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Authors

Scheib, JE
McCormick, E
Benward, J
et al.

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ORIGINAL ARTICLE

Finding people like me: contact among young adults who share an open-identity sperm donor

J.E. Scheib [1,2,*], E. McCormick[3], J. Benward[4], and A. Ruby[2]

[1]Psychology Department, University of California, Davis, Davis, CA, USA [2]The Sperm Bank of California, Berkeley, CA, USA [3]University of California Davis Medical Center, Sacramento, CA, USA [4]Private Practice, San Ramon, CA, USA

*Correspondence address. Psychology Department, University of California, Davis, One Shields Ave., Davis, CA 95616, USA. E-mail: jescheib@ucdavis.edu https://orcid.org/0000-0003-4767-1146

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STUDY QUESTION: What interests and experiences do donor-conceived adults have with respect to same-donor peers/siblings, when they share an open-identity sperm donor?

SUMMARY ANSWER: Donor-conceived young adults report considerable interest in, and primarily positive experiences with, their same-donor peers, with some finding 'people like me'.

WHAT IS KNOWN ALREADY: Through mutual-consent contact registries, director-to-consumer DNA testing and other means, donor-conceived people with anonymous (i.e. closed-identity) sperm donors are gaining identity-related information from, and establishing relationships with, people who share their donor.

STUDY DESIGN, SIZE, DURATION: Semi-structured, in depth telephone and Skype interviews with 47 donor-conceived young adults were carried out over a 31-month period. Inclusion criteria were being one of the first adults for each donor to obtain their identity and being at least 1-year post donor-information release.

PARTICIPANTS/MATERIALS, SETTING, METHODS: Participants (aged 19–29 years, 68.1% women) were born to female same-sex couple parents (46.8%), a single mother (29.8%) or heterosexual couple parents (23.4%); all parents had conceived through the same US open-identity sperm donation program. The dataset was analyzed thematically and included interviews from only one participant per family. Each participant had a different donor.

MAIN RESULTS AND THE ROLE OF CHANCE: Interest in, and experiences with, same-donor peers suggested that they occupy a unique position in the lives of donor-conceived young adults who share their open-identity donor. Contact can provide identity-relevant information and support through the availability of relationships (whether actualized or potential), shared experiences, and easier relationships than with their donor. Most donor-conceived young adults felt positively about their contact experiences. Of those not yet linked, almost all expressed an interest to do so. Some had met the children raised by their donor. When asked, all expressed an interest in doing so.

LIMITATIONS, REASONS FOR CAUTION: Interviews were conducted with donor-conceived young adults who were uncommon in their generation in terms of: having an open-identity sperm donor; the majority knowing about their family's origins from childhood; and having parents that accessed at the time one of the only open-identity sperm donation programs. Further research is needed to assess applicability to all donor-conceived adults; findings may be more relevant to the growing number of people who have an open-identity donor and learned in childhood about their family's origins.

WIDER IMPLICATIONS OF THE FINDINGS: Participants were among the first generation of donor-conceived adults with an open-identity sperm donor. Their experiences and perspectives can provide essential guidance to programs and others with similar origins. Early disclosure of family origins and identifying the donor did not diminish the young adults' interest in their same-donor peers. Positive experiences suggest that the benefits of contact include not only identity-relevant information (through shared traits and experiences), but also relationships with and support from people who understand the uncommon experience of being donor conceived. Implications include the need to educate families and intended parents about the potential benefits of knowing others who are donor conceived, and the risk of unexpected linking across families by donors, regardless of donor-conceived person or family interest.

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Key words: gamete donation / open-identity sperm donation / donor-linking registry / donor-conceived person / same donor peer support / donor sibling / young adult / kinship

WHAT DOES THIS MEAN FOR PATIENTS?

In anonymous sperm donation, multiple families may be formed with the assistance of the same donor, resulting in children who are genetically-linked 'same-donor peers'—biological half-siblings. In the current study, researchers interviewed 47 young adults about their interest in and contact with their same-donor peers. Study participants were unique in having open-identity donors whose identity they had obtained, and with whom they were sometimes in contact. (*Note*: Open-identity sperm donors are anonymous to donor-conceived people until they reach adulthood; then they can obtain their donor's identity, if they are interested.) This increased access to the donor did not appear to diminish young adults' interest in their same-donor peers. Almost half of participants had already contacted one or more same-donor peers, and almost all described their experiences positively.

Experiences with same-donor peers occupied a unique position in the lives of many of the young adults. The desire for interpersonal connectedness with their same-donor peers was a theme throughout the interviews. These relationships could provide identity-relevant information, through shared traits, and socio-emotional support that they had not found elsewhere, from others who had also grown up in a donor-assisted family. In turn, they found that both the information and relationships could contribute to a better understanding of one's self. While participants did not necessarily view their relationships as close, most felt that the genetic tie by itself had meaning and often deemed same-donor peers a sibling or in qualified sibling terms (e.g. 'donor sibling'). Finally, some young adults found the relationship with a same-donor peer(s) as easier and more rewarding than the relationship with their donor.

The current findings support and expand on previous research, highlighting the importance of same-donor peer contact for donor-conceived people. In open-identity programs, same-donor peer connections need to be understood as not just an unexpected benefit of the donor identification process, but as a separate, unique and valuable resource for donor-conceived people.

Introduction

In sperm donation, multiple families can be formed with the assistance of the same donor. These families rarely know each other, yet have genetically-linked, often similar-aged children. Terminology that has been used for these children (and donor-conceived people) include 'donor siblings' and 'same-donor peers'. We use the latter, which acknowledges both peers as people sharing the same position with regards to the donor, and the genetic link through a shared donor, but we do not assume the relationships replicate those common among siblings in Anglo-European kinship systems (Smith, 1993; for more on terminology see e.g., Cahn, 2013; Beeson *et al.*, 2015; Hertz *et al.*, 2017).

Research has documented parents' interest in same-donor linked families. By and large, parents report seeking contact to obtain: support for their children and/or themselves; and information about their children's shared physical and psychological traits, as a route to better understand their child's genetic origins (Scheib and Ruby, 2008; Freeman *et al.*, 2009; Hertz and Mattes, 2011; Kramer and Cahn, 2013; Goldberg and Scheib, 2015; Klotz, 2016; Hertz *et al.*, 2017; Hertz and Nelson, 2019). Parents report a range of experiences with contact, including mismatched expectations, not 'clicking', and disagreement within the couple about making contact. Challenges can arise for the genetically unrelated parents: for example, when family members value contact with strangers based on genetic ties (e.g. Goldberg and Scheib, 2016). However, parents more often report positive contact experiences with same-donor families (e.g. Scheib and Ruby, 2008; Freeman *et al.*, 2009; Hertz, 2009; Hertz and Mattes, 2011; Freeman *et al.*, 2014; Goldberg and Scheib, 2016).

Fewer studies focus on donor-conceived people's interest in and experiences with others who share their donor. Donor-conceived people report curiosity about their same-donor peers, including about shared characteristics that might reveal more about their donor and provide identity-relevant information about their origins, for example through 'feel[ing] more complete in my identity' (van den Akker *et al.*, 2015, p. 114). In addition, interest can center on the possibility of new relationships and extending family networks (review in Blyth *et al.* (2012); see also Hertz *et al.*, 2017; Persaud *et al.*, 2017; Hertz and Nelson, 2019). Like the parents, donor-conceived people also report positive linking experiences (e.g. Jadva *et al.*, 2010; Frith *et al.*, 2018). For example, some donor-conceived adults felt that contact with people who shared their donor changed their 'sense of self' (van den Akker *et al.*, 2015, p. 116), and provided common connections based on physical or relationship ties (Hertz *et al.*, 2017; Frith *et al.*, 2018). Donor-conceived adolescents also report that interactions with same-donor peers enabled them to expand their biological knowledge and identity, as well as form new relationships (Persaud *et al.*, 2017; see also Jadva *et al.*, 2010). But some donor-conceived adults reported challenges, such as balancing their strong interest in genetically-related strangers with loyalty to family members with whom they lack a genetic tie (e.g. Jadva *et al.*, 2010; Nelson *et al.*, 2013). Others reported difficulty maintaining social relationships within large groups, feeling like

relationships were 'rushed into', or experiencing mismatched expectations (e.g. Frith *et al.*, 2018; Hertz and Nelson, 2019).

Research has also focused on how individuals and families manage and make sense of these non-traditional relationships, in a context that often lacks established language to describe the meaning of the relationships (Kramer, 2011; Cahn, 2013; Beeson *et al.*, 2015; Canzi *et al.*, 2019). Hertz *et al.* (2017) found that participants formed relationships that they treated somewhat like traditional family, or more similar to extended family or family friends. Others described it as a unique relationship for which they had no name (Scheib and Ruby, 2008; Goldberg and Scheib, 2015). When asked about their children's perspective, parents felt that the children were more likely than themselves to view linked families and same-donor peers as some kind of family (Scheib and Ruby, 2008; Freeman *et al.*, 2009; Hertz *et al.*, 2017).

To date, studies with donor-conceived people who link to same-donor peers included a majority who had an anonymous (closed-identity) sperm donor. Most individuals were unable to identify or contact their donor. In open-identity sperm donation, donors agree to release their identities to donor-conceived individuals once they reach adulthood: however, when studies include these adults (Hertz and Nelson, 2019; Schrijvers *et al.*, 2019), the results are not separated by donor type. In addition, because open-identity donation was rare (Scheib and Cushing, 2007; Blyth and Frith, 2015), and parental disclosure infrequent before 2000 (Indekeu *et al.*, 2013), there is limited information available overall about these donor-conceived adults. This knowledge gap may pose a challenge for the growing number of programs and jurisdictions that provide open-identity donation. We aimed to reduce this gap by investigating the experiences of donor-conceived young adults who had obtained their sperm donor's identity from one open-identity program. These individuals were among the first generation conceived with open-identity donors. Here, study questions focused on the young adults' interest in and experiences with the same-donor peers—those with whom they share a close genetic tie.

Materials and methods

Participants and procedure

All potential study participants had parents who conceived them with the assistance of one open-identity program, The Sperm Bank of California, between 1983 and 1996. Donors in this program agree to release their identity and last known contact information to donor-conceived adults (18+ years) who request it. This program was the first internationally to offer open-identity donation (Raboy, 1993; Gartrell *et al.*, 2019), and from which there is now a cohort of young adults who have identified their donor (Scheib *et al.*, 2017).

The program also created a separate mutual-consent registry for families (but not donors) who want contact with others who share their donor. Parents can join as soon as their child is born, and donor-conceived people once they reach 18 years of age. About 30% of families choose to be on it (www.thespermbankofca.org/content/family-contact-list-information). Most families on the mutual consent registry had their children after 1997, when the registry was created, so fewer of the current study participant families were likely to be on it.

Most donors at this open-identity program have their identity released to more than one donor-conceived person. We invited the first donor-conceived adult who had obtained their donor's identity from the program to participate in this study. If the adult declined or could not be reached, we invited the next person who had obtained this same donor's identity. The final sample size was based on: having at least 1 year between donor information release and interview; and the ability, based on previous findings from this population (Scheib *et al.*, 2005, 2017), to detect associations related to family type (i.e. 10–16 participants per family type). Family types included female same-sex couple parents (the majority), single mothers and heterosexual couple parents. None of the families had parents who identified as trans* or gender non-binary at the time of the participant's birth or later, at interview.

We invited 63 young adults via mail and email. One of three interviewers then called to explain the study further and schedule the interview. Nine participants could not be reached. Of the 54 contacted, four declined or could not be reached at the scheduled interview time. Fifty young adults consented to participate and completed the interview (79.4% response rate). Three interviews were subsequently excluded: one at the participant's request, and two did not meet study criteria. The final sample included 47 young adults.

One author (E.M.) conducted the majority of the interviews. All but one participant was interviewed by phone (the other interviewed over Skype without video). All but one agreed to be audio-recorded. Participants could end the interview or recording at any time. Interviews lasted 1–3 h and took place between November 2013 and May 2016. Interviews were transcribed, with potentially identifying information removed. Pseudonyms were assigned to protect confidentiality. A research assistant (RA) or author (E.M. and J.E.S.) reviewed the transcripts for accuracy.

Interview guide

We conducted semi-structured interviews to learn about the experiences of donor-conceived young adults who had obtained their sperm donor's identity. A geographically diverse sample necessitated phone interviews. Interview construction was informed by the literature, our key research questions and feedback from several scholars with expertise in family relationships and qualitative research. Further modification came from pilot interview feedback (including from five donor-conceived adults not in the study). Open-ended questions allowed exploration, with probes used to encourage participants to expand on their answers. If a participant became upset by a question, the interviewer moved on.

Data for this study were derived from the following background questions and questions about young adult interest in and contact with people who shared their donor: Have you been in contact with anyone who shares your donor? *For participants not yet in contact:* How interested are you in contacting someone who shares your donor? Why might you be interested in contacting someone who shares your donor? *For participants already in contact:* How were you able to find them/contact them (followed by a checklist of options)? How many people have you been able to contact? How long ago did you contact that first person? Why did you want to contact them? What has it been like to get in contact with them? How would you describe your relationship with *him/her/each one*, for example, from acquaintance to

sibling? *For all participants*: If the donor were open to it, how interested would you be in meeting his children, if at all? Why? (This question was raised in an earlier section about contact with the donor.) The study was approved by the UC Davis Institutional Review Board.

Analyses

Interviews were analyzed using Braun and Clarke (2006) and Braun *et al.* (2018) reflexive approach to thematic analysis. This involved examining participants' responses to identify meaningful patterns and themes. Authors (J.E.S. and E.M.) read the interviews to familiarize themselves with the data. Next, they re-read the interviews, with attention to the semantic level of participants' explanations for their interest in same-donor peers, and of their experiences with contact. This focus framed the analysis of the data, from which, over the course of several readings and discussions, the categories and broader themes were generated inductively. After re-reading, the two authors developed an initial coding scheme to reflect possible response categories and broader themes, and each applied it to a subset of interviews. Coding was then compared and refined. Prior to sharing the coding scheme, RA team members also read the interviews to capture any missed patterns in the data. The two authors then integrated the new information to further refine the categories, and create a more comprehensive coding scheme. Two RAs then each coded a subset of interviews to identify whether they captured all the data. On the basis of emergent discrepancies, the two authors refined the codes. The codes were then reapplied to the subset, plus additional interviews. This was repeated until the data could be coded accurately and comprehensively. The finalized codes were then reapplied to the whole dataset. At the end, all authors discussed the findings and resultant themes.

The results are organized around reasons for wanting contact, participant contact experiences, and associated themes. Illustrative quotes are provided, along with participant gender, family type at birth, and whether or not they were in contact with same-donor peers (when not obvious). To summarize responses, we used descriptive statistics. To assess whether participant responses were related to family type, growing up with a sibling(s) and experience with contact, we used Fisher's exact tests (two-tailed; McDonald, 2014; SPSS version 26, IBM, University of California, Davis, CA, USA).

Results

Description of sample

Participants (n = 47) ranged from 19 to 29 years old ($M = 23.9$, $SD = 3.1$), and identified as women (68.1%) or men (31.9%). Almost half (n = 22) were born to a female same-sex couple (identified as lesbian, bisexual or queer), 29.8% (n = 14) to a single woman and 23.4% (n = 11) to a heterosexual couple (Table I). Over half (n = 25) had been raised with a sibling(s). Forty-six participants lived in the USA and one lived in Canada. All participants learned about their family's donor origins from their parents. All but one learned in a neutral or positive way; one participant learned during a family conflict. Those 36 born to one or two mothers learned by age 11 years, compared to 6 of the 11 born to a mother and father. The remaining five learned in adolescence.

All participants obtained their donor's identity from the program between 2002 (year of the first program release) and 2014. Interviews occurred 17 months to 11 years later (median = 5 years; mode = 2), between 2013 and 2016. The majority of participants (83%) were the first to obtain their donor's identity.

Extent of contact

Most participants (n = 42, 89.4%) shared their donor with at least one other family. About half (n = 22, 52.4%) were in contact with same-donor peers (median = 2, mode = 1, range 1-20). Among family types, this represented 10/21 participants born to two mothers, 8/12 to a single mother, and 4/9 to a mother and father. Being in contact with other same-donor families was unrelated to family type or whether or not the participant grew up as an only child (Fisher's exact P's > 0.05).

In contact: timing of linking and methods

Among participants in contact with same-donor peers, half had first linked in childhood or adolescence, before they requested their donor's identity (Table II). Most often this was parent-initiated. The other half had initiated contact themselves, as adults, with some first learning about same-donor peers at the same time as requesting the donor's identity.

Methods of linking varied. Most commonly, first-time linking occurred through the program's Family Contact registry (9/22). Other participants had linked through the online Donor Sibling Registry (5/9). One could not remember how she had linked, while another discovered his first linked peer among his friends, years after they had become close.

The last six young adults described linking after identifying and contacting their donor, who then connected them to another person who shared this donor:

> 'He told me about my half-sister right away [i.e., in first contact with donor] so that was exciting for me. . .I don't think it had occurred to me in the process of getting his information and contacting him that I would find out about this. It makes total sense that I would, if there were other people [who] came forward, but it just hadn't really occurred to me' (Lauren, W, born to a mother and father, in contact).

Not yet in contact: interest

Among participants who had not yet linked (n = 25), all but one expressed interest in same-donor peers. Rachel (W, born to two mothers), for example, was emphatic: 'I would love, love, love to meet my, my half-siblings'. Two participants went further and shared their frustration that the program would not contact same-donor families to ask that they sign up: '. . .I feel like [connecting with same-donor peers is] very important. . .I just think it's almost as big a part as the father, the sibling' (Kelsey, W, born to a single mother).

In other instances, participants did not know linking was an option, or even that same-donor peers might exist, only learning during the study interview. More commonly, however, participants did not know how to go about finding each other.

Table I Participant demographics in a study of donor-conceived young adults (n = 47).

	Family type at birth		
	Female same-sex couple (n = 22)	Single woman (n = 14)	Heterosexual couple (n = 11)
Age at interview (years, M, range)	23.6, 20–29	23.7, 19–29	24.5, 20–28
Woman	12 (54.5%)	12 (85.7%)	8 (72.7%)
Grew up with a sibling	14 (63.6%)	4 (28.6%)	7 (63.6%)
Donor origins			
Always known	16 (72.7%)	11 (78.6%)	5 (45.5%)
Donor origins			
Learned by age 11 years	22 (100%)	14 (100%)	6 (54.5%)

Table II Timing of contact between participants and their same-donor peers (n = 42 shared their donor with at least one other family).

	Female same-sex couple (10/21)	Single woman (8/12)	Heterosexual couple (4/9)
Before requesting donor identity	6/10	3/8	2/4
During or after requesting/identifying the donor	4/10	5/8	2/4

Motivations, experiences and related themes

Almost all participants expressed genuine curiosity about and interest in people who shared their donor, regardless of whether or not they were already in contact. In delving deeper, the narratives centered around two major themes. The first theme focused on aspects of the individual and the potential growth in one's sense of self—who they were and where they fit in relation to others. The second involved interactions with others, forming relationships and what could come of them. The positive interactions and sense of support that were anticipated from contact with same-donor peers, or that actually resulted from it, occurred at both the individual and the interpersonal levels.

Motivations for making contact

Participants (n = 37) described reasons for their interest in contacting same-donor peers. (Ten participants were not asked because they stated they had no same-donor peers, were upset about not being able to link and/or asked to move to the next question.) The majority (n = 27, 73%) provided more than one reason. The reasons appeared to fall into four categories: curiosity/questions (83.8%), finding someone who shared the experience of being donor conceived (32.4%), interest in or open to a relationship (59.5%) and feeling that the relationship might be easier because it was a peer, rather than the donor (35.1%; Table III, grouped by whether or not in contact).

Curiosity/questions. Most commonly (n = 31, 83.8%), the young adults wanted to know more about the people who shared their donor:

> 'I was very excited to get in contact with her, just to know that there is someone out there who is my biological half-sister was so intriguing, and to learn about her and see who she is' (Anthony, M, born to two mothers, in contact).

The majority described questions about their shared origins and the extent to which they shared characteristics. Participants wanted to know what same-donor peers were like: 'I'm curious what they look like. I'm curious what their interests are. . .Stuff like that' (Kimberly, W, born to two mothers, not in contact). In addition, they wanted to know what similarities and difference they might have: '. . .similar reasons to the donor I think. . .the missing puzzle pieces. Wanting to see how are they similar or not. Is there shared inheritance' (Christopher, M, born to two mothers, in contact).

A few participants wanted to know why same-donor peers had not contacted their donor, contrasting with their own interest in making contact. Two others wanted information because their donor could not be reached or had died: '. . .because at that point I felt like I kind of lost control, or had the control taken away from me. . .so in any way that I could find out more, I was game' (Abigail, W, born to a mother and father, in contact).

Someone who is also donor conceived. About one-third of donor-conceived young adults (n = 12, 32.4%) described wanting to find someone who shared the experience of being donor conceived and/or had been raised in a family with donor origins. Rebecca (W, born to two mothers, in contact) captured this:

> '. . .to see if we had things we could relate on, and life experiences telling people. They've all had sperm donors and we had the same sperm donor. And curious what stories they've told people or situations they've been in. . .when I was younger I wanted to meet other people my age, who had similar experiences'.

Anthony (in contact) also described his reasons, including reference to his family. Same-donor peers meant '. . . people the same generation who've grown up not only with the same donor but

Table III Motivations for contacting same-donor peers (n = 37).

	Not in contact (n = 17; 8 not asked)	In contact (n = 20; 2 not asked)
Curiosity/questions	13 (76.5%)	18 (90%)
Find someone with the experience of being donor conceived	4 (23.5%)	8 (40%)
Potential relationship/family*	7 (41.2%)	15 (75%)
Easier relationship**	3 (17.6%)	10 (50%)

*Association between participant experience with contact and motivation reported (Fisher's exact test, $P = 0.050$).
**Association between participant experience with contact and motivation reported (Fisher's exact test, $P = 0.082$).

also. . .possibly also having two moms and just more similarities'. These reasons were distinct in focusing not on shared characteristics, but on shared experiences, something that could be difficult to find if a person rarely encountered other families like theirs. The majority of participants described this interest along with explanations of what it was like not knowing others like them.

In contrast, Christopher (born to two mothers, in contact) grew up knowing families like his, but also described an interest based on shared experiences. He was already linked to three same-donor peers—one was a childhood friend, the other two were new connections—and knew others existed. He further explained his interest:

'I would love for me to gather as many of the siblings as possible. Just to have that sense of the whole bunch of us [together] who have the same experience. . .to feel that sense of belonging and togetherness in that'.

Knowing other people like them could provide a group both to relate to and to belong to.

Potential relationship, potential family. Just over half the narratives (n = 22, 59.5%) related to connecting with a same-donor peer, or being open to connecting if someone contacted them, and being motivated by the possibility that a relationship would result. The theme of connections, and their potential, was most evident in these kinds of responses. Participants described a variety of possible relationships ranging from a friendship, or not being sure what it would be, to hoping for a sibling. For example, Courtney (W, born to two mothers, not in contact) had been '. . .really attached to having siblings when I was little because I was an only child. I think that would be really interesting'. Andrew (M, born to a mother and father, not in contact) was interested, but less specific:

> 'There's the potential for having a positive relationship. . .I don't know exactly if I would immediately be "Oh brother", or "sister" or whatever, magically, we're family, I don't really feel that. . .if it worked out, cool, if it didn't, alright'.

Other participants welcomed the possibility of this new relationship in their life, even if they were not specifically seeking it: 'I wanted to be there for her, if she wanted a sibling' (Tyler, M, born to two mothers, in contact).

Easier relationship than with the donor. The appeal of potential relationships was also raised specifically in contrast to a relationship with the donor. One-third of participants (n = 13, 35.1%) were motivated to connect based on the belief that a resultant relationship would be easier than one with their shared donor. Not only might they connect based on their shared genetic tie, but also because they were closer in age and shared their generation/culture:

> 'My biological father is in his 60s. . .we didn't really have a whole lot in common. . . my half-siblings were all in their 20s. . .so I just thought that I would have more in common with them. . .like we might vibe more' (Jessica, W, born to a single mother, in contact).

About half also mentioned feeling that there would be less pressure:

> 'It would be a really special thing to be able to get to know people that I'm blood-related to, where I don't have to worry that they think I'm trying to force them into being a parent. . .[W]ith [the donor], I knew that if I ever actually did meet him. . .that I would always be cautious to not be needing too much from him. . .So, with siblings, it's just—for some reason in my mind I imagine that it would be a different kind of relationship, and one that was much more mutual' (Rachel, W, born to two mothers, not in contact).

Motivations: relation to experience

Whereas almost all expressed interest in people who shared their donor, participants often provided richer narratives, and included multiple motivations, when they had actually experienced contact. To assess whether the benefits of contact might not always be apparent, we tested whether participant motivation was related to having already experienced contact (Table III). The results, while arguable whether statistically significant or not, suggested that participants who had already contacted a same-donor peer more often described being motivated by the potential for a relationship (Fisher's exact test $P = 0.050$) and feeling that these relationships would be easier than with the donor (Fisher's exact test $P = 0.082$). Although further assessment is needed, these trends suggest that donor-conceived young adults may not always be aware of the possibilities that can come from connecting with people who share their donor.

Motivations: relation to family type and/or growing up with siblings

Following earlier findings that same-donor linking could be difficult for donor-conceived adults with genetically unrelated family members (e.g. Jadva *et al.*, 2010; Nelson *et al.*, 2013), we considered whether motivation for contact was related to participant family type (presence versus absence of a genetically unrelated parent) and/or having grown up an only child or with siblings. Being an only child meant not needing to consider how interest in a same-donor peer might affect one's own siblings, as well as being less likely to know others like you. Among the participants, however, there was no association. When we limited the sample to donor-conceived young adults who had not yet

experienced contact, again we found no evidence of any relation (all Fisher Exact test P's > 0.05).

Experiences with contact

In the next section, we focus on the experiences of the participant subsample (n = 22) who had linked to someone who shared their donor. Most (n = 17) had not only communicated with their linked peer(s), but also met in person. In addition, eight had met family members (sibling, parent) of linked peers. Over half (n = 13) still had regular contact with their linked peer(s) by text, phone, in person and/or on social media.

Challenges. When asked what contact had been like, only four participants mentioned negative aspects and challenges, or, in Michael's case (M, born to two mothers), seemed indifferent:

> '[The experience] wasn't revelatory. . .I felt it was just like "hey cool, we share some genetic information" . . .I hate to sound so blasé about it, but growing up with lesbian parents in a community of so many gay families with donor children, it's really more of an everyday thing, than anything that's interesting'.

Two participants described difficulties staying in contact, and/or that, while disappointing, contact was not worth pursuing. One young woman, Rebecca (born to two mothers), was the only person to describe difficulties with having a larger same-donor peer group. She found that when people differed in their interest in the donor, it could be polarizing, bringing only those interested closer together.

Positives. More commonly, however, participants (19/22) described their experiences positively: 'I think it's wonderful. . ..I love it' (Samantha, W, born to a single mother).

Three also described the experience as unique. Olivia (W, born to a mother and father) captured it: 'Really cool. A very unique and surreal experience, but also not as weird as you'd think. We share DNA, but are complete strangers, which is an interesting dynamic'.

Within the realm of positive experiences, participants provided rich narratives from which we identified four categories as described below.

Finding similarities: physical and related traits. Most participants (n = 16, 72.7%) began with stories of how they shared physical traits, personalities, and/or interests based on their shared origins. Olivia continued: '[I]t's been cool to be in contact with so many people that weirdly look like I do'.

Some participants explained that by identifying similarities, they could get 'a picture of where I come from' (Maria, W, born to two mothers). Similarities were especially notable to participants who said they shared little resemblance to their family of origin:

> '[I]t was a thrill to meet people that I resembled, because I never really felt like I resembled my mother that much when I was younger. . .where you meet someone and see if you have the same nose or the same hair type or the same giant forehead, get to compare interests and skills and things you're bad at and just sort of see what you share. . .' (Heather, W, born to two mothers).

Finally, some participants focused on how connecting with same-donor peers gave not only information about their donor origins, but also about the donor himself. Heather continued:

> 'I had made peace somewhat with the fact that I couldn't know my donor father until I was 18, but this was a way—this was sort of a cheat. . .to get more information about what he was actually like [and] because I shared certain characteristics with my half-siblings and not my parents, odds are my biological father also has those characteristics, and so it was a way for me to learn more about him without actually knowing him'.

Finding similarities: of being donor conceived. Narratives about similarities were not limited to personal traits. For example, Alyssa (born to two mothers) also included similarities in their lives: 'It's a really crazy story. . .we had a lot of things in common, like we both really like [the same things] and—I'm looking at her pictures—we look very similar. . .even our [parents share similarities, and further overlaps in their lives]. . . We're very, very similar. It's kind of freaky. . .'

Nearly as many participants (n = 15, 68.2%) described experiences of finding 'people like me', to whom they could relate, based on being donor conceived:

> '. . .Just having anyone with that shared experience to discuss it with, not to mention actual blood relatives, but you know anyone who's had that shared experience of donor conception has been really fascinating because it's not something that I encounter on a daily basis' (Tiffany, W, born to mother and father).

One participant, Robert (M, born to a single mother), explained that it was difficult for people to understand what it was like to be donor conceived: 'My friends, so they've been as supportive as much as they know how to be without really knowing what any of this is'.

For participants like Brianna (W, born to a single mother), same-donor peers could be '. . .the only [donor-conceived] people that I know. . .' She explained that 'it's cool just to know that there's other people who grew up that way. . .[it] help[s], that it's not just you out there'. Brandon (M, born to two mothers) expanded on this:

> 'It was really nice when I was growing up to just know more people who were in the same situation, and how they dealt with other peoples' curiosity and the world around them. . .I feel like we had more of a shared experience'.

Christopher (M, born to two mothers) not only 'appreciate[d] having other people to share the experience with [growing up]', but also emphasized another benefit: 'I can trust my own experience more in some way. Experiences feel more real somehow. . . It's possible that it's not just me'.

Easier relationship. A third category focused on having an identifiable donor whom one might contact. About one-third of participants (n = 8, 36.4%) described their experience of contacting, and continued contact with their same-donor peer(s) as easier and less intimidating than contact with the donor:

> 'I was less nervous about [contact with a same-donor peer], because he was my peer versus my parent technically. It just felt a little more relaxed, and less of a worry that we wouldn't be able to relate. . .we were siblings technically versus like a parent-child type dynamic' (Victoria, W, born to a single mother).

Susan (W, born to a single mother) described it as 'more of a reciprocal relationship'. With a more equitable balance of power with respect to interests, hopes, expectations and control of the situation, connecting with someone who shared the donor, rather than the donor himself, could be more rewarding and less risky. This was not to say relationships with the donors were typically difficult; they were not. But relationships could form more easily with same-donor peers.

There was less to lose if the young adults did not 'click', yet there was a higher chance that they would.

> 'It makes me glad that the identity-release process exists, and I've been glad I got to meet [same-donor peer] a little bit. . . from my beginning, [the donor] seemed more like a person that I wanted to get to know. I wasn't expecting that there would be siblings. Now I'm kind of curious because I don't have that ongoing relationship with the donor' (Tyler, M, born to two mothers).

These contacts were described even more powerfully when things with the donor did not work out as hoped: 'we know each other now and, and it's almost like it was just a little bit repairing to get in contact with [same-donor peer], after I was so devastated' (Abigail, W, born to a mother and father).

Potential for relationships, for family. The last category focused on the potential for relationships more generally. Just over half of the participants (n = 13, 59.1%) described wanting to see how the relationship developed or hoping that the relationship would develop further. Lauren (W, born to a mother and father) captured this in saying, 'I see her a lot less frequently [than the donor]. . .and we're not in contact nearly as much, but I like her and. . .wish we could spend more time together'.

Some, like Alyssa (W, born to two mothers), specifically hoped for a familial relationship: 'I think both of us wished that we had more time, just [to] hang out and. . .be friends and maybe it would be like sisters'.

Although participants often used the term 'sibling' for their same-donor peers, their relationships were not necessarily close. To capture this, we coded participants' descriptions of their experiences for relationship quality; a 'close' relationship was defined broadly as the same-donor peer being a friend or closer. The rest were coded as 'not-close'. Among the six participants who were linked with one same-donor peer, we found two relationships that were described as 'close'; the other four were better described as an acquaintance. Among the 15 participants (n = 1 missing) linked to two or more same-donor peers, seven lacked closeness with any of their same-donor peers, describing these relationships as casual connections only. Yet despite many relationships being characterized as 'not-close', there was a sense that they had the potential to grow and/or easily restart, as described by Abigail (W, born to a mother and father):

> 'I never met her, but we planned [to]; she's all the way across the country. So we fell out of contact, just 'cause of distance and we never had the opportunity to meet in person, but I 100% feel like I could reach out to her any day and she'd be happy to stay in contact. And she'd be happy to hear from me'.

Most participants acknowledged these relationships, while not necessarily emotionally close, nevertheless held significance. Heather (W, born to two mothers) explained:

> '[S]ome people will say that family isn't blood, it's love, and I would agree, but also I think that family counts for just being pure genetics. I think you feel connected to people you've never met before, but you know you're related [to]'.

Despite initially connecting through a genetic tie only, with limited-to-no social experiences, participants described how these relationships could stop and be easily restarted. They held the potential to become important relationships, if not now, perhaps in the future, as Tiffany (W, born to a mother and father) described:

> 'I could more easily see developing a relationship of substance with one of my siblings than with my donor, in terms of relationships that will last over the years, so I look forward to seeing what comes of these'.

Among many participants, having the socioemotional experience of a close relationship, as defined here as a friend or closer, was not required to call a same-donor peer a sibling or a qualified-sibling term. For some, even a single communication was not required. A participant might use the familial term, 'brother', to refer to a same-donor peer and/or describe their relationship, but not require any shared family experiences or closeness more typically associated with the term. Participants' use of the term 'sibling' highlighted the fact that the genetic tie by itself had meaning and significance, independent of the status of the relationship. This desire for interpersonal connectedness between same-donor peers was a theme that ran throughout, whether for the potential for new family or simply for connecting with people who shared their experiences of being donor conceived.

Finally, a few participants, unprompted, mentioned terminology in relation to their parents. Maria (W, born to two mothers) captured it well:

> 'I definitely call them my donor siblings and half-siblings quite a bit. I don't know how much my parents love the term 'half-sibling'. . .But I'm very comfortable with that term. I would say they're definitely, in terms of how well they know me, they're definitely in between friend, acquaintance, somewhere in there. I definitely don't feel as close to them as I do [to] some of our core family friends, but I do feel like I was able to connect with them and get kind of a picture of who they were'.

Interest in children raised by the donor

About half of the study participants (25/47) knew that their donor was raising or had raised children of his own. Participants shared as close a genetic tie to them as to their same-donor peers. A subsample (n = 17) was asked about their interest in meeting the donor's children, if the donor were open to it. All expressed interest in this different kind of person who shared their donor. Some even used the same terms for the children raised by the donor as for their same-donor peers. Kaitlyn (born to two mothers) explained her interest:

> 'I'm honestly more interested in meeting my siblings [donor's own children] than meeting [the donor]. . . 'cause I never had a sister and . . .we're more on the same level. . ..I wanted to meet [the donor], don't get me wrong, but I was definitely more interested in the kids, because there's more potential there'.

Another participant, Chelsea (born to two mothers), felt similarly about the children raised by her donor, who were more likely to be 'people my own age. We could hang out'. When probed further, she explained from another angle:

> 'Probably because my brother is my half-brother technically, and so these kids would be my half-siblings, but from the other side. . ..So I feel like comparing my brother to these siblings, that would be really interesting. . ..to be like, "Oh, this is half my mom and half my donor [and] I'm in the middle of these". I just find that fascinating from more of a scientific perspective'.

Whereas Chelsea had not contacted her donor, Kaitlyn had met hers. She had been disappointed that her donor had not been willing to introduce her to his children, two of whom were close to her in age. Her strong interest in those children mirrored that for connecting with same-donor peers—but because of the donor, she had not contacted them. The interest in the donor's own children, as well as the potential for relationships, was similar to that seen for same-donor peers, but among the current participants, the next step of making contact was contingent on the donor's wishes.

Susan's (W, born to a single mother) response also showed an example of the boundaries participants maintained for the donor's children:

> 'If [the donor's young children] were [their current age] and really little, "very much so" [interested in meeting]. But if they were older and aware of the situation, [then] only if they wanted to [meet], if that makes sense'.

Interacting with the donor's own children can combine the benefits of contact with the donor and with same-donor peers. The donor's own children can give insight into their shared origins (e.g. physical similarities), as well as about the donor himself: '[The donor's daughter] has been my continued link to him, and. . .my deeper understanding of him' (Tyler, M, born to two mothers).

Contact can also be easier: '. . .contacting [the donor] and talking to him on the phone or meeting him in person feels like a really big deal- but talking to his daughter who is my age and a woman just feels more natural for me' (Brittany, W, born to a mother and father).

Among the small number (n = 6) of participants in contact with the donor's children, all had initiated contact through their donor, differing from the typical mutually-driven contact among same-donor peers. Participants did not bypass the donor and directly contact his children. That may be partly explained by some of the children being quite young, but it also evidenced the donor-conceived persons' respect for the boundaries created by the donor and his family.

Discussion

Little is known about the first generation of individuals conceived through open-identity sperm donation. The current study included interviews with 47 young adults from this cohort, unique among donor-conceived adults, not only in being able to identify their donor but also in most knowing from childhood about their family's origins. Here we focused on their interest in and connections with others who shared their donor. Participants expressed strong interest in and primarily positive experiences with their same-donor peers, consistent with findings from donor-conceived people with anonymous (closed-identity) donors. This suggests that regardless of access to information about the donor, and even to the donor himself, some donor-conceived adults will have a strong interest in their origins and questions about the people who share their donor. Additionally, several described positive experiences and benefits of linking in childhood, reaffirming the notion that interest in genetic resemblance and continuity is not limited to the donor and can start well before adulthood (e.g. adolescents in Scheib *et al.*, 2005; Persaud *et al.*, 2017; Zadeh *et al.* 2018).

Participants' experiences commonly focused on what same-donor peers were like and their similarities, a finding also seen among people with anonymous donors (e.g. Blyth, 2012; Hertz *et al.*, 2017). Similarities to a same-donor peer could add identity information missing from the donor's side and give clues as to what the donor was like, something especially important to individuals who had wanted to know about their donor from a young age, and/or were unable to connect with him. For a few participants, finding same-donor peers was a rare opportunity to see people who looked like them. Growing up in the absence of resemblance to family members can result in individuals feeling like they do not fit in and challenge identity development (Kiecolt and LoMascolo, 2003; Benward, 2012; Indekeu and Hens, 2019). But through identifying similarities (e.g. 'resemblance talk' Becker *et al.*, 2005) and seeing oneself in another's face, individuals may gain a sense of belonging, and add to an 'identity narrative [that] tell[s]a story about who we are and what our place is in the world' (Benward *et al.*, 2009, p. 232; see also Frith *et al.*, 2018; Daniels, 2020).

Experiences with same-donor peers occupied a unique position in the lives of donor-conceived young adults. The desire for interpersonal connectedness ran throughout the interviews, whether for the potential for new origins information, new family, or for connecting with people who shared their donor conception experiences. Contact could provide new relationships, whether actualized or with potential, and easier relationships than with their donor.

Donor-conceived persons with anonymous donors have spoken of the need for emotional support and the ability to share their experiences with other donor-conceived persons (Benward, 2012). Despite greater openness in donor-assisted family building, people growing up in these families are still in the minority, putting them at risk of feeling like 'the other', different and potentially stigmatized (Nachtigall *et al.*, 1997; Thorn, 2006; Benward, 2012; Goldberg and Gartrell, 2014; Goldberg and Scheib, 2015; Indekeu and Lampic, 2018; Crawshaw and Daniels, 2019). Several young adults in this study had not anticipated finding people who shared their experiences of being donor conceived, either in childhood or at present. For some, this was the first time they had talked to another person who faced the same questions growing up, understood their experiences, provided support and supplied validation through allowing them to 'trust' their own experience. In finding 'people like me', participants found recognition, commonality and a diminished sense of isolation (see also Harrigan *et al.*, 2015; Indekeu and Lampic, 2018; Crawshaw and Daniels, 2019; Schrijvers *et al.*, 2019). The emotional connection with same-donor peers reinforced their personal identity and led some to feeling part of a larger group or community, following Erikson's idea that 'identity formation is a process located in the. . .individual and yet also in the core of his communal culture' (1968, p. 22). Relatedly, van den Akker *et al.* (2015) found a lower collective identity orientation, or sense of identity based on shared attributes with a group (Simon and Klandermans, 2001), in their sample of donor-conceived adults with anonymous donors. If the current study participants held a similar identity orientation, it is not surprising that they found their shared experiences with their same-donor peers to be not only positive but also new.

Shared experiences and similarities can form the basis of relationships, for now or in the future, with a range of possibilities. As found elsewhere, for most participants the genetic tie alone deemed same-donor peers a type of kin. Some participants used sibling terms to describe their same-donor peers, even in the absence of contact with them. The majority of young adults who had linked to a peer had

communicated and met in person. For those several who no longer had ongoing contact, most expected that they could easily reconnect and strengthen the relationship. The genetic tie and shared experiences of being donor conceived gave individuals the potential for relationships, but the lack of conventional social ties appeared to give the flexibility to choose whether to pursue them, giving 'a perception of individual choice and agency at every stage. . .' (Freeman et al., 2014, p. 292; see also Hertz et al., 2017; Frith et al., 2018). While the participants did not necessarily view these relationships as close, as with a close friend, the connections were important (e.g., Hertz et al., 2017; Persaud et al., 2017 in adolescents). Similar to findings from donor-conceived adults with anonymous donors (Jadva et al., 2010; Blyth, 2012), a minority of participants in the current study described challenges with same-donor peer linking, such as the logistics of keeping in contact, mismatched expectations and a lack of an emotional connection. More often, however, they described positive experiences even when they did not describe the relationships as close.

An unexpected finding was that donor-conceived young adults sometimes described the relationship with a same-donor peer as more rewarding and less risky than a relationship with the donor. Relationships could form more easily; there was potentially less to lose if the same-donor peers did not 'click', yet based on their similar ages and experiences, there was a higher chance that they would—findings that also apply to donor-conceived people who find their anonymous donor. Contact with a donor has the potential to be anxiety producing, uncomfortable and awkward. In addition to the age and generational differences, the greater power held by the donor to accept or reject contact likely contributed to anxiety reported by some participants in the current study. Future research with adults who have met their donor can help illuminate the ways in which contact might be difficult and counselors could help, as well as be used to raise donor awareness of the greater power they hold, and consider any responsibility that comes with it.

Policy and practice

Research about donor-conceived adult experiences with open-identity donation and same-donor peers is essential to informing evidence-based policy and practice. Current findings may be useful to the nearly 20 jurisdictions worldwide that permit open-identity donation only (Kelly et al., 2019), and the growing number of jurisdictions and individual donor conception programs that offer an open-identity option (Scheib et al., 2017). While open-identity donation is focused on the ability of the donor-conceived person to obtain their donor's identity, the vast majority of participants saw linking with same-donor peers as an intertwined benefit. These findings suggested that same-donor peer contact served important functions independent of access to the donor and should be as valued in open-identity donation as the identification of a donor. Those who had made contact with a same-donor peer had not always thought about the potential benefits beforehand. This highlights the need to make information about contact benefits available to intended parents and families (e.g. as is done by VARTA.org.au). At the same time, not all open-identity donors are available for contact. As is true for those with anonymous donors, a same-donor peer can be an invaluable resource in lieu of, or in addition to, contact with the sperm donor.

Same-donor peer contact can result in a complex set of relationships for donor-conceived people, their families of origin, and the donor and his/their family, requiring active navigation within and between families (Daniels et al., 2012; Goldberg and Scheib, 2016). Our finding that half of the participants had contact with same-donor peers before adulthood, and a few had contact with the donor's children, raises interesting questions about family boundaries, information sharing, and the nature of these potential networks. Potential issues with privacy can occur when donor-donor-conceived adult linking occurs alongside same-donor peer linking. For example, several same-donor peers were linked by their donor, some without prior discussion. While the outcomes were not negative or harmful, it reveals the potential for connection outside the context of mutual-consent registries. This can include individuals who do not want contact and/or have not yet reached sufficient maturity and have different developmental understandings and needs of donor relations (Blake et al., 2010; Kelly and Dempsey, 2016;). This is an emerging area in donor conception that requires more research and potentially educational materials and counselor support (Crawshaw et al., 2015).

A final consideration is that these benefits depend on the numbers of people conceived with the help of any one donor (Scheib and Ruby, 2009; Sawyer, 2010). As noted by Blyth (2012), large groups can be perceived as 'very uncomfortable and a bit unhealthy' (p. 154), detracting from the overall experience and, among other issues, putting individuals at risk of losing their sense of individuality and not being able to maintain meaningful contact (see also Janssens et al., 2015; Nelson et al., 2016). The experiences and perspectives of same-donor peers can make unique and important contributions to future discussions about regulating gamete donation, specifically regarding limits on the number of families per donor.

Strengths and limitations

Recruiting participants from one open-identity sperm donor program contributed to both study strengths and limitations. First, while a strength was that the donor-conceived young adults were not specifically seeking contact with same-donor peers, or, in some instances, even knew they existed, they had nevertheless accessed their donor's identity and were likely biased toward being interested in their origins and donor relations. Second, the findings need to be considered in light of the sample being unusual for the time period in the donor-conceived young adults often knowing about their family origins from childhood, and having parents who used one of the only programs with open-identity sperm donors, which also served all intended parents, regardless of relationship status and partner gender (Raboy, 1993). In this way, applicability to other donor-conceived adult populations is limited. Findings may have greater applicability to the upcoming generations of donor-conceived people who are more likely to know about their origins, have access to their donor's identity, and come from families parented by single cis-women and female same-sex couples.

Study strengths included learning from participants who belong to a difficult-to-access generation of donor-conceived adults from three different family types. In addition, limiting participants to only one per donor and one per family helped to minimize over-representation of the experiences of individual families, linked networks and donors. Finally, by interviewing participants after they finished with the donor program

(i.e. after obtaining their donor's identity), they may have been more willing to share both positive and negative experiences.

Conclusion

The current findings support and expand on previous research, highlighting the importance of same-donor peer contact for donor-conceived people. Unlike in anonymous (closed-identity) donation, the donor-conceived young adults in this study had access to their donor's identity, and often the donor himself. This access, along with childhood knowledge of their family's origins, did not appear to diminish young adults' interest in their same-donor peers. Positive experiences with contact suggest that same-donor peers can provide socio-emotional support and unique relationships not found elsewhere, and contribute to identity formation and 'an understanding of one's self' shaped by connections with others (Benward, 2012). Two unexpected findings hold implications for open-identity programs: one, that donors may link young adults without their prior consent, and second, that young adults may share knowledge about the donor with a linked peer who may not want it. In open-identity programs, same-donor peer linking needs to be understood as not just an unexpected benefit of the donor identification process, but as a separate, unique and valuable resource for people who are donor conceived.

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Authors' roles

J.E.S. and A.R. substantially contributed to the study conception, design and development. J.E.S. and E.M. acquired and analyzed the data. J.E.S., E.M. and J.B. substantially contributed to the writing. All authors contributed to data interpretation and intellectual content, and approved this version.

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Conflict of interest

The authors have no conflict of interest to declare.

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