

ART (Assisted Reproductive Technology)/A Search for Valid Data Regarding the Effects of Art on Children Born from these Procedures

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Abstract

This article notes a shift in the debate on ART. After a long time it has been conducted almost exclusively in the medical and/or philosophical field, now society has often taken hold of it passionately, to demand the right to the child and policies from an often clients perspective.

But we know little and we have little interest in the future of these children. Claimant parents are not told enough that failure is most often the outcome. This article tries-too briefly-to give references based on essentially foreign literature because secrecy remains a sensitive subject (we do not know with certainty the number of couples who reveal to the child his mode of procreation, in studies, these are most often intentions of revelations) in order to dispassionate the debate. As for adults from ART, we know almost nothing about their future, both physical and psychological (the first baby was born in 1978, i.e. about forty years old).

Keywords: *Reproductive Technology; Children Born*

Introduction

The increasing use of ART in the medical world is nowadays a well-known fact.

All possible procedures won't be mentioned in this survey as they are supposedly known, such as Artificial Insemination with Donor, ICSI, *In-vitro* Fertilization, Egg-donation, Surrogacy (forbidden in France).

We are facing a paradigm shift: not that long ago, the issues linked to these procedures were discussed mostly by medical specialists, including through the ethical dimension, for example in the CECOS in France.

These questions have recently been transferred from the medical area to the public and political areas. Yet, the general public and politicians tend to react in either an emotive or clientelism fashion and lack relevant information's to form an opinion (on such subject as the breach of secrecy regarding donors identity, LGBT access to ART, etc). Consequently, in France, doctors now have to come down from their ivory tower to discuss these matters. Though the situation may differ in countries that take a more business-like and less emotional, approach to the subject [1-4].

Thus, it is essential to obtain accurate and objective data concerning the future and development of children born from ART, in order to implement make more rationally-based decision.

This article could have been titled “From Ethic to Politics”, since it is clear that beyond the search for valid data, Politics do dominate this debate.

Structuration of parenthood beyond the usual genetic transmission

Filiation or parental relationship

- This is the basis of the structure of the bijective link of a child as regard to his/her parent and vice versa. This filiation link is built both by the mother and the father.
- It is usually split in three axes: biological, narcissistic and social.

Biological filiation

It is the classic filiation link, based on the transmission of parental DNA.

Narcissistic filiation

It is bound into the narcissistic pleasure parents take from projecting themselves onto this new-born being and into the child feeling loved. It forms a two-way road for deeply pleasurable and stable bounds between child and parents, crating an emotional recognition between them.

Social filiation

It is defined by the rules of the human community (law and legal rules); it leads to a sense of security which reassures the members of a family.

The biological filiation link is obviously of considerable importance, but the other axes are just as necessary to establish a potent feeling of filiation.

Attachment theory

Attachment theory has been elaborated by psychoanalyst John Bowlby during WW2 and provides a valuable model for understanding the attachment mechanism between a child and a parent. It also explains why ART generates very few problematic parental relationship and how a strong, vital relationship can be built even when the procreation mode is initially artificial.

Basically, attachment includes all child behaviour aimed at establishing or maintaining a spatial proximity with his/her attachment figure: the adult who becomes “an attachment target”. This leads to a feeling of safety for the child.

Among these behaviours we can notice “signaling behaviours” which alert the mother (or another adult) as regard to the appetite of the child for interaction (smiles, vocal signs, screams, cries.) and “approach behaviours”: following looks, crawling, getting closer or hang onto the chosen “attachment target”.

Consequently, attachment is an active behaviour aimed towards an attachment target, which is specific to the child and personified by the adult who responds the best to his/her signals. This growing relationship provides the child with comfort, support, protection and decreases his/her anxiety. This will be persistent in his/her future reaction to intimacy.

In the same way, the care-giver parent demonstrates a symmetric attachment bound towards the child. It is the caregiving system, which covers all parental behaviours providing comfort and proximity when they sense the child’s distress or feeling of danger.

As a result, a strong and loving relationship can be built thanks to the attachment link. It demonstrates that the biological link, though it is valued from a narcissistic point of view, is not sufficient “per se” to create a high quality relationship (see the numerous cases of child abuse occurring in biological families). Winnicot, who worked on motherhood and parental competences, has a similar approach.

Narrativity

Narrativity is the ability to tell a story about how the parents met, about their desire for a child, etc.

It is a necessity for every human being in order to build his/her personal story and to structure his/her personality. Through this relational history the child is embedded in a double filiation link from both the mother and father and can implement his/her own affiliation process.

Development of toddlers born from ART

Due to the secrecy surrounding the practice of ART in France (regarding the use of ART, the pregnancy outcome, the degree of involvement of the parents and even their identity.), it is almost impossible to obtain reliable data. The CECOS have enforced that secrecy for various reasons including religious ones, or from fear of negative reactions from the parents.

Thus, reliable data is usually provided by other countries than France.

Early interactions and development of the children

Some surveys show a higher level of stress during pregnancy of infertile women, due to a more anxious anticipation of somatic issues as well as a more frequent fear to be separated from the child. This anxiety could lead to overprotective behaviour toward the child.

Greenfeld., *et al.* [5] compared the adjustment to parenthood after a IVF and after a “natural” pregnancy. There is no difference regarding the adjustment of the parents at two months (anxiety, depression, self esteem, parental stress). Nevertheless, the IVF mothers have lower ability as regard to reassuring the child, frequency of breath-feeding and show more concerns about their sexuality and the participation of the father in day to day tasks. At nine months, the IVF mothers seem less concerned by the consequences of the pregnancy, their physical image, the restriction of their autonomy linked to the child. We can assume that they are more available for motherhood.

A survey about children less than one year old has assessed the quality of attachment and interactions between mother and child, based on the “strange situation” approach by Ainsworth and a spontaneous game situation. The assessed items are the following: sensitivity, mother intrusiveness and hostility, ability to respond to the child and engagement in the interaction with him/her. 65% of the IVF children feel secure without significant differences with standard naturally conceived population. On the other hand, the IVF mothers behaviour seems more structuring as if they had better anticipated the future adjustment during pregnancy [6].

Colpin [7] has directly observed 31 two-years-old children. Their behaviour as regard to their mother were similar, whether they were born thanks to IVF or by natural conception.

Golombock [8] remains the reference specialist. His multi-centric European evaluation was focused on children from four to eight years old. As regard to the adaptation of the behaviour of the child and the perception of the family relationships, the 3 groups (IVF, AID, natural conception) are equivalent. Families having benefited from AMP, IVF or AID, seem to demonstrate warmer feelings and more parents/children interactions.

Shelton [9] has a similar approach. His work validates a 2011 survey [10] comparing children born through gamete donation (36 through AID, 32 through egg donation) with 54 naturally conceived. At seven years old, the children who were born through gamete donation are going well. 3 in that group expressed psychiatric disorders which, according to the authors, had no link to the conception mode.

In 2013 Golombeck [10] published an other study with robust methodology. It followed 30 children born through surrogacy, 31 through egg donation, 35 through sperm donation and 53 naturally conceived, all sibling-less. The children were tested at one, seven and ten years using elaborated tests and statistic analyses. Children born from ART didn't demonstrate significant differences from naturally conceived children. The lack of genetical link with one of the parents seemed to have no impact on their development. Only surrogacy children have shown attention disorders at seven years, which had disappeared at ten. These troubles have never been assessed as psychiatric issues.

Twinning

Twin pregnancies are more frequent with the use of ART, particularly in IVF pregnancies: 25% against 1% average. These pregnancies are more at risk from a physical stand point. What about the psychological impact?

Postnatal depressions go from 15 to 20% in the average population, to 40/50% in twin pregnancies and 90% for triplet pregnancies.

The stress level of parents of ART-born twins has been compared to natural twin pregnancies. 54 families with natural twin pregnancies have been compared with 25 with ovarian stimulation and 24 with IVF or insemination with the sperm of the father [11]. No difference has been found between these three groups. The only specific factor was the presence of a first child before the birth of the twins, with maternal stress being lower in that case. Cook has the same conclusion.

The case of monozygotic twin pregnancies (1% of ART pregnancy) is very specific. The fact that the children look very similar might lead to suffering for both parents and children, due to the difficulty to differentiate the children as individuals. It is the only specific point as regard to the classic situations [12].

Development of teenagers born from ART

Adolescence is a critical period where many process take place, such as structuration of the identity, change of behavior as regard to the parents, becoming sexually active... creating a lot of potential issues. What about teenagers born from ART?

Colpin and Soenen [13] compared the development of 8 to 10 years old only children. They compared 31 IVF and 31 naturally conceived children families. Children were included in the survey at two years old and their behaviour has been evaluated through the Children Behaviour Checklist methodology. The result is that both groups are positioned within the limits of the standard.

In 2002, Golombeck realized for the first time a multi-centric European evaluation in four European countries, focused on early teenagers. This survey includes 102 IVF families, 102 families who adopted a child, 94 AID families and 102 families with naturally conceived children. All the children were born from unique pregnancies and were between 11 and 12 years old. The lost to follow-up rate is less than 15% in the 4 groups. Regarding the mother/child relationship, the ART women are significantly more satisfied with their motherhood. In the meantime they are also more protective and concerned for their child than the other mothers. No difference has been observed concerning the human warmth of their relationship with their child. The couples seem to going well in both groups. The AMP fathers demonstrate more human warmth with their child and are more joyful as regard to their fatherhood than the others. The assessment of the children don't show any significant difference.

Illioi and Golombeck (2014) [14] published a systematic meta-analysis of all surveys dealing with the topic found on three major web data bases (pubmed, Web of Knowledge, psyINFO). Among 1,042 surveys, only 17 could be selected according to the criteria of comparing same-size cohortes of ART-born children (IVF, ICSI, AID, eggs or sperm donation, embryo donation, surrogacy). This underlines once more the difficulty of achieving such surveys and their rarity.

All the children were between 11 and 18 years old. The specificity of this meta-analysis is to separately assess the teenagers depending on whether they have a genetic link with their parents or not.

In the IVF families, no difference has been found related to the conception mode. In the gametes donation families (mostly sperm donation since egg donation remains infrequent) with heterosexual parents (the data concerning homosexual and monoparental families is scarce), the lack of genetic link doesn't seem to impact the development of the children, who have positive relationships with their parents.

On the other hand, the age and sex of the children and of the parent seem to have an impact on their relationship. Indeed, the father seems less involved in the discipline issues and exhibits less warmth toward his teenager in the ART families. This might lead to assume that the lack of genetic link might be an issue for the father when the child becomes an adolescent. We don't know whether this is a temporary problem which will disappear along with maturity or if it will last.

That being said, the overall impression is that the psychological development of these children is positive. But we must be careful not to extrapolate those results on multiple pregnancies cases.

A Danish survey based on birth registry between 1995 and 2003, along with a long term follow-up until 2012, explored the psychiatric evolution of 33, 139 children born thanks to diverse ART procedures and 555,828 naturally conceived children. This survey is a bit less optimistic than the common opinion. The risk of psychiatric disorder is not more important in the IVF or ICSI children population, but there might be a slightly increased risk for children born through ovarian stimulation to develop autistic troubles, ADHA, social disorders, emotional disorders, tics... This risk does not seem to be linked to medication, but to the roots of the infertility.

As we lack valid information, we won't mention the situations of aging limitations, single women insemination, serodiscordant couples, homosexual couples.

An interesting survey is currently taking place at Cochin Hospital in Paris. It concerned children whose father is a FtM transsexual. The parents, their motivation, their psychological state and the evolution of the children have been assessed by a very structured methodology. In 2010, 29 such couples had given birth to 42 children. All these children were going well, from a psychological and physical stand point.

In conclusion, the surveys about ART-born children development are globally positive. We can only regret that some of them lack a stronger methodological rigor (for example, to fight the bias of including only "well going" families, dysfunctional families being at a high risk of spontaneously excluding themselves from the follow-up). Furthermore, some of them focus only at behaviours without exploring the intimate perception of the individuals.

Regarding the secrecy of origins

This remains the sore spot for ART using gamete donations.

It is not possible to know how many families do or do not breach secrecy regarding the conception of their child. The numbers vary from one survey to another and most of them demonstrate intentions more than reality. One fact is obvious though: the intention to breach the secret is clearly higher in Nordic countries than in Latin countries (for example 11% in Sweden versus 0% in Italy). Still, the social and political debate surrounding secrecy is more and more sensitive and violent (cf the current demonstrations in France against the different ART laws).

Fathers seem keener on keeping the secret, for a variety of reasons: protecting the child against hostile reactions from his/her immediate circle, facilitating paternal authority, fear that his infertility might be seen as a weakness, fear of reject by the child during teenage years.

Golombeck considers that the "secret around the conception is linked to less positive mother/child interactions". The mothers who benefited from an egg donation seemed much more at ease regarding the breach of secrecy as they bore the child during pregnancy.

A too dogmatic position seems neither possible nor desirable in this matter. Infertile couples already face a lack of freedom regarding their conception ability, which makes them suffer greatly. It seems reasonable and fair to let them build their own peaceful, consistent familial history (i.e. their own "narrativity"). Giving the children answers and information shouldn't be forced upon them, but embedded in the generation line of their family, linked to the parental vision [15-17].

Conclusion

With more than 30 years of insight following the first ART birth, we can be partially positive regarding the development and evolution of these children.

However, one central and critical question remains: beyond the multiple points of view and opinions, what about the secrecy surrounding conception? A little more serenity and tolerance would be welcomed concerning this heated debate.

Another question has yet no answer: how are the adults born from ART faring today? How do they feel and contemplate their life and history? Beside one partial survey by Jean Lou Clement the lack of data is complete and so we don't now much more so far.

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