Chapter 3

Psychology of Families Founded by Assisted Reproductive Technologies and Surrogacy

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Abstract

Assisted reproductive technologies (ART) and surrogacy have changed the way family, parenthood, and kinship have been considered over the past decades. Owing to ART, couples struggling with infertility, single people, and same-sex couples have acquired new opportunities to realise their dreams of parenthood. Although these changes bring enormous benefits, they also create new psychological challenges for both parents and children born through these methods. This chapter aims to present the psychological and emotional challenges faced by families founded through assisted reproductive technologies and surrogacy. The study outlines whether and how these methods affect family relationships, the development of children's identity, and the psychological support useful at each stage of this process. Unique aspects related to parenthood for singles and same-sex couples are also addressed. The importance of transparency in conversations with children about their origins and the role of informed consent as a basis for ethical decisions in ART and surrogacy are presented.

Keywords: ART, surrogacy, family psychology, parenthood, informed consent

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1. Introduction

Assisted reproductive technology (ART) and surrogacy have significantly transformed contemporary conceptions of family, parenthood, and kinship over recent decades. These reproductive innovations have expanded the possibilities of parenthood for individuals and couples facing infertility, as well as for single individuals and same-sex couples, enabling them to pursue the formation of families. While these developments offer profound benefits, they also introduce a range of psychological challenges for both parents and children conceived through these methods.

The psychological dynamics within families formed via ART or surrogacy encompass a multitude of complex factors. These include the emotional impact of infertility, the decision-making processes involved in pursuing reproductive assistance, and the long-term psychological outcomes, particularly regarding the identity formation of the child. A comprehensive understanding of the psychosocial and legal dimensions of ART and surrogacy is essential to ensure that decisions and practices remain aligned with the best interests of the child.

This chapter examines the psychological and emotional challenges encountered by families created through assisted reproductive technologies and surrogacy. It explores the potential effects of these reproductive pathways on family relationships, children's identity development, and the forms of psychological support beneficial at various stages of the reproductive and parenting process. The chapter also addresses issues unique to parenthood among single individuals and same-sex couples. Emphasis is placed on the importance of openness in discussing children's origins and on the foundational role of informed consent in guiding ethically responsible decisions in the context of ART and surrogacy.

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2. Family Psychology – Primary Challenges

Family is the first and most important environment in which a person develops. This is where we learn love, support, conflict management and communication. Family psychology is a field that focuses on the study of relationships and dynamics in the family and their impact on individuals. Family psychology is not only an analysis of problems, but also an attempt to understand how family relationships shape the overall life of an individual.[1] It deals with the study of family structure, family roles, communication and emotional processes occurring in the family. Family psychologists attempt to understand how family interactions affect the mental and emotional development of individual family members. Studies indicate that family relationships

1 Fine and Fincham, 2013, pp. 2–7.

are crucial for the mental and emotional health of both children and adults.[2] The family performs many functions: from providing safety and emotional support, through socialisation and education, to material support. Family psychology pays special attention to the way families cope with challenges such as divorce, death of loved ones, financial crises, or illness. Each of these factors can affect the mental and emotional health of family members. For example, studies indicate that children from high-conflict families may experience emotional difficulties such as anxiety and depression.[3] Families that can effectively resolve conflict, support the development of coping skills in their children.

Moreover, family psychology addresses topics related to family therapy, which aims to improve the functioning of the family as a whole. A popular approach is the structural model, developed by Salvador Minuchin.[4] It focuses on understanding the hierarchy and boundaries in the family, which can be a source of conflict. Family therapy helps families communicate better, resolve conflicts, and support each other in difficult situations. Family therapies are effective in treating a wide range of problems, from behavioural disorders in children, through communication problems in marriage, to support in the treatment of mental illnesses such as depression or addiction.[5] Contemporary research in family psychology often focuses on the diversity of family structures, such as reconstructed families, same-sex families, or multicultural families. This study helps to better understand how different family models affect the development of individuals. Additionally, there is an increasing emphasis on understanding the role of technology and social media in family life. Studies indicate that new technologies can have both positive and negative effects on family relationships.[6]

The psychology of families formed through ART or surrogacy is a relatively young discipline that evolves alongside advancements in biotechnological methods. Additionally, it deals with the study of emotions, relationships, and functioning of families, as well as understanding how various intra- and peri-family processes affect the development of the child, identity of children and parents, and dynamics of family relationships. In this case, it is crucial to understand the impact of ART and surrogacy on family bonds. For example, children conceived using *in vitro* fertilisation (IVF) do not differ emotionally and cognitively from children conceived naturally, however, unique challenges may result from the transparency of parents about the methods by which the child was born.[7]

A primary area of research is the impact of ART on parents, including their emotional experiences related to infertility, the treatment process, and decision to opt for assisted reproductive technologies. Parents may experience stress, anxiety, and

2 Minuchin, 1974, pp. 241–256.
3 Cummings and Davies, 2010, pp. 101–120.
4 Minuchin, 1974, pp. 46–64.
5 Nichols and Schwartz, 2007, pp. 7–24.
6 Hertlein, 2012, p. 386.
7 Golombok et al., 2013, p. 658.

tensions related to societal expectations and decisions about revealing how the child was born. Additionally, children born through assisted reproductive technology may struggle with questions about their identity, particularly in cases of surrogacy, where the roles of the biological mother and the carrier may be separate. Studies suggest that it is crucial for families to talk transparently and appropriately about the child's conception.[8]

Families created through assisted reproduction often face social challenges, such as stigma and discrimination. Studies suggest that social perceptions of surrogacy and assisted reproductive technologies can affect family relationships and family members' self-esteem. These families may experience misunderstandings or negative perceptions, which can increase stress and affect their daily functioning.[9] Family psychologists provide support and interventions to help families cope with the unique challenges of assisted reproductive technologies. Therapy can include helping to manage emotions related to infertility treatment, supporting communication about the conception of a child, and helping to establish parental bonds. Therapeutic work can be particularly important in surrogacy, where building a bond between the child and the parents and managing the relationship with the surrogate mother are important. Family therapies focus on supporting the transition through these processes in a healthy and positive way for all parties involved.[10]

Continuous technological, cultural, and social developments imply that family psychology must consider new forms and possibilities of family formation.

3. Genetic Community and Psychology

Surrogacy, although associated with advanced medical techniques in modern times, is not a new phenomenon and has been known throughout history. There are numerous examples from different cultures and eras that indicate that the practice of surrogacy has its roots in ancient times. Examples can be found in ancient religious and legal texts. One of the oldest recorded examples of surrogacy comes from the Bible, from the Book of Genesis. The story of Abraham and Sarah describes a situation in which Sarah, unable to have children, asked her slave Hagar to become a surrogate and bear a child for Abraham. Hagar gave birth to a son, Ishmael, who was planned to be recognised as a descendant of Abraham.[11] In ancient Babylon, surrogacy was regulated by law. The Code of Hammurabi allowed a man who had no children with his wife to have offspring with another woman, usually a slave, and

8 Jadva et al., 2012, p. 3013.
9 Zadeh et al., 2018, p. 1104.
10 Riddle, 2022, pp. 126–127.
11 Bible, 2003, Gen. 16:1–4.

these children were considered legitimate.[12] Surrogacy was also employed in ancient Egypt, Greece, and Rome. If a woman could not have offspring, husbands could become closer to their concubines or slaves. In such a situation, the child had rights analogous to the rights of the wife's biological children, and sometimes was directly considered the child of the legal wife.[13]

'Traditionally', in families, there has always been genetic closeness between parents and children. This has its consequences not only at the biological level (e.g. owing to shared genes, there are more possibilities for effective medical interventions between members of a given family; however, having offspring by people who are extremely closely related genetically, significantly increases the risk of various genetic diseases in the offspring), but also at the psychological level. For example, the paradigm of evolutionary psychology assumes that one of the basic motivations of every human action is the survival of one's own genes. Therefore, people will take actions that will increase the chance of passing on their own genetic pool and will protect this pool; however, they will fight against competing genes.[14] For example, the effect of this motivation will be stronger bonds with biological – children and slightly weaker bonds established with adopted children – depending on the parental investment levels.[15]

Moreover, the aspect of genetic proximity is relevant in the practice of ART and in surrogacy. Although technological development has enabled to separate genetic motherhood from biological motherhood, children remain genetically related to both or at least one of the 'intended' parents. Even in surrogacy, the surrogate mother most often carries the child of the genetic mother, who for medical reasons is unable to carry the pregnancy to term.[16] Only in the case where it is not possible to use the genetic material of both the father and the mother, embryo donation is used.[17] Children born from such procedure are not genetically related to their parents and in this regard, they can be compared with adopted children. The difference is that in the case of embryo donation, the parents (particularly the mother) have an opportunity to establish a bond with the unborn child through pregnancy – despite the lack of a genetic bond.[18] Further, it is difficult to discuss ART or surrogacy where the surrogate mother carries a pregnancy that is not genetically related to either the 'intended' mother or father. In such a situation, we are dealing with the adoption of an unborn child, which is regulated in some countries,[19] and in others it is only possible after the child is born.

12 Stępień, 2000, pp. 49–51.
13 Hostiuc et al., 2016, p. 99.
14 Buss, 2019, pp. 198–208.
15 Hamilton, Cheng and Powell, 2007, pp. 109–110; Grotevant and McDermott, 2014, pp. 263–264.
16 Imrie and Jadva, 2014, pp. 432–434.
17 Sauer and Genovese, 2023, p. 472.
18 Navarro-Aresti et al., 2024, pp. 26841–26842.
19 California Courts, 2024.

Thus, genetic community of children with one or both parents, after the use of ART or surrogacy provides the family a beginning point for building a bond and identity. Despite the circumstances, which did not allow for natural pregnancy, there is a genetic relationship between the parents (parent) and children, and in the case of embryo donation, a sense of community that is created during pregnancy. This is an important beginning point for possible couples and family therapy, however, not the only one.

4. The Psychological Situation of Heterosexual Couples Who Cannot Have Children

The decision to have or not to have children is one of the most fundamental choices that people face in their lives. This decision has not only a personal and familial dimension, but also a social, biological, and psychological dimension. When deciding to have children, parents – whether consciously or not – must consider various factors, including biological, psychological, social, cultural, and economic aspects.

Having children is deeply rooted in biology. Evolutionary pressure to reproduce is associated with the instincts of passing on genes and ensuring the continuity of the species. Despite this, modern societies provide individuals several other alternatives to select from, as well as tools to control their fertility. Studies on the influence of biology on the decision to have children display that factors such as age, health, and general physical conditions affect the desire and possibility of having children. An example is the phenomenon of the biological clock, which puts pressure particularly on women, because female fertility decreases after the age of 36.[20]

The decision to have children is also deeply psychological and emotional. It includes complex issues related to identity, a sense of fulfilment, and readiness to assume responsibility for a new family member. Psychological research suggests that motivations for having children may include the need to be loved, to share love, the desire to provide care in old age, or the desire to continue one's name or genetic line.[21] Simultaneously, psychologists highlight the importance of emotions related to the decision to have children, such as fear of losing freedom, concerns about the ability to play the role of a parent, or social pressure. Many people decide to postpone having children because of the desire for self-fulfilment, building a career, or acquiring financial stability.[22] Further, the decision to have children is socio-culturally conditioned. Cultural norms, family traditions, and social expectations can have a

20 The ESHRE Guideline Group on Female Fertility Preservation et al., 2020, p. 8.
21 Miller, 1994, p. 250.
22 Berrington, 2004, pp. 17–18.

strong influence on individuals. In many cultures, having children is considered as a social and moral obligation, which is particularly true for women. In traditional societies, the lack of offspring can be considered as a failure in life and can lead to social exclusion in extreme cases.[23] However, in more liberal and individualistic societies, acceptance of the decision to be childless is growing. In such environments, people have more freedom of choice and less social pressure to start families. There is an increasing discussion on 'voluntary childlessness', that is, a conscious decision to not have children, which is becoming more and more accepted, particularly in developed countries.[24]

Furthermore, economic factors have a significant impact on the decision to have children. The costs of raising a child, including the costs of education, health care, as well as reduced ability to work in the early years of a child's life, may delay the decision to have children. More people are deciding to have children at a later age, attempting to first achieve professional and financial stability. Economists indicate that rising living costs, lack of available housing, and employment instability may be the cause of low fertility in many developed countries.[25]

Therefore, the procreative decision process is complex and multi-threaded. People who decide to have children, most often attempt to become pregnant naturally. This decision is usually associated with hopes and plans. For many couples, it is a moment full of joy, excitement, and ideas about family life. Unfortunately, when attempting to have children takes longer, this initial euphoria can transform into increasing stress, frustration, and anxiety. Couples who struggle to conceive often feel disoriented, and their relationship may deteriorate. The time that passes without success can introduce a sense of uncertainty and tension that affects mental and emotional health. We can even discuss the cycle of hope and disappointment. Each new menstrual cycle is a hope for success, and each subsequent failure brings disappointment. This endless waiting can cause feelings of helplessness and frustration.[26] People struggling with difficulties in conceiving experience significant emotional stress, which can be compared with the stress caused by serious diseases such as cancer.[27] Couples often experience this in different ways: while women may experience more emotional suffering, men may avoid discussing it, which leads to a deepening of differences in the relationship. Long-term difficulties with conceiving a child can negatively affect the couple's relationship. Attempting to have a child often becomes the focus of the relationship, which can lead to neglecting other aspects of the life together. Tensions, guilt, mutual recriminations, and communication problems arise. Some couples experience a decline in the quality of their sexual life when attempting to have a child becomes a duty rather than an expression of closeness. This can lead

23 Inhorn, 2012, pp. 63–90.
24 Garncarek, 2014, pp. 114–115.
25 Blomberg Jensen et al., 2015, pp. 8–9; OECD, 2019.
26 Hoyle, Davisson and Novice, 2022, pp. 405–406; Jiang et al., 2024, pp. 3643–3644.
27 Domar et al., 2000, pp. 568–569.

to emotional isolation and a lack of support in the relationship, which in turn can further increase stress.[28] Failure to have a child can lead to serious health problems, such as depression and anxiety. Infertile people are more likely to suffer from depressive symptoms and anxiety than the rest of the population.[29]

A challenging moment for a couple is deciding when to stop attempting to conceive and whether to pursue alternatives such as adoption, surrogacy, or a child-free life. What happens when a couple decides to have children but discovers after analysis that they are infertile? The most common emotional reactions to a diagnosis of infertility are sadness, depression, stress, disappointment, fear, frustration, disorientation, and loss of self-confidence. Scholars indicate a significant variation in the intensity of emotions experienced; however, a diagnosis of infertility is a significant emotional burden for both patients and their partners.[30] They experience not only the loss of the biological possibility of parenthood, but also the need to revise their life plans and dreams. Infertile people may experience similar stages of mourning to people who have lost loved ones – they go through phases of denial, anger, bargaining, depression, and acceptance.[31]

Losing the ability to have a child is not only a biological problem, but also a challenge to the identity of the individual. In societies where parenthood is strongly associated with social roles, particularly for women, infertility can lead to feelings of personal failure and low self-esteem. Women may feel pressured to meet the expectations of their family and society, which intensifies their suffering. Societal norms regarding parenthood and family have a significant impact on the psychological situation of infertile people. In many cultures, infertility is perceived as a stigma, leading to social exclusion and isolation. In traditional societies where having children is considered the norm, not having children can cause tensions in family relationships and even the breakdown of marriages.[32] Men and women experience this stigma differently. Women often feel greater social pressure, while men may have difficulty expressing their emotions owing to cultural expectations of masculinity. In both cases, infertility can lead to problems in partner relationships, causing emotional tensions, conflicts, and decreased quality of sexual life.[33]

Some people, after a long struggle with infertility, decide to pursue other forms of parenting, such as adoption or using assisted reproductive technologies. These alternative paths are often the subject of intense emotional and social considerations. Others, after exhausting the available alternatives, learn to accept a life without children. This process can be long and painful, however, for many it is the key to regaining inner peace and building a happy life without children. Ultimate acceptance can lead to a sense of fulfilment, particularly if one manages to transform one's life

28 Moura-Ramos et al., 2012, pp. 503–504.
29 Greil, Slauson-Blevins and McQuillan, 2010, p. 147.
30 Boivin et al., 2023, pp. 407–408.
31 Greil, Slauson-Blevins and McQuillan, 2010, p. 141.
32 Inhorn, 2012, pp. 63–90.
33 Moura-Ramos et al., 2012, pp. 503–504.

in a way that brings joy and satisfaction despite the lack of children.[34] If infertile people decide to use ART or surrogacy, they must cope with the entire psychological burden that affects them. Experiencing the stress of infertility will also affect the experience of parenting stress after the birth of the child, which may indirectly affect the functioning of the entire family.[35]

5. Infertility Diagnosis – What Follows? Psychological Support Before, During, and After ART or Surrogacy

Psychological support is a crucial element at every stage of the treatment process – before, during, and after the use of ART and surrogacy. At the initial stage, when people learn about the inability to have children, psychological support plays an important role. The couple must cope with all the negative emotions, shock, and identity crisis and decide how to proceed.[36] Professional support, in the form of individual or couples therapy, can help process emotions and understand how infertility affects the psyche. Couples can discuss their fears and challenges and begin the process of adapting to the new reality.

After advancing to the acceptance stage, couples must decide whether to have children. If they decide to do so, the next major decision is to select from the available alternatives: adoption, ART, or surrogacy. These decisions depend on many factors, listed in the previous subsection. However, in the case of ART and surrogacy, there is an important religious-cultural or more generally ethical aspect. Some religious systems do not accept ART. Depending on how deeply rooted such views are in society, people considering ART methods will experience stress related to being exposed to exclusion and stigmatisation.[37] Therefore, in many cases, people may quit infertility treatment in favour of adoption or quit having children at all. However, social acceptance of ART will be associated with a lower sense of stress in the infertile couple, which will also translate into greater opportunities for institutional and professional support for couples treating infertility.

Couples who decide to undergo treatment with assisted reproductive methods face a choice of one of the methods. This choice is only partly dependent on the couple's preferences, however, is guided to a greater extent by the medical possibilities in a specific case. In extreme situations, the lack of sense of greater decision-making power may negatively affect couples, who may lose their sense of agency; increasingly because different ART methods may be associated with specific challenges,

34 Daniluk, 2011, pp. 444–449.
35 Burgio et al., 2022, p. 48.
36 Greil, Slauson-Blevins and McQuillan, 2010, p. 151.
37 Skrobić and Pucarević, 2021, pp. 151–152.

including emotional ones. Popular alternatives include IVF, intrauterine insemination, the use of donor gametes or embryos, and surrogacy. The IVF process can be lengthy and stressful, as it involves many steps, such as hormonal stimulation of the ovaries, egg retrieval, and embryo implantation. Couples often experience hope and disappointment during the cycles of attempts. Depending on the number of embryos that are successfully retrieved, couples may feel more stressed (few embryos) or less stressed (several embryos) as they can perceive better possibilities with more embryos; and the possibilities decrease after each unsuccessful attempt, which can be a source of stress. Psychological support during IVF treatment can reduce stress and improve treatment outcomes.[38] An additional psychological burden can be the issue of excess embryos if IVF ends successfully. There is no way to predict the number of attempts before implantation ends with birth. For example, if a couple has obtained five healthy embryos and the first implantation was successful, the parents are faced with a dilemma of the remaining four. Potentially, these are four more children, however, are the parents ready for that number? Often, infertility clinics specify in their regulations or contracts with parents that under certain circumstances or when certain conditions are fulfilled, frozen embryos can be donated. When deciding to opt for ART, parents must be aware of this, which is also a challenge.

The choice of surrogacy can bring additional emotions related to control over the pregnancy process and the relationship with the surrogate mother. These relationships are often regulated by agreements between the surrogate mother and the couple, however, various negative emotions or tensions can arise. Couples may feel anxious about not being fully present during the child's development during pregnancy. Psychological support during surrogacy helps not only in the relationship between the couple and the surrogate, but also in coping with feelings of helplessness and uncertainty.[39]

The decision to use donor gametes or embryos brings additional emotional challenges, particularly related to the child's identity and openness about its origins. Couples often face dilemmas related to whether and when to tell the child that they were conceived with the assistance of donor. Studies suggest that transparency and psychological support in this matter contribute to better family functioning and the emotional health of the child. Children who learn about their origins in a timely and open atmosphere develop emotionally better than those to whom this information is revealed late or in an unthoughtful way.[40]

Psychological support before commencing ART is essential, as it prepares the couple for the emotional challenges associated with treatment. Therapy helps not only to cope with anxiety and stress, but also to better understand the process itself. Studies reveal that women who used psychological support before and during ART were more likely to feel less stressed and have a greater sense of control over the

38 Boivin et al., 2023, pp. 407–408.
39 Zadeh et al., 2018, p. 1104.
40 Harper et al., 2021, p. 2.

treatment process.[41] During ART, particularly during IVF cycles, patients often experience many emotions – from hope for success to disappointment and a sense of failure. Each unsuccessful cycle can affect mood, self-esteem, and relationships with the partner. Therefore, psychological support should include strategies for coping with emotions and help in building psychological resilience. Additionally, support groups or group therapy can be a valuable tool, as they allow one to share experiences with other couples who are undergoing similar challenges.

Regardless of the outcome of treatment, psychological support is equally important after the completion of the treatment. In the case of success, that is, the birth of a child, parents often experience post-IVF anxiety, related to concerns about the health of the child and a sense of relief after long-term stress.[42] Psychological support helps to adapt to the new role of being a parent and build a bond with the child. However, not all ART attempts are successful, and failures can lead to intense sadness and even depression. Studies indicate that couples who are not successful after ART treatment often experience a deep emotional crisis, comparable with the loss of a child.[43] Psychological support at this point is crucial to working through this loss and deciding whether to continue treatment or consider other options, such as adoption or living without children.

6. ART and Surrogacy in Same-Sex Couples and Singles

ART and surrogacy methods are also used by same-sex couples and singles, for whom – apart from adoption – they are often the only available means to have children. This also applies to situations when both partners in the couple are healthy. Such couples are in a better position than heterosexual couples because they skip the stage of attempting to become pregnant using natural methods and when deciding to have children, they turn to ART or adoption. Similar to heterosexual couples, ART can be used to maintain genetic kinship with one or both parents. Men usually use gestational surrogacy, in which an embryo created from the donor's eggs and the sperm of one of the partners is placed in the surrogate's body. Alternatively, women use intrauterine insemination or *in vitro*, using donor sperm. Studies indicate that parenthood in same-sex couples is as valuable and has a positive impact on the development of children as in the case of heterosexual couples. However, both parents and their children may encounter challenges resulting from heteronormative social norms that continue to dominate many cultures.[44]

41 Domar et al., 2000, pp. 568–569.
42 Pasch et al., 2012, p. 463.
43 Greil, Slauson-Blevins and McQuillan, 2010, p. 141.
44 Golombok, 2015, pp. 32–69.

Although ART and surrogacy enable same-sex couples to have children, this process is often associated with emotional and psychological challenges that may be different from those of heterosexual couples. The issue of social stigma that same-sex parents may face is at the forefront. In some countries and environments, LGBT+ people may face discrimination owing to their sexual orientation and decision to start a family. This situation can lead to low self-esteem, anxiety about the child's future, and difficulties in social relationships.[45] Same-sex couples may feel pressured to prove that they are 'perfect' parents, particularly in the face of social prejudices. They may feel obliged to be 'better' parents, which can lead to stress, emotional burnout, and excessive self-esteem issues in the context of parenting. Thus, psychological support can help reduce unhealthy expectations towards oneself and learn to cope with external pressures. One of the most difficult aspects is the issue of the child's identity and biological origin. In the case of sperm or egg donors, one of the biological parents is a third party, which may raise questions about whether and how to inform the child about their origins. As aforementioned, in this case too, children who learn about their origins at a young age cope better psychologically than those who learn this later or from whom this information is hidden.

The issue of development of children raised by same-sex couples has been the subject of numerous studies. The results indicate that children raised by same-sex couples develop just as well emotionally, cognitively, and socially as children raised in traditional families. The quality of the relationship with the parents and parental involvement is most important for a child's development, not the structure of the family.[46]

In the case of gestational surrogacy, same-sex couples, particularly men, must cope with the relationship with the surrogate. This unique challenge involves balancing trust in the surrogate with the need to protect one's privacy and parenting role. Psychological support helps manage the relationship with the surrogate, as well as bond with the child in a way that is consistent with the parents' values.

Single people can realise their dreams of parenthood using ART. Changing social norms, greater acceptance of diverse family models, and technological advances imply that more single people are using these methods. The decision to parent alone, using ART or surrogacy is associated with many emotional challenges that are often different from those faced by couples. First, a single person takes this step alone, which is not only associated with a sense of responsibility, but also with the lack of a partner to share the daily responsibilities and challenges of raising a child. For many single people, such challenges can be a source of stress and anxiety, particularly if they lack support from family or friends.[47] Studies suggest that single people, who decide to parent using ART, often have to deal with social pressure and even criticism, which can affect their emotional health. In addition, single mothers and fathers often

45 Ibid., pp. 192–217.
46 Hamilton, Cheng and Powell, 2007, pp. 109–110.
47 Golombok et al., 2016, pp. 415–416; Golombok et al., 2021, pp. 198–200.

experience difficulties related to the division of roles – they simultaneously act as a caregiver, parent, and financial provider, which can lead to burnout.[48]

In families where children are conceived through ART or surrogacy, the family dynamics are specific to the context of single parenthood. A single parent builds a bond with a child without the support of a partner, which indicates that the full responsibility for the emotional relationship with the child falls on one person. Studies on single parents who have used ART demonstrate that family bonds are usually as strong as in the case of two-person families, and children develop well as long as the parent provides them with emotional support and a stable home environment.[49] It is important for a single parent to have a support network in the form of family, friends, or therapists, which can help in coping with emotional and logistical challenges. Children who learn they were conceived through gamete donation or surrogacy may have questions about their biological origins. This is particularly true for children who have no contact with their biological father or mother, if the gamete donor is unknown.

Limited research suggests that children raised by single parents who have used ART do not differ in emotional and social development from children raised in traditional families, as long as they have access to transparent and honest communication about their origins.[50] Single parenting through ART or surrogacy brings social challenges, particularly in more conservative environments. Single people may experience stigma, both for choosing single parenting and for using assisted reproductive technology. Such social reactions can affect their emotional well-being and self-esteem. Therefore, psychological support, as well as social support, is important for single parents. Individual therapy, support groups and therapeutic support can help to cope with social pressures and build self-confidence as a parent. A support network can also include other single parents who have been through a similar journey, which can help to share experiences and strategies for coping with everyday challenges.

Surrogacy is becoming an increasingly accessible option for single people, particularly for single men who want to become biological fathers, however, are unable to conceive. Gestational surrogacy, in which a surrogate mother carries a child created from the gametes of a parent and a donor, allows men to become biological parents without having to have a partner. The family dynamics in such cases often involve questions about the relationship with the surrogate and the biological origins of the child. According to Sophie Zadeh and her team,[51] children raised by single fathers using surrogacy develop well, provided they have emotional support and a stable home environment.

48 Golombok et al., 2021, pp. 198–200.
49 Ibid.
50 Landau, Weissenberg and Madgar, 2008, pp. 581–582; Weissenberg and Landau, 2012, p. 526.
51 Zadeh et al., 2018, p. 1104.

7. Development of Family Ties and the Child's Identity

When a child is born after successful ART, less often in the case of surrogacy, parents must consider whether to inform the child about how it was conceived. Unless this has been specified earlier, for example, in the contract with the surrogate or during embryo donation, it is primarily the parents' decision. Parents may want the child to remain unaware of its genetic origin and want to raise it as if everything was 'normal'. While in the case of heterosexual couples it is relatively easy to hide, in the case of same-sex couples or singles, eventually the child will be aware that it has a different biological parent than the one raising it. In addition, parents who want to hide it from the child risk conflict and a loss of trust of the child in the future if it finds out. Medical considerations are also important, particularly in the case when one of the parents is not the child's genetic parent. In the future, when the child itself is an adult, it may turn out that the genetic parent may have been burdened with certain diseases that do not occur in the target family. Moreover, some medical procedures are more likely to be successful or even possible only with the participation of people who are genetically close. Therefore, knowledge of a child's genetic origins can be a matter of life or death for the child.

Several studies have been published on children born using ART. However, as some have emphasised, the ART population itself is characterised by significant diversity (intracytoplasmic sperm injection – ICSI; *in vitro* fertilization – IVF; pre-implantation genetic diagnosis – PGD; gamete donation; pre-implantation genetic testing). This complicates the possibilities of intergroup comparisons. Simultaneously, as studies indicate, the process of psychosocial maturation of children conceived as a result of the use of ART is comparable with the development of children conceived naturally.[52] The available literature on the socio-emotional development of PGD/ preimplantation genetic screening (PGS) children suggests a normal maturation process.[53] However, the complex reality (e.g. safety of the technique and the psychological burden of genetic histories) requires larger and more similar groups with matched control groups and a multi-informant approach.[54] Thus, any differences, particularly in the teenage period, between children conceived using ART or surrogacy and children conceived naturally will result not so much from the method itself (biological and medical reasons), but from psychosocial and social issues. Particularly from how the environment (including the closest one) in which children grow up approaches the issue of their origin.

An important question in families created using ART is whether the way in which the child was conceived affects the development of family bonds. Studies indicate that the emotional bonds between parents and children in such families are as strong as in families where children were conceived naturally. Moreover, some

52 Winter et al., 2015, pp. 1132–1135.
53 Ilioi and Golombok, 2015, pp. 84–92.
54 Winter et al., 2015, pp. 1132–1135.

studies suggest that parents who had to experience the difficult process of infertility treatment often demonstrate a higher level of parental involvement and care for their children.[55] This appears evident considering the psychological problems that couples with a diagnosis of infertility struggle with. Parenting in ART families involves unique challenges related to parental identity. In cases where gamete donation (sperm or egg) is used, one of the biological parents is a third party. This can raise questions about how to build a parental identity in the context of the lack of a full biological bond with the child. Studies indicate that an essential element in building a healthy parent-child relationship is transparent and honest communication about the child's origins.[56] Children who are conceived through ART or surrogacy may at some point in their lives wonder about their origins. Questions about biological identity may arise particularly in families where gamete donation or surrogacy has been used. These children often ask themselves questions about their genetic identity and how this has affected their identity. They may reflect on and re-evaluate not only their relationship with their parents, but also their relationship with the surrogate. In the case of sperm or egg donors, these questions may concern the biological parent who does not directly participate in the child's upbringing. Children who grow up in families where their origins are openly discussed tend to have healthy coping mechanisms for dealing with challenges related to biological issues.[57] Parent-child bonds develop in a way similar to other families when parents are actively involved in the child's life from the beginning. It is important for the surrogate mother to have clear emotional boundaries and a role in the process, which facilitates easier bonding between biological parents and their child.[58]

Are there differences in the development of children conceived using different types of ART? Scholars report minor differences, however, simultaneously they highlight the limitations of their own studies, which have examined insufficiently large samples or are too diverse to be justified in drawing conclusions about differences.[59] Scholars highlight in particular that the quality of the parent-child/teenager relationship depends primarily on the gender of the parent and the child, as well as on the age and the process of disclosing the method of conception.[60]

55 Golombok, 2015, pp. 192–217.
56 Jadva et al., 2012, p. 3013.
57 Ilioi and Golombok, 2015, pp. 84–92.
58 Zadeh et al., 2018, p. 1104.
59 Ilioi and Golombok, 2015, pp. 84–92; Winter et al., 2015, pp. 1132–1135.
60 Ibid., pp. 84–92.

8. Openness Towards Children in the Context of Their Conception and the Role of Informed Consent

Finally, two issues must be emphasised. The first is the previously mentioned importance of transparency towards children in the context of their conception using ART or donor gametes or surrogacy. Children who learn about their origins in an appropriate manner and in a favourable atmosphere usually develop emotionally in a healthy way. Transparency in family relationships strengthens trust and builds a sense of security. It is important for a child to believe that their parents are honest and ready to answer questions about their conception. Children conceived using ART who are informed about their origins at the right time and in a manner appropriate to their age have better outcomes in terms of mental health and family relationships than those who learn about their origins late.[61]

A significant concern for parents is whether they should inform, and when and how to inform their child about their origins. Studies indicate that the best time to initiate a conversation is early childhood. Preschool children are open to information and treat it as a natural part of their history. Early and gradual discussion about this topic allows the child to integrate this information in a way that does not cause an emotional shock. Children who learn about their origins at a young age cope better emotionally because they have more time to assimilate this information and understand their place in the family. Knowing one's origins from an early age increases a sense of stability and belonging and reduces the tendency to experience identity conflicts. Additionally, it helps to cope better with emotional problems during adolescence. However, a lack of openness can lead to increasing emotional problems. Children who discover the truth about their origins later in life, particularly during adolescence or adulthood, may experience feelings of betrayal, loneliness, and distrust of their parents. The literature describes cases in which late disclosure of information about the child's origin led to emotionally difficult situations and even to the breakdown of family relationships.[62]

The second noteworthy issue is the role of informed consent in assisted reproduction and surrogacy. This is a complex issue, however, extremely important for patients, donors, surrogates, and children who will be born as a result of these procedures. Informed consent is a process in which the patient, gamete donor, surrogate or other persons involved in the ART process express their voluntary and informed consent to participate in each medical process. This includes a full understanding of the procedures, risks, alternatives, and effects, both medical and psychological. Informed consent is not limited to signing a formal document once. It should be interpreted as a process in which reliable and clear communication, as well as ensuring understanding of all aspects that may affect the individual's decision are extremely

61 Ilioi and Golombok, 2015, pp. 84–92.
62 Ibid., pp. 84–92.

important. Legal regulations and contracts should be secondary to psychological and ethical aspects, so that they not only cover the rights, obligations and responsibilities of all parties involved in the processes, but also define clear boundaries that can be referred to in the event of conflict or difficult situations.[63]

The psychological aspects of the entire process are complex and multidimensional, and they involve many people or institutions. Hence, mere knowledge of procedures, consequences, and alternatives is insufficient, and understanding is necessary, otherwise, it is doubtful whether we can discuss informed consent. Understanding legal issues, such as the rights of donors and parents, donor anonymity, and the child's right to information about their biological origins, is also crucial. Studies indicate that the lack of adequate information in the consent process can lead to difficult moral decisions and psychological problems in the future, such as what happens to frozen embryos in the event of a successful IVF procedure.[64]

Informed consent in the surrogacy process concerns primarily the surrogate mother, and subsequently the parents being the commissioners and potentially the gamete donors. Surrogacy involves unique challenges because it concerns the physical and emotional issues related to the pregnancy and the relationship between the surrogate mother and the parents of the child. It is crucial that the surrogate mother is fully aware not only of the physical consequences of carrying the pregnancy, but also of the emotional difficulties that may arise during and after childbirth. This includes understanding issues related to parental rights. For the surrogate mother's consent to be conscious and voluntary, it should be free from any financial or social pressure. It is necessary to ensure that the process does not become a form of exploitation, particularly in countries where legal regulations are weaker and women with a difficult financial situation may be more susceptible to accepting surrogacy offers for financial reasons. Studies suggest that the lack of appropriate protection for surrogates can lead to serious negative emotional and psychological consequences for themselves.[65] Informed consent is not only an ethical requirement, but also a legal one. In several countries, the regulations for ART and surrogacy are clearly defined to protect all participants in the process. In the case of surrogacy, there are different legal approaches. In some countries (e.g. the UK), commercial surrogacy is prohibited, while altruistic surrogacy is strictly regulated. In other countries, such as India or Ukraine, commercial surrogacy is legal, however, this leads to serious problems related to the protection of surrogates' rights, which increases the risk of their exploitation. Ethicists emphasise that the protection of surrogates' and gamete donors' rights must include not only appropriate legal provisions, but also psychological, medical, and legal support before, during, and after the procedures. Therefore, informed consent in ART and surrogacy should be a process that ensures

63 Oakley, 1992, pp. 269–270; Perrotta and Hamper, 2023, p. 238.
64 Gürtin, Ahuja and Golombok, 2012, pp. 700–706; Takahashi et al., 2012, p. 10.
65 Teman, 2010, pp. 184–204.

that all parties are fully informed about the possible consequences and have the possibility to withdraw at any stage of the process.[66]

It is important to remember that the children who will be born also participate in the entire process. For evident reasons, they cannot give their informed consent, which raises ethical issues regarding the child's right to know about their biological origins, particularly in the context of gamete donation and surrogacy.[67] In some countries, upon reaching the age of majority a child has the right to find out who their biological parents are. Parents and surrogates must be aware of possible questions that may arise in the future regarding the child's identity. Understanding that current decisions may have long-term consequences for the child is important regarding informed consent and the ethical conduct of the entire process.[68]

9. Summary

The psychological condition of children, parents, and surrogates is complex, and as presented, encompasses several aspects. The diagnosis of infertility and the requirement for treatment often leads to stress, a sense of loss, and various emotional challenges that can profoundly impact relationships within a couple and the family. However, the process of ART or surrogacy provides possibilities to fulfil the dream of parenthood, although not without challenges, such as genetic or biological community, or the relationship with the surrogate. This chapter presents various areas that require psychological support, which should accompany couples and single people at every stage of the process – before, during, and after the use of ART or surrogacy. It also indicates the specific difficulties faced by same-sex couples and single people who decide to parent using these technologies. In this context, it must be emphasised that family relationships and emotional bonds in such families are as strong, and children develop as well as in traditional families, as long as appropriate psychological and social support is provided. Children born through ART or surrogacy may struggle with questions about their origins, particularly in the case of gamete donation. An important aspect here is transparent communication with children about their conception. Studies indicate that transparency towards children in the context of their origins strengthens family bonds, rendering it easier for children to integrate information about their biological origins with a sense of their own identity.

In summary, assisted reproductive technologies and surrogacy have changed the contemporary understanding of parenting, enabling new forms of families. However,

66 Ethics Committee of American Society for Reproductive Medicine, 2014, p. 333.
67 Rocha et al., 2023, p. 199.
68 Golombok, 2015, pp. 192–217.

with these changes, complex psychological challenges have emerged that require special attention. Understanding the emotional needs of families, supporting open communication, and ensuring informed consent at every stage of the process are crucial for the proper functioning of these families. With appropriate psychological support and education, families created through ART and surrogacy can experience harmonious development and a fulfilled life. Knowing the psychological complexity of the entire situation will allow for better organisational, institutional, and legal actions in the future, which will be focused on the understood well-being of the child.

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