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ORIGINAL ARTICLE

Societal pressures and procreative preferences for gay fathers successfully pursuing parenthood through IVF and gestational carriers

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Abstract This retrospective study surveyed decision-making and challenges among 78 gay cisgender male couples utilizing in-vitro fertilization (IVF) and a gestational carrier. While most couples (67.1%) found the decision to actively pursue fertility treatment 'not difficult', 32.9% felt that it was 'somewhat difficult' or 'very or extremely difficult'. Almost 30% of couples had not undertaken financial planning for treatment, which introduced delays of >2 years for 25.3% of participants. Conceiving twins was 'important to very important' in 52.3% of couples, and 84.2% of couples chose to transfer two embryos to 'increase the odds' or reach an ideal family size in a single attempt despite increased complications with multiple pregnancies. Paternal leave was granted for one partner in 47.3% of couples, and for both partners in 43.2% of couples. One-third of couples reported experiencing discrimination, prompting a partner to seek employment, and 38% changed jobs or careers. For 80.3% of couples, the estimated cost exceeded US$100,000. Couples where one partner was aged >50 years were significantly more likely to find the decision to actively pursue fertility treatment 'very or extremely difficult' (28.6%), and less likely to agree on becoming parents (64.3%). Gay male couples undergoing assisted reproduction face challenges regarding decision-making, lack of infertility benefits and discrimination, which appear to be

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influenced by age and country of residence. Policy and educational changes are needed, including broader fertility benefits, more egalitarian parental leave, and greater awareness of risks inherent to multiple gestation.

KEYWORDS: gay male couples, gestational surrogacy, IVF, cross-border reproductive care

Introduction

Assisted reproductive technology (ART) has allowed many to become genetic parents when they could not do so previously. These technological advances have influenced traditional perspectives on kinship and family, and accelerated changes in legal and social norms (Fantus and Newman, 2019; Franklin, 1993; Jacobson, 2018; Mamo and Alston-Stepnitz, 2015; Markens, 2007; Shannon, 1988). Specifically, ART has facilitated alternative family structures in addition to traditional heterosexual nuclear families, providing parenting opportunities for sexual and gender minorities (Norton et al., 2013), including gay men (Mallon, 2004).

Over the past decade, growing numbers of cisgender gay men have sought to build families through surrogacy, adoption and the foster system. Anecdotal evidence generated from the scientific literature suggests that the number of in-vitro fertilization (IVF) cycles for gay male couples using gestational surrogates (with donor oocytes) in the USA has increased dramatically in the last decade (Lev, 2006; Schoenberg, 2016). Surrogacy offers the 'only stable commercial market in which there are legal protections for openly gay men' (Jacobson, 2018). Gay men frequently prefer IVF and gestational surrogacy to adoption because they wish to raise a child from birth (Lev, 2006), desire more control over the process (Jacobson, 2018), want a genetically-related child, and want to avoid prolonged and potentially less predictable adoption processes. Moreover, some countries bar gay males from adopting (Nakash and Herdiman, 2007).

Gay male couples pursuing IVF and gestational surrogacy represent a minority among non-traditional family types (Perkins et al., 2016). Although some clinics focus on recruiting gay males for surrogacy services (Carone et al., 2017), this is not particularly common (Jacobson, 2018; Riggs and Due, 2019). Gay male couples face unique challenges, including exorbitant treatment costs. In the USA, these expenses typically range from US$80,000 to US $160,000 per cycle (Ressler et al., 2014; Smietana, 2017), including expenses for IVF, compensation for oocyte donors and gestational carriers, legal services and insurance. Gay men from the USA may earn slightly more than their heterosexual counterparts, but an extra $2586 per year can only go so far in covering an extra $120,000 in procreative expenses (Carpenter and Eppink, 2017).

Literature also suggests that gay male couples pursuing IVF and gestational surrogacy face other unique social and legal challenges, including frustration and anxiety from perceived loss of control, bonding with the unborn baby, and preparing for parenthood (Armour, 2012; Blake et al., 2016; Carone et al., 2017; Gates, 2015). Although there is a wealth of research that explores the experiences and psychological consequences of infertility and ART in women and heterosexual men (Galhardo et al., 2016; Pinto et al., 2018; Tendias, 2016), there is far less research on gay male fathers' experiences with ART (Bergman et al., 2010; Jacobson, 2018). Existing research on same-sex couples disproportionately addresses lesbian relationships (Rabun and Oswald, 2009), in part because it is easier to acquire donor sperm than both an egg donor and a gestational carrier. Furthermore, much of the research on gay fatherhood concerns gay men who become fathers through adoption, foster care and parenting children conceived through prior heterosexual relationships (Benson et al., 2005; Bozett and Sussman, 1989; Gates, 2015; Hicks, 1996; Power et al., 2010; Riggs, 2007).

Previous work has compared gay and heterosexual men's motivations to parent, reporting that these two groups express similar parental aspirations, including a desire to nurture, a sense of immortality and fulfilment, and an innate desire to be parents (Baiocco and Laghi, 2013; Bigner, 1999; Goldberg et al., 2012; Greenfeld and Seli, 2011). Studies have also described how gay fathers transform the concept of 'family' and fatherhood (Stacey, 1996), including 'de-gendering parenting' and challenging stereotypes concerning primary caregivers, 'motherhood' and 'fatherhood' (Hicks, 1996, 2006; Mallon, 2004; Schacher et al., 2005). Other research establishes that gay male couples carefully consider fatherhood and family-building, and regard adoption as a less desirable path to parenthood because of a perceived lack of control over the process (Greenfeld and Seli, 2011). While gay men consider different family-building options, most said that genetic relationships with offspring were a primary motivation for pursuing gestational surrogacy (Blake et al., 2016; Ressler et al., 2014).

A number of empirical studies on gay couples' gestational surrogacy journeys report on motivations, treatment experiences, information and support needs, relationships with oocyte donors and gestational surrogates, legal issues and fatherhood following ART. As in adoption, many gay male couples obtain IVF and gestational surrogacy in other countries to avoid legal restrictions at home, minimize costs and protect privacy. However, cross-border reproductive care (CBRC) is fraught with ethical and legal problems, including obtaining legal parenthood status and citizenship for children. Only limited research exists on these social, legal and psychological ramifications (Ethics Committee of the American Society for Reproductive Medicine, 2013; FIGO, 2008; Thorn et al., 2012; Ziv and Freund-Eschar, 2015).

The aim of this research study was to gain further insight into challenges and decision-making that gay cisgender male couples experience in becoming parents through IVF and gestational surrogacy, and to identify necessary reforms in education and social policy. Based on responses, it was also possible to compare outcomes with respect to country of residence, partner age and income.

Materials and methods

This quantitative survey study was reviewed and approved by the Wright State University Institutional Review Board (Dayton, OH, USA), and was active from February 2017 to December 2017 (IRB #06200). After reviewing existing literature to see what issues were understudied, reproductive medicine physicians developed a 46-question quantitative survey containing closed- and open-ended questions that was programmed into REDCap and distributed online through www.menhavingbabies.com to cisgender gay male families utilizing IVF and gestational surrogacy. Couples with transgender men were not considered eligible for this study, and data were not collected. Questions assessed the respondents' backgrounds; decisions to become fathers; challenges, risks and costs related to gestational surrogacy; and parenting challenges. A collective decision was made not to assess separation or detachment issues between the gestational surrogate, fathers and neonates in order to keep the survey at a reasonable length. Each couple received a single questionnaire which was completed by one partner or both partners together.

Primary outcomes were gay male couples' general experiences with treatment and decision-making. Given the demographic variation in survey responses, we also report response variance with respect to country of residence, partners' age and income. For this study, 'international' and 'domestic' were defined as outside and inside the USA, respectively. 'Time to become parents' was defined as the time period between participants' consideration of parenthood to actively pursuing gestational surrogacy.

Statistics

Statistical analysis was performed using SPSS Statistics Version 18.0 (ICM Corp., Armonk. NY, USA). Chi-squared test and Fisher's exact test were used to examine associations between categorical variables of interest. $P<0.05$ was considered to indicate significance. Data were expressed as sample size and percentage of respondents (%) who answered the question. Associations between age, American versus international couples, annual income and decision-making were examined using unadjusted logistic regression analyses (odds ratio and 95% confidence intervals). Factors with a P-value <0.05 were further examined in a multiple logistic regression analysis.

Results

Demographics

In total, 78 gay male couples participated in the study. Demographic details are detailed in Table 1. Some respondents did not answer all survey questions, so some denominators are less than 78. Most couples [68.4% (52/76)] lived in the USA and 31.6% (24/76) of couples lived abroad (nine in France, three in the UK, three in Switzerland, three in Canada, one in Portugal, one in Spain, one in the Netherlands, one in Australia, one in Thailand and one in Columbia). Comparisons between domicile of origin including European, Eastern and Western Hemisphere failed to show differences and thus the couples were grouped as US and international couples. Overall, US and international couples were similar with respect to marital status and annual income, although significantly more international couples had a graduate-level education [91.7% (22/24) versus 69.2% (36/52); $P<0.02$].

Table 1 Survey respondents' demographics.

	Frequency (%)
Age group (years)	Total
<40	28/76 (36.8)
40-49	34/76 (44.7)
≥50	14/76 (18.4)
Legally married	
Yes	65/76 (85.5)
Education	
High school	2/77 (2.6)
College	16/77 (20.8)
Graduate	59/77 (76.6)
Annual income ($)	
<50K	2/73 (2.7)
50–100K	20/73 (27.4)
>100K	51/73 (69.9)
Country of residence	
USA	52/74 (70.3)
Other	22/74 (29.7)

Preparing to become a father

Prior to entering a committed relationship, 33.8% (26/77) of couples stated that the desire to have a child was 'extremely important' in selecting a long-term partner, while 12.9% (10/77) of couples said that it was 'not important'. Most couples [90.8% (69/76)] agreed on the decision to become parents. Couples where one partner was aged >50 years were also less likely to agree on becoming parents [64.3% (9/14); $P<0.001$], compared with 96.4% (27/28) of couples where both partners were aged <40 years and 97.1% (33/34) of couples where one partner was aged 40–49 years. No differences were noted with respect to income. However, 67.1% (51/76) of couples found the decision to actively pursue fertility treatment 'not difficult', while 19.7% (15/76) of couples felt that it was 'somewhat difficult', and 13.2% (10/76) of couples felt that it was 'very or extremely difficult'.

Overall, 48.7% (37/76) of couples began fertility treatment <1 year after deciding to actively pursue gestational surrogacy, while 15.8% (12/76) of couples took between 1 and 2 years, and 35.5% (27/76) took >2 years. Income levels were significantly associated with time spent preparing for treatment ($P<0.01$). Respondents also considered adoption [63.1% (48/76)] and co-parenting [3.9% (3/76)], and again income was associated with considering other options ($P<0.005$). With respect to costs, 29.3% (22/75) of couples did not plan financially for treatment, 17.3% (13/75) of couples required <1 year to secure funding, 28.0% (21/75) of couples required 1–2 years, and 25.3% (19/75) of couples required >2 years.

In terms of the importance of defraying costs, 27.7% (18/65) of couples claimed that it was 'somewhat important' and 49% (32/65) of couples claimed that it was 'important to very important'. Measures to defray costs included conceiving twins, which was 'somewhat important' to 24.6% (16/65) of couples and 'important to very important' to 52.3% (34/65) of couples.

When comparing country of residence, US couples were more likely to take longer to pursue treatment than international couples, often preparing >2 years before actively pursuing parenthood [46.2% (24/52) versus 12.5% (3/24); $P=0.01$]. In contrast, international couples were more likely to pursue treatment in <1 year [66.7% (16/24) versus 40.4% (21/52); $P=0.04$]. International couples were more likely to financially plan for fertility treatment than US couples, although this failed to reach significance. Significantly more US couples thought it was important to 'do anything' to defray costs, including minimizing the number of treatment cycles; 71.4% (30/42) of couples reported it as 'important to very important', and 28.6% (12/42) of couples regarded it as 'somewhat important'. International couples were more likely than US couples to regard defraying costs as 'not important' [21.7% (5/23) versus 0% (0/42); $P=0.004$]. With respect to employment issues, international couples were more likely to have both partners take on additional employment compared with US couples [12.5% (3/24) versus 1.9% (1/51); $P=0.01$]. No differences were noted with respect to desire to conceive twins, having one child genetically related to each partner, deciding who would be the genetic father, and obtaining a birth certificate.

With respect to partners' age, couples in which one of the partners was aged >50 years were significantly more likely to find the decision to actively pursue fertility treatment 'very or extremely difficult' [28.6% (4/14); $P=0.04$], compared with 7.1% (2/28) of couples where both partners were aged <40 years and 8.8% (3/34) of couples where one partner was aged 40–49 years.

Procreative preferences and costs of treatment

Overall, couples felt that it was 'somewhat important' [27.3% (30/52)] or 'important to very important' [65.5% (30/52)] to 'do anything' to defray costs, believing they could minimize the number of treatment cycles. International couples were more likely to regard defraying costs as 'not important' [21.7% (5/23)] than US couples [0% (0/42); $P<0.05$].

Conceiving twins was 'not important' to 23% (15/65) of couples, but 'somewhat important' to 24.6% (16/52) of couples, and 'important or very important' to 52.3% (34/65) of couples. Having a child genetically related to each partner was 'not important' to 56.5% (26/46) of couples, 'somewhat important' to 15.2% (7/46) of couples, and 'important or very important' to 28.3% (13/46) of couples.

With respect to genetic relationships, having one child genetically related to each partner was 'not important' to 40.0% (26/65) of couples, 'somewhat important' to 10.8% (7/65) of couples, and 'important or very important' to 49.2% (32/65) of couples. For 63.2% (48/76) of couples, the decision of who would be the genetic father was 'not difficult', 22.3% (17/76) of couples regarded this as 'somewhat difficult', and 14.5% (11/76) of couples felt that it was 'very to extremely difficult' (Table 2). No differences were noted with respect to these considerations between American and international couples, although couples aged <40 years were more likely to feel that this was not important compared with couples aged 40–49 years and >50 years.

Most couples wanted to transfer more than one embryo to increase their chances of pregnancy: 16.7% (11/66) of couples felt that this was 'somewhat important' and 83.3% (55/66) of couples felt that it was 'important to very important'. In addition, 65.1% (43/66) of couples felt that it was 'important to very important' that it would help to minimize the overall cost, while 53% (35/66) of couples thought that it was 'important to very important' to conceive twins. The latter was significantly more likely in couples aged <40 years and 40–49 years compared with those aged >50 years [47.8% (10/23) and 40% (12/30) versus 7.7% (1/13); $P<0.05$]. While the mean number of embryos transferred was 1.8 ± 0.4, only 15.8% (12/76) of couples chose an elective single embryo transfer. Overall, 48.0% (36/75) of couples had one child and 52.0% (39/75) of couples had twins.

Eighty percent (61/76) of couples estimated that total gestational surrogacy costs, including gestational carrier and oocyte donor compensation, IVF treatment, legal fees, and obstetric and neonatal medical expenses, exceeded $100,000. Interestingly, cost estimates were not significantly different for singleton and twin gestations (Table 3).

Challenges of being a parent

Obtaining a birth certificate was 'difficult' for 20.5% (15/73) of couples and 'somewhat difficult' for 3.9% (16/73) of couples. Regarding post-delivery employment disclosure and paternity leave, 98.6% (73/74) of couples reported that one of the two partners (whomever worked outside the home) informed his employer about the child(ren)'s birth, while both partners notified their employers in 89.2% (66/74) of couples. Respondents did not provide reasons for non-disclosure. Paternity leave was granted for one partner in 47.3% (35/74) of couples, while both partners were granted leave in 43.2% (32/74) of couples. Seventy-seven percent of couples needed to use annual leave, while 15.0% of partners were unable to take time off. In 8.0% (6/75) of couples, at least one partner needed to take on additional employment, while in 5.3% (4/75) of couples, it was necessary for both partners to do so. One-third (24/71) of couples reported experiencing discrimination to the point that they chose to seek alternative employment.

Respondents were asked whether they had experienced 'expected' or 'unexpected' parenting challenges (grouped in a list according to themes). Sixty-four percent (37/58) of couples reported experiencing 'expected' challenges, and 18.9% (11/58) of couples reported experiencing 'unexpected' challenges. Grouped together, the five most common themes were 'balancing home and work' [20.7% (12/58)], 'time for each other' [15.5% (9/58)], 'value differences in raising children' [13.8% (8/58)], 'sleep and personal time' [8.6% (5/58)] and 'costs of raising a family' [6.9% (4/58)].

Table 2 Parenthood decisions and timing to treatment.

	Frequency (%)					*P*-value
Decision to actively pursue fertility treatment	Not difficult	Somewhat difficult	Very or extremely difficult			
Overall	51/76 (67.1)	15/76 (19.7)	10/76 (13.2)			
Domestic	37/52 (71.1)	10/52 (19.2)	5/52 (9.6)			NS
International	14/24 (58.3)	5/24 (20.8)	5/24 (20.8)			
<40 years	24/28 (85.7)	2/28 (7.1)	2/28 (7.1)			0.04
40-49 years (one partner)	21/34 (61.8)	10/34 (29.4)	3/34 (8.8)			
>50 years	7/14 (50)	3/14 (21.4)	4/14 (28.6)			
<$50K	2/2 (100%)	0/2 (0%)	0/2 (0%)			NS
$50–100K	10/19 (52.6)	7/19 (36.8)	2/19 (10.5)			
>$100K	36/53 (67.9)	9/53 (17)	8/53 (15.1)			
Agreed on becoming parents	Yes					
Overall	69/76 (90.8)					
Domestic	46/52 (88.5)	<40 years	27/28 (96.4)	<$50K	2/2 (100)	
International	23/24 (95.8)	40–49 years (34)	33/34 (97.1)	$50–100K	20/20 (100)	
	>50 years (14)	9/14 (64.3)	>$100K	46/53 (86.8)		
P-value	NS		<0.001		NS	
Length of time after deciding to pursue surrogacy	<1 year	1–2 years	>2 years			
Overall	37/76 (48.7)	12/76 (15.8)	27/76 (35.5)			
Domestic	21/52 (40.4)	7/52 (13.5)	24/52 (46.2)			0.01
International	16/24 (66.7)	5/24 (20.8)	3/24 (12.5)			
<40 years	13/28 (14.3)	3/28 (10.7)	12/28 (42.8)			NS
40–49 years (one partner)	16/34 (32.4)	5/34 (14.7)	13/34 (38.2)			
>50 years	7/14 (50)	5/14 (35.7)	2/14 (14.3)			
<$50K	0/2 (0)	0/2 (0)	2/2 (100)			<0.01
$50–100K	10/19 (52.6)	7/19 (36.8)	2/19 (10.5)			
>$100K	36/53 (67.9)	9/53 (16.9)	8/53 (15.1)			
Financial planning	Did not plan	Planned <1 year	Planned 1–2 years	Planned >2 years		
Overall	22/75 (29.3)	13/75 (17.3)	21/75 (28.0)	19/75 (25.3)		
Domestic	18/51 (35.3)	8/51 (15.7)	10/51 (19.6)	15/51 (29.4)		NS
International	4/24 (16.7)	5/24 (20.8)	11/24 (45.8)	4/24 (16.7)		
<40 years	7/26 (26.9)	4/26 (15.4)	7/26 (26.9)	8/26 (30.7)		NS
40–49 years (one partner)	10/34 (29.4)	7/34 (20.6)	10/34 (29.4)	7/34 (20.6)		
>50 years	3/14 (21.4)	2/14 (14.3)	5/14 (35.7)	4/14 (28.6)		
<$50K	0 (0)	0 (0)	1/2 (50)	1/2 (50)		NS
$50–100K	6/19 (31.6)	4/19 (21.1)	4/19 (21.1)	5/19 (26.3)		
>$100K	8/40 (20)	9/40 (22.5)	12/40 (30)	11/40 (28.5)		
Deliberately attempting to conceive twins	Not important	Somewhat important	Important to very important			
Overall	15/65 (23.1)	16/65 (24.6)	34/65 (52.3)			
Domestic	9/42 (21.4)	11/42 (26.2)	22/42 (52.3)	NS		NS
International	6/23 (26.1)	5/23 (21.7)	12/23 (52.2)			
<40 years	6/23 (26.1)	5/23 (21.7)	12/23 (52.2)	NS		NS
40–49 years (one partner)	4/30 (13.3)	8/30 (26.7)	18/30 (60)			
>50 years	5/13 (38.5)	3/13 (23)	5/13 (38.5)			
<$50K	0/1 (0)	1/1 (100)	0/1 (0)	NS		NS
$50–100K	2/17 (11.8)	5/17 (29.4)	10/17 (58.8)			
>$100K	13/46 (28.3)	8/46 (17.4)	25/46 (54.3)			
Conceiving a child genetically related to each partner	Not important	Somewhat important	Important to very important			
Overall	26/65 (40.0)	7/65 ((10.8)	32/65 (49.2)			

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Table 2 *(continued)*

	Frequency (%)			*P*-value
Domestic	17/42 (40.5)	3/42 (7.1)	22 /42(52.4)	NS
International	9/23 (39.1)	4/23 (17.4)	10/23 (43.5)	
<40 years	10/13 (76.9)	2/13 (15.4)	1/13 (7.7)	0.001
40–49 years (one partner)	9/30 (30)	2/30 (6.7)	19/30 (63.3)	
>50 years	6/23 (26.1)	5/23 (21.7)	12/23 (52.2)	
<$50K	0/1 (0)	1/1 (100)	0/1 (0)	NS
$50–100K	2/16 (12.5)	5/16 (31.3)	9/16 (56.3)	
>$100K	16/45 (35.6)	7/45 (15.6)	22/45 (48.8)	
Deciding who would be genetic father	Not difficult	Somewhat difficult	Very to extremely difficult	
Overall	48/76 (63.2)	17/76 (22.3)	11/76 (14.5)	
Domestic	33/52 (63.5)	12/52 (23.1)	7/52 (13.5)	NS
International	15/24 (62.5)	5/24 (20.8)	4/24 (16.7)	
<40 years	11/21 (52.4)	4/21 (19)	6/21 (28.6)	0.04
40–49 years (one partner)	13/16 (81.3)	2/16 (12.5)	1/16 (6.3)	
>50 years	13/14 (92.9)	1/14 (7.1)	0/14 (0)	
<$50K	1/2 (50)	1/2 (50)	0/2 (0	NS
$50–100K	17/20 (85)	1/20 (5)	2/20 (10)	
>$100K	36/52 (69.2)	9/52 (17.3)	7/52 (13.5)	

NS, not significant.

Commenting on balancing home and work, one man stated, 'we both work demanding jobs, have next to no help from family, and our [children] . . . are not low maintenance kids'. Another stated of the difficulties in finding more time for one another, 'he was a really good/easy kid, but, like all parents, it's difficult finding time for ourselves as well as for my husband's work vs. home schedule. We're expecting #2 . . . this is going to be the biggest challenge!' Sometimes just completing daily activities could be a challenge: '[it's] very difficult for even a stay-at-home parent to run errands, complete chores, venture out with twin newborns/infants'. With respect to different parenting values, one man emphasized, '[we have] different parenting styles based on families of upbringing – [this] has required a lot of work and compromise'. Remarking on the lack of sleep and personal time, another respondent noted, '[i]t's not anything uncommon that a new parent goes through but having no frame of reference for what this amazing job entails was hard. And sleeplessness. Whoa sleeplessness'. Others commented on the new expenses of raising a child: 'added costs of needing to buy a bigger apartment; I left a very well paid job before we started our journey to have a more flexible schedule'.

Unexpected challenges included children's reactions to family structure, and others' reactions to their family. One man recalled, 'my older daughter told me that she was disappointed not having a mother. I explained to her that there were different kinds of families. . . . now she has decided that one of us is her mother!' A member of a bi-racial couple noted, 'in addition to being same-sex parents, we are a bi-racial couple. . . . We get a lot of questions around twins that look that different'. Still another commented on the effect that surrogacy could have had on his child's social life: 'it seemed our son did not have many friends come to our house, but he did go to theirs, and I am not sure if he was just embarrassed or we were just not the "fun" house to go to'.

Discussion

These data present perspectives on cisgender gay couples' decision-making, from actively pursuing fertility treatment to post-delivery challenges including employment, parental leave and discrimination. Furthermore, the data indicate that paternal age and non-US residence meaningfully affect family-building decision-making; findings that have not been previously published.

Previous research suggests that gay male couples carefully consider which partner will provide sperm, and mutually agree on who should have the first opportunity to do so. Couples gave many reasons for allowing one partner to provide sperm first, including that one partner had a greater desire to be genetically related to his children, had 'better genes', or already had genetically-related children and felt that his partner should have the same opportunity (Greenfeld and Seli, 2011). The results reveal that respondents had different views regarding the importance of being genetically related to offspring; 40% of couples felt that it was 'not important', while nearly 50% of couples felt that deciding who would have this relationship was 'important to very important'. These differences appeared to relate to age. Other studies also indicate a certain ambivalence of gay couples towards biogenetic paternity, resulting in creatively playing with the symbols of kinship (Dempsey, 2013; Murphy, 2013).

With respect to ART-related costs, challenges and associated fiscal impacts, gestational surrogacy in the USA continues to be financially prohibitive for many couples. Costs typically vary with geography, ranging from $80,000 to $160,000 per cycle (Ressler et al., 2014; Smietana, 2017).

Table 3 In-vitro fertilization-embryo transfer, antepartum and post-birth issues.

	Frequency (%)			*P*-value	
Transferring more than one embryo to increase chances	Not important	Somewhat important	Important to very important		
Overall	0/66 (0)	11/66 (16.7)	55/66(83.3)		
Domestic	0/42 (0)	7/42 (16.7)	35/42 (83.3)		NS
International	0/23 (0)	4/23 (17.4)	19/23 (82.6)		
<40 years	0/18	2/18 (11.1)	16/18 (88.9)		NS
40–49 years	1/13 (7.7)	1/13 (7.7)	11/13 (84.6)		
>50 years	0/13 (0)	1/13 (7.7)	12/13 (92.3)		
<$50K	0/1 (0)	0/1 (0)	1/1 (100)		0.03
$50–100K	0/17 (0)	6/17 (35.3)	11/17 (64.7)		
>$100K	16/44 (36.4)	6/44 (13.6)	22/44 (50)		
	Elective single embryo transfer	Double embryo transfer			
Overall	12/76 (15.8)	64/76 (84.2)			
Domestic	42/52 (80.8)	10/52 (19.2)			NS
International	22/24 (91.7)	2/24 (8.3)			
<40 years	5/28 (17.9)	23/28 (82.1)			NS
40–49 years	5/34 (14.7)	29/34 (85.3)			
>50 years	1/14 (7.1)	13/14 (92.9)			
<$50K	1/2 (50)	1/2(50)			NS
$50–100K	4/20 (20)	16/20 (80)			
>$100K	7/52 (13.5)	45/52 (86.5)			
Estimated costs	<$50K	$50–100K	$100–150K	>150K	
Overall	7/76 (9.2)	8/76 (10.5)	31/76 (40.8)	30/76 (39.5)	
Singleton	4/36 (11.1)	2/36 (5.6)	21/36 (58.3)	9/36 (25)	NS
Twin	3/40 (7.5)	6/40 (15)	10/40 (25)	21/40 (52.5)	
Domestic	6/51 (11.8)	6/51 (11.8)	17/51 (33.3)	22/51 (43.1)	0.014
International	1/25 (4)	3/25 (12)	14/25 (56)	7/25 (28)	
<40 years	1/27 (3.7)	5/27 (18.5)	14/27 (51.9)	7/27 (25.9)	0.03
40–49 years	2/34 (5.4)	3/34 (8.8)	14/34 (41.2)	15/34 (44.1)	
>50 years	4/14 (28.6)	0/14 (0)	3/14 (21.4)	7/14 (50)	
<$50K	0/2 (0)	0/2 (0)	0/2 (0)	2/2 (100)	NS
$50–100K	5/18 (27.8)	5/18 (27.8)	6/18 (33.3)	7/18 (38.9)	
>$100K	5/51 (9.8)	3/51 (5.9)	25/51 (50.9)	18/51 (35.3)	

NS, not significant.

Even couples that earn higher salaries (>$100,000/year) may not have saved enough to pay all treatment costs up front. As health insurance benefits for fertility treatment by gay couples are either non-existent or severely limited, many couples tend to use three funding sources for ART: family inheritance, life savings and bank loans (Smietana, 2017). Our data add to the literature, contributing the findings that almost one-third of couples did not financially plan for their ART cycle and that international couples were more likely to financially plan for treatment than US couples. Cost containment was a priority for almost two-thirds of couples and appeared to be more important to US couples. These financial burdens more than likely influenced couples' strong desire for twins; 84.2% of couple transferred two embryos to attempt to complete their family in one cycle, despite the known risks of multifetal gestation (Jadva et al., 2003). Given that gay male couples generally experience no underlying subfertility and gestational surrogacy requires an egg donor, double embryo transfer for gay male couples may result in a higher risk of multiples than in many other IVF contexts. Such preferences are at odds with the recommendations for an elective single embryo transfer from the Society for Assisted Reproductive Technology (SART) and the American Society of Reproductive Medicine (ASRM) (ASRM, 2017). Given that more than three-quarters of couples reported that deliberately conceiving twins was 'somewhat to very important', and more than half of gestational carriers conceived twins, there seems to be a meaningful

gap between SART and ASRM guidelines and patient goals, and patients' choices appear to have been supported by their clinicians' actions.

While much research focuses on gay parenting, child welfare, psychological outcomes among children born to gay couples, and, more recently, relationships with surrogates and egg donors (Baiocco et al., 2018; Carone et al., 2018a, b), there is a dearth of studies addressing gay fathers' parental stress, psychological adjustment and relationship satisfaction. Our data revealed that two-thirds of couples experienced 'expected' (and nearly one-fifth of couples experienced 'unexpected') parenting challenges including 'balancing home and work', 'time for each other', 'value differences in raising children', 'sleep and personal time' and 'costs of raising a family'. Few researchers have attempted to address these issues. One study by Rubio et al. involving qualitative interviews with 40 gay fathers found that most fathers had experienced occupational changes since having children, spent fewer hours at work and more time at home, travelled less frequently for business, got less sleep and worked late at night after the children were asleep (Rubio et al., 2017). In a study of 52 gay fathers, Tornello et al. (2015) reported that men tended to divide household and caregiving tasks and child care in a more egalitarian manner than heterosexual couples. While gay fathers reported high overall levels of relationship satisfaction, those who reported greater discrepancies between actual and ideal divisions of labour also reported decreased levels of relationship satisfaction, including fewer affectionate expressions and less interpersonal agreement with partners. A cross-sectional study by Van Rijn-van Gelderen et al. (2018) found no differences in parental wellbeing among gay fathers with infants conceived through surrogacy, lesbian families with infants conceived through donor insemination, and heterosexual families with infants conceived through IVF. All three parent groups reported relatively low levels of parental stress, anxiety and depression and were relatively satisfied with their intimate relationships, even after controlling for whether they were primary or secondary caregivers. Gay fathers' expected and unexpected parenting challenges are apparently no different from those of heterosexual couples; like other parents, they find that parenting requires a commitment to fulfilling both partnership and parental roles, and balancing home, parental and occupational responsibilities (Hammarberg et al., 2015).

With respect to discrimination, Riggs and Due (2014) reported that gay men commonly face generalized discrimination, particularly in their parenting roles. Discrimination may come from gay men's families, medical professionals, childcare providers, schools and society (Riggs and Due, 2014). Despite increased legal protections for, and public awareness of, same-sex couples and families, discrimination against gay male fathers is still commonplace (Riggs and Due, 2014), causing approximately one-third of respondents to seek new employment. A concerted effort is needed to eliminate discrimination, particularly when it impacts employment and the need to support a family.

Little research exists on gay fathers' use of CBRC. CBRC is a rapidly growing practice where individuals seek ART treatment outside their home country (Carone et al., 2017; Igareda Gonzalez, 2019; Pinto et al., 2018). CBRC poses considerably more ethical and legal challenges than American treatment, particularly in countries such as Italy and Germany which have banned surrogacy completely (Shenfield et al., 2010), while the USA (Hughes et al., 2016), India (Inhorn and Patrizio, 2012), and Ukraine (Ahuja, 2015) place few restrictions on commercial surrogacy but fully enforce gestational surrogacy contracts in most states or territories. When patients seek treatment abroad, it is difficult to ensure their medical safety, prevent undue coercion for gestational carriers, and establish children's parentage and citizenship status (Pinto et al., 2018; Tendais and Figueiredo, 2016). International political, religious and legal norms, and attitudes towards ART vary widely, and it is challenging to obtain international consensus on a CBRC framework (Pinto et al., 2018; Tendais and Figueiredo, 2016), particularly for gay male couples.

Finally, there are only limited data on how parental age affects the psychological wellbeing of children conceived through ART. Recent studies in heterosexual couples have addressed psychosocial effects of becoming parents through oocyte donation at an advanced age, including treatment risks, motivations for participation and impact on children, with outcomes showing that children of older mothers appear to do as well as children of younger mothers. Additional research is urgently needed regarding the psychosocial effects of conceiving children through oocyte donation for intended parents of advanced ages, including gay fathers (Guesdon et al., 2017; Sharma et al., 2015), who may have had more complex expectations about whether they could ever become parents because they were gay.

This study has several limitations. As the respondents self-selected to participate, their behaviours, views and experiences may not be representative of those of all gay fathers building families through gestational surrogacy. In addition, using a single online recruitment site may limit sample diversity. Moreover, this study did not utilize a validated survey because none existed that met the objectives of the study. Survey-based research is inherently subject to errors in coverage, sampling, non-response and measurement. Also, survey anonymity made it impossible to clarify patient responses. However, as more gay fathers pursue family-building through gestational surrogacy, future research can refine recruitment strategies, increasing the likelihood of obtaining more representative samples (Blake et al., 2016; Sharma et al., 2015).

In conclusion, gay male couples undergoing ART face challenges regarding decision-making, lack of infertility health insurance benefits, financial hardship and discrimination that are apparently influenced by partners' age and country of residence. Policy changes are needed to help gay fathers to surmount these challenges, including education on the risks of multiple gestations, increasing availability of infertility health insurance benefits, and more egalitarian parental leave for gay fathers.

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