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Psychosocial aspects of infertility and its treatment

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ABSTRACT

Nowadays, more and more couples face impediments associated with conception. Infertility is related with experiencing psychological problems by both partners. One of the infertility treatment procedures is *in vitro* fertilization. Using this method has significant influence on patients and their family's psychology. This essay reviews literature about IVF treatment and discusses the significance of infertility to a couple, children development and psychosocial functioning, their relation with parents and public opinion about *in vitro* fertilization.

Key words: treatment, infertility, *in vitro* fertilization, psychosocial factors

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INTRODUCTION

Having a descendant is definitely one of the key developmental tasks of the period of early adulthood [1]. Nowadays, a growing number of couples face difficulties associated with conception.

Infertility is a serious emotional crisis connected with a frustration of the need for parenthood which concerns both partners [2]. It is defined as an inability to conceive a child despite annual sexual intercourse with average frequency of 3–4 per week without using any contraceptives or an occurrence of multiple pregnancies, everyone of which terminated by miscarriage [3]. Unintentional infertility may be caused by a feminine factor (about 45–65% of all cases), a masculine factor (about 25–45%) or be a problem of both partners (about 10%) [4].

Due to the scale of the notion, psychosocial consequences of infertility and its treatment have become the focus of attention of humanists. What may be currently observed, is a prolonged period which young people devote to undertaking important life decisions — moratorium [5]. Excessive moratorium may have an unfavourable impact on procreation providing that it is connected with a postponement of the decision about conceiving a child as it is the age of the woman what constitutes one of the most important factors conditioning the reproductive capacity. The highest capacity is obtained by women aged between 20 and 24. Later, the reproductive potential decreases [4]. Contemporarily, the age of giving birth to the first child is around 29 years. Research on procreation plans of Polish citizens at the age of 18–39, published in 2011, revealed that nearly half of them plan to become parents, yet in unspecified future. This instantiates the postponement of this decision to even later stage of life [6].

Researchers draw attention to the fact that psychological rather than biological factors may prove to be primary causes of infertility. The results of some studies indicate that the very process of infertility treatment may bring about psychological impediments which contribute to the inability to conceive a child overlapping the already existing, somatic causes [7]. This creates an important field of study for psychologists.

The percentage of infertile couples is constantly growing. In 2009, 15% of marriages struggled with unintentional lack of children [3]. In the face of such a large scale of the notion and the number of afflicted people, it is worthwhile to focus on the probable psychological consequences connected with infertility.

PSYCHOLOGICAL ASPECTS OF INFERTILITY

Infertility is a serious problem from the psychological perspective as it is connected with a loss of self-appraisal, increased level of stress and decreased mood [8, 9]. It is frequently connected with a loss of the sense of physical attractiveness, trust between partners, self-esteem, hope and

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the sense of security [10]. The inability to conceive a child is a natural distortion of the psychological balance of a unit and is often compared to mourning after the death of a close person or experiencing serious illnesses [10].

There is a range of psychological factors which may be influential for diagnosis and therapy of couples struggling with infertility. Podolska and Bidzan enumerate: a reaction of the couple to the diagnosis and possibilities of treatment, factors connected with faith, self-appraisal and self-acceptance as a woman and relations in the family of origin [7]. Numerous studies have proven that infertility has a negative impact on the satisfaction of sexual life and the relationships between partners struggling with it [11]. Infertile women, frequently as response to the situation, reveal increased level of suspicion and hostility which may influence the relationship with the partner [12]. Moreover, infertile women achieve a higher level of depressivity in comparison to control group [8]. The highest level of depressivity was achieved by women who had struggled with infertility for 2–3 years. Similarly, the women who were familiar with the cause of infertility obtained a higher level of depressivity than women who were not familiar with it [8].

INFERTILITY TREATMENT METHODS AND THE FREQUENCY OF THEIR USAGE

An infertility treatment is such a method which results in a conception of child regardless of earlier difficulties [13]. Szamatowicz enumerates 3 groups of infertility treatment methods: pharmacological, surgical and assisted reproductive techniques (ART) [3]. The last group includes the *in vitro* fertilization (IVF), which is a fertilization of an ovum in laboratory environment and implantation of the zygote in a woman's uterus as well as intracytoplasmic sperm insertion (ICSI) which precedes the implantation of the embryo in the woman's body [3].

The beginning of an infertility treatment is frequently a difficult decision for the couples as it is connected with a loss of closeness and depriving of control over their bodies [14]. Especially difficult for the relations between partners is the *in vitro* treatment due to its increased inference in the intimate sphere of the treated couple and the fact that it is usually the ultimate procedure [10]. Despite the described inconveniences, *in vitro* is a more and more eagerly applied form of supporting procreation.

The first child conceived through *in vitro* was born in the United Kingdom in 1978 [15]. According to data collected in 34 European countries the number of procedures based on the methods of supporting procreation increases. In 2009, there were 135,621 *in vitro* cycles and 266,084 ICSI conducted in theses countries. The total number of all registered therapeutic cycles which used these and other techniques of supported procreation came up to 537,463. 12,068 of them occurred in Poland. 2882 children in Poland were conceived through ART in 2009 which accounts for a 1% of all births [16]. In 2010, 1% of all children born in the USA, around 2% in the UK and almost 4% in Denmark and Finland were conceived through *in vitro* [17].

PSYCHOLOGICAL IMPEDIMENTS CONNECTED WITH UNDERTAKING THE *IN VITRO* PROCEDURE

Apart from the negative psychological effects of infertility, the very process of its treatment — *in vitro* in this case — may result in unpleasant and dangerous consequences for the psychic. It is indicated in the research conducted by Podolska and Bidzan that the process of infertility therapy may bring about psychological impediments which additionally hinder conception overlapping the existing somatic causes [7]. It is noteworthy that the *in vitro* procedure is not only connected with the uncertainty a couple has about the conception but also with an increased inference in the bodies of the treated people (everyday injections, blood testing, USG examination, providing sperm samples etc.) [18]. Particular stages of the IVF procedure may have a negative impact on the psycho-social functioning of woman and man [18] as they are associated with intensive stress. In turn, the psychological stress may affect the result of the *in vitro*. There is an observably higher level of anxiety among people who did not manage to conceive a child through *in vitro* than among those whose attempts were successful [12].

Moreover, everyday emotions as well as social and physical reactions of the spouses were examined during the *in vitro* procedure. The results disclosed that men and women display a similar pattern of reacting to particular stages of the *in vitro* procedure. The most significant changes in functioning occurred at the stage of taking the ovum, fertilization of the ovum, implantation of the embryo inside the uterus and doing the pregnancy test. The results suggest that the most significant psychological determinant during *in vitro* is the uncertainty about the course of the procedure. Both man and women are sensitive to this uncertainty and similarly react with ambivalent feelings including emotional worrying and positive emotions connected with hope [19].

It has to be stated, though, that the experience of the diagnosis and the treatment of infertility with *in vitro* is more difficult for women than men. Women revealed a greater level of anxiety during the treatment than their partners. Moreover, they come up with a less positive opinion about their marriages and sexual intercourse than men [20].

The process of treatment may have further influence on the functioning of the family, yet the research result in this matter are ambiguous. According to studies, mothers of children conceived through *in vitro* report lower satisfaction of the functioning of the family and communication with their

partner [21]. On the other hand, European studies show that marriages having children through *in vitro* are as successful as others [20]. On the basis of the research conducted by Ulrich and associates, it has been stated that mothers of children conceived through *in vitro* reveal a significant increase in satisfaction of their general current situation since the birth of the child to its first birthday [20]. In partners and couples whose children were conceived naturally no such change in the level of satisfaction was reported.

Undergoing the *in vitro* procedure, couples most frequently had already gone through negative experiences and happen to be in a psychologically difficult position [10]. However, it is ambiguous whether the feeling of increased or decreased level of anxiety influences the result of the *in vitro* procedure [22]. At the same time the high level of disorientation and the feeling of being lost revealed at the beginning of the procedure indicates the need to inform the patients about the chosen method of treatment [9]. Patients struggling with infertility ought to receive proper support from the medical personnel in the form of appropriate information about the procedures, course, chances and threats as well as emotional support as it bears a positive impact on the quality of their further functioning [10]. The lack of support, both emotional and informative, undoubtedly increases the level of stress during the whole process of treatment. It is noteworthy that the most significant causes of couples terminating the procedure were earlier unsuccessful attempts, high costs and the already-mentioned stress connected with the participation in the procedure. The latter may be effectively decreased via proper psycho-prophylactic and therapeutic endeavours [23].

IN VITRO FERTILIZATION AND THE HEALTH AND DEVELOPMENT OF THE CHILDREN

The analysis of the influence the *in vitro* conception has on the pregnancy and development of the child is hindered due to the reluctance of parents to maintain contacts with the clinic and disclose how the child was conceived. This effects in a little amount of data [24].

Currently, it can be stated in all certainty that there is no relationship between conceiving a child through *in vitro* and an increase in injuries or neurological disorders in children. Such a conclusion has been drawn after conducting a meta-analysis of 59 studies on the influence of *in vitro* on the neuro-development of a child [25]. Nevertheless, some research estimate the risk of cerebral palsy in children conceived through *in vitro* as five times higher. However, when compared with data concerning premature babies and babies born SGA, no differences in the number of cerebral palsies, retardations or behaviour disorders were observed [26]. Other research indicate that children conceived through *in vitro* more often required health care in contrast with a control group. They underwent a greater number of childhood illnesses and more often received therapy (physiotherapy or speech therapy). Additionally, more of them underwent surgeries (particularly connected with genitourinary system) [27]. In medical circles, it is also said that the long-term influence of IVF on the life and health of patients is hardly unknown. Moreover, a direct cause of complications after IVF has not yet been established, still they may undoubtedly be caused by non-physiological conditions in the laboratory, freezing and thawing embryos or genetic manipulations resulting from a non-physiological selection of spermatozoons [15]. Further negative influence on a child is acknowledged for such factors as mother's hormonal therapy and its eventual effects during implantation and pregnancy, taken medicines and procedures connected with egg retrieval [15]. Among the most common threats resulting from IVF are: high infant mortality, low birth weight, premature birth, miscarriage, developmental congenital and genetic disorders, ectopic pregnancies [15]. It may be presumed that a good number of developmental disorders in children conceived through *in vitro* are caused by frequent multiple pregnancies. It is estimated that 30–50% of all twin pregnancies were conceived through infertility treatment [24]. There are research which report the occurrence of an alarming percentage of various disorders related to the health of the foetus even in single pregnancies through *in vitro*. It is also noteworthy to consider such factors accompanying the IVF process as the age of the mother, stress of the parents related to the initial diagnosis off infertility and perinatal factors [26].

CORRELATION BETWEEN *IN VITRO* FERTILIZATION AND THE FUNCTIONING OF CHILDREN AND THEIR RELATIONSHIP WITH PARENTS

It is commonly believed that the *in vitro* procedure is a strong stressor which may disturb the early parental behaviour and bring about potential consequences for the psychosocial development of the child and its further treatment [21]. Studies on the functioning of IVF-conceived children and their mothers have proven that the mothers reveal a higher level of protectiveness toward their children and are seen as more warm-hearted and sensitive to the children's needs. At the same time, children conceived through *in vitro* are regarded as displaying less behaviour issues and undertaking more interactions with parents [21].

No influence of the *in vitro* method on educational problems or functioning in school environment has been proven [28]. There are research results which prove that children conceived through *in vitro* obtain higher scores in school tests [17, 26]. Similarly, no difference has been observed in the declared upbringing model and reported behaviour

issues between 15- and 16-year-olds conceived through *in vitro* and conceived naturally [29]. The fact whether or not children were informed about their conception through IVF did not influence their potential behaviour issues [29].

SOCIAL APPRAISAL OF THE *IN VITRO* PHENOMENON

Various studies show that over the last few years the *in vitro* method has attracted a growing number of supporters. Similarly, people who undergo this procedure experience a growth in public support. Sigillo, Miller and Weiser [30] have observed that assisted reproduction techniques (including *in vitro*) are becoming more and more natural for the public opinion hence the moral appraisal of people undergoing such proceduresis more often positive. According to the Public Opinion Research Centre in 2012, 79% of adult Poles were in favour of the possibility to undergo the *in vitro* method by infertile marriages. 72% of the respondents facing infertility would undertake *in vitro* if no other methods were effective. The respondents who rejected the possibility of using *in vitro* as a method of treating infertility motivated their attitude with their values and beliefs (79%). Only 1.7% of the respondents would not undergo *in vitro* being concerned about the health of the child. 83.7% of Poles are convinced that children conceived through *in vitro* do not bear any genetic predisposition, their development isn't anyhow impaired and they are free from retardations [31]. The support for the *in vitro* procedure displayed by Polish citizens is still relatively lower in comparison to higher-developed countries. In Australia it reached 86% in 2000 and came up to 91% in 2011 [32].

DISCUSSION

Despite the large scope of infertility and the popularity of the *in vitro* method among people undertaking treatment, issues connected with the psychological functioning of the patients are still insufficiently determined. This may be caused by the reluctance of parents, who had struggled with procreation problems, to maintain contact with the clinic were the child was conceived and to an open discussion about the method off their child's conception even with the closest relatives. Therefore, it is significantly difficult to collect data and conduct reliable and valid research in this field.

Initiating the infertility treatment is frequently a difficult decision deep-rooted in outlook considerations. The reaction to the diagnosis of infertility is very often connected with social pressures [33]. Parenthood is regarded as a natural thing necessary for being approved as a valuable member of society. Social, negative attitudes toward childless marriages may enhance the feeling of loss, embarrassment and intensify the emotional crisis related to infertility as well as hinder the marital relationship [33]. Therefore, it seems that the success of the *in vitro* procedure and its psychosocial consequences depend on how the couples perceive the attitude of their relatives and the support they receive. It may influence both the course of treatment and further functioning of the spouses. Although the Polish general opinion about the *in vitro* and people who undergo this procedure is more and more positive, it has to be acknowledged that the assisted procreation techniques are contrary to the preaching of the Catholic Church (Congregation for the Doctrine of the Faith from 1987). This may constitute an additional psychic burden for couples who decide to undergo such method of having biological descendant and still concern this preaching as important [14].

Simultaneously, reliable medical and psychological research is required to provide the public with the myths and facts about the *in vitro* procedure. The review of the studies in this field shows that people who undertake this method of treatment reveal a high level of disorientation and the feeling of being lost both at the point of making decision as well as during the realization of the procedure. Subject literature indicates the importance of support in the course of treatment and coping with this, undoubtedly difficult, situation [34]. Especially significant are the relations with partners, families of origin, friends. Equally important is the informative and emotional support on the part of medical personnel [35].

The discussed research results indicate the necessity for collaboration between psychologists and therapists and centres providing treatment with ART methods. The growing scope of infertility, psychological difficulties resulting from infertility and its treatment and more frequent undertaking of assisted procreation methods account for an area where psychologists and therapists seem to be essential at every stage of trying for a baby: giving diagnosis, particular stages of the treatment and after the treatment regardless of its result. A psychological insight into the notion may allow for creating support procedures for units, dyads and whole families. It may constitute a training material for medical personnel and therapists who take care of the couples during treatment. In the light of new legal regulations concerning the funding of *in vitro* and growing social acceptance for the assisted procreation in Poland, further research seem worthwhile.

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