



Reproductive Technology and Its Impact on Psychosocial Child Development

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Topic

Reproductive technologies

Introduction

Since the first In-Vitro Fertilisation (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:

- a) 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;
- b) 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
- c) 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;
- d) 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

- Are these children being raised in a different socio-emotional environment than their naturally conceived peers?
- Does non-traditional family life (e.g. having two “mothers”) have implications for their development into adults?
- Are children who are denied their genetic and conceptional origins ultimately at risk of problems with their long-term psychological well-being, as has been shown in adopted children?

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 child⁵ or that IVF parents will be overprotective of their children or have unrealistic expectations of them.⁶

Hahn⁷ reviewed the psychosocial well-being 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 DiPietro³ 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 Soenen⁹ 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 child⁴ and less parenting stress.^{3,4,7,10,11} However there is some evidence of parental overprotection towards children,^{3,4,12} higher stress and anxiety^{11,13} and lower self esteem.^{13,14}

Finally in the most comprehensive study to be reported so far, Barnes et al.¹⁵ 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* fertilisation 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; these were relative differences whose clinical significance remains unknown.

Conclusions

Overall, the existing literature is reassuring. It appears that conceiving a child by IVF 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

- a) Evidence of any problems attributable to reproductive technology on psychosocial child development is weak and contradictory. On balance, this seems unlikely;
- b) 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);
- c) 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;
- d) Long-term surveillance of these children would be ideal as a way of anticipating future risks, such as reduced fertility, for the next generation;
- e) 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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REPRODUCTIVE TECHNOLOGIES

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