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FAMILY AND COUPLE HEALTH MONITORING, PREMISES AND A FAVORABLE FRAMEWORK FOR A HEALTHY BIRTH RATE

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Natality can be positively influenced by properly implemented public health policies and programs and by the active involvement of specialists in this field. Aging of the population in developed or developing countries, inevitably implies the aging of the labor force, which leads to the reorganization of public policies on the pension and public health system. The role of the family doctor in monitoring the health of the family and the couple as a premise and a favorable framework for a healthy birth rate is therefore crucial and it extends from preconception counseling, to assessing maternal and paternal risk factors, to monitoring pregnancy and last, but not least, to monitoring normal evolution of the newborn, child and adolescent. Natality can be positively influenced by properly implemented public health policies and programs and by the active involvement of specialists in this field.

Keywords: Family medicine, natality, family health, pregnancy.

INTRODUCTION – IS BIRTH A GLOBAL ISSUE?

Globally, especially in developed or developing countries, there is a growing trend in the share of older people in the population structure, caused by declining birth rates and followed by effects on economic and social dynamics. The aging of the population inevitably implies the aging of the labor force, which leads to the reorganization of public policies on the pension and public health system. In 2020, the population of the European Union in 27 countries fell slightly from 447.3 million to 447.0, interrupting long-term growth induced by positive net migration. At this time, the negative natural increase (more deaths than births) has outpaced positive net migration, most likely due to the impact of the Covid-19 pandemic. In the EU in 2020, there were 534,000 more deaths than in 2019, and 550,000 more deaths than the 2016–2019 annual average[1].

The family, in its variability – determined socially, culturally or religiously, represents the basic cell of any community despite its degree of development. In the context of the continuous progress of human societies, the family retains its fundamental role in the formation and evolution of individuals, being at the same time, the first social environment in which an individual is included. The family unit may consist of two or more related persons by blood, adoption, marriage or choice and whose relationship is characterized by at least one of the following elements: social and/or legal rights and obligations; emotional ties and intentional resistance of relationships. That is why the birth rate should not be viewed singularly, but contextualized within the dynamics of society and the family environment[2].

On the one hand, in Romania, the family remains an essential element of an individual's life, formal marriage remains a means of establishing a family, and voluntary unions are not as common as in other Member States of the European Union (according to the Census of 2002 and 2011). On the other hand, people get married at an older age, after completing the training process, when they are integrated into the labor market and have the material resources necessary for a decent existence as a couple. The increased average age at first marriage is naturally followed by an increasing age

in conception, with a negative impact on fertility (due to a decrease in ovarian reserve in women), but also by an increase in maternal and fetal risks during pregnancy[2, 3].

NATALITY IN ROMANIA – WHAT PERSPECTIVES DO WE HAVE?

The birth rate is the frequency of live births in a population, expressed by the ratio between the number of births in a year and the population. Birth rate is a dynamic element of the natural balance and involves an important temporo-spatial variability[1].

According to Eurostat, the population of Romania at the beginning of 2020 was approximately 19,328,000 inhabitants; During the same year, 176,800 live births and 297,000 deaths were recorded. On January 1, 2021, the population of Romania amounted to approximately 19,186,000 inhabitants[3].

After a sharp decline in the first three years after the 1989 Revolution, the birth rate increased slightly in 2003–2009, favored by the effect of promoting marriage in 2006 by law no. 396 stipulating the granting of financial support to couples in their first marriage. The total fertility rate increased steadily from 2002 to 2009 (1.66 children per woman), but was followed by a sharp decline since 2013, when it approached the levels of 2005 and 2006[2, 3].

FAMILY MEDICINE, PRIMARY CARE AND PERCEPTION OF FAMILY HEALTH

According to the World Health Organization (WHO), Primary Health Care is a "society-wide approach to health, which seeks to ensure the highest possible level of health and well-being and equitable distribution, focusing on people's needs and as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care and as close as possible to people's daily environment"[4].

Perception of health is influenced by a complex set of factors (environmental, cultural-religious and socio-economic conditions) and it influences the addressability of prevention programs and campaigns in the general population. There is a tendency to perceive health as extremely good in the 16–44 age group, both among men and women, but this favorable appreciation tends to decrease with increasing age[2, 5].

As an integral part of primary health care, family medicine is a key pillar in health promotion and disease prevention since the preconception period.

THE ROLE OF THE FAMILY DOCTOR IN MONITORING FAMILY AND COUPLE HEALTH

The family doctor is the only health care professional with a legal obligation to assess the health status of people who decide to start a family through marriage. The prenuptial certificate is a forensic document issued by the family doctor before the marriage, is formalized and contains data on the health of the future bride and groom obtained by general clinical examination, imaging and laboratory examinations attesting that people are neuropsychically fit, do not suffer from communicable diseases in a transmissible form and do not present evolutionary lung lesions of tuberculous nature.

The role of the family doctor in family planning is essential both in terms of contraception, but especially because the fact that his active involvement in pre-pregnancy counseling, in the follow-up of the pregnancy and in the normal development of the newborn, can influence the long-term family dynamics.

Pregnancy counseling involves ante and prenatal screening, dietary advice, harmful behaviors (tobacco use, alcohol, narcotics), assessment of chronic diseases of the future pregnant woman and the risks they pose in the evolution of pregnancy, the fetus and the general state of mother's health during pregnancy. The couple's health but also their healthy lifestyle ensure the integrity of the transmitted genetic material; epigenetically, it induces the predisposition to the disease in the future child (degenerative, neoplastic, etc.). Education and information are essential throughout the pregnancy, from the decision to become pregnant to the care of the newborn[5–7].

Basically, the family doctor establishes a specialized consultation (preconception). The expectant mother regularly attends prenatal consultations, eats healthy, is physically active, is aware that pregnancy is not a disease, avoids toxic substances, alcohol, smoking[6,7].

Also, the father's health must be assessed preconceptionally: general health, the existence of chronic or genetic diseases, smoking, chronic alcohol consumption that can have an unfavorable

impact on both fertility and the product of conception. A study published in September 2021 in the American Journal of Obstetrics and Gynecology concluded that paternal health can affect the normal course of pregnancy in healthy mothers[8]. Thus, a correlation has been shown between the presence of metabolic syndrome in the father and the increased risk of the mother developing preeclampsia.

Another study, conducted by the Department of Obstetrics and Gynecology at the University of Medicine St. Louis, Washington, noted sperm cell changes throughout its evolution under the influence of cigarette smoke constituents[9]. Also, personal or family history of genetic abnormalities can guide the family doctor to refer future parents to a regional genetics center for available screening.

RISK FACTORS DURING PREGNANCY AND NOT ONLY

According to the "Diagnostic and Care Protocols in Primary Care"[10] the family doctor must identify the risk factors during pregnancy; they fall into several categories:

1. *General risk factors*:

– Age: less than 18 years or more than 35 years (especially in primiparous)
– Constitutional type: height less than 155 cm and weight less than 45 kg
– Toxic: Pb, Hg, medicinal substances
– Exposure to radiation.

2. *Risk factors related to hereditary-collateral antecedents:*

– Genetic diseases
– Familial predispositions
– Twinning

3. *Risk factors related to maternal or paternal personal pathological history:*

– Cardiovascular diseases: pre-existing arterial hypertension or induced by a pre-existing pregnancy, etc.
– Hematological disorders: anemia gr. II (Hb 8–10 g/dL)
– Respiratory, renal, digestive, hepatic, dermatological, allergic, ENT, ophthalmic, neuropsychic, infectious-contagious diseases
– Endocrine-metabolic diseases: diabetes, dwarfism or skeletal deformities, obesity, overweight
– Sexually transmitted infections: syphilis, HIV, Chlamydia or other infectious diseases: rubella, toxoplasmosis, Cytomegalovirus infection, Mycoplasma, Herpes, etc.
– Chronic intoxications: Pb, Hg, medicinal substances,
– Chronic treatment with undesirable effects on the product of conception.

4. *Risk factors related to gynecological and obstetric pathology prior to the current pregnancy*:

– Anatomically altered genital tract: genital infantilism, genital malformations, tumors, scarred uterus, ectopic pregnancy
– Sterility/infertility: history of pregnancy after treatment – ovarian stimulation, *in vitro* fertilization
– Pathological pregnancies and births with complications, repeated miscarriages, cervico-isthmic incompetence, perinatal infections, hemorrhage
– Pathology associated with pregnancy: pregnancy hypertension, gestational diabetes, history of placental insertion abnormalities, Rh incompatibility.

And here's what perinatal and/or fetal risk means:

– fetal malformations: heart malformations, neural tube abnormalities;
– macrosomia (4500 g),
– accidents during birth (shoulder dystocia)
– obese child later;
– willful or unwanted prematurity (37 weeks), with repercussions on short and long term health (obesity, asthma);
– pregnancy loss: stillbirth or spontaneous abortion;
– neonatal hypoglycemia, neonatal hyperbilirubinemia, neonatal hypocalcemia, respiratory distress, etc.

Thus, after establishing the diagnosis of pregnancy and after recording the pregnant woman, the family doctor will perform a general clinical examination accompanied by a mandatory package of laboratory investigations (complete blood count, blood group + Rh, blood glucose, summary urine test, RBW, HIV testing, bacteriological examination of vaginal discharge, cytological examination Babeş-Papanicolau) and will recommend to the pregnant woman a specialized obstetrical examination[10,11].

For the pregnant woman with a personal history of chronic diseases, a multidisciplinary approach to pregnancy will be adopted through close collaboration between the family doctor, the specialist doctor in whose follow-up is the patient for chronic disease, the obstetrician, the psychologist, the specialist in medical genetics[6, 10].

Both the mother and the father may experience mental problems during pregnancy[12]. The most

common forms are associated with depression, anxiety and, less frequently, bipolar disorder. It is estimated that 1 in 10 women and 1 in 20 men experience antenatal depression. This applies to anxiety as well or they can be associated. There are the associated risk factors: known history, lack of psychological support, couple problems, history of toxic consumption, drugs, alcohol, etc. In this light, the ante / prenatal consultation should take into account the diagnosis of the couple's mental health.

Last but not least, the family that wants children must be educated and informed about being a parent; this is acquired, beyond the instinct of conservation of the species. It is an aspect of therapeutic education that aims at the physiological evolution of motherhood and fatherhood, with the acquisition and awareness of the role of a parent[13].

Regarding the methods and techniques available to the family doctor, these are multiple: preconception counseling, antenatal clinical consultation with the health assessment of future parents, clinical registration of the pregnant woman, follow-up of the pregnancy, registration of the newborn and following the mother and child health post-partum. This whole continuum has three directions of active support: medical, multidisciplinary, educational-informative[5, 6, 7, 10].

The platforms managed by approved institutions that inform the couple about the evolution of the pregnancy, the care of the newborn, the management of the problems are very useful. In this situation, the physician is also the one who specifies the sources of information[4, 13].

INSTEAD OF CONCLUSIONS

Birth rate is a decisive factor in the evolution and shaping of a society, it is a very important concept in the field of public health and can be positively influenced by properly implemented public health policies and programs and by the active involvement of specialists in this field.

The role of the family doctor in monitoring the health of the family and the couple as a premise and a favorable environment for a healthy birth rate is therefore crucial, and it extends from preconception counseling, to assessing maternal and paternal risk factors, to monitoring pregnancy, and last but not least, to monitoring the normal development of the newborn, child and adolescent.

REFERENCES

1. https://ec.europa.eu/eurostat/statistics-explained/images/4/4a/Table1-Demographic-balance-2020.png.
2. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Marriages_and_births_in_Romania/ro.
3. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Population_and_population_change_statistics#EU_population_shows_a_slight_decrease_in_2020.
4. https://www.who.int/teams/primary-health-care.
5. https://insse.ro/cms/files/women-and-men/1/bloc-1b.html?lang=ro.
6. American Family Physician – AAFPhttps://www.aafp.org/afp/2018/0501/p559.html.
7. American College of Obstetricians and Gynecologists - ACOG https://www.acog.org/en/Patient%20Resources/FAQs/Pregnancy/Obesity%20and%20Pregnancy.
8. Association of preconception paternal health and adverse maternal outcomes among healthy mothers Gayathree Murugappan, MD; Shufeng Li, MS; Stephanie A. Leonard, PhD; Virginia D. Winn, MD, PhD; Maurice L. Druzin, MD; Michael L. Eisenberg, MD, Divisions of Reproductive Endocrinology (Dr Murugappan); Maternal-Fetal Medicine (Drs Leonard, Winn, and Druzin); Department of Obstetrics and Gynecology, Stanford University, Stanford, CA; Department of Urology, Stanford University, Stanford, CA (Ms Li and Dr Eisenberg), Am J Obstet Gynecol MFM 2021.
9. Esakky P, Moley KH. Paternal smoking and germ cell death: A mechanistic link to the effects of cigarette smoke on spermatogenesis and possible long-term sequelae in offspring. Mol Cell Endocrinol. 2016 Nov 5;435:85-93. doi: 10.1016/j.mce.2016.07.015. Epub 2016 Jul 14. PMID: 27424142; PMCID: PMC5014701.
10. https://www.insmc.ro/wpcontent/uploads/2021/01/Protocoale_de_diagnostic_si_ingriiri_in_asistenta_primara.pdf .
11. Ghid Practic de Obstetrică și Ginecologie Oxford Sally Collins, Sabaratnam Arulkumaran, Kevin Hayes, Simon Jackson, Lawrence Impey, Benedict Ancar,2017, Editura Hipocrate, Bucureşti, ISBN: 9789738837218.
12. https://www.pregnancybirthbaby.org.au/mental-wellbeing-during-pregnancy.
13. https://www.mayoclinic.org/healthy-lifestyle/pregnancy-week-by-week/in-depth/pregnancy-and-obesity/art-20044409.
14. Cazacu, Mihaela & Titan, Emilia. (2019). Statistical analysis of living conditions and quality of life in Romania. Proceedings of the International Conference on Applied Statistics. 1. 171-184. 10.2478/icas-2019-0015.