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Development

Assisted reproductive technology

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Synthesis

How important is it?

Since the first *In Vitro Fertilization* (IVF) birth in 1978 (fertilization of an egg with sperm in the laboratory, with the resulting embryo transferred to the mother's womb), more than 1 000,000 children have been born worldwide as a result of *Assisted Reproductive Technology* (ART). In first world nations, approximately 1% of births per year are from ART. These children (and their parents) represent a significant group and will become an important client group as adults.

Advances in reproductive technology have had an extreme effect on the way families are created. It is now possible for a child to have five parents: an egg donor, a sperm donor, a birth mother (pregnancy host) and the two parents the child calls Mum and Dad.

The literature examining the possible risks this mode of conception may have for a child's psychosocial development – social, emotional, behavioural and psychological – is limited. Research tends to focus more on how ART affects physical development and the risk of birth defects.

What do we know?

In order to address the psychosocial development of children born in assisted reproduction families, research has mainly focused on parent-child relationships in IVF families, investigating maternal skills in comparison with naturally conceived children and examining relationships in unorthodox family groups (e.g. lesbian couples). The impact of these factors must be considered separately from impacts of the reproductive procedures per se.

- There is a higher incidence of multiple births, preterm births and low-birth-weight infants following IVF and *intracytoplasmic sperm injection* (ICSI), in which a single sperm is injected directly into the egg to create an embryo.
- Mothers of IVF children are generally older than mothers who have given birth naturally.

Existing research in this area has various methodological limitations, such as the use of cross-sectional research design, with a few longitudinal investigations coming up lately, the focus being mainly on mothers. More medically vulnerable children, including those born prematurely, tend to

be excluded from sample studies. Research results show:

- no evidence of cognitive impairment in singleton IVF
- no differences between the two groups at age one for social development or test-taking behaviour
- IVF children having secure attachment relationships with their mothers (at 12 months)
- children from "*gamete donation*" (donor insemination and egg donation) to be above average in terms of psychomotor and intellectual development (two studies) and more advanced in psychomotor and language development (one study)
- no evidence of emotional or behavioural problems in early studies of the socio-emotional development of donor-insemination children, with egg-donation parents less likely than IVF parents to express concern about their children's behaviour.

What can be done?

The existing research, while limited, is reassuring. Children conceived by IVF appear to develop psychosocially and emotionally in the same range as naturally conceived children. However, more research is needed to address the psychosocial sequelae of multiple births, longer-term follow-ups and studies on outcomes of cutting-edge IVF technologies.

- Service-providers need to promote a policy of single embryo replacement to reduce the rate of multiple births, which will in return reduce the workload for neonatal intensive care units and the secondary disability burden on families, the health-care system and our society/economy as a whole.
- These children should be monitored over the long term in order to anticipate future risks, such as genetic disorders, cancers and reduced fertility, as well as the impact on psychosocial well-being associated with multiple births, women conceiving at an advanced age and the availability of prenatal-genetic diagnosis resulting in so-called "designer babies."
- While there are clear differences between embryo donors and birth parents (in the case of adoption), legislators and practitioners need to consider the adoption example with respect to the child's right to know his or her genetic background, and examine donor- and recipient-related issues, including screening and psychological and legal status of both parties.

- Policy-makers and practitioners urgently need to address the issue of gamete donation and set reasonable boundaries as the imbalance between supply and demand makes anonymous and commercialized reproduction more readily available and frequent.

Reproductive Technology and Its Impact on Child Psychosocial and Emotional Development

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Introduction

Since the birth of the first baby was produced using *in vitro* fertilization in 1978,[1] advances in assisted reproduction procedures have had a fundamental impact on the ways in which families may be created. It is now possible for a child to have 5 parents: an egg donor, a sperm donor, a birth mother who hosts the pregnancy, and the two social parents, whom the child knows as "Mum and Dad."[2]

Subject

Research on the psychological development of children in assisted reproduction families has focused on two major types of assisted reproduction:

1. **"High-tech" procedures** include *in vitro* fertilization (IVF) and intracytoplasmic sperm injection (ICSI). IVF involves the fertilization of an egg with sperm in the laboratory and the transfer of the resulting embryo to the mother's womb. With ICSI, a single sperm is injected directly into the egg to create an embryo.
2. **Gamete donation** includes donor insemination and egg donation. Donor insemination involves the insemination of a woman with the sperm of a man who is not her husband or partner. The child produced is genetically related to the mother but not the father. Egg donation is like donor insemination in that the child is genetically related to only one parent, but in this case the mother is the parent with whom the child shares no genetic link. Egg donation is a much more complex and intrusive procedure than donor insemination and involves IVF techniques.

Problems

The key problems in this area of investigation are as follows:

- The higher incidence of multiple births, preterm births, and low birthweight infants following IVF and ICSI.[3,4] The impact of these factors on child development must be considered separately from the impact of IVF and ICSI *per se*. Many of the empirical investigations have focused on families with a singleton (only) child to avoid the confounding effect of a multiple birth.
- Mothers of IVF children are generally older than mothers who give birth without medical intervention, and attempts to match natural conception mothers for maternal age have presented difficulties, as has matching for birth order of the target child and number of children in the family, although some researchers have attempted to statistically control for these variables.

Research Context

Studies in this area tend to be cross-sectional, although longitudinal investigations are beginning to appear. As the majority of parents whose children have been conceived by gamete donation do not tell their children about the nature of their conception, it is not possible to establish how children's psychological development may be affected when their parents do or do not divulge details regarding their genetic origins.

Key Research Questions

The key research question in this area is as follows: What are the consequences of assisted reproduction for children's cognitive, social, and emotional development?

Recent Research Results

1. **"High-tech" procedures.** The early, uncontrolled studies of the cognitive development of IVF children found no evidence of impaired cognitive ability.[5,6,7,8] Controlled studies of IVF infants reported similar findings using the Bayley Scales,[9,10,11] the Brunet-Lezine test,[12] and the General Cognitive Index.[13] No evidence of delayed mental development was found among ICSI children in studies in Belgium[14] and the United Kingdom.[15,16] Although one study in Australia found evidence of cognitive impairment,[17] there were no differences between the ICSI children and the control groups when the children were followed up at age 5, at which point the sample size had increased.[18] With respect to socio-emotional development, IVF

mothers in a prospective study rated their babies as more temperamentally difficult than did natural conception mothers, and their babies showed more negative behaviours in response to stress.[19] At 1 year of age, no differences between the two groups of children were found for either social development or test-taking behaviour. However, the IVF mothers rated their children as having more behavioural difficulties, and more difficult temperaments, than the control group.[20] The authors suggested that these findings may be related to the greater anxiety of IVF mothers about their children's well-being. The security of the infant's attachment to the mother was also assessed at 12 months of age using the Strange Situation procedure.[21] IVF children showed predominantly secure attachment relationships, and there was no difference between groups in the proportion classified as "insecurely attached." No differences in the behaviour of IVF and naturally conceived children have been identified in studies conducted in Belgium,[22] Taiwan,[23] Sweden,[5] and the Netherlands.[24] In addition, the European Study of Assisted Reproduction Families[25,26] found that IVF children did not differ from natural-conception children with respect to the presence of psychological disorder. An investigation of the psychological well-being of ICSI children found no evidence of raised levels of emotional or behavioural problems compared with IVF and naturally conceived children.[27]

2. **Gamete Donation.** With respect to cognitive development, two studies in Australia,[28,29] and one study in Sweden[30] found donor-insemination (DI) children were above average in terms of intellectual and psychomotor development. In the only controlled study, donor insemination children were found to be more advanced than natural conception children with respect to psychomotor and language development.[31] An investigation of the cognitive development of egg-donation children showed no evidence of psychomotor retardation.[32] The early, uncontrolled studies of the socio-emotional development of donor-insemination children found no evidence of emotional or behavioural problems.[28,29] Although one study reported a higher incidence of psychological problems among donor insemination children than among naturally conceived children,[31] controlled studies that used standardized measures found donor insemination children to be functioning well.[25,26] In an investigation in Finland, egg donation parents were less likely than IVF parents to express concern about their child's behaviour,[33] and no evidence of psychological difficulties among egg-donation children was found in a study conducted in the United Kingdom.[34]

Conclusions

Creating families by means of assisted reproduction has raised a number of concerns about potentially adverse consequences for child development. It seems, however, from the evidence available so far, that such concerns are unfounded. There is no evidence of cognitive impairment in singleton children born as a result of IVF procedures, although the findings regarding ICSI children remain inconclusive. The reports of superior cognitive functioning among donor-insemination children have not been supported by large-scale, controlled studies could conceivably result from the use of highly educated donors. In relation to socioemotional development, assisted-reproduction children appear to be functioning well. The greater difficulties of IVF infants are based on maternal reports and probably result from the higher anxiety levels of IVF mothers. Studies of children during the pre-school years do not indicate a higher incidence of emotional or behavioural problems among assisted-reproduction children.

Implications for Policy and Services

- One of the most problematic issues associated with the practice of assisted reproduction is the high incidence of multiple births. The risks associated with multiple births in terms of perinatal mortality, neonatal problems, physical disability, and cognitive impairment have been well documented. The World Health Organization has recommended that fewer embryos be transferred in IVF procedures.[3]
- The majority of children conceived by gamete donation grow up unaware that they lack a genetic relationship with one or both parents. Although the absence of psychological problems in children conceived by gamete donation suggests that secrecy does not have an adverse effect, this does not mean that it is better for children not to be told about the nature of their conception. There is growing concern among professionals in the fields of adoption and family therapy, and from some DI adults about the secrecy that surrounds gamete donation. In addition, the widespread use of anonymous donors prevents children who are told about their donor conception, or who find out about it, from obtaining information regarding their genetic parent(s).

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Reproductive Technology and Its Impact on Psychosocial Child Development

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Introduction

Since the first In-Vitro Fertilization (IVF) birth in 1978 in England,[1] more than 1,000,000 children have been born worldwide as a result of Assisted Reproductive Technology (ART).[2] In first-world nations, approximately 1% of births per year are now the result of ART, in some this is up to 4% (e.g., Finland). These children (and their parents) represent a significant group; as adults, they will become an important client group. This article will discuss the possible risks of this mode of conception for a child's psychosocial (i.e., social, emotional, behavioural and psychological) development. Literature in this area is rather limited, with research tending to concentrate more on the impact of ART on physical development and the risk of birth defects.

Subject

Research to date has focused on: a) parent-child relationships in IVF families; b) investigation of maternal skills in IVF families compared to families with naturally conceived children; c) consideration of relationships in non-traditional family groups, e.g., lesbian couples; d) consideration of the possible impact of non-genetic parenting (i.e., using donated eggs/sperm).

Problems

Studies investigating the impact of reproductive technology on the psychosocial development of the child have conceptual and methodological limitations:

1. Many of the studies regarding this client group included mothers only, limiting the scope of discussion about the impact of ART on these families and the children involved;
2. Since studies generally involve healthy children, the exclusion of the more vulnerable children may affect researchers' abilities to ascertain the full effects of IVF;[3]

3. In addition, cross-sectional studies cannot determine whether the actual IVF conception or the parents' infertility are key determinates of these actual parent-child relationships;
4. Fertility clinics do not perform systematic follow-up and parents of ART-conceived children often prefer to keep their mode of conception secret, but studies need to be replicated with larger groups to validate findings. Non-participation and non-representative samples are also issues.

Research Context

In the initial stages of the development of assisted reproduction, ethical, legal, and medical issues were raised. However, in more recent years, concerns have surrounded the psychosocial development of children born after assisted reproduction. As new reproductive technologies have advanced rapidly, questions regarding the consequences for children conceived with the help of these procedures have lagged far behind.[4] Examples of cutting-edge IVF technologies in which virtually no studies about outcome have been performed are blastocyst transfer, pre-implantation genetic diagnosis and in-vitro maturation.

Key Research Questions

1. Are these children being raised in a different socio-emotional environment than their naturally conceived peers?
2. Does non-traditional family life (e.g., having two "mothers") have implications for their development into adults?
3. Are children who are denied their genetic and conceptional origins ultimately at risk of problems with their long-term psychological wellbeing, as has been shown in adopted children?
4. What is the impact, if any, on family relationships when the biological origins of children conceived via medically assisted reproduction is disclosed to them?

Recent Research Results

Psychological literature suggests that the stress of infertility may lead to dysfunctional patterns of parenting and may result in negative outcomes for the child[5] or that IVF parents will be overprotective of their children or have unrealistic expectations of them.[6]

Hahn[7] reviewed the psychosocial wellbeing of parents and their children born after assisted reproduction. The objective of the paper was to critically review the empirical literature published on this topic since 1980. Several common findings appeared across the literature reviewed. No statistically significant differences in child functioning in terms of emotions, behaviour, self-esteem, or perceptions of family relationships were reported at that time. However, Hahn does cite work by Levy-Shiff et al[8], who assessed the long-term effects on 51 IVF children in Israel. No significant difference was found in IQ or cognitive performance, but IVF children rated on socioemotional adjustment were reported by their teachers to be more anxious, depressed, and aggressive than their peers. This is the only report to date of poorer emotional adjustment of IVF children. Hahn goes on to state that this study's data may have been compromised due to cultural factors, which may also explain discrepancies in results from study to study.

An article by Golombok et al[4] presented findings from a longitudinal study of the first cohort of children conceived by IVF to reach adolescence. Thirty-four IVF families, 49 adoptive families and 38 families with a naturally conceived child were compared on standardized interviews and questionnaire measures of parent-child relationships and children's psychological well-being. The few differences in parent-child relationships that were identified appeared to be associated with the experience of infertility rather than the IVF procedure itself. The IVF children were found to be functioning well and did not differ from the adopted or naturally conceived children on any assessments of social or emotional adjustment.

Hahn and DiPierto[3] examined the associations between homologous IVF and quality of parenting, family functioning and emotional and behaviour adjustment in three- to seven-year-old children. A cross-sectional survey conducted in Taiwan compared 54 IVF mother-child pairs and 59 mother-child pairs with children conceived naturally. IVF mothers reported a greater level of protectiveness toward their children than control mothers. Teachers, blind to condition, rated IVF mothers as displaying greater warmth but not more overprotective or intrusive parenting behaviours than mothers of control children. Teachers scored children of IVF as having fewer behavioural problems than control children. In contrast, IVF mothers reported less satisfaction with aspects of family functioning. Family composition was found to moderate parenting stress: IVF mothers with only one child perceived less parenting stress than did those in the control group.

Colpin and Soenen[9] reported details of their follow-up study of the parent-child relationship and the child's psychosocial development after IVF. The pilot study compared 31 IVF families and 31

families with a naturally conceived child when the children were two years old. Twenty-seven IVF and 23 control families participated again when the children were eight to nine years old. Both parents completed the questionnaires, which assessed parenting variables as well as the child's behaviour. In most cases, behavioural ratings were obtained from the child's teacher. The results showed no significant differences between IVF and control parents' reports of child behaviour, parenting behaviour, parenting stress and most of the parenting goals. Teachers' ratings of the child's behaviour did not differ significantly between the IVF and control groups.

Researchers have suggested that IVF parents have more emotional involvement and warmth towards their child[4] and less parenting stress.[3,4,7,10,11]

For example, Goisis et al investigated the impact of medically assisted reproduction on parent–child relationships during adolescence. They used a sample of 320 mothers who conceived with the help of assisted reproduction. Interestingly, there were similar conflict frequencies between medically assisted reproduction and natural conception families.[12] Previous studies have identified a relationship between disclosing the method of conception and lower levels of mother–child conflict,13,14 and particularly between mother and adolescent males.[15] Another significant finding from Goisis et al was that mothers who underwent assisted reproduction reported being closer to their children than mothers who conceived naturally.[12] These findings are supported by a systematic review by Illioi et al; this review summarized 17 studies that assessed the psychological adjustment and family relationships within families that underwent assisted reproduction. The overall findings were that positive parent–adolescent relationships were present in families that had in vitro fertilization (IVF), egg donation, and donor insemination.[16]

In contrast, there has also been studies to suggest that there is some evidence of parental overprotection towards children,[3,4,17] higher stress and anxiety[11,14] and lower self-esteem[18,19] amongst children conceived from assisted reproduction. Parental overprotection may have resulted from the emotional, psychological, and financial obstacles that parents had to overcome to conceive.[3] As a result, this may have negative consequences on the parent-child relationship. On the other hand, overprotection towards children conceived from assisted reproduction may explain the higher probability of living with parents till adulthood and the lower probability of not being in education or employment.[20]

An important discussion to consider amongst families that had assisted reproduction is the parental disclosure to their children. This can create anxiety as it can be challenging to decide

when the best time is to disclose this information, and parents may worry about the child's response and the effect this has on their relationship. Recent research has suggested that when children, that were conceived via medically assisted reproduction, find out the method of conception, this influenced their relationship with their parents positively.[21,22] Similarly, findings from a longitudinal study suggested that when parents disclosed the biological origins to their children before they became 7 years old, there were higher quality mother–child relationships and higher levels of psychological wellbeing at the age of 14.[23] However, not all parents disclose this information to their children, which may be explained by the greater level of protectiveness from IVF mothers towards their children; this was identified in a study by Hahn and DiPierto.[3] Furthermore, the study from Blake et al included 64 families with a child conceived by donor insemination or egg donation, and they observed that disclosure of the biological origins to the child was not always associated with improved levels of parental psychological wellbeing. For example, when children were of an older age and had a more sophisticated understanding of their donor origins, disclosure was associated with poorer psychological wellbeing.[24] As a result, the discussion surrounding biological origins is a sensitive topic between the parent and child, and it might be important to consider the optimal time and environment to deliver this conversation in as this can have an impact on the parent and child relationship.

In a comprehensive study, Barnes et al.[25] examined the relationships between parent and child, and also in the couple (the dyadic relationship), and their attitudes towards parenting and work. This study involved 1,523 five-year-old children in approximately equally sized groups either conceived naturally, by conventional in vitro fertilization and by intracytoplasmic sperm injection from five European countries (Belgium, Denmark, Greece, Sweden, and the United Kingdom). The response rates varied from close to 100% to as low as 50%. However, there were some interesting findings. Firstly, ART families found the experience of parenting more positive than naturally conceiving families. Secondly, they were less committed to work than naturally conceiving families. Thirdly, there was no evidence of child temperament problems or difficulties in the dyadic relationship. Notwithstanding these caveats, all scores were normal in all groups; there were relative differences whose clinical significance remains unknown.

In contrast, a very recent study noted less aggressive behaviours, but more withdrawn behaviours and a higher incidence of clinical depression in 310 adolescents, who were aged 14 years, conceived after assisted reproduction when compared to their peers who were naturally conceived.[26] In addition, a large Norwegian study included 32,580 children conceived through

assisted reproduction and observed that this cohort tended to be brought up in more resourceful environments,[27] which would be advantageous to their development and wellbeing. When this factor was accounted for, the risk of psychological disorders was higher.[20] Therefore, this highlights the importance of taking sociodemographic backgrounds into consideration when studying the psychological development of children conceived from assisted reproduction.

Conclusions

Overall, the existing literature is reassuring. It appears that conceiving a child by IVF and disclosing this method of conception to the child does not have a detrimental effect on the child's psychological development over and above the range of emotional environments to which children in naturally conceived families can be exposed.
There are far more important issues beyond the brief of this report that definitely have implications for public policy. These include the major problems in ART resulting from higher-order births, prematurity and disability and the impact of falling fertility, as noted below.

Implications for Policy and Service Perspectives

1. Evidence of any problems attributable to reproductive technology on psychosocial child development is weak and contradictory. On balance, this seems unlikely;
2. Service providers need to consider more fundamental issues, such as encouraging a policy of single embryo replacement to reduce the rate of higher-order births (three or more babies);
3. A reduction in higher-order births will also lead to a reduced workload for neonatal intensive care units and reduce the secondary disability burden on families, health-care systems and society/the economy as a whole;
4. Long-term surveillance of these children would be ideal as a way of anticipating future risks, such as reduced fertility, for the next generation;
5. Since fertility rates are falling and the use of the new reproductive technologies is growing, these children will make up a significant client group as adults. If they have been exposed to undue risks as a result of their mode of conception, they will take a very different view of these risks in relation to those who helped in their conception.

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Commentary: Reproductive Technology and Its Impact on Child Psychosocial and Emotional Development

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Introduction

Since the first IVF baby was born in 1978, the rapid rate of development in reproductive technology has made it difficult for social scientists to keep pace in documenting the social and psychological consequences of IVF. In the 1980s the focus of media and research was on the impact of the technology on the children, referred to as “test-tube babies,” who were deemed to be at risk of spending their lives “in a glasshouse.” There were concerns about congenital abnormalities, cognitive development, and the psychological well-being of children who were “not conceived in loving conjugal embrace like other children, that they are oddities, that they were produced in a manufacturing process with little respect for human dignity.”[1] There were also fears that parents would have unrealistic expectations of a “messianic child.”[1] It was not until the 1990s that systematic reviews of outcomes for children conceived through IVF appeared and controlled studies were initiated. At this time it became clear that there were several issues that researchers needed to address: the impact of prior infertility and the stress of IVF treatment on the psychological well-being of the parents and on their expectations of their child; the impact of the “high-tech procedures” on the developing embryo and subsequently on child development; and the fact that these procedures enabled children to be born into family contexts with an increasingly complex mix of genetic and social parents through the donation of eggs, sperm, embryos, and surrogacy. Gradually, as IVF has become more common (over 1% of children born in the Western world have now been conceived as a result of the technology), attitudes toward IVF children have become more positive and the focus of concern in social commentaries has shifted to newer applications of the technology, such as our capacity to use surplus human embryos for stem cell research and advances in prenatal genetic diagnosis allowing for the selection of embryos with particular characteristics. In sum, concern has shifted from “test-tube babies” to “designer babies.”

Research and Conclusions

Professor Golombok has organized her review of the research around the two issues of “high-tech” procedures and gamete donation, arguing that the key research question concerns the consequences of assisted reproduction for children’s cognitive, social, and emotional development. She provides a succinct review of findings with respect to the cognitive and social-emotional development of singleton children, and concludes that no differences have been identified in emotional and behavioural outcomes for children conceived through assisted reproductive technology compared to naturally conceived children across a range of European and Asian contexts. Dr Sutcliffe[1] draws attention to the only study to date which has suggested that school-aged IVF children may be at greater risk for emotional difficulties and that the older the parents were, the greater the risk for emotional difficulties became.[2] These findings, while not consistent with the larger body of research, warrant further investigation. Overall, both authors conclude that the research shows more similarities than differences when IVF parents and children are compared with naturally conceived families. However, there are unique concerns for IVF parents, including some anxiety in the early stages of parenthood and a tendency to overprotectiveness (neither of which appear to be associated with any adverse impact on the parent–child relationship[3]). These subtle differences may reflect the special path these families have taken from infertility to parenthood.

Dr Sutcliffe also points out various methodological limitations in existing research, including a focus on mothers, the use of cross-sectional research designs, and the exclusion from samples studies of more medically vulnerable children (including those born very prematurely). A few studies, however, have included an examination of adjustment in fathers both during the transition to parenthood[4] and during middle childhood and adolescence.[5,6] Moreover, although still small in number, there are now a number of longitudinal studies examining adjustment through the transition to parenthood (see reference 3for a review) as children grow from the age of 2 through until 8 years of age,[7] and from the preschool years through to adolescence.[5,6]

Both authors comment on the important issue of multiple births, but neither reviews any research addressing this issue. Although very little information has been published to date on outcomes for IVF twins, and sample sizes are typically small, preliminary studies to date have generally provided no evidence of problematic parent–child relationships or child outcomes in such cases.[8] The issue of triplets is more complex, and no research has been reported to date on psychosocial

outcomes in families with triplets. Clearly, more research is needed on the psychosocial sequelae of multiple births.

Both authors also discuss the important issue of genetic versus biological parenting. Professor Golombok focuses on the issue of secrecy and Dr Sutcliffe raises questions about the well-being of children raised in unorthodox family structures (eg, lesbian parents). With respect to gamete donation, Professor Golombok's review concludes that existing studies suggest donor insemination children are functioning well with respect to both cognitive and social-emotional development. Two studies on children conceived through egg donation are reported and provide similar positive findings. No findings are reported with respect to outcomes for children conceived through embryo donation and this represents an area in need of future study. With respect to children growing up in "unorthodox" families, a growing body of research has failed to demonstrate any adverse psychosocial consequences for the children to date,[9] however longer term follow-up is warranted.

Implications for Policy and Services

Both Professor Golombok and Dr Sutcliffe highlight the issue of the transfer of multiple embryos and the associated risk of multiple births and advocate the transfer of single embryos in line with recommendations of the World Health Organization.

Professor Golombok also discusses the issue of secrecy with respect to genetic origins and suggests that, notwithstanding the lack of empirical evidence of psychological problems in children conceived through donor gametes, the issues of secrecy and anonymous donation need to be addressed by practitioners. I would agree with this suggestion and add that children conceived using donor embryos are a special case. They are not genetically related to either parent and can therefore be regarded as being similar to adopted children. There are clearly analogies and lessons to be learned from the adoption experience, where an earlier model of secrecy has been replaced as the concept of openness in the adoption process has evolved.[10] While there are clear differences between embryo donors and birth parents (in the case of adoption), practitioners, policy makers, and legislators need to consider the adoption example with respect to the child's rights to know their genetic background, and issues to do with donors and recipients, including screening and the psychological and legal status of both.

Gamete donation challenges established notions of biological and legal parentage, and the imbalance between supply and demand also opens the door to increased anonymous and commercialized reproduction. Policy makers and practitioners urgently need to address this issueand set reasonable boundaries.[11]

Dr Sutcliffe notes the need for longer-term follow-up of IVF children as a way of anticipating future risks (eg, reduced fertility, and higher rates of genomic imprintable disorders). Practitioners, policy makers, and researchers need to remain mindful that the birth of a child through reproductive technology may only be the beginning of a complex and evolving story as the implications of the IVF process — including disclosure issues, ongoing involvement with IVF treatment, decisions regarding non-implanted frozen embryos, and long-term health outcomes for mothers — unfold over time.[3] Furthermore, there is a need for a continued commitment on the part of service providers to evaluate the psychosocial sequelae of new and cutting-edge technologies. In particular, there may be new challenges to parenting and child psychological well-being associated with women conceiving at advanced maternal ages, and the availability of prenatal-genetic diagnosis, enabling the production of so called “designer babies.”

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Note:

[1] Comments on original paper published by Alastair G. Sutcliffe in 2003. To have access to this article, contact us at cedje-ceecd@umontreal.ca.