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The Birth of Development: The Social, Economic and Environmental Advantages to Contraceptive Use on a Global Scale

Linda Hanes
Western Michigan University, linda.j.hanes@gmail.com

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The Birth of Development:

The Social, Economic and Environmental Advantages of Contraception Use on a Global Scale

Linda Hanes

Western Michigan University

Abstract

For many women around the world, pregnancy is a miraculous, exciting stage in life. But for others pregnancy means financial burden, having to stay in an abusive relationship, or giving up a career. What many people forget is that motherhood is not the default position for women. As a result of the traditional views of acceptable roles regarding women, in most, if not all cultures, there is a stigma placed on family planning and abortion. To talk about contraceptive use is to admit that sex is a natural part of life for all genders. Many cultures are not prepared to admit such a thing. Instead, sexuality is placed in a narrow box and people are told mold themselves accordingly. My hypothesis is that access to contraceptives, abortion and family planning education can drastically improve the quality of life on a global scale for people of all genders and sexualities. Reproductive health is the foundation upon which healthy lives are built. When children are planned and wanted, a society can thrive. In my thesis, I will explore the possible effects of reproductive choice as an antidote to many of the issues facing the world, including social, environmental, and economic implications.

History

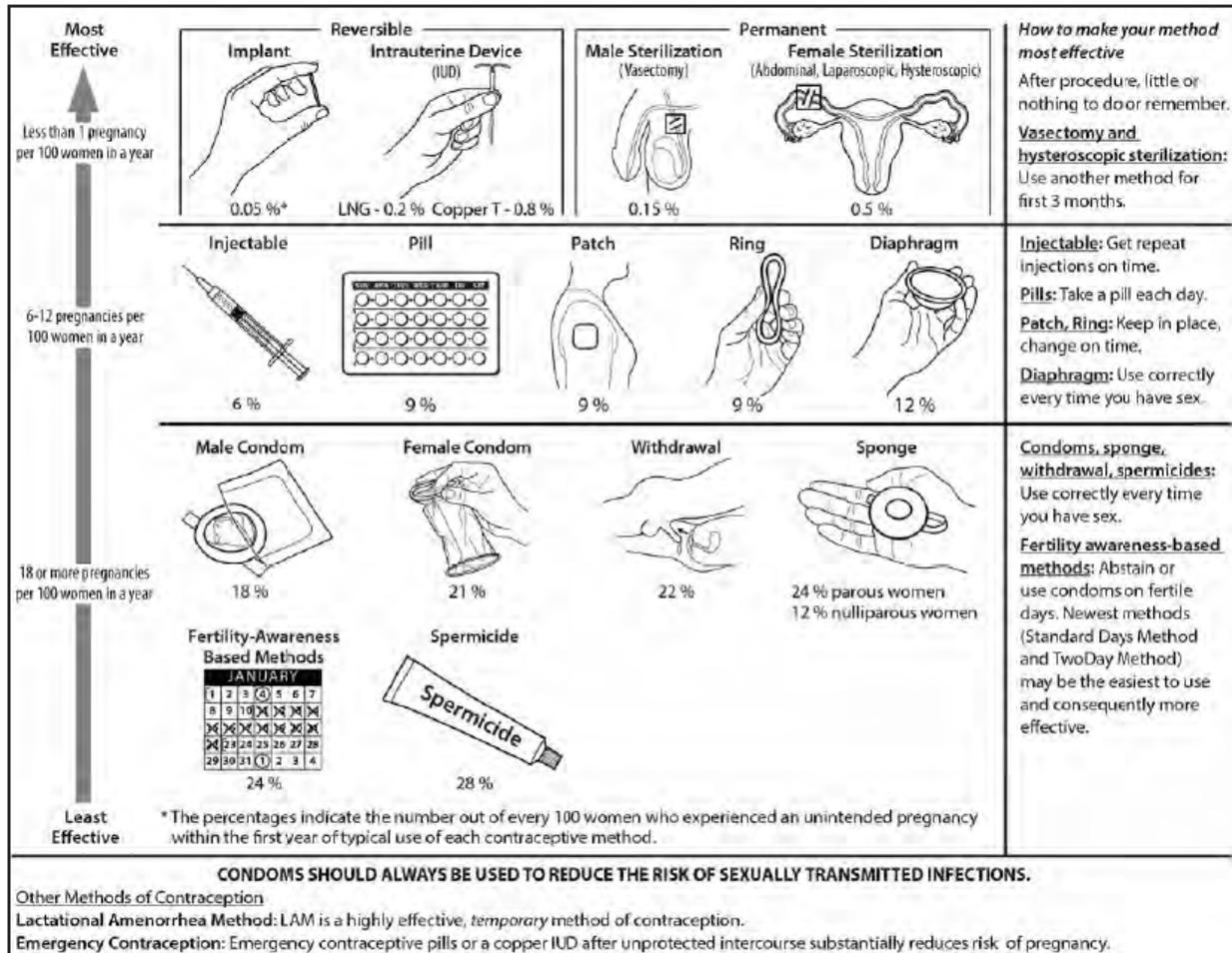
The first recorded instance of contraception use dates back to 1850 B.C. “This reference comes from a papyrus on which the ancient Egyptians recorded that several methods were in use at that time. These consisted of irrigating the vagina with honey, or some other sticky substance; of using some common chemical as a spermicide-native sodium carbonate is specifically mentioned; and the third idea was to use a pessary. This was made up of crocodile dung mixed with a paste-like vehicle.” By 1550 B.C., birth control evolved to a lint tampon that used lactic acid as a spermicide (Suttters, 1968).

During the golden of age of Greece, 500 to 300 B.C., one of the most famous gynecologists of the time, Soranos of Ephesus, theorized that there was a specific time window for when pregnancy could occur, although he believed this time frame to be during menstruation. This theory of ovulation persisted until the 1920s when the actual time of ovulation, approximately 14 days before menstruation begins, was discovered. Soranos also made the distinction between abortion methods used to expel an existing pregnancy and contraception, methods used to prevent pregnancy from occurring in the first place. The Italian anatomist, Gabriella Fallopius, invented the condom in 1564 to protect against syphilis.

These discoveries were all well known throughout the course of history; however, real development on the effects of family planning did not begin until the 18th century. Francis Place was one of the first people to recognize family planning as a vehicle for positive social change when he published the brochure, “The Diabolical Handbill,” in which Place urged the working class to plan their families so as not to sink further into poverty. Recognizing the potential of contraception, the Dutch began the first family planning clinic in Amsterdam in 1882. It was there that they began to refine contraception research and education. The late 1800s brought the

invention of the cervical cap, also known as the diaphragm, which remained popular until the invention of the pill in the 1950s and 60s (Suiters).

Methods



(Cdc.gov, 2013)

The various methods available are worth mentioning for my argument as not all methods work in the same ways and they all have different implications in the real world. Major advancements have been made in recent decades to allow for individuals to go about their lives as they choose while still being able to control their reproduction. Methods range from daily, weekly, quarterly and yearly commitments. None of the modern forms of birth control cause infertility later in life and all except sterilization are reversible. For the purpose of efficiency, I

will be discussing the most common forms: the pill, the implant, the injection, the intra-uterine device, the vaginal ring, the penile condom and sterilization.

One of the most common methods is the birth control pill. According to the CDC, 62 percent of women of reproductive age use the birth control in the United States and of that 62 percent, the pill was the most commonly used method (Jones et al., 2015). There are two options with this form, the combined pill, which is a combination of the hormones estrogen and progestin and the mini-pill, which is progestin only. The combination pill has an hour and a half window when it can be taken before effectiveness decreases from 99 percent to 91 percent. The mini-pill only has a half hour window, making it more time constrictive. The pill is most commonly used in America and Canada because it needs to be kept at room temperature, requires a yearly check up with a doctor, and a monthly pharmacy visit to pick up a prescription. Women living in developing countries or rural areas do not typically have the same privilege of regular access to a doctor or pharmacy that women in more developed countries have. The benefit of the pill is that it can be stopped at any time and for any reason with no medical intervention. This method ranges from over 99 percent effective to 91 percent effective and below depending on user commitment. The combined pill has been shown to lower the risk of endometriosis and ovarian cancer, as have many other methods of birth control. An advantage to the mini-pill is that it can be used during breastfeeding and is helpful for women who have a sensitivity to estrogen or experience negative side-effects from the hormones in the combination pill (“Birth Control Pills - Birth Control Pill - The Pill”, 2014).

The subdermal implant is a relatively new innovation as of the mid-2000s. A trained doctor places the implant above the muscle in the upper arm during a simple outpatient procedure. The implant lasts for three years, has no temperature requirement and cannot be seen

under the skin, making this a convenient option for anyone who does not have regular access to a doctor or pharmacy. After the three years are up, a doctor removes the implant by making a small incision and pulling it out from under the skin. The implant uses progestin to thicken the cervical mucous and prevent ovulation. A bonus to this method is that it is 99.9 percent effective and many women have also reported that their menses stopped altogether shortly after insertion or their periods were significantly lighter than they were previously (“Implanon Side Effects - Birth Control Implant”, 2014).

The injection is a quarterly shot that uses the same hormone as the implant to thicken the cervical mucous and prevent ovulation but, the hormone dosage is higher. This is a shot injected into the muscle of the arm every two to three months and is over 99 percent effective, 97 percent effective with typical use. A doctor or nurse must administer this shot so it requires a visit to the doctor’s office every couple of months, but is otherwise convenient. However, studies have shown that the injection can lead to loss of bone mass if it is used for longer than two years and there is a delayed return to fertility, typically one to four months (“Depo-Provera - Birth Control Shot”, 2014).

The modern version of the intra-uterine device, also known as the IUD, is relatively new. It comes in a variety of options lasting three, five, and ten years. It is a small t-shaped device that is placed inside the uterus during a simple outpatient procedure. There are two types available, hormonal IUDs, (Skyla and Mirena) and non-hormonal, (Paragaurd) which is made of copper. The IUD works by thickening the cervical mucous and affecting the way that sperm moves so that it is more difficult for fertilization to occur. The IUD is more than 99 percent effective meaning that less than 1 woman per 100 will get pregnant during a year of use (“IUD Birth Control - Mirena IUD - ParaGard IUD”, 2014). The benefits to this device are that it is

convenient and there is no possibility of user error. This method has found a special application in the international realm because of its convenience and long-term effects. The statistics on IUD use vary across the world, but rates of use have been steadily rising since the IUD has been updated to become safer and more effective than the model used decades ago.

“According to an analysis of data from Demographic and Health Surveys of 14 developing Asian, Latin American and Caribbean, and North African countries conducted between 1993 and 2007, the proportion of currently married women aged 49 or younger who reported using the IUD at the time of survey ranged from 2 percent in Bangladesh and the Dominican Republic to 38 percent in Vietnam and 42 percent in Kazakhstan; across all of the study countries, the median prevalence of IUD use among those women was 9 percent,” (Rosenberg, 2011).

The vaginal ring is a small flexible ring that is inserted into the vagina once every three weeks. This method works by releasing the hormones progestin and estrogen through the vaginal walls. These hormones work to prevent ovulation and thicken the cervical mucous (“NuvaRing Effectiveness | Birth Control Vaginal Ring”, 2014). This method is also one of convenience, although it has been made more innovative and convenient in recent years. Northwestern University biomedical engineer Patrick Kiser invented the first transvaginal ring that is designed to protect against HIV, herpes, and unintended pregnancy. The ring works by releasing controlled doses of tenofovir, an antiretroviral drug, and levonorgestrel for 90 days before needing to be changed. This innovation could have profound effects across the globe, especially in places where the spread of HIV still occurs at an alarming rate (Fellman, 2014). The only inconvenience that could arise from the ring is that it must be kept at a cold temperature before being inserted into the vagina because the hormones are released when exposed to heat.

The patch is similar to the ring as it administers hormones through the skin. It prevents ovulation and must be changed every week for three weeks and then removed for one week to allow for menstruation. The side effects and effectiveness of the patch is comparable to the

combined oral contraceptive and the vaginal ring. Unlike the ring, the patch does not need to be kept at a certain temperature (“Birth Control Patch - Ortho Evra”, 2014).

The penile condom is a latex, polyurethane, or lambskin sheath that covers an erect penis and is 98 percent effective with perfect use and 85 percent effective with typical use. Aside from the pill, the condom is one of the most widely used forms of birth control. The latex and polyurethane condom also prevent the spread of sexually transmitted infections. The lambskin condom is porous and only protects against pregnancy but not infections. The condom works by creating a barrier between the semen and vagina so that the sperm cannot reach an egg if one is present (Alford, 2005).

Finally, sterilization, which is most popular in Latin America and parts of Asia; this is a permanent form of birth control that is irreversible in women, but reversible in men (Scott & Glasier, 2003). A vasectomy is done in males through blocking or cutting the vas deferens tubes that carry sperm from the testicles. The process of female sterilization involves blocking or cutting the fallopian tubes so that an egg cannot pass through and be fertilized. As both of these procedures do require surgery and are difficult to reverse for vasectomies and irreversible in the case of female sterilization, informed consent is essential for the procedure to take place.

BARRIERS TO ACCESS

Culture

Sex in cultures all across the world is heavily stigmatized and the implications of the various attitudes and beliefs about sex and sexuality are difficult to comprehend fully. There tends to be a juxtaposition between the conflicting ideals of a sexualized culture that also still

values purity. Internationally, family planning becomes difficult for many other cultural reasons besides virtue. An atmosphere of distrust has developed because of a history of colonization and enslavement. There is a fear of Western hegemonic power that pervades the culture in many societies around the world.

One reason why many developing countries have resisted family planning efforts is because there is a deep distrust of Western medicine. Implementing family planning methods in developing countries is a top-down implementation and although it can be done with the best of intentions, there is reason behind the resentment. For example, in many third world countries, there is a vastly unequal distribution of wealth among the population. Many believe that family planning programs are meant to maintain a status quo (Deyo, 2012).

Another reason is because in many cultures, children are a sense of pride, especially if they are boys. It is insulting to have an outsider come in and suggest preventing a pregnancy that could lead to another son who would carry on the family legacy. Children are also a source of income and labor, especially in agricultural communities. Children become workers for the family and bring more economic stability as they become independent and are able to work. Later in life, the parents can have the assurance that their large family will care for them in their old age (Elele, 2002).

Religion

Much of the religious objection to contraception use comes from what has been determined as acceptable roles for women and expounded on over thousands upon thousands of years. For a woman to admit that she wishes to use contraception to control fertility is admitting that sex can occur for reasons other than procreation.

In a collection of Catholic penitentials, a set of church rules within Christian sacrament that define what acts require penance, the use of contraception is equated with murder. “If someone [si aliquis] to satisfy his lust or in deliberate hatred does something to a man or woman so that no children be born of him or her, or gives them drink, so that he cannot generate or she conceive, let it be held as homicide,” (Smith, 2010). This idea of contraception as murder has evolved under the misconception that conception and fertilization are one in the same. Fertilization is the process in which the sperm meets the egg, conception is when the fertilized egg embeds itself into the uterus. Some believe that all birth control causes a fertilized egg to be expelled after conception, meaning a miscarriage. Thus, every month, the potential of life is killed. But this idea is wildly inaccurate and can quickly be disproved by an overwhelming amount of scientific and medical evidence (Gold, 2005).

Conception involves more than just a fertilized egg. First, an egg must be released, a process that almost all forms of hormonal contraception prevent from occurring in the first place with over 99 percent accuracy. Then the vagina, a normally acidic and harsh environment, must be welcoming enough to the sperm for it to swim all the way up to meet an egg. Then when the sperm meets the egg, it needs to embed itself into the uterine wall, a lining that is thinned by contraception. The whole process takes a few days to occur (Gold).

Another portion of the religious argument against contraception comes from nature. Thomas Aquinas was one of the most famous proponents of this ideology, saying that contraception goes against the natural order created by a heavenly superior. Basically, if it is God’s plan for conception to occur, who are we to prevent the natural system of life? To use birth control is to disrespect God’s will. But if that is the case, then one could argue that to use

any form of medical treatment goes against God's will (St. Thomas Aquinas, Summa contra gentiles, 3, 122).

The problem with all of these arguments though is that they assume that all people can make any situation work for their life with faith alone. It is reasonable to follow the will of God in terms of having children if you can afford multiple mouths to feed. But if you are living in poverty, an extra person in need of food while dealing with food insecurity, means the difference between life and death. It is easy for children to be an accomplishment when in a functional marriage, but in an abusive relationship, or in many cases, a marriage between a young adolescent girl and a grown man, pregnancy makes escape nearly impossible. One could make the rebuttal that pregnancy does not always occur under the same circumstances and to project one's own morals and motives onto another can be unfair and problematic.

Gender Inequality

When women have control of their fertility, they can be more independent and could therefore be seen as more of a threat to the patriarchal society pervading every country, developing or otherwise. For various reasons, women are kept from education and the professional world on a large scale. Lacking access to education and living in a culture that encourages women to believe that their default position is motherhood, family planning becomes an irrelevant issue. When women's lives can be changed at the whim of a pregnancy, they are at a disadvantage by their own bodies.

It can even be seen in the history of developed countries, in the United States for example, medical care has shifted from networks of women working together as midwives to men becoming doctors and changing the way obstetric care is received. Although governmental regulations for healthcare have done wonders to advance sterilization practices and research,

they have also required health practitioners to receive specialized certification through universities, institutions women were largely banned from for a number of years. Women exist in societies throughout the globe that work against their favor and have done so since the beginning of time (Rierson, 1994).

Family planning is deeply influenced by inequality because the caliber of medical care between men and women is just not the same across the board. These gender differences are greater where women have relatively lower socioeconomic status than that of men (WHO, 2011, Nelson, 2011). It stands to reason that gender inequality intersects with other social determinants of health, such as race, ethnicity and socioeconomic status, to produce health disparities between men and women that are similar to social divisions within society (WHO, 2008).

Lack of Education

Contraception needs to be more accessible in order for the quality of life for women everywhere to improve. But these methods are nothing without education to teach both women and men about their proper use and effectiveness. But across the world, sex education is often misguided, inaccurate and controversial.

This lack of education can be attributed to all of the above topics, religious and cultural opposition, and gender inequality. But the fact of the matter is that contraceptive methods mean nothing without proper education on how to use them. In the United States alone, a developed country often serving as a model for other nations, only 21 states and the District of Columbia require sex education in public schools. Of those 22, only 19 states require that the information be medically accurate (National Conference of State Legislatures, 2015). With those statistics alone it seems like an absurd, insurmountable goal to achieve comprehensive sex education in developing countries that do not have the same resources as the U.S.

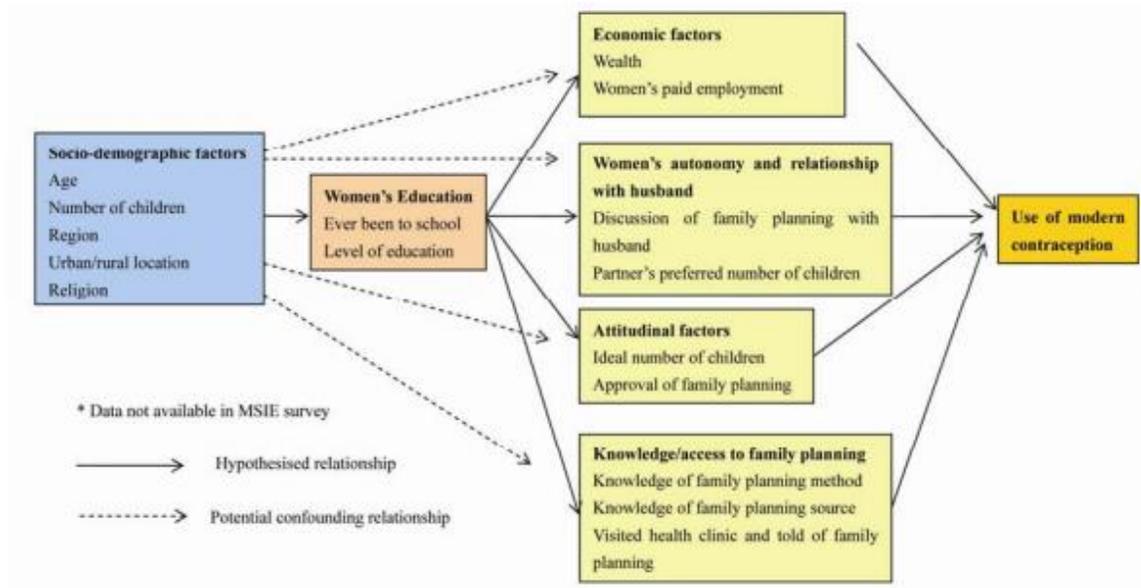
Developing countries have a wide array of issues to contend with: poverty, hunger and corrupt government. Family planning education falls to the wayside. It becomes an idealistic passing priority. It is controversial and requires the field of economics, medicine and sociology to all come together in such a way as to not upset individual cultural balance. Reproductive health education is a foundational tool to cure the world's ailments but societies are too busy addressing the problems directly to worry about a topic as large and controversial as reproductive health education.

BENEFITS TO CONTRACEPTION USE

Social Benefits

Gender equity is defined by the World Health Organization as, “the fairness and justice in the distribution of benefits and responsibilities between women and men,” (Euro.who.int., 2002). When women can have control over their fertility, they have control of their lives which creates a society where gender equity can occur with all genders benefiting from the same resources. Contraceptive use promotes gender equality by improving the accessibility of education, employment and health care to women. If women are using contraception to postpone or prevent a pregnancy from occurring, they are able to stay in school and seek gainful employment upon completion. Women are also able to prevent sexually transmitted diseases, such as HIV, with barrier methods. When women are not given the choice to determine when or even if to have children, their autonomy and freedom as a person with needs and hopes is severely limited. Furthermore, when women are denied reproductive healthcare, including contraception and abortion services, this is a form of sexual discrimination. Beyond the freedom to simply make

the decision to pursue an education and career, contraception also allows women to enjoy sexual activity without the concern of it resulting in an unintended pregnancy (Sonfield et al., 2013).



(Gordon et al., 2011)

Education and contraceptive use are related to one another in a cyclical manner. Female education at primary and secondary levels corresponds with an increased likelihood to use contraceptives, and the use of contraceptives also allows women to pursue higher education without the fear of an unintended pregnancy (Bbaale and Mpuga, 2011). This relationship exists because both motherhood and education are time intensive. If a woman is devoting her time to education, her need for contraceptive use increases more than if she were to take the route of motherhood. Conversely, the use of contraception allows a woman to pursue higher education in the first place. "Several influential studies on young, single women from the late 1960s through the early 1970s indicate that this generation's ability to obtain highly effective contraception was a significant factor behind greater numbers of women investing in higher education. These authors found that access to reliable contraceptives—initially, the pill—improved women's

capacity to successfully delay childbearing and thus minimized the economic and opportunity costs of pursuing higher education.” (Sonfield et al.).

In Ethiopia, a country with one of the highest population growth rates in the world, the Ethiopian government has finally recognized the correlation between contraceptive use and education. In an effort to expand the number of girls staying in school, they have called for an increase in contraceptive access and use. A study done which followed Ethiopia's efforts found that the government was right to focus on education and increased access to contraception with proper use of birth control naturally following in importance.

“Women who have more education are more likely to hold positive attitudes towards family planning, have greater knowledge of contraceptive use, are more likely to visit health clinics and, as a result, are more likely to use contraceptives. The impact of background factors such as age, location and religion are mediated by education, as well as these other proximal mechanisms. Only age is likely to have a direct independent association with contraceptive use, indicating the shift of new generations towards use of modern contraceptive methods,” (Gordon et al., 2011).

Contraceptive use also benefits the family structure as it prevents children from being conceived when the family cannot support another individual. Therefore, the children the family already has do not suffer from a lack of resources and receive more care in a stable environment.

“People are relatively less likely to be prepared for parenthood and develop positive parent child relationships if they become parents as teenagers or have an unplanned birth. Close birth spacing and larger family size are also linked with parents’ decreased investment in their children. All of this, in turn, may influence children’s mental and behavioral development and educational achievement,” (Sonfield et al.).

Environmental Benefits

“The arithmetic of global population growth has become numbingly familiar [...] In the past four decades more people have been added to the globe than in all of history before the middle of this century [...] The United Nations and the World Bank project an additional 6

billion inhabitants by the end of the next century. Virtually all of this growth is expected to occur in Africa, Asia, and Latin America,” (Bongaarts, 1994). Famine and disease act in response to this rapid growth as a means to self-regulate. Nature cannot keep up with the current reproduction and our world population is quickly becoming unsustainable.

In the late 1700s, Malthusianism came about in response to the political and economic theorist Thomas Malthus who wrote *An Essay on the Principle of Population* which described the correlation between exponential population growth and a dwindling food supply. His findings make sense, more people means fewer resources, but even today his essay garners staunch criticisms. Admittedly, his opinions were imperfect and at times even judgmental and unreasonable. He argued for two types of checks on population: moral, including abstinence, delayed marriage, and preventing people from getting married and procreating if they were poor. The other check is Malthusian catastrophe which includes starvation, war, and natural disaster caused by climate change spurred by too large of a population (Malthus, 1798).

Climate change, although still considered controversial, is becoming a major concern as our world is without a doubt changing, and rapidly. It is estimated that the population will rise from the present number of 6.8 billion people to 9.2 billion in 2050 and with that substantial increase in the numbers of people, comes an increase in the emission of greenhouse gases (Bryant et al., 2009). These findings have led to many researchers arguing that voluntary family planning needs to be included as a component to dealing with climate change, especially considering that contraception use has been linked to a wide range of benefits outside of environmental sustainability. “At the international level, rectifying the chronic global under-spend for family planning development assistance – including through integrated sexual and reproductive health and HIV/AIDS programmes – should be recognized as an important addition

to international efforts to assist least-developed countries to adapt to climate change,” (Bryant et al.).

Economic Benefits

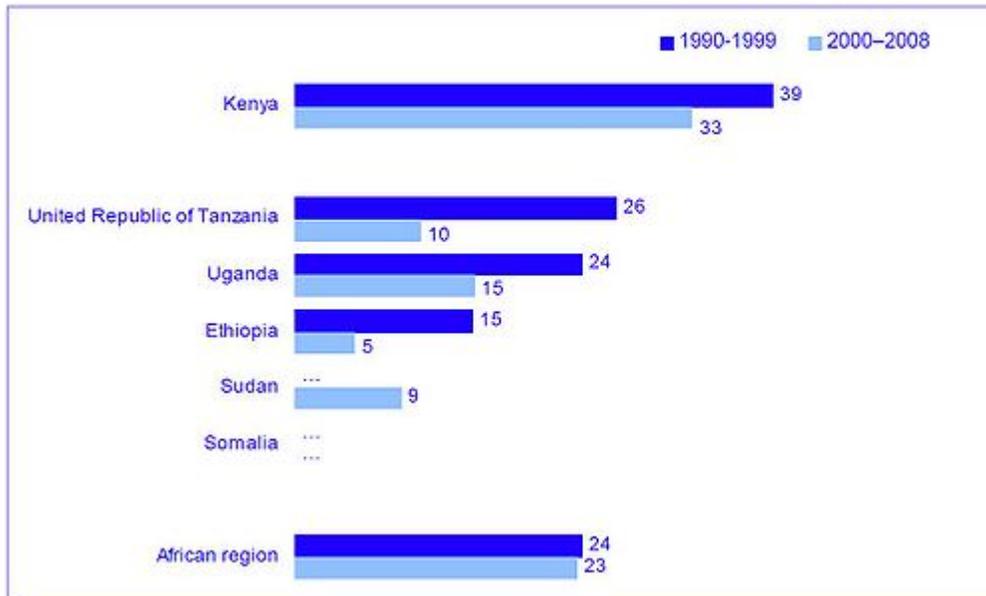
By giving women control over their fertility, they are thus able to complete their education without hindrance and then be able to go on to pursue higher paying employment. Women also do not have to worry about an unintended pregnancy causing them to have to quit their job. With women having the freedom to work without hindrance, their income is then distributed back into the economy. Studies have shown strong evidence that, “access to contraception has significantly contributed to increasing women’s earning power and to decreasing the gender gap in pay,” (Sonfield et al.). Other studies have found that when childbirth is delayed until a woman is in her 20s or 30s, she is better able to contribute to the family’s economic stability as a whole. The invention of the pill not coincidentally ushered in a societal shift towards more young women seeking and participating in gainful employment (Sonfield et al.).

Contraception also allows governments to save money on public aid. In the United States alone, for every \$1 spent on family planning, nearly \$4 is saved in governmental programs for low income individuals. This might not seem like much, but these numbers add up to a net savings of \$800 million (Dreweke, 2006). Although these financial findings are focused on the United States, one could arguably assume that similar benefits could be achieved in other countries that are less economically stable.

CASE STUDIES

Kenya

Percentage of contraceptive use among currently married women 15-49 years of age, in Kenya and neighboring countries, 2000-2008 and 1990-1999

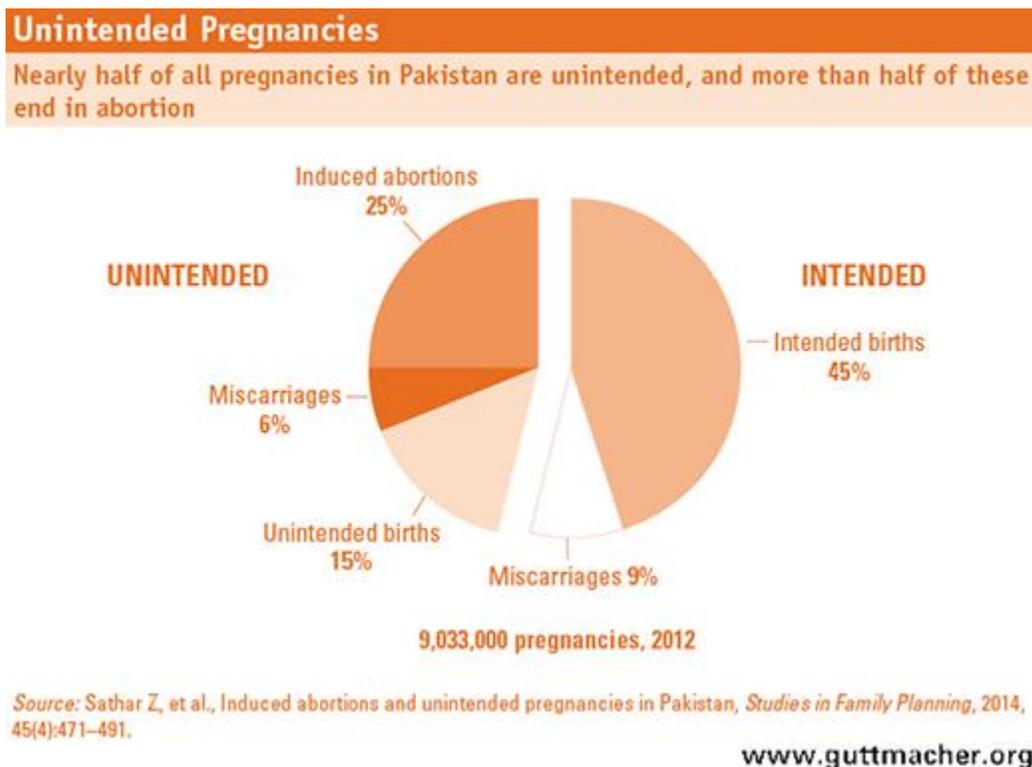


(Aho.afro.who.int, 2014)

Beginning at the end of the 1970s, Kenya began prioritizing contraceptive use as a means to develop economically and socially. During the following decade, birth control use rose rapidly. Although that change was not reflected across all Kenyan populations of women, contraception use mainly spiked among educated women who wished to delay childbearing or space out their children. Kenya has one of the oldest family planning organizations in Africa, but the Kenyan Fertility Survey also showed that it has the highest fertility rate. Kenyans began to shift their thinking in the 1970s to see contraception use as a help, not a hindrance on progress. Although birth control use did not spread evenly across Kenyans of every socioeconomic and educational status, Kenya as a whole did see progress in educational attainment for women and a decrease in childhood mortality rates (Nijogu, 1991).

Pakistan

According to the Guttmacher Institute, almost half of all pregnancies in Pakistan, roughly 4.2 million, are unplanned. Of those unplanned pregnancies, 34 percent result in birth and 54 percent result in an abortion. Each year 623,000 women are treated for post abortion complications. These figures are also largely underestimated as numerous cases go unreported each year (Sathar et al., 2014).



(Guttmacher.org, 2015)

These are interesting statistics as abortion is only legal in Pakistan if deemed medically necessary, and even that regulation is very strict as no internal organs can be formed in the fetus at the point in time when the abortion would be taking place. Part of the reason why so many abortions take place in Pakistan is because sexuality is an extremely taboo topic and sex outside of marriage is punishable by stoning. “The problem is that there is no legal cover for these

procedures,” said Fauzia Viqar, Head of Advocacy at the Shirkat Gah women's resource centre, “Women are told upfront: this is your risk, so if you don't make it, that's your problem. If a woman is in poor health after having an unsafe abortion, she can no longer effectively contribute to a household, and her family has to bear that extra financial burden,” (Obermueller, 2012). The physical death toll of these women is an astounding and devastating blow to any developing country, where most illegal abortions take place.

Although contraception use has risen slowly to 35 percent in 2013, this is still the slowest rate of advancement in an Asian country and the rate of unintended pregnancies has risen as well from 38 percent in 2002 to 46 percent in 2012. This steady rise in unintended pregnancies only shows that the increases in contraceptive use have not kept up with Pakistani women’s desire for smaller families (Sathar et al.).

Conclusion: A Case for Reproductive Choice

A vast majority of the world from the United States to Latin America, to Asia, to Africa, to Europe is experiencing an unmet need for contraception, sex education, and safe abortion. There is a resounding argument from doctors, sociologists, and researchers who all can assert that there is a direct correlation between family planning and quality of life. Having children is arguably the biggest financial decision a family can make. Yet women around the world are left to fend for themselves and see what happens. This all comes down to the role women have been placed in culturally.

Roles aside, family planning matters whether it is acknowledged or not. It is an unfortunate situation that in places of the world needing the most help to progress, the population continues to grow unabated, as does famine and disease. This phenomenon adheres to the Malthusian prediction that if the population grows at a faster rate than it can be maintained, it

will self-limit in disastrous ways. Contraception is affordable and offers a variety of benefits beyond just preventing pregnancy, adding even more value to its use. We can no longer afford to avoid this topic or forget that contraceptive methods and access to safe abortion are vital towards improving the world we live in. It is the 21st century and it's time we start having conversations about increasing access in a culturally sensitive and inclusive manner. Yes, there are many barriers standing in the way expanding reproductive health in every corner of the world and no, it might not be the right means for some cultures to alleviate poverty and gender inequality, but it needs to be available for individuals to decide for themselves what is right for their life.

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