Jose Antonio Castilla

CEIFER Biobank, Sperm and Oocyte, Granada, Spain; MasVida Reproduction, Sevilla, Spain; Human Reproduction Unit, Granada, Spain; Dept. of Anatomy and Embryology, Medicine Faculty, University of Granada, Spain

Address for correspondence:
Jose Antonio Castilla
Human Reproduction Unit,
University Hospital Complex, Granada, Spain
Department of Anatomy and Embryology, Medicine
University of Granada, Spain
Av. de las Fuerzas Armadas 2
18014 Granada, Spain
E-mail: josea.castilla.sspa@juntadeandalucia.es

KEY WORDS: sperm bank, oocyte bank.

In organising a sperm and/or oocyte bank, both physical and personnel resources must be carefully matched to the numbers of candidates for donation and of donors accepted. The key element in this respect is the final number of donors accepted, because they are essential to the viability of the bank. Despite the existence of Europe-wide regulations in this field, the presence of national regulations, too, means that the practise of gamete donation varies greatly among EU countries (1).

Taking into account the donor motivation findings reported by Pennings et al. (2), in a study of oocyte donors in different European countries, we conclude that oocyte donation is motivated by two crucial elements: economic and altruistic reasons. The fundamental point to ensure there are sufficient donors to meet the demand is, undoubtedly, that of providing financial compensation for the donation. This conclusion is in line with that described for semen donors (3). Moreover, for donors to repeat the donation, economic motivation remains essential. The EU directive governing the donation of cells and tissues prohibits retribution or payment for gametes, but allows compensation to donors or the reimbursement of expenses incurred by the donation. Likewise, recipients are prohibited from making any economic contribution for the gametes received, but they are allowed to pay the expenses of the donation (medication, screening test, etc.). In fact, over 80% of all oocyte reception cycles are performed in countries where the donor receives some form of financial compensation. However, most of these cycles take place in countries where donors affirm that their motivation is a mixture of altruistic and economic reasons. In Table 1 a list of motivations and drawbacks of gamete donation is presented.

The importance of the above-mentioned altruistic motivation in the donation of gametes was highlighted by Riggs and Russell (4). Indeed, in countries where oocyte donors cite altruism as a motivating factor, economic compensation, adjusted for purchasing power parity, is lower than in countries where donors do not refer to altruistic reasons (2).

Another factor that determines the number of donors available is whether the donation occurs within a legal framework of anonymity. Van den Broeck et al. (3) conducted a systematic review of semen donors in an anonymous model and concluded that only 20-50% of donors would continue to donate if their form of donation changed from anonymous to non-anonymous. Therefore, it is fundamental to guarantee anonymity in order to meet the demand for donor semen. In the very near future, and with the increasing use of genetic tests, it will be difficult to maintain anonymity. Indeed, cases have already been described of the children of donors using genetic testing and genealogy websites to identify their donor (5).

The third most important factor influencing the
The number of donors available is that of donor screening, since only 10% of candidates are finally accepted as donors, and some Authors have reported values as low as 3.6% (6). The main cause of rejection is inadequate semen quality, followed by failure to keep scheduled appointments, family and personal medical history (including the psychological study) and, finally, the legally-required serological and genetic tests. Currently, a significant percentage of donors is rejected due to the results obtained in non-mandatory genetic tests. Extended genetic carrier screening is now widely used due to the emergence of next-generation sequencing, which has greatly reduced the costs of identifying carrier donors of pathogenic mutations in autosomal recessive diseases. Although there is no agreement as to how this information should be used, some sperm banks reject carrier donors of highly prevalent recessive diseases, while accepting carrier donors of recessive diseases of very low prevalence. In this respect, it should be recalled that everybody is a carrier of 3-8 pathogenic mutations in recessive disease genes (7). Managing this volume of data poses new challenges to sperm and/or oocyte banks, in areas such as genetic matching, which has yet to be standardised. Finally, another factor limiting the number of available donors is the maximum number of children allowed per donor, which is very low in the majority of European countries. It has been shown that the risk of unions between descendants of the same sperm donor is very low, and that this type of union is, in fact, much more frequent among descendants of the same father due to false paternity (8). In Spain, it has been estimated that the maximum number of children per donor that equalises the risk of unions between descendants of the same donor with that of unions between descendants of the same person due to false paternity is 25 children per donor (9). Accordingly, most limits in this respect in European countries should be revised upwards, thus making more donor gametes available.

In conclusion, donors are essential to the creation and survival of a sperm bank. This human resource should be managed such that the safety of patients and children is of paramount importance, based on the proper evaluation of real risks. Means are currently available with which to increase the security of gamete donation, but they are difficult to apply due to non-scientific restrictions placed on the maximum number of donor children allowable (10).

References


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<tr>
<th>Motivations</th>
<th>Drawbacks</th>
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<tbody>
<tr>
<td>Economic compensation</td>
<td>Physical (e.g. pain at injection site) and Psychological (e.g. felt disrespect by medical staff) discomfort</td>
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<tr>
<td>Altruism</td>
<td>Physical risks (ovarian hyperstimulation syndrome, reaction to anaesthesia, infection, bleeding)</td>
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<td>Know health status</td>
<td>Psychological risks (frustration about the anonymity of the process, curiosity about the end result of the donation, experiencing a sense of loss or attachment to their gametes, moodiness due to hormone treatment, negative effect on sexual life)</td>
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<td>Indirect monetary gain (e.g. reduction in IVF price in egg sharing programmes)</td>
<td>Regret</td>
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<tr>
<td>Other type of compensation (e.g. reduction of waiting lists in egg sharing programmes)</td>
<td>Anonymity loss by legal imperative (e.g. Holland) or by the use of new technologies (e.g. next generation sequencing)</td>
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<td>Health issues discovery (low ovarian reserve, low semen quality, carrier of recessive disease)</td>
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