



FAMILY HEALTH AND BIRTH RATES AT THE BEGINNING OF THE 21st CENTURY. THE GYNAECOLOGIST'S PERSPECTIVE

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The falling birth rates and demographic decline over the past 30 years have been putting pressure on the state's major pillars to identify and address the root causes of population decline. In an attempt to avoid adopting radical policies such as the Communist-era Decree no. 770, we have identified a number of health factors that contribute to the declining birth rate. These are: decreasing fertility due to women's advancing age, pregnancy complications, poor family planning and abortion options, poor sex education and prevention of sexually transmitted diseases. The aim is to generate actionable solutions by developing national programmes designed to combat these factors.

From a gynaecologist's perspective, major policy and funding interventions in ongoing or newly created public health projects are needed to increase the birth rate. There is an urgent need to increase access to medically assisted reproductive treatments, to improve the quality of all levels of medical care and monitoring of pregnant women, thus ensuring safe deliveries in any maternity units, regardless of their level.

Keywords: birth rate, family health, fertility decline, public health.

INTRODUCTION

The birth rate is declining globally. Romania follows the same trend and has experienced a massive population decline over the past 30 years. Birth rate information is of vital importance because birth rates directly influence the size of the natural population growth. Demographic changes generate profound changes in the social structure, with many important implications for public policy, including public health, and, as it should, for education policy.

According to official data^{1,2}, Romania's population has decreased by more than 4 million since 1990. Among the main causes is the steady decline in the birth rate. Compared to 2019, in 2020, with the onset of the COVID-19 pandemic, 24,500 fewer newborns were registered. In many countries, COVID-19 has suppressed population growth, leading to a decline in births, migration and life expectancy.

CAUSES AND EFFECTS OF FALLING BIRTH RATES IN ROMANIA A FORAY INTO OPPORTUNITIES AND SOLUTIONS

Low birth rates represent a global problem, mainly due to the imbalance between generations. The birth rate decline is caused by a multitude of factors. From a health perspective, the most important factors leading to birth rate decline, which can also be observed in Romania, are³: demographic factors, average marriage age, political and economic factors, maternal mortality and stillbirth, subjective factors within the family, social and religious beliefs – especially related to contraception and abortion – and social and educational factors.

Correcting some of these factors through short, medium and long-term policy reforms can influence birth rates and fertility growth in Romania.

I. URBANIZATION AND MIGRATION

The biggest force influencing birth rates over the years has been urbanization⁴. Moving from the

country-side to the city or to another country changes the economic rewards and penalties. This phenomenon has led to declining birth rates and fertility rates by increasing the women's age at first childbirth and the number of children born.

Relative to the number of births, the lowest number of births since 1930 was registered in 2020, not including statistics between 1941–1945, the data not being available¹. The birth rate in 2020 was 8.1 births/1,000 people, with an annual percentage decrease of 0.38%^{1,2,4}.

The total fertility rate (TFR) is the average number of children born to a woman during her lifetime. A TFR value of 2.1 is a threshold indicator up to which a population can ensure replacement without the need for international immigration. A value below this threshold indicates regressive trends in the native population^{4,5}. In Romania, TFR has been progressively decreasing, reaching 1.38⁴ in 2021. Unlike developed western European countries, which have attracted a large enough number of migrants to partially compensate for the decline in fertility, Romania and other eastern European countries are facing two problems: external migration of young population, with many women being of childbearing age, as well as the low birth rate of the resident population.

II. FERTILITY DECLINE WITH ADVANCING AGE OF WOMEN. ACCESS TO ASSISTED HUMAN REPRODUCTION TECHNIQUES

Women are born with a finite, genetically determined ovarian reserve of approximately 3 million follicles. Ovarian reserve and fertility decline with advancing age, the decrease being both qualitative and quantitative. A particularity can also be found in young women who have a low ovarian reserve from birth or show an accelerated loss of this ovarian reserve due to gynaecological or epigenetic causes (smoking, unhealthy diets). After the age of 35, the decline is more dramatic, with an increasingly reduced possibility of a spontaneous pregnancy⁷.

The negative consequences of an ageing population and increasing women's age at first childbirth can be mitigated by means of assisted human reproduction techniques, which can positively influence fertility rates. Well-thought-out and implemented national reproductive health policies can slow down the decline in fertility under favourable circumstances.

In Romania, there is a lack of official information on the number and age of infertile people. There is no registry that records infertile population. The estimate is about 10% of couples. The current recommendations are to test the fertility potential by a simple blood test, by measuring the anti-Mullerian hormone (AMH) titre⁸.

The infertility problem for women who have postponed their first birth until after 30 years of age should be anticipated. For this target group, the Romanian Society of Obstetrics and Gynaecology (RSOG) has requested the introduction of AMH titre assessment in the laboratory through tests paid for by the National Health Insurance House.

The use of assisted human reproduction techniques (ART) in Romania, in terms of performance indicators monitored, is very low compared to other European countries - measured by number of ART cycles / procedures per million fertile women and number of newborns through these treatments.

The European Society of Human Reproduction and Embryology (ESHRE) generally estimates the need for ART treatment of 1,500 couples / 1 million people⁹.

Romania is an underprivileged country. According to recommendations, approximately 27,000 cycles / year should be performed for a population of 18 million inhabitants. In reality, only 2,700 cycles / year are performed.

Governments of former communist bloc countries in Eastern, Central and Western Europe support 3-6 IVF procedures for every infertile couple. Hungary has decided to financially support 10,000 procedures/year and nationalize reproductive medicine centres as an alternative to population growth by immigration¹⁰.

In contrast, in Romania, couples are not financially helped to obtain a pregnancy. It is one of the few countries in Eastern Europe where this high-performance treatment is only paid for at a negligibly low rate by the National Health Insurance House and only after meeting certain eligibility criteria. Only 600 procedures are partially reimbursed by the state. Publicly funded reproductive medicine should be seen as an investment in the country's future, not just as a state expense.

Romania has been running since 2011 the National Sub-program for In Vitro Fertilization and Embryo Transfer. In 2014, the last modification to this program was made, by including the minimum success rate as a performance indicator required by partner clinics.

The Romanian Society of Obstetrics and Gynaecology in collaboration with the accredited IVF Clinics in Romania have submitted to the competent authorities a series of proposals with modifications of the eligibility criteria. These modifications are absolutely necessary to increase programme accessibility for couples. A number of policy changes are required. The state can invest in reproductive medicine clinics, like Hungary, which has nationalized all IVF centres. It is necessary to provide three free cycles per infertile couple. It is becoming urgent that this programme must become an important public health policy.

III. PREGNANCY MONITORING. ACCESS TO PREGNANCY MONITORING SERVICES

Pregnancy is a physiological process, a special period which most women hope for in their lives. Regular monitoring of pregnancy allows early detection of pregnancy-related maternal and fetal pathology, so that perinatal morbidity and mortality rates can be as low as possible. Pregnancy follow-up among women in Romania is vastly different between urban and rural areas and often flawed. An efficient healthcare system requires equitable access to essential, cost-effective, evidence-based, standardized, optimized health services, with a focus on preventive services and interventions¹¹. The territorial distribution of reproductive health services – number of health units, number of health service providers, number of health services in relation to population need – is however uneven. Quality medical services, pregnancy monitoring and mandatory paraclinical investigations (biological and ultrasound) during pregnancy are not uniformly accessible in all communities. The wide disparities in opportunities and services that exist between rural and urban areas, invalidate the principle of social inclusion, specific to European Union countries. Uninsured pregnant women, as well as those on low income or from vulnerable groups, find it difficult to finance continued access to outpatient obstetric services for pregnancy monitoring. Added to all this is the index of social development of vulnerable pregnant women and families on the margins of society, who often lack minimum health education. Pregnancy, but especially teenage parenthood, has important social and health costs, including a direct impact on birth and fertility rates. WHO defines a teenage pregnancy as a pregnancy that occurs under the age of 20 at the time of birth¹². Under this age, pregnancy is a

critical experience, as the body is still growing and maturing naturally, ponderally, genitally, hormonally and psychologically. Numerous studies provide evidence that teenage pregnancies are most often high-risk pregnancies^{13,14}.

Statistically, complications of teenage pregnancies are much more frequent compared to adult pregnancies, and are increasingly common the younger the age of the pregnant woman¹⁵. Pregnancy-associated complications are both maternal and fetal, and are most often expressed as increased risk of miscarriage, fetal death, nutritional deficiencies and anaemia, pregnancy-induced hypertension, and intrauterine growth restriction^{15,16}.

There is an absolute need for greater awareness among this population group on the importance of pregnancy monitoring and a correct prenatal diagnosis when required. It is imperative for women to be aware that they need medical assistance during pregnancy and to recognize the warning signs that appear during this period. Women in this target group do not know whom to address to either because specialised medical services do not exist in a certain area, or they are inaccessible for other reasons, such as distance, costs or socio-cultural barriers^{12,17}. In disadvantaged communities, local authorities, through the community care service, must provide care for vulnerable pregnant women, no matter if they are adult, adolescent or underaged. The community health worker identifies and monitors the underaged pregnant woman. Pregnancy monitoring and medical care for these pregnant women must be provided at least by the general practitioner/family practice physicians. Local primary health care services need to be reconfigured to make them more **accessible and available**¹².

Romania has approved the guidelines *Methodology of pregnancy monitoring*¹⁸, available for obstetricians and gynaecologists, family doctors, and midwives. It is the latest tool for monitoring pregnant women and aims to detect and limit or reduce obstetric risks. At each prenatal consultation, the case must be prioritised according to its evolution by the general practitioner or midwife. They must assess the risk factors, classify the pregnancy as having a high obstetric risk and refer the pregnant woman to the outpatient obstetrician. All the information obtained shall be noted in the 'Pregnancy Booklet'¹⁸, as the medical documentation is of particular importance in communicating with the obstetrician for the group of vulnerable pregnant women.

The guide is a useful tool for decision-makers at the central level in formulating appropriate public policies in this area. It becomes absolutely necessary to re-train the general practitioner by regularly participating in continuing medical education courses. It re-emphasises the role of midwives in society as primary health care providers, as **they are able to reduce maternal and neonatal morbidity**. Their work must involve prenatal education, parenting training and has to extend into women's health and sexual health fields. Midwives can thus play a leading role in communities to protect women from disadvantaged backgrounds. The midwife-community health care assistant team has an important role to play in both counselling and providing sex health education, not only for pregnant woman, but also within the family and community.

IV. THE DELIVERY. MATERNAL MORTALITY AND STILLBIRTH

Maternal mortality is one of the indicators showing the degree of development of a country. It is edifying for the status of women, their access to health care and the competence of the medical system to respond to each individual case. Maternal deaths are the result of substandard health care and can be prevented¹².

An UNICEF study²⁰ states that around eight million women worldwide suffer pregnancy-related complications each year and more than 500,000 women die from direct and indirect causes¹². Direct maternal deaths result from conditions or complications occurring only in the antenatal, intrapartum or postpartum period. The most common causes are postpartum bleeding (27%) and complications of labour (8%)²⁰. Indirect maternal deaths result from pre-existing conditions that are aggravated in pregnancy (diabetes mellitus, heart disease, epilepsy, hormone-dependent malignancies)^{21,22}. WHO points out that in developing countries, one woman in 16 may die from pregnancy-related complications compared to one in 2,800 in developed countries.¹² In Romania, maternal mortality has been steadily declining in recent years, with small fluctuations, but remains about four times higher than in EU countries.¹² In 2020, maternal mortality was 17.9 deaths per 100,000 live births, an increase from the previous year (9.8 deaths per 100,000 live births)¹.

Actual maternal mortality remains difficult to quantify, especially where the system for recording

deaths and causes of death is deficient, particularly in vulnerable communities¹². The Brazilian model can be implemented, where the Ministry of Health has introduced a paragraph in the death certificate stating whether the woman of childbearing age was pregnant at the time of death or within 12 months prior to death.

Identifying maternal deaths and all the details connected to the event is the first step in the process of surveillance, identifying causes and solutions to prevent further similar situations

- Maternal deaths can occur at home, during transportation or in health facilities.
- In relation to childbirth, deaths may be antepartum, intrapartum or immediate postpartum, most often due to haemorrhagic complications, pregnancy-induced hypertension, pre-eclampsia, eclampsia, thrombotic pulmonary embolism²³.
- Death might occur also in the first trimester of pregnancy due to haemorrhagic or septic complications of abortion²⁴ or ruptured ectopic pregnancy with haemorrhagic shock.

The underlying causes of death in women who do not request the services of or go to a health facility may be different from those of women who die in health facilities.

In rural areas or vulnerable communities, there are a number of women who die without going to a health facility. In such situations, it is necessary to identify the medical and non-medical enabling and determining factors that impeded specialist care and led to death.

These can be¹²:

- lack of awareness of the need for medical care in an acute obstetric or gynaecological situation
- cultural beliefs
- use of dangerous traditional practices – such as home birth
- lack of transportation to a hospital unit

According to the The National Institute of Public Health report on maternal mortality published in 2017, which analysed the period 2000–2017, the level of education of mothers who died of obstetric causes is: primary school (22%), middle school (20%) and high school (16%)¹.

The way in which outpatient maternal deaths are identified is variable. Various methods or combinations of methods are used to identify as many deaths as possible. Ideally, it would be useful to identify problems and characteristics for a specific population or area around a health service.

The most common approach is verbal autopsy¹² (a community-based case review). These approaches can save lives, through educational messages and raising awareness of this problem in the community. Changes should also be made by adopting measures in clinical practice in primary care, with the application of the measures set out in the *Methodology of pregnancy monitoring*¹⁸. 80% of maternal deaths can be prevented or avoided by permanent monitoring of pregnant women¹². The baby will be born in a century of innovations, but lack of access to the medical system / certain cultural beliefs regarding home birth robs the baby of access to all this.

Teenage mothers are not a compact group with the same characteristics and needs. However, they most often face poverty and material deprivation, and adopt various risky behaviours, such as smoking or alcohol and/or substance abuse²⁵.

Birth at this young age increases maternal, fetal, and neonatal mortality and morbidity²⁶.

- Childbirth complications are the leading cause of death among girls aged 15–19 worldwide. Deaths in this age group account for 99% of all maternal deaths in women of childbearing age. They occur most frequently in low- and middle-income countries. Deaths are caused by severe pre-eclampsia, eclampsia, puerperal endometritis, and systemic infections²⁶.
- Newborns face higher risks of low birth weight, preterm delivery and severe neonatal conditions. The way the newborn is cared for in the first minutes of life can have consequences in the subsequent psychomotor development. Neuro-motor and cognitive disabilities and complex congenital malformations are more common in children born to adolescent mothers than in those born to adult mothers²⁷. Moreover, newborns born to teenage mothers have a higher risk of death¹⁹.
- There is a substantially increased risk of neonatal and infant mortality, through accidental and infectious risk, raising questions about the maturity and ability of some minors to supervise and care for their children²⁸.
- In some cases, another pregnancy occurs quickly after birth, increasing the risk of maternal and fetal mortality and morbidity.

Most often, assessments of maternal and fetal deaths focused on aspects of **in-hospital deaths**.

A maternal, fetal or neonatal death is usually a **summation of three events**²⁰.

1. Delay in seeking care
2. Delay in reaching the emergency room of a medical unit
3. Delay in providing adequate care. Maternity hospitals with poor financial resources often lack adequate diagnostic tools and qualified medical staff. Inadequate diagnosis and management of conditions associated with pregnancy, childbirth and their complications put pregnant women's lives at risk and even lead to death.

Depending on the facilities and medical services they can provide, hospital units or wards and departments of obstetrics-gynaecology and neonatology are classified into three categories, with category level 3 corresponding to those that can provide the best care to newborns. The overwhelming majority of maternity units are wards within regional hospitals and are level 1, meaning that they can provide the minimal medical care for pregnant women and newborns (full-term physiological births; newborns without associated pathology). In the event of an obstetric emergency, premature birth, placental abnormalities, emergency fetal extraction by caesarean section is required. A life-saving surgery cannot be performed in a level 1 maternity ward, requiring transfer to a higher-level maternity hospital. All these procedures are time-consuming, to the detriment of the health and even the life of the pregnant woman and the foetus/newborn. Improving medical and obstetrical treatment of complications and better medical practices also require reorganization of the referral system for interdisciplinary consultations and reorganization of hospital services. The solution is to reclassify maternity wards/units and their facilities/equipment as uniformly as possible in order to ensure low-risk births.

Looking beyond the purely medical factors, action is needed at all levels of the healthcare system, including community-based interventions.

V. FAMILY PLANNING AND THE ABORTION OPTION. SEX EDUCATION

Family planning helps people have the desired number of children, at the desired time and in the right way for each family. It is a method that improves or maintains the health of women and their families. Family planning reduces the number of unwanted pregnancies, the incidence of abortion on demand and the rate of maternal morbidity/

mortality due to abortion. Although it seems a novel factor, contraception does not increase the birth rate in the short term, but in the long term, by protecting fertility and correct planning of a pregnancy.

The dismantling of the family planning network no longer provides the necessary framework for contraceptive counselling and assistance in general. In particular, it also limits access to these services for adolescents in both urban and rural areas. There is an urgent need to reorganise family planning services, with the *introduction of friendly services for teenagers and young people*.

The number of abortions among women of childbearing age and adolescents in particular is high¹⁹. According to WHO, the abortion rate in Romania is more than twice as high as in the EU, i.e. 480 abortions per 1,000 births²⁰.

The reasons for opting for abortion are varied and must be accepted by society, the medical profession, political or religious institutions. Birth rates must be stimulated, but only through health and sex education, not through coercive *pronatalist* policies. The influence on birth rates is easily demonstrated by the years of illegal abortion. The consequences of that abortion ban law were disastrous, resulting in illegal, habitual abortions, thus in multiple deaths. Between 1966–1989, this policy led to increased maternal morbidity and mortality, lowering the subsequent fertility potential of many women.

Counselling the patient, and even the family, is, therefore, very important. Unfounded medical or psychological considerations (pregnancy crisis) can be eliminated. Emotional arguments, certain superstitions and taboo labels behind unfounded reasons can be clarified by both the gynaecologist and the psychologist.

It becomes absolutely necessary to inform young girls about abortion, about the types of abortion and about performing it in an appropriate environment. Women must be informed about the risks of abortion (infectious, traumatic) which can increase the risk of infertility. The Ministry of Health has approved the guide entitled *Medical Abortion* developed by RSOG. Surgical abortion is an invasive surgical manoeuvre which results in the immediate termination of pregnancy. The risks of surgery from an infertility perspective are endometrial basal layer damage, cervical lesions, uterine or cervical synechiae²⁹. Medical abortion is a current, modern, elegant, non-invasive method without the risk of mechanical trauma to the endometrium. Thus, the type of abortion has

crucial implications for subsequent fertility. The final decision on the type of abortion is the patient's alone, only after an extensive discussion with the gynaecologist about medical recommendations, risks, advantages and disadvantages of each method. **Assuring subsequent fertility potential is a safe method of increasing the birth rate.**

The implications of abortion can also be emotional. They are varied: depression, change in family perception or post-traumatic stress disorder. All of these aspects can take away the desire to achieve a pregnancy later on. Sex education campaigns, focused on ensuring women's mental and physical health, can result in a decreased desire to give up pregnancy. The need for sex education in this branch thus breaks a vicious chain and contributes to increasing the birth rate.

VI. PREVENTION OF SEXUALLY TRANSMITTED DISEASES (STDs)

There are sexually transmitted diseases that evolve silently and that have an impact on female and male fertility long after their onset. The most studied STDs implicated in infertility are Chlamydia Trachomatis and Neisseria Gonorrhoeae infections because of the risk of salpingitis and pelvic inflammatory disease (PID)³⁰. Tubal infertility is the most common cause of infertility and the trauma of untreated PID. After each episode of PID, the risk of infertility increases to 12% in women who have had a single episode, to 25% after two episodes and to over 50% after three or more episodes. The incidence of ectopic pregnancy after PID is 26%³¹.

WHO ranks Romania among the countries with the highest incidence of sexually transmitted diseases. We can therefore conclude that sex education and STD screening programmes are not fulfilling their role and may be a cause of lower birth and fertility rates. The lack of sex education has placed us in this ranking. International research conducted by UNESCO³² has demonstrated the short and long-term benefits of sex education: delaying the onset of sexual activity, increasing contraceptive use, and other sexual and reproductive health information. Nowadays, sex education in schools is very much needed. Most young women have access to information through social media platforms or websites, but may have inaccurate or scientifically distorted information. One example is the risk of infertility if STDs are

ignored and untreated. Sex education raises awareness of sexual and reproductive health.

CONCLUSION

The Romanian health system is underfunded and needs consistently increased financial resources to improve the quality and access to medical services. Romania spends insufficiently on health, compared to most EU countries³³. Compared to other EU member states, Romania has the highest rate of deaths attributable to optimum quality health care, with a value 2.5 times higher than the EU average³⁵.

It is imperative to implement health and sexual education classes in schools and to carry out national campaigns to inform, educate and raise public awareness regarding sexual and reproductive health.

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