Embryo donation families: Do genetic ties matter?

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Embryo donation - background

• An embryo created using sperm and egg of one couple is donated to a second couple

• 1983 – First successful transfer of donated human embryo (Trounson et al., BMJ)

• In last decade, ~35 babies per year born through embryo donation in UK
Embryo donation - background

• Recommended when both of couple infertile or previous IVF attempts failed

• Currently in UK, majority of donor embryos “surplus” from another couple’s IVF treatment

• Child raised by two parents to whom not genetically related

• Some refer to it as “embryo adoption”
Practical differences between embryo donation and adoption

- Legal mother is woman who gives birth to child and legal father is her husband

- “Embryo ‘adoption’ is a term that may be endearing and may even be accurate in a bio-psycho-social sense, but it is not accurate in a legal sense” (Crockin, 2001)

- Selection criteria for adoption is social and psychological, for embryo donation is medical
Research question (1): Absence of genetic link

- Evolutionary psychology suggests that this could influence quality of parenting and parent-child relationships

- “Children are a parent’s most direct route to genetic immortality” (Bjorklund, Younger & Pellegrini, 2002)

- Donor insemination fathers – as warm towards their child as natural conception (Golombok et al., 2002)

- Egg donation mothers – form close relationships with their child (Raoul-Duval et al., 1994)
Research question (1): Absence of genetic link

- Lack of genetic link to one parent does not have negative consequences for family relationships

- But what about both?

- Does this result in less positive parenting in embryo donation families than in genetically related IVF families?
Research question (2): Presence of gestational link

- Embryo donation parents have opportunity for prenatal bonding and regulation of prenatal environment

- Mother-child attachment begins before birth (Laxton-Kane & Slade, 2002)

- Mother-foetal attachment related to postnatal attachment styles of infants

- Children do not experience separation from and relinquishment by birth parents

- Does this result in more positive parenting in embryo donation families than in adoptive families?
Research question (3): Disclosure of genetic origins

• Adopted parents disclose to children from early age

• Study of donor conception infants conceived between 1999 and 2001 – only 50% disclosing (Golombok et al., 2004)

• Embryo donation parents can present the pregnancy as ‘natural’

• Does this result in lower disclosure rates in embryo donation families than in adoptive families?
Issue of disclosure in donor conception

• Donor conception offspring can trace the donor at 18

• BUT parents have no legal obligation to tell child about donation

• Many family therapists and counsellors recommend openness to avoid future problems

• Proposal to include donor conception on birth certificate
Research question (4): Child psychological problems

• Some adopted children show raised levels of behavioural problems, starting in middle childhood around age 7 (Brand & Brinich, 1999)

• May be due to adoption specific characteristics
  – biological factors, preplacement history, understanding of concept of relinquishment

• BUT could be associated with lack of genetic relationships

• Does this also happen with embryo donation children?
1st phase of study

- Embryo donation, adoption and IVF groups
- Children aged 2-5 years
- Embryo donation showed more over-involvement, more defensive and less likely to disclose
- No differences in child socio-emotional development
Follow-up in middle childhood

Samples

• Overall response rate of 87% from 1st phase

• 17 families with child conceived through embryo donation

• 24 families with adopted child
  – All placed before 12 months

• 28 families with IVF child
  – All conceived using parents’ own gametes

• Children aged between 5 and 9 years
  – 88% of target children participated
  – Significantly fewer embryo donation children (12, 71%) than IVF (27, 96%) or adopted (22, 92%)
Parental measures

• Parents administered standardised interviews and questionnaires

• Quality of parenting
  – Detailed account of child’s behaviour and parent’s response (Quinton & Rutter, 1988)

• Child socio-emotional development
  – Psychiatric assessment interview rated by child psychiatrist “blind” to family type
  – Strength and Difficulties Questionnaire (Goodman, 1997) – also completed by teachers where possible

• Disclosure of method of family creation
  – Additional interview section based on previous research
Child measures - adjustment

- Self-Perception Profile for Children (Harter, 1985) if age ≥ 7.5 years

- Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (Harter & Pike, 1984) if 5-7 years

- Subscales of Cognitive/scholastic competence and Social acceptance
Fig. 1.—Sample item

Harter and Pike 1973
Child measures – parent-child relationship

Separation Anxiety Test

- Series of pictures involving parent-child separation
- How would they feel and why?
- Subscales of *Attachment* and *Avoidance*
Quality of parenting
Examples of ratings:

- **EXPRESSED WARMTH**
  - 0 (none) → 5 (high)

- **SENSITIVE RESPONDING**
  - 0 (none) → 4 (very sensitive)

- **EMOTIONAL OVER-INVOLVEMENT**
  - 0 (little/none) → 3 (enmeshed)

- **EASE OF BEDTIME**
  - 0 (no difficulty) → 4 (major battles)
Maternal Expressed Warmth

Embryo donation
Adoptive
IVF
Maternal Emotional Over-involvement

- Embryo donation
- Adoptive
- IVF
Parent-child relationship - SAT

- Scores compared using Kruskal-Wallis test
- No group differences for Attachment
- No group differences for Avoidance
Child Adjustment – SDQ (mothers)

• Embryo donation children not showing raised levels of problems

• Total difficulties
  – $\chi^2 = 6.30$, $p < .01$
  – Adopted 25%, Embryo donation 13%, IVF 0%

• Hyperactivity
  – $\chi^2 = 8.45$, $p < .025$
  – Adopted 31%, Embryo donation 13%, IVF 0%
Child Adjustment – SDQ (teachers)

• Similar to those of mothers

• Total difficulties
  – $\chi^2 = 11.32$, $p < .01$
  – Adopted 42%, IVF 4%, Embryo donation 0%

• Hyperactivity
  – $\chi^2 = 8.85$, $p < .025$
  – Adopted 47%, IVF 13%, Embryo donation 0%
Child adjustment – psychiatrist’s ratings

• 13 children rated as displaying definite problems

• Significantly higher proportion in adopted group
  – $\chi^2 = 23.61, p < .001$
  – 11 adopted children, 2 embryo donation children
  – 9 adopted children had either developmental disorder or symptoms of ADHD
Child Adjustment – Harter scales

• Scores compared using Kruskal-Wallis test

• Cognitive/scholastic competence
  – $\chi^2 = 9.49$, $p < .01$
  – Adopted < embryo donation and IVF

• Social acceptance
  – No group differences
Disclosure to Child

- Not telling
- Uncertain
- Plan to tell
- Told

Embryo donation
Adoptive
IVF

WARWICK
Reasons for non-disclosure

• 70% felt ‘no need to tell’

• 50% concerned about family relationships

• 30% wanted ‘to protect child’
Conclusions (1)

• Embryo donation does not seem to result in less positive parenting than IVF

• Non-genetic parents not exhibiting lack of investment in child hypothesised by evolutionary psychology

• Strong desire to parent child overcomes potential challenges posed in bonding to non-genetic child
Conclusions (2)

• Embryo donation does not seem to result in more positive parenting than adoption

• Prenatal attachments do not necessarily promote high-quality parenting

• Social component of motherhood compensates for lack of gestational link
Conclusions (3)

• Embryo donation parents are more likely not to disclose the method of family creation to their child

• More like other donor conception families than like adoption families

• Also increased involvement with child (as at 1st phase) – characteristic of those couples who opt for embryo donation?
Conclusions (4)

• Increased involvement and secrecy does not seem to have adversely affected embryo donation children at this age

• Suggests adopted children’s difficulties due to features specifically connected with adoption

• Remains to be seen if this will change as children grow older, particularly if discover facts of donor conception
Remaining questions

• Will increased secrecy and emotional involvement in embryo donation families have consequences later?

• Are differences due to types of couples opting for different methods of family creation?

• Effect of changes in legislation?