


## ORIGINAL ARTICLE

# Student views on recognition and payment options for gamete donation in New Zealand

Kelsey Cornthwaite<sup>1</sup> , Sonja Goedeke<sup>1</sup> , Daniel Shepherd<sup>1</sup>  and Iolanda Rodino<sup>2</sup> 

<sup>1</sup>Department of Psychology and Neuroscience, Auckland University of Technology, Auckland, New Zealand

<sup>2</sup>Medical School, The University of Western Australia, Perth, Western Australia, Australia

*Correspondence:* Associate Professor Sonja Goedeke, Department of Psychology and Neuroscience, Auckland University of Technology, 90 Akoranga Drive, Northcote, Auckland, 0627, New Zealand.  
Email: [sonja.goedeke@aut.ac.nz](mailto:sonja.goedeke@aut.ac.nz)

*Conflict of Interest:* The authors report no conflicts of interest.

Received: 7 September 2022;  
Accepted: 1 May 2023

**Background:** Demand for donor gametes in New Zealand significantly outweighs the number of willing donors. Payment for donation has been suggested as a viable solution to increase the supply and attract more donors in acknowledging the time, effort and inconvenience associated with donation.

**Aims:** Internationally, university students are a commonly targeted group for paid gamete donation. This study aims to explore the views of university students in New Zealand to gauge their support and concerns relating to a range of options to recognise donors, including payment.

**Methods:** Two hundred and three tertiary students completed a questionnaire exploring their views on various forms of recognition for donation and concerns relating to payment.

**Results:** Participants indicated the greatest support for reimbursement for expenses directly related to the donation process. Payment constituting explicit financial advantage was regarded least favourably. Participants held concerns that payment would attract people donating for the 'wrong' reasons and lead to donors concealing relevant histories. Further concerns included payment increasing costs for recipients and causing disparities in access to gametes.

**Conclusions:** The findings of this study suggest that within a New Zealand context a culture of gift-giving and altruism are strongly held principles towards reproductive donation, including among the student population. This highlights the need to consider alternative strategies to commercial models to overcome donor shortages which are in line with the cultural and legislative context of New Zealand.

## KEYWORDS

altruism, donor conception, infertility, payment, students

## INTRODUCTION

Increasing access to, and acceptance of, third-party assisted reproductive technologies has resulted in greater demand for donor gametes, with donor gametes involved in approximately 10% of

fertility treatment cycles in New Zealand.<sup>1</sup> However, shortages of gamete donors continue to be reported globally,<sup>2,3</sup> including in New Zealand where there are long waitlists.<sup>4</sup>

To aid in donor recruitment, there has been significant international interest in understanding donor motivations,<sup>2</sup> and

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2023 The Authors. Australian and New Zealand Journal of Obstetrics and Gynaecology published by John Wiley & Sons Australia, Ltd on behalf of Royal Australian and New Zealand College of Obstetricians and Gynaecologists.

paying donors has been suggested to increase donor numbers.<sup>5</sup> Payment is viewed as a way to incentivise and recruit potential donors, especially younger, healthy donors, as well as to acknowledge the inconvenience and burden associated with donation,<sup>6</sup> and includes recognition for time investment and potential earnings, efforts of the donor, psychological risk and, particularly for oocyte donors, potential morbidity from superovulatory drugs.<sup>7</sup>

Internationally, young people from the student population are actively recruited as their younger age is associated with perceived better health and greater fertility, making them appealing as donors. Gamete recipients are also reported to be interested in donors with a university degree,<sup>8</sup> and fertility agencies in commercial jurisdictions may require donors to be enrolled in or have a degree, offering higher rates for Ivy League students or 'doctorate donors'.<sup>9,10</sup> Donor programs target students by advertising in campus newspapers, free weekly magazines, radio and websites,<sup>9</sup> and some of the largest sperm banks of the USA are purposefully located near prestigious universities. Financial compensation may be especially valuable to young university students who typically have limited financial resources and higher debt,<sup>11</sup> leading to concerns about the potential exploitation of a vulnerable population who, if in financial need, may feel they have few other alternatives.<sup>7</sup> There are also concerns that young university students may lack the maturity to be sufficiently autonomous and fully comprehend their decision, underestimating the physical, emotional and psychological short- and long-term risks involved in donating.<sup>12</sup>

Studies based in jurisdictions where payment for gametes is allowed, such as the USA, have demonstrated that financial motivation may be a main driver for donation, including for students.<sup>3,11</sup> In contrast, altruistic motives of donating have predominantly been reported by donors who operate in non-commercial jurisdictions,<sup>13,14</sup> including in New Zealand.<sup>15</sup> This suggests that donor motivation may be shaped by the social, cultural and economic contexts within which donations occur.<sup>16</sup> However, motivations for donation can also be complex, and financial and altruistic motives may co-exist.<sup>17,18</sup> Significant variation exists even in commercial contexts regarding the importance payment plays in donation, and although financial gain may be cited as a primary motive, a degree of altruism is also often expressed.<sup>2</sup> However, in Pennings et al.'s<sup>19</sup> study of egg donors in 11 non-commercial European countries, younger donors (aged below 25 years) were less likely to be altruistically motivated and reported higher levels of financial motivation.

In New Zealand, donation is based on an identity-release model, and by law there may be no 'valuable consideration' for the supply of gametes,<sup>20</sup> meaning that donation must be altruistic and unpaid. Although payment in the form of financial advantage is prohibited, fertility clinics may offer a fixed-sum 'reimbursement fee' so that donors are not left out of pocket for donating. Research on fertility stakeholders (donors, recipients, donor-conceived offspring, fertility professionals) in New Zealand and Australia has suggested support for reimbursement of expenses for donation, but not payment constituting financial reward, and has indicated significant concern about the potential impact of payment.<sup>15,16</sup>

This research, however, focused on fertility stakeholders, and little is known about the views of New Zealand students.

Students have typically not been the traditional donor population in New Zealand. However, given that they are actively recruited elsewhere, particularly in commercial jurisdictions, and that there has been a push in some sectors to offer payment for donation in New Zealand, it is possible that students may become targeted in New Zealand for recruitment. This study aims to understand the views of university students in New Zealand with respect to recognition and payment of donors, as well as concerns relating to payment. It is hoped that findings will help inform gamete donation policy and practice.

## MATERIALS AND METHODS

### Participants

Two hundred and three tertiary students attending the Auckland University of Technology in New Zealand participated in the study. Recruitment occurred primarily through psychology courses and university-wide platforms. Ethics approval was obtained from the Auckland University of Technology Ethics Committee (AUTC: 18/304). Participants were required to be university students studying in New Zealand and aged between 18 and 30 years. The majority of participants identified as single heterosexual New Zealand European females. Of the respondents who identified as female ( $n = 172$ ), 98 indicated that they would consider being an egg donor, and 22 (of 31) male respondents indicated that they would consider being a sperm donor. Further demographical details are presented in [Table 1](#).

### Questionnaire

The questionnaire was adapted from Goedeke et al.<sup>15,16</sup> for use with the student population. Item content for this questionnaire was developed from relevant donor conception, gifting and compensation literature and piloted with a range of parties, including consumers, fertility professionals and members of the public to enhance content and face validity. The questionnaire collected demographical information and participants' fertility experiences ([Table 1](#)). Participants were asked to indicate their level of support for a range of reimbursement, recognition and payment options for both egg and sperm donation ([Table 2](#)) and to indicate if they agreed with a list of concerns ([Table 4](#)) related to payment over and above reimbursement. All items were rated using a seven-point Likert scale, anchored with 1 = strongly disagree and 7 = strongly agree, with a score of 4 = neither agree nor disagree indicating a neutral response.

### Procedure

Students were invited through either online advertising on university curriculum platforms or information supplied during

**TABLE 1** Socio-demographical profile of respondents (*n* = 203)

Characteristics	<i>n</i> (%)
Age, mean (SD)	21.52 ± 3.2
Sex	
Male	31 (15.3)
Female	172 (84.7)
Relationship	
Single	99 (48.8)
Married	5 (2.5)
Divorced	3 (1.5)
In a relationship – living together	40 (19.7)
In a relationship – not living together	56 (27.6)
Sexual orientation	
Heterosexual	161 (79.3)
Homosexual	7 (3.4)
Bisexual	25 (12.3)
Other	5 (2.5)
Prefer not to say	4 (2)
Ethnicity	
New Zealand European	98 (48.3)
Māori	15 (7.4)
Pasifika	21 (10.3)
Asian	39 (19.2)
Other European	14 (6.9)
Other	15 (7.4)
Religion	
Atheist/agnostic	110 (54.2)
Christian	52 (25.6)
Muslim	7 (3.4)
Hindu	6 (3)
Buddhist	7 (3.4)
Other	17 (8.4)
Education	
Secondary school	130 (64)
Polytechnic/training college	22 (10.8)
University undergraduate	35 (17.2)
University postgraduate	10 (4.9)
PhD	1 (0.5)
Other	5 (2.5)
Employment	
Full-time	12 (5.9)
Part-time	123 (60.6)
Unemployed – looking for work	25 (12.3)
Unemployed – not looking for work	28 (13.8)
Other	14 (6.9)
Children	
Yes	6 (3)
Yes, but desire more	6 (3)

(Continues)

**TABLE 1** (Continued)

Characteristics	<i>n</i> (%)
No, but wanting children	135 (66.5)
No, do not want	55 (27.1)
Would consider being donors	
Egg donors	98 (57)
Sperm donors	22 (71)
Fertility experience	
Donor-conceived person	1 (0.5)
Know an egg donor/recipient	27 (13)
Know a sperm donor/recipient	26 (13)

*n* ranges due to missing data. SD, standard deviation.

psychology lectures. Hard copies of the questionnaire were available in lectures and, once completed, were returned to a box to the front of the lecture room. Online questionnaires could be accessed via Qualtrics. Five hundred and forty-six students were enrolled in psychology courses during questionnaire distribution; however, advertising also took place through university-wide platforms, and the survey links could be shared beyond this setting to allow for snowball sampling. The questionnaires provided an explanation of egg and sperm donation at the outset to ensure sufficient understanding of the topic. The questionnaire could be completed in ~20 min, and responses were anonymous.

Online questionnaire data were downloaded into Excel spreadsheets, and hard copy questionnaire data were transferred to the spreadsheet manually.

## Data analysis

All statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS v.26, Chicago, IL, USA), with all analyses performed with careful consideration of test assumptions outlined by Tabachnick and Fidell.<sup>21</sup>

## RESULTS

Table 2 shows that the highest level of support was indicated for the reimbursement of medical costs followed by reimbursement directly related to donation, with greater support for egg donation. Lowest levels of support were indicated for payment for both egg and sperm donation.

Multiple linear regression analysis was performed to determine predictors of responses to the items probing support for the various forms of payment and recognition. Table 3 presents the results for egg and sperm donation data, with only the significant predictors reported. Age was a significant predictor for all egg donation reimbursement items, suggesting stronger support for reimbursement of egg donors with the increase in age. Those identifying as Christians were less likely to support reimbursement for expenses related to egg donation in comparison

**TABLE 2** Means and standard deviations (parentheses) to items gauging attitudes to compensation for either egg or sperm donation

Donors should ...	Egg donation	Sperm donation	t-Statistic
1. ... be reimbursed for medical expenses	5.99 <sup>2,3,5,6,7,8</sup> (1.13)	5.67 <sup>2,3,5,6,8</sup> (1.18)	3.79**
2. ... be reimbursed for travel costs	5.37 <sup>1,4,5,6,7,8</sup> (1.51)	5.27 <sup>1,5,6,8</sup> (1.31)	1.23
3. ... be reimbursed for unpaid time taken off work	5.46 <sup>1,4,5,6,8</sup> (1.40)	5.17 <sup>1,4,5,6,8</sup> (1.53)	3.19*
4. ... be reimbursed for all expenses directly related to donation	5.74 <sup>2,3,5,6,7,8</sup> (1.28)	5.46 <sup>3,5,6,7,8</sup> (1.38)	3.08*
5. ... receive a token of thanks, for example, gift voucher	4.41 <sup>1,2,3,4,7</sup> (1.68)	4.55 <sup>1,2,3,4,7,8</sup> (1.56)	-1.54
6. ... receive some type of non-material recognition	4.64 <sup>1,2,3,4,7,8</sup> (1.61)	4.59 <sup>1,2,3,4,7,8</sup> (1.54)	0.59
7. ... receive subsidised fertility treatment	5.43 <sup>1,2,4,5,6,8</sup> (1.23)	5.42 <sup>4,5,6,8</sup> (1.29)	0.14
8. ... be paid for their gamete(s) or donation service	4.15 <sup>1,2,3,4,6,7</sup> (1.41)	4.09 <sup>1,2,3,4,5,6,7</sup> (1.53)	0.64

\*  $P < 0.01$ ;\*\*  $P < 0.001$ .

Superscript numbers indicate significant statistical differences ( $P < 0.05$ ) between the eight items in that column. The *t*-statistic was obtained from comparing egg and sperm ratings for a single item.

to those who identify as an atheist/agnostic. Female participants were less likely to support the use of non-material forms of recognition such as letters of thanks and were also less likely to support the overt payment for oocytes. Support for egg donors receiving subsidised fertility treatment was predicted by those who identified as non-European. With reference to sperm donation, gender was a significant predictor of support for Item 8 where females were less likely to support the payment of sperm donors compared to males.

Table 4 presents the mean ratings for responses to the concern items relating to payment of donors. The highest mean value was obtained for the item around concerns that payment would attract people donating for the 'wrong' reasons, followed by concern that potential donors may not disclose relevant histories, worries that wealthier individuals may get access to 'better' gametes or that payment would increase the costs sustained by recipients. The item with the lowest rating was the ethical concern that payment diminishes the value of human life.

## DISCUSSION

Research exploring the views of students on recognition options for gamete donation is limited, and yet students may be the targets of recruitment campaigns and valued for their youth, health and education. This study sought to determine the views and concerns of students regarding a range of recognition options for gamete donation. The findings suggest that, within a New Zealand student context, there is support for the reimbursement of donation-related costs, including reimbursement for medical costs, travel, unpaid time off work and all expenses related to donation, especially with regard to egg donation (likely reflecting the perceived greater effort and risk associated with egg donation – see Johnson<sup>22</sup>). This finding aligns with research with other populations<sup>17,23</sup> and suggests that reimbursement of costs may be considered appropriate to remove barriers to donation,<sup>24</sup> although it is less clear if it may serve as an incentive for donation.

Paying donors a financial reward received the lowest level of support for both egg and sperm donation. Although there is a lack of research related to tertiary students' views and their experiences, some international research suggests that although younger donors may be incentivised by payment,<sup>19</sup> issues of informed consent, or awareness of the potential longer-term complications associated with donation, may be problematic.<sup>25</sup> In contrast, the low level of support indicated here may reflect New Zealand's legislative framework and policies that prohibit the commercialisation of gametes, recruitment strategies which encourage donation as an altruistic act and societal attitudes rooted in a culture of gift-giving and altruism.<sup>16</sup> Female students were less likely to support payment for both sperm and egg donation, possibly reflecting a gendered altruistic outlook.<sup>9</sup>

The findings of the present study are consistent with previous research within New Zealand investigating the views of fertility stakeholders and members of the public, which found the greatest support for reimbursement of expenses related to the donation process and least support for the outright payment of donors.<sup>16</sup> Although similar trends of support were observed between the studies, the level of support is lower within the student population. We suggest that this may be because of limited fertility-related knowledge and the lack of awareness of the need for gametes in this age group. Indeed, the age of the participants was a significant factor related to support for reimbursement for egg donors, with older student age associated with greater support for reimbursement. Research has suggested that both in New Zealand<sup>26</sup> and internationally<sup>27</sup> young people at university have limited understanding of the biological restrictions of fertility and factors that cause infertility. Lower levels of endorsement may also be explained by students' limited personal experiences with infertility. In this study, few students had personal connections to gamete donors or recipients, yet personal knowledge of donor conception is associated with support for reimbursement, likely due to the greater emotional investment associated with personal connections.<sup>15</sup>

This study also explored students' concerns in relation to the payment of donors beyond reimbursement costs. Overall, the

**TABLE 3** Results of simultaneous multiple linear regression analyses undertaken on egg and sperm donation data

Egg donors should ...	Model R <sup>2</sup>	B	SE	β
1. ... be reimbursed for medical expenses	0.100			
Age		0.056	0.028	0.157*
2. ... be reimbursed for travel costs	0.083			
Age		0.081	0.038	0.165*
3. ... be reimbursed for unpaid time taken off work	0.072			
Age		0.084	0.036	0.181*
4. ... be reimbursed for all expenses directly related to donation	0.091			
Age		0.071	0.033	0.169*
Christian (atheist)		-0.644	0.249	-0.508*
5. ... receive a token of thanks, for example, gift voucher	0.067			
6. ... receive some type of non-material recognition	0.081			
Female (male)		-0.735	0.334	-0.448*
7. ... receive subsidised fertility treatment	0.084			
Other ethnicity (European)		0.432	0.217	0.348*
8. ... be paid for their gamete(s) or donation service	0.076			
Female (male)		-0.704	0.299	-0.497*
<b>Sperm donors should ...</b>				
1. ... be reimbursed for medical expenses	0.051			
2. ... be reimbursed for travel costs	0.072			
3. ... be reimbursed for unpaid time taken off work	0.030			
4. ... be reimbursed for all expenses directly related to donation	0.049			
5. ... receive a token of thanks, for example, gift voucher	0.045			
6. ... receive some type of non-material recognition	0.046			
7. ... receive subsidised fertility treatment	0.052			
8. ... be paid for their gamete(s) or donation service	0.105			
Female (male)		-0.873	0.324	-0.557**

\* $P < 0.05$ ;\*\* $P < 0.01$ .

Only significant predictor variables were reported. SE, standard error.

greatest concern of respondents was that financial incentives may attract the 'wrong' type of donors with unsuitable motivations, in contrast to those who donate altruistically, which is widely regarded as the 'right reason' to donate.<sup>28</sup> Those who are financially motivated are sometimes assumed to have qualities that are framed as undesirable, for example, to be driven by desires to promote their self-interest, to be materialistic or to be dishonest.<sup>15,29</sup> However, although financial motivations may be presented as undesirable and incompatible with altruistic motivations, this assumption has been contested in research, and financial and altruistic motivations may coexist.<sup>18</sup> There are also concerns that donors who are financially motivated may overtly misrepresent themselves in a positive manner and conceal important medical and psychological histories that have the potential to negatively impact a donor-conceived person. Such concerns, where payment may encourage the misrepresentation or dishonesty of medical, family or social histories, have been reported in other research,<sup>7</sup> including in New Zealand.<sup>15</sup> Although donors in New Zealand are screened, in that they are required to undergo medical examination and genetic assessment, complete a questionnaire on medical and family history and meet with a counsellor to discuss the implications of donation and the legal provisions surrounding donor conception,<sup>1</sup> some of this screening is reliant on self-report.

Students also indicated concerns about the financial implications for recipients, and disparities in access to donor gametes, an issue in New Zealand where there is limited publicly funded support for fertility treatments.<sup>1</sup> Students did not indicate statistically significant levels of concern that payment could lead donors to discount the risks of donation, which could be particularly relevant for young students with limited financial resources. Although written informed consent is required of donors in New Zealand, several researchers have highlighted that financial rewards for donors may take unfair advantage of vulnerable populations, leading donors to minimise risks of donation and to be coerced into a decision based on financial need.<sup>7,23</sup> In the current study, students' possible lack of fertility-related knowledge, and thus awareness of risks, could account for their low levels of concern in this regard.

This study has a number of limitations. First, participants were primarily recruited from students enrolled in psychology courses. Although their health background could suggest higher levels of knowledge about fertility-related matters, research in New Zealand suggests poor knowledge even among medical students about fertility-related matters.<sup>26</sup> Next, the majority of participants in this study, as is typically the case in undergraduate psychology courses at the Auckland University of Technology, were female, thus potentially offering a gendered perspective on donor recognition, especially given that women may be socialised by organisational structures and practices to present as altruistic and selfless beings.<sup>9</sup> Most participants were also New Zealand European, even though only about one-third of students at the Auckland University of Technology identify as European, thereby limiting the generalisability to other groups. Although the research did not include many Māori participants, participants' views must be

**TABLE 4** Results of a repeated-measures analysis of variance (second column) and simultaneous multiple linear regression analyses (fourth to seventh columns) undertaken on concerns about payment for gamete donation

Concerns over payment	Repeated-measures ANOVA		Simultaneous multiple linear regression analyses			
	Mean	SD	Model $R^2$	B	SE	$\beta$
a. Unethical	3.80 <sup>b,c,d,e,f,g,h,j,k</sup>	1.52	0.082			
b. Diminishes value of human life	3.13 <sup>a,c,d,e,f,g,h,i,j,k</sup>	1.59	0.165 <sup>**</sup>			
Other sexual orientation (heterosexual)				-0.893	0.301	-0.581 <sup>**</sup>
c. Financial coercion	4.34 <sup>a,b,d,e,f,h,i</sup>	1.59	0.123			
Other religion (atheist)				-1.116	0.367	-0.714 <sup>**</sup>
Would donate (won't donate)				-0.540	0.247	-0.345 <sup>*</sup>
d. Not disclosing relevant histories	4.88 <sup>a,b,c,i,j</sup>	1.54	0.104			
Other sexual orientation (heterosexual)				-0.704	0.313	-0.454 <sup>*</sup>
Other religion (atheist)				-0.779	0.366	-0.502 <sup>*</sup>
e. Attract donors for the 'wrong' reasons	4.95 <sup>a,b,c,i,j</sup>	1.48	0.050			
f. Increase cost of fertility treatment for recipients	4.83 <sup>a,b,c,i,j</sup>	1.32	0.060			
Other religion (atheist)				-0.643	0.322	-0.482 <sup>*</sup>
g. Donors may discount risks	4.67 <sup>a,b,i</sup>	1.30	0.049			
h. Wealthy may access 'better' sperm or eggs	4.83 <sup>a,b,c,i,j</sup>	1.58	0.051			
i. Children born from donation will be uncomfortable	3.76 <sup>b,c,d,e,f,g,h,j,k</sup>	1.56	0.087			
j. Donors/recipients less likely to ensure children have access to information on genetic heritage	4.35 <sup>a,b,d,e,f,h,i</sup>	1.37	0.031			
k. Long-term issues associated with donation disregarded	4.54 <sup>a,b,i</sup>	1.40	0.046			

\* $P < 0.05$ ;\*\* $P < 0.01$ .

Superscript characters indicate statistical significance across the means in the second column. Only significant predictor variables were reported. ANOVA, analysis of variance.

considered in the context of legislative frameworks which both prohibit commercialisation and significantly consider the needs, values and beliefs of Māori for whom financial inducement may be considered inappropriate.<sup>30</sup>

Overall, however, this research suggests that students were supportive of gamete donation, with the majority indicating that they would consider being a donor in the future, which given the demand for donor gametes in New Zealand is welcomed and reiterates the need to canvas student views on donor motivation and recruitment strategies. Findings indicate that support for payment is however low and is associated with a myriad of concerns. Even if these concerns could be addressed, our study reinforces recruitment strategies which continue to operate in line with cultural norms which value altruistic models. Public programs which aim to provide appropriate education with respect to fertility, assisted reproductive technologies and donation may go some way in increasing prospective donors' motivations, as well as ensuring that they are aware of the short- and long-term implications and risks.

## ACKNOWLEDGEMENTS

The authors wish to thank the students who participated in this research. Open access publishing facilitated by Auckland

University of Technology, as part of the Wiley - Auckland University of Technology agreement via the Council of Australian University Librarians.

## FUNDING INFORMATION

No external funds were sought for this work.

## REFERENCES

1. Fertility Associates. Pathway to a child. 2020. [Accessed 25 August 2022.] Available from URL: <https://www.fertilityassociates.co.nz/media/1788/pathway-oct2020.pdf>.
2. Bracewell-Milnes T, Saso S, Bora S *et al*. Investigating psychosocial attitudes, motivations and experiences of oocyte donors, recipients and egg sharers: A systematic review. *Hum Reprod Update* 2016; **22**(4): 450–465.
3. Van den Broeck U, Vandermeeren M, Vanderschueren D *et al*. A systematic review of sperm donors: Demographic characteristics, attitudes, motives and experiences of the process of sperm donation. *Hum Reprod Update* 2013; **19**(1): 37–51.
4. Fallon V. Desperately seeking donors: New Zealand's chronic sperm shortage. Stuff. 2021. [Accessed 26 August 2022.] Available from URL: <https://www.stuff.co.nz/national/health/124208648/desperately-seeking-donors-new-zealands-chronic-sperm-shortage>.

5. Pennings G, Ravel C, Girard JM *et al.* Attitude towards reciprocity as a motive for oocyte donation. *Eur J Obstet Gynecol Reprod Biol* 2018; **225**: 194–198.
6. Ethics Committee of the American Society for Reproductive Medicine. Financial compensation of oocyte donors: An ethics committee opinion. *Fertil Steril* 2021; **116**(2): 319–325.
7. Lee MS, Farland LV, Missmer SA, Ginsburg ES. Limitations on the compensation of gamete donors: A public opinion survey. *Fertil Steril* 2017; **107**(6): 1355–1363.e4.
8. Epstein SF, Whitehouse PN. Inheriting the ivy league: The market for educated egg and sperm donors. The Harvard Crimson. 2020. [Accessed 26 August 2022.] Available from URL: <https://www.thecrimson.com/article/2020/4/30/inheriting-the-ivy-league/>.
9. Almeling R. Gender and the value of bodily goods: Commodification in egg and sperm donation. *Law Contemp Probl* 2009; **72**(3): 37–58.
10. Daniels CR, Heidt-Forsythe E. Gendered eugenics and the problematic of free market reproductive technologies: Sperm and egg donation in the United States. *Signs* 2012; **37**(7): 719–747.
11. Kenney NJ, McGowan ML. Looking back: Egg donors' retrospective evaluations of their motivations, expectations, and experiences during their first donation cycle. *Fertil Steril* 2010; **93**(2): 455–466.
12. Papadimos TJ, Papadimos AT. The student and the ovum: The lack of autonomy and informed consent in trading genes for tuition. *Reprod Biol Endocrinol* 2004; **2**: 56.
13. Bakker MR, Maas J, Bekker MH *et al.* Autonomy and self-esteem of women who donate to an oocyte cryopreservation bank in The Netherlands. *Reprod Biomed Online* 2017; **35**(2): 225–231.
14. Graham S, Jadva V, Freeman T *et al.* Being an identity-release donor: A qualitative study exploring the motivations, experiences and future expectations of current UK egg donors. *Hum Fertil (Camb)* 2016; **19**(4): 230–241.
15. Goedeke S, Shepherd D, Rodino IS. Fertility stakeholders' concerns regarding payment for egg and sperm donation in New Zealand and Australia. *Reprod Biomed Soc Online* 2021; **14**: 8–19.
16. Goedeke S, Shepherd D, Rodino IS. Support for recognition and payment options for egg and sperm donation in New Zealand and Australia. *Hum Reprod* 2020; **35**(1): 117–129.
17. Ravelingien A, Provoost V, Wyverkens E *et al.* Recipients' views on payment of sperm donors. *Reprod Biomed Online* 2015; **31**(2): 225–231.
18. Strathern S. Gifts money cannot buy. *Soc Anthropol* 2012; **20**(4): 397–410.
19. Pennings G, de Mouzon J, Shenfield F *et al.* Socio-demographic and fertility-related characteristics and motivations of oocyte donors in eleven European countries. *Hum Reprod* 2014; **29**(5): 1076–1089.
20. Human Assisted Reproductive Technology Act. 2004.
21. Tabachnick BG, Fidell LS. *Using Multivariate Statistics*, 7th edn. Upper Saddle River, NJ: Pearson Education, 2019.
22. Johnson KM. The price of an egg: Oocyte donor compensation in the US fertility industry. *New Genet Soc* 2017; **36**(4): 354–374.
23. Waldby C, Kerridge I, Boulos M, Carroll K. From altruism to monetisation: Australian women's ideas about money, ethics and research eggs. *Soc Sci Med* 2013; **94**: 34–42.
24. Nuffield Council on Bioethics. Human bodies: Donation for Medicine and Research. 2011. [Accessed 27 August 2022.] Available from URL: [http://nuffieldbioethics.org/wp-content/uploads/2014/07/Donation\\_full\\_report.pdf](http://nuffieldbioethics.org/wp-content/uploads/2014/07/Donation_full_report.pdf).
25. Tober D, Garibaldi C, Blair A, Balt K. Alignment between expectations and experiences of egg donors: What does it mean to be informed? *Reprod Biomed Online* 2021; **12**: 1–13.
26. Lucas N, Rosario R, Shelling A. New Zealand university students' knowledge of fertility decline in women via natural pregnancy and assisted reproductive technologies. *Hum Fertil (Camb)* 2015; **18**(3): 208–214.
27. Meissner C, Schippert C, von Versen-Höyneck F. Awareness, knowledge, and perceptions of infertility, fertility assessment, and assisted reproductive technologies in the era of oocyte freezing among female and male university students. *J Assist Reprod Genet* 2016; **33**(6): 719–729.
28. Gilman L. Toxic money or paid altruism: The meaning of payments for identity-release gamete donors. *Sociol Health Illn* 2018; **40**(4): 702–717.
29. Pennings G. Central role of altruism in the recruitment of gamete donors. *Monash Bioeth Rev* 2015; **33**(1): 78–88.
30. Glover M. *Māori Attitudes to Assisted Human Reproduction: An Exploratory Study*. Auckland: University of Auckland, 2008; [Accessed 7 April 2023.] Available from URL: <https://www.maramatanga.co.nz/sites/default/files/Research%20Report%20-%20Maori%20Attitudes%20to%20Assisted%20Rproduction%20FIN AL.pdf>.