

Closing the Womb Door: Contraception Use and Fertility Transition Among Culturally Tibetan Women in Highland Nepal

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Abstract *Objectives* Whether in metropolises or remote mountain communities, the availability and adoption of contraceptive technologies prompt serious and wide-ranging biological, social, and political-economic questions. The potential shifts in women's capacities to create spaces between pregnancies or to prevent future pregnancies have profound and often positive biological, demographic, and socioeconomic implications. Less acknowledged, however, are the ambivalences that women experience around contraception use—vacillations between moral frameworks, generational difference, and gendered forms of labor that have implications well beyond the boundaries of an individual's reproductive biology. This paper hones in on contraceptive use of culturally Tibetan women in two regions of highland Nepal whose reproductive lives occurred from 1943 to 2012. *Methods* We describe the experiences of the 296 women (out of a study of more than 1000 women's reproductive histories) who used contraception, and under what circumstances, examining socioeconomic, geographic, and age differences as well as points of access and patterns of use. We also provide a longitudinal perspective on fertility. *Results* Our results relate contraception usage to fertility decline, as well as to differences in access between the two communities of women. *Conclusions* We argue that despite seemingly similar social ecologies of these two study sites—including stated reasons for the adoption of contraception and expressed ambivalence around its use, some of which are linked to moral and cosmological understandings that emerge from Buddhism—the dynamics of contraception uptake

in these two regions are distinct, as are, therefore, patterns of fertility transition.

Keywords Nepal · Tibetans · Contraception · Fertility transition

Significance

The availability of modern contraception not only affects women's agency but contraceptive technologies have also been associated with the assertion of state or institutional control on and through women's bodies. Less acknowledged, however, are the ambivalences that women experience around contraception use—vacillations between moral frameworks, generational difference, and gendered forms of labor that have implications beyond the boundaries of individual reproductive biology. Despite significant literature on family planning in Nepal, this is the first study that focuses exclusively on culturally Tibetan women in who not only inhabit a harsh, high-altitude environment but who are also marginalized in Nepali society, which, in turn, affects their access to reproductive health services.

Introduction

Whether in metropolises or remote mountain communities, the availability and adoption of contraceptive technologies prompt serious and wide-ranging biological, social, and political-economic questions [1–5]. Contraception not only has the capacity to impact fertility¹ but also to affect

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¹ In the proximate determinants of fertility model commonly used by demographers, use and effectiveness of contraception is one of the seven major socioeconomic and environmental variables that affect fertility. In contemporary societies contraceptive usage has the most significant influence on achieving low fertility [42].

women's lived experiences within the frameworks of their socially, economically, religiously, and politically defined roles [6–10]. The potential capacity to space pregnancies or prevent future pregnancies has profound and often positive biological, demographic, and socioeconomic implications. The availability of modern contraception not only affects women's agency—their ability to control and respond to life circumstances—contraceptive technologies have also been associated with the assertion of state or institutional control on and through women's bodies, whether in overtly coercive ways (e.g. forced sterilization campaigns) [11, 12], through population control measures such as China's One Child Policy [13], or via more subtle yet equally powerful state and social messaging, linked to international development discourse, that “a small family is a happy family” [14–16]. Less acknowledged, however, are the ambivalences that women experience around contraception use—vacillations between moral frameworks, generational difference, and gendered forms of labor that have implications beyond the boundaries of individual reproductive biology. With few exceptions [17–19], scholarly engagements with contraception use in Tibetan and Himalayan communities have tended to focus more on the biopolitical implications of family planning—from discourses of pronatalism to accusations of genocide—than they have addressed contraception as part of women's everyday and intimate lives [20–24]. There is a rich history of research on family planning access, social acceptability, adoption and barriers to use in Nepal [16, 25–28], including scholarship that focuses on the role of education and employment [29] as well as caste [30] in contraception-related decision-making. However, to our knowledge, this is the first study that focuses exclusively on culturally Tibetan women who not only inhabit a harsh, high-altitude environment but who are also marginalized in Nepali society, which, in turn, affects their access to reproductive health services.

This paper hones in on contraceptive use among culturally Tibetan women in Nepal whose reproductive lives happened from 1943 to 2012. We describe who has used contraception, of what sort, and under what circumstances, examining socioeconomic, geographic, and age differences as well as points of access and patterns of use. We also provide a longitudinal perspective on fertility, framing that data within the proximate determinants of fertility: from fertility moderated primarily through lactational amenorrhea and female celibacy [20] to fertility moderated through contraception. We consider the ways that mountain living, migration patterns, and limited access to biomedical health care, including contraception, have shaped women's experiences. Likewise, we explore women's knowledge of contraception, including their understandings of the uses and side effects of available methods, principally Depo-

Provera, Norplant, intrauterine devices, and tubal ligation. Finally, we consider how contraception use is framed within the context of household and community dynamics. On the one hand, it evokes ethical and religious discussions about human interventions into bare life, specifically the workings of karma (*lé*) and the circulation of consciousness (*namshey*); on the other, it mediates concerns over the socioeconomic costs of having and raising children, including household labor needs, access to land and the costs of educating children, against the biocultural impacts of contraception on women's bodies, including negative physical side effects.

We emphasize at the outset that the women sampled for the statistical analysis in our study are *40 years of age or older* by Tibetan reckoning, and that they therefore represent a particular historical moment in the adoption of biotechnologies to regulate fertility. These inaugural generations of family planning use in our study areas occurred at a moment when access to reproductive and sexual health services was becoming a global priority, as illustrated by the 1994 United Nations Conference on Population and Development in Cairo, and during a time when Nepal had begun to launch some of its most comprehensive family planning programs, with financial and implementation support from a range of multilateral organizations. Although our long-term research in the study communities has included both demographic (in Nubri) and ethnographic (in Mustang) data collection on younger women's use of contraception, these data are more preliminary and less comparable. Our objective in this paper is to discuss contraception usage, to connect this usage with patterns of fertility decline, and to explore the differences in contraception use between the two communities of women. We argue that despite seemingly similar social ecologies of these two study sites—including stated reasons for the adoption of contraception and expressed ambivalence around its use—the dynamics of contraception uptake in these two regions are distinct, as are, therefore, patterns of fertility transition.

Fieldwork Setting and Methods

Fieldwork Setting

We conducted fieldwork in two districts of Nepal in 2012: Nubri in Gorkha District, and Baragaon and Upper Mustang within Mustang District. We also collected additional data on contraception in 2013 (Nubri) and 2014 (Mustang). The study communities are situated on the southern aspects of the Tibetan Plateau. Villages range in altitude from 2090 to 3,787 m. The inhabitants are descendants of migrants from the Tibetan Plateau from the Fourteenth century or

earlier. The people self-identify as ethnically Tibetan: they speak Tibetan dialects, practice forms of religion and social organization akin to those across the Tibetan Plateau, and retain the characteristic agro-pastoral and trading mode of subsistence. Residents of study communities have held low status in the Hindu caste hierarchy since the valleys were incorporated into Nepal between the late eighteenth and mid nineteenth centuries. Ethnic Tibetans were first classified in the Muluki Ain legal code of 1854 as belonging to the lowly category of ‘Enslaveable Alcohol Drinkers’ (*māsinyā matwāli*) [31]. Although public policy has of course changed since the nineteenth century, Nepal remained a Hindu state until 2008; the legacies of such policies remain, seriously limiting high mountain culturally Tibetan communities’ commensality with higher caste Hindus. As a result, they have been economically and politically marginalized, and have had limited access to government services. In Nubri, the national government has never developed basic services such as educational and healthcare systems [32]; evidence of the government’s failure is the fact that, in 2010, it delegated the provisioning of healthcare services to non-governmental organizations. In Mustang, the northern culturally Tibetan enclaves have had limited access to government services [33], although its geography as well as its strategic geopolitical positioning in Nepal has meant that more governmental (and, since the 1990s, non-governmental) health, development, and education services have been available than in Nubri (Fig. 1).

In both regions, Tibetan medicine administered by *amchi* practitioners is a primary avenue for the provision of health care [32, 34]. Although most elder *amchi* in both regions are male, they do at times attend to obstetrical and reproductive concerns, including issues surrounding menstruation, breastfeeding, and infertility; however, they do not provide modern contraception and some of these practitioners advocate against the use of biomedical family planning methods. Nongovernmental-sponsored Tibetan medical clinics began in Nubri in 2000; biomedical care, including modern contraceptives, only became consistently available in 2010 when two NGOs opened clinics. There are currently four biomedical clinics and two Tibetan clinics in Nubri, which are staffed by locals whose training as health care providers has been supported by NGOs.²

In contrast, Mustang’s district headquarters in Jomsom includes a 15-bed government hospital staffed year round by a medical doctor; it functions as a hub for the

distribution of medical supplies and expertise throughout the district, and has the capacity to insert Intrauterine Devices (IUDs) as well as provide other forms of contraception, including Depo-Provera injections, Norplant, and pills; tubal ligations are not performed at this facility. As of 2014, two private pharmacies in Jomsom stocked oral contraceptive pills and condoms. There is at least one functioning government health post in each Village Development Committee (VDC) in both Baragaon and Upper Mustang, which provide various forms of contraception, though not consistently because the clinics are only staffed 6–9 months of the year—a problem for many reasons, including for women who stay in mountain communities through winter and wish to access contraception. Furthermore, health care workers who staff government health posts are often male, from other regions of the country, and do not speak the local language. Cultural incommensurability can seriously limit the ability of local high mountain women from reaching out for a range of health care needs, including contraception.

A medical clinic sponsored by the Annapurna Conservation Area Project (a government-organized NGO or GONGO), with support from a US NGO, funds a clinic in Lo Monthang, the population hub of Upper Mustang. Another small NGO-funded hospital operated from 2008 until 2013 in Ghami VDC, which was a major provider of family planning in the region; it closed in 2013 for several years, and was only able to reopen in 2015 with support from another private foundation. In these settings, contraception has been provided either free of charge or for minimal and locally affordable user fees. In addition to district-level resources, women in both study communities—but more commonly in Mustang—have occasional access to contraception during trips for trade and pilgrimage to major Nepali cities (Kathmandu and Pokhara), Indian cities, and across the border in the Tibet Autonomous Region, China. These might include more expensive contraceptive options, as well as costs associated with a hospital stay for tubal ligation.

Methods

Our ability to successfully conduct this project builds on the two decades of research and rapport that two of the authors have garnered in Mustang and Gorkha Districts, and by more than three decades of research in culturally Tibetan communities in Nepal and the Tibet Autonomous Region, China by the third author. All researchers speak Tibetan; one also speaks Nepali. In both districts, the research team included six local residents and two of the authors. The research assistants were in their 20s, had a secondary or college education, were fluent and literate in Nepali, spoke local Tibetan dialects, had varying degrees

² As illustrated by this information about contraceptive availability in Nubri and Mustang, the authors with long-term and ongoing fieldwork in these regions include for context data about general healthcare infrastructure and contraceptive ability that extends beyond the period in 2012 when data used for the statistical analyses in this paper were collected.

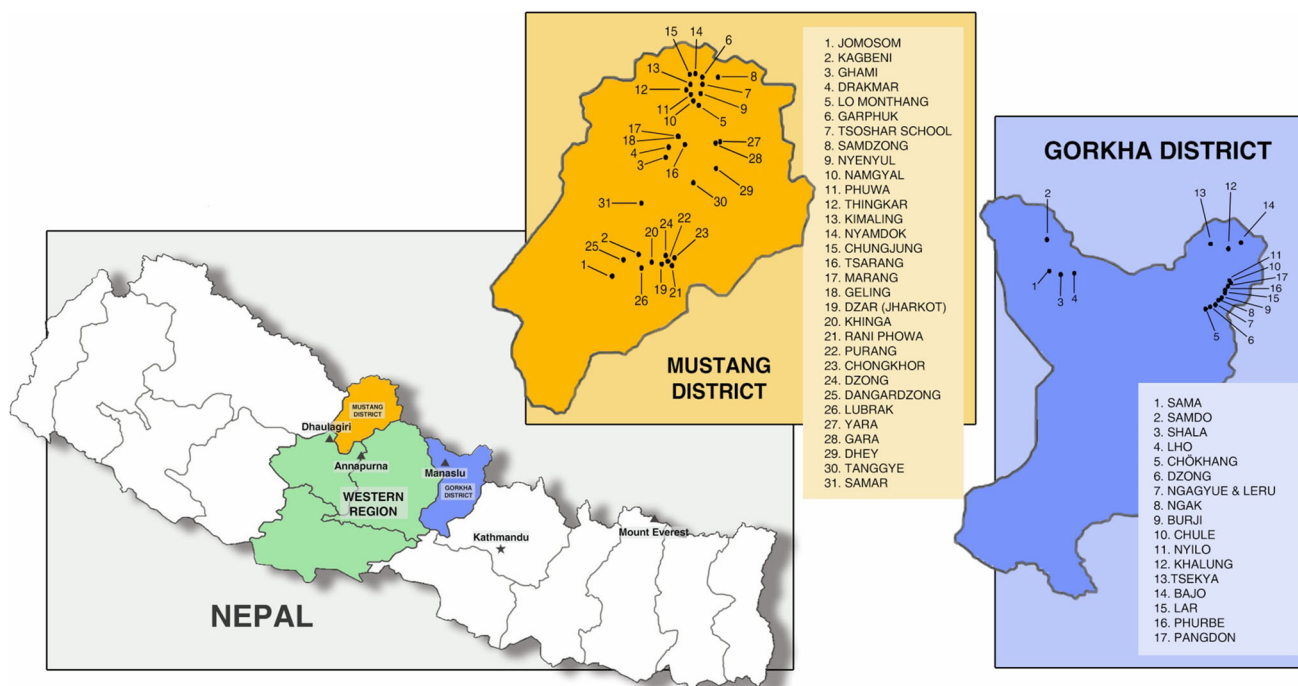


Fig. 1 Map of research areas

of English literacy, and were born in a study village. In each case research site, all but one research assistant was female. Only female researchers and research assistants asked direct questions of women in the study about contraception.

A key method used during fieldwork was the reproductive history survey. Questions began with marital history details, then the first pregnancy, the animal year of birth, the Tibetan month of birth or the season (many women did not recall this information), the outcome (livebirth, stillbirth, or miscarriage), sex, name, current status, age at death and cause of death, if applicable. Reproductive histories concluded with information about contraceptive use. The Tibetan calendar provided the anchor for determining accurate ages and the timing of reproductive history events. A thorough discussion of methods for collecting reproductive history surveys is described in [35], using data from this study.

The reproductive history sample included women 40 years of age and older by Tibetan reckoning (39 in western years), of Tibetan ethnicity, native to and born at or above 3000 m, who had experienced marriage or pregnancy. 1030 women provided interviews. The final reproductive history sample included 1006 women from 987 households after exclusion for the following reasons: they had never been married or pregnant, were born below 3000 m altitude, or were not ethnically Tibetan. For this paper, we have also included additional data on fertility

and contraception use from an identical 2013 reproductive and demographic survey conducted in Nubri in 2013 in the same villages among all women regardless of age, and in a few additional villages that are socioculturally consonant with the rest of the dataset but that lie below 3000 m.

A total of 874 women's reproductive histories have been included in demographic and socioeconomic analysis for this paper. Women in the study were an average of 55 years old at the time of data collection. Their average age at first pregnancy was 24 years, age at last pregnancy was 36 years, and years since last birth was 19. Women from Upper Mustang tended to be older, have a slightly older age at first birth, younger age at last birth, and more time since their last births than women from the Baragaon region of Mustang or from Nubri. Among these women, 64 % were currently married, while 25 % were widowed, 4 % were divorced, and 6 % had never been married. 95 % of these women had not received any formal education, while 4 % had minimal education (1–5 years of school); in 40 % of these 874 women, neither she nor her husband had received any formal schooling.

Of these 874 women, 66 % had never used contraception. Our statistical analysis for this paper focuses on the 34 % or 296 women reported using contraception. Ethnographic data on contraception have been drawn from both formal and informal interviews and participant-observation among women in our study, family members, local religious figures, healthcare providers, and educators.

Table 1 Description of contraception use

Location	Used contraception (n, % of all study women from the district)	Average age at data collection (\pm SD)	Average age at first use of contraception (\pm SD)	Average date of first use (\pm SD)	Most common type used (% of 305 women who reported contraception use)
Nubri	17 (13 %)	44 \pm 3.3	35 \pm 4.3	2006	Depo-Provera (35 %)
Upper Mustang	233 (39 %)	47 \pm 5.9	33 \pm 6.1	1998	Depo-Provera (65 %)
Baragaon	46 (15.1 %)	50 \pm 6.6	32 \pm 5.5	1994	Depo-Provera (45 %)

Have You Used Medicine to Stop Pregnancy?

In this section,³ we describe the contours of contraception use among the 296 women who said they had used contraception at least once during their reproductive careers. Table 1 provides an overview of contraception use in this sample. The 296 women who used contraception were roughly a decade younger than the average age of the sample as a whole (47 years as compared to 55 years), though they had very similar ages at first and last pregnancies. Reproductive careers began at an average age of 23 years (first pregnancy) and closed at an average age of 36 years (last pregnancy). At the time of their participation in our research, it had been on average 11 years since their last pregnancy. 89 % of these women were married at the time of the survey, 8 % of these women were widowed, and only 1 % had been divorced. In terms of generational analysis, nearly half (56 %) of the women 54 and younger had used contraception, while 89 % of women 55 and older had never used contraception. The percent of women in each decade who had never used contraception increased from 41 % in the youngest cohort (<49 years) to 99 % of women in their 70s.

As illustrated in Table 1, the average age of women who have or had used contraception was, overall, younger for those from Nubri, slightly older for those in upper Mustang, and oldest for those in Baragaon. Women's age at

first use and year of first use follows the same pattern, and is reflective of relative access *in or near home villages* to biomedical care. The standard deviation for this data reveals a significant range, though. The earliest reported usage in Nubri was 1992. These inaugural users included women who crossed the border to the Tibet Autonomous Region, China, to get birth control pills. However, the median year of contraception adoption in Nubri was much later, in 2004. The youngest age at first use in Nubri was 28 years and the median was 35 years. In Upper Mustang, the first reported incident of contraceptive usage came a full two decades earlier (1972), with significant use noted after the establishment of ACAP in 1986, and notable increase from the mid 1990s onward, including from healthcare providers in Kathmandu. The median year of first use was 1998. The youngest age of adoption was 21 and the median was 33. In Baragaon, the first noted use occurred *outside* Mustang District, in Pokhara, Nepal. The median year of first use was 1980. The youngest age of adoption was 20 and the median, like Upper Mustang, was 33. This variation not only reflects differential access to care *in remote mountain settings*, but also distinct patterns of seasonal migration to urban settings where contraception is more readily available. Mustangis have been traveling to India and urban Nepal for winter petty trade in significant numbers since the 1970s; while more men than women migrate, women have increasingly joined in these journeys. Although no women reported accessing contraception in India, they did report accessing in Kathmandu or Pokhara. As illustrative of this point, the percentage of women from Mustang who had ever used contraception is roughly double that from Nubri.

Acknowledging that education can be an important variable in family planning, we note that among women who had used contraception, 88 % had received no schooling, while 4 % had received minimal schooling (between 1 and 5 years). In 42 % of these cases, neither the woman nor her husband had any formal schooling. Among women with any schooling, those from Nubri were less likely than women from Mustang to use contraception. When taking into account education of both husband and wife, the lowest rates of contraception use occurred in households where the husband had some education but the

³ In revising this paper, one reviewer mentioned that this seemed like a question that could be interpreted as a reference to abortion. This is not the case. Abortion is described in Tibetan in terms that do not reference "medicine" (*men*) but rather in various ways that describe the agentive act of "taking a baby out before its time," "making the baby no more" or, more rarely, a direct reference to killing the unborn fetus. During our fieldwork, we asked the following question in vernacular Tibetan: *trugu ma khorwa men se song e?* This translates literally as "[did you] eat medicine to make a baby not be conceived?" This was often preceded or followed by: "*men se song e? khab gyab song e?*" which, literally translates, means "Did you eat medicines? Did you use an injection?" for women to understand that we were speaking of contraception. Interestingly, the idea of "eating medicine" here covers several contraceptive choices, from the less common birth control pill to the more common use of norplant. The reference to injections speaks directly to Depo-provera. Once we asked these questions, if the answer was "yes" we then discussed the specific method(s) used.

wife had no education (73 %), while the highest rates of contraception use in relation to education occurred when the wife had some education and the husband had none (56 %).

Depo-Provera was the most commonly used form of contraception, used by 58 % of all women, with another 14 % saying they used Depo-Provera plus an “other” method. Women in Nubri also used Norplant (23 %) and “other” methods (19 %). More than half (61 %) of the women in Upper Mustang used Depo-Provera, with another 15 % reporting the use of Depo plus one “other” method. In Baragaon, about 45 % used Depo-Provera, with another 9 % reporting Depo plus an “other” form. An examination to responses to this question about “other” forms, we see significant variety: IUD, Norplant, contraceptive pills, and “operation.” This latter term most often refers to tubal ligation, although in some cases it indicates a hysterectomy. Overall, 31 women (10 % of all contraception users) reported having an “operation,” with the highest reports of this method occurring among Baragaon (31 %) women. Rates of “operation” as a method of contraception in other regions were much lower: 11 % in Nubri and 7 % in Upper Mustang. Only one individual in Nubri, 5.6 % of women in Upper Mustang, and 11 % of women in Baragaon reported using contraceptive pills. No women reported their partners using condoms; only six women (one in Nubri and five in Mustang) noted that their husband had received a vasectomy.

We also asked women how many times they used contraception and where they accessed it. The number of independent uses of contraception varied from 1 to 4 times, with the vast majority in both districts (approx. 75 %) having used it only once—with the important note that “one time usage” can represent a continuous usage over the course of months, or it could be a single injection that was not repeated. Nubri women had the highest rates of one-time usage (80 %), while those from Upper Mustang reported the highest rates of using contraception multiple times (18.9 % used it twice and 4.7 % used it three times); rates for Baragaon were quite similar. This reveals that some women used family planning off and on, presumably to space births, while others were using contraception to stop reproducing altogether.

To understand more about *why* women were choosing to use contraception—and at what stage in their reproductive careers—we analyzed the number of pregnancies prior to first contraception use and number of living children before contraception use. Although the range was from 1 to 14 pregnancies, most women initiated use after 4–6 pregnancies; relatively few women initiated contraception use before 3 pregnancies or after 9 pregnancies. However, study areas presented differently in this regard. While in Nubri the median for commencing birth control use was 6

pregnancies or 5 living children, in Baragaon it was 5 pregnancies or 4 living children, and in Upper Mustang this went down to 4 pregnancies or 3 living children. More than 80 % of Nubri women using contraception had at least four living children before they commenced use. Only in Nubri do we see some evidence of son preference in relation to number of living children and adoption of contraception. While the median number of pregnancies before contraception use was 6 and the median number of living children before contraception use was 5, the number of boys alive was 3 while girls were 2. In qualitative terms, this means that women with only daughters, or who had just given birth to a daughter, were less likely to use contraception than those with at least one son, or who had just given birth to a son.

In Upper Mustang and Baragaon, close to 50 % of women began using birth control when they had less than 4 living children and 10–15 % of women from Upper Mustang and Baragaon reported usage after 2 pregnancies. We also note that this pattern varies by age. While no Nubri women over 55 (median age of all women in the study) reported ever using contraception, women in Mustang did. Among Mustang women over 55, the median number of first adoption of contraception was after 6 pregnancies and 4 live births. However, among women 54 and younger, this dropped to 4 pregnancies and 3 live births, with a median of 2 boys and 2 girls alive. Such variation in first use of contraception between the two district does indicate differences in “ideal” family size and composition, which may, in turn, reference differential labor needs as well as different senses of security about when one has “enough” living children to mitigate against the possibility of child death in these two culturally Tibetan regions of Nepal. Significantly, this timing also corresponds—especially in Nubri—to the time when contraception became locally available (Fig. 2).

One often finds a correlation between socioeconomic status (SES) and contraception use, but the correlation need not be unidirectional. Sometimes women of higher SES have greater access to contraception and use it more to control fertility; in other instances, women of lower SES seek out contraception because of the financial burdens associated with raising children. In these Nepali communities, the specific avenues through which wealth is accrued and express include: cultivatable land and animals; cash income earned from trade (tourism, medicinal plants); inherited wealth (jewelry, Buddhist statues and paintings); and remittances. By using a relative wealth ranking as a proxy for socioeconomic status,⁴ our analysis revealed that women living in households that rank 2–3 on a 5-point

⁴ Relative wealth ranking is a method to rank households according to wealth status using emic criteria [43].

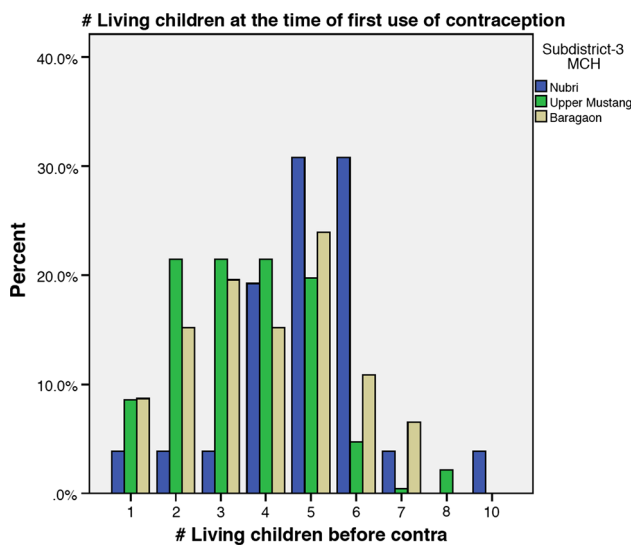


Fig. 2 Number of living children at time of first contraception use

scale from wealthy to poor are using contraception more than those who are either wealthiest (1) or poorest (4–5). However, we also note significant regional variation. While 18 % of those in Nubri who used contraception were in the highest rank, none are in the lowest, while in Upper Mustang, 36 % are in the highest rank and 18 % are in the lowest; Baragaon results are more similar, with 14 % of those in the highest relative wealth ranks and 11 % in the lowest ranks using contraception. These variation illustrates several possible socioeconomic dynamics: that poorer women may have the least ability to travel and therefore to access contraception either outside or within their district and the least amount of social agency; that poorer women may be separated from their husbands more; that those in Nubri who are relatively wealthy—with respect to land and other resources—are still choosing to regulate fertility less than those who have fewer resources; that wealthier women in Baragaon have greater recourse to hiring agricultural labor to work their land as opposed to having more children to do this work; and that families in both districts are increasingly expected to educate (often in boarding schools, which they pay for) the children they have, perhaps prompting greater birth spacing and lowered total fertility [36].

Where are women getting access to family planning? Data reveal many different strategies. More than 70 % of women accessed contraception on first usage within their home district. Of the Nubri women, 69 % *only* accessed contraception locally, in one of the NGO-funded health posts, while 31 % accessed it both within and outside of their home district: in Kathmandu, district hospitals in better-served regions between Nubri and Kathmandu, or in China (Tibet Autonomous Region). In Upper Mustang, the

majority (72 %) of first contraception use occurred in a district facility, usually within the woman's VDC of residence; roughly equal numbers (13 and 14 %, respectively) accessed contraception only outside their district or both within and outside the district. In Baragaon, 66 % of first contraception use occurred in a district-level facility, with a greater number of women (27 %) accessing contraception both within and outside of their district. Unlike in Nubri where there are no public services, in Upper Mustang more than 60 % of contraception was provided by government facilities as compared to NGOs, illustrating a significant difference in the “reach” of the state in these two locations. While first contraception use most often took place within a woman's community of residence, among all recorded incidents of contraception use across study sites (as opposed to only first use), nearly 30 % occurred outside a woman's home district. While the most common forms of contraception (Depo-Provera, Norplant, and IUD) can all be accessed locally (including through health camps for the minor surgery required to insert an IUD), we learned from our reproductive survey that 76 % (28) of all “operations” were performed in urban hospitals, either in Pokhara or Kathmandu. The remaining 9 reported that operations occurred at a hospital in Mustang District, although all of these occurred before 1997.

We examined where women accessed contraception in relation to where they spent the winter prior to data collection, their relative wealth rank, and their age. We learned that all Nubri women stayed home over the previous winter, as opposed to 50–60 % of the Mustang women. While 30 % of Baragaon women migrated to India, only 14 % of those from Upper Mustang did, while a much higher percentage of Upper Mustang women (19 %) spent the winter in Pokhara. When aggregated according to relative wealth rank, we learn that a larger percentage of lower ranked women stayed home for the winter and a smaller percent traveled to India. Only 43 % of Nubri women obtained contraception outside the district, with no discernible difference based on relative wealth in this group. In contrast, in Mustang, those of the highest relative wealth rank (1) 31 % ($n = 42$) of women obtained contraception outside the district, all in Kathmandu and Pokhara. Among the lowest relative wealth rank (5), 24 % ($n = 29$) also obtained contraception in Kathmandu and Pokhara. These results indicate that for poorer women in Mustang and for the overwhelming majority of Nubri women, contraception should be available locally for greatest reliability and consistency in use. Among women in Mustang 55 and over, 24 % of them accessed contraception in Kathmandu and Pokhara as opposed to only 17 % of women 54 and younger. This indicates increased local availability among younger cohorts of women in Mustang.

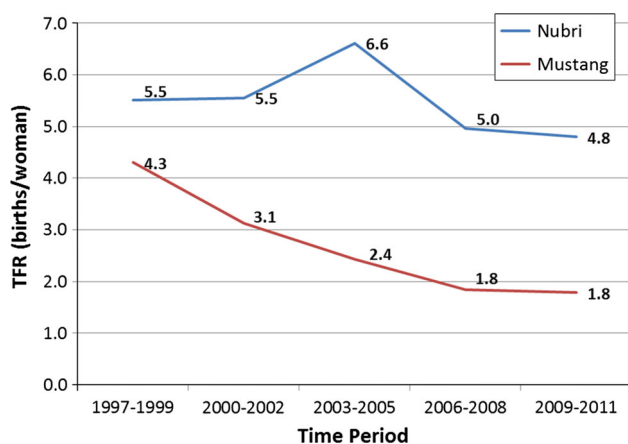


Fig. 3 TFRs for Mustang and Nubri over time

Fertility Transitions in Mustang and Nubri

How do these patterns of contraceptive use bear out in understanding the fertility transitions occurring in both study regions? Figure 3 compares the Total Fertility Rates (TFR) in Mustang and Nubri over the time period 1997–1999 to 2009–2011.⁵ Whereas Mustang has experienced a sharp fertility decline from 4.3 to 1.8 births per woman, fertility dropped less than one birth per woman in Nubri and remains high at 4.8.

Figure 4 provides a strong indication that the fertility transition was already underway in Mustang in the late 1990s. Note how, in 1997–1999, the ASFR peaked among women 25–29 and 30–34 and then quickly dropped among women aged 35–39. The data suggests that in the late 1990s, women in their mid and upper 30s were the first users of birth control, whereas contraceptive usage among the younger age groups had not yet become common. This aligns with our data as presented in Table 1, with regard to

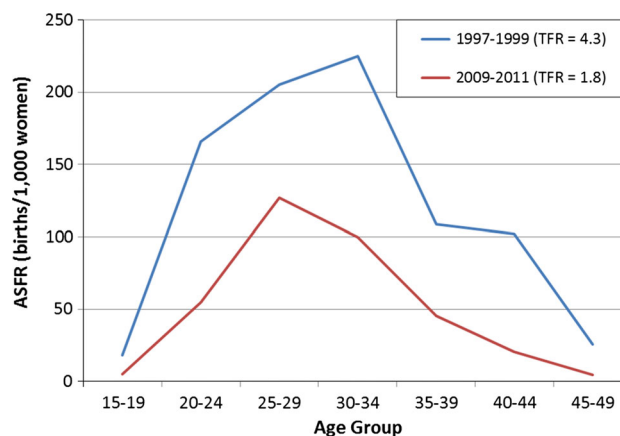


Fig. 4 ASFRs for Mustang, 1997–1999 compared to 2009–2011

average date of first usage. By 2009–2011 fertility had fallen significantly in all age groups suggesting a more widespread adoption of contraception.

Figure 5 suggests that the fertility transition had not started in Nubri in the late 1990s. During fieldwork in Nubri between 1995 and 1997, modern means of birth control were almost entirely absent due to the lack of government healthcare facilities and the fact that NGOs were not yet providing such services. One health post that was chronically under-staffed and ill-supplied did have some condoms. When a local man who held the key to the facility was asked whether any men availed themselves of these, he chuckled and responded, “No. But one time some monks bought several, blew them up like balloons, and hung them from trees.” Figure 5 also indicates that the fertility transition has now commenced in Nubri as evidenced by strong consistency in ASFRs for the age groups 15–19 through 30–34, but then in 2009–2011 a sharp decline among women aged 35–39 suggesting that women in that age group were starting to use contraception. In fact, data on women aged 40 and above reveals that the mean starting year was 2006, and the mean age at first usage was 37 years after experiencing an average of 4.9 pregnancies and having 4.0 living children. In other words, women were beginning to use birth control only after having achieved a relatively large family size. The timing coincides with the introduction of NGO-sponsored health care facilities that provide several contraceptive methods.

In summary, Mustang’s fertility decline was already underway in the late 1990s, whereas in Nubri the phenomenon only recently started. The contrast illustrates that the timing of reproductive control is not uniform across the region, despite cultural continuities, and highlights the importance of understanding differences in exposure to health care services and access to contraception.

The finding is revealing in light of the fact that family planning became a national priority in Nepal during the

⁵ The Total Fertility Rate (TFR) is a standardized measure of the average number of children that would be born to each woman if Age-Specific Fertility Rates (ASFRs, births in a year to women aged x divided by the number of women aged x at midyear) remain constant. The TFR is an estimate of the number of children that would be born to a hypothetical cohort of women, not to an actual cohort of women. To estimate fertility we used the Own-Children method (henceforth, OCM), a reverse-survival technique designed to calculate Total Fertility Rates in the absence of detailed data on reproduction [29]. Reverse-survival uses a population’s current age structure and assumptions about mortality to reconstruct that population’s age structure at a previous time. OCM has been applied to large datasets such as national censuses from various countries [44–47] as well as household surveys to estimate fertility in small-scale populations studied by anthropologists [39]. A recent reappraisal of the method finds that in some cases it is more accurate than fertility estimates derived from full birth histories [35]. Our data comes from two surveys: 2012 Nubri, Tsum, and Mustang household and reproductive history survey and 2013 Nubri household and reproductive history survey.

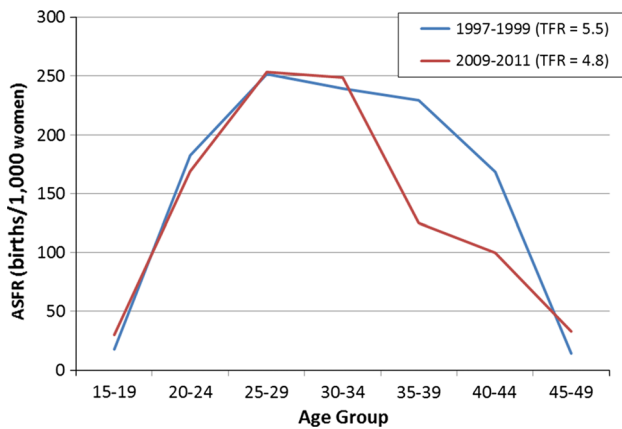


Fig. 5 ASFRs for Nubri, 1997–1999 compared to 2009–2011

1970s in response to perceived connections between population growth, environmental degradation, and poverty [25]. Although the earliest family planning work in Nepal began with the 1959 formation of the Family Planning Association of Nepal (FPAN), it was not until 1976 that more comprehensive national programs on family planning was undertaken, with funding from the United States Agency for International Development (USAID) and implementation support over the past four decades from a variety of other stakeholders, both Nepali (e.g. Nepal Fertility Care Center) and international (e.g. JSI Research and Training Institute, Save the Children). Nepal's fertility transition commenced in the 1980s [37]; the TFR for the nation recently declined to 2.6 births per woman [38]. Nowadays the vast majority of women (86.3 % for tubal ligation, 95.5 % for pill, and 94.7 % for injectable contraception, including Depo) receive family planning services through government hospitals and clinics or private institutions [38]. Barriers to adoption among marginalized groups include the difficulty of transmitting information between high status service professionals and low status clients [26], a situation that may have influenced contraceptive usage in Nubri and Mustang during the 1980s had the state actually provided health services at that time. In contrast to China where the state had a major impact on reproductive outcomes in Tibetan communities [23, 39], the lagging fertility decline in Nubri (and to a lesser extent Mustang) is partially attributable to the lack of government presence.

Embodied Experiences of Contraception

The introduction of birth control in Tibetan populations has raised a series of cultural and political issues. For example, among Tibetan exiles living in India and Nepal, the use of family planning to limit births was long seen as

problematic due to the collective concern about increasing population to counteract perceived genocide perpetrated by China in Tibet [17]; similar pronatalist arguments have been made by Buddhist leaders in Ladakh, India, to counteract perceived fertility trends among the resident Muslim population [21]. An early proponent of birth control in the Tibetan exile community reported that some community members accused her of being a witch (*dumo*). One of the first women to promote contraception in Nubri faced a similar charge. Another cultural issue arises in connection with the Buddhist conception of cyclical existence whereby, following death, one's consciousness principle (*namshey*) prepares to reenter the womb of a mother at the moment of conception. Some Tibetan women speculate that using contraception may actually block a natural process of uniting a consciousness principle with its karmically-ordained mother through this "closing of the womb door."

Some of the women who shared their views of contraception with us (even if they might not have used contraception themselves) took a socially conservative position. One woman in her mid-sixties from upper Mustang who had not used contraception herself said, "Having those injections kills babies." Her comment resonates with the findings from an ethnographic study of contraception usage among Tibetan exiles in India where the most commonly used term for birth control is *kyegog*, a contraction of *kyego gogtab* (that literally translates as "means for obstructing the birth canal." Rather than being construed as a means to prevent conception—and without, as we did in this study, referencing the term 'medicine' in discussing contraception—the term was misinterpreted by many to imply abortion, which is widely considered sinful in the Tibetan Buddhist worldview [22].

Some women of younger generations tended to express moral reservations with more nuance. A 45-year-old woman from Upper Mustang said:

Birth control is not good for the circulating consciousness of sentient beings. It makes it difficult for them to find a womb door – a home and a new life. Many people have *labruk* [back to back children]. Why do you think this happens? It is because some women use birth control and close their womb door. This means that other women [who do not use contraception] have to carry those *namshey*. This is bad for everyone... Then other women [in her community] end up suffering because they have so many children, even when their bodies are still weak.

In this configuration, contraceptive-using women are seen as playing a negative role in other local women's health. This concept of "closing the womb door" and its multiple interpretations is seen in other culturally Tibetan

communities [18, 22, 24]. In these ethnographic examples, such thinking is not directly linked to the more esoteric aspects of Tibetan Buddhism. But this concept absolutely reflects cultural sensibilities shaped by Buddhist concepts of reincarnation and definitions about human life—including the interdependent karma or *temdrel* that may link one woman's choice to another's outcome, or to considerations of when "life" begins in an embryological sense and how that relates to the perceived karmic "gift" of being born as a human being [40, 41].

And yet, ambivalence about birth control also has a much more material and biocultural basis to it as well. The woman quoted above went on to say, "Birth control makes a woman's uterus weak. It makes her bleed too much, even if she stops the children coming." Significantly, this individual is also a Female Community Health Volunteer and, as such, someone who has access to contraception at a village level, even if she expressed ethical objections to its use. Her concerns were also grounded in what she had seen contraception do to other women: painful and heavy periods and other side-effects that are particularly common with the forms of contraception most common in these communities.

These findings relate to those found by Schrepf (2011: 330) in her study of fertility, family planning, and reproductive health among women in Amdo, northeastern Tibet. She writes:

Rather than religious or ethical concerns, in our conversations women expressed fear of the use of intra-uterine devices (IUDs) or of becoming sterilised against their will, both potentially causing 'loss of strength.' Comments on women's 'strength' often appeared in casual conversations during my fieldwork.... Tibetan men would reiterate the importance of a 'tough,' i.e. hard-working, strong, and morally pure Tibetan wife as an asset upon which a Tibetan household economy on the High Plateau heavily depends. At the same time, this value placed upon women reiterates the classic gender division in Tibetan society identifying women with household labour and reproduction [23].

Many women in our study shared concerns about the iatrogenic health effects of contraception. In response to questions about how contraception affects a woman's body, respondents almost universally mentioned that it makes a woman 'weak' (*kombo*), that it can be 'painful' (*zugchen*), that it can make women bleed more, that even if one ceases use becoming pregnant again can be more difficult, and that use of contraception can negatively impact a woman's ability to perform the agricultural, animal husbandry, and household labor expected of her. Of course, it must be recognized that the *forms* of contraception most

often adopted by women in these highland regions of Nepal have been subjects of intense controversy with respect to their side effects and counter-indications.⁶

For the most part, women bear the responsibility for family planning in our study areas. While many reported either health concerns (namely the impacts of many pregnancies on their health and wellbeing) or a desire to not have any more children as their reasons for usage, men are less receptive than their wives to the idea of limiting family size. During reproductive survey interviews several women mentioned that their husbands do not know they are using birth control, and asked that the information be kept secret. One woman from Nubri, a 32-year old leader in the local Women's Association (Nepali: *Mahila Samiti*), explained how her organization counsels women to have fewer kids and provide better education for them. When asked if any disagreements erupt between husbands and wives over birth control usage, she responded,

Yes, there are such fights. Since the beginning of this year since the first month there have been a few such cases. We went to mediate and found out that the fights were caused by this [disagreement over how many children to have]. We counsel them not to fight, and tell them that there is a big difference between the past and the present. We have to think carefully and plan our families. The young men in the village say that women these days are thinking only about themselves.

In Mustang, religious leaders voiced opposition to the use of contraception specifically because declining fertility corresponds to fewer children being sent to local monasteries and nunneries—a problem both in terms of the social and economic capital associated with these institutions and senses of local religious identity. For one monk from Garphuk village, "Using medicines to stop pregnancies is a problem! If people only have two or three children, they are not going to send one or two of them to the religious life. This is bad for the merit and wellbeing of our community. We cannot rely only on outsiders to be our religious people (*chöpa*)." Here, the concern was not directly with closing womb doors but rather with who would, later, walk through the doors of monastic institutions. And yet such a view was not uniform. When we asked a traditional Tibetan doctor in Nubri (also a Buddhist practitioner) about the ethics of birth control, he responded,

My wife has opted for injections every three months. As a medical practitioner I don't know if this is

⁶ We note controversies in the United States, Canada, and India over the use of Depo-Provera as examples. Vitzthum et al. [50] discusses these issues in relation to hormonal contraception and physiology in non-western contexts.

wrong but this practice is looked down upon and considered unethical from a Tibetan cultural point of view. There are medical means nowadays to avoid conceiving for up to three years. From a Tibetan perspective such an act is a bit sinful.

Despite his reservations, the man did not object to his wife's usage of birth control.

One woman in her mid-fifties from Mustang summarized moral and physiological ambivalence about contraception as follows:

From one view, birth control is good if you can't afford to take care of your children to go to school, pay for them, and all of that. However, from another perspective it is also bad to use birth control. It creates problems in the uterus. It is a sin (*digpa*). It can make other problems – like questioning a wife's devotion to her husband. However, there are too many people in the world, and children are too expensive, so it is good that we have this method available today.

Beyond what women think of the contraception methods available to them, infrastructural challenges that shape maternal and child mortality and morbidity in these mountain communities also pose challenges to the availability of reliable, safe, and convenient contraception. For example, many women noted that while they would accept a Depo-Provera shot, a Norplant insertion, or an IUD, they weren't sure where or when to go for subsequent Depo-Provera injections, or that they were unable to access the minor surgery required to insert a new IUD or to replace Norplant rods. In several instances, women in our study told us that they could not remember when they were supposed to switch these devices and continued to wear these invasive technologies years after they were supposed to be removed or replaced.

At times women's answers to questions about permanent forms of contraception revealed dissonance and confusion over what they thought had happened to their bodies. Several women from Mustang recalled that they could no longer have children because they, "had their uterus removed," indicating a hysterectomy. And yet, these same women also revealed that they were still menstruating. This prompted follow up, revealing that they had actually had tubal ligations. Others noted coercive experiences with healthcare providers who, with little to no formal informed consent—in some cases exacerbated by the fact that many of these women spoke very little Nepali, the national language—performed tubal ligations on them after they gave birth in urban hospitals. In Nubri, some women followed the lead of the first individual who went across the border to Tibet for birth control pills, yet knowledge of

usage was sketchy; one woman described her confusion over whether to take one pill per day or one per month.⁷ One healthcare provider in Upper Mustang recounted how, during a local health training, women were shown how to use a condom via demonstration on a cucumber; after faithfully putting a condom on a cucumber before intercourse, one woman was surprised when she became pregnant. We mention these examples with no disrespect intended, but rather to illustrate concrete and very serious problems about how language, dynamics of biomedical hierarchy, education levels, access to information, and problems of translation between health care workers and the women they are meant to serve can further complicate the use of contraception, increasing feelings of ambivalence about its use.

Even with such points of personal, moral, and embodied ambivalence, contraception has become an increasing biosocial reality for women in these mountain communities. Some women choose to ignore moral concerns. For example, when asked whether birth control is considered unethical by fellow community members, one woman from Nubri responded,

Here in the village people say such things. But I have no such thoughts. In the past we could not control [reproduction] and had many children. If we did anything with birth control, people would call it sinful and look down upon you. But after my sixth and before my seventh pregnancies I went to Tibet and had an injection and took several birth control pills.

Akin to this woman, others in our study (either elder women reflecting on their own experience or younger women citing reasons why they chose to use contraception) would often speak of being "like" an animal—a cow, a dog—in the era when she had no possibility of modern contraception, instead experiencing many pregnancies, even if many of these pregnancies ended with a miscarriage or an infant or child death.⁸ In other words, the use of contraception was equated to greater experiences of agency—if not terribly great choices—over what happened to her body.

⁷ Personal communication with Margaret Swift. In 2002 she interviewed several women in Nubri about birthing difficulties and family planning issues.

⁸ Such comparisons between women and domestic animals also appears in Jan Brunson's [16] introduction to her new book on Nepal's family planning history. In the Introduction, she recounts a contentious moment during International Women's Day in 2002 when the Family Planning Association of Nepal published a poster, the title of which was "Am I am man's wife or a rooster's hen?" While there was controversy over this message, this idea of women being compared to reproductive beings with no agency over their reproductive lives resonates.

Beyond these issues of control over reproduction, even with serious side effects, concerns such as the cost of educating children and shifting household labor needs means that women are choosing to regulate their fertility with biomedical technologies if and when the choice is made available to them. In fact, the desire to use birth control preceded local availability. One of the authors was involved in a health training program for Nubri women held in Kathmandu in 2000. During the training, which covered topics other than contraception, women continually approached one of the trainers, a Tibetan nurse, asking for advice on how to avoid pregnancy. Ethnographic interviews also elucidated women's feelings about the shifting size and composition of an 'ideal' family. In Mustang, the most common refrain was that having two sons and one daughter created a viable family. Even so, many of the women in our study, especially those in their 40s, cited the costs of education as a primary driver both for the use of modern contraception and for accepting, if not idealizing, smaller families.

Conclusion

Despite the rich scholarship on family planning in Nepal, as well as a strong interest in the politics of reproduction in culturally Tibetan communities in Asia, this article is the first to focus expressly on issues related to contraception among women from Nepal's high mountain regions, bordering Tibet. Furthermore, while one might assume that two regions of the country that share a great deal in terms of socioeconomic organization and cultural life might translate into rather similar patterns of contraception use, our research tells a different story, one that highlights the role (or absence of) the state in facilitating the fertility transition, and that engages with shared physiological and moral ambivalence around the meanings and uses of contraception in women's daily lives.

Our data draw attention to the role of seasonal migration in the initial adoption of contraception, as well as the near total lack of condoms and the rare vasectomies as a contraceptive strategy. Although increasing access to and adoption of other means of contraception are helping women and their families adapt to shifting socioeconomic realities, the strategies employed do not prevent the transmission of STIs. As studies elsewhere have demonstrated [48, 49], male mobility in conjunction to rapid social change is exposing married women to the risk of contracting sexually transmitted infections including HIV, from their husbands—a fact with crucial public health significance for this and future generations of women living in the increasingly mobile populations of highland Nepal.

Our data also illustrate that family planning decisions by culturally Tibetan women in northern Nepal are mitigated by sociocultural conditions and structural parameters. While used with increasing regularity, actions taken to “close the womb door” still evoke social and religious uncertainty. It is an embodied action that can at once unite and divide women and the wider social body—causing debate, fueling gossip. Even so, contraception is viewed as a way out of cycles of social and biological reproduction that have taken huge tolls on women: either those who have died as a result of the complications of pregnancy and childbirth or who have suffered multiple morbidities as a result of many pregnancies. And yet a range of factors—from the expectation that one should educate one's children to the costs of doing so, from changing local labor demands to the shifting locus of family life—means that the daughters and granddaughters of women included in this study will likely increasingly control their fertility with contraception. In this case, the convergence of availability and adoption in a context of moral ambivalence suggests that women are exercising “interpretive agency,” a concept developed by Hirsch [8] in relation to contraceptive usage in Catholic Mexico to explain the “capacity of people to interpret religious ideology in ways that support, justify, or rationalize their actions.”

Acknowledgments Most of the data presented in this paper was gathered in the summer of 2012 during a project titled Genes and the Fertility of Tibetan Women at High Altitude in Nepal, which was sponsored by the National Science Foundation (Grant No. BCS-1153911). Additional Funding was provided by grants from the Claire Garber Goodman Fund, the Rockefeller Center, and the Dean of Faculty Innovation and Advancement Fund, at Dartmouth College. The Institutional Review Boards of Case Western Reserve University, Washington University, Dartmouth College, Oxtrec, and the Nepal Health Research Council approved the research protocol. We would like to thank our fieldwork assistants for their hard work and dedication to the project: for Nubri and Tsum, Ang Tsering, Jangchuk Sangmo, Tinley Tsering, Tsechu Dolma, and Tsering Buti; for Mustang, Kunzom Thakuri, Karma Chödrön, “Apu” Karma Chödrön, Diki Dolkar Gurung, Yangjin Bista, Karchung Gurung, Nawang Tsering Gurung, and Tashi Bista. We also thank the study communities and volunteers for their hospitality and participation.

Compliance with Ethical Standards

Conflicts of interest None.

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