

Medical Social and Environmental Aspects of Over Population

Keywords: Population; Migrations; Fertility; Reproductive Coercion

Abstract

Environmental degradation is one of the most threatening global challenges currently faced by humankind. Despite generally decreasing birth rates, the global population continues increasing in absolute terms, which is an unsustainable trajectory. Efficient solutions would require new ethical principles, in particular, that no population group obtains any advantages because of a faster growth. In countries with sufficient food and water resources, the birth rate may be higher than in regions where people are consuming desalinated water and foodstuff acquired through international aid. In the past, overpopulation has been reduced by wars, epidemics and starvation. Today, the possibility exists of applying humane, scientifically based methods, consciously choosing between birth rate restriction and mortality rise. Unlike preventable shortening of life expectancy, birth control is ethically neutral. International tensions are among reasons to boost childbearing. Hidden reproductive coercion committed by the state is a mechanism of birth rate elevation. The military needs young people. In conditions of durable peace and mutual trust, large projects could be introduced to improve the quality of life.

Introduction

Environmental degradation is one of the most threatening global challenges currently faced by humankind. Despite generally decreasing birth rates, the global population continues growing in absolute terms, which is unsustainable trajectory. Efficient solutions would require new ethical principles, in particular, that no population group obtains any advantages because of a faster growth. In countries with sufficient food and water resources, the birth rate may be higher than in regions where people are consuming desalinated water and foodstuff acquired through international aid or sold fossil fuels. In the past, overpopulation has been reduced by wars, epidemics and starvation. Today, the possibility exists to apply humane, scientifically based methods, consciously choosing between birth rate restriction and mortality rise. International tensions are among reasons to boost childbearing. The military needs young people. In conditions of durable peace and mutual trust, large projects could be introduced to improve the quality of life.

“Humanity is but a blip on the time-scale of life on Earth; but that blip is all that we have, and our present global course guarantees its extinction” [1]. Global overpopulation leads to poverty, overcrowding and pollution of air and water. Environmental degradation is one of the most threatening global challenges faced by humanity [2]. Despite generally decreasing birth rates, the global population continues growing; there is no sign of a decrease sufficient to achieve sustainable numbers. Humanity is expected to use $\geq 200\%$ of the global biocapacity (croplands, forests) by 2050, which is an unsustainable development. Environmental degradation is proportional to the number of humans [3]. Efficient solutions would require a revision of some stereotypes and application of new principles, namely that no population group, on a national or international scale, may achieve advantages through faster growth, even if such caveat flew in the face of democracy.



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Obviously, food and water requirements depend on the population size. In the next decades, as the world's population is projected to pass nine billion, reliable access to sufficient water of required quality will be increasingly difficult, and in some areas perhaps impossible. Agriculture is the largest global user of water. The depletion and degradation of water resources threatens food production [4]. Groundwater quantity and quality are declining due to over-pumping, runoff of fertilizers, pesticides and industrial waste. Conflicts and violence lead to loss of food stores and disruption of the marketing systems [5]. Obviously, concerted global action is needed instead of conflicts. Wide-scale solutions can be found and realized only in conditions of globalization under the guidance of the most developed nations. President Donald Trump is right stating that “the alternative to U.S. world leadership offered by China and Russia is autocratic, corrupt and brutal” [6]. Countries with food security challenges tend to be more corrupt [7], let alone democracy and human rights. Mr. Trump is also right that paradise cannot be built worldwide for American money. The paradise might wither thanks to international conflicts, migrations and inter-ethnic differences in the birth rate. Some peoples get what they actually deserve. We can only hope to be at the site of civilization in the end.

Overview of regions

In view of the global overpopulation, large families and fertile population groups should live in more crowded conditions. Acceptance of this principle could provide a basis for international understanding and trust. Without proactive competition, different peoples would be more likely to live in peace. During the last century, populations in less industrialized countries grew faster than those in more developed ones [8]. The forthcoming industrialization of regions, formerly regarded as developing, is important due to their less efficient environmental conservation and the vast scale, proportional to the sizes of involved populations. In the past, overpopulation was offset by homicide, epidemics and starvation. Today, there is probably the last chance to apply humane methods, consciously choosing between birth rate restriction and rising

mortality. It is widely believed that the answer to existing problems is a reduction in human numbers. Without a serious international attempt to bring the world population back to sustainability, Earth will become increasingly depleted of biological resources.

Sterilization was successfully applied in India. The family planning became an integral part of the development plans in 1952. During the Second Five Year Plan (1956-1961) provisions were made for evolving the National Family Planning Program. Along with other contraceptives, sterilization was approved. For a wider availability of the services, a broad-based extension program was launched in 1963 [9]. It was pointed out in the Statement of Policy that sterilization services are offered free but there is no room for compulsion, coercion or pressure of any sort [10]. By 1996, three quarters of contraceptive users in India were sterilized, which was a worldwide unique achievement [11]. Today the demographic situation is completely different from the conditions prevailing when the Family Planning Program was launched: both mortality and fertility have declined drastically [12]

China had the largest population for many decades, with a fertility rate as high as 6.0 before 1970. This rate had decreased to 1.5-1.7 by the late 1990s. The one child policy was replaced by two child policy from 2015 on. Additional pro-natalist measures have been introduced in 2021 [13]. Southeast Asia and Africa are amongst the regions with the highest population densities [2]. Uganda is projected to triple by 2050 to more than 100 million inhabitants, which will be accompanied by deforestation and soil erosion [14]. Nigeria's current population of ~233 million is expected to grow. The tenfold population increase in Ethiopia during the last century went along with deforestation and soil erosion [15]. In 2020, up to 264.2 million people (24.1% of the population) in sub-Saharan Africa were undernourished. With the populace likely to grow in the near future, these statistics have the potential to increase [16]. As for more developed countries, their populations continue to grow thanks to immigration. As for more developed countries, their population continues to grow due to legal and illegal immigration. South Africa is overpopulated, in need of water desalination, and still receiving immigrants.

In the former Soviet Union (SU), the fertility rate varied from 3.8 in Tajikistan to 1.2 in Ukraine and 1.5 in the Russian Federation (RF), the latter including Caucasus and other regions with high fertility [17]. Within RF, the maximal population increase has been recorded in Chechnya, Dagestan, Ingushetia and Tuva; while it is decreasing most rapidly in Tver, Tula, Pskov, Leningrad and Novgorod provinces [18]. The quantity increases in Russian citizens occurred predominantly thanks to the North Caucasus [19]. The high socio-cultural value of multi-child families in the Caucasus is known. Nonetheless, government members continue talking about boosting fertility also in the Caucasus [20]. In November 2022, Vladimir Putin awarded the medal for "mother heroines" to the spouse of Ramzan Kadyrov, who has "more than 10 children" according to Wikipedia.

Emigration of ethnic Russians from the Caucasus and Central Asia started several decades ago, having increased after the dissolution of SU. During the 1990s, the most intense emigration of Russian-speaking people occurred from Kazakhstan and Uzbekistan. The same pertained more or less to other ex-Soviet republics except for Belarus [19]. At the same time, indigenous people from Asian

republics of the former SU relocated to ethnically Russian territories. Migration distances extend from the Caucasus and Middle Asia to Moscow, St. Petersburg, Siberia, Königsberg/Kaliningrad and the Far East. The highest emigration rate has been from North Ossetia-Alania [21]. The Armenian minority is growing on the Caucasian Riviera (Black Sea shore), where they participated en masse in privatization and construction of houses. In Stavropol, Krasnodar and Rostov provinces, percentages of indigenous Caucasians are growing. Among the stimuli are unemployment and overcrowding in their native areas [22,23]. At the same time, the North Caucasus receives considerable federal funding [24,25].

In the Far East and Siberia, the population growth has been maximal in Buryatia and Yakutia due to higher birth rates of the indigenous peoples [26]. In Siberia, there are many homeless citizens, referred to as "Beaches" (bichi), most of them of Slavic origin. This word is said to be derived from English (hence the spelling) and previously meant a sailor unable to find employment. During the anti-alcohol campaign (1985-1989), many of them consumed inexpensive eau-de-colognes and industrial liquids e.g. window-cleaner [27]. Considering the extent of window cleaner sales in certain areas, it was knowingly tolerated by the authorities.

Since the 1990s, the immigration to Siberia and Far East went on from China, Korea, Vietnam and Central Asia, compensating for departures of ethnic Russians. At the same time, the Far East has been losing people both to other regions of RF and to foreign countries [28]. As of 2020, the maximal increment of immigration to the Far East was from Tajikistan, Uzbekistan and China, while the maximal emigration was to Ukraine and Moldova. The highest percentage of overstay (lacking residence permit) was among Azerbaijanis [29]. Working immigrants are followed by their relatives [30]. Anti-Russian resentments are widespread in the immigrant milieu, especially among young people [31]. Problems related to the demographic growth are expected to increase [32].

For prevention of conflicts, minorities should not grow faster than the titular ethnic group of a country. This is understood in many Jewish families. However, in the orthodox milieu their birth rate remains relatively high. Migration to the populated territory of Palestine with a shortage of water and energy resources occurred, resulting in increased competition for the lebensraum. Such arguments as "historical patrimony" [33] are not necessarily acceptable to other peoples. Both sides of the Middle East conflict have applied terrorism [34]. State violence is generally more destructive than that carried out by non-state actors [35]. In the 1860s, the number of Jews in Palestine was approximately 14,000 or 4% of the total population of 350,000 [34]. From 1948 to 2002 the population of Israel increased from 806,000 to 6.3 million, or 9.8 million if Palestine territories are counted [36]. Combined with immigration, the populace of the arid land, largely dependent on foreign aid and water desalination, is likely to reach 16 million by mid-century. Despite existing beliefs, the fertility rate of Israeli and Palestinian women is approximately equal (3.1): higher than in Iran (1.8), Tunisia (2.0) and Saudi Arabia (2.1); being the highest in developed parts of the world [37].

In light of the Ukraine conflict, the double standards should be stressed: no sanctions were imposed against Israel for comparable military actions. On the contrary, financial and technical aid has

been provided. Apparently, certain spheres on both sides of the Middle East conflict have cooperated in receiving foreign aid: some get it from the West, others from oil-producing countries. Israel has been the greatest cumulative recipient of U.S. foreign assistance since the World War II [38,39]. Besides, both Israel and the Palestinian territories receive financial help from Germany. In 2003, about two-thirds of the Palestinian economy was dependent on the foreign aid [40]. The Middle East imports more than half of its consumed food. The land and water constraints will continue to tighten [7]. Agriculture in conditions of insufficient water supply is economically and ecologically unfavorable as fossil fuels are burnt for desalination. The water sources are overused and contaminated [41]. Israel is one of the most water-stressed countries in the world, with agriculture accounting for over half of water consumption [42]; it is expected that the gap between water supply and demand will widen [40].

The energy for desalination could be produced by nuclear power plants (NPPs), but durable peace is needed because NPPs are potential targets. There are no alternatives to nuclear energy today [43]. In the long run, non-renewable fossil fuels will become more expensive, facilitating energy-based blackmailing [44], leading to overpopulation in fossil fuel-producing regions and poverty elsewhere. NPPs have come back to the agenda due to concerns about increasing energy demand and climate change. Well-run NPPs pose fewer risks than fossil fuel power stations. Health burdens are maximal for power plants based on coal and oil, smaller with natural gas and much lower for the NPPs. The same ranking applies also to greenhouse gas emissions and thus probably to the climate change. It is to be hoped that nuclear fission will be replaced in the future by fusion, which is intrinsically safer. Fusion should offer a source of safe, clean power generation with a plentiful supply of raw materials [45-47]. The worldwide use of nuclear energy must be managed by a powerful international executive based in most developed parts of the world. Durable peace and international cooperation are needed for this and other large-scale projects, but increasing population densities lead to complexity and reduced stability. Notwithstanding the prospects of cheaper and cleaner energy, there may be no alternative to a major fall in regional and global populations.

Birth control

Social progress is assumed to go along with improvements of morals, but migrations confound this process. Fictive, temporary marriages and reproductive coercion (RC) are used to spread certain genotypes and/or to cement marriages contracted to obtain a residence permit or accommodation [48]. This is a probable cause of increased birthrates immediately after immigration [49]. RC can involve physical, sexual, financial or psychological abuse [50]. Reportedly, about 70-75% of sexual violence cases in Moscow are committed by immigrants from Central Asia; some other ethnic groups are also active in this field [51]. Of note, people coming from the North Caucasus and ethnic minorities are not counted among aliens because they are Russian citizens. According to a monograph published in 2012, 1 out of 7 murders and ~50% of rapes in Moscow were committed by foreigners. At that, many crimes remain unreported or unsolved, especially those committed by migrants [52]. Among foreign citizens residing in the Russian Far East, crime was most frequently committed by Chinese (55%) and Uzbeks (23%);

while there was a growth tendency. The criminality in this milieu was found to be proportional to the share of illegal immigrants [53]. The criminal activity of migrants was estimated to be 4 times higher than the average for RF [54]. Analogous data are difficult to find in the recent literature; the topic seems to be avoided these days. Considering the high social significance, it may be a good idea to consider the migrant status as aggravating circumstance in criminal justice.

Bringing a new individual into the world leaves fewer resources for those who already need them, and in many cases have them in suboptimal amounts [55]. As mentioned above, sterilization is the most reliable method of birth control. Receiving countries decide whom they take and whom not; although many aliens enter and remain illegally. In countries with relatively stable regimes, the surgical sterilization might be considered as a precondition for work permit and/or permanent residence. Male sterilization (vasectomy) is a simple and harmless procedure. Caesarean section (CS) is an occasion to provide permanent contraception (tubal ligation) in females without additional trauma [56,57]. Increased use of caesarean tubal ligation would be especially favorable for overpopulated regions. The advantage of elective CS is the relatively low risk of fetal injury as well as the negative association with neonatal mortality and morbidity. Birth is a time of stress, manifested among others in tooth enamel by marked stria known as the neonatal line, which tends to be thicker after vaginal delivery than after CS [58,59]. This is an additional argument in favor of CS that is less traumatic for the newborn. There seems to be some conservatism; for example, it was claimed that the "overuse of SC adversely affects the health of the mother and the child" [60] with references [61,62]. There are no such or similar statements in the cited articles; more details are in [57]. This pertains also to Russia, where CS is usually not performed on a maternal request [63]. Certain experts reported that they had performed CS on maternal request and that countrywide it is performed more frequently when the procedure is paid on by patients [64]. Others insist that SC must be done only in accordance with indications. In the author's opinion, the tripling of the global index of deliveries performed by CS over the period 1980-2016 (from 6 to 18.6%) [65] is a positive development. A more frequent use of the caesarean tubal ligation would be especially favorable for overpopulated regions with a gender imbalance. Admittedly, sterilization can be seen as a violation of the bodily integrity. The same, however, can be said about sexual and reproductive coercion committed for migration/accommodation purposes, to spread a certain genotype and newly also to boost national birthrate (discussed in the next section). High fertility is sometimes used for geopolitical advance and should be counteracted as such. It can be argued that sterilization does not prevent sexually transmitted diseases; however, these diseases may be regarded as self-inflicted in consequence of negligent or immoral behavior, thus being in a sense a private matter. When children appear, it ceases to be a private matter, because the number of children in a family is of public concern today, as is the size and density of the population.

Reproductive coercion

Violence against women and maltreatment of children is sometimes tolerated by the state [66,67]. According to an estimate,

the prevalence of family violence in Russia during last decades has been 45-70 times higher than in France and Great Britain [68]. There is neither uniformly agreed attitude nor consequent policies. In 2017, Vladimir Putin signed into law an amendment decriminalizing some forms of domestic violence. Although the research is focused on the male control of a female's reproductive autonomy, RC can be perpetrated by other family members, institutions and the state [69-71]. Among others, religious argumentation is used for opposition to birth control and sex education, portraying childbearing as a duty. In fact, religion-related objections to contraception and sterilization are human speculations as no mention thereof is made in canonic sources and scriptures. Some writers equating abortion with homicide [72] might try to undergo surgery without anesthesia to appreciate the difference between an insensitive structure and a human being. Even today, Russian dentists ask for under-the-counter payment for anesthesia at tooth extractions and other procedures [73]. The mass misinformation can be seen as facilitation of RC sanctioned by the state. Some policies aimed at fertility elevation disregard reproductive rights of women. Among others, religion-related argumentation is used for opposition to the birth control and sex education, depicting childbearing as a duty, thus curtailing women's rights, including sexual and reproductive autonomy. Of note, there cannot be any valid religious objections against contraception and abortions because these methods are not mentioned in sacred texts. Popular TV series depict unexpected pregnancies both in and out of wedlock as natural and unavoidable. The risks associated with abortions and contraception are exaggerated or invented by some authors, including medical professionals e.g. [74]. In fact, the mass misinformation is a facilitation of RC committed by the state.

In societies accepting the rape myth, sexual violence is seen as a method of acquiring wives [75,76]. The fact that some victims married their rapists was erroneously seen as an indication that women enjoy it; in fact, sexual and reproductive coercion is associated with unfavorable health outcomes [77,78]. The battered woman syndrome and learned helplessness must be timely identified [78,79]. Sexual and reproductive coercion is not always recognized as such by victims. Intimidation and shame can prevent a woman from describing certain acts as coercion [66,78]. The maltreatment of women is under-reported, especially in less open societies. Denunciation of illegal and immoral acts has been unusual in the former SU, especially if committed by individuals from the privileged milieu. Boys are taught sexual coercion in certain traditional settings: experience with relatives is not unusual [80]. Studies indicate a link between child maltreatment, including incest, and sexual crime committed by victims in their later life [81,82]. Males imprisoned for sexual crime were often molested in their childhood. A similar pattern has been suggested for intergenerational incest [80]. A broad range of tactics is used by perpetrators: seduction and persuasion up to hypnosis, alcohol and drugs, intimidation and violence, blackmail and financial pressure [50], as well as deceit including concealment of genetic diseases [83]. Women should be aware of these tactics. RC is regarded to be a form of intimate partner violence. As mentioned above, it can lead to unintended pregnancy, abortions, poor pregnancy outcomes, sexually transmitted infections, psychological trauma and other complications [77,78,84-87]. Moreover, the control of reproduction may also have consequences for later mothering and relationships

with children [88]. Growing up as an unwanted child is associated with abuse and neglect, which is a source of emotional suffering and potential damage [89-93]. In the authors' opinion, contraceptive sabotage must be qualified as crime with infliction of bodily harm if an abortion or unwanted pregnancy, sexually transmitted or genetic disease has been inflicted intentionally or by negligence.

There is a maxim: "Do not have children unless you are sure that they will be healthy both mentally and physically" [94]. This suggestion is not realizable in conditions of sexual and reproductive coercion, contraceptive sabotage or concealment of heritable conditions from partners. It should be mentioned in this connection that 20-25% people of Ashkenazi descent carry a mutation for a genetic disorder [95,96]. Among others, the prevalence of the following conditions is above-average: Tay-Sachs disease, Alport, Lynch, Wolfram syndromes, Glanzmann thrombasthenia, adrenal hyperplasia, thromboangiitis obliterans, torsion dystonia, osteoporosis, cystic fibrosis, mucopolidiosis IV, pentosuria, diabetes, polycythemia vera, some solid cancers and leukemias, certain ophthalmic and other disorders [94-104], as well as predisposition to neurasthenia [105]. Some conditions are comparatively very frequent; for example, familial dysautonomia occurs almost exclusively in the above-named population; Bloom syndrome is ~600 times more prevalent than in the background. Approximately 1/10-15 Ashkenazi individuals is a carrier of mutation causing type 1 Gaucher disease, 1/30 familial dysautonomia, 1/75 A or B type of Niemann-Pick disease; 1/40 Canavan disease, 1/89 Fanconi anemia [106]. Some mutations are almost specifically Jewish, others are gathered and concentrated from surrounding peoples [107,108]. Inter-ethnic marriage may be consciously used against pathological consequences of incest [109].

The propensity for migrations and vagabondage is associated with certain genetic and/or ethnic characteristics. Migration may be desirable for people with abnormalities because behavioral and other deviations are less conspicuous abroad as the person is not typical just because he or she comes from another country. In a foreign environment, persons with abnormalities may be at least temporarily devoid of stigma [110,111]. "The grass is greener on the other side of the fence" not for everybody but for some individuals for certain reasons. Among the causes may be inherited features and/or affiliation with ethnic minorities. Another demographic problem, the gender imbalance caused by migrations, sex-selective abortions or female neonaticide, has been discussed elsewhere [112]. The growing excess of males contributes to their marginalization, antisocial behavior and militarism.

Conclusion

Rapidly growing peoples should live in less spacious conditions. Consequences of the gender imbalance must be borne by populations with a male predominance due to migrations and/or sex-selective abortions. Recognition of these principles should become a basis for international understanding and trust. In view of ecological and economic conditions, an optimal fertility level must be recommended for different regions. Who would determine the level? Primarily, everyone for her- or himself. In stable societies with sufficient food and water resources, the birth rate of the titular nation may be higher than in regions where people consume desalinated water and foods acquired with foreign aid or for exported fossil fuels. An international

authority could issue evidence-based recommendations. Birth control has been obfuscated by presumed national interests; demographic growth is supposed to strengthen the sovereignty and defenses. Smoldering international conflicts contribute to birth rate elevation in some regions. In the past, overpopulation was counteracted by homicide, pestilence and famine. Today, scientifically based humane methods can be used to regulate the population size, taking into account ecological and economical realities. Large projects could be accomplished to improve the quality of life: irrigation systems, nuclear and other energy sources as an alternative to fossil fuels. Hydroelectric power plants can be built on large rivers to produce hydrogen as a non-polluting energy carrier. Such projects would create many jobs, being a reasonable alternative to excessive military spending. Not only durable peace but also mutual trust is required for that. Unfortunately, trust can be abused. Confidence-building measures are of great importance. It seems to be inevitable that the global human population will become reduced during the present century. How this happens may be to some extent within our control. It will not remain so indefinitely.

In conclusion a few words about the Ukraine war. The conflict has impeded ecological policies in Europe and worldwide. Environmental protection and energy conservation are less popular in Russia than in other developed nations. The conflict between two major agricultural countries has negative impact on the global food supply. Military actions burn much fuel and release toxic chemicals [113]. Birth control has been obfuscated by presumed national interests: the demographic growth is used to strengthen defenses. International tensions and conflicts are among reasons to boost childbearing. At the same time, the topic of inter-ethnic differences in the birth rate and migrations is largely avoided these days.

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