Infertility and mental disorders. Communication 2

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The paper presents data on the impact of infertility on the mental state of a woman in terms of both a change in her psychological profile and psychosocial, familial adjustment disorders, and the occurrence of mental disorders. It analyzes predictors (personality traits, familial, and sociocultural factors) for pathopsychological and psychopathological abnormalities in infertile women. The specific features of the impact of diagnosing infertility and uncertain reproductive status on the mental state of women are shown. Psychologically induced hormonal changes during infertility are described and data on the occurrence of somatic comorbidity of infertility are given. Mental health disorders in women using assisted reproductive technologies are touched upon.

Keywords: *mental disorders; psychological characteristics; reproductive health; assisted reproductive technologies; female infertility; infertile marriage; primary infertility.*
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For reference: *Tyuvina NA, Nikolaevskaya AO. Infertility and mental disorders. Communication 2. Nevrologiya, neiropsikhiatriya, psikhosomatika = Neurology, Neuropsychiatry, Psychosomatics. 2020;12(1):93–99.*
DOI: *10.14412/2074-2711-2020-1-93-99*

The relationship and interconnection of women's mental health and their reproductive function are multifaceted and ambiguous. On the one hand, psychological, psychogenic factors, mental disorders affect the sexual, menstrual, generative function, which can lead to infertility [1, 2]. On the other hand, infertility, as a chronic stressful factor emotionally significant for a woman, negatively affects her mental health, relationships in the family, and quality of life. Mental prerequisites and consequences of infertility, despite a long-term study of biological, physiological and endocrine factors of its development, began to attract attention of medical scientists relatively recently. Initially, researchers, mainly psychologists, believed that the central psychic cause of infertility in women was a violation of their femininity and ambivalent relationships with their mothers [3]. Then, the failure to conceive a child began to be considered in the context of psychosexual disorders [4]. Currently, many researchers agree that there is no scientific evidence of «fixation» on parenthood, «psychological blocks», or special behavioral patterns of a couple that cause infertility [5]. However, in some cases, it is mental pathology that acts as the only cause of infertility, and inability to conceive or give birth to a healthy child threatens the sense of identity, undermines personal values and motivation of parenting, and affects the reassessment of the couple's relationships [6].

Nowadays most women plan pregnancy and childbirth just as carefully as they choose their career, education, and lifestyle; they want to become mothers at a particular moment of their lives [7]. The birth of a child allows women to achieve maturity status, establish their social identity, fulfill a gender role and consolidate marriage. On the other hand, inability to realize these social expectations can be a source of stress and tension, leading to disruption of their mental health and deterioration of physical and mental indicators of the quality of life, disruption of sexual functioning.

With the optimal age of birth of a child under 35 years old, a definite tendency has emerged in recent years – to postpone the implementation of their fertility to later dates. The reasons for this trend are modern methods of contraception, a change in the social status of women, as well as lack of awareness of medical aspects of infertility associated with age. With this approach to childbearing, such women lose sight of the accumulation of various risk factors for infertility, which become more significant due to their longer impact; moreover, other factors negatively affecting fertility are added with age [8].

Based on the fact that most marriages are for the purpose of having children, the failure of natural conception is a personal tragedy for a woman and a traumatic factor for her husband, parents and the whole family, a reason for condemnation by the society. For most women, pregnancy and childbirth are vital events reflecting the leading biological and social need of women in motherhood. The diagnosis of infertility seems to such women a «catastrophe», inability to realize their life plans and can lead to the development of psychopathological disorders [9].

Half of patients of reproductive age with infertility note the fact that this diagnosis is traumatic, explaining this by instability of their status as a woman and a potential mother. Infertile marriage is a highly significant psychosocial problem, acting as permanent chronic stress and leading to the development of neurotic disorders [10].

Epidemiology of infertility-related mental disorders

A significant increase in infertility in women of reproductive age and uncertainty of their reproductive status contribute to the emergence of significant socio-demographic consequences (a decrease in fertility and population growth, quality of life), an increase in the incidence of borderline mental disorders, an increase in the number of depressive and anxiety states. The com-

bination of infertility and psychopathological disorders changes the level of social functioning of a woman, up to social maladaptation. Conversely, their altered mental state may contribute to a progressive clinical course of infertility [11].

According to the results of a domestic study including 700 women with various types of infertility, only 17,14% of the subjects were mentally healthy, while 50% had borderline mental disorders. In these cases, the subjects regarded the diagnosis of infertility as a personally significant psycho-traumatic situation affecting their self-identity and self-esteem. According to these women, the term «an old primipara» currently used in obstetric and gynecological practice for pregnant women older than 28 years, has an iatrogenic effect on them [12].

According to some authors, infertility is associated with a severe moral trauma, and, as a result, causes personal, family and social maladaptation, and increases the risk of developing mental disorders of a neurotic spectrum [5]. At the same time, prevalence rates of non-psychotic mental disorders, such as anxiety disorders and sexual dysfunction, in patients with infertility reach 60%, and comorbidity of sexual dysfunction and borderline mental disorders is 100%.

According to B.D. Peterson et al. [13], a half of infertile women develop adaptation disorders, 54% – mild depressive syndrome, and 25% – anxiety disorders. Moreover, the most pronounced indicators of depression are noted in those with a newly established diagnosis of infertility.

A structured psychiatric interview of women before the initiation of infertility therapy in the clinic showed that up to 40% of the subjects had high levels of depression and anxiety, as well as their combination [14].

H. Volgsten et al. [15] noted the presence of psychopathological symptoms in 31% of women with infertility, depression being the most common disorder. Similar data were obtained by S.R. Holley [16] as a result of a survey of 174 women undergoing infertility treatment. In 39% of the examined patients, their mental state met the criteria for depression.

A large-scale Danish study of 42,000 women undergoing infertility therapy through assisted reproductive technologies found depression in 35% of cases [17]. One of the largest studies of infertility to date has been conducted in Northern California: 56% of 7352 women examined reported depressive symptoms, 76% had anxiety.

Significant prevalence of affective disorders in patients with infertility naturally arouses interest of scientists in the problem of suicidal behavior caused by infertility. So, when examining 106 women with infertility referred to the clinic of assisted reproductive technologies, 9,4% of them showed suicidal tendencies, represented by suicidal thoughts and attempts. The authors noted that women with suicidal behavior were distinguished by the absence of children, ideas of self-accusation, a high level of social isolation and high tolerance to physical pain [18]. Danish scientists reported an increase in the number of suicidal women in the subgroup with unsuccessful therapy for infertility, based on data obtained from a survey of infertile women from 1973 to 1998 [19].

Predictors of mental disorder development in infertility

Female infertility is not an exclusively gynecological problem, as women suffering from it exhibit a high level of stress, anxiety and depression, «social pain». Moreover, various social, family, psychogenic factors exacerbate the stress caused by infertility.

It is interesting to note that prior to the initiation of the therapy, during a psychological interview aimed at assessing distress, women suffering from infertility dissimulated existing mental problems in order to appear «healthier than they really were» in the eyes of doctors. The authors of the study explain this by increased optimism of women starting treatment for infertility in terms of the possibility of conception in a natural way, without resorting to assisted reproductive technologies [20].

Infertile women are significantly more vulnerable than men to stimuli related to reproduction (for example, the appearance of a pregnant woman). Infertility causes in women low self-esteem, negative attitude towards themselves, a sense of shame that impede their emotional contacts with other people, normal social functioning, and social support. They are burdened by unfulfilled hopes, desires and aspirations, which may cause new personality problems [21].

Infertility is often referred to as «silent struggle» because women suffering from infertility are «struggling to conceive a child». This state gives rise to depression, anxiety, guilt, feeling of internal uneasiness, voluntary social isolation, loss of control over current life events [22].

The diagnosis of infertility and uncertain reproductive prognosis are some of the main predictors of mental disorders. Pronounced mental stress, hypothymia, high level of anxiety, emotional instability, decreased emotional expression, lack of adaptability, inadequate coping behaviors, low self-esteem, self-stigmatization, decreased range of interests, absence of perspectives in a childless marriage – all these qualities are inherent to women with uncertain reproductive status [23].

N.O. Dementieva [23] describes a specific internal picture of the disease: absence of a holistic cognitive concept of the disease, domination of mystical ideas about maternal failure; frustration with the attempts to accept one's reproductive status, lack of a construct for adaptation and «bidding for diagnosis». All these characteristics are combined with disruption of interpersonal interaction with the spouse, parental families, sexual and spiritual disharmony, low level of emotional involvement of both spouses in the life of their family with belittling and ignoring family values and traditions in dynamics.

The specificity of perception of reproductive status depends on the presence or absence of a history of pregnancy. If pregnancy did not occur, a woman is in a situation of constant and continuous clarification of the diagnosis, reflection on her reproductive and personal viability. If pregnancy occurred in the past, there are increased concerns in connection with non-occurrence of pregnancy at present.

Infertile patients tend to blame the medical community for incompetence, often completely subordinating their lives to the idea of becoming pregnant, which in dynamics becomes obsessive, up to clinical obsession. Such patients are able to radically change their lifestyle, abandoning the use of various products, exhausting themselves with various physical exercises, special diets, adhering to a special sleep schedule [24].

One of the important factors contributing to developing infertility is personal characteristics of women in the view of their impact on mental and reproductive health.

The results of epidemiological studies, indicating a double prevalence of depressive and anxiety disorders in women compared with men, are explained by personality characteristics of women. These include a tendency to self-aggression in a frustrating situation, increased responsibility for an unfavorable outcome

in certain life circumstances, caring for members of one's family, neglect of one's own health, double social burden, which includes, along with family and parental responsibilities, a desire for professional realization [25]. Failures of adaptive mechanisms in stressful situations and intrapunitive reactions are also inherent to women. Personality profile of infertile women is characterized by high levels of guilt, suspicion, and hostility [26].

A.V. Vasilieva [12] notes that women have a combination of gender specificity and personality traits, such as categoricality, sthenicity, conscientiousness, a desire to control what is happening, focus on high achievements, while ignoring the biological boundaries of load tolerance. The MMPI (The Minnesota Multiphasic Personality Inventory) test demonstrated a psychological profile of women of reproductive age with infertility which included emotional instability, a tendency to conflict, anxiety, infantility, dependence, unstable self-esteem and a tendency to depressive reactions [27].

Mental health of a woman in the presence of gynecological problems is directly related to the state of the hypothalamic-pituitary-ovarian regulation. This regulation may be responsible for both mental disorders in women in the case of reproductive dysfunction, and hormonal disturbances caused by stress factors [28, 29, 30].

Stress-induced rearrangements of the nervous, immune, and endocrine systems of the female body potentiate a significant effect on the homeostasis of psychopathological manifestations, especially affecting the reproductive system.

Such susceptibility to external and internal cyclical changes and versatility of clinical manifestations make it difficult to study mental disorders in women with a gynecological pathology. Reduced resistance of the female body due to gynecological pathology makes it susceptible to minimal stressful effects. A prolonged gynecological disease significantly changes social adaptation and the level of mental functioning of a woman, which in some cases reaches a diagnosed mental disorder. On the other hand, the severity of the gynecological disease, a tendency to chronicity and exacerbations, concomitant complications are determined by the state of mental well-being of patients, their personality characteristics and the presence of personally significant stressors [4].

Cultural and socio-psychological factors of female infertility

Infertility is recognized as one of the most powerful stressors for women suffering from it due to a special attitude of the society towards such a woman, her role in it and the issue of childbearing [31].

Inability to give birth to a child is one of the most significant psycho-traumatic situations for a married couple in view of the prevalence in modern society of special attitudes that postulate «pronatalism» – obligatory parenthood. N.P. Petrova et al. [22] describe special gender-role expectations of a woman, which include realization of her reproductive function, femininity and maternal qualities, love for children. In modern society, negative stereotypes of assessing female infertility are prevailing, linking it with social and mental ill-being. Accordingly, if there are problems with reproductive health, the described «pronatal values» frustrate such a woman, causing low self-esteem and self-confidence. Researchers propose to regard psycho-emotional disorders in such women as a link in infertility pathogenesis, and as a consequence of the summation of somatic (with the analysis of gynecological status) and psychological characteristics [22].

Additional psychological pressure on infertile couples is exerted by negative stereotypes in the society, expressed in the form of neglect, rejection and even contempt from others, including close relatives [32].

The necessary diagnostic procedures and therapeutic measures also increase the level of psychological tension of the couple. The experiences of both spouses often lead to disturbance of the family climate (interpersonal relationships, emotional stress, sexual disorders) and ultimately to a divorce in 70% of cases [4].

There is a so-called «gear mechanism», when one of the three leading destabilizing interchangeable factors (the quality of life determined in the context of a particular culture, the very fact of infertility in a woman, as well as distress) comes to the fore and potentiates the action of the others [33, 34, 35].

It seems interesting that the influence of social factors on the situation with infertility varies depending on the country, culture and religion. A study of the mental health of infertile Muslim women revealed some cultural factors that are determined by the subordinate position of women and affect the prevalence, clinical picture, characteristics of therapy, behavioral strategies, and social consequences. It was found that Muslim women suffering from infertility are most susceptible to depressive, somatoform anxiety disorders, are more likely to suffer from eating disorders and are characterized by suicidal tendencies [36]. The examination of 120 Kuwaiti infertile women with the Arabic version of the Hospital Anxiety and Depression Scale (HADS) revealed high mental stress, clinically pronounced levels of anxiety and depression, ideas of self-accusation, suicidal thoughts. Some of the women surveyed had no education and explained their infertility by the intervention of demons, evil spirits, otherworldly forces, God's retribution for their sinfulness. Such women resorted to the services of healers and became deeply religious [37].

Despite a sufficient number of scientific ideas about the causes of infertility, women are primarily «blamed» on it, which leads to their stigmatization, social isolation and cases of domestic violence [38]. So, 50% of Turkish women, regardless of the type of infertility, call infertility «the most difficult experience in their life» [39].

Fertility plays an important role in the sexual and psychological atmosphere of the family, while infertility can lead to serious mental disorders, impaired social adaptation, including dissatisfaction with marriage and quality of life. Infertile women face severe stigma, fear, shame, medical complications and social consequences of infertility. Due to infertility intrapersonal conflicts of each of the potential parents are aggravated, the sphere of interpersonal relationships suffers, which affects the normal functioning of the family.

In combination with social and parental pressure to preserve procreation, infertility can lead to serious mental disorders [40, 41, 42].

Despite the widespread prevalence of infertility, most women suffering from it do not share their story with family or friends, which increases their psychological vulnerability. Inability to conceive naturally gives rise to shame, low self-esteem, which negatively affects the quality of life of such patients.

Infertile women suffer from psychosocial problems such as pressure from relatives, lack of social support, social isolation, low self-esteem, negative vision of their own future prospects [4].

The problem of diagnosing mental disorders in women with infertility

Despite the existing interest of doctors of various specialties in psychology, psychopathology and psychotherapy, as well as the integration of psychiatry into general medicine, «treatment for infertility is mainly carried out by gynecologists using biological methods» without the participation of mental health specialists [43, 44].

Until recently, the American Society for Reproductive Medicine and the European Society for Human Reproduction and Embryology believed that there were no formal grounds for psychological counseling for women with infertility. However, the value of such counseling is undeniable, since psychological correction helps to reduce anxiety and depression and can contribute to a higher percentage of positive outcomes in the implementation of assisted reproduction technologies [45]. On the contrary, German psychiatric literature defines infertility as a biopsychosocial crisis, and psychological counseling on reproductive health disorders is an integral part of a multidisciplinary approach to the treatment of this pathology [46].

R.F. Nasyrova et al. [3] note that patients with a pathology of the reproductive system in more than 49% of cases show concomitant prenosological and borderline mental disorders. This situation dictates the need for interdisciplinary approach to the treatment of this category of patients. The most universal, simple and affordable method in gynecological departments and women's clinics is early verification of relevant extranosological forms and nonpsychotic mental disorders in women with impaired reproduction by means of psychopathological screening. If such mental conditions are suspected by a gynecologist, it is recommended that such women be referred to a psychiatrist for a consultation.

Moral, ethical and psychological problems associated with the use of assisted reproductive technologies

In response to the growing level of infertility in the world, rapid progress is being made in the field of reproductive medicine, the most successful and common methods of which in most countries are assisted reproductive technologies. These include «all treatments or procedures connected with in vitro manipulations with both human oocytes and sperm, or embryos for the purpose of achieving pregnancy» [47].

Treatment using assisted reproductive technologies involves daily injections to stimulate ovulation, vaginal ultrasound, and painful manipulations to aspirate oocytes, which may be both mentally and physically difficult to undergo [48].

The other side of the problem under discussion is related to the issue of morality, ethics and law, both for professional communities and for a woman herself [49]. Often, a woman may be mentally unprepared to dispose of «unnecessary» embryos, as well as to have a multiple pregnancy after in vitro fertilization and may experience fears associated with possible diseases when using donor gametes [50].

According to J.R. Gardanova, infertile women undergoing IVF therapy suffer from borderline mental disorders, mainly neurotic (anxiety, conversion, adaptation disorders) and somatoform, the frequency of which reaches 52%.

Such patients at the stage of preparation for in vitro fertilization procedure need psychodiagnostic screening, which is aimed at eliminating endogenous and verifying borderline mental disorders, correcting existing disorders, which should be carried out before and during the course of therapy. Such psychocorrectional work can reduce the severity of anxiety-depressive symptoms, as well as significantly increase the success of in vitro fertilization – from 29,8% to 42,1% [51].

Chinese researchers who studied gender differences in infertility have found that women have a more negative view of infertility than men. They exhibit lower levels of identity, self-esteem, and somatic health, as well as psychopathological manifestations such as depression, stress and anxiety disorders, stigmatization, and shame [52].

Specialists in human reproduction consider assisted reproductive technologies exclusively in the positive light of pregnancy occurrence. As a rule, they ignore potentially negative psychological consequences associated with unsuccessful attempts at in vitro fertilization [53].

Advances in assisted reproductive technologies have provided a real prospect of parenthood for many women with infertility, but in the case of failure there is a high level of stress, feelings of frustration, powerlessness, guilt, and an increase in the incidence of mental disorders [60].

Conclusion

Thus, the analysis of scientific works aimed at studying the relationship and mutual influence of mental and reproductive health in women shows that these mechanisms are not fully understood. Not only psychological problems, emotional stress and mental pathology can cause infertility, but also infertility itself, a woman's uncertain reproductive status and psychosocial, family, and cultural influences associated with it contribute to psychological maladaptation, personal reactions, as well as clinically pronounced mental disorders.

Modern reproductive technologies, on the one hand, demonstrate indisputable achievements, but on the other hand, they create a lot of moral, ethical and psychological problems. Despite the obvious need to study all these issues, not all patients who require psychological and psychiatric aid are referred to a psychiatrist. Such counselling would undoubtedly contribute to a more effective prevention and treatment of infertility, including the use of modern reproductive technologies.

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Received on 24.01.2020