

THE DEVELOPMENT OF THE FAMILY WITHIN THE CONTEXT OF THE ASSISTED REPRODUCTIVE TECHNOLOGY PROCESS: A SOCIO-ECOLOGICAL MODEL OF UNDERSTANDING THE IVF PROCESS IN POLAND

Julie Ann Pooley¹, Alicja Malina²

¹Uniwersytet Edith Cowan, Wydział Humanistyczno-Artystyczny, Australia
Edith Cowan University, School of Arts and Humanities, Australia

²Instytut Psychologii, Uniwersytet Kazimierza Wielkiego w Bydgoszczy, Polska
Institute of Psychology, Kazimierz Wielki University in Bydgoszcz, Poland

Summary. For couples that have issues in conceiving a child the use of assisted reproductive technologies like IVF provide an opportunity to bring a child to the union of the couple and develop a family. Across the world the awareness, attitudes and utility of IVF differs and thus an opportunity exists to assist in understanding the development of couples and families undergoing IVF. Utilising a socio-ecological model allows the context of the couple to be explored and look at the impacts on the couple from a systemic approach. Therefore this article proposes the utility of Bronfenbrenner's socio-ecological model of development as an ideal theoretical model for exploring the development of couple undergoing IVF.

Key words: infertility, family development, systems theory, in vitro

Introduction

This article explores the use notion of exploring couples undergoing an In vitro fertilisation (IVF) process through a socio-ecological lens in an attempt to understand the effect on the development of a couple's relationship, and the interactions and transactions taking place for couples. Therefore this paper will first discuss the role of Assisted Reproductive Technology (ART) and then outline the IVF process considering the evidence for the efficacy of IVF. Finally the relevance of Bronfenbrenner's socio-ecological theory will then be presented to provide a theoretical underpinning for further exploration of IVF couples in Poland.

Adres do korespondencji: Alicja Malina, e-mail, alamalina@gmail.com

Assisted Reproductive Technology (ART)

Infertility is defined as a problem with conceiving offspring despite regular sexual contact between parents (without the use of contraception) or when multiple pregnancies occur but all result in miscarriage (Szamatowicz, 2007). Within the psychological literature it is indicated that infertility can be a serious emotional burden for both men and women affected by infertility and can significantly change the couple's relationship (Whiteford, Gonzales, 1995; Pasch, Dunkel-Schetter, Christensen, 2002; Monga et al., 2014). Modern medicine offers different types of treatments for infertility: pharmacological, surgical and techniques of assisted reproductive technology (ART). Assisted reproductive technology includes in vitro fertilization – IVF. IVF involves the fertilization of the egg cells in the laboratory then placing the embryo in the women's uterus. Other ART methods include intrauterine insemination (IUI) and intracytoplasmic sperm injection (ICSI). Due to the high effectiveness of IVF, this method of treating infertility is more common and increasing in use (Makara-Studzińska et al., 2010).

In Vitro Fertilization (IVF)

In vitro fertilization is the most utilized treatment process for infertility even where other methods have not been successful. Therefore many couples that undergo an IVF procedure have possibly already had negative outcomes, and possibly negative experiences, connected with the inability to naturally conceive a child, which places them in a psychologically vulnerable position (Łuczak-Wawrzyniak, Pisarski, 1997). Whilst numerous studies reveal that as many as 48% of the patients treat the experience of infertility as the worst experience of a lifetime (Freeman et al., 1985; Stewart, Robinson, 1989; Lukse, Vacc, 1999; Newton, Sherrard, Glavac, 1999; Berghius, Stanton, 2002) it is important to note that infertility is an issue that concerns both partners (Beisert, 1980).

In the past few decades success rates for IVF have significantly improved. Pregnancy statistics have increased with pregnancy efficacy rates in young patients of IVF averaging 30-40% per cycle, while among women over the age of 41 years dropping to a few percent (Daly, Bewley, 2013; Wdowiak, Wdowiak, 2015; Lukaszuk et al., 2016). There is also significant decrease in the multiple birth rate among couples undergoing the IVF process (Wade, MacLachlan, Kovacs, 2015).

Indeed rates of IVF success have increased statistically however we have less knowledge about the psychological consequences of the IVF process. Further to this it is argued that there needs to be more understanding on the effect of IVF treatment on couples, developing families and the relationship with the child as a result of IVF (Malina, Pooley, 2017). For couples creating a family through the process of IVF the lens of a social-ecological theory assists in understanding the needs of couples, and subsequently families, as they develop. As ultimately the family is the most important influence within the psychosocial environment of the child (Bronfenbrenner, 1986).

Ecological Model

The work of Bronfenbrenner is not new to understanding development. Urie Bronfenbrenner's work was originally applied to the development of children within the broader sociological context. The Social-ecology theory posits a relationship between the developing child and the settings and contexts in which the child is actively involved. Bronfenbrenner (1979) proposed a model of bi-directional influences on the child within their environment as occurring within nested settings beginning with the child, *microsystem*, and extending out to the immediate social settings of home, school and neighbourhood, *mesosystem*, and settings that do not involve the child as an active participant such as the parents' workplace, the *exosystem*, and the wider society and culture, *macrosystem*. More recently the addition of the *chronosystem* introduces the notion of environment events and transitions that occur during a person's life and the impact of possibly when they occur. A substantial body of literature supports utilisation of this model for understanding families and the influence of being embedded in different social systems.

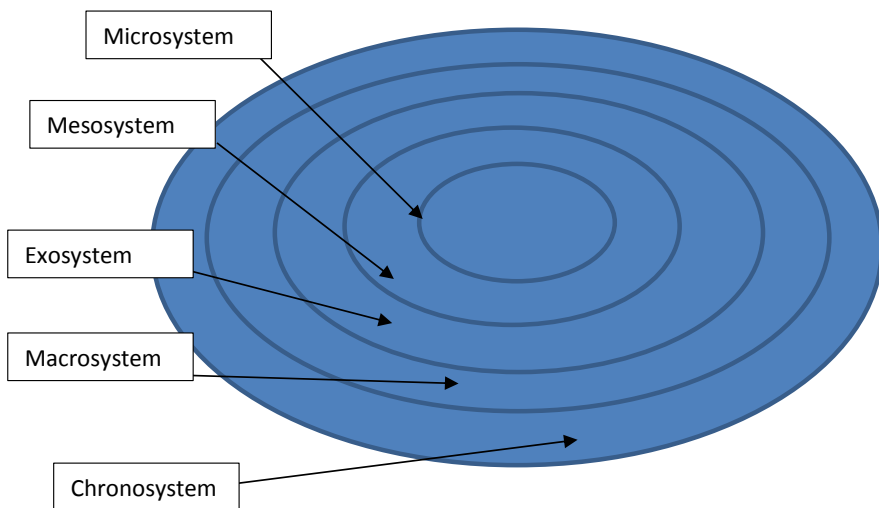


Figure 1. Bronfenbrenner's Five Subsystems

Family theory is strongly based upon the idea of the family as a social system and that the relationships between family members are important to the family itself. The relationship between the couple (pre-parents) is centrally important to the developing family (Carlson, McLanahan, 2006). Therefore using a socio-ecological theory to investigate couples undertaking the IVF experience will provide insight into the developing relationship, social systems and social environment to more fully

understand what impacts and enables these couples to develop into families and ultimately how these experiences impact on the development of the child.

With regard to examining couples there is a lot of evidence for the importance of the quality of the parent's relationship and the impact on parenting. Socio-demographic variables such as age, ethnicity, education level, employment status, have all been reported as having an impact on parenting (Carlson, McLanahan, 2006). Research has shown parenting behaviours and parental characteristics can influence academic achievement (Englund et al., 2004; Pomerantz, Moorman, Litwack, 2007; Cheung, Pomerantz, 2011), cognitive development (Ryan, Martin, Brooks-Gunn, 2006), socio-emotional development (Dallaire et al., 2006; Bernier, Carlson, Whipple, 2010; El Nokali, Bachman, Votruba-Drzal, 2010), and school dropout rates (Marcus, Sanders-Reio, 2001). Moreover, family psychosocial functioning, including parenting, is well known to impact normal child development (Beauchamp, Anderson, 2010).

Research by Gana and Jakubowska (2014) however found that infertility had greater impact to the individual's emotional distress than to marital satisfaction. To further understand the socio-ecological impact to couples undergoing IVF it is proposed that an examination of the ecological system in which IVF couple exist is warranted. Given that research can already identify many impacts (negative outcomes) associated with the couple/parental relationship, on the parent-child interaction and family system, an identified gap is the potential positive impacts. An embedded examination of couples undergoing IVF would enable researchers to more fully understand what is occurring and what potentially could support these developing families.

Importance of Socio-ecological Context

Given the importance of the sociocultural context to understanding what IVF couples/families embark on, the exploration of two different cultural contexts in regard to IVF may assist in broadening and deepening research, interventions and policy. Examination of countries that differ in terms of current IVF awareness, attitudes, and processes provide an opportunity for research. Looking at the growing rates of IVF use in Poland and at the same time seeing the more established IVF process in Australia offers opportunity for IVF research.

Of all Polish marriages infertility is reportedly an issue for approximately 15-18% of married couples (Makara-Studzińska et al., 2012; Serdyńska, Pawelczyk, Jędrzejczak, 2008). Due to numerous issues (religious differences, legal regulations) results of international studies in the field of infertility do not easily translate into the Polish context. The method is becoming more popular among Polish couples struggling with infertility due to its efficacy. In 2009, there were 135 621 in vitro cycles conducted in European countries, 12 068 (8.9%) of these occurred in Poland. In 2009 a number of 2882 children in Poland were conceived through ART which accounts for a 1% of all European births through ART methods. According to current

studies, these figures across many European countries are rapidly increasing (Ferraretti et al., 2013).

According to the Polish Public Opinion Research Centre in 2012, 79% of adult Poles were in favour of the possibility of undertaking IVF to assist in infertile marriages and 83.7% indicated that children conceived through IVF would not have any resulting negative genetic predisposition or developmental impairment. Further, 72% of the respondents facing infertility would undertake IVF if no other methods were effective. Of the respondents who rejected the possibility of using IVF, most (79%) reported that IVF did not fit with their values and beliefs, and 1.7% were concerned with IVF and the effects potential health of the child (www.cbos.pl). The attitudinal support for the use of assisted reproduction in Poland is increasing however the support for IVF exhibited by Polish citizens is still relatively lower in comparison to other countries like Australia (Kovacs et al., 2012) and the level of social acceptance of infertility treatment methods is different depending on age, level of education and the income of respondents (Wdowiak, Wdowiak, 2015). There is also a positive relationship between the level of knowledge about IVF and the attitude towards parents who utilise IVF, and moderate positive relationship between the level of knowledge about IVF and attitude towards children conceived through IVF processes. This may be indicative of the social-cultural/historical and ecological system in which people live may impact the way in which issues like IVF are understood and the attitudes toward IVF are constructed and expressed (Malina, Roczniowska, Pooley, 2017).

In Poland the government programme “Treating Infertility with the In Vitro Method for the years 2013-2016” introduced in allows for healthcare services to finance IVF and as such has influenced the number of couples utilising the in vitro method (www.invitro.gov.pl [access: January 9, 2017]). The main aim of the programme is to provide access to IVF for couples struggling with infertility. The programs specific goals are: to decrease the number of childless couples and providing high standards of infertility treatment. The program has been conducted since 1st July, 2013 and since then 3841 children have been born (to 7th December 2015). What would be of benefit to this programme is an understanding of the psychological aspects of the developing couple through the IVF process to ensure that any support services developed are of direct assistance to the couples and developing families.

Even though the social acceptance for the IVF process in countries such as Poland is increasing there are differences when comparing to countries where IVF has been introduced earlier. The difference may be connected with societal values and attitudes values related to open discussion about perceived intimate information and issues. For example work by Radkowska-Walkowicz (2012, 2014) argues that the IVF issue in Poland needs to be understood in a political, and historical context because of the narratives present in the IVF discourse. Currently language use and the portrayal of IVF children as sufferers from physical, social, and mental health

problems questions the broader societal attitudes and values. These values and attitudes may then dictate the level of help and support seeking opportunities available for couples which in turn can affect the development of couples and families. Understanding not only the values and attitudes but also the help and support opportunities can assist these developing families. By understanding all of this within a socio-ecological context there is also the opportunity to assist in building into the context potential programs and supports that further develop social attitudes and values.

References

- Beauchamp, M., Anderson, V. (2010). Sociality: An integrative framework for the development of social skills. *Psychological Bulletin*, 136 (1), 39-64, doi: 10.1037/a0017768
- Beisert, M. (1980). Infertility as a disturbing factor of interpersonal communication in the family. *Problemy Rodziny* [Family Problems], 1, 80-86.
- Berghius, J.P., Stanton, A.L. (2002). Adjustment to dyadic stressors: a longitudinal study of coping and depressive symptoms in infertile couples over an insemination attempt. *Journal of Consulting and Clinical Psychology*, 70, 433-438.
- Bernier, A., Carlson, S.M., Whipple, N. (2010). From external regulation to self-regulation: Early parenting precursors of young children's executive functioning. *Child development*, 81 (1), 326-339, doi: 10.1111/j.1467-8624.2009.01397.x
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist*, 34 (10), 844-857.
- Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22 (6), 723-742.
- Carlson, M.J., McLanahan, S.S. (2006). Strengthening unmarried families: Could enhancing couple relationships also improve parenting? *Social Service Review*, 80 (2), 297-321.
- Cheung, C.S., Pomerantz, E.M. (2011). Parents' involvement in children's learning in the United States and China: Implications for children's academic and emotional adjustment. *Child Development*, 82 (3), 932-950, doi: 10.1111/j.1467-8624.2011.01582.x
- Dallaire, D.H., Pineda, A.Q., Cole, D.A., Ciesla, J.A., Jacquez, F., LaGrange, B., Bruce, A.E. (2006). Relation of positive and negative parenting to children's depressive symptoms. *Journal of Clinical Child and Adolescent Psychology*, 35 (2), 313-322, doi: 10.1207/s15374424jccp3502_15
- Daly, I., Bewley, S. (2013). Reproductive ageing and conflicting clocks: King Midas' touch. *Reproductive Biomedicine Online*, 27 (6), 722-732.
- Dembińska, A.A. (2016). Psychological determinants of life satisfaction in women undergoing infertility treatment. *Health Psychology Report*, 4 (2), 146-158.
- El Nokali, N.E., Bachman, H.J., Votruba-Drzal, E. (2010). Parent involvement and children's academic and social development in elementary school. *Child Development*, 81 (3), 988-1005, doi: 10.1111/j.1467-8624.2010.01447.x

- Englund, M.M., Luckner, A.E., Whaley, G., Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology*, 96 (4), 723, doi: 10.1037/0022-0663.96.4.723
- Ferraretti, A.P., Goossens, V., Kupka, M., Bhattacharya, S., de Mouzon, J., Castilla, J.A, Erb, K., Korsak, V., Nyboe Andersen, A. (2013). The European IVF-monitoring (EIM), Consortium for The European Society of Human Reproduction and Embryology (ESHRE). *Human Reproduction*, 28 (9), 2318-2331.
- Freeman, E.W., Boxer, A.W., Rickels, K., Tureck, R., Mastroianni, L., Jr. (1985). Psychological Evaluation and Support in a Program of In Vitro Fertilization and Embryo Transfer. *Fertility and Sterility*, 4, 48-53.
- Gana, K., Jakubowska, S. (2014). Relationship between infertility-related stress and emotional distress and marital satisfaction. *Journal of Health Psychology*, 21 (6), 1043-54.
- Kovacs, G.T, Morgan, G., Levine, M., McCrann, J. (2012). The Australian community overwhelmingly approves IVF to treat subfertility, with increasing support over three decades. *The Australian & New Zealand journal of obstetrics & gynecology*, 52, 302-304.
- Lopes, V.M., Leal, I.M. (2012). Personality and emotional adjustment in infertility. *Journal of Reproductive Medicine*, 57, 153-158.
- Lukaszuk, K., Jakiel, G., Kuczynski, W., Pukszta, S., Liss, J., Plociennik, L., Lukaszuk, A., Pastuszek, E. (2016). Next generation sequencing for preimplantation genetic testing of blastocysts aneuploidies in women of different ages. *Annals of Agricultural and Environmental Medicine*, 23 (1), 163-6.
- Lukse, M.P., Vacc, N.A. (1999). Grief, Depression and Coping in Women Undergoing Infertility Treatment. *Obstetrics and Gynecology*, 2, 245-251.
- Łuczak-Wawrzyniak, J., Pisarski, T. (1997). Psychologiczne problemy w leczeniu niepłodności [Psychological problems in infertility treatment]. W: T. Pisarski, M. Szamatowicz (red.), *Niepłodność [Infertility]* (s. 298-304). Warszawa: Wydawnictwo Lekarskie PZWL.
- Makara-Studzińska, M., Moryłowska-Topolska, J., Wdowiak, A., Bakalczuk, G., Bakalczuk, S. (2010). Anxiety and depression in women cured due to infertility. *Przegląd Menopauzalny*, 9 (6), 414-418.
- Makara-Studzińska, M., Wdowiak, A., Bakalczuk, G., Bakalczuk, S., Kryś, K. (2012). Problemy emocjonalne wśród par leczonych z powodu niepłodności. *Seksuologia Polska*, 10 (1), 28-35.
- Malina, A., Pooley, J.A. (2017). Psychological consequences of IVF fertilization – Review of research. *Annals of Agricultural and Environmental Medicine*, doi: 10.5604/12321966.1232085
- Malina, A., Roczniowska, M., Pooley, J.A. (2017). Sources of attitudes towards in vitro (IVF) parents and children. *Annals of Agricultural and Environmental Medicine*. Submitted.

- Marcus, R.F., Sanders-Reio, J. (2001). The influence of attachment on school completion. *School Psychology Quarterly*, 16 (4), 427, doi: 10.1521/scpq.16.4.427.19894
- Martins, M.V., Peterson, B.D., Almeida, V., Costa, M.E. (2014). Dyadic dynamics of perceived social support in couples facing infertility, 29 (1), 83-89.
- Monga, M., Alexandrescu, R., Katz, S., Stein, M., Ganiats, T. (2014). Impact of Infertility in Quality of Life. Marital Adjustment and Sexual Function. *Urology*, 63, 126-130.
- Newton, C.R., Sherrard, W., Glavac, I. (1999). The Fertility Problem Inventory: Measuring Perceived Infertility Related Stress. *Fertility and Sterility*, 1, 54-62.
- Noorbala, A.A., Ramezanzadeh, F., Abedinia, N., Naghizadeh, M.M. (2009). Psychiatric disorders among infertile and fertile women. *Social Psychiatry and Psychiatric Epidemiology*, 44, 587-591.
- Pasch, L.A., Dunkel-Schetter, C., Christensen, A. (2002). Differences Between Husbands' and Wives' Approach to Infertility Affect Marital Communication and Adjustment. *Fertility and Sterility*, 6, 1241-1247.
- Pomerantz, E.M., Moorman, E.A., Litwack, S.D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research*, 77 (3), 373-410, doi: 10.3102/003465430305567
- Radkowska-Walkowicz, M. (2012). The creation of 'monsters': The discourse of opposition to in vitro fertilization in Poland. *Reproductive Health Matters*, 20 (40), 30-37.
- Radkowska-Walkowicz, M. (2014). Frozen children and despairing embryos in the 'New' post-communist state: Debate on IVF in the context of Poland's transition. *European Journal of Womens Studies*, 21 (4), 399-414.
- Roguska, B. (2012), Postawy wobec stosowania zapłodnienia in vitro. *Komunikat z Badań*, 121, http://www.cbos.pl/SPISKOM.POL/2012/K_121_12.PDF [access: January, 2017].
- Ryan, R.M., Martin, A., Brooks-Gunn, J. (2006). Is one good parent good enough? Patterns of mother and father parenting and child cognitive outcomes at 24 and 36 months. *Parenting*, 6 (2-3), 211-228, doi: 10.1080/15295192.2006.9681306
- Serdyńska, M., Pawelczyk, L., Jędrzejczak, P. (2008). Niepłodność [Infertility]. W: Z. Słomko (red.), *Ginekologia* [Gynecology] (t. 1, s. 465-555). Warszawa: Wydawnictwo Lekarskie PZWL.
- Stewart, D.E., Robinson, G.E. (1989). Infertility by Choice or by Nature. *Canadian Journal of Psychology*, 9, 866-871.
- Szamatowicz, M. (2007). Niepłodność [Infertility]. W: G.H. Bręborowicz (red.), *Położnictwo i ginekologia* [Obstetrics and gynecology] (t. 2, s. 737-756), Warszawa: Wydawnictwo Lekarskie PZWL.
- Wade, J.J., MacLachlan, V., Kovacs, G. (2015). The success rate of IVF has significantly improved over the last decade. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, 55 (5), 473-476.
- Wdowiak, A., Wdowiak, A. (2015). Comparing antioxidant enzyme levels in follicular fluid in ICSI-treated patients. *Gynécologie Obstétrique & Fertilité*, 43 (7-8), 515-521.

Whiteford, M.L., Gonzales, L. (1995). Stigma: the hidden burden of infertility. *Social Science & Medicine*, 40, 27-36.

Polish website on governmental programme supporting in vitro fertilization, www.invitro.gov.pl [access: November, 2016].

ROZWÓJ RODZINY W KONTEKŚCIE TECHNIK
WSPOMAGANEGO ROZRODU: SOCJOEKOLOGICZNY MODEL
ROZUMIENIA ZASTOSOWANIA PROCEDURY IN VITRO W POLSCE

Streszczenie. Dla par, które mają trudność z poczęciem dziecka, stosowanie technologii wspomaganej reprodukcji stanowi często jedyną możliwość powiększenia rodziny. Jedną z najbardziej rozpowszechnionych metod wspomaganego rozrodu jest in vitro ze względu na wysoką skuteczność tej metody. Na całym świecie świadomość, postawy wobec in vitro i rozpowszechnienie metody różnią się. Wykorzystanie modelu ekologicznego pozwala poddać analizie sytuację pary małżeńskiej i przyrzeć się relacjom wewnątrzrodzinnym oraz otoczeniu rodziny w kontekście społecznym, w którym funkcjonuje. W związku z tym niniejszy artykuł proponuje wykorzystanie modelu Bronfenbrennera znanego jako teoria systemów ekologicznych jako teoretycznego modelu rozważania nad rozwojem rodziny poddającej się leczeniu niepłodności metodą in vitro.

Słowa kluczowe: niepłodność, rozwój rodziny, teoria systemów, in vitro

Data wpłynięcia: 10.04.2017

Data wpłynięcia po poprawkach: 1.10.2017

Data zatwierdzenia tekstu do druku: 5.10.2017