A COMPARATIVE STUDY OF CONTRACEPTION GOVERNANCE IN IRAN AND AFGHANISTAN

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Introduction

Western media commonly presents the Middle East from a monolithic ideological standpoint.[1] In the case of Iran and Afghanistan, this means using Islamic fundamentalism to explain current conditions and issues. Both Iran and Afghanistan are formally considered Islamic republics, and with this in mind, policy-making is often understood as being rooted in conservative, perhaps fundamentalist, Islam. Women's issues, including but not limited to, sexuality, divorce, female infanticide, gender relations and equality, polygamy, education, and veiling are often introduced and explained using a static methodology that includes debates about modernist versus fundamentalist Islam.[2] This paper considers ideology as a key factor, along with geographic accessibility, affordability, availability, and economy, that impacts gender and sexuality in both of these regions. I suggest that current policies that govern the availability and accessibility of birth control are influenced not only by Islamic fundamentalist regimes, as media frequently suggests, but also by other, more pragmatic, factors. This paper examines the histories and current conditions and challenges in these regions in order to support this hypothesis.

Key Words

A few definitions of religious terms and specific ideas are defined below in order to aid understanding of this topic throughout the rest of the paper:

Middle East and North Africa (**MENA**): A region that includes Morocco, Algeria, Tunisia, Libya, Egypt, Sudan, Somalia, Djibouti, Yemen, Oman, Jordan, Lebanon, Syria, Iraq, Kuwait, Bahrain, Qatar, UAE, Iran, and often Afghanistan and sometimes Pakistan.[3]

Islamic Republic: a government/state that uses the Islamic legal system (jurisprudence), which is based on the interpretation of the *Quran*, *hadith*, and *sunna*. An Islamic Republic does not have to be a theocracy (a system of government ruled by one or multiple religious leaders). In the

case of Afghanistan, there is no formal religious head of state, however the country is recognized as an official Islamic Republic.[4]

Quran: central religious text of Islam, believed to have been revealed to the Prophet Muhammad by God and eventually transcribed into writing. This is one of three sources of Islamic law and jurisprudence.

Hadith: a collection of traditions containing sayings of the Prophet Muhammad. This is also a source of guidance for Islamic law and jurisprudence.

Sunna: a record of the teachings, actions, and sayings of the Prophet Muhammad and his companions. The *sunna* outlines the daily teachings and practices for Muslims and accompanies the Quran and hadith as a source of Islamic law.

Fatwa*:* a legal ruling, opinion, or decree on a point of Islamic law given by an Islamic religious expert or leader

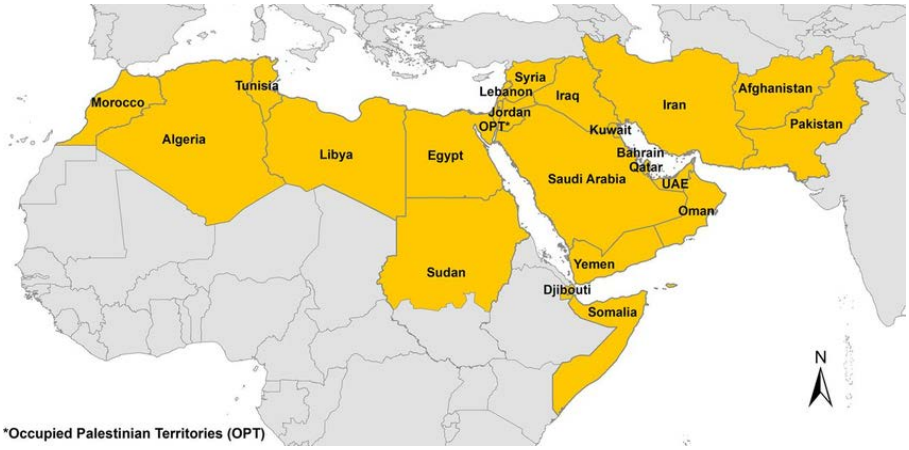
Ulama*:* the Islamic scholars who have special expertise of Islamic law and theology. In Iran, the ulama are consulted often during policy making and upon issuing fatwas or other legal opinions.

Reproductive rights: the rights to decide when and whether to reproduce and secure health services that affect reproductive health. This includes family planning, contraception, abortion, sex education, and access to reproductive health services.

Reproductive health: a state of complete physical, mental, and social well-being in all matters relating to the reproductive system.[5]

Diversity in MENA Region

Relevant to health policies in Iran and Afghanistan is the region in which these two nations are located and the economic, social, and geographical challenges this region faces. It is not without the combination of all three factors that these policies arise and continue to change.



The Middle East and North Africa (MENA) is defined by a variety of unofficial borders, however, in this paper both Iran and Afghanistan are considered part of this region for analytical purposes. This large region is linguistically, culturally, ethnically, religiously, and economically diverse which can lead to and reinforce conflict, especially given the fact that the birth of three Abrahamic religions occurred in this area.[6]

The religious landscape in this region remains predominantly Muslim, with an estimated 91% of the total population identifying as Muslim. However, Muslims in the MENA region comprise only about 20% of the world's entire Muslim population. Sizeable minority religions such as Christianity and Judaism, among others, exist at maximum distributions of 20% or less in countries such as Lebanon and Israel respectively.[7]

Both Iran and Afghanistan vary geographically, not just from one another, but within each respective region as well. They each have mountains, lakes, seas, and prairies; however in the desert areas of each region there is dry heat, little rainfall, and extreme temperatures.[8] These

geographical characteristics play major roles in the different lifestyles that exist within this region and will be important when considering solutions for health problems that exist within Iran and Afghanistan.

Economic factors are important to consider when looking at contraception in Iran and Afghanistan because they can be used to explain current policies and challenges that these governments face for future reform. Currently, the MENA region is characterized by political turmoil due to ongoing civil wars in Syria, Iraq, Libya, and Yemen, which are crippling infrastructure, economies, and government systems and creating refugees. The International Monetary Fund outlines economic reasons for comparatively low economic growth rates in Iran and Afghanistan: high population growth and low productivity, lagging political and institutional reforms, large and costly public sectors, inefficient and inequitable educational systems, underdeveloped financial markets, high trade restrictiveness, and inappropriate exchange rate policies.[9] Despite the end to international sanctions in Iran, the economy remains unstable. Currently the Iranian government relies on exports such as oil and gas, and while agriculture and industrial sectors also support the economy, the private sector is still not developed effectively. Both Iran and Afghanistan are plagued by corruption and inefficiency, although Iran's President Rouhani has had a bit of success increasing trade and stimulating growth.[10] Before discussing the history of family planning and current birth control policies in each region, I will discuss the geography, demography, socioeconomic and political context, and health system of both countries in order to show the multi-faceted nature of this issue.

An Overview of Iran

The Islamic Republic of Iran has two salt deserts that comprise a majority of the area and rainfall is scarce. At more than twice the size of Texas, the country is two-thirds desert and mountains and the most fertile land lies in the middle of the region. The fertile land in the middle is home to thick forests of walnut, pistachio, and lemon trees.[11] Approximately 72% of the population lives in urban areas, while the remaining live in rural areas. A variety of languages are spoken and religions practiced in Iran, both of which contribute to diversity within the nation. The official language of Iran is Persian, although other languages such as Kurdish, Arabic, and Turkic dialects are also observed in certain areas. Islam is the official religion of the nation; according to the 2011 national population and housing census, approximately 99% of citizens identify as Muslim, although with the existence of many minority and secular citizens this reported percentage could be inaccurate.[12] With all of this diversity, Iran seeks to maintain an effective governmental structure, although it is plagued as inefficient and unbalanced. By understanding Iran's government structure, we are able to better understand how policies are developed and established.

Iran is currently ruled by a theocratic republic government which combines secular and Islamic laws. The state is led by Supreme leader Ayatollah Ali Hoseini-Khamenei, who is appointed for life. His duties include being commander-in-chief for all of Iran's armed forces,

intelligence and security operations and overseeing all general policies of the nation, including both domestic and foreign policies. The Supreme leader appoints his own representatives that are separate from the president's representatives, and often hold more authority. The President, currently Hassan Rouhani, is the second-most powerful leader of the executive branch. His duties include drafting legislation, ratifying treaties, and overseeing the national budget. As mentioned, the president appoints his own set of ministers, however, these appointments are strongly guided by the Supreme leader. The legislative branch is unicameral and consists of a 290-seat assembly. The members of this assembly must be approved by the Guardians of Council, which consists of 12 jurists who interpret the Constitution and decide which policies adhere to Islamic law. Lastly, the judicial branch consists of a Supreme Court. Altogether, Iran's government lacks a strong system of checks and balances, and expertise of Islamic jurisprudence and law is incredibly important.[13]

Iran consists of a variety of religions and ethnicities with a population of about 82 million people. About 60% of the population is under 30, which is about 20% more than the proportion of the U.S. population in the same age group. This large percentage of young people is most likely due to policies and encouragement by the Iranian government for women to marry early and have large families; this is a kind of pronatlism. This was in part due to a national agenda to increase the country's population, however, since then, different family planning policies have taken effect. These policies have fluctuated numerous times since the 1979 Revolution; the key point here is that overall birth rates have decreased and family planning has become prevalent since the Revolution, which leaves Iranian boomers growing older as the largest population group.[14] Although Iran has a strikingly high proportion of population under 30, due to factors such as comparatively high birth rates, high maternal and infant mortality rates, and lower

literacy rates, about 70% of Afghanistan's population is under 30.[15] There is a direct correlation between maternal mortality rates and literacy. On average, literate women die of pregnancy-related issues less often than illiterate women, making education systems a vital factor when understanding birth control practices and policies in these regions.[16] Although literacy rates are incredibly high in Iran (98%) in comparison to Afghanistan, the slow economic growth has left many students without job opportunities after education is completed. Unlike many other countries in this region, Iran has no gender gap in student enrollment distribution and spends a large portion of its GDP on the education sector. Both private and public educational institutions exist, and although facilities and quality of education are still in question from the desecularized curriculum, improvements are being made.[17]

The healthcare system in Iran is built on three pillars: the private sector, non-governmental organizations (NGOs), and the public-governmental system, the latter of which is the most powerful. Compared to other countries in this region, Iran has low fertility and maternal mortality rates.[18] Beginning in the 1980s, Iran experienced the largest and fastest drop in fertility ever recorded, ranging from seven births per woman to less than two on average in 2012. Between 1990 and 2015, these rates were dropping exponentially; however, because of policy changes regarding government-subsidized contraception, these rates may not continue to decline.[19] In 2015 the recorded prevalence of contraception was 77%, but due to recent policy changes regarding contraception, the rate might not continue to be this high, in comparison to Iran's regional counterparts which are making changes to decrease fertility rates and increase contraceptive use.[20] Next I discuss Iran's history and current contraceptive prevalence and policies in order to highlight the various factors, in addition to Islam, that contribute to such policy making.

Policies on Contraception in Iran

1967 marked the beginning of Iran's family planning program during which Mohammad Reza Pahlavi, the last *shah* (king) of Iran, issued a comprehensive birth control plan.[21] This plan included free access to contraception in health facilities, but a shortage of health facilities in rural areas still made contraception difficult to access for people in these areas. The plan also failed to address religious opposition to family planning or education about these new freely accessible contraceptive methods. For these reasons and because no resources were available for adults to make informed decisions, a mere 37% of married women used contraceptives.[22] The first wave of change, pioneered by Mohammad Reza Shah, appealed to the public adoration of western ways. Posters, such as those in Figure 1, employed images of inclusiveness, such as groups of people in one poster. There is also evidence of positive emotive language such as the association of few children with happiness and success. They utilized inclusiveness and suggested that having less kids would be the new "Iranian way," which focused on the workforce and education.[23]

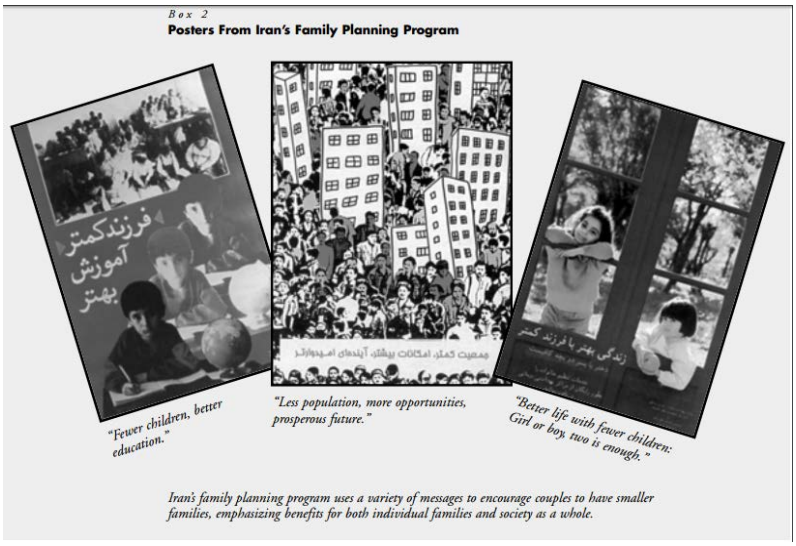


Figure 1 Posters from Iran's Family Planning Program

After the 1979 Iranian Revolution, the new supreme leader of Iran, Ayatollah Ruhollah Khomeini, repealed the family planning program set in place by the Shah. Along with this came the illegalization of contraception in Iran.[24] In the late 1980s, when Iraqi forces were invading Iran, many Iranians were killed and the country's population was decreasing by hundreds of thousands due to the war. Although the family planning program was initially repealed for being too "Western" for the new Islamic Republic, it also became economically disadvantageous to have a program that was meant to decrease the population. Khomeini had plans to rebuild Iran's population and construct a powerful army to fight in the Iran-Iraq war, offering incentives to women for having more children.[25] In various statements Khomeini appealed to fear, as many Iranian citizens were terrified of the Iraqi invasion. His solution suggested flag-waving or a nationalist approach to the decreasing Iranian population caused by the Family Planning Program.[26] Legal marriage ages were lowered to 13 and 15 (from 15 and 18) for women and men, respectively. Family planning was labeled an imperialist plot to reduce the number of Muslims.[27] Many family planning clinics were closed and clinic personnel transferred to other jobs.[28]

Consequently, fertility increased after the Revolution because of these changes and other pro-natalist policies, some possibly traceable to the Iran-Iraq War.[29] In the decade following the Revolution, Iran had the fastest population growth rate in the world at nearly 4% per year with a fertility rate of six children per woman.[30] At this time Khomeini relied on "Islamic values" and the concept of traditional family structure in Iran in order to promote his new pro-natal policies. Both domesticity and motherhood became core components of Iranian women's family ideology- playing on traditional values and cultural norms.[31] After the Revolution in 1986, approximately 7% of women worked outside the home, which was starkly different from conditions before this

time, when about 15% of women were employed.[32] This rate increased to around 16% by 2006, and it has continued to increase.[33]

By 1986, Iran had grown by approximately 15 million people and the economy and government could not support the new growth rate.[34] Hoodfar and Assadpour described the tasks that religious leaders faced in order to effectively campaign for the reimplementation of a family planning program:

> *The religious authorities saw as their first and primary task to dispel the myth that the population debate originated in modern Western society. Reviewing debates on the permissibility of fertility control and sponsoring research and republication of medieval Islamic works on population and contraception, they established that concern about population had preoccupied Muslim scholars long before it was discussed in the West. Thus, the authorities were able to celebrate Iran's Islamic heritage, to promote family planning, and to reinforce their independence from the West.*[35]

It was not until 1989 that Khomeini issued *fatwas* making birth control widely available and acceptable to conservative Muslims.[36] Under the new decrees by the Ministry of Health, contraceptives, including the pill, IUDs, tubal ligations, vasectomies, and the morning-after pill, could be obtained for free at government clinics and thousands of new rural health centers.[37] Health workers promoted contraception in order to increase time between births and help reduce maternal and child mortality. Educational programs, such as counseling sessions, were also made widely available to Iranian citizens.[38] With the *fatwas* that were issued, the new rural health facilities, and implementation of educational programs, the rebirth of Iran's family planning program addressed the important issues that had kept the program from being successful initially. Birth control use was at an all-time high in Iran during the 1990s for these reasons, and this

increased use changed the meaning of marriage as well. A shift in marriage from arranged marriages to ones with substantial input from the partners was evident during this time. Greater familiarity, initial closeness, and physical attraction became important factors and led to more frequent sexual activity, which became even more common with access to birth control.[39] In short, marriage was postponed in these contexts until the couple was ready to become parents and because elements besides parenthood were being valued. Birth control use immediately after marriage became common in Iran, especially among the most educated.

Khomeini and the Ministry of Health revamped Iran's family-planning program ten years later. At the request of the country's Ministry of Health, Khomeini issued a *fatwa*, or religious edict, declaring that, "...contraceptive use was not inconsistent with Islamic tenets as long as it did not jeopardize the health of the couple and was used with the informed consent of the husband."[40] The Ministry of Health began to employ slogans such as, "One is good. Two is enough," while reinstating the family planning program in Iran.[41] The birth rate decreased from about 4% to 1.8 and similarly, the use of female contraception increased from 37% to about 70% by 2000.[42] Because of these successes, Iran received the United Nations Population Award in 2001 and their program was recognized as the most successful in human history.

Another shift in Iran's family planning history began in 2010 when President Mahmoud Ahmadinejad began offering incentives to women to have more children. The financially incentivized program was unsuccessful and, by 2012, the president decided that the population-control program would be shut down altogether.[43] Supreme Leader Ayatollah Khameini stated, "One of the mistakes we made in the '90s was population control. Government officials were wrong on this matter, and I, too, had a part. May God and history forgive us."[44] Similarly, Ayatollah Mohammad Ghazvini announced on national television, "So tonight...start the

operation of having 5, 8, 12, and 14 children," he announced, "which, God willing, will be a big slap in the face... [to] this nasty one-child culture."[45] Public campaigns used billboards such as those in Figure 2 that state "One flower does not make spring" and "More children, a happier life."[46] The top panel of this billboard uses metaphor in order to communicate that one child is not an ideal situation. The bottom panel uses positive emotive language to suggest that a happier life is obtained by having a bigger family. Both of these posters also use code-switching by providing English translations to associate such ideas with the west.[47] The year 2014 marked the beginning of bills that banned all forms of sterilization and made other contraceptive methods difficult and even impossible to obtain.[48] The "Bill to Increase Fertility Rates and Prevent Population Decline" bans all forms of sterilization—the second most popular contraceptive method in Iran—and promises harsh disciplinary actions for any physicians found to be performing the procedure. It also bans anyone from distributing or promoting any information related to contraception.[49] The "Exaltation of Family Bill," demands that employers give hiring priority to, in this order, "married men with children, married men without children, and women with children." The bill also bans the recruitment of single women as schoolteachers, or as members of the board at higher education facilities.[50] Both bills utilize fear tactics by stating that any cases of disobeying these rules are illegal. They also suggest an "us vs. them" element by suggesting that women who have big families may be included and given priority in the workforce, while those who are single cannot. These efforts were set in place in order to avoid a dramatically uneven distribution of elderly people in Iran, but if these new policies will lead to population growth is yet to be determined.

Figure 2 Billboard from Iran, "More Children, A Happier Life"

As of 2015, the United Nations recorded a 59% use of modern contraception among Iran's population.[51] Currently, many Iranian women seeking reproductive health services such as permanent and temporary contraceptive methods and abortions are turning to underground markets. Utilizing contraceptive methods helps couples and individuals exercise and educate themselves about their basic right to decide freely and responsibly if, when, and how many children to have. Various research studies have also shown that increased use of contraceptive methods has resulted not only in improvements in health-related outcomes such as reduced maternal mortality and infant mortality, but also improvements in schooling and economic outcomes, especially for girls and women.[52] While Iran is enacting a number of pro-natalist policies and utilizing religious leaders as tools for campaigning, Afghanistan is making contraception comparatively more widely accessible.

Throughout these phases of Iran's history, language has been used as a powerful tool to accomplish the goals of the Iranian government. A variety of methods such as inclusiveness, hyperbole, code-switching, appeals to authority and fear, black and white fallacy, flag-waving, and associations to religiosity have been used by government leaders between 1960 and 2014 in order to promote their own family-planning agenda for the nation.[53] Given the history and

figures presented, it is evident that Iran's Family Planning Program has gone through a series of changes that have prompted government leaders to use a variety of techniques to facilitate these changes. An analysis of the language and context of policy changes reveals that, contrary to the popular belief about conservative Islamic Republics, these policy changes were not motivated solely by religion. Other reasons, such as economic benefits, were also behind these changes. The issue of reproductive health in this nation remains influenced by a number of factors discussed, and understanding the impact of all of these factors facilitates future policy-making efforts.

When Iran became recognized as an official Islamic Republic after the 1979 Revolution, Khomeini, the new supreme leader, decided to repeal Iran's Family Planning Program set in place by the previous leader of Iran, the Shah. While previous public posters and billboards used positive emotive language in association with fewer children and smaller families, Khomeini released a series of statements that condemned the program as too "Western." After the revolution, Iran's reformist discourse was not so much built on a foundation of Khomeini's fundamentalist, but rather on an anti-Western and anti-monarchist approach.[54] Khomeini was able to appeal to these sentiments by associating Iran's program with westernization. Toward the end of the 1980s, during the Iran-Iraq War, Khomeini began campaigning for a "Twenty million man army." During this time it was beneficial for him to take a nationalist and pronatal approach since national pride in Iran during the war was incredibly high. The language used by government leaders during the second wave of change in Iran's Family Planning policies suggests that a call for such policy changes was motivated by anti-Western sentiment and a need for a bigger and more powerful army, rather than only for religious reasons.

At the tailend of the 1980s and the war, an Islamic supreme leader who was known for conservative social policies and who had initially campaigned against any type of program that allows free access to contraceptive methods, changed his views dramatically. At this time, with the support of the Ministry of Health, slogans depicting a black-and-white fallacy and statements appealing to the religious population of Iran were released in order to run a campaign that supports free access to contraceptive methods. By releasing *fatwas*, Khomeini was not establishing that this change in opinion is religiously motivated, but instead, he used this approach as a strategy to gain the support of conservative religious families in Iran who were skeptical of how the program fits into Islam. Post-war Iran suffered from a damaged economy that was projected to no longer be able to support the rapidly increasing population growth rate which was a result of the Family-Planning Program repeal.[55] In order to help Iran's economy recover, Khomeini and the Ministry of Health decided to reenact a program which would control the growing population, which included providing a variety of contraceptive methods to the urban and rural communities within the nation.[56]

The language throughout the final wave of change in Iran's family-planning policies also suggests economic, rather than religious, motivation for any change to these policies. In 2012, the Supreme Leader of Iran, Ayatollah Khamenei, released a statement regarding Iran's Family Planning Program. He used words with negative connotations such as *mistakes*, *wrong*, and *forgive*, to suggest that the program was bad and that alternatives such as banning contraception to increase the birthrate would absolve the "sins" the Iranian people had committed. Posters depicting big happy families and sad small families used metaphor and code-switching in order to persuade the population that having fewer children would lead to unhappiness. When billboards were not as effective, Khamenei and Ghazvini appealed to fear and used negative

connotations and hyperbole in order to effectively campaign to repeal Iran's Family Program. By suggesting that the economy would suffer, Khamenei was able to garner support from other government sectors and some of the population. The most recent element in this campaign consists of two bills that were put in place to illegalize certain contraceptive methods, make other methods less accessible, and incentivize bigger families. The language in these bills appeals to fear and suggests an "us versus them" approach. These policies bring us to present-day Iran and the government stance on family-planning policies. These policies, although influenced by conservative, fundamentalist views embedded in society and within the policy-making regime, are also products of the surge in unemployment, a static economy, and perhaps increased education resulting in a "brain drain."

As Talatoff (2002) notes, …What seems clear is that religion has played an important role in contraceptive governance in Iran but it has been bolstered and sometimes weakened by economic and social factors. Religion has been used as a resource by various leaders in implementing policies that are seen to be beneficial to the nation state. It is important to note here that it is not women's interests or rights that drive policymaking, but rather the shifting needs of the nation state.

An Overview of Afghanistan

Officially the Islamic Republic of Afghanistan, this nation is about 647,500 square kilometers. Afghanistan borders Turkmenistan, Tajikistan, Uzbekistan, Pakistan, Iran, and China. The mountainous country remains

landlocked and divided by the Hindukush mountains into three different ecological zones.[57]

Afghanistan has one of the youngest populations in the world: about half the population is under the age of 15 and about 15% of the population is under five years of age. This population distribution is due to high fertility and mortality rates in the region. Although these high rates have been decreasing since the overthrow of the Taliban in 2001, they are still much higher than other countries.[58]

The Afghan population primarily speak Dari (a dialect of Persian), although Pashtu is another official language of the government. These languages are spoken among the four dominant ethnic groups in this region: Pashtun, Tajik, Hazara, and Uzbeks. Like Iran, about 99% of the population in Afghanistan is Muslim.[59]

The Afghan government consists of three democratic branches: executive, legislative, and judicial. Presidents are elected as head of state for five-year terms, with a two-term limit. The president elects two vice presidents, cabinet ministers, an attorney general, national security advisor, judges, and a central banker. The legislative branch is referred to as the National Assembly and has two "chambers": "House of the People" and "House of Elders." The judicial branch consists of nine members who serve for ten years and must be experts in Islamic jurisprudence.[60] Currently, Afghanistan utilizes a mixed administrative system that combines centralized and decentralized characteristics. The central government employs a minister as the head of each administrative unit at the local level. Similarly, there are independent administrative commissions and institutions created by the government, which are not led by any minister or parliament.[61] There are many challenges that the Afghan government faces, corruption and inefficiency being the most obvious.

Thirty years of civil war in the region, followed by continued corruption and inefficiency, has caused a crippling economy and infrastructure.[62] After the overthrow of the Taliban in 2001 reforms implemented by a new democratic government and international assistance attempt to improve the fragile state of economy, education, and health in the nation, although challenges remain.

Afghanistan is a country of about 32.5 million people, 75% of whom live in rural areas, and 35% of whom are in poverty.[63] Since 2002, Afghanistan has had a partnership with the World Bank, which has provided to date $3.34 billion in development projects. Because of harsh weather conditions, political instability, a lack of aid, concerns about security, and lack of reform progress, Afghanistan has been plagued with low levels of economic growth, and signs of improvement are not promising.[64] This slow improvement creates cost barriers for much of the Afghan population to access health services. Although health services are free, there are many out-of-pocket costs required to obtain certain services.[65]

Unlike slow economic growth, education in Afghanistan has improved tremendously in the past 15 years. School enrollment has improved eight-fold, there are nine times as many teachers, and the percentage of girls enrolled in school has increased from 3% to 36%. Although quality of education and educational facilities remains weak, these improvements remain promising for the future.

Similarly, the Ministry of Public Health in Afghanistan reports that although the Afghan healthcare system lacks high quality services and facilities, it has progressed immensely in the past decade. These changes stem from positive policy changes, strong government leadership, assistance, and careful monitoring and evaluation. Improvements such as decreasing infant mortality rate from 165 to 55 deaths per 1,000 births in the first year, decreasing maternal

mortality rates, and four times more functional health facilities compared to 2002, are all evidence of these positive changes in Afghan economy.[66] An increase in female health workers has also shown positive changes in health services in Afghanistan. It must be noted, however, that these health statistics remain incredibly poor compared to other low-income countries and access to women's health services remains low. In addition, power grids remain scarce in this region, making improved health facilities difficult.[67] Few medical facilities have toilets and about 25% of these have electricity. Of those, half are dependent on generators and 66% of these facilities cannot provide reproductive health services. Transport systems include bikes, horses, or nothing, and only 57% of the population is within one hour walking distance from these facilities.[68]

The combination of out-of-pocket health services costs, education, culture, and social norms contribute to lack of access to health services across the nation. With all of this in mind, we are able to look at how new policies regarding female contraception, which has risen in prevalence from 19.5% to 30%, are being implemented and how they are affecting women in the country.

Policies on Contraception in Afghanistan

Afghanistan, like Iran, is an Islamic republic that utilizes an Islamic legal system of governance. Although both countries cite Islam as the foundation for their legal systems, the structure and some of the policies that exist in each country are very different from one another. Stance on contraception is an example of an issue that has been approached differently by the leaders in each respective country and as a result has led to different policies in each.

Because of conservative Islamic policies implemented by the Taliban between 1996 and 2001, the average number of children was five per woman and access to contraceptive methods

in Afghanistan was rare. In 2000, 5% of people in Afghanistan recorded utilizing contraception. By 2003 that percentage had doubled and between 2006 and 2012, the percentage stabilized around 18-21%.[69] In contrast, Iran was noted to have 77-78% of people using contraceptive methods during this time. UNICEF reports that, currently, half of all deaths in women 15-49 years of age is due to pregnancy and childbirth.[70]

Direct communication with a religious leader about the issue of family planning and contraception was and still is incredibly common among Afghan families, therefore much of the public opinion and government policy regarding contraception was shaped by religious leaders.[71] Because of this, there was a common public misconception about family planning and Islam. While religious leaders in Iran claimed that because the *Quran* did not directly address birth control, it was consistent with Islamic beliefs, religious leaders in Afghanistan used a variety of quotes from the Quran such as "You should not kill your children for fear of want" to preach pro-natalist views.

A study conducted for *Health Promotion International* reported that many religious leaders believed that certain methods of contraception were equivalent to infanticide and contributed to suppressing the Muslim population, both of which are sinful according to Islam.[72] Researchers involved in this study also suggested that if religious leaders were to promote contraceptive methods and offer guidance for family planning that use would increase significantly because Afghanistan is built on a strong Islamic foundation. Between 1990 and 2012, due to rule of Taliban and high rates of low education and poverty across the country, contraception was frowned upon by religious leaders and nearly inaccessible in health facilities in Afghanistan. These statistics would slowly increase, but only with the help of religious leaders.

After the overthrow of the Taliban in 2002, Afghanistan underwent a health system reform because conditions were among the lowest ranking developing countries. Although improvements have been made, a significant gap continues to exist in maternal healthcare services due to a variety of factors, including difficulties improving infrastructure in insecure areas. One woman dies from pregnancy-related difficulties every two hours in Afghanistan. In 2012, less than half of the women in Afghanistan that were surveyed recorded knowledge of modern contraceptive methods, and of these, only 13% were utilizing any of these methods, a decrease from record high rates within the country in 2006.

Based on primary Islamic text, where do pro and anti-natalist policies stem from?

There is constant tension when discussing women's autonomy in Islam, primarily because of the diversity that exists in the Muslim world. All beliefs in Islam are taken primarily from three sources: the Quran (holy book), hadith (collection of things that Prophet Muhammad either did or said), and the *sunna* (biography of the prophet Muhammad). The sacred texts can be read in a variety of ways that either promote a subordinate position for women in society or a more egalitarian view of men and women.[73] In addition to all of this room for interpretation just in texts alone, there exists no hierarchical organization within Islam, which allows flexibility for legal systems to develop differently. In many countries, different schools of thought, systems of jurisprudence, and sometimes pre-Islamic legal systems exist simultaneously, which causes contradictory policies to unfold on local and national levels.[74] Moreover, policies undoubtedly change over time, sometimes under the same regime and other times between successive regimes, as with the case of multiple policy reversals in Iran. Because of this, painting an accurate picture of what a religion permits and how a country's legal system adapts these interpretations is impossible.

On the topic of the role of women in Islam, there exist many arguments that suggest women have lower status in Islam, while others argue that the religion gives women a higher status. Evidence for the former argument includes the fact that women can choose their own husbands, keep their maiden names, and maintain financial independence.[75] Most often, Islam is known as a religion that does not fall in line with international human rights, although the argument can be made that international human rights are solely based on Western principles and do not coincide with Islam.[76]Many people analyze women's status on the basis of sexuality and reproductive health rights. Reproductive health includes, but is not limited to autonomous reproductive/sexual behavior, widely available family planning services, effective maternal care and safe motherhood, effective control of reproductive tract infections, including sexually transmitted diseases (STDs and HIV/AIDS), prevention and management of infertility, prevention and treatment of malignancies and elimination of unsafe abortion.[77] In this paper, female reproductive choice and responsible reproductive behavior is addressed, specifically female contraceptives.

The texts do not discuss birth control explicitly, except for in the case of withdrawal, which is condoned by the Prophet specifically in the passage that states, "BUKHARI 9.506". In regards to temporary contraception, most Muslim theologians conclude that as long as there is an agreement by both the husband and wife and they are safe, that this type of reproductive behavior is acceptable.[78] Permanent methods are still highly debated among scholars.

One of a few sources that are cited as permitting contraceptive use in Islam is a quote by Imam Ali, which states, "One of the two (means) of affluence is to have few dependents"*. Another Hadith argues that it is Allah's will l if a child is conceived, regardless of whether birth control is utilized because of a verse that states, "*When your Lord brought forth from the*

children of Adam (i.e., from their loins) their seed...'[7:172]". There is a variety of contraceptive methods available for females and each is handled differently in Islam, depending personal belief and evidence from the hadith and Quran.

It can be argued that oral contraceptives are permitted by Islam as long as the woman is not in danger and her husband consents to contraceptive use as well. However, contraceptives such as the morning-after pill are frequently not permitted because contraception is said to occur at implantation (Omran 1992). So it depends on who interprets Islam.

The lack of hierarchical structure within Islam creates a space for flexibility, which contributes to issues of opposing views about topics such as contraception.

Islam is not merely a religion; it is used as a basis for governance in regions like Iran and Afghanistan, as a foundation for ideology in modernist and fundamentalist organizations, and as an origin for culture such as art, architecture, and poetry. Although Islam does not have a formal clergy, there is a variety of Muslim scholars/leaders that act as the source of moral and cultural guidance. Muslim scholars who are part of the *ulema* are educated in the Islamic sciences, *muftis* are able to issue judicial opinions called *fatwas*, there are scholars educated specifically on the *hadith*, judges that hold office in Islamic courts, and leaders who conduct worship services, often called *mullahs*. Because there are various religious Islamic leaders/scholars that the public may refer to for moral opinions, there is a lot of variation between countries that run their government according to Islamic law such as Iran and Afghanistan. Together these religious leaders leave room for a variety of interpretations of different subject matter, such as reproductive health.

Between 1990 and 2012 in Iran, language was used as a powerful tool to accomplish the goals of the Iranian government. A variety of linguistic persuasive techniques such as inclusiveness, hyperbole, code-switching, appeal to authority and fear, and nationalism were

used by religious leaders in order to promote their own family-planning agenda for the nation. The most effective technique to target the skeptical religious families, however, was using language with religious association and issuing *fatwas* permitting contraception. In contrast, during this time in Afghanistan religious leaders were approaching the topic of family planning in a starkly different manner. The notion that family planning is wrong and that contraception is *haram,* was widely preached by religious leaders and became common public opinion.[79]

The governance of contraception in Iran and Afghanistan can be used to show variation between Islamic states. Because birth control is not addressed explicitly in the *Quran*, opposing views coexist about this matter among religious leaders who have different interpretations of *Sharia* law. Between the late 1980s until around 2012, Iran utilized the most effective population control plan noted in history. The program included free access to a variety of contraceptive methods and educational programs for the public. In contrast, during this very same time, Afghanistan was noted to have one of the lowest recorded percentages of contraceptive use at an average of 18-21% of sexually active women utilizing any sort of contraceptive method.[80] This paper analyzes the governance of contraception in two Islamic Republics to show how the same source (the *Quran*) was used to implement pro-natalist and anti-natalist policies. The language used in a few official statements and slogans and historical context from both countries will be analyzed in the following sections.

Islam has proved to be not just a religion; it is the foundation of and intersects with various aspects of society such as government, morality, and culture. There are different religious scholars and leaders that help guide and manage the public on these different elements of society. For instance, a *qadi* (judge in a Shari'a court), helps review judicial matters, a *mullah* is readily accessible to the public and uses his knowledge of Islamic traditions and law to offer

knowledge and guidance, and an *imam* can leader prayer. Islamic states such as Iran and Afghanistan rely heavily on these leaders for guidance in developing and educating the public about policy. These religious leaders create dynamicity within Islam that allows the application of the religion in a variety of societal elements, such as government, to constantly evolve. Looking at patterns in policy regarding contraception in both Iran and Afghanistan supports this idea, as religious leaders are a key driving force behind developing and implementing new policies.

"Constraints on reproductive choice are a function of state politics rather than a reflection of religious doctrine, and that leaders do, in fact, use Islam to justify divergent positions on gender and reproduction" (Obermeyer 1994).

Socioeconomic changes in Iran encouraged change in policies regarding birth control. Fertility was supported during a time when a new, young population was necessary for the Iran-Iraq war; however, by the end of the 1980s, Iran's economy was challenged in providing its citizens the basic necessities of life.[81] The damage from the war with Iraq including the economic embargo, the falling price of oil, the flight of capital, and poor management resulted in worsening economic conditions for Iran has a whole, and in 1989 the Islamic Consultative Assembly issued a national Birth Control policy.[82] Unlike former policies, which reduced the legal minimum marriage age, encourage widowed and divorced females to remarry, outlawed sterilization and abortion, and pushed women to overall bear more children, these new policies aimed to reduce the population through family planning practices. New policies provided a more comprehensive list of contraceptive options for women to obtain at little or no cost.

In 1994, Carla Obermeyer, a medical anthropologist and professor who specializes in fertility and HIV studies, wrote a lengthy update on Iran's policy that at the time, implemented

all of the changes discussed above. This included abortion, sterilization, and testing out methods such as injectable birth control. She points out that the very same religious basis was used to promote their anti-natal policies as was used after the revolution when pro-natal policies dominated. She proposes that the relationship between Islam and women and reproduction is dependent on the political contexts through which these issues arise.[83]

In support of this theory, if we look at a variety of statements released by Iranian officials from 2012 until present-day, we are able to see how Islam is yet again used to justify anti-natal policy reversals. In 2012, the Supreme Leader of Iran, Ayatollah Khameini, stated on television, "The policy of population control and family planning should definitely be revised and the authorities should build the culture in order to abandon the current status of one child, two children [per family]…The figure of 150 or 200 million was once stated by Imam Khomeini. That is correct. Those are the types of figures we must achieve."[84] With the goal of expanding the population, two bills were proposed that would highly affect the rights of women and girls in Iran. Bill 446 calls to increase fertility rates and prevent population decline, which in turn, restricts reproductive and sexual health rights that women were previously exercising.[85] Along similar lines, Bill 315, the Comprehensive Population and Exaltation of Family bill, encourages continual and consecutive childbearing, early marriage, and lower divorce rates. Both of these bills support defunding family planning programs and subsidies for contraceptive methods, on the basis of strengthening "Islamic Iranian lifestyles."[86]

In August 2012, the Supreme Council of the Cultural Revolution (SCCR) declared the end of Iran's Family Planning Program in order to increase the fertility rate. In addition, new policies such as financial incentives for couples married before 25 years of age, new jobs for women that allowed a focus on their primary job as wives and mothers, classes that taught

women the role of being a wife and mother according to Islamic values and other incentives to promote fertility rate, were set in place.[87]

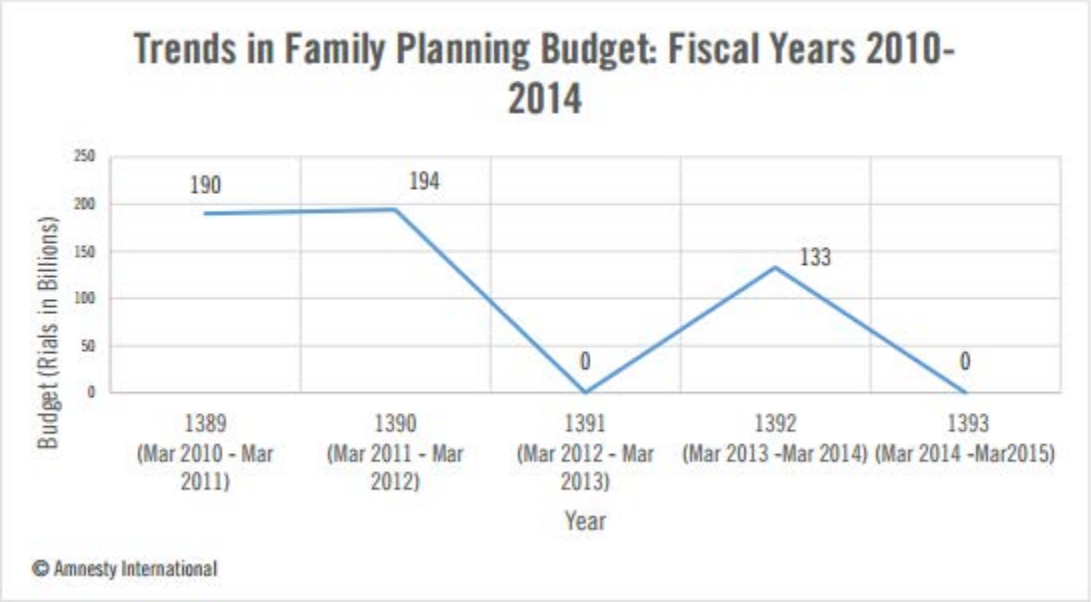


Figure 3 Iran's Family Planning Budget 2010-2014

Sacrificing women's reproductive and sexual health rights is motivated by geopolitical interest, not Islamic values. The relationship between Islam and contraception will change, depending on the political context.

Although there is a wide variety of contraceptive technologies available around the world, access and practicality limit the actual options available to women in Iran and Afghanistan, especially those offered in government subsidized health centers. In the following sections, we will look at a few different categories to assess supply chain risks in both regions. Based on the general information regarding contraceptive methods provided in Appendix A and the information in the following three sections, it is evident that some methods of contraception are more suitable for certain populations and lifestyles than others. With this data I suggest contraceptive methods that accommodate these limitations that may be considered in future government health center reform plans.

Geographic Accessibility

Unlike Iran, Afghanistan has several geographic challenges to overcome to provide its female citizens with adequate access to reproductive health services. The mountains in Afghanistan limit easy access and the ability to build secure roads. Additionally, winter weather conditions such as snowfall and flooding contribute to this limited access. The most common means of transport available include traveling by foot, bike, rickshaw, or car. As of 2012, 83% of the rural population was within two hours of a health facility, however, this distance is not ideal for a variety of populations, including pregnant women, especially if a mode of transportation such as foot or bike is the only option. On a similar note, in 2012 about 15% of Afghan households were recorded as living in an insecure area. In this context, insecure is defined as physically insecure. For those who live in isolated communities, all of these factors cause a severe lack of geographic accessibility to health services and thus contraception as well.[88]

About 67% of Iran's population lives in an urban area and this percentage continues to increase annually. Because of this ratio, geographic accessibility to reproductive health services is not as evident of an issue in comparison to Afghanistan. Local pharmaceutical companies are based in developed areas and health service facilities do not require long trips.

Availability

Both Iran and Afghanistan are afflicted with shortages of contraceptive methods. As of 2012, the Iranian regime and ministry of health have outlawed a variety of contraceptive methods such as sterilization, in bills such as the "Bill to Increase Fertility Rates and Prevent Population Decline."[89] The combination of these policy changes with US sanctions has impacted the influx of reliable foreign contraception.[90] Currently, many Iranian women seeking reproductive health services such as permanent and temporary contraceptive methods and

abortions are turning to underground markets. Prior to these bills which internally limit access to birth control, international sanctions affect the pharmaceutical supply chain in Iran as well. After the 1979 U.S. embassy hostage crisis in Tehran, the U.S. Congress established sanctions against Iran. Since then the European Union and the United Nations Security Council have also imposed sanctions, mostly due to nuclear proliferation activity. Although these sanctions do not include medicines, due to "restriction on money transaction and proper insurance" a cash payment prior to importing raw materials or medicine is required which makes acquisition incredibly difficult for pharmaceutical companies.[91] Data recorded in 2013 confirms that limited supply of quality medication and/or raw materials for local manufacturing, such as decreased supply from Western manufacturers versus lower quality medicines from India and China, has affected Iranian citizens negatively.[92] An economic study in 2015 showed that although political conditions such as international sanctions have played a significant role in availability of pharmaceuticals, there are many internal factors that could be fixed to improve the market. These include money transfer, interest rate, currency fluctuation, unstable policies, information flow, regulation transparency, and economic stagnation.[93] The results of this study show that operation and quality management affect internal pharmaceutical industry functioning and can be improved for overall improvements in contraceptive method availability.

In Afghanistan, poor facility conditions also play a vital role in limited availability in rural areas. Problems such as a shortage of healthcare staff and cold patient care rooms during winter reduce quality of care.[94] Knowledgeable and adequate healthcare staff serve as great resources to provide sex education about topics such as contraception and family planning and to build longitudinal preventative healthcare, however, when facilities are short-staffed, they no longer serve a variety of purposes. Sex education is important when looking at reproductive

health reform. Both countries limit public sex education, which reduces the prevalence of contraceptive methods.

Reproductive health services availability is characterized by a number of factors including contraceptive method availability, adequate reproductive health care professional staff, quality reproductive health services access, and prevalence of sex education. Both Iran and Afghanistan limit the availability of a combination of these elements which creates challenges when thinking about women's health reform. External factors remain restrictive, however, prevalence of sex education, quality of facilities, health care budget, and operation management are internal factors that can be changed.

Affordability

Both Iran and Afghanistan run on a dual private-public practice system. This means that private practices and government subsidized health facilities coexist simultaneously. Operations management must be efficient in order for these types of systems to be effective. Increased internal and external challenges decrease efficacy of dual healthcare practice systems. Iran and Afghanistan have portions of their national budget allocated to government subsidized health care services, however, for many ordinary people, this aid is not nearly enough to obtain quality care, especially in regards to reproductive health in particular. A combination of internal and external challenges plague these regions and affordability is a limiting factor in birth control access.

A combination of political conditions and current government goals that include population increase are contributing to supply shortages in Iran. International sanctions are not only limiting pharmaceutical imports into Iran, but they are also creating high cost-barriers for the public. Cost of goods, such as birth control, is increasing due to supply shortages.

Additionally, a rise in corrupt practice and smuggling facilitate black market prosperity.[95] Out of pocket costs are high for those who even have the option to obtain any type of birth control in the first place. Accounts of low quality birth control pills such as *Yaz*®, which has been recalled in several western countries, discuss the high cost for low quality products due to supply shortage.[96] Unlike Iran, the Afghan is trying to increase prevalence of contraception and is currently not suffering from international sanctions. Efforts to achieve this goal include government subsidized healthcare facilities, however, there are challenges with this system due to budget restrictions.

As stated before, Afghanistan provides its people with free health services, but approximately 73% of expenditures are out-of-pocket costs.[97] On top of this, indirect expenditures, such as transportation costs to access health facilities, can be relatively high. Quality of public health facilities and services is low in places such as Afghanistan, where access to electricity and clean water is scarce and reproductive health services themselves are limited. This forces some women to have to turn to private practices which can be extremely expensive. Without full or significant government healthcare subsidies, many women are limited by the affordability of reproductive health services and increased risk of maternal mortality, infant mortality, infection, etc.

After analyzing each of these supply chain factors, it is evident that they are interrelated and affect one another. The big question that remains is to what extent these are external versus internal issues. With this knowledge, it is easier to propose internal improvements that increase access to contraception and other reproductive health services. The sections above highlight the complexity of economic, political, and social factors that contribute to contraception access in each country examined. Those who simply relate an Islamic regime to conservative healthcare

policies would be failing to give an accurate description of the complex dynamics of reproductive health governance in these regions.

What does the future hold for both of these nations?

Acceptability of birth control by policy makers in both of these countries is one of the most important factors that impede increases in contraceptive use. Currently, Afghanistan has issued a variety of messages that discuss contraception as adhering to Islamic family values.

There is much to be said about the importance and efficacy of education in promoting social and political change, however, this is hard to achieve in societies where many tools used to develop educational programs are filtered by the government. Currently, the Afghan government is developing policies to increase the prevalence of contraception in government health facilities, while Iran has released a few pro-natal policies to increase its population. As of 2012, when the government established the "Bill to Increase Fertility Rates and Prevent Population Decline" and "The Exaltation of Family" bill, there have been strong efforts by the Iranian regime to increase population size. Because rapid results are desired, any efforts to challenge the government's new pro-natal policies, such as educational programs that educate citizens about reproductive health and contraception, are discouraged and subject to punishment. It is my hope that through platforms of communication, such as social media, that the population continues to educate themselves on knowledge about reproductive health rights. Through this, I hope that the public will eventually demand change in the interest of women's health and rights. Iran has been a unique case for many issues related to the Middle East; the topic of birth control as a tool for population control is just another example of this.

Current efforts by the United Nations to increase access to sexual and reproductive health, including family planning, and the realization of reproductive rights as a reality for all

people are being made in Iran.[98] This agenda aims to ensure, by 2030, "universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes" and "universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Program of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences."[99] Similar efforts are headed by UNICEF as well as the United Nations in Afghanistan, as Afghanistan has one of the poorest quality healthcare systems in the world.

Through increased education and health care accessibility, more effective and efficient governmental operations regarding health care, and the utilization of public religious figures in implementing new health care policies, both Iran and Afghanistan may establish more prevalent contraceptive use and higher quality health care systems. This can only be a boon to women's and children's health, and to efforts toward equality.

Appendix A

Method	Description	How it works	Efficacy Rate	Limitations	Suitability for Iran and Afghanistan	
Abstinence	Refraining from sexual intercourse altogether	No intercourse or penile/vaginal contact	100%			**Behavioral Method**
Withdrawal	Removing the penis before ejaculation	Withdrawal before any ejaculate is released to prevent fertilization (i.e. contact between sperm and egg)	78-99.6%	-leaves room for technical difficulties depending on a partner's self-control and self-awareness -pre-ejaculate may contain sperm and infectious organisms	Although associated with no cost, this method is incredibly risky due to technical difficulties.	
The Pill	Pills that contain varied amounts of the hormones estrogen and/or progestin	Prevent pregnancy by inhibiting ovulation and thickening cervical mucus	91-99.7%	-effectiveness is decreased if not used correctly -new pills are required every month -nausea	Although this method has a low failure rate, pills must be replenished by a pharmaceutical provider every month. Those without easy access to a pharmacy may find this method to be inconvenient. Additionally, if not taken as instructed effectiveness dramatically decreases.	**Hormonal Method**
Depo-Provera®	Injectable form of progesterone administered every 3 months	Prevent pregnancy by inhibiting ovulation and thickening cervical mucus	94-99.8%	- must be re-administered every 12-13 weeks -irreversible for 12-13 weeks -associated with weight gain -conception may take 9-12 months after stopping injections	This form lasts for 3 months, however, it is both irreversible in those 3 months and may affect ability to conceive for 9-12 months thereafter,	

					which might not be suitable for some women. Additionally, the next shot must be administered by a health care provider almost exactly 12 weeks after the previous injection. This may post difficulties for those without convenient access to healthcare resources.	
Emergency Contraception	High doses of hormones taken after unprotected intercourse	Delays or inhibits ovulation	62-89%	-treatment is most effective within the first few hours after unprotected intercourse (72-120hrs, depending on the brand) -may cause nausea and vomiting -less effective if >120lbs	Not suitable for regular contraceptive use. This method also has a limited time frame between time of unprotected intercourse and taking the pill.	
Nuva Ring®	A small flexible ring that works for three weeks at a time, followed by one week without the device	Inserted into the vagina and releases estrogen and progestin. Prevents ovulation and thickens cervical mucus.	91-99.7%	-technical difficulties are common with this method -possible side effects: vaginal infections and irritation, vaginal discharge	Because this method is reversible, lasts up to a month, and can be inserted yourself, this might be a suitable method for women in these countries. Those who have limited access to resources might have difficulty	

					replacing the ring every month. Additionally, difficulties with insertion are common.	
Ortho Evra®	Patch placed on the skin and replaced every week for 3 weeks	Releases estrogen and progestin through the skin and into the bloodstream. Prevents ovaries from releasing egg and thickens cervical mucus	91-99.7%	- may not be a birth control solution for women who are: overweight, enduring prolonged bed rest, have breast or liver cancer, smoke and are 35 years or older, have high blood pressure, lupus, liver disease, history of heart attack or stroke, or suffer from blood clots	For a variety of reasons, this method may not be suitable for women in these areas. First, technical difficulties are common and require a new patch be placed. This could be costly and inconvenient for those who have limited access to healthcare. This method is also not suitable for women with a variety of conditions. Logically, government subsidized health centers would not benefit from offering this method.	
Nexplanon®	1.5 inch rod inserted into the arm and lasts for 3 years	Continuously release hormones to prevent ovulation and thicken cervical mucus	99.9%	-must be inserted by a medical provider	Incredibly suitable for women in both regions. This method lasts 3-5 years, can be removed, is relatively painless, and discreet.	
Intrauterine Device	Small “T-shaped” object that is released into the uterus and prevents pregnancy for long periods of time (3-12	Device is placed and left in uterus to prevent conception*	99.2-99.8%	-must be inserted by a medical provider -pain may occur at time of insertion *non-hormonal copper IUD	This is another incredibly suitable option for women in these regions due to its long-term	

	years)			available	effectiveness, high rate of effectiveness, and removability. Must be inserted and removed by a healthcare provider.	
Diaphragm and Spermicide	Small silicone cup that is inserted into the vagina to cover the cervix for up to 2 years	Serves as a physical barrier to prevent sperm from reaching the cervix	88-94%	-Requires medical provider for device fitting -technical difficulties are common -must be refitted after pregnancy or weight change -spermicidal cream or jelly must be used with diaphragm -cannot be used during menstrual period -spermicides associated with increased risk of urinary tract infections -must be inspected for holes	Because of a variety of technically limitations and risks, this method may not be incredibly suitable to provide in a government subsidized healthcare center. The benefits include reversibility and self-insertion, however relatively low rate of effectiveness is also important to note.	**Barrier Method* *only methods that may protect against STIs/HIV**
Female Condom	Thin non-latex sheath that contains two flexible rings One ring is an internal anchor and the other ring remains outside of vagina	Prevents any semen (and the sperm inside) from reaching the inside of the vagina	79-95%	-more expensive than male condom	Condom must be replaced after every act of intercourse. This can be relatively expensive. The benefits include STI/HIV protection. Barrier methods are the only way to protect against STIs which makes both female and male condoms beneficial methods of contraception to provide in government healthcare centers.	

Male Condom	Rubber layer that fits over an erect penis	Prevents any semen (and the sperm inside) from reaching the inside of the vagina	82-98%	- not as effective as other methods listed due to high risk of technical difficulties	Condom must be replaced after every act of intercourse. This can be relatively expensive. The benefits include STI/HIV protection. Barrier methods are the only way to protect against STIs which makes both female and male condoms beneficial methods of contraception to provide in government healthcare centers.	
Sponge	A plastic foam-like material and contains spermicide which is released into the vagina	Inserted at the opening of the uterus, like the diaphragm, prior to intercourse. Blocks and absorbs sperm and releases spermicide	76-91%	-not as effective at preventing pregnancy as some other options listed below due to high risk of user error -All limitations and benefits are similar to that of the diaphragm -Risk of toxic shock syndrome if left in vagina for >30 hours.	Suitability is the same as diaphragm.	
Vaginal Spermicide	Foam, gel, film or suppository	Agents contain chemicals that kill sperm. Also serve as a barrier and may immobilize sperm	72-82%	-Needs to be used before each act of intercourse -allergies to spermicide are common -spermicides associated with increased risk of urinary tract infections	If access to healthcare resources is limited, this might not be a suitable method to practice due to risk of UTIs and allergies which may require further consultation with a healthcare provider. Effectiveness	**Other**

					is also relatively low.	
Sterilization	Surgical procedure that permanently renders a person infertile or sterile	**Female tubal ligation** or occlusion is a permanent contraceptive method that requires cutting or blocking the fallopian tubes to prevent pregnancy **Hysteroscopic sterilization** is another female sterilization procedure that is used as a permanent form of birth control. This operation includes inserting a device in the fallopian tubes through the cervix	99.5%	- it takes 12 weeks for the device to become effective -nickel allergies can cause severe adverse effects -procedure must be done at a certain time of a woman's menstrual cycle -risk of infection and bleeding -medical provider required -Essure® requires a backup method for 3 months after insertion	This method is suitable for women who are looking for a more permanent form of birth control. These methods require surgery by a healthcare provider. These forms would be beneficial to provide to female citizens of both regions.	

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