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Innovations in the Research of the Relationship of Mental and Reproductive Health: Changes in Personality Profiles in Young Women with Pregnancy Pathology and the Reflection of Obstetric-Gynecological Diseases on Their Psychological Status

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Abstract

This practical work is aimed at identifying various changes and disorders in personality profiles in a specific cohort of the population: young women from 18 to 30 years old with pregnancy pathology. In addition to this experimental part of the article, which also includes a study of situational and personal anxiety, the relationship of these indicators with existing obstetric and gynecological pathologies and their severity, global parameters were also revealed in the context of this topic. A woman's well-being psychoemotional state is of high enough importance for the normal course of pregnancy, and in the future, childbirth. Current research in this area dictates the existence of a two-way relationship between mental and reproductive health. Problems in the reproductive sphere are certainly a powerful trigger and etiological factor in the occurrence of stress, anxiety, and personality profile disorders. In turn, various kinds of psychological disorders often cause violations of the reproductive potential of women, especially those of young age and with an unstable nervous system. And pregnancy, as mentioned above, being a period of increased risk of developing pathologies in the psycho-emotional sphere, often becomes a trigger factor in the manifestation of hidden changes. A correlation analysis conducted after evaluating the personality profiles of patients revealed their violation in 84%, and the main scales that appeared in high and low scores were the scales of depression and hysteria. Pregnant women in this group were certainly more irritable and nervous. Anxiety, assessed both as a property and as a condition, had a high level - 48% and 18%, respectively. The scientific novelty of the work lies in the research of this issue by reviewing leading articles and conducting their own practical research. We are confident that all clinicians should monitor this population group with extreme caution, as evidenced once again by the results of the work and the conclusions revealed against its background.

Keywords: stress, anxiety disorders, pregnant.

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INTRODUCTION

It is well known that pregnancy occupies a rather important and critical position in the life of every woman. Currently, it is believed that women in this period of life become more susceptible to various neuropsychiatric influences.

According to the research by J. Alder, N. Fink, J. Bitzer et al.[1] disorders in the psychoemotional spectrum in pregnant women often go unnoticed against this background: little studied. And this is despite the fact that the frequency of these violations, including anxiety, reaches 14% and 54%, respectively[2]. Moreover, there is a mutual dependence: that is, both the influence of mental factors on reproductive health and vice versa.

In addition to the main changes in the body of a pregnant woman, which are of a physiological and complex nature, changes in the psycho-emotional status often occur.

During pregnancy, there is a high percentage of women with increased anxiety, emotional instability, and suspicion. Quite often, pregnant women are in a state of chronic stress due to fears and worries about future childbirth[3,4]. Increased anxiety and depression are common, but often unrecognized conditions that lead to negative consequences for the health of women and the fetus[5]. It is anxiety that is a mental expression of a stressful state and represents a temporary negative emotion. In this case, anxiety is expressed by an unpleasant emotional state, which is characterized by a subjective feeling of tension, expectation of an unfavorable development of events[6].

Stress and anxiety are interrelated, and if anxiety becomes the dominant emotion, the course of pregnancy may worsen, and the possibility of complications in childbirth increases[7]. The intensity of anxiety-phobic disorders increases as childbirth approaches. The content of such disorders are various types of prenatal anxiety: generalized, physical (it is difficult to tolerate the physical aspects of pregnancy), fear for the fate of the fetus, fear of the need to care for the child, fear of childbirth[8].

Psychological factors such as anxiety, suspiciousness, impressionability, egocentrism and fear of pain contribute to the appearance of emotional stress during pregnancy, which is eventually perceived as a negative psycho-emotional state that complicates the course of pregnancy and childbirth, as well as preparation for the role of mother[9]. That is why the first element of the system of psychoprophylactic preparation for childbirth is an in-depth medical history, since anxiety, fright, fear and other negative emotions disrupt the balance of cortical and subcortical systems. The excitation of the subcortex increases the negative induction of the cortex, and thus, the conditions of pain processing of normal irritations ascending into the cortex from the birth canal and organs[10].

Emotional stress, in addition to correlating with premature birth, the birth of small children and an increase in the percentage of mortality, is interrelated with the more frequent development of child psychopathology[11].

The condition of a pregnant woman in critical periods significantly affects the peculiarities of the formation of the mental functions of the unborn child, and therefore determines in many ways his life scenario[12]. Prenatal negative effects have the strongest damaging effect. If the mother experienced severe stress, intense anxiety or depression during pregnancy, or received glucocorticoids, then all this can lead to a decrease in fetal weight and body size at birth, a decrease in the size of the hippocampus, and cellular disorders in the brain[13]. Any negative environmental influences can negatively affect the body of a woman forming a maternal dominant, and leads to the emergence of a competing "stress" subdominant[14].

Today it has been proven that the mental life of an intrauterine developing baby is very active, largely depends on the emotional experiences of the mother, and most importantly, it is the foundation of the psychoemotional characteristics of the child for many years to come. The child "experiences" all the conditions of the mother at the hormonal level. Each wave of maternal hormones abruptly removes the child from his normal state and provides him with heightened sensitivity[15].

Pregnancy pathology occupies a significant place among the variety of stressors. Every third pregnant woman is admitted to prenatal hospitals for treatment. The number of congenital anomalies and chromosomal abnormalities in fetuses reaches 85 for every 1,000 pregnancies. About 40% of all birth defects are diagnosed prenatally.

It should be noted that the personality traits of a pregnant woman determine the mental and adaptive reactions to the pathology that has arisen. Recent studies have shown that there are features of the

psychological status of women suffering from various types of pregnancy pathology, for example, with the threat of miscarriage, diabetes mellitus, etc.[16]. The problems of the occurrence of disorders in the maternal sphere and the analysis of the causes of complications of maternal-child relations are of great interest to researchers[17].

That is why special attention is paid to this dependence and we are at the junction of these two broad sciences: obstetrics/gynecology and psychiatry, we will try to answer the main questions regarding this topic.

MATERIALS AND METHODS

Objective: to identify disorders in the psycho-emotional sphere of young pregnant women with obstetric and gynecological diseases, to assess this problem on a large scale and to implement the results of this work in modern medicine.

Tasks: to build personality profiles for this population group and note changes, assess the level of situational and personal anxiety, identify the prevalence, as well as the relationship with existing obstetric and gynecological pathologies, a systematic review using the literature of Pubmed and Scopus databases.

The object of this empirical scientific work was young women aged 18 to 30 years in the number of 50 people (n=50). The average age was 26.8 years. The following tests were used as diagnostic tools: the MMPI (Minnesota Multiphasic Personality Inventory), thanks to which personality profiles of the subjects were built taking into account the correction scale. As well as the Spielberger test (Spielberger-Khanin Anxiety Scale, STAI), which consists of 40 statements, with the help of which the levels of situational (reactive) and personal anxiety, anxiety as a state and properties, respectively, were determined.

The study was conducted on the basis of the gynecological department of the State Clinical Hospital of Stavropol, and Microsoft Excel software was used as a method for processing statistical data. The results of the study are presented in tables and figures.

RESULTS

When analyzing the results, a change in personality profiles was found in 42 patients, which is 84% of all respondents, and the change refers to values both exceeding 70 T-points (high scores) and values below 40 T-points (low scores, respectively), while the normal schedule was typical only for 16% (n=8). For the convenience of evaluating all subjects according to the age criteria, we divide them into 2 groups: persons from 18 to 25 years old (n= 25), and 25-30 years old (n=25). Patients of both the first and second groups were equally susceptible to changes (45% each), which weakens the dependence of disorders of the psychoemotional spectrum in pregnant women on age and number of births.

It should be noted that high scores were revealed, namely in schools of depression (10%:70 and 73 T-points – figure 1), hypochondria (10%:70 and 72 T-points), hysteria (5%: 73 T-points), paranoia (5%: 75 T-points), schizoid (5%: 72T-points).

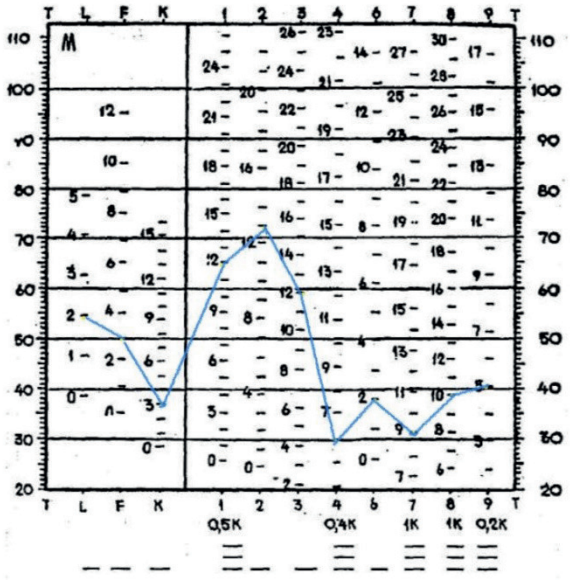

Figure 1. An example of building a personality profile. An increase in the 2 -D scale (depression). *Source*: Compiled by the authors

Almost all patients who received high values according to these scales as obstetric and gynecological pathology had bleeding in early pregnancy (90%). In addition to this pathology, which is 40% (n=20), in the line of these diseases there are also: threatening abortion in 28% (n=14), toxicosis of pregnant women in 16% (n=8), gestational diabetes in 12% (n=6) and vomiting of pregnant women in 4% (n=2).

Low scores appear in 78%, and the decrease more often concerns the scales of psychopathy, hypomania, psychasthenia, paranoia, hysteria, schizoid and hypochondria.

The low values on the above scales provide the basis for the assumption that these subjects: have a conventional personality of 30% (decrease in psychopathy 15 times), have limited contact and activity with people of 18% (decrease in hypomania 9 times), flexible behavior and have a low level of anxiety of 16% (decrease in psychasthenia 8 times) they are distrustful and quickly change their point of view by 14% (decrease in paranoia also 7 times), etc.

Personal anxiety, which characterizes anxiety as a property, was found to be high in 48% (n=24), moderate in 34% (n=17) and low in 18%.

In addition to personal anxiety, situational, i.e. reactive anxiety, was also assessed (Table 1), high rates were noted in 18% (n=9), moderate – 40% and low situational anxiety in 42%.

Table 1. Dependence of types of anxiety on their level (in quantity)

The level of anxiety	Situational anxiety	Personal anxiety
Tall/Very high	9	24
Moderate/Mod.Increase	20	17
Low	21	9

Source: Compiled by the authors

DISCUSSION

Raising the scales above the norm characterizes women as follows:

An increase in the depression scale (D) is a feeling of inner tension, anxiety, and after it is replaced by fear;

An increase in the hypochondria scale (Hs) suggests that anxiety is formed not so much due to external causes, but due to the state of one's physical health. It is manifested by a change in general well-being, performance, and somatic functions;

An increase in the hysteria scale (Hy) is a demonstrative accentuation of somatic distress. People of this type do not have a strong inner world, due to which their experiences are completely oriented to an external observer;

An increase in the paranoia scale (Pa): the main feature of people with high scores on this scale is a tendency to form highly valuable ideas. These people are one-sided, aggressive and vindictive. Whoever does not agree with them, who thinks differently, is either a stupid person or an enemy. They actively propagate their views, so they have frequent conflicts with others. They always overestimate their own slightest successes;

An increase in the schizoid scale (Se): a common feature of the schizoid type is a combination of increased sensitivity with emotional coldness and alienation in interpersonal relationships;

When analyzing anxiety, it is worth noting that the indicator of personal anxiety is such a trait that determines susceptibility to threat in a wide range of situations. High, of course, reflects pronounced anxiety when exposed to even the slightest trigger, can reach such a level (at a very high degree), directly correlating with various neurotic conditions, emotional breakdowns and psychosomatic pathologies.

A direct relationship has been proven, namely: in all women with high rates of anxiety, bleeding in early pregnancy and threatened abortion were noted as an obstetric and gynecological pathology, each of which very often ends in termination of pregnancy. Against this background, given the severity of these disorders, even if these patients are not characterized by personal anxiety (in 35%), situational anxiety in them reached high levels – 50%. The state of reactive anxiety occurs directly when getting into a stressful situation and is characterized by instability in time and intensity depending on the strength of the trigger factor: as in this case, it is very high, because these pathologies are a common cause of termination of pregnancy.

Anxiety during pregnancy is a prognostic factor for the occurrence of complications in the neonatal period[18,19]. The same conclusion was reached by P. Rondo, J. Martini et al., in addition, noting the influence of anxiety disorders on an increased risk of intrauterine development delay[20], an increase in the level of depressive disorders in the mother and in the postpartum period[21].

The effect of sleep disorders, anxiety-depressive disorders on childbirth and neonatal outcomes is quite contradictory. Thus, one of the modern studies led by Hilla Peltonen revealed low levels of actual risks[22]. That is why it is necessary to develop research in this area and pay due attention.

CONCLUSION

Thus, the study reflected a fairly high level of changes in personality profiles (84%) in young women with obstetric and gynecological pathology, with an increase of 22% and a decrease of 78%. Anxiety, mainly personal, was also high in 48%. Situational anxiety was changed

by 58%, with its increase in 9 patients (18%), due to the existing gross pathology. Other dependencies are usually contradictory and have a weak correlation.

We hope that the conclusions and results of the work will be of practical importance for clinicians and will be taken into account when managing patients of this cohort of the population.

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None of the authors has any conflict of interest.
The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national laws. Informed consent was obtained from all the patients included in the study.

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