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Justice in the context of family balancing

Michelle L. McGowan, Ph.D. and

Case Western Reserve University, Department of Bioethics, 10900 Euclid Avenue, TA 200, Cleveland, OH44106

Richard R. Sharp, Ph.D.

Cleveland Clinic, Center for Ethics, Humanities and Spiritual Care, Department of Bioethics, Cleveland Clinic Main Campus, Mail Code JJ60, 9500 Euclid Avenue, Cleveland, OH 44195

Michelle L. McGowan: michelle.mcgowan@case.edu; Richard R. Sharp: sharpr3@ccf.org

Abstract

Bioethics and feminist scholarship has explored various justice implications of non-medical sex selection and family balancing. However, prospective users' viewpoints have been absent from the debate over the socially acceptable bounds of non-medical sex selection. This qualitative study provides a set of empirically-grounded perspectives on the moral values that underpin prospective users' conceptualizations of justice in the context of a family balancing program in the United States. The results indicate that couples pursuing family balancing understand justice primarily in individualist and familial terms rather than in terms of social justice for women and girls or for children resulting from sex selection. Study participants indicated that an individual's desire for gender balance in their family is ethically complex and may not be inherently sexist, immoral or socially consequential, particularly given the social context in which they live. Our findings suggest that the social conditions that contribute to prospective users' desires for gender balance in their families may direct them away from recognizing or engaging broader social justice concerns relating to sexism and stratified reproduction.

Keywords

ethics; gender; justice; family balancing; non-medical sex selection

Introduction

The use of reproductive technologies for non-medical sex selection has generated a great deal of debate within bioethics, feminist studies and medicine. This debate has focused on the moral permissibility of sex selection and the conditions under which it would be acceptable or unacceptable to choose the sex of one's offspring. One justification for sex selection that has provoked controversy is family balancing, a term used in the biomedical sector to characterize the practice of selecting spermatozoa or embryos on the basis of sex to "balance" the ratio of girls to boys in a family (Sauer 2004). Critiques of family balancing focus on the presumption that families with uneven sex ratios are somehow abnormal and how such rhetoric masks the many prejudicial implications of sex selection by couching

Correspondence to: Michelle L. McGowan, michelle.mcgowan@case.edu.

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decisions within the realm of family planning and reproductive choice (Ettorre et al. 2006; Sauer 2004).

Considering the controversy of family balancing, the Ethics Committee of the American Society for Reproductive Medicine (2001, 861) characterizes preconception gamete selection for family balancing as more ethically justifiable than embryo selection because it promotes gender variety in the family and “may not so greatly increase the risk of harm to children, women, or society that its use should be prohibited or condemned as unethical in all cases.” The Committee (1999) discourages the use of in vitro fertilization paired with preimplantation genetic diagnosis (IVF-PGD) to select embryos solely on the basis of sex due to the physical burdens and risks to women’s health associated with IVF and the cost and resources for an unnecessary medical intervention.

Though professional recommendations discourage IVF-PGD for sex selection and family balancing, there is no formal regulation of the practice, and data on the incidence of IVF-PGD for sex selection in the United States (US) is limited. The Centers for Disease Control and Prevention (2012) reports that IVF-PGD has comprised 4% to 5% of all IVF cycles in the US since 2004, however, this annual report does not differentiate reasons for the use of IVF-PGD. A 2005 survey of US fertility clinics revealed that 42% of responding clinics offered IVF-PGD to select embryos on the basis of sex (Baruch, Kaufman, and Hudson 2008). More recently, the Society for Assisted Reproductive Technology reported that use of IVF-PGD for non-medical sex selection increased from 2007 to 2008 by over 5% (Ginsburg et al. 2011). These reports suggest that, despite professional recommendations to the contrary (Ethics Committee of the American Society for Reproductive Medicine 1999), sex selection via IVF-PGD is available and incidence may be increasing in the US, though overall incidence is still infrequent.

Bioethics and feminist scholars have given considerable attention to the justice implications of this techno scientific family-building practice. However, prospective users’ viewpoints have been largely absent from discourse concerning the socially acceptable bounds of IVF-PGD’s usage. Little is known about the extent to which expert discourse on sex selection and family balancing informs the thinking of those most likely to seek IVF-PGD to select embryos on the basis of sex for family balancing purposes. To this end, the aims of this paper are to characterize the beliefs and attitudes of couples interested in using IVF-PGD for family balancing. It is our contention that the perspectives of some of the earliest potential adopters of IVF-PGD for sex selection in the US can contribute to the discourse on social justice by situating their moral reasoning within the rationality of individual choice. Insight into how potential adopters of family balancing conceptualize the social acceptability of this practice can further elucidate the socio-cultural and political conditions that have fostered the emergence of sex selection via IVF-PGD and reveal the social norms governing sex selection practices in the US.

Background

Bioethical approaches to sex selection and justice

Within Western bioethics the principle of justice guides ethical decision-making by “require[ing] equitable distribution of the benefits as well as the burdens associated with an intervention” (Merhi and Pal 2008, 591). Libertarian, egalitarian and relativist theories of justice underpin current bioethical debate on sex selection.

For libertarian theorists “a just society protects rights of property and liberty, allowing persons to improve their circumstances and protect their health on their own initiative” (Beauchamp and Childress 2009, 245). Libertarians consider reproductive genetic testing

(including IVF-PGD for sex selection) to be ethically justified so long as individuals are informed of the risks that they would be undertaking and can pay for the intervention (Mahowald 1994). In the absence of evidence that sex selection results in serious harms, it would be unjust to prohibit prospective parents from making the decision to choose the sex of their offspring or to engage in family balancing to create the desired family (Robertson 1994; 2002). Liberal and libertarian proponents of IVF-PGD for sex selection appeal to liberty for individual decision-makers, focusing on upholding privacy in reproductive decision-making (Malpani, Malpani, and Modi 2002; Merhi and Pal 2008; Savulescu 1999; Savulescu and Dahl 2000; Steinbock 2002).

Within a libertarian view, sex selection is permissible because it is an enactment of reproductive autonomy. In John Robertson's (1994) characterization of procreative liberty in a liberal society, the decision to have or not have children holds "presumptive primacy" and extends to choosing traits of one's offspring. Undue interference (by the government or other entities) into these private decisions would be a violation of individuals' reproductive rights and a gross injustice. While Robertson and others categorize sex selection as an expression of procreative liberty, they typically characterize this as a negative right, understood as an individual choice that should not be substantively limited by the state. Hence, within an expansive view of procreative liberty state regulation of sex selection would be suspect to the extent that it is seen as infringing upon autonomous reproductive decision-making. Yet, in this conceptualization of procreative liberty the state does not owe a duty to individuals to provide the means to help them pursue sex selection.

In contrast, egalitarian theorists have argued that the use of assisted reproductive technology (ART) to select embryos on the basis of sex is unjust because it perpetuates sex discrimination and reinforces women's subordinate position to men in society, or sexism (Blyth, Frith, and Crawshaw 2008). Egalitarian theorists also raise concerns that sex selection may impose expectations of children to conform to stereotypical gender norms (Seavilleklein and Sherwin 2007). To remedy such inequalities, Rao (2008) and others argue that imposing legal limits on technologies like IVF-PGD would not necessarily impinge on constitutional protections of equality. Egalitarians favor limiting use of reproductive technologies based on the concern that these technologies could generate, reinforce, and exacerbate gender discrimination and inequality in society.

Deploying a relativist approach, Dickens and colleagues (2005) argue that it would be unjust to treat all instances of sex selection as though they are alike because doing so ignores significant socio-cultural contextual differences. They argue that prohibiting sex selection in national and cultural contexts where gender discrimination and gender preference for boys is strong, such as in China and India, may be ethically justifiable as a strategy to promote gender equality in society (Dickens et al. 2005). In their view the social injustice manifested in sex selection is not something that can simply be universally regulated without sensitivity to the contexts in which these practices are situated; rather cultural change is necessary to right the wrongs of gender discrimination in society, since sex selection is a "symptom of pervasive social injustices against women" (Dickens et al. 2005, 176). In contrast, they argue that in contexts where a sex preference has not been discernable, such as North America, it would be unnecessary to prohibit sex selection and family balancing should be allowable.

Feminist approaches to sex selection and justice

According to Susan Sherwin (2007, 79), "feminists tend to share the three-part view that gender inequality exists, it is unjust, and social and political actions can help to correct inequities." Feminists largely contend that sex selection perpetuates sexism, and allowing it to continue supports injustice; however, they are not unified in their normative

conceptualizations of gender equality or strategies on how to promote equality and achieve social justice (Moazam 2004; Sherwin 2007).

A feminist egalitarian conceptualization of justice recognizes that reproductive decision-making and access to reproductive technologies occurs within a social context in which gender-based discrimination exists, hence regulatory actions may be needed which acknowledge this reality that limit individual liberties to promote equality (similarly to welfare and taxation programs in the US) (Mahowald 1994). Seavilleklein and Sherwin (2007, 15) argue for governmental prohibition of sex selection to ensure that use of medical resources and technology does not actively perpetuate gender discrimination. They argue that equating sex selection and gender selection “is not only misleading but may well be harmful to society, to individuals who do not fit well within the available dichotomous categories, and to children produced through sex selection techniques. The assumption that gender is easily characterized and reducible to sex is problematic for society in the sense that it may serve to make people in general less tolerant of diversity; this intolerance can have a significant impact on matters of social justice.”

Some feminist theorists move beyond egalitarian conceptualizations of justice to critique inequalities as systemic social problems experienced by groups rather than simply by individuals within said groups (Sherwin 2007). For instance, in reference to prenatal screening and sex-selective abortion, Farhat Moazam (2004) has argued that US-based feminist libertarian theorists’ conceptualizations of justice have been shaped by cultural factors at work in the American abortion debate. While Western feminists may find the practice of sex selection distasteful, they caution that prohibition of sex selection may erode respect for women’s reproductive autonomy and choices more broadly and cannot be ethically justified (Moazam 2004; Bhatia 2010). Moazam goes on to contrast Western feminist perspectives with those of Indian feminists who have used the power of the state to advocate for legislation to make sex selection illegal in India, arguing by disallowing sex selection the state can demonstrate that it will not tolerate further subjugation of women and devaluation of daughters as cultural and economic liabilities. She has argued that a prohibitionist stance that does not adequately take into consideration the social context and cultural factors that may complicate the efficacy, and indeed justice, of banning sex selection. Hence, Moazam argues that in socio-cultural contexts where son preference and subjugation of women is pervasive, the use of state power to positively impact public welfare may eventually be more efficacious in achieving justice than an approach that maintains the primacy of individual reproductive autonomy and choice regarding sex selection.

While scholarship in feminist bioethics has debated the appeal of and need for various regulatory approaches to sex selection, feminist social scientists such as Rayna Rapp (2011, 696) have argued that “any transformation of child-making proceeds not only through the medicalization of women’s bodies; it always and also involves simultaneous entanglement with gender and generational relations, kinship, religious, and governmental regulation at both the local and the international level.” This scholarship recognizes the proliferation of the ART market in the industrialized North (Rapp 2011) and characterizes the “choice” to engage in family balancing in the US as one imbued with social-economic privilege which needs to be contextualized within an already unjust social structure (Rothman 1999). They argue that feminist attention to reproduction should include not only considerations of individual liberty and choice, but also considerations of social justice within a larger socio-economic and political context in which reproduction is stratified between privileged and marginalized populations within and across cultures (Meleo-Erwin & Rothman 2011; Rapp 2011).

For instance, Bhatia (2010) argues that the rationality governing family balancing in the US context is premised on the notion that using technological means to have children of both genders in one's family does not promote gender discrimination. She contends that this conclusion is based on the assumption that son preference is not a relevant societal concern in the US, and that this framing has the potential to exacerbate gender inequality and transnational social stratifications and power dynamics evident in the practice of sex selection. She draws attention to the socioeconomic barriers inherent in sex selection practices, such that hi-tech sex selection and family balancing techniques limit availability to those who are wealthy, in contrast to prenatal sex selection practices that would be more accessible to women with lesser economic resources. Bhatia (2010, 275) cautions that "moral distinctions may be made according to the type of technology used, that is, assisted reproduction (read: good sex selection) versus abortion (read: bad sex selection)," illustrating how power relations could further stratify reproduction and exacerbate gender inequalities within and across cultural contexts.

Significance

As the preceding literature review demonstrates, the justice implications of sex selection and family balancing have garnered much attention in the bioethics and feminist literatures. To date there has been little empirical research engaging attitudes towards sex selection. Empirical research on the public's perspectives on sex selection in Australia and the United Kingdom, where medically-indicated sex selection is permissive and non-medical sex selection is disallowed, suggested that non-medical sex selection is not morally justifiably (Kippen et al. 2011; Scully et al. 2007). In contrast, focus group research to elucidate lay perspectives on preconception family balancing techniques in the US revealed more variable attitudes, and suggested that the harms associated with preconception sex selection were not viewed as significant enough to limit individuals in their use (Kalfoglou et al. 2008).

User perspectives from social contexts in which family balancing techniques such as IVF-PGD "remain governed only by the marketplace" (Rapp 2011, 696) have largely been missing from this discourse. It is important to capture the salient moral values articulated by those who are interested in pursuing these technologies to assess what they reveal about social norms in specific contexts, and the extent to which these norms engage social justice concerns. Building upon previous research on prospective users' motivations and moral framings of family balancing (Authors et al. 2010), we examined couples' understandings of the social implications of family balancing techniques. Our study provides a unique set of empirically-grounded perspectives on how prospective users of family balancing assess the social implications of sex selection and family balancing, and how their viewpoints resonate with conclusions drawn in bioethical and feminist scholarship regarding conceptualizations of reproductive justice. Prospective user perspectives also have the potential to provide insights into pending or emerging theoretical debates about reproductive justice and the use of IVF-PGD for family balancing.

Methods

Couples interested in pursuing IVF-PGD for sex selection were recruited through a clinical research study at Baylor College of Medicine, a private medical school in Houston, Texas, US. The research study was approved by the Baylor College of Medicine Institutional Review Board. Couples interested in enrolling in the clinical research study participated in an interview with a medical ethicist to discuss their interest in using IVF-PGD for sex selection. A semi-structured interviewer guide was used to promote consistency of approach across interviews. The interview guide included questions pertaining to couples': (i) attitudes about sex selection as a social practice, (ii) understandings of sexism and sex

discrimination, and (iii) views on the scope of IVF-PGD use. To elucidate participants' attitudes towards sex selection as social practice, interviewers queried: "Why do you think it's important for parents like yourselves to be able to participate in a family balancing program?" and "What do you see as the main reasons that couples should be allowed to use IVF-PGD for family balancing?" For participants' views on the scope of IVF-PGD use, interviewers asked: "Does the use of IVF-PGD for family balancing cross important moral boundaries? What about choosing the sex of one's first child or selecting other physical traits such as height or hair color? Should parents be allowed to use this technology for those purposes?" To begin a discussion with participants regarding discrimination, interviewers probed: "One concern that some folks have expressed is that if we allow couples to choose the sex of their child that over time that might give rise to some form of gender-based discrimination. Is that something that you're worried about?" Interviewers asked multiple follow-up questions to clarify respondent answers and provide additional insights into the reasoning that respondents used to support specific beliefs. Interviews were not framed to interrogate participants' understandings of justice specifically. Rather, interviewers posed problem statements and questions to encourage participants to use their own words, normative values and moral frameworks to describe how they understood the morality, justice and limits of family balancing.

Interviews were conducted from November 2005 to April 2006 and lasted 20 to 75 minutes. Participants were not compensated for their participation in this study. All interviews were audio recorded, transcribed, and de-identified through the replacement of personal identifiers with interview identification numbers. In an iterative process using inductive methods, the researchers used a subset of transcripts to generate a coding scheme to categorize the text into primary thematic domains, subdomains, and more specific categories. Using the coding scheme, all interview transcripts were double coded by two research assistants and were analyzed for thematic content using qualitative data analysis software (QSR NVivo 2.0). Data analysis involved thematic analysis, with thematic coding limited to moral and liberty appeals, ethical beliefs, religious values, economic justifications, and related sociocultural concepts. Interviewer notes were used to supplement and refine understandings of discursive themes.

Results

Characteristics of couples pursuing IVF-PGD for sex selection

The research coordinator received 492 inquiries about the study. The enrollment target for the study was 50 couples, so the research coordinator scheduled 50 couples who met the enrollment criteria for in-person clinic appointments to learn more about the study. Eligibility was restricted to couples who had at least one biological child together of the opposite sex they desired for the next pregnancy. Enrollment was further limited to couples with women ages 18–42 who met the standard medical criteria to undergo IVF. Couples in the study were responsible for financial costs associated with undergoing IVF-PGD treatment at Baylor in Houston. Of the 50 couples scheduled to be seen in-person, only 18 attended their scheduled appointments and were presented with the opportunity to participate in the study. These 18 couples consented to participate and were interviewed as couples for the study. In one case, the male partner was not available for the interview, resulting in a total number of 18 interviews with 35 participants (17 men and 18 women). The mean age for women pursuing sex selection was 32 years. Men were often a few years older than women, with a mean age of 35 years. All participants self-identified as heterosexual and married. Participants self-identified their ethnicity as Caucasian (17), Hispanic (8), Asian (6), African (3) and mixed heritage (2) and most characterized themselves as Christian (29). Twelve of the eighteen couples had annual household incomes above \$60,000. All of the couples had at least one child of the opposite sex from that being

sought through the family balancing program. Four couples had one child, eight had two children, five had three children, and one couple had four children. Fourteen couples indicated a preference for a boy and four preferred a girl. Participants first learned of the research study through a variety of avenues, including the internet, television news stories, friends, family members, and healthcare providers.

Appeals to reproductive liberty

All couples expressed strong commitments to individual reproductive autonomy, stressing the importance of having access to technologies such as IVF and PGD to help them achieve their personal reproductive goals. Nearly all couples recognized the socially contentious nature of using IVF-PGD for sex selection and could articulate competing moral perspectives on the issue. Although at least one member of the couple, and often both, could be characterized as highly enthusiastic about the use of IVF-PGD for sex selection, this enthusiasm did not blind couples to competing perspectives. For example, many couples discussed critiques of the notions that sex selection is playing God, a form of genetic engineering and could perpetuate gender discrimination.

While recognizing the ethical controversy over sex selection, most couples viewed the use of IVF-PGD as generally safe. In the absence of major safety-related concerns about sex selection techniques, they felt it inappropriate to deny couples access to IVF-PGD for sex selection. In fact, all couples considered reproductive decisions to be highly private matters and believed that parents should be allowed to make such decisions independently. Participants commonly made statements regarding the use of IVF-PGD for sex selection like:

I think it's a personal decision for us and it's really nobody else's business... This is the United States and you know, we get to do everything else we want to do. I don't think that the government should come in and say you can't do that because we don't regulate on other ethical issues. I don't think that this should be one of those that they should step in and do that. (Couple 12, mother of three boys)

This stance mirrors the libertarian bioethical argument made by Robertson (1994) that procreative liberty has historically held "presumptive primacy" in the US socio-legal context. This position maintains that those who wish to limit the reproductive decisions of others have the burden of demonstrating that the reproductive decision in question would create substantial harm, otherwise individuals should be free to make their own reproductive decisions without interference from the state or other actors.

Further extending the rationale of the presumptive primacy of procreative liberty, several couples compared the use of IVF-PGD to decisions about abortion, maintaining that individuals should have the right to make such reproductive decisions privately. As one participant articulated:

I believe that... it's not if you think people should be allowed to do it or not allowed to do it. I think that the fact is that you have the decision to make. It belongs to you not to any other entity. The issue and specifically whether its abortion or gender selection doesn't matter, the issue is the decision is the parents' to make not anybody else's. (Couple 2, father of one girl)

Couples frequently likened the use of IVF-PGD for sex selection to other types of fertility treatments. Many couples felt that the use of IVF-PGD for non-medical sex selection raises the same ethical considerations as the use of IVF for medical reasons. These issues center on questions about the creation and destruction of human embryos, and participants reasoned that if it is considered socially acceptable to create and destroy human embryos for fertility treatments or to test embryos for medical indications, then the same opportunities should be

extended to couples seeking a child of a particular sex. Their appeals to reproductive liberty demonstrate that the study participants viewed sex selection as analogous to other forms of reproductive interventions, even when the reproductive technologies had different goals (i.e. facilitating a pregnancy versus selection of a particular type of embryo). Their reasoning suggests that if other forms of ART are socially accepted, then treating sex selection differently would entail an unjust constraint on their reproductive liberty.

Similarly, participants largely rejected the notion that sex selection was “playing God.” Many couples reasoned that if medical applications of IVF were acceptable, despite being an “unnatural” method of conceiving a child, then the use of IVF-PGD for sex selection should be viewed in the same light. From a moral perspective, the orientation of the couples is noteworthy here; their focus on the permissibility of sex selection hinged on the nature of the creation and manipulation of embryos, and not on the aims of the intervention. For instance, drawing from their own faith views, two fathers articulated that if God had wanted to disallow sex selection techniques, *he* wouldn’t make it possible (Couple 7, father of three boys and Couple 8, father of two girls). However, a more common position amongst participants is reflected in the following statement:

I know there’s a lot of skepticism and you know and saying that and it’s not God’s will. But I don’t think anyone can decide what’s right for any particular person. I mean there’s [sic] a lot of things people probably shouldn’t be doing but they get done anyways. I mean as far as IVF is concerned, I mean me myself I’ve heard the pros and cons from some of my friends, some that are kind of like ‘well, you know I’d just try to have you know another kid just to see what I would have but I don’t know.’ But to me it’s a choice that I want to make. I should be able to make it and no one should be able to tell... it’s a sin to do that. (Couple 6, mother of two girls)

Most couples thought that the use of IVF-PGD for sex selection was inevitable now that the technology was available for uses other than to screen for heritable genetic conditions, and many believed PGD would be widely used for sex selection and family balancing in the future.

Appeals to socio-economic concerns

Couples often articulated cost-benefit arguments in support of allowing IVF-PGD to be used for sex selection. In their view, restricting families to conventional procreation would unfairly burden those couples who had not been favored by the natural lottery to have a gender-balanced family. For example, many couples felt that allowing sex selection techniques would result in fewer children of the “unwanted gender” (Couple 3, father of one girl). Some couples expressed this position within the context of a single family, maintaining that if couples were allowed to use IVF-PGD for sex selection, they would not feel pressure to keep trying to have a child of the preferred sex or having a family that is larger than they would like. Making this appeal to the impact on the family economy of having more children, one participant stated:

I always wanted a son and I don’t see us getting to the point where we have four or five children and keeping trying... I think we’re both realistic enough to know that the financial pressure, we probably can’t do that... At this point we’re going to explore every avenue to increase the likelihood of having that boy sooner rather than by chance later (let’s say) or never. (Couple 8, father of two girls)

Other couples maintained that some parents are better suited to raise children of one sex and that children benefit from being raised around children of the opposite gender. In the same spirit, Couple 9, who already had two girls and desired a boy, said that sex selection should be allowed because it would prevent parents from being disappointed with an “unwanted”

child and developing a poor relationship with a child of the “wrong” sex. Considering economies of scale at the family- and population-levels for the impact of natural conception versus sex selection, they stated:

Father 9: If I can select the sex now and I can stop having so many kids and decrease the size of the population so I can have the boy now I can probably stop. But if I continue have girls then I’ll probably end up having ten kids.

Mother 9: We believe in having a set number of kids. I don’t think that.

Father 9: But I’ll continue to try if I can’t have a boy.

These petitions to the moral permissibility of sex selection appeal to economic, family-centric and population-level conceptualizations of justice. Applied to an international population-level understanding of socio-economic justice, two couples also stated concerns about the problem of gender preference in Asian cultures, suggesting that use of IVF-PGD for sex selection would prevent many elective abortions of female fetuses and girls being placed in orphanages after birth. Considering whether non-medical sex selection via IVF-PGD should be available to couples without any children one participant pondered:

I think you’re pushing the boundaries when you open it up to couples that don’t have any children at all... I think that’s when you’re starting down the whole road that’s going on in China. I just think that’s what happens. Although you would prevent a lot of those horrible things: these children that are sitting in these Chinese orphanages because they [their parents] don’t want these girls. (Couple 12, mother of three boys)

In each of these appeals, the basic claim being made by couples was that, on average, there may be more individual, familial, and population-level socio-economic benefits than harms associated with the use of IVF-PGD for sex selection.

Disavowal of sexism and sex-based discrimination

While highlighting the potential benefit of sex selection in cultures where a son preference is well-recognized, it was uncommon for couples to express moral concerns that they themselves might be perpetuating sexism through their own personal use of IVF-PGD. Rather, they largely felt that they were simply seeking balance within their own families.

Although there were frequent references in the interviews to gender bias in China and India, most couples felt that prospects of sex-based discrimination were unlikely in the US. This is noteworthy given that fourteen couples sought a boy and four preferred a girl for their next child, suggesting a son-preference amongst couples seeking to use IVF-PGD for family balancing in the US. Most couples felt that it would be rare for people living in the US to want only children of one sex, although some of the participants assumed that everyone would want a son. For instance, two participants justified their positions by saying:

I think that in the United States, I don’t think there is that sex discrimination. I don’t think it’s especially for people who already have the sex. For instance, we have two girls. I don’t think that that shows a sex discrimination like we prefer a boy over a girl. It’s just to help, not for family selecting. (Couple 4, mother of two girls)

I don’t think that we’re choosing to have a boy just to have boys so I think I’m not worried about that cause if I had boys if probably want to have girls, I’d probably being coming here to have a girl to offset the family. So, I don’t think that’s a concern for me or for our family. I think that they’re happy to have both sexes. We just, we’re just trying to equal it out, that’s all. So I don’t, I mean I think I can see

how people would see that if you were only planning to have one sex but if you're trying to do it to make some more harmony in the whole family and extended family I don't see how you're really playing God. I mean you are in a way selecting but you're not doing it for negative reasons. (Couple 8, mother of two girls)

Drawing moral boundaries

The emphasis that couples put on the moral acceptability of achieving gender balance in their own families was less definitive when they were asked to consider the use of IVF-PGD to select the sex of one's first child. Although some couples felt it would be problematic to use IVF-PGD to select the sex of one's first child, couples were divided on this issue. Some thought that choosing the sex of one's firstborn would be acceptable, but the majority of couples felt that sex selection should be limited to family balancing to avoid taking steps towards morally problematic applications of the technology. While the couples did not raise specific concerns regarding a moral imperative to maintain gender equality, their concerns about limiting this technique to applications of family balancing hint at moral undertones promoting equality of the sexes (at least in large population frequencies). Though not a universal or firm stance, the couples' focus on equality of representation of the sexes is consistent with an egalitarian conceptualization of reproductive justice.

Couples tended to express few reservations about the potential use of IVF-PGD for other purposes, such as selection of eye color, hair color, height, and so forth even though the technology has not yet become available to screen embryos for these phenotypic features. Even when couples disapproved of using IVF-PGD to select for traits like eye color or height, many continued to maintain that couples should have the right to make such decisions without interference. For example, differentiating between using IVF-PGD to select for sex, which is currently technologically feasible, and potential future uses, one participant stated:

The sex you could have, like you have three daughters and you know you want that son before you don't have any more children or it just seems weird to talk about it in a sense that we have three blonde girls and you want a brunette you know. I don't know, it just doesn't make as much sense, it doesn't mean as much to me I guess. I wouldn't be the one. I wouldn't stop someone else from doing it but it just wouldn't be for me you know. (Couple 1, father of one girl)

However, couples often drew sharper moral distinctions between the use of IVF-PGD for sex selection and genetic engineering. Couples typically viewed sex selection as an acceptable practice but felt that a moral boundary would be crossed by allowing couples to select for various traits that do not occur naturally. These couples reasoned that sex selection does not involve creating an "artificial" embryo or manipulating the genes of an embryo for specific results that would be impossible through "natural" methods of procreation. Couples who expressed this view highlighted the degree of control made possible through genetic engineering and contrasted this control with sex selection. Sex selection was acceptable and engineering was "playing God." One participant used the metaphor of buying a car to make this point, saying "a car, its already made you just pick and choose what car you want" (Couple 6, father of two girls), indicating that choosing IVF-PGD embryos is akin to choosing a car off the lot, whereas genetic engineering is more like designing your own car from scratch.

Discussion

The topic of sex selection has garnered considerable attention in bioethical and feminist scholarship as well as in professional debates over offering sex selection services in the clinical context. It is our contention that situating the perspectives of patients seeking IVF-

PGD for family balancing within relevant theories of justice can contribute to the broader discourse on sex selection and social justice. However, as the results of this empirical study demonstrate, a complex range of conceptualizations of reproductive justice permeate patient perspectives on sex selection and family balancing. Thus, the question remains as to whether and how patient perspectives challenge or enrich existing bioethical and feminist claims about the relationship between sex selection and justice.

While study participants recognized sex selection as a socially contested practice, they frequently utilized rhetoric that upheld libertarian notions of privacy in reproductive decision-making and the right to pursue one's family form without government intrusion. The notions of reproductive rights, individual liberty and privacy as defining features of a just society mattered for these couples as they considered their own reproductive decisions. This finding is consistent with the emphasis that the American public and libertarian bioethical normative analyses have placed on reproductive liberty interests (Kalfoglou et al. 2008; Malpani, Malpani, and Modi 2002; Merhi and Pal 2008; Savulescu 1999; Savulescu and Dahl 2000). In addition to referring to their own pursuit of sex selection, these couples characterized justice in terms that drew parallels to culturally embedded libertarian values of upholding individual rights to abortion and other reproductive technologies in the US context (Moazam 2004).

Nonetheless, participants' conceptualizations of justice were not wholly consistent with libertarian ideals. Participants indicated that they would set their own moral boundaries for the use of IVF-PGD for family balancing purposes, echoing egalitarian concerns about reproductive justice. At the same time, participants expressed varying degrees of libertarian leanings towards procreative liberty, even if it would not appeal to them personally. This was evident in endorsements of trait selection and sex selection for one's first pregnancy. Interestingly, participants' moral differentiation between various applications of sex selection may be out of step with state interests in protecting equality. As Rao (2008) has argued, permitting IVF-PGD to achieve a gender balanced family is seen as a "normal" desire in US society, but prohibiting sex selection for sons for cultural reasons is often viewed as questionable in the US because of the potential for disparate access based on the couples' identities, characteristics and preferences.

While participants supported a libertarian approach to reproductive autonomy, they often questioned an unlimited approach to procreative liberty, particularly when it came to the idea of using genetic engineering for family building. Genetic engineering was seen by some couples as crossing a moral boundary because it extends too much control to parents, allowing them to "play God" (a result also obtained by Kalfoglou and colleagues (2008)).

Participants in this study also acknowledged that the potential for gender discrimination still exists, particularly in Asian cultures with a strong son preference. To remediate gender discrimination, some suggested that using IVF-PGD for sex selection would be a preferable alternative to aborting female fetuses and putting girls up for adoption. In their view, allowing prospective parents to make decisions that best suit their families would result in fewer children of the undesired gender and contribute to the financial well-being of the family. Some participants felt selecting embryos would put fewer physical burdens on prospective mothers and lesser emotional burdens on families than if the pregnancy turned out to be of the "unwanted" sex and would be a lesser injustice than the alternatives, even if it means excluding female embryos. These participants' views reflect Moazam's (2004) contention that the practice of condemning sex selection needs to be situated geographically and culturally – arguing that in the context of India, for example, sex selection is not simply a "free" and autonomous choice reflecting a preference for boys, but one made in the context in which daughters are considered cultural and economic liabilities for the family.

However, participants' characterizations of remedies for gender discrimination via hi-tech sex selection contributes to "othering" low-tech sex selective practices in Asia (Bhatia 2010) and fails to problematize the values perpetuating son preference and sex selection practices regardless of the technique employed.

In addition, casting hi-tech reproduction via IVF-PGD as a preferable reproductive choice in comparison to abortion and adoption reflects the socio-economic privilege of participants in this study. The remedy proposed by participants to combat gender discrimination via embryo selection neglects to consider the cost of IVF-PGD for sex selection, which would be inaccessible for most people – both in the US and abroad. Hence, the option to engage in hi-tech family balancing is a "choice" that is only available to well-resourced individuals (Bhatia 2010; Rothman 1999). Yet, this broader social concern was not evident in the views of couples seeking family balancing in the US.

Rather, couples in this study distanced their personal desires from discriminatory values and practices in "other" cultures. They understood the society in which they lived as devoid of egregious forms of sexism. Rather than having a preference for sons or daughters, they felt that the ideal family form should include children of both sexes and that this arrangement would promote harmony in the family. They believed that seeking balance was not unjust or negative because it expressed appreciation for what both genders (presuming conformity to gendered social norms) would contribute to the family.

Supporting this view, Dickens et al. (2005) have argued that in many countries, including the US, Canada, and the United Kingdom, parents have no preference regarding the sex of their children, and empirical research in these countries reports that parents would be in favor of using family balancing technologies if they only had children of one sex (Dickens et al. 2005; Jain et al. 2005). Dickens et al. (2005) argue that where sex preference does not exist it would be an ethical injustice to prohibit sex selection for family balancing; rather each sociocultural context should be assessed based on its unique characteristics. From this perspective, placing limits on sex selection in the US may be an injustice because prospective users claim not to uphold a preference for either sex.

On the other hand, as Bhatia (2010, 263) has argued, "viewing Eastern and Western contexts as oppositional and unequal immunizes U.S. sex selection from interrogation on cultural grounds." The makeup of this small qualitative sample in which 14 of 18 couples were seeking family balancing to have a boy may call into question the veracity of the claims that gender preference, family expectations, and cultural norms do not apply in the US context, or at the very least amongst those enthusiastic enough about sex selection to pursue it seriously. Further, this study demonstrates that the vision of the nuclear family of a father, mother, son and daughter has been deeply normalized in this prospective user population as the ideal family form. The conceptualization of the normalized or idealized family form as being nuclear and "gender-balanced" may make invisible the perpetuation of a more insidious form of gender-based discrimination or injustice, mediated in this setting by family-centered and scripted gender roles. As Bhatia (2010) and Seavilleklein and Sherwin (2007) have argued, using family balancing techniques does not necessarily mean that parents will raise their children in gender-normative ways, but they may be more likely to equate sex and gender which may raise the potential for intolerance for diversity in gender roles. Authors (2010) demonstrate that prospective parents seeking sex selection have very specific gender expectations and desires concerning the personal relationships they will have with their future children– including passing on the family name to a son and walking a daughter down the aisle at her wedding - that may be "fueled by normative stereotypes of gender" (Bhatia 2010, 271) that are culturally embedded. The social implications of this conceptualization of the ideal family in the US context may be that achieving the norm may

require access to reproductive technologies to balance the sex ratio in one's family, resulting in further stratification, medicalization and commodification of reproduction (Bhatia 2010; Meleo-Erwin & Rothman 2011). Furthermore, the endorsement of the primacy of reproductive liberty above all other ethical and social values associated with family balancing strategies may continue to perpetuate a moral hierarchy of sex selective practices and further stratify reproduction on a global scale (Bhatia 2010; Rothman 1999; Meleo-Erwin & Rothman 2011; Rapp 2011).

This study was limited to a small number of participants who responded to several non-standardized announcements of the availability of sex selection in a research study at a single academic medical center in the US. Their viewpoints may not be representative of individuals seeking family balancing in other clinical settings or who would not have fit the eligibility requirements of this study. It is noteworthy, however, that every couple who visited the clinic to consider participation in the research study was interviewed. Future research should seek to characterize moral attitudes and beliefs among both heterosexual and same-sex couples seeking IVF-PGD for sex selection in other clinical settings and cultural contexts in order to further elucidate broader implications of the practice for social justice.

In conclusion, our findings suggest that couples seeking IVF-PGD for family balancing in the US understand justice in individualist and familial terms rather than in terms of social justice for women and girls or for children who are the product of sex selection. Because they do not view family balancing practices in the US as a manifestation of sex discrimination, their conceptualizations of justice are framed largely through the lens of individual choice and reproductive rights. Couples who participated in this study also voiced a less commonly articulated perspective in the bioethics and feminist studies literatures, specifically that an individual's desire for gender balance in their family is ethically complex and may not be inherently sexist, immoral or socially consequential (Steinbock 2002), given the social context in which this practice is situated. In making the relativist claim that sex selection means different things in different social contexts these prospective users' perspectives highlight the importance of understanding the ideological and cultural contexts in which these reproductive decisions are made and how power operates in that context (Ginsburg and Rapp 1995; Rapp 2011). Not surprisingly, the social conditions that contributed to couples' desire to pursue sex selection may direct them away from recognizing broader considerations of social justice. This is not to argue that these couples' claims settle the scholarly debate about whether sex selection is just. Rather, these empirically-grounded assessments of reproductive liberty (and its scope) and reproductive justice demonstrate that it is equally important to reflect upon and contextualize the ethical tensions that prospective users raise with regard to existing technologies that enable sex selection.

In the end, neither scholarship nor prospective user perspectives alone can stand in for sustained dialogue about how individuals' reproductive decisions may contribute to perpetuating the injustices of sexism and stratified reproduction. The availability of these technologies demands that constituencies, including bioethicists, feminists, social scientists, policy makers, clinicians, individuals seeking in sex selection and the lay public, wrestle with the stakes of engaging in sex selection simultaneously as individualized, familial, and social practice with implications for social justice.

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