



“There is such a thing as too many daughters, but not too many sons”: A qualitative study of son preference and fetal sex selection among Indian immigrants in the United States

Sunita Puri^{a,*}, Vincanne Adams^b, Susan Ivey^c, Robert D. Nachtigall^d

^a Department of Internal Medicine, University of California, San Francisco, CA, USA

^b Department of Anthropology, History, and Social Medicine, University of California, San Francisco, CA, USA

^c Department of Community Health and Human Development, University of California, Berkeley, CA, USA

^d Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, CA, USA

ARTICLE INFO

Article history:

Available online 15 February 2011

Keywords:

USA
Gender
Reproductive technology
Sex selection
Son preference
South Asian women
Immigration and health
Reproductive decision making
Family violence
Reproductive coercion

ABSTRACT

In response to concerns from feminists, demographers, bioethicists, journalists, and health care professionals, the Indian government passed legislation in 1994 and 2003 prohibiting the use of sex selection technology and sex-selective abortion. In contrast, South Asian families immigrating to the United States find themselves in an environment where reproductive choice is protected by law and technologies enabling sex selection are readily available. Yet there has been little research exploring immigrant Indian women's narratives about the pressure they face to have sons, the process of deciding to utilize sex selection technologies, and the physical and emotional health implications of both son preference and sex selection. We undertook semi-structured, in-depth interviews with 65 immigrant Indian women in the United States who had pursued fetal sex selection on the East and West coasts of the United States between September 2004 and December 2009. Women spoke of son preference and sex selection as separate though intimately related phenomena, and the major themes that arose during interviews included the sociocultural roots of son preference; women's early socialization around the importance of sons; the different forms of pressure to have sons that women experienced from female in-laws and husbands; the spectrum of verbal and physical abuse that women faced when they did not have male children and/or when they found out they were carrying a female fetus; and the ambivalence with which women regarded their own experience of reproductive “choice.” We found that 40% of the women interviewed had terminated prior pregnancies with female fetuses and that 89% of women carrying female fetuses in their current pregnancy pursued an abortion. These narratives highlight the interaction between medical technology and the perpetuation of this specific form of violence against women in an immigrant context where women are both the assumed beneficiaries of reproductive choice while remaining highly vulnerable to family violence and reproductive coercion.

© 2011 Elsevier Ltd. All rights reserved.

Introduction

Sex selection is a practice historically prevalent in societies that express a strong desire for sons. The cultural basis for son preference may include the necessity or utility of male offspring for manual labor, war, elder care, property inheritance, continuation of the family name or blood line, and/or avoidance of the expense of dowries. In addition to its direct influence on sex-selective terminations and female infanticide, son preference also impacts how parents allocate food, money, and other resources after birth,

resulting in greater female childhood mortality due to starvation and illness (Dasgupta, 1987; Miller, 1997; Pande & Malhotra, 2006). In Asia, son preference and sex selection are intertwined phenomena, most visibly in India and China, countries with long-standing histories of female infanticide (Croll, 2000; Greenhalgh, 2008).

More recently, there has been increasing attention from demographers, economists, and journalists towards the use of biomedical technology for sex selection in South Asia. With estimates that there may be over ten million “missing” women in India alone (Jha et al., 2006), health organizations and women's groups have cited the cultural pressure to have sons as contributory to sex selection, which has been considered a form of violence against women and girls (Dagar, 2001; Fair, 1996; Kishwar, 1995; Patel,

* Corresponding author.

E-mail address: Sunita.puri@ucsf.edu (S. Puri).

1989). In 1994 and 2003 the Indian government implemented legislation prohibiting the use of ultrasound and sperm sorting technologies used explicitly for sex selection. In contrast, sex determination and selective abortion, as well as pre-implantation sex selection technologies, are legal in the United States. Although there is ample exploration of the ways medical technologies can influence gender hierarchies and notions of empowerment (Franklin & Roberts, 2006; Saetnan et al, 2000), and there are numerous qualitative studies of this in the context of reproductive choice (Beck-Gernsheim, 1989; Becker, 2000; Ginsburg & Rapp, 1995; Inhorn, 2003), there is little known ethnographically about how new reproductive technologies are used specifically for sex selection in the United States.

South Asian families immigrating to the U.S. thus find themselves in an environment where reproductive choice is protected by law and a number of technologies enabling sex selection are readily available. In this context, then, how do women exposed to long-standing cultural pressures to have male children react in a social environment where reproductive choice is respected and sex selection technologies are openly marketed and available? To our knowledge, this report represents the first research investigating and documenting the experiences of son preference and sex selection among Indian women who have immigrated to the United States.

Methods

Qualitative approaches have been successfully employed in exploring cultural and ethical dilemmas in reproductive medicine such as the disposition of frozen embryos, the infertility experiences of low income immigrant Latina women, and the use of pre-implantation genetic diagnosis (Becker, Castrillo, Jackson, & Nachtigall, 2006; Franklin & Roberts, 2006; Lyerly et al., 2010). More specifically, prior work on son preference and sex-selective abortion in India (George, Abel, & Miller, 1992; Khanna, 1997; Ramanamma & Bambawale, 1980) suggests that a qualitative approach to data collection “can best reveal...the complexity of the decision-making processes and cultural values behind the practices of prenatal sex determination and sex-selective abortion” (Khanna, 1997, 171–180).

The data on which this analysis is based were collected between September 2004 and December 2009, and were based on interviews as well as participant observation in clinics, homes and community events. Interview participants were included in the study on the basis of the following criteria: (a) migration from the Indian subcontinent after age 18, (b) fluency in English, Hindi, or Punjabi, and (c) a history of seeking sex selection services. Interviews took place in California, New York, and New Jersey between 2005 and 2009. Two clinics offering elective prenatal ultrasound services located in large South Asian immigrant communities were chosen as research sites with the consent of clinic directors. Patients were recruited either directly from clinics (78%) or through snowball sampling (22%). Approximately 250 women were offered information on the study, from which 51 elected to participate, suggesting a response rate of approximately 20%. The remainder of our participants (14) was recruited via snowball sampling. In this instance, snowball sampling was especially effective because subjects were more willing to be interviewed when referred to the research team by trusted friends, family members or community members.

Interviews were in-depth, semi-structured and lasted up to 3 h. Interviews were conducted by the lead author in locations deemed safe and confidential by participants. In order to create a comfortable, open atmosphere during the interview, participants were offered the opportunity to stop the interview and/or to take a break

during particularly sensitive topics of discussion. Given concern for participants' exposure to marital violence, all subjects were offered information on local South Asian women's organizations offering assistance for survivors of family violence. All interviews were audiotaped with the consent of participants, and subsequently translated, transcribed, and coded. Three independent analysts read and coded the interview transcripts, independently developing codes based on major themes that arose during interviews. The three readers then collaborated on a final coding lexicon reflecting the most common themes articulated by respondents across interviews.

All participants provided verbal consent to participate in the research study and separate consent to allow for audio recording of interviews. This project received ethical approval from the Institutional Review Boards of the University of California Berkeley and the University of California San Francisco.

Results

Demographics

The 65 women participants had immigrated from the Indian states and territories of Punjab, Haryana, New Delhi, Gujarat, Andhra Pradesh, and Tamil Nadu. Interviews were conducted by the first author in English, Punjabi, and Hindi. Forty-two women identified as Sikh (65%), fourteen as Hindu (22%), eight as Jain (12%) and 1 as Muslim (1%). Thirty eight women (58%) completed high school, twelve women completed college (18%) and fifteen (23%) had advanced degrees in medicine, law, business, nursing, and scientific research. Approximately half the women interviewed held jobs outside the home. These demographic data are summarized in Table 1.

Participants had an average of 2 living children; 62 of 65 women had only female children. All 65 participants sought a male child, and 26 participants (40%) had undergone from 1 to 4 (average 1.4) sex-selective pregnancy terminations in the past.

The clinic-based sample was composed of 51 women utilizing ultrasound for sex determination. The subjects recruited through snowball sampling included 10 women who had used sperm sorting technology and 4 women who had undergone in vitro fertilization (IVF) with pre-implantation genetic diagnosis (PGD) to determine the sex of their fetus. All of the women who had used sperm sorting and those who had used IVF/PGD were carrying male offspring. Of the 51 women using ultrasound, 24 fetuses were determined to be male and 27 female. All but 3 of the women carrying a female fetus (89%) terminated their pregnancy following sex determination.

The major themes that arose from the interview transcripts included the cultural basis of son preference, the prior knowledge of sex selection, maintaining confidentiality, familial pressure to have sons, verbal and physical abuse, and issues related to reproductive choice.

Cultural understanding of son preference

In nearly every interview, women's first impulse was to refer to the concept of “culture” to explain the significance of a son in a mother's life. While some women protested the phenomenon of son preference, they still acknowledged that sons played a very culturally specific and valued role in the economic lives of families and the social lives of mothers. They did not necessarily agree with the gender inequalities that son preference indexed, but nonetheless felt that son preference was rooted in their understanding of their intertwined culture and social circumstances.

Table 1
Demographic characteristics of respondents.

Characteristic	Category	N (%)
Age	Range	19–44
	Mean	31
Indian State of origin	Punjab	34 (52%)
	Haryana & New Delhi	12 (18%)
	Gujarat	10 (15%)
	Tamil Nadu	6 (9%)
	Andhra Pradesh	3 (5%)
Education	High School or less	38 (58%)
	College	12 (18%)
	Graduate School	15 (23%)
Current/Previous Occupation	Homemaker	33 (51%)
	Skilled Professional	15 (23%)
	Clerical	6 (9%)
	Skilled labor	8 (12%)
	Unskilled labor	3 (4%)
Medical Insurance	Uninsured/Self Pay	21 (32%)
	Medi-Cal/Medicaid	23 (36%)
	Private	21 (32%)
Religious Affiliation	Sikh	42 (65%)
	Hindu	14 (22%)
	Jain	8 (12%)
	Muslim	1 (1%)
Past Sex-Selective Termination		26 (40%)
Current Method of Sex Selection	Ultrasound and selective abortion	51 (78%)
	Sperm sorting and insemination	10 (15%)
	Pre-Implantation	4 (6%)
	Genetic Diagnosis	
Identified Sex on Ultrasound (of 51 total)	Male	24 (47%)
	Female	27 (53%)
Women Carrying Female Fetus Who Terminated Most Recent Pregnancy	N/A	24 (89%)

In discussing son preference, women commonly referenced their own cultural beliefs about the roles of sons and daughters and the challenges of raising male and female children in a foreign society. These factors influenced women's reproductive decision making in ways that felt less coercive to women but nonetheless remained a source of conflict for many. Their attitudes mirrored those frequently observed in the Indian communities from which they emigrated.

For example, the concept of "a woman's duty" figured prominently in discussions about the importance of having a son. Women cited the experiences of their mothers and female relatives in emphasizing the elevated status and security of women with sons. If a woman did not produce a son for her husband's family, she was considered less valuable and, in some instances, infertile. Ironically, while many women disagreed with the exaggerated value placed on sons, particularly in the United States where girls could enjoy the same privileges of education and income that boys did, they also recognized the advantages of respect and status that having a son brought to a daughter-in-law.

"My mother only had me and my three sisters. Life was very hard for her, my dadiji [paternal grandmother] did not respect her because she had no son but her sisters-in-law did."

"My neighbor once told me that anyone can have a daughter but you must be very special to be able to have a son. Everyone in the family is very nice to a woman with a son because she has done her job."

In addressing son preference specifically, the majority of women discussed the culturally-rooted expectation that sons will care for their parents in old age and help their parents navigate the cultural complexities of the United States. Women also verbalized the belief that although American society would afford their daughters many opportunities that Indian society did not, their daughters would ultimately marry into another family. While women openly referenced numerous instances in which daughters, not sons, cared for their aging parents, they still believed that the roles of care-taking, wage earning, and cross-cultural negotiation were the duties of sons, not daughters. Despite several Sikh women voicing fear that their sons may face discrimination in the post 9/11 United States, the majority of women believed that, as men, their sons would be more reliable sources of monetary and emotional support, requiring less monitoring compared to their daughters.

In contrast, women spoke of their daughters with fear that they would be harder to raise in a non-Indian context. Women referenced sexual abuse, sexual assault, and consensual premarital sex as their biggest concerns about raising daughters in the West. Of these, consensual sex was women's greatest fear, particularly since many women felt that promiscuity was promoted in American films, music, and advertisements.

"With a boy, I don't have to worry about him coming home pregnant."

"Mothers have to be very careful with their daughters...I feel more scared of having a girl because there is more that can happen to her."

In addition to women's beliefs about the challenges of raising daughters compared to sons, participants also voiced a need for smaller families given the financial challenge of living abroad. Particularly for lower-income women, the expenses of clothing, food, education, and housing would have been split with extended family members had the family remained in India. In the absence of resource sharing, women felt even more strongly about limiting family size and ensuring the birth of a son.

"My sisters and brothers live so far away. Americans have strangers to take care of their children. My husband and I do not have enough money for that. So here, I am having fewer children than I might in India."

"Here, my son and daughter, they need nice clothes to wear to school. In India, they would have worn uniforms. I have to be very careful here what I spend. It's very expensive so I can only afford two children, and we wanted at least one son."

Prior knowledge of sex selection

Having grown up in India, many women remembered hearing about the "scan" (common parlance for sex determination ultrasounds) and seeing or hearing of advertisements stating "Spend 500 rupees now, Save 50,000 rupees later." Women understood these advertisements to mean that terminating a female fetus would spare parents the financial burden of a daughter's dowry and wedding. Because the use of obstetric ultrasound was closely monitored in India, many women were relieved to know that ultrasound-based sex determination was legal and routine in American prenatal care. As most of the women were only vaguely aware of ultrasound use to assess fetal and maternal health, some women spoke of their frustration with American physicians or ultrasound technicians who would not give information on fetal sex prior to 20 weeks' gestation, leading women to pursue sex

determination at private ultrasound clinics. Women expressed frustration that information on fetal sex could not be given earlier than 20–22 weeks in standard prenatal care appointments, whereas private clinics offered this information as early as 12 weeks at a substantial cost.

Women were concerned about the accuracy of the ultrasound results. Their articulated fear was that of receiving inaccurate results and carrying a female fetus to term. Women stated that they had heard of this happening, although nobody in the interview sample had personally experienced this. Women also desired to learn how to seek information on fetal sex during routine prenatal visits.

"I knew about these tests from living in India. But since my[American] doctor said no, we don't tell the sex of the baby [at 12 weeks' gestation], only the health, I came to [the private ultrasound clinic]."
"Why doesn't the doctor here [in America] tell me [the baby's sex]? It is legal, that much I know. Even though I pay health insurance, I have to pay more to find this out at another clinic."

Women had almost uniformly heard of more "difficult and expensive" [*mushkil aur mehenga*] methods of sex selection, including sperm sorting and PGD. The cost was generally prohibitive for most couples, but the 14 women who did pursue these methods financed the procedures with the partial support of extended family members. The women who pursued pre-implantation methods had already tried ultrasound sex determination an average of 2 times and sought to avoid further second trimester terminations. Because they lacked familiarity with these technologies and did not personally know anyone who had used them, they described their experiences as frightening and shameful:

"I had already had 3 abortions and did not want to have another. My husband found information about sperm sorting on the internet and so we thought we would try it."
"The doctor was a man and I felt scared when they did all the [gynecologic procedures] but I knew that if I wanted to have a son, I had to have courage and do this. But I felt very uncomfortable doing this."

Maintaining confidentiality

Despite their level of pre-immigration knowledge of ultrasound technology and the frequency with which it was used in India, women generally felt comfortable talking only to trusted relatives and friends about their experiences and were cautious about sharing their pursuit of a male child with anyone. Women recognized broad public opposition to this practice and therefore felt an overwhelming need to guard their privacy. Despite feeling that "everyone does this [*sab lok yeh karte hai*]," women felt a need to shield themselves from judgment for their actions. Couples frequently provided false names, addresses, and phone numbers to ultrasound clinic staff to prevent any written record of their having visited the clinic. In interviews, many women reported that they had sisters-in-law or other close relatives call to make appointments on their behalf to protect their identity. Women were generally only open with other women—relatives or friends—who they knew had pursued sex selection in the past, as they felt safe from judgment and free to share their experiences and concerns.

Women stated that they would never publicly discuss or share their participation in sex selection for fear of judgment and possible retribution, given strong religious sanctions against mistreatment of daughters and, in the Jain religion, the prohibition of abortion. They had all heard of the declining numbers of women in India due to sex selection and selective neglect of young girls. While they did not agree with these large scale demographic shifts and social

effects, they all believed that their individual decisions were important in the context of their lives and that their own decisions were unlikely to worsen existing social problems. Despite their conviction that their actions were not harmful or bad, women insisted on the privacy of their decision making.

Familial pressure to have sons

Women identified female in-laws and husbands as sources of significant pressure to have male children. This was especially true when in-laws were geographically close, but also occurred if the in-laws still lived in India. Other male relatives, such as brothers, fathers-in-law and brothers-in-law, were never described as sources of pressure but were also never cited as allies or sources of support.

Women framed the pressure they faced from female in-laws as embedded in a social context in which female in-laws openly inquired about the couple's family planning. This could range from gentle expressions of a desire for a grandson to daily questions about whether a woman was pregnant or trying to conceive. Women reported that female in-laws often tried to involve themselves in the timing of conception as well as later requests that a woman seek sex determination services. Women experienced verbal pressure even in the initial months of marriage, although at this stage the most important aspect of family planning was for the woman to prove her fertility. However, throughout each pregnancy, women spoke of the increasing pressure they felt to have sons. Approximately two-thirds of women cited direct verbal pressure primarily from their mother-in-law or sister-in-law to undergo early determination of fetal sex or sex selection in pursuit of a male child.

"My bhabhi [sister-in-law] always tells me she had to have the baby checked [to determine fetal sex] and I must do so too. I thought maybe my mother-in-law thought differently but she also said that if I want to remain in the family I must have a son."

"My first child is a girl. My mother-in-law said that is okay, she said at least it is good that I can have babies. But when my second child was also a girl, she did not want to hold her after the birth. She yelled at me that I should have had this test to know if I had a boy or girl. This is why I am getting the test now for my third child."

Ten women identified their husband as the primary source of pressure to have a son. Their description of pressure paralleled the narratives of women facing such pressure primarily from female in-laws. In the initial stages of family planning, husbands emphasized the need to produce a child, preferably but not necessarily a male child. However, they also made clear their expectation of having a son, and if the firstborn child was not male, women noted increasing amounts of pressure to undergo closely spaced pregnancies, ultrasound-based sex determination, and terminations in pursuit of a male child. If the couple knew about pre-implantation sex selection (sperm sorting or IVF/PGD), this was presented as a less desirable option both because of the cost and that the actual conception would be physician facilitated ("unnatural") rather than through intercourse ("natural").

"My husband said that I must give him a son. My first child was a girl and...I felt the pressure remained to have a son. I did not know about the test to find out if a baby is a boy or girl then. My husband heard about it from a friend and we have come here now to find out if we are having a son. If not, I will have to get an abortion because he does not want another daughter."

While women usually described one or two family members as exerting the greatest amount of pressure verbally, they also noted silence on the part of other family members, particularly their husband, in countering this pressure. Women understood this

silence as contributory to, and in some instances encouraging of, continued pressure to have sons:

“My husband did not say anything when my mother-in-law would tell me that I am useless. He would say, if we have a son, she won't say those things, so what should we do to have a son? I felt that...he should have defended me but because he said nothing she thought he agreed with her.”

“My mother in law stopped eating... She said she would starve unless she had a grandson. My husband did nothing. He asked me every day, ‘Do you want my mother to die?’ I was not ready to get pregnant so soon after my last child but I had to try. What could I do?”

Verbal and physical abuse

Forty women (62%) described verbal abuse from their female in laws or husbands. The abuse typically threatened their status as immigrant women and included culturally specific forms of shaming. Such shaming included threats to send women who did not have sons back to their natal families in India—indicating failure on the part of women's families to raise suitable wives—or threats that their husbands would divorce or abandon them to marry women who might provide them with sons. Women described feelings of extreme fear that they may be abandoned or divorced, as many of them did not have extended family in the United States.

“My mother in law always tells me I am useless because I do not have a son. If I do not have a son, she says, they will send me back to India.”

“My husband said he needed to have a son. He said that if I cannot give him a son since we have two daughters, he would need to find another woman... I felt sad and I was scared. If he left me and my daughters, how would I take care of myself? I could not stay here in this country.”

One-third of women described past physical abuse and neglect related specifically to their failing to produce a male child. The most common forms of neglect were the withholding of food, water, and rest during a woman's pregnancy with a female fetus, although women also described being hit, pushed, choked, and kicked in the abdomen in a husband's attempt to forcibly terminate a pregnancy. Some women reported that they were denied prenatal care if the fetus had been identified as female and four women reported that their families either did not take them to the hospital when they were in labor with a female child or pick them up after delivery.

“I decided to keep my second daughter once we found out it was a girl... I did not get enough food to eat during my pregnancy and I did not go to see the doctor...nobody cared how my health because I was having only a girl, not a boy.”

“My husband pushed me into a wall after the test showed another girl. He said he hoped the baby died.”

Reproductive choice

Most women spoke of their reproductive decision making as mediated by others in their extended family, particularly their husbands and mothers in law. To some extent, women understood and accepted their female in-laws' desire to make known their expectations of their daughters-in-law. However, women struggled to balance their desire to keep family planning a private matter to be discussed only with their husband and their perceived obligation to consider the opinions of extended family members in their reproductive decision making.

While every woman in the study desired children and felt that their husbands shared that desire, many did not feel empowered to engage in shared decision making around pregnancy timing or termination. In particular, women reported having multiple closely spaced pregnancies with terminations of female fetuses under pressure to have a male child. Women did not openly oppose their relatives urging them to seek a termination as many women believed consenting to sex determination implied consent for termination if the fetus was identified as female. Thus, consenting to obtaining a “scan” was a much more charged discussion. A number of women reported making appointments for terminations with medical providers prior to visiting sex determination clinics in the event that they were carrying a female fetus.

“When I went to the clinic, I knew I may have to...get [an abortion]. So when the doctor said I had a girl, I already knew what I had to do.”
“I called the abortion doctor because I felt this is easier. If I am having a girl it is easier mentally for me to know I have already made the decision. If I think about it after I find out [whether the sex is male or female], it may be more difficult.”

Despite feeling compelled to pursue a termination if their fetus was identified as female, women eloquently described their conflicted feelings about terminating a pregnancy with a female fetus when they themselves are female. In particular, women who had terminated prior pregnancies reported feelings of guilt and sadness over both their decisions and the context in which these decisions were made.

“I have gotten three abortions. Every time, I go and lie, tell [the physicians] that it was an accident or we cannot afford a baby. The truth is that they don't want me to have another girl.”
“It is not right that women must keep getting pregnant and keep getting abortions. We are women, yet we want no daughters. I cannot sleep for days after I had an abortion because I did not want it... I am ashamed.”

Although the majority of women pursued a termination if fetal sex was found to be female, three women chose not to pursue a termination. While all expressed ambivalence about termination generally, they cited the psychological and physical trauma experienced during prior terminations as reasons they chose not to pursue another. All three women referenced their inability to “save” their other daughter(s) during prior pregnancies and felt unable to deal with the guilt, shame, and sadness that they felt for terminating a healthy female fetus simply because of its sex. The families of two women agreed to support this decision as long as the wives in these families agreed to pursue another pregnancy. The husband of the other woman remained unsupportive of her decision. This woman felt that, had she been closer to her natal family, she would have gone back to live with her parents for the duration of her pregnancy. She was seriously contemplating leaving her husband because the extent of psychological and verbal abuse related to family planning.

Discussion

Despite the proliferation of bioethical (Chervenak & McCullough, 1996; Sauer, 2004) and aforementioned feminist analyses of the impact of reproductive technologies on women's reproductive choice, there has been comparatively little research exploring women's narratives about the pressure they face to have sons, the process of deciding to utilize sex selection technologies, and the physical and emotional health implications of both son preference and sex selection. This analysis of the narratives of 65 immigrant Indian women who attended sex selection clinics on the East and

West Coasts of the United States suggests that their reproductive decision making is influenced by their own cultural beliefs about the meaning of sons and daughters, economic constraints on family size, and pressure from husbands and female in-laws often accompanied by verbal and occasionally physical abuse. These narratives suggest that sex selection is both reflective of and shaped by pre-existing gender inequality that manifests itself in particular ways in the immigrant context, where women's immigration status and poorly developed support system make them more vulnerable to reproductive coercion and family violence. However, while women astutely identified and articulated these constraints imposed on their reproductive decision making, their pursuit of sex selection may also reflect an important mode of self empowerment and preservation in a country where a fuller range of reproductive options are available and legal.

Women's descriptions of the role that culture plays in their reproductive decision making are strongly rooted in their early socialization process within India, particularly when observing the suffering of female relatives without sons. While these conversations often began with women feeling ill-equipped to explain cultural reasons for son preference, they inevitably explored the necessity of sons for economic support and agreed that having a son guaranteed them a certain stability and acceptance in their marital home through the fulfillment of what they perceived to be a wife's duty. Although some women disagreed with the systemic subordination of women and power differentials between men and women in their communities, they recognized that having a son ensured respect, stability, and acceptance in their marital homes.

Kandiyoti's (1988) notion of the "patriarchal bargain" provides a theoretical framework in which to understand this behavior by describing the power women gain through sons: "In classic patriarchy, the subordination to men is offset by the control older women attain over younger women. However, women have access to the only type of labor power they can control, and to old age security, through their married sons." Interestingly, women felt that their status as immigrants made a son even more necessary because men were perceived as being better equipped to navigate the complexities of immigrant life despite their being occasionally subjected to religious and racial discrimination.

Compounding these notions of son preference was the expression of the difficulties of raising girls in the United States. While lack of family support for girls was often cited, more powerful were the expressions of fears that a sexually permissive environment would cause their daughters to engage in premarital sex. Concern about women's premarital sexual purity has been well documented in anthropological studies of gender and culture in South Asia and in the South Asian diaspora. The concept of *izzat* (honor) in particular has been cited as the cultural basis for the expectation of women's sexual purity, which is closely tied to family honor. In journalistic accounts of son preference in India, women have been noted to prefer sons because they want to protect girls from suffering as they themselves have: "What do you want us to do with our daughters? Why should we let them live? So that they can suffer like we do?" (Aravamudan, 2007, p. 27; Dogra, 2006). In the immigrant context, women spoke less about wanting to protect unborn girls from their own suffering and more about a combination of concern over a girl's premarital sexual practices and a desire to limit family size (and, therefore, the number of daughters) in an expensive Western setting.

While higher education is often thought to translate into enhanced female empowerment, our data suggests a distinction between financial/educational empowerment and empowerment within the context of marital relationships. Even some of the most highly educated and financially stable women interviewed spoke of household gender inequality precluding equal participation in

reproductive decision making and family planning. In India, researchers have found that higher levels of female education (Jha et al., 2006) and higher household income (Pande & Malhotra, 2006) may not deter women from seeking sex selection services since higher social status increases both awareness of technology and women's financial access to it.

Sex selection undertaken in the pursuit of a male child is often accompanied by varying degrees of verbal, emotional, and physical abuse, a finding that has been noted in prior studies of sex selection in India, Egypt, and Pakistan (Inhorn, 1996, 2003; Raj et al., 2010; Winkvist & Akhtar, 2000). Studies of intimate partner violence have also documented the involvement of extended family members in perpetration of violence against women (Chan, Brownridge, Tiwari, Fong, & Leung, 2008; Clark, Silverman, Shahrouri, Everson-Rose, & Groce, 2009; Khosla, Dua, Devi, & Sud, 2005; Raj et al., 2010). Our findings indicate that verbal, emotional, and physical abuse existed on a continuum, occurred in various combinations, and took place in an attempt to coerce a woman into getting pregnant, to pursue sex selection or sex determination, and/or to terminate a fetus identified as female. Such abuse could also take the form of denial of food and health care services if a woman chose to continue with a pregnancy her in-laws and/or husband protested.

Pregnancy and the postpartum period are recognized as times of increased vulnerability to violence (Bacchus, Mezey, & Bewley, 2006; Coker, 2007; Hathaway, Willis, Zimmer, & Silverman, 2005; Silverman, Decker, Reed, & Raj, 2006) and immigrant women subjected to domestic abuse or violence face less access to care due to linguistic barriers and lack of familiarity with American social services (Lee & Hadeed, 2009; Raj & Silverman, 2003). One-third of women in our study reported a history of family violence exacerbated when they did not give birth to a son. That they are at increased risk for psychological and physical morbidities is documented by their descriptions of depression, anxiety, chronic pain, physical abuse, closely spaced pregnancies, and forced abortions. Sex selection has long been considered a form of violence against women, and this research confirms that women themselves often experience pressure to have sons in abusive family contexts, as the lack of a male child becomes a reason for family members to initiate and continue verbal and physical abuse.

Our study thus represents a new contribution to the growing field of research examining the relationship between intimate partner violence and reproductive coercion (Miller, Jordan, Levenson, & Silverman, 2010). Our findings echo those of researchers who have found that intimate partner violence may be directly related to a woman's ability to control her fertility (Miller et al., 2007; Pallitto, Campbell, & O'Campo, 2005; Williams, Larsen, & McCloskey, 2008; Wingood & DiClemente, 1997) and may result in women's experiences of forced sex and denial of health care services if pregnant (Miller et al., 2010; Thiel de Bocanegra, Rostovtseva, Khera, & Godhwani, 2010). While these studies focus solely on the relationship between heterosexual partners, our study suggests the need to consider how the involvement of extended family members may contribute to reproductive coercion. Furthermore, our findings suggest the need for further exploration of the impact that fetal sex identification in particular may have on a woman's health during, and experience of, pregnancy. These data highlight several potential points of intervention for health care providers caring for pregnant women who may face reproductive coercion in the setting of family violence. As previous studies have noted (Moore, Frohwirth, & Miller, 2010), we found that pregnancy, termination of pregnancy, and the use of preconception reproductive technologies may be unintended and a product of an abusive environment created either by marital partners, extended family, or both.

While reproductive technologies have traditionally been viewed as presenting women with increased reproductive liberty, it has also been noted that technological advances can actually decrease the scope of women's reproductive choice (Beck-Gernsheim, 1989; Becker, 2000; Rapp, 1999). Most participants recognized that ultrasound technology not only allowed them to pursue sex selection, but its ready availability and legality in the U.S. increased the pressure and even obligation to use it. This paradox of technology and choice echoes Becker's (2000) descriptions of infertile couples who pursue endless cycles of IVF simply because the technology is available. As some women noted, uncertainty about the accuracy of newer sex selection technologies (such as at-home gender testing kits) led some to "double check" their results with additional ultrasound testing. In this manner, the technological choices available to women in the name of reproductive freedom actually left many women feeling less able to resist pressure to pursue multiple available routes of sex determination and sex selection. Women's own narratives of the impact that sex selection technology has on their lives and ability to exercise reproductive choice contrasts with the results of our qualitative research documenting the complex, multifaceted opinions of physician providers about the impact of sex selection technology on reproductive choice. In another paper, we document and analyze the varied reasons why many of these providers felt that offering sex selection expanded the scope and nature of women's reproductive freedom (Puri & Nachtigall, 2010). Finally, the disclosure of fetal sex during routine ultrasound and the ways that women experience punishment for carrying a fetus of the "wrong" sex illuminate the profound power that ultrasound results have to alter the course of a woman's pregnancy (Rapp, 1999).

However, despite the pressure that many women believed influenced their reproductive choices, some women also thought that pursuing sex selection was an assertion of independence and, perhaps, self-preservation (Dai, 2001). They also recognized that living in the United States afforded them the legal means and the technology to increase their power and security in their marital home by pursuing a son. In this manner, under limited and demanding circumstances beyond their control, these women challenge cultures of oppression in and through their reproductive decision making in a country offering a number of legal reproductive options.

Thus, despite the intention with which they are created, medical technologies such as ultrasound come to acquire meanings shaped by the sociocultural context in which they operate (Khanna, 1997; Rapp, 1999). Women uniformly believed that the main purpose of ultrasound technology was to provide information on fetal sex, an understanding that they learned first in India and an example of global technology assuming local meanings, even within a transnational context (Ginsburg & Rapp, 1995). That ultrasound technology assumes this particular social role both reflects and shapes underlying gender inequality in the sociocultural experiences of our informants. Far from being value neutral, medical technologies enabling sex selection mediate and modify pre-existing societal preferences for male children, facilitating a shift from female infanticide to more medically sanitized, legal ways of ensuring the birth of a son.

This study has several limitations. The controversial nature of the interview subject matter necessitated the participation of a self-selected, rather than random, sample of women. Additionally, while all patients emigrated from India, they were from culturally and linguistically distinct regions of the country and lived in different communities within the United States. These demographic differences complicate the task of applying generalizable conclusions about these women's experiences to larger Indian immigrant populations. Furthermore, because the sample recruited represents

women who actively pursued sex selection technologies, the narratives presented here may not be representative of the attitudes and beliefs that all Indian immigrants hold about the complex and multifaceted issues of son preference and sex selection.

Despite these limitations, our research highlights both the sociocultural meanings of and motivations for son preference and sex selection, their impact on the health of immigrant women, and the role that technology plays in facilitating a centuries-old practice. These findings may inform additional investigations of South Asian and other immigrant women's experiences of reproductive technologies, drawing attention to the complex nature of women's reproductive decision making. By addressing these multi-dimensional social and medical-technological issues, we hope that the perceived burden of "too many daughters" may someday be referenced only in its historical context.

Acknowledgements

This paper would not have been possible without the brave contributions of all of the women who shared their stories. We are very thankful to them for their courage and willingness to share the most challenging parts of their lives, and hope that their contributions will help to bring about lasting change. For their contributions to this project, we thank Guy Micco, Amar Jesani, Vibhuti Patel, Ameena Ahmed, Osagie Obasogie, and Arjun Rihan. This research was supported by the UCB-UCSF Joint Medical Program Research Fund, the Berkeley Human Rights Fellowship, and the UCSF PACCTR Research Fellowship, none of which had access to our data or participated in its analysis.

References

- Aravamudan, G. (2007). *Disappearing daughters: The tragedy of female foeticide*. New Delhi: Penguin Books.
- Bacchus, L., Mezey, G., & Bewley, S. (2006). A qualitative exploration of the nature of domestic violence in pregnancy. *Violence Against Women, 12*, 588–604.
- Beck-Gernsheim, E. (1989). From the pill to test tube babies: new options, new pressures in reproductive behavior. In K. Strother Radcliff (Ed.), *Healing technologies: Feminist perspectives* (pp. 23–40). Ann Arbor: University of Michigan Press.
- Becker, G. (2000). *The Elusive embryo: How men and women approach new reproductive technologies*. University of California Press.
- Becker, G., Castrillo, M., Jackson, R., & Nachtigall, R. D. (2006). Infertility among low-income Latinos. *Fertility and Sterility, 85*, 882–887.
- Chan, K. L., Brownridge, D. A., Tiwari, A., Fong, D. Y., & Leung, W. C. (2008). Understanding violence against Chinese women in Hong Kong: an analysis of risk factors with a special emphasis on the role of in-law conflict. *Violence Against Women, 11*, 1295–1312.
- Chervenak, F. A., & McCullough, L. B. (1996). Should sex identification be offered as part of the routine ultrasound examination? *Ultrasound in Obstetrics and Gynecology, 8*, 293–294.
- Clark, C. J., Silverman, J. G., Shahrouri, M., Everson-Rose, S., & Groce, N. (2009). The role of the extended family in women's risk of intimate partner violence in Jordan. *Social Science & Medicine, 70*, 144–151.
- Coker, A. L. (2007). Does physical intimate partner violence affect sexual health? A systematic review. *Trauma, Violence & Abuse, 8*, 149–177.
- Croll, E. (2000). *Endangered daughters: Discrimination and development in Asia*. London: Routledge.
- Dagar, R. (2001). *Life enhancing mechanisms, life depriving outcomes: case of female foeticide*. Chandigarh: Institute for Development and Communication.
- Dai, J. (2001). Preconception sex selection: perspective of a person of the undesired gender. *American Journal of Bioethics, 1*, 37–38.
- Dasgupta, M. (1987). Selective discrimination against female children in rural Punjab, India. *Population and Development Review, 13*, 77–100.
- Dogra, C. S. (2006). Death becomes her. *Outlook India*, 66–70, February 27, 2006.
- Fair, C. (1996). Female foeticide among Vancouver Sikhs: reconceptualizing sex selection in the North American diaspora. *International Journal of Punjab Studies, 3*, 1–44.
- Franklin, S., & Roberts, C. (2006). *Born and made: An ethnography of preimplantation genetic diagnosis*. Princeton: Princeton University Press.
- George, S. M., Abel, R., & Miller, B. D. (1992). Female infanticide in rural South India. *Economic and Political Weekly, 27*, 1153–1156.
- Ginsburg, F., & Rapp, R. (1995). *Conceiving the new world order: The global politics of reproduction*. Berkeley: University of California Press.
- Greenhalgh, S. (2008). *Just one child: Science and policy in Deng's China*. University of California Press.

- Hathaway, J. E., Willis, G., Zimmer, B., & Silverman, J. G. (2005). Impact of partner abuse on women's reproductive lives. *Journal of the American Medical Women's Association*, 60, 42–45.
- Inhorn, M. (1996). *Infertility and patriarchy: The cultural politics of gender and family life in Egypt*. Philadelphia: University of Pennsylvania Press.
- Inhorn, M. (2003). *Local babies, global science: Gender, religion, and in vitro fertilization in Egypt*. New York: Routledge Press.
- Jha, P., Kumar, R., Vasa, P., Dhingra, N., Thiruchelvam, D., & Moineddin, R. (2006). Low female [corrected]-to-male [corrected] sex ratio of children born in India: national survey of 1.1 million households. *Lancet*, 367, 211–218.
- Kandiyoti, D. (1998). Bargaining with patriarchy. *Gender and Society*, 2, 274–290.
- Khanna, S. (1997). Traditions and reproductive technology in an urbanizing North Indian village. *Social Science & Medicine*, 44, 171–180.
- Khosla, A. H., Dua, D., Devi, L., & Sud, S. S. (2005). Domestic violence in pregnancy in North Indian women. *Indian Journal of Medical Sciences*, 59, 195–199.
- Kishwar, M. (1995). When daughters are unwanted: sex determination tests in India. *Manushi*, 86, 15–22.
- Lee, Y. S., & Hadeed, L. (2009). Intimate partner violence among Asian immigrant communities: health/mental health consequences, help-seeking behaviors, and service utilization. *Trauma Violence Abuse*, 10, 143–170.
- Lyerly, A. D., Steinhauer, K., Voils, C., Namey, E., Alexander, C., Bankowski, B., et al. (2010). Fertility patients' views about frozen embryo disposition: results of a multi-institutional U.S. survey. *Fertility and Sterility*, 93, 499–509.
- Miller, E., Decker, M. R., Reed, E., Raj, A., Hathaway, J. E., & Silverman, J. G. (2007). Male partner pregnancy-promoting behaviors and adolescent partner violence: findings from a qualitative study with adolescent females. *Ambulatory Pediatrics*, 7, 360–366.
- Miller, E., Jordan, B., Levenson, R., & Silverman, J. G. (2010). Reproductive coercion: connecting the dots between partner violence and unintended pregnancy. *Contraception*, 81, 457–459.
- Miller, B. D. (1997). *The Endangered sex: Neglect of female children in rural North India*. Oxford: Oxford University Press.
- Moore, A. M., Frohwirth, L., & Miller, E. (2010). Male reproductive control of women who have experienced intimate partner violence in the United States. *Social Science & Medicine*, 70, 1737–1744.
- Pallitto, C. C., Campbell, J. C., & O'Campo, P. (2005). Is intimate partner violence associated with unintended pregnancy? A review of the literature. *Trauma Violence Abuse*, 6, 217–230.
- Pande, R., & Malhotra, A. (2006). *Son preference and daughter neglect in India: What happens to living girls?* Washington, D.C.: International Center for Research on Women.
- Patel, V. (1989). Sex-determination and sex- preselection tests in India: modern techniques for femicide. *Bulletin of Concerned Asian Scholars*, 21.
- Puri, S., & Nachtigall, D. (2010). "The ethics of sex selection: a comparison of the attitudes and experiences of primary care physicians and physician providers of clinical sex selection services. *Fertility and Sterility*, 93(7), 2107–2114.
- Raj, A., Sabarwal, S., Decker, M. R., Nair, S., Jethva, M., Krishnan, S., et al. (2010). Abuse from in-laws during pregnancy and post-partum: qualitative and quantitative findings from low-income mothers of infants in Mumbai, India. *Maternal and Child Health Journal*, . (print ahead of publication).
- Raj, A., & Silverman, J. (2003). Immigrant South Asian women at greater risk for injury from intimate partner violence. *American Journal of Public Health*, 93, 435–437.
- Ramanamma, A., & Bambawale, U. (1980). The mania for sons: an analysis of social values in South Asia. *Social Science & Medicine*, 15, 107–110.
- Rapp, R. (1999). *Testing women, testing the fetus: The social impact of amniocentesis in America*. New York: Routledge.
- Saetnan, A., Oudshoorn, N., & Kirejczyk, M. (Eds.). (2000). *Bodies of technology: Women's involvement with reproductive medicine*. Columbus: Ohio State University Press.
- Sauer, M. V. (2004). Gender selection: pressure from patients and industry should not alter our adherence to ethical guidelines. *American Journal of Obstetrics and Gynecology*, 5, 1543–1545.
- Silverman, J. G., Decker, M. R., Reed, E., & Raj, A. (2006). Intimate partner violence victimization prior to and during pregnancy among women residing in 26 U.S. states: associations with maternal and neonatal health. *American Journal of Obstetrics and Gynecology*, 195, 140–148.
- Thiel de Bocanegra, H., Rostovtseva, D. P., Khera, S., & Godhwani, N. (2010). Birth control sabotage and forced sex: experiences reported by women in domestic violence shelters. *Violence Against Women*, 16, 601–612.
- Williams, C. M., Larsen, U., & McCloskey, L. A. (2008). Intimate partner violence and women's contraceptive use. *Violence Against Women*, 14, 1382–1396.
- Wingood, G. M., & DiClemente, R. J. (1997). The effects of an abusive primary partner on the condom use and sexual negotiation practices of African-American women. *American Journal of Public Health*, 87, 1016–1018.
- Winkvist, A., & Akhtar, H. Z. (2000). God should give daughters to rich families only: attitudes towards childbearing among low-income women in Punjab, Pakistan. *Social Science & Medicine*, 51.