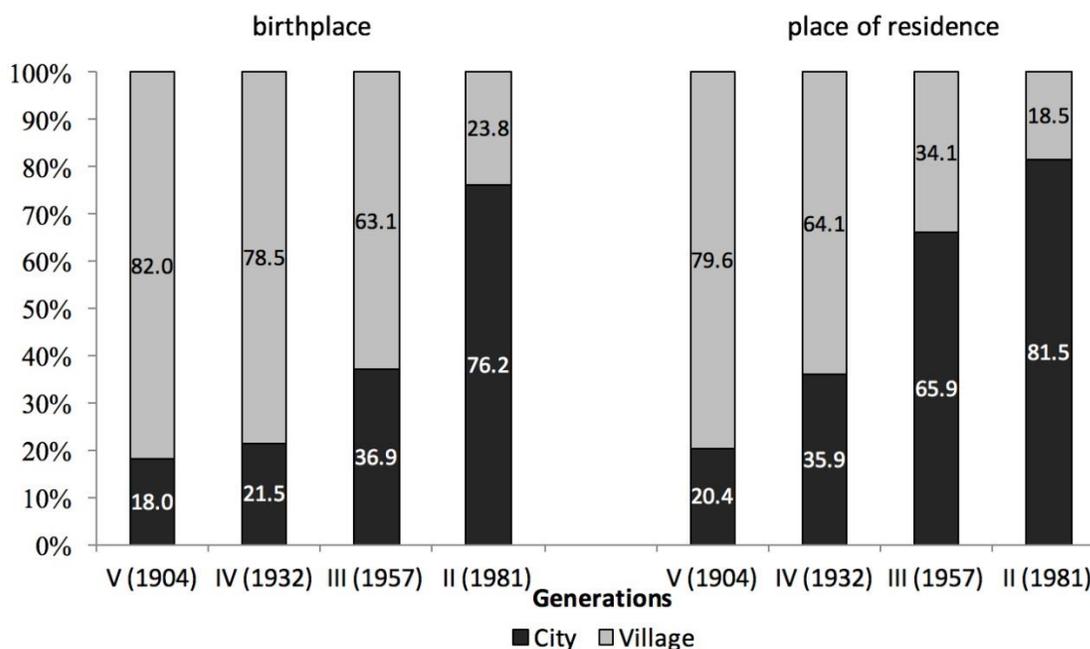
Generation	1 child	2 children	3 children	4 children	5 children	6 or more children
V (1904)	9.1	9.1	18.2	15.2	15.2	33.3
IV (1932)	6.3	30.3	26.1	14.8	9.0	13.8

Generation	1 child	2 children	3 children	4 children	5 children	6 or more children
III (1957)	15.1	57.5	20.7	4.1	2.4	0.5
II (1981)	43.2	42.2	10.7	2.4	1.0	0.5

When studying of the change the composition of the family under the influence of migration processes, geographical (Belarus, other countries) and socio-economic factors (city, village) were taken into account.

Figure 5 shows the change in the proportion of the urban population for generations V-II. The place of birth and residence of individuals was considered. Distinctions in distributions reflect the intensity of the urbanization in the 20th century. The migration of individuals from villages to cities was largely determined by marital affiliations. The greatest increase in the urban population due to the relocation of a person from rural areas was noted for generation III – by 29%.

Figure 5. The distribution of representatives of generations V-II depending on the place of birth and residence (city / village), %



The contribution of internal migration and immigration to the change in the family structure is reflected in figure 6. Four groups of individuals are distinguished: 1 – natives of the cities of Belarus; 2 – natives of the villages of Belarus; 3 – migrants from cities and urban villages of other countries; 4 – migrants from villages of other countries.

Figure 6. Distribution of representatives of generations V-I by place of birth, %

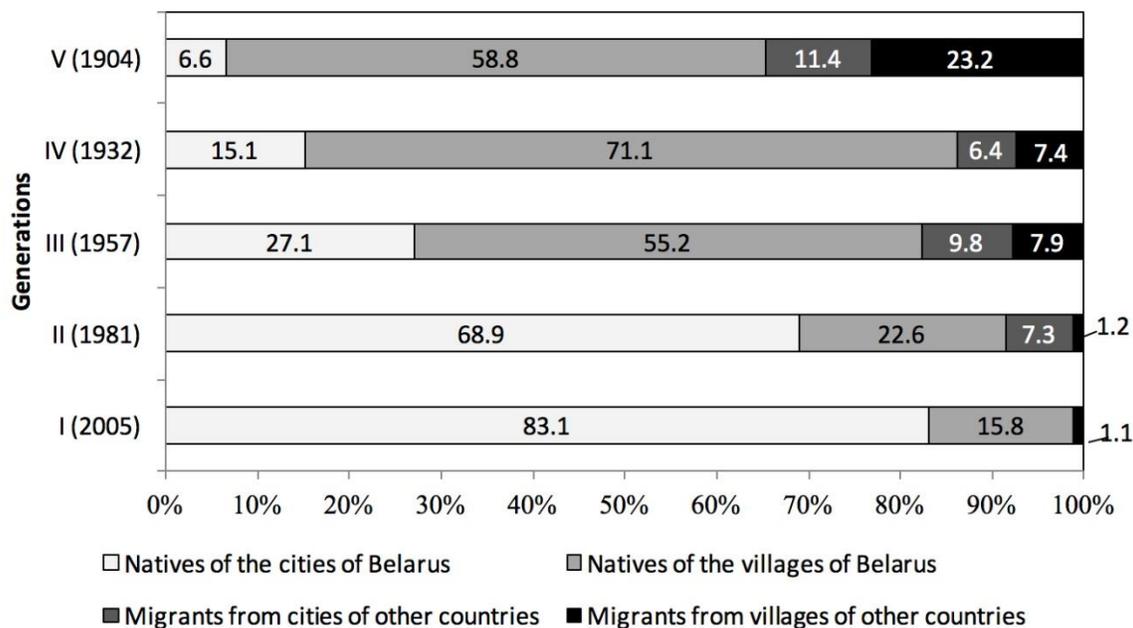


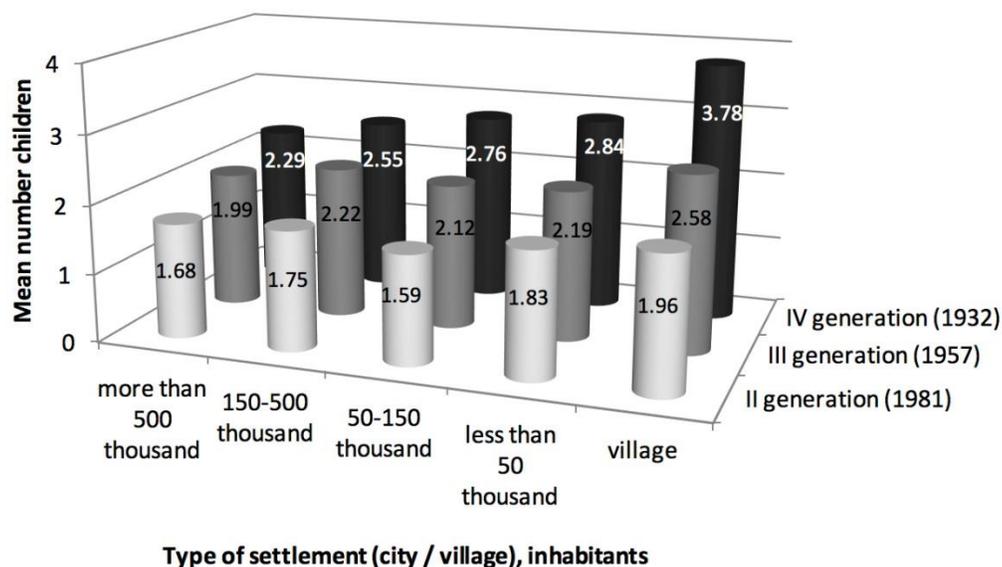
Table 3 presents the main statistical parameters of fertility in cities and rural areas of Belarus in the generations of the 20th century. The sample of generation V was not numerous (in particular, the city) but the indicators for it were also calculated to get an idea of the general trend.

Table 3. Statistical parameters of fertility in the V-II generations (city / rural settlement)

Generation	Number of women in the sample with children (N)		Mean	SD	Max	Skew	Mode (M ₀)	p10	p25	50p	p75	p90
	city	village										
V (1904)	city	7	2.86	1.68	5	0.31	-	1	1	3	5	5
	village	26	5.35	2.80	13	0.98	4	2	3	5	7	9
IV (1932)	city	120	2.56	1.11	7	1.47	2	2	2	2	3	4
	village	199	3.78	1.99	15	2.02	3	2	3	3	4	6
III (1957)	city	275	2.08	0.76	5	0.96	2	1	2	2	2	3
	village	137	2.58	1.17	10	2.64	2	2	2	2	3	4
II (1981)	city	172	1.67	0.77	5	1.15	1	1	1	2	2	3
	village	26	1.96	0.96	5	1.56	2	1	1	2	2	3

Additionally, the average number of children in families living in cities with different populations is determined (figure 7).

Figure 7. Average number of children in a family (populated areas with different number of inhabitants)



There is a clear tendency of the increase of the average number of children in the family while reducing the size of the settlement (in terms of the number of inhabitants). To a greater extent this is manifested in generation IV.

Discussions

In the second part of the 20th century the regulating influence of social factors on the duration of the period of the birth of children in families was increasing in Belarus. The influence of biological factors was abating. From the end of the 20th to the beginning of the 21st century this period decreased almost 3 times. The data obtained are consistent with the materials of the First General Census of the Population of 1897, according to which the average size of an urban family in Belarus was 5.5 people. Each second family included 5 people or more. Moreover, a significant group consisted of families of 6 people or more. For example, in the cities of the Minsk province such families were 37.0% (Statistical Committee of the Ministry of the Interior, 1904, p. 15). Thus, the demographic situation in the republic during the 20th century was manifested by a sharp decline in the rate of population growth. By the early 1990s the negative rate of natural decrease was marked. The priorities in the family changed, and the prestige of social status in society gained special significance. Small families began to dominate not only in the city, but also in the village.

Generation IV, which included individuals born in the period from the beginning of the 20th century to the 1950s, is characterized by a decrease in the frequency of first childbirth under the age of 20 years and an increase in the proportion of women whose first birth was after 25 years. This fact is related to some socio-economic reasons. Researchers note that during this time, both creative and destructive factors acted in the republic with respect to the population

(Manak, 1992).

The first and second world wars, revolutions, civil war and the waves of migrations, forced relocations and epidemics associated with them had a devastating effect on the population, sex ratio and, as a result, on the formation of families and birth of children. Peacetime between wars is considered as a phase of compensation.

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The stratifying factor in relation to the number of children born is the place of residence of the parents. Lower birthrate in cities than in villages can be a consequence of the changing social role of women which revealed more in cities. The maximum convergence of birth rates in cities and villages in the youngest generation probably reflects the smoothing out of differences in living conditions and medical care in Belarus by the end of the 20th century. Adverse shifts in birthrate over the course of the 20th century are recorded along with active urbanization which is provided mainly by internal migration.

Conclusions

From the beginning of the 20th century to the beginning of the 21st century, the pace and nature of the population reproduction in Belarus changes significantly: the average number of children in a family steadily decreases (over the century, it has decreased by almost 3 times); the age of birth of the firstborn shifts to later ages, and the age of the birth of the last child is becoming lower and lower, as a result, by the middle of the 20th century, the period of birth of children within the reproductive age reduced by 2 times, the mean age of women at birth of first child increases; closer to the present, women give birth to firstborn children in the most favorable age period – from 20 to 30 years. The birthrate in all generations in cities is lower than in villages, but the differences by the end of the 20th century reduced. For the considered period the generation time reduced from 28 to 24 years.

During the 20th century, the influence of urbanization on the formation of the structure of generations increased and the influence of immigration decreased.

Acknowledgements

A summary of this paper was presented at International Conference: Individual, family, society - contemporary challenges, 3rd edition, 9 to 10 October 2019, Bucharest, Romania, and published in the journal *Studii și Cercetări de Antropologie*, No. 6/2019.

References

1. Dubkova, T.P., 2008. Reproductive attitudes of modern students. *Issues of health care organization and informatization*, 3, pp. 8-14. [In Russian]
2. Kasperovich, G.I., 2018. Marriage and birth rate in the Republic of Belarus at the end of the XX – beginning of the XXI century. *Actual issues of anthropology*, 13, pp. 62-76. [In Russian]

3. Manak, B.A., 1992. *The population of Belarus: Regional features of development and resettlement*. Minsk: University. [In Russian]
4. Marfina, O.V., 1981. *Questionnaire «Socio-demographic indicators of the Belarusian family»*. [manuscript] Department of Anthropology Collection. 1980-1985. Minsk: Archive of the Department of Anthropology of Institute of History of National Academy of Sciences of Belarus. [In Russian]
5. Marfina, O.V., 2015. *The history of anthropological research in Belarus*. Minsk: Belarusian Science. [In Russian]
6. Marfina, O.V., 2017. The study of socio-demographic aspects in anthropological research. *Actual issues of anthropology*, 13, pp. 3-11. [In Russian]
7. Nikitenko, V.V., 1975. The place and significance of the cohort method in demographic analysis. *Questions of demographic theory*, pp. 68-92. [In Russian]
8. Shakhotko, L.V., 2010. Problems of marriage and fertility. *Main challenges to demographic security: similarities and differences in Moldova and Belarus*. Chisinau: Stiintsa. [In Russian]
9. Sifman, R.I., 1974. *Birth dynamics in the USSR*. Moscow: Statistics. [In Russian]
10. Skrigan, G.V., 2018. The main socio-demographic indicators of Belarusian families from the end of the 20th century to the beginning of the 21st century. *Actual issues of anthropology*, 13, pp. 158-171. [In Russian]
11. Spicina, N.H., 2006. Demographic transition in Russia: an anthropogenic analysis. Moscow: Nauka. [In Russian]
12. Tegako, L.I., Salivon, I.I., Mikulic, A.I., Marfina, O.V., Polina, N.I. and Hurbo, T.L., 2006. *Belarusians*, 9: Anthropology. Minsk: Belarusian Science. [In Russian]
13. Tegako, L.I., Marfina, O.V., Skrigan, G.V. and Emelyanchik, O.A., 2013. *The dynamics of the adaptive variability of the population of Belarus*. Minsk: Belarusian Science. [In Russian]
14. Timofeev-Resovsky, N.V., Yablokov, A.V. and Glotov, N.V., 1973. *An Essay on Population Teaching*. Moscow: Science. [In Russian]
15. ****Demographic yearbook of the Republic of Belarus: Statistical book, 2015*. Minsk: National Statistical Committee of the Republic of Belarus. [In Russian]
16. ****Demographic yearbook of the Republic of Belarus: Statistical book, 2016*. Minsk: National Statistical Committee of the Republic of Belarus. [In Russian]
17. ****National Statistical Committee of the Republic of Belarus, 2018. Demographic yearbook of the Republic of Belarus: Statistical book*. [pdf] Minsk: National Statistical Committee of the Republic of Belarus. Available at: <<http://www.belstat.gov.by/upload/iblock/160/160cdbb177cdb3dad3862488e420dbd8.pdf>> [Accessed 10 July 2019].
18. ***Statistical Committee of the Ministry of the Interior, 1904. First General Census of the Russian Empire in 1897. XXII. Minsk province. St. Petersburg: Statist. Comm. of the Min. of the Interior Publishing. [In Russian]
19. *** United Nations, Department of Economic and Social Affairs, Population Division, 2017. Migration and population change – drivers and impacts. Population Facts, 8 [pdf] Available at: <https://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts_2017-8.pdf> [Accessed 10 July 2019].