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PECULIARITIES OF PSYCHOEMOTIONAL STATE OF PREGNANT WOMEN CONSIDERING THEIR READINESS FOR MOTHERHOOD AND ITS CORRECTION THROUGH SPA THERAPY

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Abstract

The study focuses on identifying features of altered mental status of women during pregnancy. The goal was to determine the patterns of psychological state dynamics of women during pregnancy to assess the level of personal and reactive anxiety in pregnant women considering the psychosomatic component, and on the basis of it to come up with a definitive idea about how to promote readiness for motherhood, and to develop methods of psychological preparation of pregnant women for childbirth.

A number of psychodiagnostic techniques were used to investigate the mental state of pregnant women and their identities, their attitude to the disease and treatment, accentuation of personality, detection of situational and reactive anxiety. The range of special psychological study included four questionnaires: Minnesota multifactor survey, Shmishek survey, Bekhterev Institute questionnaire and Spielberger-Hanin Anxiety Questionnaire. There were also used D.A. Leontiev's test of life orientations, self-esteem of empathetic abilities, personal orientation questionnaire, K. Rogers and I.P. Raymond's method of diagnostics for social and psychological adaptation. The authors' profile for establishing the level of psychological readiness for motherhood was also applied. Each pregnant woman was interviewed individually with elements of counseling and group discussions, too. The level of life of pregnant women was investigated on the basis of standardized method using a special questionnaire.

Particularities of mental and emotional state of pregnant women with a sufficiently high level of personal and reactive anxiety can lead to complications during pregnancy and delivery, primarily due to impaired adaptation to pregnancy that may require psychotherapeutic correction. A significant percentage of pregnant women with a medium-high level of reactive anxiety indicates the effects of a stressful situation, and eventually leads to the stimulation and creation of a competitive (stressful) dominant, able to suppress the main (gestational) one.

In the course of this study a model of psychological readiness for motherhood was built, employing methodological tools to determine its level, as well as an original range of psychological and psychotherapeutic correction of pregnant women through spa therapy was developed. A feature of this complex is individual counseling aimed at stabilizing the mental state of a pregnant woman, removing anxiety and unwanted plans, psychological preparation for childbirth, correction of intrapersonal or family conflicts that potentiate the balneological medical factors.

Keywords: *pregnancy, psycho-emotional state, readiness for motherhood, quality of life, psychotherapeutic correction, spa therapy.*

Introduction

In terms of today's Ukraine and its social development, there is an extremely high level of psycho-emotional stress of population. Pregnant women are the most vulnerable part of society that is experiencing emotional stress, which leads to a deterioration or even breakdown of adaptation mechanisms. Rapid technological development, intensive production, constant increase in the flow of negative information, environmental, economic, social, domestic and moral issues associated with excessive psycho-emotional overload, create the

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conditions for pathogenic effects on all body systems of pregnant women [*Korniyenko V, 2009; Potapov V et al., 2012*].

Pregnancy is very strong in terms of anxiety, specific for a complex of sensations period in a woman's life. It is proved that there is a close interaction between mother and unborn child, whose psyche develops before birth. Together with the mother, a child learns to perceive the world and forms the first habits [*Mendelevich V, 2008; Senchuk A et al., 2009*].

In the last decade, acceleration of pace of life, urbanization, information overload, dramatically increased periods of emotional surge and reduced periods of positive emotional states [*Mykhailov B, 2006; Astakhov V et al., 2010*] are observed. Stress during pregnancy leads to reproductive loss, preterm delivery, fetal abuse, having a baby with low birth weight, the emergence of psychosomatic disorders and psychopathology. Researchers consider pregnancy to be the test for psyche, a period of prolonged emotional stress and adaptation to new conditions of women [*Filippova G, 2002; Blenning C, Paladine H, 2005*]. Anxiety and stress are interconnected, and if anxiety is the dominant emotion, the overall condition may worsen during pregnancy. In addition, the possibility of complications in childbirth increases [*Raving L et al., 2004*].

A great number of scientific papers that contributed to the development of high quality obstetric care in our country are concerned with the study of emotional status in pregnant women with obstetric and extragenital pathology, but the lack of a comprehensive system of care for pregnant women at various violations of their emotional state caused relevance of this study.

The objective to determine patterns of psychological dynamics of state during pregnancy, to assess the level of personal and reactive anxiety in pregnant women considering psychosomatic component; on its basis to establish the optimum readiness for motherhood, to develop methods of psychological preparation of a pregnant woman for childbirth.

Materials and Methods

The study involved 60 pregnant women of 22-32 weeks of gestation who were in rehabilitation in Zhovten Clinical Sanatorium in Kiev. Inclusion of pregnant women with the term of 22 weeks of gestation in the study group was due to the following reasons: early perinatal period and stable feeling of fetus movements that allowed mothers to specify its "starting" style of emotional support. Exclusion criteria were severe physical illnesses.

The age of pregnant women in the study group was in the range of 21-40 years. The average age of women was 29.00±0.36 years.

To investigate the mental state of pregnant women and their individual features a number of techniques were used for psychodiagnostic examination of the types relevant to the disease and treatment, accentuation of personality, and confirmation of situational and reactive anxiety. The range of special psychological study included four questionnaires: Minnesota multifactorial (provides information about the characterological features of emotional and volitional aspect of a personality and her response to the disease); Shmishec (to identify the accentuations of a character); national questionnaire of Bekhterev Institute (characterizes attitude to illness), and anxiety questionnaire (personal and reactive anxiety) of Spielberger-Hanin [*Raigorodskiy D, 2002*].

We also used D.A. Leontyev test of sense life orientation, self-esteem of empathic abilities, questionnaire of personality orientation, K. Rogers and I.P. Raymond's (SPA) method of diagnosis of socio-psychological adaptation [*Balin V et al., 2006*]. Self-created questionnaire to diagnose the level of psychological readiness for motherhood was applied, too.

We also interviewed every woman with elements of surveyed counseling and group discussions. Questionnaires were filled in to diagnose the level of psychological readiness for motherhood and personality questionnaires.

We also investigated the quality of life of pregnant women with a standard method using questionnaire SF-36 of John E. Ware (The Health Institute, New England Medical Center, Boston, Massachusetts, 1998) [*Raigorodskiy D, 2002*], which includes the following scale:

Physical Functioning – physical functioning, reflecting the extension to which health limits physical activity (self-service, walking, climbing stairs, etc.).

Role-Physical – effect of physical condition on role-functioning (work, everyday activities).

Body Pain – intensity of pain and its impact on the ability to engage in daily activities, including work at home and beyond.

General Health – self-evaluation of one's own health at the moment and treatment opportunities.

Vitality – vitality (feeling oneself full of power and energy, or, conversely, weakness).

Social Functioning – social functioning is determined by the degree to which physical or emotional condition restricts social activities (communication).

Role-Emotional – influence of emotional state on role-functioning, i.e. the extent to which emotional state prevents execution of work or daily activities (increased spending of time, reduction in workload and reduction in its quality).

Mental Health – mental health assessment that describes the mood (the presence of depression, anxiety, general indicator of positive emotions).

The score of each scale is adequate to the difference between the absolute quality – 100% and the existing value. For 100% maximum total positive score is accepted, i.e. no restrictions as an indicator of the state of physical and mental health. The maximum amount of points on a single scale is 100%. The amount of points gained by the patient refers to the maximum-possible as absolute number to 100%. Thus, the assessment of each quality of life scale was performed.

Variation-statistical analysis of the results was performed with STATISTICS 6.0 standard licensed software packages of multivariate statistical analysis.

Results and Discussion

The study revealed a high frequency of extragenital pathology among surveyed groups (90%), and it required health resort rehabilitation for this group of women. Often a history of pregnancy contained a recorded vegetative-vascular dystonia and anemia of pregnant women – 84.2% and 50% respectively. The analysis of reproductive function revealed that 61.7% of women were primiparas, but the number of women giving birth for the first time was higher and amounted to 70.2%.

According to the questionnaire results, 20% of pregnant women appeared to be with a high level of psychological readiness for motherhood, 50% of women – with a medium level, and 30% – with a low level.

An additional confirmation of the validity of the "level of psychological readiness for motherhood" test is a high correlation with indicators of personality questionnaires that were used in the study. So, close relationship with empathy for "self-evaluation of empathic abilities" (correlation coefficient level of empathy with the level of psychological readiness for motherhood rxy=0.6970 at $p<0.01$) is evident. This means that empathic women have a high level of psychological readiness for motherhood.

Also, inverse relationship with the level of anxiety (Spielberger-Hanin) is evident. This suggests that a high level of anxiety is linked with a low level of readiness for motherhood (rxy=0.4732 at $p<0.05$).

Analysis of the test results of sense of life orientation revealed a relationship of the level of psychological readiness for motherhood with a subscale of Locus control-I, high score of which fits the image of oneself as a strong personality with sufficient freedom of choice to build one's own life in accordance with the objectives and perceptions of sense. Such orientation and position in life is a prerequisite for the formation of a high level of psychological readiness for motherhood (rxy=0.5136 at $p<0.01$). Also, there is an inverse correlation with a subscale of life satisfaction or fulfillment. This suggests that women who are living in the past and reliving memories do not seem to have a high level of psychological readiness for motherhood.

The study of psychological readiness for motherhood influences the course of pregnancy (correlation coefficient level of psychological readiness for motherhood with having problems in pregnancy (rxy=-0.386 at $p <0.01$.) It means that women with a low level of psychological readiness for motherhood have more prerequisites for pathological pregnancy.

We identified the following factors that were likely to cause abnormal pregnancy: unplanned pregnancy, experience through the relationship with the father of the child, anxiety because of financial insecurity, memories of past abortions and miscarriages, problems experienced in the professional fieldm, personal anxiety and fears.

There were many cases of women (22 of 60, or 37%), who had problems during pregnancy, and for obvious reasons those problems were not revealed. Even with external readiness for motherhood at tangible security, satisfactory relationship with a husband, there are problems in pregnancy. In this case, there is an internal unwillingness for motherhood, which occurs more often when pregnancy is unwanted (correlation coefficient = 0.476 at $p<0.01$) and is closely associated with the indicator of psychological readiness for motherhood (correlation coefficient is -0.582 at $p<0.01$).

The test of social and psychological adaptation after K. Rogers and I.R. Diamond also revealed a relationship between the subscales and level of psychological readiness for motherhood. For example, the scale of adoption itself is linked to the level of psychological readiness for motherhood (rxy=0.4411 at $p<0.01$). This is an indication that a woman who accepts herself as she is accepts herself even during pregnancy, and this positively influences the level of psychological readiness for

motherhood. Acceptance of other women is closely associated with the acceptance of their own child as an independent entity, which also affects the level of Potential Readiness for Motherhood (rxy=0.6360 at p<0.01). Spa therapy allowed us to test our methodology and its connection with personal orientation questionnaire. The results were satisfactory, because our hypothesis that the value of self-actualization affects the level of psychological readiness for motherhood has been confirmed. It is just a scale of self-actualization value that manifested good relationship with the scales Normal Time and Support Ratio. According to the results that we obtained, highly actualized women living today are focused on themselves and are guided by their inner principles, and appeared to have a high level of psychological readiness for motherhood (correlation coefficient of scale Normal time rxy=0.6189 with scale Support Ratio (rxy=0.5040 at p<0.01). According to the same questionnaire, there was observed a Potential Readiness for Motherhood connection with sensitiveness (rxy=0.4760 at p<0.01) and the ability to come in close contacts (rxy=0.5897 at p<0.01). That is, sensitivity to feelings of other people and ability to form close relationship with other people without anxiety due to expectations and responsibilities, cause a high level of psychological readiness for motherhood.

Thus, the results of our studies showed that a woman with a high level of psychological readiness for motherhood should be a mature person, responsible, empathic and have an average level of anxiety.

The study of pregnant women with psychosomatic component indicates a fairly high level of personal and reactive anxiety. These features of emotional state may be a prerequisite for complications during the term of pregnancy and childbirth, primarily at the expense of adaptation to pregnancy that requires psychological adjustment.

The results we obtained became the basis for the application of the original set of measures for psychological and psychological adjustment in pregnancy based on spa therapy. A particularity of this complex is not only in applying traditional means of auto training, relaxation and mobilizing psychotherapy, music therapy that psychologically potentiate balneological medical factors, but also special psychological support. Particular attention was paid to individual counseling that was aimed to stabilize the mental state of pregnant, removal of anxiety and unwanted plans, psychological preparation for childbirth, correction of self personal or family conflicts related to the expectations of a childbirth.

As a result, a comprehensive spa therapy including psychological and psychotherapeutic procedures influenced the attitude of pregnant women to their condition, making it much more positive. Improvement was in the downward trend of moderate anxiety and attitudes to health and prospects for future delivery – alarm reaction rate decreased (2.8±0.36 at baseline and 0.9±0.30 after rehabilitation; significantly decreased the rate of sensitive reactions (respectively 2.51±0.43 and 1.6±0.25 p<0.01). Improvements in spectrum of attitude to health is clearly confirmed by the majority of indices of Bekhterev Institute questionnaire (Table 1).

Before treatment the patients were recorded in the index of anxiety of 18.4±0.12, and after a full course of spa therapy with complex psychotherapeutic interventions, they were recorded with 13.1±0.2 (p<0.05) (Fig. 1)

A survey of pregnant women according to Minnesota questionnaire before and after the course of spa therapy involving psychological and psychotherapeutic interventions also showed positive dynamics of the psychological state of pregnant women (Table 2).

As it is seen from the data in the table, the rate of hypochondria and depression significantly decreased. Along with the increase of correction index (K) it indicates the improvement of health, mood, mitigation of negative experiences due to

Table 1.

Indices of the types of attitude to the illness in the pregnant women under study

Types of attitude to the disease	Pregnant women		
	Before treatment	After treatment	p (before/after treatment)
harmonic	2.4±0.18	3.2±0.21	<0.05
anxious	2.8±0.36	0.9±0.30	<0.05
hypochondriac	1.7±0.17	0.5±0.04	>0.05
apathetic	0.8±0.03	0.2±0.06	<0.05
neurasthenic	2.4±0.15	1.2±0.63	>0.05
phobic	1.9±0.16	1.2±0.15	<0.05
sensitive	2.51±0.43	1.6±0.25	<0.01
egocentric	0.6±0.08	0.4±0.07	>0.05
euphoric	2.2±0.14	2.28±0.60	<0.05
anosognosic	0.3±0.06	1.7±0.42	>0.05
ergopathic	2.1±0.45	2.8±0.07	>0.05
paranoid	0.4±0.09	0.9±0.04	<0.05

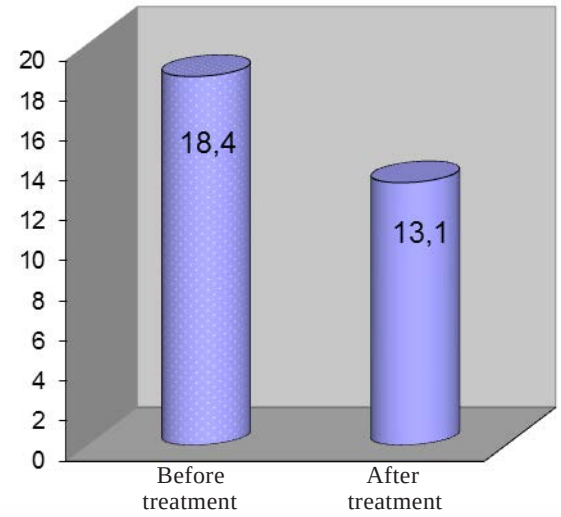

***Figure 1**. Indices of anxiety for pregnant women before and after treatment according to D. Taylor scale.*

health, strengthening of optimistic expectations, reduce of potential anxiety.

The course of spa therapy positively affects the quality of life of pregnant women (Table 3).

In terms of quality of life the positive trend was due to the following:

Physical Functioning – the tendency is noted to increase this index after the course of spa therapy.

Role-Physical – the positive dynamics of this index is due to the normalization of physical condition.

Body Pain – significant difference not observed

General Health – self evaluation of one's own health. It influenced positively on the emotional state and self-perception of pregnancy.

Vitality – normalization of these parameters is due to the improvement in physical and emotional state of pregnant women.

Social Functioning – normalization of pregnant women is due to the return of full physical and intellectual ability. Rehabilitation had a positive influence on emotional sphere, and reflected in the following index.

Role-Emotional – normalization is due to the return of a pregnant woman's emotional state, pre-existing prior to pregnancy.

Mental Health – normalization of mental health due to decreased levels of depression and anxiety which were caused by the disease.

The results presented in the table 3 demonstrate that 98% of the pregnant women showed improved indicators of the quality of life.

TABLE 2.

Performance scales of Minnesota Multiphasic Personality Inventory questionnaire (MMPI) of pregnant women before and after treatment

Scales	Correction index		Reliability of the difference
	Before Treatment	After treatment	p
Openness	43.2±2.7	38.9±1.7	>0.05
Reliability	61.4±1.6	57.3±1.3	>0.05
Correction	46.7±1.7	50.1±1.6	<0.01
Hypochondria	58.3±1.5	49.7±1.2	>0.01
Depression	57.2±2.3	49.4±2.5	>0.01
Hysteria	53.4±4.2	47.3±4.1	>0.05
Psychopathy	60.5±5.7	44.8±1.9	>0.05
Masculinity, femininity	72.9±3.6	76.5±3.2	>0.05
Rigidity of behavior	67.8±4.3	48.7±2.8	>0.05
Psychasthenia	57.6±2.2	53.6±2.5	>0.05
Schizoid behavior	58.5±3.3	55.1±1.6	>0.05
Maniac state	61.7±3.1	56.7±3.2	>0.05
Social introversion	54.3±1.9	50.3±0.8	>0.05

TABLE 3.

The evolution of the quality of life of pregnant

Pregnant Groups	Treatment		
	Before	After	p
Physical functioning	2.34±4.25	74.20±3.1	>0.05
Role-Physical	8.38±2.3	71.30±2.11	<0.001
Body Pain	8.32±5.0	87.90±2.9	>0.05
General Health	43.46±5.32	65.56±2.54	<0.001
Vitality	43.24±5.5	73.40±2.92	<0.001
Social Functioning	45.24±5.32	67.91±3.34	<0.001
Role-Emotional	55.36±4.32	69.90±3.21	<0.001
Mental Health	52.56±6.23	67.42±4.2	<0.01

CONCLUSIONS

Psychological readiness for motherhood has an influence on the course of pregnancy. Women with low levels of psychological readiness for motherhood have more prerequisites for pathological pregnancy. A woman with high levels of psychological readiness for motherhood should be a mature person, responsible, empathetic and have an average level of anxiety.

A significant percentage of pregnant women with medium-high level of reactive anxiety indicates the effect of a stressful situation, such as the flow of negative information that is often discrep-

ant (internet, television, pieces of advice of non-specialists, etc.), which ultimately leads to the stimulation and the formation of a rival (stressful) dominant, capable of significant disruption of the course of the main (gestational) one.

Comprehensive spa therapy including psychological and psychotherapeutic correction significantly improved psycho-emotional state of pregnant women, as it is evidenced by the data obtained through University of Minnesota questionnaire: hypochondria index decreased (from 58.3±1.5 to 29.7±1.2), depression (respectively 57.2±2.3 and 39.4 ± 2.4), and along with the increase of the index correction (from 46.7±1.7 to 51.1±1.6) indicates the improvement of health, mood, mitigation of negative experiences of health, reduction of potential anxiety.

Spa therapy helped to improve the quality of life of pregnant women, as it can be seen by a higher amount of points obtained in the analysis of the SF 36 University of Minnesota: general health, vitality, social functioning, emotional and mental health. As a result, poor quality of life was observed in 87.34±3.56% of pregnant women before treatment, and it significantly decreased to 30.0±1.24% of pregnant women ($p<0.05$) after the treatment.

Thus, to improve the health of pregnant women, prevention of complications of pregnancy, labor and perinatal pathology, it is advisable to pursue a course of rehabilitation at a health resort that includes comprehensive original psychological and psychotherapeutic correction of emotional state of pregnant women, regardless of comorbidity.

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