

# Ethical aspects of abortion

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**UNIVERSITY OF ZAGREB  
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# **ETHICAL ASPECTS OF ABORTION**

**GRADUATE THESIS**



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This graduation paper was made at The Department of Obstetrics and Gynecology under the supervision of Assistant professor Josip Juras, M.D., Ph.D., and it was submitted for evaluation in the academic year 2019/2020.

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## **List of Abbreviations**

TOP- Termination of Pregnancy

US- Ultrasound

IUD- Intrauterine device

WHO- World health organization

PGS- Preimplantation genetic screening

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## Abstract

If we analyze the matter of intentional abortion through a clinical eye, it is a simple procedure in most cases. However the complexity of the implications concerns people from almost all sectors. The conflict of different opinions generates a great controversy, a controversy that seriously infringes human rights, especially those of women. There are different attitudes towards termination of pregnancy, and it differs by area/location. Mostly along history, religion used to have the highest influence on the legality of abortion, but today, human kind face other challenges and wide verity of options, which gives an individual, to plan their reproduction in the sake of the family and in some cases in the favor of the nation. When applying the fundamental ethical laws to the issue of abortion the lines easily fade. Suddenly it is difficult to determine right or wrong and to determine a universal code of behavior. Serious honest questions must be asked to understand how to precede which each case of potential abortion.

## Introduction

Termination of pregnancy (TOP) is a complicated ethical case that challenges a wide spectrum of professionals in a wide range of fields including politicians, medical practitioners, philosophers, representatives of all religions and the public in general. Religion had the most influence on the implications of abortions laws. The three religions dominate the world of today; Christianity, Judaism, and Islam forbid most cases of induced abortion and consider it as intentional killing. The rationale behind the ban is the assumption of the fetus as a potential life created in God's will, and humans should not violate it. Although there are some exceptions, for example in Judaism, the matter is divided into 40 days and after it. According to it, the soul of a human enters the body 40 days after creation, which makes abortion a crime at that time, however if by any chance pregnancy detected before, abortion is permitted under rigid conditions. Reality has made normative people consider breaking the law regarding their unwanted pregnancy and terminate illegally, while their counterparts on the other side of the globe have access to a supporting health system. Even today there are countries which forbid abortions by any circumstance, but a positive trend is felt when most of the countries that previously banned abortion now enacts more lenient conditions.

Ethical issues were relatively simple before the emerging of new technologies. The sex of the fetus and the health status were unknown, moreover, women weren't aware they are pregnant and it was brought to their attention at late stages. Nowadays technology can help us to predict numerous unwanted situations by the mother. With serial antenatal screens, for example, triple test, quadruple test, cell-free fetal DNA (cf-DNA), and more invasive Chorionic villus sampling (CVS), we can reach to more than 90 % sensitivity and confirm aneuploidy or polysomy. Imaging methods, mainly ultrasound (US) machines, allow us to have a snapshot of the fetus in real-time, which help us observe unusual fetal features that might be a matter of concern. With the blessing technology brought on us, the ability to predict whether or not the fetus is healthy raises questions and harsh ethical issues among on the international level. Demographics of nations in Asia were significantly affected when cultural preferences took advantage of technology, causing irreversible damage. A battle of right and wrong is to occur in these times, how to define the fetus accurately, fetus rights versus the mothers, who have the authorization to approve an abortion and the effect of implication of new abortion laws on the society still exist, and doesn't look like the solution is near. In this text we will try to answer a few essential questions. Questions about the fetus will be:

- What gives a being the right to life?
- Is the fetus in utero considered a human being?
- Is a fetus a separate being from its mother?
- Can a fetus feel pain?
- If the fetus has a right to life, does that right take priority over the mother's right to control her own body?
- Under what circumstances, if ever, can we take an 'innocent' human life?

Questions addressed to the mother will be:

- Is any other right more important than the right to life - for example, a woman's right to decide what to do with her own body?
- At what circumstances abortion is justified?
- If the woman's life is in danger because of the pregnancy, how do we decide whose rights should prevail?

## Epidemiology

The estimated worldwide rate for abortion from 2010 - 2014 was 35 per 1000 women ages 15 to 44. Further research discovers differences in rate of abortions between developed and non-developed countries; the rate in developed countries between the years 2010-2014 was 27 per 1000, and it is a significant reduction relative to 1990 - 1994 in which the rate was 46 to 1000 (1). On the contrary, in developing countries the calculated rate was 37 per 1000 with 2 points reduction compared to 1990 to 1994(1). Examples for developed sub-regions and countries with lowest abortion rates; United States, Canada (17 per 1000) and Western Europe (18 per 1000). Abortion rates in the United States were highest in women ages 20 to 24 (30 per 1000 women) and 25 to 29 (22 per 1000) (2). The rate of abortion in adolescents was 10.7 per 1000 women, with the highest rates for those ages 18 to 19 (21 to 26 per 1000). Marital status was also significant, with most of the abortion-related with an unmarried woman and one or more children (84 %). The abortion rate among women living in poverty, defined as \$9570 per year (?) for a single woman with no children in 2002, was four times higher (3). The majority of abortion occurs during the first trimester, <8 weeks (64 %) and <13 weeks (91 %) (2). In comparison to developing, sub-regions such as the Caribbean get as high as 65 per 1000 (1). Repeated abortions accounted for 42 % of induced abortions in the US (2). When asked why did they choose abortion instead of having the baby the most common answer were inability to afford a child; not wanting to be a single parent; interfere with work, school, or other responsibilities (4). Although these results have few limitations, information about abortion incidence in the developing world is incomplete. Moreover, many women undergo unsafe abortions that put them at risk of physical harm. There is evidence of 6.9 million women living in the developing world which got treatment for complications of unsafe abortion (1).

This epidemiologic data can help us in understanding the dramatic shifts in rates of abortions that took place among developed regions. Those countries suggest and provide types of contraception methods for females in reproductive age. The best way to prevent an abortion is to prevent unintended pregnancy from occurring in the first place. Examples for contraceptives are condoms, pills, smart intradermal devices, patches and injections. More reliable contraceptives may be the intrauterine devices (IUD), Copper and Progesterone based IUD can



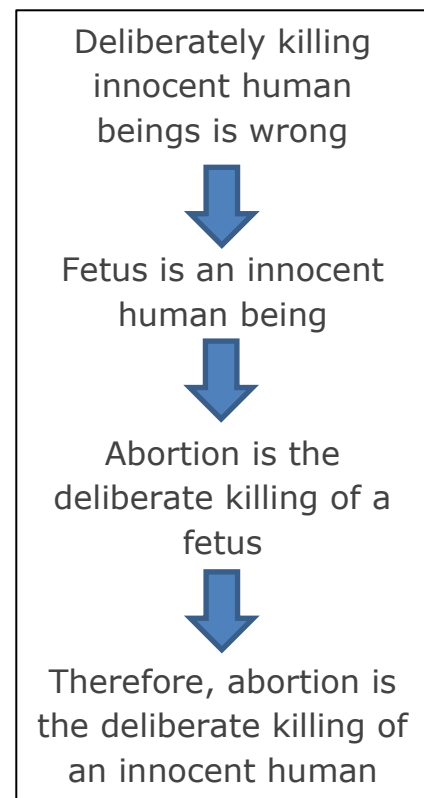
reach pregnancy probability of 0.6 and 0.1 respectively (5). Humankind development during the decades is astonishing and rising exponentially, as a result, humans are the only species that succeed to control their reproducibility. Development of such almost absolute methods of contraception is a remarkable achievement regarding ecosystems and cultural development. At the same time can affect our future by affecting natural demographic development and human morals for good.

### The Abortion Debate

The abortion debate encounters the issue of the right and wrong regarding ending a pregnancy before childbirth, by killing the fetus in the process. Pregnancy termination is a very sensitive and extremely painful issue which causes many moral dilemmas. When dealing with abortion we must question ourselves, **is abortion morally wrong?** If we consider it as morally right, we want to know in which cases abortion is considered the right thing to do. There are two main attitudes, on one side are those who call themselves 'pro-life'. They say that intentionally caused abortion is always wrong. On the other side are those who call themselves 'pro-choice' or 'supporters of abortion rights', and who regard intentional abortion as acceptable in some circumstances. A frequent common reasoning for banning abortion is illustrated in figure 1. If we accept the following reasoning, it means that the right to life outweighs another person's right to control its own body, and the only such right is the mother's right to live. But even before engaging with the question of abortion and fetus right to live, the issue of what defines a human being should be sorted out. When defining human life, we might mean a member of the biological human species - having the human genetic code. But clearly it is not enough, and human behavior properties must be added, properties often suggested might be the ability to think, to imagine and communicate. Why does it matter? Without getting the point sorted out people can find themselves arguing about completely different things, even though they are using the same vocabulary, 'human being'. After everybody is lined up with definitions, we can ask the question, **when is the time the fetus gets its right to life? Is there an agreed exact time when a fertilized egg,**

**crossing the line from a group of potent stem cells, becomes a human being?** Everyone agrees that adult human beings have the right to life. Some people would say that the fertilized cell resulting from conception does not have the right to life. Therefore, the right to life is acquired sometime in between those two points. There's no agreement in medicine, philosophy or religion as to what stage of fetal development should be associated with the right to life. Each of these sectors suggest different dates which seem either arbitrary or not precise, but they all have a common ground, they all base their abortion laws based on viability of the fetus. Some argue that life begins when the baby is in the stage at which it can survive out of the womb which makes it a viable organism, and this is the most common rule when developing abortion rules. Of course, whether a fetus can survive outside the womb depends on external factors such as the state of medical science, the medical facilities available, the gender and sometimes the race of the fetus. Some disagree with the notion of being out of the womb making the baby an independent entity and exacerbate the approach until the umbilical cord is clapped, and the fetus is not dependent on the mother resources anymore. Other fetal development stages which were and still significant in arguments are the moment of conception, implantation, the moment when the fetus first moves in the womb, tissue differentiation and first brain activity.

Figure -Common reasoning for banning of abortions



To access these sensitive issues, all involved sectors investigate the laws of ethics, foremost; autonomy, beneficence, Non-maleficence, and justice for temple court. Equally important in reaching the best outcome is, of course, common sense.

### Ethics – Four core principles

Hippocratic code "I will maintain the utmost respect for human life, from the time of conception" protects the fetus in utero and considers him as a human (6). Ethics is essential in obstetrics and should be applied for all physicians regardless of their religion and personal beliefs. Ethics is trans-religious and transcultural and can assure uniform behavior among medical staff and physicians.

In pregnancy, the facts of two human lives are in stake, causing many contradictions of ethical laws in which the medical practitioners must follow. Ethical laws can be guidelines in simple cases but can raise the level of debate in more complex cases. Such cases may appear when there is a serious medical problem for example too many fetuses in the womb for them all to survive. Cases where the development of child will not result in healthy human being, also known as negative eugenics, that includes mental retardation and physical abnormality or cases where the pregnancy is entirely unintentional as a result of a rape.

Each case should be thoroughly examined and respected by the core ethical laws, *Autonomy; Beneficence; Nonmaleficence and Justice*. A quick revision would be useful when engaging ethical issues of TOP.

**Autonomy**- deliberate self-rule is the condition or state of being autonomous, able to make decisions unaided by others. "Respect for autonomy is the moral obligation to respect the autonomy of others, in so far as such respect is compatible with equal respect for the autonomy of all potentially affected" (7). Respect for autonomy contains different strata, in the health care system physicians are required to consult patients and obtain their agreement (also called informed consent) for any procedure or treatment. The Informed consent protects the physician against accusations such as malpractice and nonmaleficence and protects the patient as well by providing all the information the patient needs to know to make an informed decision (6). Medical confidentiality is another principle implicated in respect of autonomy; it is considered a cornerstone in establishing a good and trustful patient-doctor relationship, gaining the trust of the patient is essential; the physician mustn't share any personal information on the patient except for self-harming or to

prevent danger to others. Confidentiality is promised to the patient that he's medical information would not be released without his consent, and it is crucial to take a comprehensive medical history (7). Decisiveness of the patient's trust will cause damage to the physician-patient relationship and a lot of time, if ever, gaining the trust again. Conservation of patient information protection is a highest priority, it should be combined with good communication based on listening and telling the truth, sometimes requiring inquiry by the medical caregiver, on how much information the patient wants to know (7). Obstetrics autonomy principle can help when treating a patient-facing TOP in definite cases, for example, anencephaly and other malformations incompatible with life. This principle, however, can complicate decision making in cases when the fetus has minor future disabilities, in this case, we should try to balance between the two autonomies, the mothers versus the fetus.

**Beneficence** refers to the physician's obligation to act with the best interest of the patient. When trying to help the patient, in some cases the offered treatment has serious life-threatening risks. Consequently, Beneficence must be considered together with ***Non-maleficence***. The Hippocratic moral obligation of medicine guides us to provide net medical benefit with minimal harm. The caregiver must assess all the option considered objectively, and implant them into a treatment or advice which protects and promote the best interest of the patient (6). In the case of abortion, it's a bit delicate situation, when a mother request to terminate a normal healthy pregnancy, the doctor would act with the beneficence of the mother and clearly against the beneficence of the fetus.

Professionalism must be considered as a physician who must be capable of advising with the latest developments in evidence-based medicine and treat according to the latest guidelines. Clear Transparency should be conducted, and no information should be hidden from the patient.

Lastly, a great benefit may be gained by empowering the patient. Giving power and control, gives the patient better acknowledgment of he's/she's condition and helps him/her to cope with the medical condition better (7). Empowerment methods in the health care system may conclude; to give clear information and actionable plans, provide them convenience; encourage to monitor themselves and to set achievable goals (small wins).

**Justice** "could be described as the moral obligation to act based on fair adjudication between competing claims. As such, it is linked to fairness, entitlement, and equality. In health care ethics, this can be subdivided into three categories: fair distribution of scarce resources (distributive justice), respect for people's rights (rights-based justice) and respect for morally acceptable laws (legal justice)" (7). Any person has the right to be treated equally regardless of race, gender or religion. The concept of distributive justice relates to the allocation of goods and is usually confused with just process (implementation of laws). Distributive justice engages the outcomes. For example, when workers who work more than others in the hypothetical firm, get the same salary. Another example is taken from the dark days of World War II (WWII) when Jewish citizens in Germany were obligated to pay much more taxes than non-Jewish citizens.

Rights-based justice is the unalienable rights which each person deserves; examples are the right to life and liberty.

### **Religion and Abortion**

All the religions have taken strong positions on abortion; they believe that the issue encompasses profound issues of life and death, right and wrong, human relationships and the nature of society, that make it a major religious concern. People involved in an abortion are usually affected very deeply not just emotionally, but often spiritually, as well. They often turn to their faith for advice and comfort, for explanation of their feelings, and to seek atonement and a way to deal with their feelings of guilt. Because abortion affects heart as well as mind, and because it involves life and death, many people find that purely intellectual argument about it is ultimately unsatisfying. For them it's not just a matter that concerns a human being and their conscience, but something that concerns a human being and their God.

### **Judaism**

For a starting point, Judaism does not forbid abortions. It will forbid abortion on demand and consider abortion only in serious cases. In such cases any situation when the fetus is a threat for the mother life, abortion can be proceeded. From here we can conclude that strict Judaism permits abortion only in cases where

continuing the pregnancy would put the mother's life in great danger, The Mishnah (is the first major written collection of the Jewish oral traditions known as the "Oral Torah". It is also the first major work of rabbinic literature) (8), states that where there is danger to the mother's life, an abortion can be performed at any stage from conception until the head of the infant emerges. Moreover, the moment of birth is described in detail in the Mishnah "if a woman is having trouble giving birth, they cut up the child in her womb and bring it forth limb by limb, because her life comes before the life of the child. But if the greater part has come out, one may not touch it, for one may not set aside one person's life for that of another" which means that the position of the fetus during labor is crucial for the fetus survival, not only from the clinical aspect. Some rabbis will consider approving and abortion on the bases of mental health illness, especially if it is severe which may lead to suicide. as we can see the anti-abortion attitude of Judaism is not black and white. This attitude comes from the Jewish high value of sanctity of human life.

According to the Mishnah (Sanhedrin 4:5):

"Whoever destroys one life is as if he destroyed a whole world, and whoever preserves a life is as if he preserves a life is as if he preserved the whole world"

This attitude might be confusing, if we are relating to the baby the properties of an independent human being. Jewish arguments about abortion usually mainly concerned with the distinction between killing someone who is fully a person, and someone who is not fully a person. It can be difficult because the bible do not encounter abortion issues directly, so it must be concluded from the written text analogies.

Another interesting interpretation by the great Jewish commentator Maimonides is 'saving the mother from the fetus' and claims to justify destroying something of high value (the fetus), because it is (actively) endangering a person's life. The humanness of the fetus is devalued because the fetus is threatening a life.

When relating abortion in the sake of the fetus, in case of severe disease or malformations, the views are split between rabbis who do not permit and claiming 'it is God's will' and rabbis with other views, which consider abortion in

the favor of the fetus and family. Moreover, the opponents also forbid screening for malformations and syndromes, by doing so they save the hassle.

In Judaism, a fetus is not considered to be a person until it is born. Before that it is regarded as a part of the mother's body, although it does possess certain characteristics of a person. Before the 40 day of conception the fetus is considered as 'mere fluid'. It means that the fetus is not yet considered a person, but rather a potential human being. But still, the 'mere fluid' gets protection by Jewish law, evidence for it lies in the law of saving the fetus even on the account of Shabbat, the holiest day for the Jews when no work is allowed.

### Christianity and Catholic Church approach

The Roman Catholic Church approach is against abortion and define it a grave moral evil. They claim that human life begins starting from the moment of conception. From that moment a unique life begins, independent of the life of the mother and father. The features that distinguish us from our parents - the color of our eyes, the shape of our face - are all laid down in the genetic code that comes into existence by fertilization. Each new life that begins at this point is not a potential human being but a human being with potential. The church forbids abortions since the 2<sup>nd</sup> century. "You shall not kill the embryo by abortion and shall not cause the newborn to perish" (9) written in a document called Didache. The catholic current approach towards abortions can be reflected by the saying of Pope Francis (the current pope) that abortion, even of a sick child, "is like hiring a hitman", and Pope John Paul II claimed in he's teaching letter to the whole Catholic Church called *Evangelium Vitae* ('The Gospel of Life'), I confirm that the direct and voluntary killing of an innocent human being is always gravely immoral" (10). and relates to abortions specifically: "I declare that direct abortion, that is, abortion willed as an end or as a means, always constitutes a grave moral disorder, since it is the deliberate killing of an innocent human being". There are pro-choice Catholics which do not agree with the Vatican approach, and argues that the church approved to every catholic to follow he's own conscience regarding moral values even if it is contradicting the church teaching. Some are claiming over strictness of the catholic system and claim that life begins after 40 days of conception similar to the Jewish approach.

The Islamic religion has similar approach towards abortions with several different reasoning. It is evident that there is a common ground to all the three monotheistic religions, they comment against abortions because the sanctity of life. Human life is a supreme value and when it is violated it is considered as a mass evil. No doubt, human life is one of the highest values, but it is not coming on the account of those who are already living. Strict laws offend women and take from them the natural right to have control of their own body. Those strict laws not only come to protect life, but also to gain control over population. Churches, synagogues and mosques need people to spread the word of God, and without them they have no purpose to exist. Population decline across Europe is a great matter of concern for the Catholic Church which is losing her power with less followers. Because of the decline, we can predict escalation in the anti-abortion attitudes, the question is, how do governments will respond to it?

### **Abortion Law Overview and Illegal Abortions**

Laws regarding abortions were always complicated. Usually, abortion law aims to allow or prohibit, restrict and regulate the act of abortion because of its unique complexity. The World Health Organization (WHO) database shows that there is not much of a difference between countries that approve abortions, then those who ban them. Nowadays a few countries (26 countries) prohibit abortion completely, 5 % of women in reproductive age live in those countries, which means approximately 90 million women. Among them; Honduras, Nicaragua, Angola, Egypt, Iraq, and the Philippines. The laws of the countries in this category do not permit abortion under any circumstances, including when the mother's life or health is at stake (11). Other countries (39 countries) will allow abortion only if it is an emergency and can save the life of the mother. Examples are Brazil, Mexico, Tanzania, Iran and Indonesia, 360 million women which are 22 % of women in the reproductive age population worldwide. Overall we can conclude that over a quarter of the women population in reproductive age cannot decide whether or not to terminate their pregnancy no matter what the circumstances are. Not surprisingly human rights in the countries spoken above are violated on a daily basis. Women in Iran, for example, can be incarcerated for marital infidelity and illegal abortions and in the worst-case executed. These



brutal rules go hand by hand with the prohibition to have an abortion by request, since a woman cannot decide on their own body and break the Sharia laws. Committing unsafe TOP is one of the issues inflicts much concern among health care providers.

### Unsafe Abortion

"The World Health Organization (WHO) recognizes that in countries with restrictive abortion laws, induced abortion rates are high, the majority of abortions are unsafe, and women's health and lives are frequently put at risk."

(12)

Data provided by WHO reveals an interesting fact, laws banning abortion do not restrict abortion rates. Interestingly it is stayed the same and encourage woman to seek for over the counter abortion, provided by unauthorized company or individual. Moreover lack of data predicts even bigger numbers of unsafe abortions which were not reported. In addition safe abortion in countries with highly restricted or unavailable abortion law became for the rich, while they can fund their travel abroad and carry out their wishes.

"Almost 23,000 women die each year as a result of complications from unsafe abortions" (11)

The World Health Organization defines safe abortion as abortion in countries where abortion law is not restrictive (abortion is legally permitted for social or economic reasons, or without specification as to reason) or countries in which, despite formal law, safe abortion is broadly available. (10) Conversely, "unsafe" abortion is performed by people lacking the necessary skills or using a hazardous technique, and/or in an environment that does not meet minimum medical standards. The burden of unsafe abortion on the health care system is large. Complications can lead to infection, trauma, incomplete abortion, life-threatening hemorrhage and death. In fact, In the developing world, it is estimated that five million women are admitted to hospitals for the treatment of complications from induced abortions each year (13). From the psychological

aspect, Women put into a major distress; usually, they cannot consult with a professional and share their worries which place them in a stressful situation. Under these circumstances, women left alone to decide to have a baby or abort the pregnancy. In some instances, pressure is too difficult to handle and may lead to suicide. Although the psychiatric impact of TOP is controversial, in general, most of the high-quality studies suggest that induced abortion is not associated with an increased risk of serious mental health disorders including suicide (14). These studies also reveal the influence of potential modifying factors, the following factors appear to be associated with the degree of emotional distress that occurs in response to pregnancy termination; Mental disorders prior to the abortion, Social support, Relationship violence and Attitude toward pregnancy termination. The social support available to women before and after abortion, affects their perception, experience, and post-abortion feelings. It was found that low social support is associated with increased negative feelings following the TOP which may lead to self-harming (14). With so many consequences on the woman's physical and mental health, the individual woman is the only one who seriously pays the price; the health care systems in those banning countries add those illegal abortions to the statistics and relating them as a burden.

### **Rapes Raising Ethical Issues**

Pregnancy might be as a result of a rape. When sexual intercourse is forced upon a woman or child there is no question about the feelings of the woman towards her growing fetus, but is it a good enough reason to abort the pregnancy? Why does the fetus have to pay the price of cruelty?

The act of rape has been documented throughout history in numerous contexts, examples are rape during a war, statutory rape, incest (between family members) and underage. Epidemiological studies indicate that women who report a history of physical or sexual assault demonstrate significantly higher rates of general medical health complaints including gynecological and gastrointestinal symptoms, chronic pain syndromes, sexual dysfunction, and functional impairment (15). additionally, mental illness such as acute stress syndrome, post-traumatic stress disorder (PTSD) are common and reach up to

30 to 50 % of life expectancy (15)(16), sexual assault will increase the chance to all of the following. In case the woman got pregnant after the assault she will need to face a new reality in which she carries the baby of her rapist. A couple of choices would be on the table in this case; one is to raise the child, another is to give the child for adoption and third is TOP. When the mother decides not to abort, she will have to face psychosocial challenges, and in the future, the child as well. The mother might not accept her own child which might lead to child abuse and homicide. Also, according to law, in several regions, the rapists are considered the father and maintain paternal rights (17). The child might be a victim of humiliation, prejudice and together with the mother can be outcast. Are future difficulties which mother and child could encounter sufficient reason for abortion? With a supportive social environment with no prejudice, an integration of the child may be successful. On the other hand, the mother that experienced a traumatic event, and the birth of the baby will aggravate the psychological pain. Humanity had to deal with horrors of wars, part of them are mass rapes which left behind thousands of helpless women and children afterward.

### Rape as a Weapon of War

The use of rape in the times of war is not uncommon and even described in the bible at the wars of Israel against their enemies (18). A list of countries that have been involved with mass rapes conducted by military or paramilitary forces just in the 20th century includes Belgium and Russia in World War I (WWI). Russia, Japan, Italy, Korea, China, the Philippines, and Germany during World War II (WWII). And in other conflicts in Afghanistan, Rwanda, Bosnia -Serbia -Croatia, India and Pakistan. Rapes during wars are not random, but a planned military strategy. Mass rape produces fear and terror among the enemy, and the main purpose is to dislocate the enemy population from their property and reduce the chance of them to return. Usually, mass rapes are part of ethnic cleansing and genocide (19). In the Bosnian War (1992-1995) around 12,000–20,000 women were raped, most of them Bosnian, Croatian women and a minority of Serbian women in Bosnia - Herzegovina and Croatia. They were raped systematically by the army of Republic Srpska and Serbian paramilitary units in rape camps, in which women were held against their will and pregnant women were detained

until it was too late to have the fetus aborted. The aim was ethnic cleansing which achieved by sexual abuse and genocide.

### Abortion Law in the Developing World

In the world of today, there is still no consensus regarding women rights. Women over the world still have a lower status than men, even in developed countries. In countries located in Africa, Asia, and South America women still suffer from contempt, abuse, and violations of human rights. Somalia, for example, is in an ongoing war for decades, the population lives in poverty, the women are enslaved and sold in the human trafficking business where they tortured reputedly which presents a violation of ethical laws on a daily basis. Somalia is also one of the countries with an absolute ban on abortions (20). Punishment may be incarceration or death penalty. With exception of a new policy that had been started after the adoption of the Somalia Provisional constitution by the National Constituent Assembly in 2012, in which an abortion is illegal and may only be allowed to save the life of the mother. The government does not yet recognize the right of a woman to control her own body, and not even in extreme cases of pregnancy as a result of sexual assault (12). Refugees pruned to sexual assault as a consequence of war, are a population with a high rate of unwanted pregnancies (21). Being displaced and becoming homeless temporarily, refugee women are lacking safety and protection which makes them an easy target for violence. An example which can illustrate the magnitude of the problem is the story of a young African refugee known only as S99, which attempted to reach Australia. She is a 23-year-old Somali refugee who like thousands before her, tried to reach Australia in a rickety boat that was intercepted at sea two years ago. She ended up in a detention center on Nauru, an island in Micronesia, one of two remote islands where Australia sends asylum seekers. Her lawyers say she was raped in July 2015 when she became pregnant. Since she was not eligible to stay in Australia, she was planned to be sent back to Somalia due to the strict immigration policy of Australia. She desperately requested an abortion before she was sent back to her home country where an abortion is banned. The government flew her to Sydney, where her pregnancy was to be terminated. But, the abortion did not happen and the abortion refusal papers were signed without

her knowing, and she was sent back to Nauru. In this case, the dispute was much bigger than S99 human rights, it was political. The government of Australia was concerned with this complex story since it might encourage and ignite the campaign against Australia's strict immigration policy (22). Sudan has almost a similar problem as Somalia with ongoing civil war for more than 20 years. Women and children are in the range of danger. Battles between government forces and rebellions left women and children without shelter, food and water. Women were sexually abused by soldiers and got into unwanted pregnancies. In 1991 the Islamic government expanded the circumstances for abortions and permit pregnancy termination as a cause of rape (23). Women, at last, gained more autonomy and justice, yet, they could not take full advantage of the new laws. Women had to prove that the sexual intercourse was forced upon them in order to get an abortion, in order to achieve that they should have four male witnesses and marks of violence such as bruising and lacerations (23). If she fails to prove the lack of consent, she will be accused of having sexual intercourse before or after the marriage, simply explained as if you cannot prove rape, you become the perpetrator (24). According to Islamic laws, she deserves 100 lashes if unmarried and stoning if married. The legislation of new laws came to improve the status of rape victims in case of pregnancy but worsened the ethical issue around it and created a dilemma for a rape victim with new laws that led to punishment and death of an innocent woman.

Initiatives took place at 1994; Most reproductive health programs for refugee women now include family planning and safe delivery care. They provide emergency contraception and post-abortion care (but not yet implemented), nevertheless, no service is available for women who wish to have abortion (21). Abortion among refugees is left out of the world agenda for several reasons; first, there is lack of hard data on abortion needs in the refugee population, most organizations do not collect enough data and publish it. Therefore, the onset of abortion policies and their implementation is hopeless. Furthermore, many refugee clinics are not equipped and organized for abortion services, and woman are referred to distant clinics which they cannot reach. Refugees per se are a complicated political issue. Internal politics lead to restrictions that might hasten the average stay in the host country (21). For example, in Croatia refugees got only partial health service coverage compared to local population(25). Also,

external political entities, e.g. the Vatican, can influence organizations such as United Nations High Commissioner for Refugees (UNFPA) reproductive health programs against abortion in refugee populations.

### Worldwide Liberalization of Abortion Laws

Women's rights have become an important topic nowadays. 'Me Too' movement against sexual harassment and assault is only the tip of the iceberg when speaking about the struggle for women's rights and gender equality over the years. In 1994, 179 states signed the International Conference on Population and Development Program of Action (ICPD) (26). That was the first document signed recognizing reproductive rights as human rights. Since 1994 more than 50 countries have expanded and liberalized their abortion laws. 15 countries reformed their laws to allow abortion on request.

Table 1: Sex Ratio of Total population and child population in the age group 0-6 and 7+ years: 2001 and 2011

State/UT Code	State	Sex ratio (females per 1,000 males)					
		Total population		Child population in the age group 0-6		Population aged 7 and above	
		2001	2011	2001	2011	2001	2011
	INDIA	933	940	927	914	934	944

Office of the Registrar General & Census Commissioner, Indian Ministry of Home Affairs, Government of India.

18 countries overturned complete bans on abortion, reforming their laws to permit abortion under various circumstances. Some countries made meteoric changes in their policies like Guyana which was known for their absolute prohibition on any circumstance of abortion to much easier conditions just in a year (26). Other countries change their abortion policy more gradually (over

decades) such as Mauritius and Angola and now permit abortion for the health preservation. These are important steps, empower women, and integrate them better into society. However, there are still problems in the availability and implantation of these laws, and we must interpret this data with caution. With the extension of abortion laws, availability of abortion is clashing with cultures and lifestyles motifs which are not in line with its earlier seeing.

### Sex-Selective Abortion

In a strongly patriarchal society (mostly found in developing countries, but not only), the value of sons, cultural and financially, is incomparable to the value of girls. It has started in the allocation of family resources towards the sons while neglecting the girls in the family, handing them to adoption, passive and active abuse and in the worst case infanticide and homicide (27).

Sex ratio is the ratio of males to females in a population. With a natural pregnancy process and no intervention, sex ratio at birth is consistent across populations at between 103 and 107 boys born for every 100 girls. Higher mortality among boys ensures a ratio close to 1 until reproductive years (28). Sex ratio in India in 2001 reveal a child (0–6 years) sex ratio has fallen markedly from 945 in 1991 to 927 in 2001 (29). Table 1 shows a trend that is a matter of concern for the Indian government. In ten years, we can see a reduction in the population of females relative to males in the age group 0-6. Sex ratios are the lowest ever in some of the states of the country: Maharashtra (917), Gujarat (878), Punjab (793) and Haryana (865). Table 1 shows the increasing sex ratios between the years 2001-2011. Before the emerging antenatal diagnosing tools infanticide of female fetuses was the method of choice. Sex selection nowadays is most prevalent in India, China, Taiwan and Nepal (27). With the advent of ultrasound (US) in the '80s, parents were granted more power in controlling their family structure. Even before the era of US, medical practitioner could know the sex by amniocentesis, usually done for detection of trisomies and aneuploidies. The use of amniocentesis, which is an invasive procedure, was limited. Today medicine appreciates the US as the main diagnostic tool and makes it widespread in covering a bigger population, which accelerates the process of sex-selective abortions. Newer technologies now allow sex selection prior to

conception, e.g. techniques for separation of the X-bearing and Y-bearing sperm to use one or the other for in vitro fertilization (IVF) or artificial insemination.

### **Does fetal sex-based abortion is a manifestation of increase women autonomy around the globe?**

We have spoken about the natural right of a woman to decide on her own body, if we will look closely on the nature of decision, we will discover several facts,

"Recent study in India compared women having abortions on grounds of fetal sex to those having abortions for other reasons; the former had relatively less autonomy and mobility, and were less likely to play a major role in family decision-making"

The pregnant woman is under pressure coming from different directions, sometimes close family and relatives will encourage her to terminate, and in some cases by joint family decision. Sometimes the decision falls as a result of intense pressure from the husband, the desire to conceive a male who will continue his name. This leads us to the conclusion that women living in patriarchal societies do not really grant their reproductive rights and freedom of choice. To the matter of fact statistical analysis of sex ratio leading us to the assumption that woman decision in patriarchal society usually is not independent and the pressure from family and society is prominent.

### **China – The One Child Policy**

Chinese fertility program was redirected in 1979 to a one-child policy (30). By 1949 Chinese population was approximately 500 million and in three decades the population reached 800 million people. Stability after centuries of wars, rebellions, and epidemics, together with increase in life expectancy, resulted in a 2.8 percent rise in growth rate, which led to the additional 250 million people by 1970 (31). The rapid population growth alarmed Chinese officials, and the Communist Party subsequently enacted a series of fertility control policies culminating in the One-Child Policy. The establishment of the policy was an important landmark in Chinese history, contradicting the agenda of Mao Zedong also known as Chairman Mao. He was a Chinese communist revolutionary who became the founding father of the People's Republic of China, which believed



that population growth would empower the country. With uncontrolled reproduction and no laws restricting it, most probably, China's destiny was going towards overpopulation catastrophe. China's main objectives were to stop population growth by 2000, which was defined as a national interest (31). The one-child policy is unique to China, this unique policy causing unique conditions and raising serious ethical issues. The new restricting laws made family planning much more complex, and contradicting the basic natural, biological drive to reproduce, which is also an important component of life. To enforce the new policy, provincial governments have required the use of contraception, sterilizations, and abortions, sometimes against the will of the mother, to ensure compliance and those who would not follow the rules were imposed with enormous fines for violations. Local and national governments created commissions to promote the program and monitor compliance. The government also used rewards to encourage families to "play by the rules". They awarded 5 yuan per month for families with one child. Parents who had only one child would also get a "one-child glory certificate". Human rights were violated, such as the freedom to choose and decide on your own personal future. Women were obliged to have an IUD installed after having a first child and to be sterilized by tubal ligation after having a second child. Women who refused these procedures were in danger of losing their rights and their child's rights for identity (32).

There were four fertility limits for four different categories of parents. The first category consists of parents from the urban zone (called Hukou), they were permitted to have only one child. Those from rural zones (called hukou) could have a second child if the first child is female. Population from autonomous zones was allowed to have a second child in any condition, and ethnic minorities are subject to weaker regulations and may have a bigger family (30).

Applying the one-child policy on the Chinese population had made several unwanted effects. Like we discussed previously, male babies were preferable in China, the family has directed resources to sons at the expense of daughters (30). Similar was the tradition in Nepal, India, and Taiwan. Influenced by the same reasons, the family will gain more money and honor. Mothers who had female fetuses were pushed to the edge, on one side by society norms dictating

a preference for male babies, and on the other side allowing just one child, what denied the possibility of having a baby boy in her lifetime. Cultural influences and government policy together led to the widely known phenomenon, shortage of female population. Mothers chose various methods to hide their girls. Infanticide, adoption and neglect were the main ones. When the US first appeared, sex-selective abortion was the method of choice (33). Sex determination by a medical specialist was illegal, but in reality, it was not the case. In a survey conducted in 2000 in central rural China, 820 women, medical practitioners, and other health care providers were asked if the prenatal diagnosis were prevalent in their premises (34).

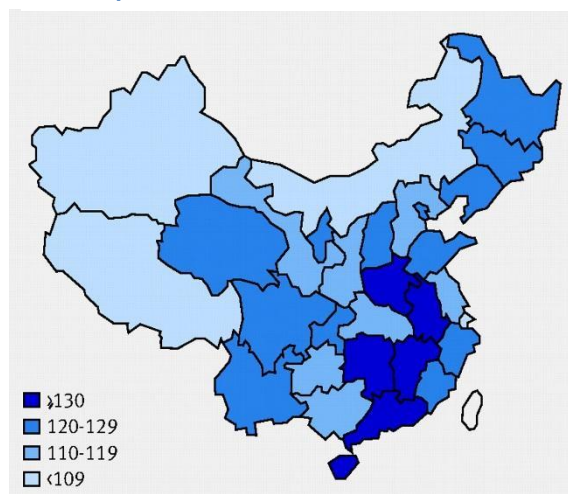
"Thirty-six percent (109) of the women admitted to having had female sex-selective abortions. Among 753 pregnancies (427 with male fetuses and 279 with female fetuses), 25% of female fetuses were terminated while only 2% of male fetuses were aborted".

(33)

**Sex Ratio and Fertility Rate** The sex ratio and fertility rate were mostly affected.

The fall in fertility rate among women in China was already down sloping even before applying the one-child policy and reached 2.8 at 1979 as a result of previous, less radical plans to lower population growth by contraception mostly. After the application of the policy, the fertility rate by 1990 had been 1.5, the lowest ever in the history of China (35). Fertility restrictions also had unintended consequences, the deficit of 40 million female babies (30). Despite the prohibition on sex-

Figure - Sex ratio in 1-4 year age group: all China's provinces



selective abortions in China, women turned to the illegal alternative and performed illegal unsafe abortions (33). As a result, a severe imbalance of the sex ratio had occurred, raising questions of ethics and existence. Together with other countries such as India and Pakistan the world is lacking approximately 100 million females relative to males. It is considered as a great concern among

East and Far East countries, while the western world is considered balanced. One of the reasons for the development of increasing sex ratios over the years was false reporting by the Chinese government on sex ratio, which was a literally systematic denial of any connection between the thriving one-child policy and the uprising sex ratios (33). In the late 90's with growing world interest in the internal issues of China, violations of human rights, offenses against women autonomy and rueful demographic future were discovered. An article published in 2005 illustrates the dismal situation. 4 764 512 million people under the age of 20 were part of the survey with overall sex ratios being high across all age groups and residency types, but they were highest in the 1-4 years age group, peaking at 126 (95% confidence interval 125 to 126) in rural areas(28). Figure1 illustrate the provinces with the highest sex ratios are clustered together in the central-southern region. Table1 shows the sex ratio by age group and type of residency. Sex ratios were consistently higher than normal across residency types and all age groups except for urban 15-19-year-olds. Sex ratios peaked in the 1-4 age group; the highest was 126 (95% confidence interval 125 to 126) in rural areas. This controversial policy was under massive criticism. The law was unequally

**Table 2- Sex ratio (95% confidence interval) by age and residence, under 20-year-olds**

Residence	No (%)	Age (year of birth)				
		<1 year (2004-5) (n=182 393)	1-4 years (2000-4) (n=724 709)	5-9 years (1995-9) (n=1 060 664)	10-14 years (1990-4) (n=1 353 263)	15-19 years (1985-9) (n=1 443 483)
All	4 764 512	119 (119 to 120)	124 (123 to 124)	119 (119 to 120)	114 (113 to 114)	108 (108 to 109)
Urban*	1 073 229 (23)	114 (112 to 115)	116 (115 to 117)	116 (115 to 117)	112 (111 to 114)	101 (100 to 103)
Town†	813 386 (17)	117 (115 to 119)	122 (120 to 124)	121 (120 to 122)	116 (115 to 117)	109 (107 to 111)
Rural‡	2 877 897 (60)	122 (121 to 122)	126 (125 to 126)	120 (120 to 121)	114 (113 to 114)	111 (110 to 111)

\*Area with more than 100 000 non-agricultural population.

†Population of at least 20 000, where the non-agricultural population exceeds 10%.

‡More than 90% of agricultural workers.

populations have often been able to violate the policy and avoid consequences. The proclamation of the International Conference on Human Rights was violated, according to it "Parents have a basic human right to determine freely and responsibly the number and the spacing of their children" (36). Women were forced to abort usually by saline injection already pregnant with a second illegal child, or have their child killed while having labor or right after.

After 4 decades, Chinese one-child policy was brought into an end (2016). All Chinese couples are allowed today to have 2 children. Family planning for

Chinese families will be easier from now on. The main reason is the effect of the new demographic balance and sex ratio on the economy and society. A new era is coming, women's rights are no more to be ignored, which is another reason for the release of women and Chinese citizens in general, from the shackles of the Government.

### Human Selection- short revision of human history

Humankind had been developing for millions of years now. Historians and archaeologists claim that approximately 2.5 million years ago humans started to use stone instruments, after 2.2 million years, fire usage was prevalent (37). Indeed, the History of mankind is not the topic of the ~~article~~ thesis, but it can help us in understanding human psychology, decision making, and development of human moralities of today. According to the common theory among historians, homo-sapiens (the wise man) was part of many other human species such as the Homo-Neanderthalensis which was found in the continent of Europe, and Homo-Erectus (38). The question that concerns historians today is why the Homo-sapiens survived compared to others? Moreover, how Homo --sapiens are now in the top of the food chain and controlling plant Earth?

Answers to these questions are still blurry and incomplete. It will require more research in order to get into a definite conclusion, if ever. There are theories though, some of them relate to natural selection as other animals, and some are unique for Sapiens (38). A part of the fact that humans develop into two legs walking animals which made their hand free for more sensitive gentle work, the cultural and linguistic development was fast as ever. Thanks to that, now progression which could be made in millions of years can be made in a few years only (37). History of mankind teaches us an important lesson that development of humans is still in progress and compared to history natural selection has only a small part. 500 years ago, when the Scientific Revolution began, and along the way with the industrial revolution gave humans the tools and knowledge to gain control over numerous sectors of life. Basic needs such as food, shelter and safety are not a concerning issue in most parts of the world. The days of community as the center of life are about to end, when the future predicts more self-centered attitudes. Personal development and social efficiency are on the

top priorities, and the world has become non friendly towards the weak classes of society. Who is included in these groups? Mostly elderly, but also handicaps, mentally retarded (autism, down- syndrome), ill patients and many more. Denunciation might be because they are a burden on society and maybe they cannot contribute to the fast-developing world of today.

### Fetal Anomalies and Down syndrome justify abortion?

Some say that the parents of today are lucky. Health system today is full of screening programs, research, guidelines and superior technologies in order to provide the future family the best care, and to ensure them a normal life in the future. In the obstetrics world women are screened at the first and second trimesters for most common disorders, following more specific tests if new findings or risk factors are present. Abortion and euthanasia is recommended definitely to fetal abnormalities which is incompatible with life, such abnormalities include anencephaly, renal agenesis (Potter syndrome), autosomal recessive polycystic disease (ARPD), trisomy's 13 and 18 (39). Euthanasia of infants was proposed by philosophers, which aim to end the unnecessary suffering of an infant with anomaly incompatible with life (40). Also, in the medical field guidelines were necessary to redeem the parents and their newborn from an unbearable agony. There is some countries such as Chile that used to ban abortion even in the circumstances of severe malformations (41). The only choice for women in Chile were illegal abortion or to terminate the pregnancy out of Chilean borders. As we mentioned earlier, preventing those women an abortion can cause severe mental burden which sometimes lead to fatal consequences. In countries which allow abortion on their territories, in the case of pregnancies with fetal abnormalities which compatible with life, the center of debate refers to terminate or let it be. When we approach these moral dilemmas we are obliged to look into the four main principles of ethics; autonomy, beneficence, non-maleficence and justice. Upon it we have to question ourselves, if we have the same duty and obligations towards the baby with Down syndrome compared to a normal baby? Of course, precise medical conditions should be assessed, the degree of disability, and the probability of achieving for the patient a substantial net benefit over harm are crucial moral issues which we must follow. But in case of uncomplicated Down syndrome, they may get to

significant achievements during their lives. Down syndrome patients can feel happiness, love and accomplishment. They may be an integral part of society, although of their stigmatized appearance, learning disabilities, and delayed cognitive functions which makes it more difficult to integrate into the society. Couple of them even crossed the line and became millionaires. It is hard to define if life with certain pathology is worth living or not, in the case of Down syndrome, most patients report to be happy (40). Therefore, while termination of pregnancy with Down syndrome is still acceptable, since the fetus is not defined as a person, euthanasia of Down syndrome baby without complications is not acceptable, with no exception. The world today has become intolerant for mistakes. This is also relevant for the mistake in the human genome. Soon we will be able to predict mistakes in the genes of our children before birth, and even before fertilization. Populations with syndromes such as Down and Williams will disappear. The positive side, fewer burdens on families and the health care system, the negative side, humans with those conditions would not have the opportunity to live anymore. We can only try to imagine how the world is going to change in the human selection era. Abnormal humans will be defined and classified as class B humans. Redefining humanity would be a dangerous path. It will legitimize further detailed human selection. Examples would be choosing the sex, phenotype, personality, IQ of the future newborn. The fall of this technology in the wrong hands would be a catastrophe.

#### **In vitro fertilization on the edge of losing control**

Until now we have discussed about sex selective abortions. Mostly relying on prenatal diagnosis, which until recently was dependent on invasive procedures (chorionic villus sampling or amniocentesis) or non-invasive ultrasound. New methods have been emerging lately. People may select the sex of the fetus preconception (selective fertilization with enriched fractions of X- or Y-bearing sperm) and preimplantation (selective transfer of male or female embryos) (42). The Microsort flow cytometry method involves staining the sperm with a fluorescent dye and then using a laser beam can differentiate DNA contents of X- and Y-bearing sperms. Accuracy of the Microsort method reached 92% in pregnancy of girls and 83% of boys (42). This method helped many couples carrying X-linked diseases, by selecting females at the risk for having any

manifestations of the disease approaching zero. Although effective in preventing diseases, side effect of preimplantation genetic screening (PGS) is the additional request of the couple for specific sex selection of the child, which is non- medical purpose (43). Western countries predicted the threat and legislated laws to restrict the new technologies. The Convention on Human Rights and Biomedicine (Council of Europe) claims "the use of techniques of medically assisted procreation shall not be allowed for the purpose of choosing a future child's sex, except where serious hereditary sex-related disease is to be avoided"(44)

There is some view connecting sex selection to sexism and refers to the thought that one sex is better than the other. In Asia it will further worsen the increasing sex ratios. Some couples, when planning a family, believe in the idea of 'balanced family', which means one to one ratio of girls and boys. Parents may find it beneficial for their children to have the experience of growing up in a family of both boys and girls. The new technology of sex selection may pose a hazard to the family structures and cohesion, and any deviation from the wishes of the parents will be accompanied with disappointment. Moreover, the right for self-determination of the children will be affected. The child's existence would be only to fulfil the expectations of the parents. In the level of the society, sex selected pregnancies might increase inequality between sexes. Regarding the future progressions, sex selection is a thin border that set apart children commodifications, and so in fact, choosing the offspring characteristics. Soon the PGS would be in the standard of care in IVF treatment. Requests for particular sex of the fetus would increase and the health system should prepare accordingly. It will require complete transparency, reliability and complete monitoring. More legislation should be proposed, and if needed, punishment of the people involved. All of those are required to prevent an outbreak market which can change the face of humanity forever.

## Summary

The issue of abortion involves a large number of people and all kinds of social classes. First, it is an issue that directly affects the individual, in this case the woman and the child, but indirectly also the immediate family members, causing numerous and unpleasant events. Moreover, abortions can trigger conflict within a society that may involve violence. At the level of governments and the health system, abortions are usually seen in statistics as a cause of potential economic harm.

There is a difference in attitudes towards abortions between countries, which are usually divided into western and non-western states. In those states that are considered members of Western civilization, liberal attitudes and fundamental human rights are nurtured. The reasons for abortion are many, ranging from socioeconomic, overlapping marital infidelity, desire to continue a childless life for the purpose of achieving one's life goals, controlling number of family members and the population, rejecting a sick fetus, rejecting a child as a product of rape, but also physical or mental illness of mother.

The technological revolution has brought numerous opportunities in pre- and antenatal care. In many cases it is a blessing, problems start when the use of technology is applied for the wrong reasons and violates many ethical laws. It will be almost impossible to overcome the damage that has already occurred as a result of distorted attitudes.

In the coming decades, the human species will face great challenges, with the exponential development of technology that no longer knows the frontiers. It will be interesting to see how the human species will deal with the complicated issues of human engineering. The right to natural selection or the desire for perfection? Which aspiration will prevail? Will the number of abortions be higher or lower and will it be affected by changes in the law, moral or overall civilizational reach, especially technology and the health system?



## Sažetak

Pitanje pobačaja obuhvaća velik broj ljudi svih društvenih slojeva. Prije svega, to je pitanje koje utječe izravno na pojedinca, u ovome slučaju ženu i dijete, ali neizravno i na članove uže obitelji, uzrokujući brojne i nevoljne događaje. Štoviše, prekidi trudnoće mogu potaknuti sukob unutar društva koji može uključivati nasilje. Na razini vlada i zdravstvenog sustava, pobačaji se u statistici obično vide kao razlog potencijalne ekonomske štete.

Postoji razlika u stavovima prema pobačajima među zemljama koje se obično razdvajaju na zapadne i ne-zapadne države. U onim državama koje se smatraju članicama zapadnjačke civilizacije njeguju se liberalni stavovi i njeguju osnovna ljudska prava. Razlozi za pobačaj brojni su, protežu se od socioekonomskih, prekrivanja bračne nevjere, želje za nastavkom života bez djeteta u svrhu ostvarivanja vlastitih životnih ciljeva, kontrole članova obitelji i populacije, odbacivanja bolesnog fetusa, odbacivanja djeteta kao proizvoda silovanja, ali i fizičke ili mentalne bolesti majke.

Tehnološka revolucija donijela je brojne mogućnosti očuvanja trudnoće. U mnogim slučajevima to je blagoslov, problemi počinju kada se upotreba tehnologije primjenjuje iz pogrešnih razloga i krši mnoge etičke zakone. Bit će gotovo nemoguće nadvladati štetu koja je već nastala kao rezultat iskrivljenih stavova.

U narednim desetljećima ljudska će se vrsta suočiti s velikim izazovima, s eksponencijalnim razvojem tehnologije koji više ni ne poznaje granice. Bit će zanimljivo vidjeti kako će se ljudska vrsta nositi s kompliciranim pitanjima ljudskog inženjerstva. Pravo na prirodnu selekciju ili želju za savršenstvom? Koja će težnja prevladati? Hoće li broj pobačaja biti veći ili manji te hoće li na to imati utjecaja promjena zakona, morala ili ukupan civilizacijski doseg, naročito tehnologije i zdravstvenog sustava?

## Biography

Amit Moses was born to Elly and Bina on June 9th, 1988 in Haifa, Israel. From 2006 to 2009 Amit served in the Israeli Defense Forces (IDF), in the paratrooper's brigade. From 2010 to 2014 worked in Israel's Ministry of Foreign Affairs. During the years 2014-2020, Amit studied general medicine in general School of Medicine University of Zagreb, Croatia. During studies Amit spent 2 months at the RAMBAM hospital as a study experience in the departments of Internal medicine and Thoracic surgery. Also, in his sixth year, 2019-2020, he was the demonstrator of 3<sup>rd</sup> year students in the hospital KBC Rebro.

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