

METHODOLOGY FOR STUDYING OF FERTILITY

Methodology and basic concepts

Survey objects in the demographic statistics are demographic events and population.

Survey objects in the fertility are the cases of births and born children as a result. They are registered at the moment of occurrence of the birth and the respective periodical aggregates for a given period of time are created. A calendar year is covered by the demographic statistics.

The term 'birth' means completion of pregnancy that result in child bearing. It includes live born and stillborn children, excluding the abortions.

The indicator 'births' includes the number of live born and stillborn children and not the different cases of births with one, two or more children.

In accordance with the methodology valid up to 2008 inclusive, the definitions about the born children's status are the following:

A live born child is the one, who weighs 1 000 or more grams and has shown signs of life at the completion of pregnancy no matter its duration. The signs of life are breathing, functioning of the heart, pulsation of the umbilical cord or voluntary movement of the muscles. At the presence of one of these signs it is considered that the child is born alive.

If the foetus weighs less than 1 000 grams it is accepted as live born if it has been alive for at least 6 days.

A stillborn child is the one who has not shown signs of life and its length is 35 or more centimeters at the completion of pregnancy or the pregnancy has continued at least 28 weeks. The number of stillborn children does not include the abortions, which are premature interruptions of pregnancy in unnatural or natural way.

In accordance with the same methodology an abortion is defined as interruption of the pregnancy when the foetus has not shown signs of life and its length is below 35 centimeters or the pregnancy has continued less than 28 weeks. It is accepted that abortions are also the cases when the foetus weighs less than 1 000 grams and has not lived at least 6 days from the birth.

Since 2009 according to Decree No 32 from 30.12.2008 of the Ministry of health, the following definitions about the born children's status have been applied:

A live born child is the one, who has shown signs of life at the completion of pregnancy no matter its duration.

A foetus with a weight below 600 grams and/or duration of pregnancy less than 22 weeks is accepted as live born if it has been alive for at least 3 days. A stillborn child is the one who has not shown signs of life and its weight is 600 and more grams at the completion of pregnancy and/or the pregnancy has continued at least 22 weeks.

In accordance with the new Decree an abortion is defined as interruption of the pregnancy when the foetus has not shown signs of life and its weight is below 600 grams and/or the pregnancy has continued less than 22 weeks. It is accepted that abortions are also the cases when the foetus has not lived at least 3 days from the birth.

According to Decree No 12 from 21.07.2014 on adoption of a medical standard "Midwifery and gynaecology" the following new definitions about the born children's status are applied:

"Birth" is a complete expulsion or extraction from the mother of a foetus, irrespective alive or dead, that meet the following criteria: not

- a) body weight at birth of 800 grams and over and / or 26 weeks of gestation;
- b) body weight at birth of less than 800 grams and / or less than 26 weeks of gestation - provided that the foetus was born alive and has lived at least 3 days.

"Alive" is a foetus who shows signs of blood circulation. In absence of such signs, the foetus is considered "dead" (foetus mortuus).

According to the new Decree, "Abortion" is a loss or interruption of a pregnancy before the foetus to meet the above mentioned criteria.

According to Decree No. 9 from 27.04.2021 on adoption of a medical standard 'Midwifery and gynaecology', the following new definitions about the born children's status are applied:

'Birth' is a complete expulsion or extraction from the mother of a foetus, irrespective alive or dead, that meet the following criteria:

- a) 25 weeks of gestation and/or 700 grams and over;
- b) less than 25 weeks of gestation - provided that the foetus has lived at least 72 hours (3 days).

'Alive' is a foetus who shows signs of blood circulation. In the absence of such signs, the foetus is considered 'dead' (foetus mortuus).

'Abortion' is a loss or interruption of a pregnancy before the foetus meets the abovementioned criteria.

The parents' age at birth of the child is calculated in completed years on the basis of

their birth dates and the date of the event birth.

The population at the age of 0 includes the live births occurred during the respective reference year only. The live births occurred in previous years, but registered in the reference year, are included in the total number of live births and distributed in the respective population ages.

Main indicators

The number of births and born children is the actual quantitative amount of these aggregations. They include all born children in the reference year with usual residence (present address) in Bulgaria.

The fertility indicators are calculated on the basis of the live born children.

The crude birth rate (n) is a ratio between the number of live born children (N) and the average annual population (\bar{S}_i) during the same year. It is calculated in ‰ and shows the number of live born per 1 000 population.

$$n\text{‰} = \frac{N}{\bar{S}} \cdot 1000$$

The mean age of the mother at birth is calculated as a weighted average in the interval between the birth of mothers' generations and children' birth.

$$a = \frac{\sum(x + 0.5)n(x, x + 1)}{\sum n(x, x + 1)}$$

The total fertility rate is a sum of the age-specific fertility rates during the respective year (TFR = $\sum_{x=15}^{49} nx$). It shows the average number of children (boys and girls) that a woman would bear

during her entire fertile period (from 15 to 49 years) if the age-specific fertility rate stays the same as during the reporting year. Age-specific fertility rates (nx) are calculated as a ratio between the number of children born alive (Nx) by women at age x and the average annual number of women at the same age (\bar{S}_x).

$$nx = \frac{Nx}{\bar{S}_x}$$

Territorial distribution and data sources

Data are distributed in regional aspect according to the administrative–territorial division of the country as of 31.12. of the respective year (settlements, municipalities, districts and statistical regions) by present address. That address corresponds to the persons' officially declared residence.

Data source for the births and born children is the form of National civil registration system certificate of birth.