



www.sciencedirect.com
www.rbmsociety.com



ORIGINAL ARTICLE

Conceptualizing aged reproduction: genetic connectedness, son preference and assisted reproduction in North India

Anindita Majumdar

Department of Liberal Arts, Indian Institute of Technology Hyderabad, Sangareddy, Telangana, India



Anindita Majumdar is an assistant professor at the Department of Liberal Arts, Indian Institute of Technology Hyderabad, India. The research for this paper is based on fieldwork in North India amongst postmenopausal couples who became pregnant through the use of assisted reproductive technology. She has published *Transnational Commercial Surrogacy and the (Un)Making of Kin in India* (2017), and *Oxford India Short Introductions Series on Surrogacy* (2019).

Abstract In this paper, I explore the narratives on the administration of assisted reproductive technology (ART) treatments amongst ageing men and women who are past their 'reproductive prime'. I use the phrase 'past their reproductive prime' with caution as ART has the capability to resurrect the desire, quest and conception of children amongst these ageing women and men. In rural agrarian Haryana in North India, ART panders to, and provides, potent narratives for perpetuation of the patrilineage for genetic continuity through the male line. The administration of ART treatments to this particular demographic is undertaken through the 'operation' of two particular forms of discourse: the desire for genetic perpetuity, and the pursuit of sons. In this enterprise, the aged pregnant body becomes an important trope of resurrecting childless marriages, evidenced by the secrecy surrounding the use of donated sperm, and the open rejection of adoption. Through an exploration of conceptualizations of pregnancy, age and legislation in India, I present the argument that ART supports the pursuit of genetic connectedness by resurrecting the social importance of genetic connectedness through sons and the pregnant wife. In this paper, I purposely engage with elements of the study of kinship and family in South Asia to undertake an analysis of how ART is used as part of a larger social narrative around conception and pregnancy amongst older married couples.

© 2021 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

KEYWORDS: ageing, ART, patrilineage, pregnancy, son preference, South Asia

Introduction

In this paper, I explore narratives on the administration of assisted reproductive technology (ART) treatments —

E-mail address: anindita@la.iith.ac.in

<https://doi.org/10.1016/j.rbms.2021.11.005>
2405-6618 / © 2021 Published by Elsevier Ltd.

This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

including in-vitro fertilization (IVF), intrauterine insemination, intracytoplasmic sperm injection and prenatal genetic diagnosis – among ageing women and men who are past their ‘reproductive prime’. I use the phrase ‘past their reproductive prime’ with caution as ART has the ability to promise conception in ageing women and men. This is linked to the suggestion that ART helps delay reproduction in favour of pursuing personal goals, or economic stability through practices of egg freezing and availability of IVF at later ages in the reproductive cycle (Daly and Bewley, 2013). However, in North India, where my fieldwork was based, elderly women and men have been struggling with infertility and childlessness for decades without cure or support. Faced with intense social debility and stigma, middle-aged and elderly women in the sample (some as old as 60 years) undertook risky pregnancies for reasons I outline below and explore further in the paper.

Aged conception through ART, such as IVF, tends to perpetuate the ideological dominance of patrilineal descent in North India. In this paper, I examine the ways in which this is undertaken through the continued importance of the ‘nasl’ or lineage and the pursuit of sons. Thus, ART may also cater for couples who have adult daughters but seek sons to carry forth the lineage. In Haryana, North India, my ethnography at the Shikhar Clinic (pseudonym) chronicles the experiences of many patients in their late 50s and 60s seeking ‘biological-genetic’ ties to their children. These couples were largely infertile or childless for over two to three decades of their married life. Many women had suffered ectopic pregnancies and lost their fallopian tubes, others had uterine tumours, and others had husbands who were sterile or had other fertility issues. However, in most cases, the diagnosis was neither absolutely clear nor available for scrutiny. Most importantly, a significant number of the clinic’s clientele were women suffering from secondary infertility, having given birth to living children, or seeking to conceive again after the death of an adult son.

I differentiate between infertility and childlessness to focus on two aspects of the ethnographic data that I encountered. First, the official medical definition of infertility [as endorsed by the World Health Organization and the Indian Council of Medical Research (ICMR)] stipulates 1 year of unprotected coitus without conception. Such definitional restrictiveness has been criticized previously and is often seen to be in conflict with lived realities of infertility (Qadeer, 2010; Shah, 2011). My respondents had decades of unprotected sexual intercourse with no conception, before or despite recourse to ART. The official medical definition of infertility restricted to a specific time frame necessitates immediate intervention through ART, but does not always reflect decades of seeking medical and non-medical interventions to facilitate conception. In rural North India, women who are unable to bear children seek non-medical interventions such as folk medicines, spiritual remedies and co-wives to be able to conceive. Medical interventions may include going to the obstetrician-gynaecologist in public health facilities before resorting to ART in the expensive private healthcare arena (Singh, 2017; Unnithan-Kumar, 2003). The official definition of infertility fails to capture the diversity of measures involved in fertility management, and is geared towards immediate intervention with ART.

Second, childlessness may also include those who have conceived and lost children/infants through repeated miscarriages and infant mortality, especially in rural India (Jeffery et al., 1989; Patel, 1994). Here, conception occurs, as does birth, but may not lead to the fulfilment of nurturing children into adulthood. Anthropologists have also highlighted research findings from the diverse experiences emerging from women’s reproductive lives to be able to fully comprehend infertility (Bledsoe, 2002; Inhorn, 1994). In this paper, I use the terms ‘infertility’ and ‘childlessness’ together to highlight the life circumstances of my respondents’ navigation of conception, pregnancy and childbirth through ART.

Other papers in this special symposium issue have focused on the ‘valuation of eggs’ to the emergence of medicalized notions of the biological clock and declining reproduction. Here, I focus on how ART reinvokes classical understandings of conception, while rejecting them, especially in facilitating aged conception. Thus, in the interplay between the patrilineage and ART, gestation and the marital tie to the husband are prioritized in an elaborate ‘choreography’ of the womb and sperm (Bharadwaj, 2015; Thompson, 2005). The stigma and secrecy involved in sourcing third-party gametes through anonymous donors is managed between the clinician and the couple coming in for ART treatment, as is the choice to birth sons who will carry the lineage forward. Within the pursuit of sons is the identification of mothers and fathers of daughters as inadequate, akin to the childless-infertile.

As we go forward, the paper provides information regarding ethnography, and the field in terms of its cultural context, followed by a discussion of the theoretical background within which the ethnographic findings are discussed. In the theoretical background to the paper, the focus is on particular themes connected to the findings regarding the use of ART amongst elderly couples. How is aged reproduction understood and mapped in ethnographic literature within anthropology and on South Asia? What are the findings linked to the culture of seeking assisted conception, especially with reference to India? How are kinship and gender understood within reproductive ageing and ART treatment in India?

In the research findings, I discuss how genes are identified and represented in the use of ART amongst aged couples; and how ART is implicated in the culture of son preference in North India, thereby highlighting how assisted conception is not limited to the infertile young or middle-aged heterosexual married couple.

The field in profile

North India has been the focus of anthropological studies on fertility, kinship and the family for decades (Jeffery and Jeffery, 1997; Kaur, 2008; Patel, 1994; Raheja and Gold, 1994). In recent scholarship on North India, the focus is on the socio-economic impact of the declining sex ratio due to the rise in female feticide (John et al., 2008). Closer scrutiny has found that ultrasound used to monitor fetal growth has been an effective medium for eliminating female fetuses before birth. As a practice, female infanticide has been part of the systemic violence wrought on

women in parts of North India such as Punjab, Rajasthan and Haryana (Kaur, 2008; Patel, 1994; Purewal, 2018). Along with other practices — such as child marriage, dowry and dowry-related deaths, and honour killings — sex-selective abortions and infanticide are well entrenched in the area.

As per the Preconception and Prenatal Diagnostic Techniques Act (PCPNDT) Act 1994, use of ultrasound machines for the detection of sex of the fetus has been banned in India. Of late, preimplantation genetic diagnosis has been recognized as the new go-to technology to circumvent ultrasound and subsequent sex-selective abortions. This means that the ART clinic is increasingly scrutinized for preconception sex determination. By law, all hospitals and medical establishments, including all ART clinics, must display a notice prohibiting the use of ultrasound to detect the sex of the fetus. Any queries regarding this service, and responses regarding the same, are punishable by law, as is the use of preconception technology to select sex. PCPNDT is now part of the prohibitive landscape of the ART clinic.

Haryana, the field site in question, has recently been the subject of anthropological analysis on the perpetuation of a particular North Indian patriarchal culture that is marked by extreme violence against women (Chowdhry, 2011). The systemic violence within Haryanvi society has come to be represented through recent incidents of honour killings, and an alarming decrease in the female sex ratio (Chowdhry, 2007). In turn, the decline in sex ratio with 940 females per 1000 males in the 2011 census of India (John et al., 2008) is attributed to the rise of an overt masculine culture (Chowdhry, 2019; Mishra, 2018), impacting the ways in which women are treated, through to extreme violence and aggression if certain social codes of marriage and honour are transgressed (Chowdhry, 2007).

This paper discusses data collected in 2018 at Shikhar IVF clinic in Haryana, where I interviewed 17 women and 12 men. Six of the women interviewed were aged >50 years when they became pregnant following ART treatment. Of these 17 women, nine were pregnant at the time of the interview, and four had birthed children previously at the same clinic through ART treatment. Most of the women had not completed formal schooling (meaning they had completed primary school alone or had never enrolled in a school); of the six women who had completed formal schooling, two were teachers in local schools, and the rest ran their households. The average number of attempts at IVF amongst the 17 women was 2.1. Among the 12 men, five were aged >55 years. Nine men were working in sectors other than agriculture, such as poultry, banking, jewellery, armed forces and teaching; the rest of the men were farmers with medium-to-large landholdings.

The average IVF cycle at Shikhar cost 1300 USD during my fieldwork, but could be more depending on the level of intervention required (i.e. type of technology, third-party gamete requirement, drugs prescribed). This was expensive for the small farmer struggling to make ends meet, keeping in mind the average per-capita income in Haryana was approximately 1300 USD (2015 data; Rao, 2015), with regional variations. Many subjects had taken out bank loans or informal loans to fund the ART procedure. Shikhar's clientele consisted of small-to-large landowners who could afford to undertake multiple cycles of IVF, either because they had the financial strength to do so, or because the doc-

tor would extend significant discounts with each subsequent new IVF cycle.

Dr Anuj, the charismatic doctor running Shikhar, was a local himself and noted how husbands preferred to marry second wives rather than fund expensive IVF cycles for their infertile first wives. Dr Anuj positioned himself as a 'feminist', giving women the choice to birth children even at a later stage. He was 'supporting women's stakes in a marriage' when threatened with rejection due to their childlessness and infertility. The clinical practice began to garner media and public attention in 2009–2010 because of how he had facilitated the pregnancy and birth of children amongst three women aged 60, 66 and 70 years (data also drawn from newspaper reports on women and men belonging to this particular demographic who gave birth at the same clinic through ART intervention). His commitment to marriages where husbands stayed loyal to one wife, despite her childlessness, was not necessarily true, but created a discourse around monogamy in a situation where women are already in 'short supply' and the demand for progeny was high.

The pursuit of ART: aged conception, marriage and the quest for the intergenerational tie

The quest for children amongst ageing, postmenopausal couples is a continuous search for social legitimacy. This 'quest', as identified by Inhorn (1994, 1996), is deeply embedded in the desire for conception. It is not the desire for a child alone but the seeking of conception, pregnancy and childbirth. This is where ART steps in to 'assist' nature through artificial, laboratory-induced conception and pregnancy.

How does ART create and sustain the desire for biogenetic kin? In anthropological literature, this question has led to theoretical and ethnographic findings regarding the manufacturing of a narration of 'nature' in relation to ART (Cannell, 1990; Carsten, 2007; Edwards et al., 1999; Franklin, 2007; Strathern, 1992), and its subversion (Bharadwaj, 2015). ART provides the resources to re-engage with questions of biology and culture in diverse ways (Cussins, 1996; Franklin, 1997; Thompson, 2005), especially in how the conception and birth of a child is a fundamental aspect of family making, thereby reinvesting in earlier debates within kinship.

In engaging with aged conception, I find the idea of the patrilineage to be all-encompassing in the pursuit of ART in North India. ART facilitates the pursuit of descent through men, under the leadership of fathers, especially 'founding fathers' (King and Stone, 2010). Fatherhood is an important source of seeking power in the patrilineage, as is the corresponding desire to birth sons. While 'motherhood' provides legitimacy to a married woman in a patrilineage, it is fatherhood that carries prestige and power. Within the pursuit of fatherhood, is also the idea of the intergenerational bond that fathers and sons share:

Patriliney bequeaths not only name, kinship status, family wealth, and so on, but also specifically male identity and quality of masculinity that applies to individuals, and to

groups of patrilineally related persons (King and Stone, 2010: 327).

This intergenerational tie, perpetuated over time, also follows a life cycle (Buhler, 2015; Kabeer, 2000). Fatherhood is beneficial if followed by grandfatherhood, not only in terms of perpetuation of the lineage, but also in terms of the prestige of the role of the patriarch and the assurance of elderly care. Patel (1994) stated that 'fertility performance' may be linked to age through the patrilineage's investment in securing grandparental status for its men through the timely birth of sons, as evident in the ethnographic vignette below:

Rajuji was forced into work that was unusual for his age (late 60s) – carrying his own daughter, fetching water and herding cattle. He had to do it as his wife was ailing and there was no one else in the household to relieve him. Rajuji had spent his entire life aspiring for a son. He married thrice. Two of his earlier wives died without a son. The second bore a girl who has been married off. The third wife had also borne a girl who was 2 years old. (This was the one he was carrying.) Rajuji's was the only Patel household without any gold and silver jewellery – the most sought after security plank after land. Rajuji's house would have been full of people had he a few sons. He would have hardly needed outside help. His sons, daughters-in-law and grandchildren would not have let him work so hard (Patel, 1994: 83).

In narratives such as the above, patrilineality has implications beyond its 'ontology' (King and Stone, 2010). Even in matri-focal Antilles, Heron (2016: 274) noted:

[A] strong ontological connection to progenic kin (children and grandchildren) develops as a man grows through fatherhood and grandfatherhood...a 'continuity of being'...for the individual men...who identified their antecedent natural pasts and descendent progenic futures as existentially significant to their lived present...

Although the importance of the patriline differs from North to South India – especially in how marriage practices are structured (Dumont, 1983; Uberoi 1994), and also, to some extent, in thinking through conception ideologies (Ostor et al., 1983; Trawick, 1990) – by and large, children in India belong to the patrilineage. Birthing, thus, is important to sustain the patriline. In North India, control over the birthing woman, as an in-marrying affine, is strictly followed (Jeffery et al., 1989; Patel, 1994) through other women within the patriline, such as mothers-in-law (Patel, 1994; Singh, 2017; Unnithan-Kumar, 2003). Research suggests that 'classical patriarchy' works through senior women enforcing codes of conduct and discipline on junior women (Kandiyoti, 1988), and the perpetuation of the patrilineage is an important subtext to this.

However, we are suddenly exposed to the older mother who is beyond this spectrum, who is postmenopausal and 'grandmotherly' confounding the generational contract (Buhler, 2015). So, in Haryana, when elderly men and women in their 60s and 70s gave birth through the intervention of IVF, they made headlines. The images that followed these headlines were particularly provocative, invoking the

ageing mother who is unable to care for the toddler she has birthed through caesarean section. Here, the quality of her eggs or her gestational role is hardly under scrutiny as much as the peculiar nature of the births and the birthing parents.

In literature emerging from the West, 'older motherhood' is conceptualized as a form of life choice which engages with women managing their social image through different forms of negotiation (Buhler, 2015; Campbell, 2011; Friese et al., 2008). The age of the 'older' mother is not identified in terms of numbers, but through the management of stigma that comes from becoming a mother at an older age. Additionally, chronological ageing is now manipulated by science to show the ways in which decline and decay may not follow a temporal trajectory, as evident from research on menopause (Lock, 2007). In India, menopausal widowed women are seen as asexual and without gender, almost akin to men in Bengal (Lamb, 2000). They wield power and give advice in community and household decisions. However, such a status is bestowed only once they have fulfilled their duties as the wife and mother in a patrilineage. Premature menopause may be a 'bane' to the woman if she is unable to bear children, leading to abandonment by her husband in favour of a fertile second wife (Uberoi and Bahadur, 2001).

In draft legislation undertaken by the Indian state and ICMR on ART and surrogacy in India, age is used to identify not only suitability for motherhood, but also how particular parts of the woman's body fare in reproduction. So, for instance, in the 2017 Draft ART Regulation Bill, a woman between the ages of 18 and 45 years can access the technology, while men can access ART between 21 and 50 years of age. Identification of the limits of assisted parenthood for women at 45 years of age [a study conducted in 2015 amongst 150 women in Punjab, North India found the age of onset of menopause to be between 45 and 55 years (Kaur and Talwar, 2009), while an earlier study suggested 44.3 years (Syamala and Sivakami, 2005)] compared with 55 years for men suggests that men's fertility does not age like women's reproductive life cycle. Such a valuation is overturned in the case of the Surrogacy Bill 2019 that outlaws commercial surrogacy in favour of the altruistic version, suggesting that the intended parents who will commission the surrogacy arrangement must be between 23 and 50 years for women and between 26 and 55 years for men. The 'relaxation' of 5 years is significant, pointing to the flexibility involved in thinking about the end of reproductive life for women within ART. Surrogacy certainly involves the surrogate's uterus (the surrogate should be aged between 25 and 35 years), but may involve the intended mother's eggs. However, by allowing her to engage in surrogacy ostensibly after menopause, there is a tacit understanding that both eggs and wombs may be 'outsourced' in ART. Reproductive decline through age is particularly marked on the woman's body, and through repeated recourse to ART, until she gets pregnant or outsources her pregnancy.

However, in reality, the 5-year grace period for women in the surrogacy bill, as opposed to the ART bill, is positioned on the mandatory requirement for the commissioning couple/intended parents to be married for 5 years before entering a surrogacy arrangement. Surrogacy is not available to those suffering from secondary infertility, except when they have a child who is differently-abled. In the 5

years of infertility, the couple should have explored all forms of ART treatment before being 'compelled' to think of surrogacy, pointing to the importance of the gestational role in seeking motherhood. In identifying age-related access to surrogacy, the 2019 Surrogacy Regulation Bill aims to curtail the exploitation of economically disadvantaged women as gestational surrogates by outlawing commercial surrogacy. The altruistic version in the law encourages intended parents to seek out kin to be gestates although this is not mentioned explicitly. In practice, intended parents seek surrogacy as the last resort, which is also part of the intent of the Bill.

The nature of seeking ART over a period of time, without conception and childbirth, may seem like a viable reason to opt for adoption; however, [Bharadwaj \(2015\)](#) found that adoption in India is marked by multiple forms of stigma that are ultimately linked to aspersions regarding the (sexual and reproductive) viability of the marital relationship:

A publicly visible child incorporated into the family without any corporeal connectedness with the family unit makes the child and couple vulnerable to a more severe level of social ridicule and stigma than that caused by infertility ([Bharadwaj, 2015: 161](#)).

Added to this is the restrictive nature of the adoption process in India:

Adoption has become so prohibitive, especially for couples older than 40. The state is restrictive about supporting older couples wanting to have children (Dr Vineeta, IVF specialist in Delhi, personal interview June 2018).

The Central Adoption Resource Authority, Government of India, stipulates the following under 'eligibility' for prospective parents:

In case of couple, the composite age of the prospective parents shall be counted. ... The minimum age difference between the child and either of the prospective adoptive parents shall not be less than twenty-five years (http://cara.nic.in/Parents/eg_ri.html).

In [Table 1](#), the adopted child's age is linked to the prospective parents' ages in an institutionalized understanding of suitable parenting.

In India, adoption of infant children is preferred by most infertile couples ([Bhargava, 2005](#)). There is an opportunity to script a new narrative of 'kinning' for them which may include secrecy around the 'origins' of the child, akin to the secrecy around donated eggs. However, as per government guidelines, aged-ageing couples can only adopt older children, making them 'stand out' as symbols of a 'failed childless marriage'. Thus, heterosexual marriage, motherhood and the patrilineage lead the childless and infertile couple back to the ART clinic, seeking constant social legitimacy through pregnancy and childbirth.

'Nasl' and the complicit nature of aged reproduction

'unki nasl kya hain kaun jaane' (what is their lineage, who knows?) (Sadhu, 52).

Sadhu was recently blessed with the birth of a daughter after close to 30 years of childlessness and two marriages. His first wife, Rajo, had given birth to their daughter through IVF at the age of 50 years; and his second wife, Dhupan, was still visiting Shikhar to initiate treatment for pregnancy. When asked why he had never considered adoption, his reply was linked to the ambiguity that the 'nasl' or lineage of the adopted child presented. This idea of the 'nasl' finds echoes in the Islamic notion of 'nasab' or lineage. As [Inhorn \(2006: 95, emphasis in original\)](#) notes:

In Islamic *fiqh* (jurisprudence), the tie by *nasab* (lineage or relations by blood) is considered to be one of god's gifts to his worshippers. The preservation of *nasab* is emphasised through Quranic rules designed to ensure the sanctity of the family and the purity of the *nasab*.

While there is historic documentation of the cultural commingling and impact of Islamic rule on North Indian local practices such as *purdah* ([Mandelbaum, 1988](#)), as [Bharadwaj \(2003\)](#) mentioned, unlike Islam, mainstream Hindu families are able to circumvent the need to protect the lineage through secrecy around their use of third-party egg and sperm donation in IVF. What Sadhu refers to in speaking about 'nasl' is the unknown value of other genes, and the visibility of these genes through the open adoption of another child. However, in taking recourse to third-party reproduction, many of the aged couples coming to Shikhar had to depend upon gametes 'outsourced' from anonymous sperm and egg providers. A significant part of the clinical and social choreography involved around aged reproduction included hiding the contribution of third-party providers, even though it was sometimes evident. For instance, at Shikhar, the act of birthing was a very important aspect of seeking ART repeatedly. Women past their reproductive prime carried visible pregnancies and birthed children through caesarean section. 'Gulabo', for instance, at 66 years of age had carried triplets and eventually gave birth to them through caesarean section. Newspaper reports documenting this 'miraculous birth' mentioned the possibility of donor eggs having been used in the ART procedure ([The Independent, 2017](#); [The Indian Express, 2010](#)):

For older patients. ...who make up 20 percent of [the clinic's clientele, the doctor] harvests eggs from anonymous donors, but in a deeply patriarchal culture, what really matters is that the sperm belongs to the father ([The Independent, 2017](#)).

As the focus was on elderly women birthing and carrying viable pregnancies, the question of male fertility was never directly discussed and was almost taken for granted. However, elderly women came with their elderly husbands, some of whom had been married multiple times without leading to any pregnancies or children. Male infertility was rarely spoken about, but there was speculation through media conversations and local gossip.

In coverage regarding elderly couples in Haryana birthing babies, there would be a discussion of the husbands marrying other women to be able to conceive heirs. The news reportage implied that these men had been unable to conceive with other women, leading to questions about their own fertility, rather than that of their wives. However, this

Table 1 Age stipulation for adoption.

Age of the child	Maximum composite age of prospective adoptive parents (couple)	Maximum age of single prospective adoptive parent
<4 years	90 years	45 years
4–8 years	100 years	50 years
>8–18 years	110 years	55 years

Source: Central Adoption Resource Authority, Government of India website (http://cara.nic.in/Parents/eg_ri.html).

line of argument was rarely developed, leaving the rest to the reader's understanding as evident below:

Almost all stories about elderly women trying the IVF share a similar narrative. Their husbands married twice, even thrice, in their desperation to have a child. Chameli Devi, was her husband's second wife, his first couldn't conceive. But Chameli Devi was unable to bear children too. Then the couple discovered IVF and all was well, the narrative runs. ...[P]anchayats [village councils] here [in Haryana] tell the man to try IVF when he approaches them for permission to marry for the second or a third time because his wife is unable to bear children (*The Indian Express*, 2010).

According to Singh (2017), in other parts of North India, multiple marriages by the man formed some of the 'strategies' that the married couple had to undertake (at the behest of the extended family/patrilineage) to achieve a pregnancy and a live birth, in case it took longer than usual to conceive. Strategies would also involve the creation of viable narratives of conception and birthing through what Singh calls 'procreative labour' (2017: 30). Procreative labour involved clinical intervention, familial support, and a delicate balance of facilitating conception with or without sexual intimacy. In the case of aged couples, the procreative labour involved a narrative of conception that justified the use of ART. This was done by employing the seed and earth metaphor.

In such an imagining, the seed facilitates conception and therefore gives life (Jeffery et al., 1989). Thus, 'a man, but not a woman, lives on through reproduction, through the transmission of his semen' (King and Stone, 2010: 332). Such a 'patrogenetic model' of conception reduces women to the role of carriers or nurturers through their womb, as repeated in narratives on IVF surrogacy in India, where there is differential value given to the gestational and genetic role (Majumdar, 2017; Menon, 2012; Pande, 2014; Singh 2017) making the pregnancy and its sustenance the most important element for the patriline and, by extension, for the preponderance of ART. The preponderance of the agrarian symbolism of the 'seed and the earth' in North Indian ethnoembryology (Fruzzetti and Östör, 1976; Jeffery et al., 1989) makes it necessary for women to bear their husband's seed. Thus, different sets of women and men are desired within the patriarchal group (Kaur, 2008) – daughters-in-law as opposed to daughters, and the eldest son as opposed to the younger sons. Daughters-in-law belong to the patrilineage and reproduce for it, while

daughters leave the home (Brunson, 2016) and the eldest son keeps the land together.

News narratives also suggest that the pressure to birth children amongst elderly couples in rural Haryana and Punjab is due to the pressures of claiming property inheritance (*Deccan Chronicle*, 2018; *Hindustan Times*, 2010). The linkage between property inheritance and 'nasl' is not only pragmatic economics, but, again, is linked to conception ideologies mentioned above in rural agrarian economies. The adoption of a male heir could be undertaken from within the extended family, but is the last resort. One of the patients at Shikhar, Rajwanti (age 50 years) was pregnant for the first time through IVF. Her adopted son, Jogi and his wife accompanied her regularly to the clinic for her check-ups. Jogi was Rajwanti's sister's son and had actually convinced her and her husband to think of IVF. Although Jogi was the heir apparent to Rajwanti's husband's land, the appearance of a new heir would complicate things within the family; something they were reluctant to speak of. Perhaps Jogi was heir to his biological parents' property as well, dividing loyalties and stakes in patrilineal inheritance; a situation with the potential to create conflict between affines. However, this was never discussed with the author even though the tension at each clinic visit was palpable.

Tej (age 51 years), an entrepreneur-educationist who had started a residential school in Haryana, was reluctant to ask his brother and his sister-in-law to 'give birth to a child exclusively for us'. Although he loved his nephews and nieces, intrafamilial adoption was still adoption. Tej was happy that after 20 years of relentless IVF treatment, he was finally the father of a boy who would inherit his legacy and property. As mentioned earlier, the patrilineage is deeply invested in establishing a 'mascu-line' wherein '[i] deal men in patrilineal societies are fathers who impart to their descendants a masculine legacy, but their offspring are just the start of that legacy, not its culmination' (King and Stone, 2010: 327). Thus, masculinity and virility are also implicated in the process of ART. For instance, Shastri (age 52 years) linked his struggles with childlessness and infertility primarily through jibes regarding his masculinity:

I have seen our infertility become a topic of speculation in the village. I was constantly derided through sarcastic references to my manhood...but I learnt to live through it. My wife's desire for motherhood led me to all sorts of places...a holy godman who managed to mess up our 'prescription' of herbs to ensure conception, to a nurse who promised my wife instantaneous pregnancy.

Shastri's wife, Dulari (age 50 years) continued:

The nurse [u]sed to work for a gynaecologist. She was trained and used to run a parallel fertility establishment where a lot of childless/infertile couples we knew got pregnant. Her clinic was in the adjoining town so I went there once. As soon as I go in to her chamber for a check-up she tells me: 'look, your husband doesn't have sperms that will lead to a pregnancy. ...most women who come here have "wasted" husbands. I will inject you with someone else's sperm — a young man's sperm. You are bound to get pregnant! And no one has to know'. I ran out of there. I want my husband's children or I don't want any children at all.

The gossip regarding third-party gametes, especially sperm, was pervasive. Shastri and Dulari both knew couples who had children through the above-mentioned nurse's intervention, and have often looked at them with suspicion. Shastri was embarrassed when he said, 'I look at them and feel sorry for the "father". We all know the children are not his'.

In many ways, at Shikhar, while donated eggs formed the subtext to the pregnancies carried by elderly, post-menopausal women, the real secrecy surrounded the use of donated sperm. In an increasingly toxic agrarian environment (Kannuri and Jadhav, 2018), reproductive health was deeply compromised. Dr Anuj spoke of the impact of toxicity on sperm 'quality':

I have noticed that amongst some of the men who come in for fertility treatment, if there was discontinued use of pesticide sprays, the sperm quality improved. ...I have been suggesting to many of my older male patients that they should tell younger men to abstain from using pesticide sprays.

Within such a context, there was very little conversation regarding older men with multiple wives — older and younger women — coming to the ART clinic to have children. Dr Anuj facilitated these arrangements, overtly hiding the use of donated eggs, but covertly maintaining the biggest secret of all. Speculation regarding third-party intervention in pregnancies could be ignored as long as the married wife begot her husband's child. If the baby was a boy, such speculation could be ignored.

The pursuit of sons

Jalwa Pujan (worshipping the water) is a ritual that can be undertaken only when you have a son. It involved the worship of flowing water at a canal to signify the continuity of the lineage through the male line (Dr Anuj, Shikhar Clinic).

'Jalwa Pujan' as a local custom comes to represent a double bind that childless women, and women without sons, faced in their exclusion at this key lifecycle ritual. In North India, to be a mother of sons was to be 'blessed', and to be a mother to daughters alone was akin to being childless. This embedded patriarchal desire for sons is fuelled by other structural practices that position women at a gross disadvantage for their entire lives: the practice of veiling, with linkages to ideas of shame and honour positioned primarily

on the woman's body (Vatuk, 1982); large amounts of dowry given at the time of marriage to the groom that makes the birth of a daughter a huge liability; and inheritance and rights to property that are vested in men.

Despite the PCPNDT law prohibiting sex-selective technologies, as well as government schemes meant to encourage the birth of daughters, infertile-fertile couples repeatedly mentioned seeking ART in the hope that they would have a son. The notion that ART may help in the birth of a son was fuelled, in large part, through rumours and media reports regarding affluent Indian couples travelling to Thailand where they could access ultrasound imaging to ascertain the sex of the fetus, as well as preconceptive technologies that would facilitate the implantation of an embryo which has the 'right' sex.

Many of the women who came to Shikhar spoke about it openly. Kulwinder (age 48 years), pregnant with twins, said 'We heard that most babies at Shikhar are boys. I want both my twins to be boys'. Waiting room conversations in other ART clinics carried the same subtext, often right under the displayed warning against sex selection. But why is the pursuit of sons a lifelong agenda?

At Shikhar, out of 17 women, six had come to seek ART after the death of their young or adult sons. Most of these women were aged 45–50 years. They were risking their health to pursue their desire for their lost son, and to maintain the patriarchal demand for continuation. Tales of 're-birthing' were common at Shikhar, and always focused on the desire of replacing a recently deceased son, but pursued in his memory. Dr Anuj was both disdainful and cautious about such cases:

Amongst one of my screening criteria to ascertain genuine cases of infertility, is the existence of previous children. Many older couples have older daughters and come to have sons through IVF. I do not encourage or take these cases.

However, there were plenty of such cases at Shikhar. Kanta (age 48 years) was 7 months pregnant at the time of the interview, after the success of her second IVF cycle. She came to Shikhar a year previously, after losing her 18-year-old son in a traffic accident. Her 21-year-old daughter was studying engineering in the neighbouring state. Throughout our conversation, she reiterated that while her husband and she will accept the baby if it is a girl, they would prefer it if the baby was a boy:

See, my daughter is perfectly capable of taking care of us as we age. . .but its just too much responsibility for her to take on. 'Ladkiyan theek se nahin kar pati' [girls are just not able to take on that kind of responsibility].

The idea that daughters are unable to 'care' for ageing parents is linked to the social responsibilities that they carry for their husband's kin. The patrilineage depends upon incoming women to produce more sons and consolidate the hearth. Kaur (2008) spoke of the desire for sons in patriarchal North India as being embedded within the need for a daughter-in-law. The daughter-in-law is the source of both reproductive and productive labour. She will birth future heirs and participate in agricultural and household labour. A significant part of household work is the care of ageing parents.

Brunson (2016) found that women in Nepal do not necessarily desire sons more than daughters, but are socialized and compelled into 'seeking' sons for a variety of social reasons. Ritual requirements within Hinduism that privilege the son in carrying out funerary rites seems to be the predominant reason, interlaced with anxieties about support in old age and continuation of the lineage.

The link between son preference and fertility decline has led to a generational conflict amongst younger women who feel caught in the demands of producing a male heir for the patrilineage, and the love and confidence they feel in their daughters (Brunson, 2010). Many of the older women who came to Shikhar may have been part of the family planning programme in postcolonial India, limiting their families to two children of both sexes, and were now forced to come to the ART clinic to safeguard their daughter's future. Unwilling to burden them with the care of two sets of elderly relatives, women were seeking to birth 'sons' to give their daughters more security.

Kulwinder (age 48 years) had also come to Shikhar to birth a son after the death of her 22-year-old in a traffic accident. Her 27-year-old daughter was at university in Canada, and had coaxed her into the ART procedure after her brother died:

I am doing this for the sake of my daughter. She misses her brother, and I hope that the twins I am carrying are boys. Having a son will mean that my daughter will have a home to come back to. My daughter told me that if she had a brother she would have a home in India, otherwise there would be nothing to come back to.

Although most of the men interviewed wanted a son as an affirmation of their masculinity and to stake rights to property and social status, many of them sought sons to protect their daughters. After his first wife, Rajo (age 55 years) gave birth to their first child, a daughter, via ART, Sadhu (age 60 years) began to frequent Shikhar in the hope that his second wife, Dhupan (age 30 years), would give birth to a son. He had a very simple reason for this:

I want my daughter to have a home to come back to. If she has a brother, and after she gets married if something happens, her brother will take care of her. He will take care of her when she is old. We won't be around for long. He will be there.

Intergenerational anxiety over daughters fuels the desire for sons, as they continue to see the former as burdened already by demands from the husband's kin and unable to shoulder additional responsibility. In this complex socio-economic manifestation of 'disposable daughters' and desirable sons (Kaur, 2008), the patrilineage continues to redesign the pursuit for sons amongst the young and the old through newer technological interventions.

Conclusion

In this paper, I engage with two of the dominant narratives used to 'protect' the marital bond of reproduction invested in by the patrilineage. These two ideas are: the preservation of the male line through genetic connectedness established

by facilitating pregnancies amongst in-marrying women; and the birth of sons.

The childless marriage is thus a source of great anxiety for the patrilineage. Neither adoption nor the hiring of a gestational surrogate are acceptable under such conditions to birth sons and kin. The marital bond solemnized through ritualized practices under the control of the patrilineage provides legitimacy to children born to the lineage. Adopting from the extended family negates the value of the marriage, which is the coming together of two patrilineages in complex relations of gift-giving. Similarly, the gestational surrogate, an unrelated woman, carries a pregnancy that is visible (unless the arrangement is hidden) and creates doubts in the marital procreative bond. Under the circumstances, infertile men and women in Haryana struggle through decades of childlessness as adoption and surrogacy remain forbidden socially or do not provide legitimacy to the marriage or children.

However, third-party gametes in the form of eggs or sperm are anonymized in ART and may therefore be hidden from social scrutiny. Aged couples continue to seek ART for social legitimacy and the promise of invisible gametes and visible pregnancies. Older clients of the IVF clinic channel their quest for a visible pregnancy in pursuit of a son, maintain secrecy regarding matters of genetic connectedness when donor sperm is involved, and negate the value of adoption as an 'option'.

ART poses a significant threat to the health of elderly women in the pursuit of conception and pregnancy; an aspect that is mentioned in media narratives but is not addressed adequately in the clinical space. The risk of death is a recurring part of the narrative of elderly conception and birth, but as Dr Anuj reiterates:

Most of these older women are willing to die to birth heirs for their husbands, despite my warning.

ART conception is a necessity and not a sacrifice.

Acknowledgements

The author wishes to thank Anupam Sharma for support during the fieldwork in Haryana, and Sarah Franklin for her support in publishing this paper. The author also wishes to thank the anonymous peer reviewers for their timely comments. This paper is based on research funded by the Wellcome Trust UK (2018 Small Grant 209620/Z/17/Z).

References

- Bharadwaj, A., 2003. Why adoption is not an option in India: the visibility of infertility, the secrecy of donor insemination, and other cultural complexities. *Soc. Sci. Med.* 56, 1867–1880.
- Bharadwaj, A., 2015. *Conceptions: Infertility and Procreative Technologies in India*. Berghahn Books.
- Bhargava, V., 2005. *Adoption in India: Policies and Experiences*. Sage, New Delhi.
- Bledsoe, C.H., 2002. *Contingent Lives: Fertility, Time and Aging in West Africa*. University of Chicago Press, Chicago, IL.
- Brunson, J., 2010. Son preference in the context of fertility decline: limits to new constructions of gender and kinship in Nepal. *Stud. Fam. Plan.* 41, 89–98.

- Brunson, J., 2016. *Planning Families in Nepal: Global and Local Projects of Reproduction*. Rutgers University Press, Rutgers, NY.
- Buhler, N., 2015. Imagining the future of motherhood: the medically assisted extension of fertility and the production of genealogical continuity. *Sociologus* 65, 79–100.
- Cannell, F., 1990. Concepts of parenthood: the Warnock report, the Gillick debate, and modern myths. *Am. Ethnol.* 17, 667–686.
- Campbell, P., 2011. Boundaries and risk: media framing of assisted reproductive technologies and older mothers. *Soc. Sci. Med.* 72, 265–272.
- Carsten, J., 2007. Constitutive knowledge: tracing trajectories of information in new contexts of relatedness. *Anthropol. Q.* 80, 403–426.
- Chowdhry, P., 2007. *Contentious Marriages, Eloping Couples: Gender, Caste, and Patriarchy in Northern India*. Oxford University Press, New Delhi.
- Chowdhry, P., 2011. *Political Economy of Production and Reproduction*. Oxford University Press, New Delhi.
- Chowdhry, P., 2019. *Gender, Power and Identity: Essays on Masculinities in Rural North India*. Orient Blackswan, New Delhi.
- Cussins, C., 1996. Ontological choreography: agency through objectification in infertility clinics. *Soc. Stud. Sci.* 26, 575–610.
- Daly, I., Bewley, S., 2013. Reproductive ageing and conflicting clocks: King Midas' touch. *Reproduct. Biomed. Online* 27, 722–732.
- Deccan Chronicle, 2016. 70-year-old gives birth through IVF to stake claim in Rs 4.8 crore property? May 13.
- Dumont, L., 1983. *Affinity as a Value: Marriage Alliance in South India with Comparative Essays on Australia*. University of Chicago Press, Chicago.
- Edwards, J., Franklin, S., Strathern, M., Hirsch, E., Price, F., 1999. *Technologies of Procreation: Kinship in the Age of Assisted Conception*. Psychology Press.
- Franklin, S., 1997. *Embodied Progress: A Cultural Account of Assisted Conception*. Routledge, London.
- Franklin, S., 2007. *Dolly Mixtures: The Remaking of Genealogy*. Duke University Press, Durham, NC.
- Friese, C., Becker, G., Nachtigall, R.D., 2008. Older motherhood and the changing life course in the era of assisted reproductive technologies. *J. Ag. Stu.* 22, 65–73.
- Fruzzetti, L., Östör, Á., 1976. Seed and earth: a cultural analysis of kinship in a Bengali town. *Contrib. Indian Sociol.* 10, 97–132.
- Heron, A.P., 2016. Becoming papa: kinship, senescence and the ambivalent inward journeys of ageing men in the Antilles. In: Pooley, S., Qureshi, K. (Eds.), *Parenthood between Generations: Transforming Reproductive Cultures*, Berghahn, London.
- Hindustan Times, 2010. The search for heirs in Haryana. June 27.
- Inhorn, M.C., 1994. *Quest for Conception: Gender, Infertility and Egyptian Medical Traditions*. University of Pennsylvania Press, Philadelphia, PA.
- Inhorn, M.C., 1996. *Infertility and Patriarchy: The Cultural Politics of Gender and Family Life in Egypt*. University of Pennsylvania Press, Philadelphia, PA.
- Inhorn, M.C., 2006. He won't be my son. *Med. Anthropol. Q.* 20, 94–120.
- Jeffery, P., Jeffery, R., Lyon, A., 1989. *Labour Pains and Labour Power: Women and Childbearing in India*. Zed Books, London.
- Jeffery, R., Jeffery, P., 1997. *Population, Gender and Politics: Demographic Change in Rural North India*, vol. 3. Cambridge University Press, Cambridge.
- John, M.E., Kaur, R., Palriwala, R., Raju, S., Sagar, A., 2008. *Planning Families, Planning Gender: The Adverse Child Sex Ratio in Selected Districts of Madhya Pradesh, Rajasthan, Himachal Pradesh, Haryana and Punjab*. ActionAid, New Delhi, IN.
- Kabeer, N., 2000. Inter-generational Contracts, Demographic Transitions and the 'Quantity–Quality' Tradeoff: Parents, Children and Investing in the Future. *J. of Inter. Dev* 12, 463–482.
- Kandiyoti, D., 1988. Bargaining with patriarchy. *Gen. & Soc.* 2, 274–290.
- Kannuri, N.K., Jadhav, S., 2018. Generating toxic landscapes: impact on well-being of cotton farmers in Telangana, India. *Anthropol. & Med.* 25, 121–140.
- Kaur, R., 2008. Dispensable daughters and bachelor sons: sex discrimination in north India. *Econ. Polit. Wkly.*, 109–114
- Kaur, M., Talwar, I., 2009. Age at natural menopause among rural and urban Punjabi Brahmin females. *The Anthropol.* 11, 255–258.
- King, D.E., Stone, L., 2010. Lineal masculinity: gendered memory within patriliney. *Amer. Ethno.* 37, 325–336.
- Lamb, S., 2000. *White Saris and Sweet Mangoes: Aging, Gender, and Body in North India*. University of California Press, Berkeley, CA.
- Lock, M., 2007. The final disruption? Biopolitics of post-reproductive life. *Reproductive Disruptions: Gender, Technology, and Biopolitics in the New Millennium*. Berghahn, London.
- Mandelbaum, D.G., 1988. *Women's Seclusion and Men's Honor: Sex Roles in North India, Bangladesh, and Pakistan*. University of Arizona Press, Arizona.
- Majumdar, A., 2017. *Transnational Commercial Surrogacy and the (Un)Making of Kin in India*. Oxford University Press, Delhi.
- Menon, N., 2012. *Seeing Like a Feminist*. Penguin UK.
- Mishra, P., 2018. Being 'bare branches': Demographic imbalance, marriage exclusion and masculinity in north India. In: *Scarce Women and Surplus Men in China and India*. Springer, Cham, pp. 25–46.
- Ostor, A., Fruzzetti, L., Barnett, S., 1983. *Concepts of Person, Kinship, Caste and Marriage in India*. Oxford University Press, Delhi.
- Pande, A., 2014. *Wombs in Labor: Transnational Commercial Surrogacy in India*. Columbia University Press, NY.
- Patel, T., 1994. *Fertility Behaviour: Population and Society in a Rajasthan Village*. Oxford University Press, Delhi.
- Purewal, N., 2018. Sex selective abortion, neoliberal patriarchy and structural violence in India. *Fem. Rev.* 119, 20–38.
- Qadeer, I., 2010. *New Reproductive Technologies and Health Care in Neoliberal India: Essays*. Centre for Women's Development Studies Monograph, New Delhi.
- Raheja, G.G., Gold, A.G., 1994. *Listen to the Heron's Words: Reimagining Gender and Kinship in North India*. Univ of California Press, Berkeley, CA.
- Rao, Hitender, 2015. Haryana's per capita income tops charts, thanks to Gurgaon, 5 other districts. *Hindustan Times*, 3 March 2015.
- Shah, C., 2011. Regulate Technology, Not Lives. *Info. News and Feat.*, 20, 12–16.
- Singh, H.D., 2017. Fertility control: reproductive desires, kin work, and women's status in contemporary India. *Med. Anth. Quart.* 31, 23–39.
- Strathern, M., 1992. *Reproducing the Future: Essays on Anthropology, Kinship and the New Reproductive Technologies*. Manchester University Press, Manchester, UK.
- Syamala, T.S., Sivakami, M., 2005. Menopause: An emerging issue in India. *Econ. Pol. Week.*, 4923–4930
- The Independent, 2017. The 'rogue doctor' using IVF to bring hope to older women in India. May 25.
- The Indian Express, 2010. The baby boom town. June 20.
- Thompson, C., 2005. *Making Parents: The Ontological Choreography of Reproductive Technologies*. MIT Press, Boston, MA.
- Trawick, M., 1990. *Notes on Love in a Tamil Family*. Univ of California Press, Berkeley, CA.

- Uberoi, P. (Ed.), 1994. *Family, Kinship and Marriage in India*. Oxford University Press, USA.
- Uberoi, P., Bahadur, T., 2001. The Woman's Body in Midlife: Socio-cultural and Medical Perspectives from South Asia.
- Unnithan-Kumar, M., 2003. Spirits of the womb: migration, reproductive choice and healing in Rajasthan. *Cont. Ind. Soc.* 37, 63–188.
- Vatuk, S., 1982. Purdah revisited: a comparison of Hindu and Muslim interpretations of the cultural meaning of purdah in south Asia.

In: Papanek, H., Minault, G. (Eds.), *Separate Worlds: Studies of Purdah in South Asia* South Asia Books, Columbia, MO.

Declaration: The author reports no financial or commercial conflicts of interest.

Received 28 August 2020; refereed 26 September 2021; accepted 29 November 2021.