As Many as Allah Gives:
Religion, Health, and Family Planning Decisions in Uzbekistan

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Abstract
Uzbekistan has undergone substantial changes in the recent past, including a transformation in fertility. Following independence in 1991, support for family planning programs rapidly developed and expanded. In the same period, opportunities for religious expression, participation, and learning increased following the collapse of the officially atheistic Soviet regime. Using data collected from focus groups and individual interviews in Tashkent and in an Uzbek village in 2005-2006 as well as quantitative data from two Uzbekistan Demographic and Health Surveys, I seek to develop understanding of the role of religion in family planning decision-making in a context of declining fertility and increasing contraceptive use. Although informants (both Muslim and Orthodox) note that religion dictates that a family should have "as many children as God gives," at the same time many also report that their religion does not prohibit the use of temporary modern contraceptive methods. I examine how respondents describe religion as a protector of health and explain the religious acceptability of family planning in terms of preserving the health of mothers and children under current difficult economic conditions. I discuss the relevance of these findings for existing theoretical perspectives on the influence of religion on fertility.
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The question of how religion might influence reproductive decisions is by no means a new one. For decades, scholars have hypothesized that affiliation with certain religious groups may serve as a facilitator or, more often, an impediment to family planning and contraceptive adoption. No major world religion is completely silent on the issue, but it is important to keep in mind that religious texts do not serve as a set of unchanging instructions followed blindly by adherents. Rather, religious leaders, governmental officials, and ordinary male and female believers interpret, reinterpret, resist, manipulate, and synthesize religious texts and teachings, including those that relate to reproductive choices, as a part of daily life. This paper draws on multiple methods to summarize changes over time in use of contraception and abortion and to illuminate the processes through which religious beliefs and practices are linked to family planning in Uzbekistan.

Secularization theory posits that religion will gradually decline and be increasingly relegated to the private realm until it becomes completely unimportant in modern life (Norris and Inglehart 2004). As a component of modernization theories, secularization has often been considered an inevitable consequence of modernization and industrialization and a precondition allowing for fertility decline (Ross [1907] 2003; Caldwell and Caldwell 1987; Lesthaeghe 1980, 1983). Although secularization theories have long been dominant in social science discourse, religion continues to assert itself as a major factor of influence across multiple dimensions of individual and collective action. Modern religious revivals and the continued influence religion exerts on the lives of people in a variety of world contexts have caused some scholars to question the relevance of secularization theory (Berger 1999; Stark 1999; Renne 2002).

Nevertheless, the role of religious culture, beliefs, and practices in the lives of individuals
is not examined often enough in social science research. Perhaps worse, researchers have sometimes taken religion as a rigid and unchanging categorization, without examining its contemporary meaning in people's everyday lives. Khalid (2003) asserts that in much social scientific work on Islam in Uzbekistan, “Islam is... taken simply as a given, a monolithic set of beliefs that drives its believers to certain political actions” (574), with neither a careful consideration of existing contextual work on Islam nor any acknowledgment of the deep and continued influences of Soviet nation-building. Islam is rarely included in sociological studies of the region, and Islamic meaning systems are explored even less often.

Perhaps in part because of the absence of a strict hierarchical structure of authority on religious interpretation, Islamic views on fertility and contraception vary across locations. The Qur’an, the primary source of religious information in Islam, does not specifically mention either contraception or abortion, but several hadith (collections of sayings and doings of the prophet Muhammad) relate to the permissibility of family planning. Children are of high importance in Islam, but its tenets are generally interpreted as compatible with the use of most forms of temporary modern contraception for married couples (Hasna 2003; Omran 1992). In a historical analysis of Islamic texts, Omran (1992) emphasized scriptural assertions that Allah does not want to burden man and determined that there are multiple justifiable reasons for choosing to use contraception. Among these are protecting the health of the mother and child, preventing economic difficulties, and ensuring the family’s ability to provide for their children. Islamic perspectives on abortion are also mixed. “Every school agrees that abortion after the first 120 days is forbidden except to save the mother’s life; there is, however, no consensus on abortion before the period of ensoulment,” (Sachedina 1990:109). Many have noted the flexibility in Islam, and especially in the liberal Hanafi school prevalent in Central Asia (Babadzhanov 2002),
to reinterpret texts and adapt based on current circumstances (Aghajanian 1994; Obermeyer 1994; Offenhauer 2005).

Research on Muslim societies suggests that Islamic belief and practice may influence demographic processes, including reproduction, in a variety of ways. Many scholars have attributed a lagged fertility decline in the Arab world to Islam, often with little supporting evidence. Multiple counterexamples challenge the tenability of this argument, including family planning successes and fertility decline in Algeria (Fargues 2005), Tunisia (Obermeyer 1994) and perhaps most notably Iran, which experienced a rapid decline in fertility after the implementation of a post-revolutionary governmental family planning program that had the active support of religious leaders (Aghajanian 1994; Boonstra 2001; Hoodfar 1994; Obermeyer 1994). In other contexts, where more religious variation allows for comparisons, researchers have found mixed support for a religion effect. Although Islamic jurists and scholars generally agree that Islam does not forbid contraceptive use, on the local level individual Muslims in certain contexts may see contraceptive use as incompatible with Islam or choose to adopt contraception less often than affiliates of other religions (Ali and Ushijima 2005; Hogan and Biratu 2004; Knodel et al. 1999; Morgan et al. 2002; Sargent 2005). Others have found mixed attitudes about religious perspectives on contraception (Iyer 2002) and pointed to women’s agency in personal interpretations on the acceptability of contraception (Keefe In Press).

In what Obermeyer (1992) has termed the “fateful triangle,” researchers have often associated Islam, poor treatment of women, and demographic outcomes. While it is perhaps a convenient explanation for a group of nations that tend not to fit international fertility models, looking for a single explanation in Islam sometimes reflects an “Orientalist” outlook (Said 1978), judging Islamic societies to be fatalistic and opposed to modern innovation. This sort of
perspective “…treats as monolithic a trait that is shared by close to a billion people worldwide, and that has adapted to, and been affected by, diverse regional contexts” (Obermeyer 1992:42). Although at some times and in some contexts Islam has been linked to lower status and reduced reproductive choice for women, these relationships are variable and largely explained by other characteristics such as the social context and structure of political power (Obermeyer 1994; Moaddel 1998; McQuillan 2004). Islamic doctrine can be used to legitimate divergent conceptions of women's status, as its texts simultaneously support equality among believers and distinguish between the rights and roles of men and women in daily life (Obermeyer 1992, 1994; Moaddel 1998). Results of qualitative fieldwork (Obermeyer 1994) and quantitative analyses (Morgan et al. 2002) indicate that the conception of universally low women’s status in Islamic nations is incorrect. Further, the link between low female status and demographic outcomes of high fertility and low contraceptive use is far from consistent in past research (Fargues 2005; Morgan et al. 2002). With few exceptions, literature on reproduction and religion is limited to the Middle East and Northern Africa. There is great need for examinations of the relationship in religiously and culturally diverse contexts.

Theories of Religion and Fertility

Interest in the effect of religion on reproductive outcomes was sparked in the 1970s when the European Fertility Project found that cultural behaviors and beliefs, including religious ones, might influence the onset of fertility decline, and others became interested in the religion/fertility connection because of findings that Islamic groups often have lower contraceptive use and higher fertility than others (Agadjanian and Yabiku 2005; Dharmalingam and Morgan 2004; Iyer 2002; Morgan et al. 2002; Knodel et al. 1999). Researchers have offered several possible
mechanisms that may link religion to fertility, including the characteristics hypothesis, the particularized theology hypothesis, and the interaction hypothesis.

The characteristics hypothesis puts forth the idea that any positive or negative relationship between religion and fertility is actually spurious, and can be “explained away” by controlling for socioeconomic factors (Goldscheider 1971). This hypothesis has received very little support in previous research, as any difference between religion, fertility, and contraceptive prevalence persists after controlling for social, economic, and demographic variables (Agadjanian and Yabiku 2005; Dharmalingam and Morgan 2004; Morgan et al. 2002; Knodel et al. 1999).

According to the particularized theology hypothesis, the effect of a particular religion on fertility can be explained by interpretations of its official writings or teachings. Goldscheider (1971) criticized the particularized theology perspective, finding it shallow and inadequate. He argued that it was necessary to understand the entire content of a religious organization, of which the particular theology is a part, but maybe not the primary part. McQuilla (2004) argued that it is also important to consider the status of the religious group in a particular society. Knodel et al. (1999) find that popular conception of religious restrictions on contraceptive use are directly linked to low rates of use for Muslims in Thailand and Iyer (2002) finds that only 1% of Muslims in one region in India believe that their religion allows contraceptive use of any kind.

Third, Chamie (1981) offers the interaction hypothesis to explain religious lags in fertility decline. This hypothesis, basically an adaptation of secularization theory, argues that, as development advances, religion will become less important and the economic forces acting on larger society to encourage smaller family size will eventually apply to members of all religious groups. Knodel et al. (1999) find some support for this in focus group evidence that modern
economic pressures are beginning to encourage ethnic-Malay Muslims in Thailand (the group with the highest fertility) to reduce family size. They find the hypothesis flawed because it does not acknowledge that the secularization process will not function identically across contexts and it fails to account for the possibility that religion will maintain its importance as religious leaders may change their interpretation of religious texts in response to social and economic forces operating at a given time.

The Uzbek Context

Uzbekistan, the most populous state of formerly Soviet Central Asia, provides a theoretically and substantively unique context for this research. Uzbeks were one of the first Central Asian groups to convert to Islam in the 7th and 8th century (Gunn 2003) and Uzbekistan is sometimes cited as having the strongest religious traditions of any nation in the region (Tazmini 2001). In Uzbek society, the neighborhood association (mahalla) is a central point for the Muslim community (Kandiyoti and Azimova 2004; Ilkhamov 2001). The population of Uzbekistan is largely Muslim, predominantly Sunni, with varying degrees of belief and practice. Most of the remainder are Christian, and there are very small numbers of people of other religions or no reported religion (Mutalova and Newby 2004). In the early years of Soviet rule, a major stated purpose of the campaign to liberate Uzbek women was to free Muslim women from religious structures thought to be oppressive (Keller 1998). Under the Soviets, religious practice declined and women's status improved in terms of employment, education, and freedom of movement. Soviet treatment of Islam was first characterized by almost total repression, followed by limited tolerance with almost complete control. Gorbachev’s policy of glasnost’ included the goal of softening restrictions on religious groups, but this “openness” had a later and slower affect on Muslims in Central Asia than on other religious groups elsewhere in the Soviet Union.
The gradual resurgence in Islam that began as the policies of glasnost’ and perestroika reached Central Asia increased in magnitude after the fall of the Soviet Union (Tazmini 2001; Zanca 2004; Kandiyoti and Azimova 2004). This resurgence is characterized by increased observation of Islamic rituals as well as increased importance of Islam in social identity, especially as it can serve to distinguish Central Asia from Russia (Tazmini 2001). Tazmini (2001) argues that beliefs and traditional and cultural elements of Islam persisted, as did a conception of Islam as a component of identity and heritage, but decades of oppression have left many Muslims, including religious leaders, without a firm grasp of the teachings of Islam (Gunn 2003). Governmental control of religion persists in varying degrees across Central Asia, with Uzbekistan being one of the nations keeping the strongest hold on acceptable religious expression. The Uzbek government requires all religious groups to register officially and has taken a strong stance against those who practice unofficially, especially Muslims (Gunn 2003; Tazmini 2001).

During the Soviet period, a relatively high standard of living and equitable distribution of wealth was achieved in the Central Asian republics (Veenema 2000). The Soviet legacy has left a complex network of facilities designed to provide benefits and healthcare services free-of-charge to the entire population, including those living in remote areas. Following the breakup of the USSR, questions arose regarding the structural and financial viability of maintaining an adequate system of universal government-provided healthcare (Karimov 1997; Veenema 2000). Consequences of a deteriorating health infrastructure emerged toward the end of the Soviet period, and many of the nations of the former Soviet Union are experiencing a health crisis (see, for example Kingkade 1997; Rose 2000; DaVanzo and Grammich 2001). The Uzbek government is currently charged with the task of re-organizing a healthcare system created in the
Soviet period and eliminating rural/urban differentials in medical provision (Buckley 1998b). Moving in some cases to partial privatization and targeted (rather than universal) benefits are strategies employed in recent years to finance health care in the country. Beginning in 1994, the government of Uzbekistan began using public committees of elders within mahallas to determine vulnerable members of the community for receipt of targeted benefits (Veenema 2000). Policy makers hoped that, because these committees are embedded in their communities, they would be able to make better informed decisions on real economic need. However, at the same time, the government reduced the funds allotted to citizen benefits. Governmental money spent on education, health, subsidies, benefits for families with young children, and benefits for families with low income declined each year between 1991 and 1998 (Coudouel and Marnie 1999).

Since declaring independence in 1991, Uzbekistan has experienced a rapidly changing demographic situation. Emerging demographic trends include a dramatic drop in growth rate and absolute population growth in the last few years. These changing trends are due, partially, to a sharp decline in birth rate, especially among the rural population. The fall in birth rate has been largely attributed to changing fertility preferences in rural areas (Ubaidullaeva and Umarova 2001). The composition of the population of Uzbekistan has also changed considerably in recent years. Following the breakup of the Soviet Union, much of the Russian and Russian-speaking population departed, while people from nearby Central Asian states migrated into Uzbekistan (Ubaidullaeva and Umarova 2001). In recent history, Uzbek society has been extremely pro-natalist. During the Soviet period, government officials consciously attempted to encourage population growth through public policy. Mothers who gave birth to at least seven children were honored with the governmental distinction of “mother-heroes.” This award was accompanied by many financial and social benefits (Barbieri et al. 1996; Buckley 1998a; Karimov 1997). Family
planning was not encouraged during this period (Barbieri et al. 1996). For the last decade, however, the Uzbekistan Ministry of Health has actively promoted the use of governmentally-provided and privately-marketed family planning services in order to improve maternal and child health (Karimov 1997).

Governmental action, international contraceptive aid, and reductions in the demand for children all contributed to improvements in reproductive health in the 1990s (Buckley et al. 2004). Between 1996 and 2002, the percentage of married women using a modern method of contraception at the time of survey increased from 51.3% to 62.8%. Ever use of modern contraception increased from 64.9% to 82.4% among married women, but the IUD continued to be used almost exclusively (Asadov et al. 1996; Sullivan and Kamilov 2004a). Induced abortion was widely used throughout the USSR, and high reliance on abortion persisted following the breakup (Henshaw et al. 1999), although abortion rates have undergone a “steady and significant decline” since the early 1990s (Sullivan and Kamilov 2004b). Use of abortion within Soviet Central Asia was much more common among Russians and other Europeans than among ethnic Central Asians, and Agadjanian (2002) found that this difference has persisted in independent Kazakhstan. In 1996, ethnic Uzbeks also had lower abortion and contraceptive rates than Russians and other Europeans living in Tashkent (Agadjanian and Makarova 2003).

This project focuses on two key research questions. First, have contraceptive use and abortion rates changed over time for the Muslim population of Uzbekistan, both overall and relative to non-Muslims? Second, how do specific religious beliefs, behaviors, and affiliation come to bear on family planning decision making for different population subgroups? In exploring the second question, I discuss the characteristics hypothesis, the particularized theology hypothesis, and the interaction hypothesis as potential explanations for effects of
religion on reproductive decision making.

**Data and Methods**

The research methodology allows me to go beyond purely quantitative assessments of religious affiliation and family planning by detailing individual conceptions of contraception and abortion that are shaped by multiple aspects of religiosity. I begin with a description of quantitative analyses, used to gauge nation-wide trends in use of contraception and abortion and then summarize the qualitative stage of analysis, used to gain information about the behavioral and psychological mechanisms of transmission linking religious beliefs to family planning attitudes and behaviors.

**Quantitative Analysis**

The quantitative stage of the project uses women’s data from the 1996 Uzbekistan Demographic and Health Survey (UDHS) and the 2002 Uzbekistan Health Examination Survey data (UHES) to examine trends in use of contraception and abortion. Both the UDHS and the UHES are multistage stratified cluster samples of women ages 15 to 49 living in Uzbekistan and both include data on fertility, family planning, and religious affiliation. The 1996 sample consists of 4,415 women, and the 2002 sample consists of 5,463 women. In these analyses, I restrict the sample to sexually active Muslim or Orthodox women with no missing data on variables of interest, reducing the working sample to 3110 in 1996 and 3995 in 2002. When examining current contraceptive use, I also limit the sample to women who are not currently pregnant and report having sexual intercourse in the last month (2439 in 1996 and 3310 in 2002). Sampling weights are applied to the data, and clustering is taken into account using Stata 9’s survey analysis commands.

**Dependent variables.** The dependent variables considered are 1) ever use of modern
contraception; 2) current use of modern contraception; and 3) abortion history. Respondents are asked whether they have ever used each method they report as familiar (spontaneously or when prompted). They are then asked if they are currently using a method. Those who report use of female sterilization, the pill, the IUD, injectables, condoms, or other forms of modern contraception\(^1\) are considered to have used (or currently be using) a modern method. To gauge abortion history, I use a dichotomous variable indicating whether or not the outcome of a woman’s last pregnancy was induced abortion (versus all other outcomes).

**Independent variables.** The key independent variable is respondent’s reported religion. Only broad religious affiliation is measured (Muslim, Christian, no religion, or other) in both of these surveys. I explore the importance of religious affiliation and other background characteristics for predicting current and past use of contraception and abortion history. In many contexts, including Central Asia, it is difficult to separate influences of ethnicity from religious influences, as the two traits overlap almost completely. When the sample is limited to those reporting Uzbek or Russian ethnicity, the weighted correlation between Islamic affiliation and ethnicity is .97 in the 1996 UDHS and .94 in 2002 UHES.

Other independent variables included are age, education, wealth, parity, and employment. I compare women younger than 25 years of age and those 40 and over to the reference category of women 25-39 years old. Education is dichotomized with those with some university or institute compared to those with less education. To examine wealth, I constructed a scale using the sum of household ownership of eight items (telephone, electricity, radio, television, refrigerator, bicycle, motorcycle, car).\(^2\) Following the process detailed by Bollen et al. (2002), I added one to the total number of goods in the household and took the natural log of the resulting score. Women with two or more children are compared to those with less than two.
Throughout the analysis, I present two sets of models for each outcome. The first set examines outcomes for both urban and rural Muslim women, and the second includes only urban women, both Muslim and Christian. This is a similar approach to that taken by Agadjanian and Makarova (2003) in order to compare marriage and fertility patterns between different ethnic groups in Uzbekistan. It is necessary to make comparisons between religious groups only in urban areas because of the very small numbers of non-Muslims living in rural Uzbekistan. In order to make meaningful comparisons, individuals listing their religious affiliation as anything other than Muslim or Christian (other and “not religious”) have been excluded from the sample.

Qualitative Analysis

Between January and August 2006, focus groups and interviews were conducted with women and men in Tashkent and in a village in the Jizzakh oblast of Uzbekistan. Eight focus groups were conducted with eight to ten participants each. In both locations, groups were conducted with Muslim Uzbek-speaking women with grandchildren, Muslim Uzbek-speaking women without grandchildren, and Muslim Uzbek-speaking men. In Tashkent, there were two additional groups: non-Muslim Russian-speaking men and non-Muslim Russian-speaking women. These group divisions were selected both to facilitate open conversation between participants and to allow for meaningful comparisons across groups. The same focus group protocol was used with each of the groups in order to examine views on family size, contraception, abortion, and religious restrictions or recommendations for family planning. Each group was conducted by a native Russian or Uzbek speaker, and I observed all women’s groups.3 All sessions were audio recorded and transcribed into Russian. Purposive sampling was used to select participants over age 18, with children, who met the language and religious affiliation requirements for each group. Although it was not a requirement in the selection process that
participants in the non-Muslim group be of any specific religious affiliation, all participants in these groups identified themselves as Orthodox. Before each group, participants also completed a short questionnaire to collect background information.

The main goal of the groups was to identify pathways of religious influence on use of contraception and abortion, as little is known about that specific area in this context. Although religious identity is often thought of as an ultimately private decision, religious practices are adopted socially and for a variety of reasons. Observing group interaction and perceptions of public norms and sanctions is critical for understanding the adoption of family planning practices stemming from perceptions of others' positive or negative religiously-motivated reactions.

I conducted semi-structured follow-up interviews with 28 male and female participants from each of the focus groups between March and September 2006. The interviews were planned with the goal of adding depth to explanations of religious influence on family planning and probing issues that emerged during the focus groups. I conducted these interviews in Russian, audio-recorded them, and transcribed them into English.

**Results**

*Quantitative Analysis*

Table 1 Here.

Variables used in this analysis are described in Table 1. The urban sample is 88% Muslim in 1996 and 91% Muslim in 2002. The Muslim/Christian gap in contraceptive use appears to be closing and potentially reversing in 2002, with 63% of sexually active Muslim urban women currently using modern contraception, compared to 53% of urban Christian women in this sample. Increases in contraceptive use between the two surveys appear to be due exclusively to higher adoption by the Muslim population. There remains a substantial differential in prevalence
of induced abortion, as 22% of the urban Muslim sample and 39% of the urban Christian sample report aborting their last pregnancy. Although this table appears to show a slight increase in abortion between surveys, Sullivan and Kamilov (2004b) assert that this is likely due to undermeasurement of abortion in 1996.

Table 2 Here

In Table 2, I report logistic regression results for ever use of modern contraception. With increases in contraceptive prevalence among Muslim women, key determinants of ever use have changed. While age and parity continue to be important and the effect of higher education increases, wealth and work status are no longer significant. Analyses for Muslim and Christian urban women reveal a negative association between ever use of contraception and Muslim religion. In 2002, the odds of ever use of contraception was almost 70% lower for Muslim women than for Christian women living in urban areas (p<.001). Controlling for other variables in the model increases the size and significance of the religion effect over the bivariate model (not shown due to space concerns). As in the model for Muslim women only, higher education has a larger, stronger effect on ever use of contraception in 2002 than in 1996, and age and parity continue to be important indicators.

Table 3 Here

Table 3 shows the results of a logistic regression predicting current use of modern contraceptives among non-pregnant women who report sexual intercourse in the last month. The models for Muslim women only show that age and parity remain very important for explaining current use. The effect of work outside the home, a strongly significant positive predictor of current contraception use in 1996, is not statistically significant in 2002. In urban areas, the effect of religious affiliation changes substantially between surveys. In 1996, Muslim affiliation
reduces the odds of currently using a modern method of contraception by almost 60%, controlling for other variables in the model (p<.001). By 2002, this effect had disappeared. Ancillary analyses show that, in the bivariate case, there is a weak positive relationship between Islamic religious affiliation and current contraceptive use (p<.1). Other strong determinants of current contraceptive use are mostly consistent between surveys, and the strongest are the effects of age and parity.

Table 4 Here

I present results for logistic regression models of abortion of last pregnancy in Table 4. For Muslim women, age and urban status continue to be important predictors of abortion, with older, urban women having increased odds of last pregnancy ending in induced abortion. Wealth declines in importance for explaining abortion, while a significant positive association emerges between parity and abortion of last pregnancy. Results for Muslim and Christian urban women indicate that religious affiliation has a strong effect on abortion. Net of other factors in the model, Muslim women’s odds of aborting their last pregnancy is reduced by 74% in 1996 and almost 60% in 2002 compared to Christian women (p<.001). This relationship exists in the bivariate case, and is virtually unchanged by adding sociodemographic controls. In the urban context, we see that age also continues to be associated with abortion, and number of children becomes a significant positive predictor in 2002.

Qualitative Analysis

In presenting insights from focus groups and interviews, I first discuss issues related to influences of religion on the acceptability of abortion and contraception. Next, I summarize perspectives on changes over time in the influence of religion and in religious perspectives on
family planning. Finally, I then outline views on who is responsible for reproductive health choices.

**Number of children.** Across all focus groups, one of the initial responses when asked what religion might contribute to discussions of the appropriate number of children was the phrase, “As many as God will give, that is how many children there will be in the family.” However, groups differed in their interpretations of this statement and its application to daily life. Although there were several mentions of the need to be grateful for all the children Allah sends to you in both groups of Muslim grandmothers, the difficulty of having and raising many children in today’s world was noted by all four groups of Muslim women. One 24-year-old Muslim woman living in Tashkent with 1 child remarked, “Now life is hard. Today 2 or 3 children is enough.” Reasons given for this difficulty included rising costs of caring for children, economic difficulties, and, in the urban groups, a deterioration of the environment, as summarized by one group participant:

> In our religion it is said that the more children the better. Now here they have begun to organize the births of children. Intervals. It is related to economic problems, to ecology, and other things. (40-year-old Tashkent Muslim woman with 3 children)

> Muslim men were generally less sure of what, if anything, the texts of their religion might say about family size. Although one Tashkent participant noted that people have the number of children granted by Allah, the group reached consensus that there is probably nothing written or spoken in Islam directly relating to the quantity of children. Others responded that some planning is necessary even though Allah ultimately determines the number of children. One man later explained in an individual interview that his view on needing to plan ahead for the number of children you are able to support is based on the idea that Islam does not encourage parents to have more children than they can provide for adequately:
You know that many children are required, yes. But like always there is also some commentary to that. If you read it attentively, you will find that it says, “The more the better, if you can provide normally for your children.” And to provide for [them] normally – in the first place the child must be healthy. Then he must be fed well at least. (54-year-old Tashkent Muslim man with 3 children, individual interview)

The group of rural men also asserted that there is nothing in Islamic doctrine that directly relates to the quantity of children, but several participants expressed the idea that Allah decides the number of children in a family. “Allah says that every person will have as many children as God himself determines.” (60-year-old rural Muslim man with 7 children).

In both men’s and women’s non-Muslim groups in Tashkent, participants emphasized the importance of individual desire for children:

Moderator: What do you think, does your religion say something about the number of children that should be in a family?

Maksim: No. Everything depends only on the wishes of and on the concrete health and wealth of the family. (52-year-old Tashkent Orthodox man with 1 child)

Acceptability of abortion. Across groups, participants agree that both Islam and Orthodoxy are opposed to abortion. The majority of participants in all groups reported that allowances would be made for abortion in cases of severe threat to the woman’s health. The view that religion is opposed to abortion was expressed most strongly in the group of urban Muslim men and in the urban and rural groups of Muslim women without grandchildren, where multiple participants asserted that abortion is murder:

Inside you is a normally developing child, and if you have an abortion it is the same as if you murdered him. Such is written in religious books. (36-year-old rural Muslim woman with 4 children, individual interview)

Several participants in male and female non-Muslim groups asserted that there is a tolerant relationship to abortion in society and stressed the need to consider pragmatically individual situations:
Everything does not always end well. Sometimes a woman necessarily goes for an abortion. (25-year-old Tashkent Orthodox woman with 1 child)

Acceptability of contraception. In many groups, there was uncertainty about religious positions on contraception. Interestingly, in Tashkent, the majority of interpretations that religion unilaterally forbids contraception were made by non-Muslim groups, and some participants in the female non-Muslim group felt that contraception is not allowed specifically because it harms the health of the woman. A few women in this group said that priests had become more tolerant, though not fully accepting, of contraception in recent years in order to prevent abortions. The male non-Muslim group could not think of any religious texts or beliefs that related to the use of contraception, although one participant said that Orthodoxy’s extremely negative view of abortion should translate to a similar disapproving stance on contraception. Several men suggested that it might be better to ask women.

Female Muslim participants without grandchildren in Tashkent expressed the strongest opinion on this subject, reaching consensus that temporary contraception is allowed in Islam and that sterilization is forbidden. The majority of participants expressed a positive view of contraception, especially to protect their health:

[I]f God has given, give birth. But all the same it is necessary to use protection and think about taking care of yourself. You should not give birth every year. (37-year-old Tashkent Muslim woman with 3 children)

Both in the focus group discussion and in a subsequent interview, the above respondent explained that using contraception is not only necessary to take care of yourself in a physical sense, but to keep yourself out of a situation in which you might be forced to commit the larger sin of abortion, a view expressed by several other women in individual interviews:

I for example used protection through my husband for 11 years because I know that if I got pregnant I could not have an abortion and it would be necessary to give birth. I am afraid to have an abortion – it is a big sin. My husband uses protection. And I have not
needed to go to have an abortion. I for example say to my husband, “if suddenly I get pregnant, then I cannot have an abortion – it is a big sin and I am afraid to do that. If it is necessary for me to have an abortion, then the sin lies on you.” Therefore my husband looks for ways to protect himself. (37-year-old Tashkent Muslim woman with 3 children)

Other respondents shared the view that contraception is necessary in order to prevent being faced with the decision of whether to have an abortion or have a child they could not afford to raise. A few participants mentioned a preference for natural, non-hormonal means of contraceptives, such as breastfeeding. One respondent noted that the calendar method would be desirable from the perspective of health, but that it is forbidden in Islam because it involves refusing to engage in sexual intercourse with the husband at certain times of the month. In Tashkent, both the group of Muslim men and the group of Muslim women with grandchildren expressed doubt that there is any specific mention of contraception in Islamic texts.

In all three rural groups, participants supported the idea that there is nothing written specifically about contraception in Islamic texts, but that preventing pregnancy is generally not allowed in Islam. During individual interviews, respondents expressed stronger opinions and were split in their interpretations of the religious acceptability of contraception. Most respondents chosen from each group of women asserted that Islam is opposed to all methods of contraception:

[Religion] does not allow [using contraceptives]. It is forbidden to do anything so that there will not be a child. It is a sin. (39-year-old rural Muslim woman with 3 children, individual interview)

For some of these women, the idea that their religion condemns limiting births is in conflict with what they see as the current necessity of using contraception:

My mother-in-law tells me that because I had an IUD inserted, in the next life I will answer for it. I don’t know. Maybe I will answer for that in the next life. (36-year old rural Muslim woman with 4 children)
The interviewed rural men expressed generally uncertain and divergent views. A few interview respondents noted that religion has no place in family planning, and therefore does not forbid or permit the use of contraception. In almost all of the individual interviews, rural men and women said that, as nothing concrete is written or spoken regarding family planning, their opinions were not firm and they do not know exactly what religious leaders might have to say about contraception.

*Changes in religious perspectives on family planning.* In each group of women in Tashkent, participants remarked on the possibility of reinterpreting religious texts with regard to contraception in the contexts of modern circumstances.

> It is said that it is necessary to observe everything according to what is possible to you. It was written at the time of Muhammad. Now there is a very big difference in time. Now everything is different. Therefore it is necessary to observe these laws, proceeding from what is possible to you. (24-year-old Tashkent Muslim woman with 3 children)

Especially in the group of Muslim women with grandchildren, women also noted that the clergy are changing their views on contraception because of the difficulties of having children in today’s world:

> Now religious management is kind of making a few concessions, *fatwa*, on the permissibility of contraception. It is given because of the economic recession, so as not to increase difficulties. If all clergy during *Juma Namaz* (Friday prayers)… said that in the Qur’an there is such a place about contraception, then many people would adhere to that. (66-year-old Tashkent Muslim grandmother with 3 children)

Such opinions were rarely expressed among rural respondents, and only when specifically probed in individual interviews.

*Contraceptive decision-making.* The different focus groups varied markedly in their perceptions of who in a family had the right and responsibility to make decisions regarding contraception and abortion. Both non-Muslim groups agreed that, ultimately, these decisions were made by women themselves, sometimes with input from their husbands or other family members. The non-
Muslim male group expressed disinterest and lack of knowledge about how women come to decisions about family planning. Several Orthodox women noted that it would be better if men would also think about contraception and not put all the responsibility of using contraception on the woman, “as many methods of contraception harm the health of women.”

The consensus was quite different in the male and female Muslim groups in Tashkent, all of whom agreed that the final say about contraception must lie with the husband:

In the Qur’an it is written that even if you are a disciplined Muslim woman and you do everything correctly but you don’t have harmony in your family then you will never go to Heaven. Therefore, in the first place it is necessary to get the consent of your husband. He must be satisfied with you... Therefore it is always necessary to ask the permission of your husband and get his consent on abortion, on protection against unwanted pregnancy, and so on. (58-year-old Tashkent Muslim grandmother with 5 children)

Although both Tashkent women’s groups did say that the woman has a voice in the decision-making process, the final decision was invariably attributed to her husband. Women gave examples of this both when the husband was opposed to and in favor of using contraception:

I think that in my family is modern but my husband is categorically opposed to contraceptive pills. He considers that it is hormonal and does not allow me to use them. Without permission of the husband we cannot use contraceptive drugs regardless of the fact that it is a modern family. He considers that it will harm my health and in some degree the husband is the boss – without his permission I can’t do anything. Everything depends on the husband. (35-year-old Tashkent Muslim woman with 3 children)

I told my husband that I will give birth – our daughter is already 3.5 years old. But he said no. He has his own plan and until that he will not allow me. My husband tells me that “2 children is enough for us.” For me the decision about contraception is made by my husband. (24-year-old Tashkent Muslim woman with 1 child)

It is important to note that women did not view their husbands as having unconditional authority over their reproductive decisions. In the case of health concerns preventing a woman from giving birth, several Muslim women noted in individual interviews that it is both accepted by society and condoned in religion for the woman to use contraception (such as the IUD or pill) without her husband’s knowledge or permission if necessary.
The three rural groups diverged in ideas about which family member is responsible for contraceptive decisions. Both women’s groups reached almost full consensus that it is the woman alone who is responsible for making decisions regarding contraception:

We leave the decision to her. When she herself wants to, then she will stop taking injections. We are ashamed to tell her to remove the IUD if she has one. We do not have such conversations – we are embarrassed. (55-year-old rural Muslim grandmother with 9 children, individual interview)

However, the men consistently asserted that contraceptive decisions are made jointly between a husband and wife.

Muslim women in all groups linked obedience to their husbands with religious requirements. Although many participants disagreed with the woman who remarked that, “In religion it is written that the husband is the second God,” all agreed that being a good Muslim woman required deference to the husband:

But in Islam it is said that the word of a man must be executed unconditionally and the woman must submit. If in the first place stands Allah, then in the second place for a woman – it is her husband. She must idolize her husband. (37-year-old Tashkent Muslim woman with 3 children)

**Discussion**

In this paper, I set out to answer two key research questions. First, quantitative analysis demonstrated that contraceptive use has changed in the past decade, especially for Muslim women. Ever use and current use of modern contraceptives has increased among Muslim women, both in overall prevalence and, in urban areas, relative to the contraceptive use of Christian women. In fact, in this sample, the current contraceptive use for sexually-active women who are not pregnant is higher for Muslim women than for Christian women. In regression analyses, I found no support for the characteristics explanation of religious differences. Wherever I found religious effects, they were unchanged (and in some cases strengthened) by
controlling for sociodemographic characteristics. Although Muslims continue to be less likely to report ever use of modern contraceptives net, I did not find a significant effect for religious affiliation on current use in 2002. The difference between the effect of religion on ever and current use may be partly explained by the inclusion of all women who were ever sexually active in the ever use models. If those women who are no longer sexually active were making their contraceptive decisions in a period characterized by a larger religious differential in contraceptive use, it makes sense that religion might continue to show an effect on ever use even if religion is no longer associated with differing rates of contraceptive adoption. Additionally, the same result might be seen if currently pregnant women, excluded from the current use models, are both less likely to use contraception and more likely to be religious.

My second research question involves examining how specific religious beliefs and behaviors influence attitudes toward contraception and abortion. Given that participants in the female and male Muslim groups were more than twice as likely as their non-Muslim counterparts to say that religion has a very strong influence on daily life in the pre-group questionnaire, it is not surprising that Muslim focus group participants and interview respondents expressed more concern about religious perspectives on family planning. One interesting theme in these results involves Muslim women, chiefly in Tashkent, taking religion’s fervent opposition to abortion as a strong reason to adopt contraception. Especially regarding results on abortion, I do find some support for the particularized theology hypothesis. Respondents often explained that they knew abortion was forbidden by religion from reading religious texts or talking with religious leaders, and that religious people do not have abortions because of fear of divine punishment.

The interaction hypothesis, though an incomplete explanation, is more relevant to these data. Multiple respondents noted the impossibility of having large numbers of children given
present circumstances of economic difficulties, environmental deterioration, and compromised health. Especially among Muslim groups in Tashkent, women viewed these circumstances as reason to reinterpret religious texts regarding family planning. Many of these women asserted that their clergy had indeed taken note of the situation and changed their views on contraception in order to protect the health of women and the well-being of the family. This flexibility seen in the stance of religious leadership on contraception puts an interesting twist on interaction theory. Rather than being outweighed by the pressure of growing socioeconomic forces encouraging small family size, interpretations of religious regulations on family planning may adapt to fit with present circumstances.

Although this work makes an important contribution, it does have several limitations. It is important to note again that participants in the qualitative stage of this project were selected in a purposive manner and are not representative of any larger group. Because of this, and because qualitative work was carried out in a limited geographic region, my findings should be interpreted with caution and should not be assumed to characterize attitudes and behavior in the entire region or country.

Although the responsibility for family planning decision-making may rest with men in some Muslim households, my results indicate that Islam is not necessarily an obstacle to improvements in either reproductive or sexual health for women. This is clear both in the assertion that the religious unacceptability of abortion can represent a motivation for using contraception and the emphasis many urban research participants place on the flexibility of religious thought. Additionally, in results not discussed here, the majority of Muslim respondents emphasized the health-protective nature of Islam for all its followers. The participation of religious leaders alongside doctors in mid-1990s Russian and Uzbek language reproductive
health media campaigns indicates that the Uzbek government has already enlisted support of some religious leadership in its family planning initiative.

Reaching women directly is one obstacle likely to be faced by any organization seeking to improve sexual and reproductive health in conjunction with the official religious leadership. In many regions of Uzbekistan, the mosque is attended only by men, and women do not generally feel that they have direct access to assistance from mullahs, all the more on matters related to sex and reproduction. While work with men is important, reaching women solely through their husbands is very problematic. In addition to reading primary sources and receiving religious information from their husbands, women report learning about religion through short brochures detailing appropriate behavior in daily life that and, sometimes, from interaction with an *otin*\(^6\) (Muslim female religious leader and teacher), a group also identified by Peshkova (2005) as potential “entry points for health promotion and education in Islamic terms.” Unfortunately, based on conversations with mullahs, *otins*, regional religious scholars, and research participants, an international organization currently seeking to work with religious leaders or to engage religion directly in their programs might face resistance from the government or reluctance from participants based on fears connected to the current governmental crackdown on religious extremism. Enlisting the help of *otins*, who often work unofficially, might prove difficult.

The primary implication of this research for policy makers and health care workers in the region regards the importance of religious beliefs in making decisions affecting health. Cultural and religious practices in Uzbekistan are intrinsically linked. The paper attempts to develop an understanding of potential mechanisms through which religious beliefs come to influence decision-making about family planning. By understanding potential pathways through which religious beliefs influence family planning and contraceptive practices, assistance groups can
better take advantage of preexisting assets and prepare for obstacles in the promotion of improved sexual and reproductive health.
Notes

1. Other modern methods include male sterilization, implants, female condom, diaphragm, foam/jelly and emergency contraception, which were grouped under “other modern method” in 1996, and listed separately in 2002. The lactational amenorrhea method is not coded as a modern method in these analyses, because the variable was operationalized differently in the two surveys. The measures of ever use and current use of modern contraceptive methods are identical to the DHS summary measures for modern contraceptives in 1996 (when lactational amenorrhea was not included), but differ from the summary measures in 2002.

2. Information on additional durable goods is available in the 2002 survey (dishwasher, freezer, washing machine, vacuum, tape recorder, video player, video camera, camera, satellite antenna, sewing machine, knitting machine, and personal computer), but I use only the eight items available on both surveys.

3. Based on the advice of local colleagues and given the sensitive nature of the information discussed, I left the discussion room before the start of the men’s groups.

4. For interviews conducted in Jizzak, I worked with an Uzbek-Russian interpreter.

5. All participant names have been changed to protect confidentiality.

6. Depending on the region of Uzbekistan, this may be otin, otincha, or otinoi.
References


Buckley, Cynthia. 1998a. “I Feel Good: Measuring Health Status in Rural Russia.” University of Texas Population Research Center (TPRC papers; no. 97-98-04).


Table 1. Basic Characteristics of Model Variables (Percentages or Means)

<table>
<thead>
<tr>
<th></th>
<th>Urban and Rural Muslim Women</th>
<th>Muslim and Christian Urban Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Used Contraception</td>
<td>62%</td>
<td>77%</td>
</tr>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Christian</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Currently Using Contraception</td>
<td>58%</td>
<td>66%</td>
</tr>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Christian</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Abortion of Last Pregnancy</td>
<td>11%</td>
<td>18%</td>
</tr>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Christian</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Urban</td>
<td>36%</td>
<td>39%</td>
</tr>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Under 25</td>
<td>23%</td>
<td>20%</td>
</tr>
<tr>
<td>40 or Older</td>
<td>21%</td>
<td>26%</td>
</tr>
<tr>
<td>Material Well-being Score(ln)</td>
<td>1.57</td>
<td>1.51</td>
</tr>
<tr>
<td>Higher Education</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Work Outside the Home</td>
<td>56%</td>
<td>49%</td>
</tr>
<tr>
<td>Number of Living Children</td>
<td>2.87</td>
<td>2.72</td>
</tr>
<tr>
<td>N</td>
<td>2341</td>
<td>3850</td>
</tr>
</tbody>
</table>

Source: 1996 Uzbekistan Demographic and Health Survey, 2002 Uzbekistan Health Examination Survey

1 Only women who are not currently pregnant and who report having sexual intercourse in the last 30 days are included on current use variables (Muslim women: n=2,341 in 1996 and 3,209 in 2002; Urban women: n=902 in 1996 and 1,292 in 2002).
Table 2. Logistic Regression Predicting Ever Use of Modern Contraception\textsuperscript{1,2}

<table>
<thead>
<tr>
<th></th>
<th>Urban and Rural Muslim Women</th>
<th></th>
<th>Muslim and Christian Urban Women</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
<td>0.255 ***</td>
<td>0.312 ***</td>
</tr>
<tr>
<td></td>
<td>(0.054)</td>
<td>(0.080)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>1.318 *</td>
<td>0.885</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.183)</td>
<td>(0.172)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25</td>
<td>0.431 ***</td>
<td>0.640 ***</td>
<td>0.510 ***</td>
<td>0.802</td>
</tr>
<tr>
<td></td>
<td>(0.683)</td>
<td>(0.796)</td>
<td>(0.090)</td>
<td>(0.132)</td>
</tr>
<tr>
<td>40 or Older</td>
<td>0.403 ***</td>
<td>0.280 ***</td>
<td>0.471 ***</td>
<td>0.336 ***</td>
</tr>
<tr>
<td></td>
<td>(0.063)</td>
<td>(0.361)</td>
<td>(0.077)</td>
<td>(0.059)</td>
</tr>
<tr>
<td>Material Well-being Score (logged)</td>
<td>1.756 **</td>
<td>1.200</td>
<td>1.921 *</td>
<td>1.057</td>
</tr>
<tr>
<td></td>
<td>(0.332)</td>
<td>(0.203)</td>
<td>(0.568)</td>
<td>(0.227)</td>
</tr>
<tr>
<td>Higher Education</td>
<td>1.088</td>
<td>2.085 ***</td>
<td>1.417 *</td>
<td>1.981 ***</td>
</tr>
<tr>
<td></td>
<td>(0.175)</td>
<td>(0.394)</td>
<td>(0.237)</td>
<td>(0.397)</td>
</tr>
<tr>
<td>Work Outside the Home</td>
<td>1.439 ***</td>
<td>1.065</td>
<td>1.271</td>
<td>1.080</td>
</tr>
<tr>
<td></td>
<td>(0.135)</td>
<td>(0.125)</td>
<td>(0.157)</td>
<td>(0.174)</td>
</tr>
<tr>
<td>Number of Living Children</td>
<td>1.509 ***</td>
<td>2.515 ***</td>
<td>1.702 ***</td>
<td>2.551 ***</td>
</tr>
<tr>
<td></td>
<td>(0.078)</td>
<td>(0.173)</td>
<td>(0.129)</td>
<td>(0.296)</td>
</tr>
<tr>
<td>N</td>
<td>2969</td>
<td>3850</td>
<td>1177</td>
<td>1634</td>
</tr>
</tbody>
</table>

\textsuperscript{1}***=p<.001, **=p<.01, *=p<.05

Source: 1996 Uzbekistan Demographic and Health Survey, 2002 Uzbekistan Health Examination Survey

\textsuperscript{1}The sample is limited to sexually active women.

\textsuperscript{2}Results are presented as odds ratios with standard errors of odds ratios in parentheses.
Table 3. Logistic Regression Predicting Current Use of Modern Contraception\textsuperscript{1,2}

<table>
<thead>
<tr>
<th></th>
<th>Urban and Rural Muslim Women</th>
<th></th>
<th>Muslim and Christian Urban Women</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
<td>0.410 ***</td>
<td>0.985</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.086)</td>
<td>(0.269)</td>
</tr>
<tr>
<td>Urban</td>
<td>0.984</td>
<td>0.842</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.129)</td>
<td>(0.126)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25</td>
<td>0.541 ***</td>
<td>0.539 ***</td>
<td>0.624 *</td>
<td>0.844</td>
</tr>
<tr>
<td></td>
<td>(0.095)</td>
<td>(0.067)</td>
<td>(0.131)</td>
<td>(0.146)</td>
</tr>
<tr>
<td>40 or Older</td>
<td>0.333 ***</td>
<td>0.324 ***</td>
<td>0.364 ***</td>
<td>0.314 ***</td>
</tr>
<tr>
<td></td>
<td>(0.060)</td>
<td>(0.054)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material Well-being Score (logged)</td>
<td>1.477 *</td>
<td>1.249</td>
<td>1.518</td>
<td>1.627 *</td>
</tr>
<tr>
<td></td>
<td>(0.279)</td>
<td>(0.198)</td>
<td>(0.450)</td>
<td>(0.455)</td>
</tr>
<tr>
<td>Higher Education</td>
<td>0.936</td>
<td>1.270</td>
<td>0.983</td>
<td>1.057</td>
</tr>
<tr>
<td></td>
<td>(0.142)</td>
<td>(0.182)</td>
<td>(0.153)</td>
<td>(0.168)</td>
</tr>
<tr>
<td>Work Outside the Home</td>
<td>1.429 ***</td>
<td>1.125</td>
<td>1.284 *</td>
<td>1.055</td>
</tr>
<tr>
<td></td>
<td>(0.137)</td>
<td>(0.107)</td>
<td>(0.158)</td>
<td>(0.164)</td>
</tr>
<tr>
<td>Number of Living Children</td>
<td>1.307 ***</td>
<td>1.402 ***</td>
<td>1.311 ***</td>
<td>1.592 ***</td>
</tr>
<tr>
<td></td>
<td>(0.059)</td>
<td>(0.066)</td>
<td>(0.066)</td>
<td>(0.122)</td>
</tr>
<tr>
<td>N</td>
<td>2341</td>
<td>3209</td>
<td>902</td>
<td>1292</td>
</tr>
</tbody>
</table>

\textsuperscript{**}=p<.001, **=p<.01, *=p<.05

Source: 1996 Uzbekistan Demographic and Health Survey, 2002 Uzbekistan Health Examination Survey
\textsuperscript{1}The sample is limited to women who report sexual intercourse in the last 30 days and who were not pregnant at time of survey.
\textsuperscript{2}Results are presented as odds ratios with standard errors of odds ratios in parentheses.
### Table 4. Logistic Regression Predicting Induced Abortion of Last Pregnancy

<table>
<thead>
<tr>
<th></th>
<th>Urban and Rural Muslim Women</th>
<th>Muslim and Christian Urban Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>(0.55)</td>
<td>(0.073)</td>
</tr>
<tr>
<td>Urban</td>
<td>2.026 ***</td>
<td>1.659 ***</td>
</tr>
<tr>
<td></td>
<td>(0.321)</td>
<td>(0.254)</td>
</tr>
<tr>
<td>Under 25</td>
<td>0.157 ***</td>
<td>0.301 ***</td>
</tr>
<tr>
<td></td>
<td>(0.479)</td>
<td>(0.080)</td>
</tr>
<tr>
<td>40 or Older</td>
<td>1.227</td>
<td>1.388 **</td>
</tr>
<tr>
<td></td>
<td>(0.172)</td>
<td>(0.142)</td>
</tr>
<tr>
<td>Material well-being score (logged)</td>
<td>2.497 ***</td>
<td>1.488</td>
</tr>
<tr>
<td></td>
<td>(0.609)</td>
<td>(0.302)</td>
</tr>
<tr>
<td>Higher Education</td>
<td>1.391</td>
<td>1.024</td>
</tr>
<tr>
<td></td>
<td>(0.238)</td>
<td>(0.153)</td>
</tr>
<tr>
<td>Work Outside the Home</td>
<td>1.091</td>
<td>1.102</td>
</tr>
<tr>
<td></td>
<td>(0.155)</td>
<td>(0.114)</td>
</tr>
<tr>
<td>Number of Living Children</td>
<td>1.060</td>
<td>1.208 ***</td>
</tr>
<tr>
<td></td>
<td>(0.035)</td>
<td>(0.045)</td>
</tr>
<tr>
<td>N</td>
<td>2969</td>
<td>3850</td>
</tr>
</tbody>
</table>

***=p<.001, **=p<.01, *=p<.05

Source: 1996 Uzbekistan Demographic and Health Survey, 2002 Uzbekistan Health Examination Survey

1 The sample is limited to sexually active women who were not pregnant at time of survey.

2 Results are presented as odds ratios with standard errors of odds ratios in parentheses.