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The connection of family adaptation and cohesion with anxiety at different trimesters of pregnancy

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Abstract

One of the most important factors influencing the development of each person is the period of prenatal development. According to the results of numerous studies, it has been established that the psycho-emotional state of the future mother during pregnancy has an influence on the course of pregnancy and the process of childbirth, on the peculiarities of the prenatal development of the child and, as a result, on his/her personality in adulthood. During the research, Taylor's Manifest Anxiety Scale was used in order to assess the anxiety levels for pregnant women. Moreover, the Family Adaptation and Cohesion Scale was applied to estimate the level of family cohesion and the level of family adaptation. The study of the psychological state of women during pregnancy suggests that the pregnancy has its own dynamics of aggravation and weakening of a woman's existing problems and various psycho-emotional aspects of perception of the pregnancy and corresponding behavior. A particularly characteristic aspect is the aggravation of the existing personal, psycho-emotional and social problems in families, which are characterized by a disharmonious relationship with friends and ambiguous attitude to pregnancy and the future child. Modern researchers in the field of psychology of pregnancy set the task of studying factors influencing the development of the child and the welfare of the mother-child dyad, the emotional state of pregnant women, changes in their perception of the surrounding world, their attitude to the future child, and the influence of relationships with close people during pregnancy.

Key words: pregnancy, anxiety, prenatal period, family system, family adaptation, marriage, paternity, postnatal period.

Introduction

Disharmonious marital relations in the family of pregnant women are often considered by researchers a significant etiological factor in the development of anxiety or depressive disorders (Kitamura *et al*. 1996; Kumar and Robson 1984). Even having a fairly harmonious relationship in the couple, the family waiting for the birth of the child stands at the threshold of serious changes, and its functioning becomes unstable (Eidemiller *et al*. 2003). When moving to a new stage of the life cycle of the family, its structure changes, new functions appear, and this affects the mental state of pregnant women. In turn, the changes taking place in her body and psyche in many respects determine the psychological situation in the family and the character of relationships of its members.

Satisfaction with marital relations is one of the main components of life satisfaction and the factor of mental health and welfare of the person. In spite of the large amount of material on various factors that affect the satisfaction with marriage, there are no works which consider the peculiarities of parental settings of spouses and birth of the first child in the family (Andersson *et al*. 2003).

The analysis of internal family processes and the influence they have on the emergence of neuropsychiatric disorders of the patient received the name "family diagnosis" (Eidemiller *et al*. 2003). The correct diagnosis of internal family relations allows one to choose the appropriate method of therapy and determines its success. In turn, anxiety or depression symptoms of pregnant women increase violations of interpersonal communications in marital relations.

There is a closed circle: the "communication problem" further worsens the mental condition of the pregnant woman (Christian *et al*. 2010).

Modern researchers in the field of pregnancy psychology set the task of studying factors influencing the development of the child and the welfare of the mother-child dyad, the emotional state of pregnant women, changes in their perception of the surrounding world, their attitude to the future child, and the influence of relationships with close people during pregnancy (Matthey and Ross-Hamid 2011).

The pregnancy and birth of the child is one of the most important periods in the life of each family when new object relations emerge. The pregnancy involves the end of the existence of a woman as an independent individual being and the beginning of an indispensable and irrevocable relationship of a mother and child. New roles are also received by other family members: the father, the grandmother, and the grandfather (Rubertsson *et al*. 2014).

The issue of the formation of a maternal instinct in pregnant women is quite fully reflected in scientific literature. In addition, the description of the satisfaction with marriage is well presented in academic works, which is closely correlated with such indicators as similarity of husband and wife's role expectations, husband and wife's role correspondence, and the level of understanding of the role expectations of each other (Kagami *et al*. 2012).

The concept of "family adaptation" reflects the ability of the family to adapt to changing living conditions. It involves the characteristics of how flexible or, conversely, stable relationships are in it. The concept of "family cohesion" defines the type of emotional closeness of family members. Family adaptation and cohesion can be organized on extreme (disconnected, coupled, rigid, and chaotic) and balanced levels (structured and flexible, divided, and bound). Extreme levels are usually considered problematic, leading to violations of the family system, while balanced ones determine its success (Stanton *et al*. 2002).

At the same time, it is an indisputable fact that optimal conditions for pregnancy are harmonious relations in a couple, when the spouses love each other, the family life has a stable character, there is time for joint leisure, and they both desire to have a child. Thus, the indicators of well-being of marriage are important for the formation of the optimal attitude of women to their pregnancy (Kotabagi *et al*. 2020).

There is also a problem of research into the motives of conception and preservation of pregnancy. In particular, there is no single classification of conception motives. Traditionally, they are divided into constructive and destructive (Molotokas 2021). The question of how the family situation affects the appearance of a woman's constructive motive requires a separate consideration.

Mental disorders are among the most common pathologies of pregnant women. A multicenter prospective study in Japan showed that during gestation and the post-natal period, approximately 12% of women had at least one of the following mental disorders: depression, manic episode, generalized anxiety disorder, social phobia, specific phobia, and obsessive-compulsive disorder (Melender and Lauri 1999). The most common mental disorders during gestation were found to be depression and anxiety disorders, often combined (Melender and Lauri 1999).

With the onset of pregnancy, many women note changes in their state of health, which is manifested in irritability, tearfulness, increased fatigue, change of appetite, nausea, and sleepiness during the day. Moreover, pregnant women often have anxiety disorders. Anxiety is a fundamental emotional state, inherent to a person in a situation of uncertainty and expectation, with an unpredictable result. Anxiety is subjectively characterized by a feeling of internal tension with activation of reactions of the vegetative nervous system (Brutman *et al*. 2000).

The highest level of anxiety is noted in the first and third trimester of pregnancy and in the postnatal period (Glazier *et al*. 2004). The increase of anxiety in the first trimester is connected with changes in health within the framework of the asthenic syndrome at the beginning of pregnancy (nausea, vomiting, sleep disorders and appetite changes). The factors influencing the increase of anxiety level in the third trimester include emotional negative experience of future mothers due to subjective feeling of appeal, changes of body shape, fear of childbirth, and fear about pregnancy results. It was found that, regardless of the term of pregnancy, concern about the child's health, the result of pregnancy in connection with obstetric complications, family conflicts and material and household problems are the issues that have the most intense stressful effect (Cooklin *et al*. 2007).

The data from previous scientific studies show that stress during pregnancy, together with anxiety and/or depression, can increase the vulnerability to infectious diseases, cause pregnancy complications (Chang and Renshaw

1986), and increase the risk of premature birth. Prenatal stress can adversely affect the quality of interaction between the mother and child, contributing to the violation of the mental health of the child both after birth and later, in preschool and school years. Due to all of the above-mentioned considerations, it is important to study the emotional state of pregnant women and mothers during the pandemic and the war, which would allow us to develop more widely programs of prevention of mental health disorders and minimize the negative influence of family and marital life factors (Glover 2014).

Material and methods

One hundred pregnant women aged 18 to 42 participated in the study of family adaptation and cohesion (25 women aged under 20 years, 35 women aged 20-29 years, 35 women aged 30-39 years, 5 women aged over 40 years). Among them we distinguished positive (50 women), neutral (38 women) and negative (12 women) attitudes to pregnancy of women themselves (Fig. 1).

The attitude of the inner circle to women's pregnancy is distinguished as follows: a positive supportive attitude (28 women), a calm favorable attitude (38 women), a neutral indifferent attitude (22 women) and a negative attitude, threatening normal childbirth (12 women) (Fig. 2).

In order to find the most accurate solution of the research objectives and obtain comprehensive information about the presence and manifestations of anxiety of women and peculiarities of their family systems, the following methods were chosen: Taylor's Manifest Anxiety Scale and The Family Adaptation and Cohesion Scale.

Taylor's Manifest Anxiety Scale is a scale of a personality's anxiety manifestation, which is intended to investigate the manifestations of anxiety. Published by J. Taylor in 1953, the scale consists of 50 statements to which the participants must answer "yes" or "no". The statements were selected from the MMPI list of statements. The selection of items for the test was carried out on the basis of analysis of their capability to distinguish people with "chronic anxiety reactions". The test lasted 15-30 minutes. For ease of use, each statement was offered to the participants on a separate card.

The Family Adaptation and Cohesion Scale (FACES-3/Olson's test) is a scale that assesses the level of family cohesion and the level of family adaptation. The Family Adaptation and Cohesion Scale is designed to analyze how family members perceive their family and how they would like to see it. The difference between perception and the ideal determines the degree of satisfaction and the psychological climate of the existing family system.

Results

Based on the method of determination of the degree of anxiety by J. Taylor (adapted by T. A. Nemchynov), the survey of pregnant women demonstrated high and medium-high anxiety for almost half of the participants. The general indicators of anxiety of the participants are shown in Figure 3.

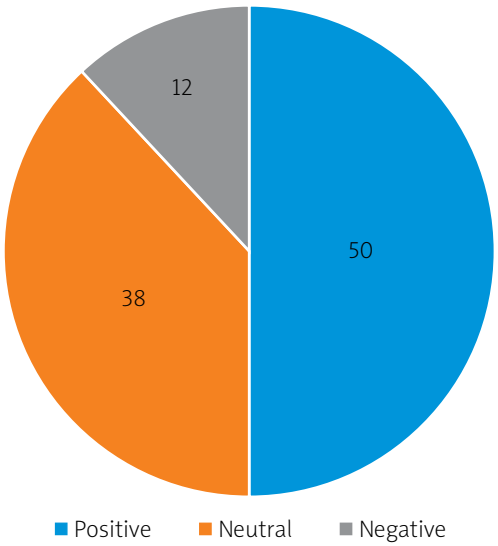

Fig. 1. Women's attitude to pregnancy

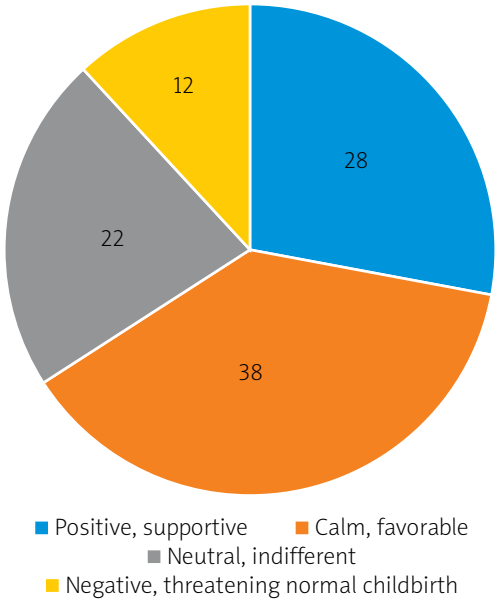

Fig. 2. The attitude of the inner circle to women's pregnancy

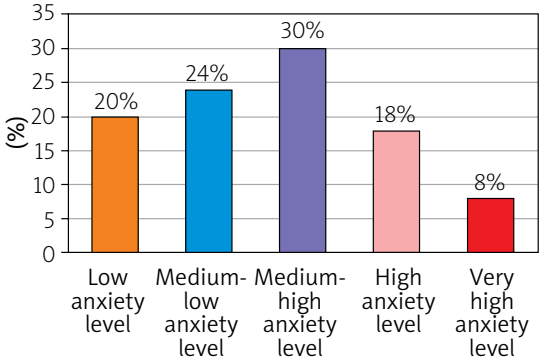

Fig. 3. Levels of anxiety of pregnant women

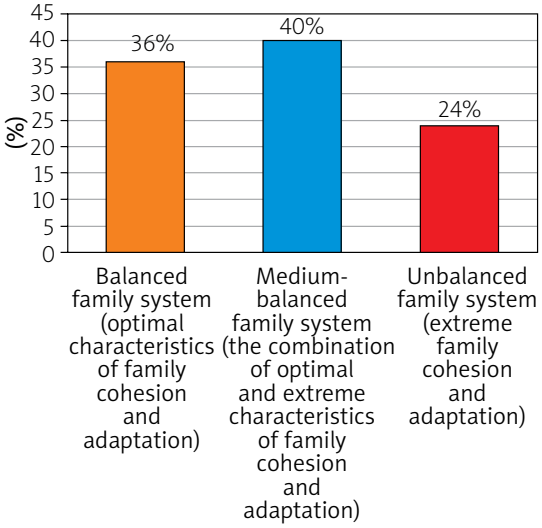

Fig. 4. Levels of balance of pregnant women's family systems

Thirty percent of pregnant women have a medium-high anxiety level, which is connected with both health and other material and household problems. One quarter (24%) of respondents have a medium-low anxiety level, while another 20% have a low anxiety level. However, a high anxiety level is characteristic for 18% of pregnant women, while a very high anxiety level is observed for 8% of the participants. They have not only psychological features, but also somatic symptoms of anxiety, frequent changes of mood, sweating, trembling, etc. Anxiety is manifested in different ways at different trimesters of pregnancy (Table 1).

Using the Family Adaptation and Cohesion Scale by D. X. Olson, we analyzed the impact of family cohesion and adaptation on the emotional health of pregnant women. To this end, according to the methodology, the existence of balanced, medium-balanced, and unbalanced characteristics of family systems was determined (Fig. 4). The authors of this questionnaire distinguish between moderate (balanced) and extreme levels of family cohesion and adaptation, and believe that the most balanced levels are the indicator of the system's success. Such levels are divided and bound for family cohesion, while for family adaptation they are structured and flexible. Extreme levels, which lead to violations of the family system, are usually considered problematic (Spinelli *et al*. 2013).

Among pregnant women, only 36% of the respondents demonstrate the optimal balance of family characteristics of cohesion and adaptation, which create a favorable psycho-emotional climate in the family, providing an atmosphere of support and mutual understanding between pregnant women and members of their family. Almost half (40%) of pregnant women have medium-balanced family systems, in which part of the optimal and part of the extreme characteristics of the family atmosphere are shown. The remaining 24% of pregnant women live in unbalanced families, where they do receive support but feel hostility to themselves on the part of family members, and often quarrel with them for various reasons.

Determining the types of family systems of women who are at different trimesters of pregnancy, we see that the most favorable atmosphere is found for women at the second and third trimesters of pregnancy (Table 2).

These respondents live in balanced family systems (40% each). In general, 40% of all

Table 1. Anxiety levels of pregnant women at different trimesters of pregnancy

Anxiety level	Trimesters of pregnancy					
	First trimester of pregnancy (35 women)		Second trimester of pregnancy (40 women)		Third trimester of pregnancy (25 women)	
	n	%	*n*	%	*n*	%
Low anxiety level	6	17.1	10	25	4	16
Medium-low anxiety level	8	22.9	10	25	6	24
Medium-high anxiety level	13	37.1	12	30	5	20
High anxiety level	7	20.0	4	10	7	28
Very high anxiety level	1	2.9	4	10	3	12

Table 2. Manifestations of adaptation and cohesion in families of pregnant women at different trimesters of pregnancy

Characteristics of adaptation and cohesion in families of pregnant women	Total (100 women)		First trimester of pregnancy (35 women)		Second trimester of pregnancy (40 women)		Third trimester of pregnancy (25 women)	
	n	%	*n*	%	*n*	%	*n*	%
Balanced family system (divided and bound family cohesion; structured and flexible family adaptation)	36	36	10	28.6	16	40	10	40
Medium-balanced family system (the combination of optimal and extreme characteristics)	40	40	14	40	16	40	10	40
Unbalanced family system (extreme characteristics: disconnected or coupled family cohesion, rigid or chaotic family adaptation)	24	24	11	31.4	8	20	5	20

respondents live in medium-balanced family systems, where both optimal and extreme characteristics of the family system are shown, namely: the division of family cohesion, rigidity of family adaptation, etc. The most suboptimal manifestations of family systems are observed in the families of pregnant women at the first trimester of pregnancy (31.4%), although 20% of women at the second and third trimesters also live in such unbalanced families. It is in these conditions that pregnant women lack the support, understanding and assistance of other family members. Such families often have quarrels, problems are not solved, and these families have low material and social status. Table 3 presents data on the effect of the balance of family system characteristics on the manifestations of anxiety of pregnant women.

All women with a low anxiety level live in families with balanced characteristics of cohesion and adaptation. They receive the necessary support and assistance from their family members and know that they can count on them in different situations of life, feel warmth and love in their attitude to themselves and the child.

Pregnant women with a medium-low level of anxiety live in both balanced and medium-balanced family systems (50% each). The majority of pregnant women with a medium-high anxiety level (73.3%) live in medium-balanced family systems. Women with a high anxiety level live in families where there is no balance of family adaptation and cohesion (66.7%). All pregnant women who have a very high level of anxiety live in unbalanced family systems (100%).

Thus, there is a connection between family support and the attitude of family members and the anxiety of pregnant women. In families where cohesion and adaptation prevail, and balanced family characteristics create a climate of warmth and support, pregnant women mainly have low or medium-high levels of anxiety. They know that they can always rely on family members who support and help in solving different situations of life, in caring for a child, and so on.

In the medium-balanced family systems, pregnant women predominantly have medium-high, medium-low and partially high levels of anxiety. Such women are not sure of the support of family members, do not feel united, doubt the successful adaptation of the family to the birth of a child, changes of life circumstances, etc. They also do not receive proper assistance and support during pregnancy, and do not receive

Table 3. Manifestations of family adaptation and cohesion in families of pregnant women with different levels of anxiety

Anxiety level	Balance of family system					
	Balanced family system (36 women)		Medium-balanced family system (40 women)		Unbalanced family system (24 women)	
	n	%	*n*	%	*n*	%
Low anxiety level (20 women)	20	100				
Medium-low anxiety level (24 women)	12	50	12	50		
Medium-high anxiety level (30 women)	4	13.3	22	73.3	4	13.3
wHigh anxiety level (18 women)			6	33.3	12	66.7
wVery high anxiety level (8 women)					8	100

understanding and respect for their condition, anxiety and experiences.

In the unbalanced family systems, high and very high levels of anxiety prevail among pregnant women, which is connected not only with health, but also with material difficulties, family circumstances, social status, etc. In the unbalanced families, a pregnant woman very often faces a hostile attitude toward her from family members, and conflicts with other people, which does not contribute to the quiet bearing of the child and the harmonious flow of pregnancy, but creates a negative emotional background for a pregnant women and the future child.

Thus, the mental and emotional state of pregnant women is greatly influenced by the support of family members, the creation of an atmosphere of support and love or hostility and conflict. The state of health of the pregnant woman and her future child, her psycho-emotional condition, the expectations of the future with hope or pessimism and depression will depend on how she feels in the family system while pregnant. Anxiety and depression of pregnant women are closely related to the presence or absence of support and assistance from family members, the general atmosphere of the family, its cohesion and family adaptation to different situations of life and changing circumstances (Table 4).

A higher level of anxiety is typical for women:
- who have an unexpected pregnancy (Pearson correlation coefficient –0.519),
- who experience a calm ambivalent attitude to pregnancy (Pearson correlation coefficient 0.197),
- who have a negative attitude to pregnancy (Pearson correlation coefficient 0.366),
- whose family have a negative attitude to pregnancy that threatens normal childbirth (Pearson correlation coefficient 0.250).

A low level of anxiety is typical for women:
- who have a positive attitude to pregnancy (Pearson correlation coefficient –0.426),
- whose family is supportive and positive about pregnancy (Pearson correlation coefficient –0.359).

Discussion

According to the results of the comparative analysis of attitudes to pregnancy and the characteristics of family adaptation and cohesion, it is possible to conclude that women who planned pregnancy are more positive about it, they demonstrate readiness for motherhood and have high expectations in the sphere of social activity and high degree of concordance of family values with the partner and, accordingly, a low level of anxiety.

The data indicate that in the families of women with medium-high anxiety both in the prenatal and postnatal periods, there is a violation of family relationships. The parameter of "family unity" indicates the dynamics of deterioration of relations. This reflects the fact that the family system is not capable of converting to a new level of functioning (of accepting the new role of "mother" and "father" for family members) along with maintaining harmonious marital relations.

The analysis of the relationship between a man's attitude to his wife's pregnancy, the future fatherhood, and marital relations showed that his relationship with his wife is important for the positive attitude of the future father to the child. For most couples, in the case of a positive attitude of a man to pregnancy and marriage, as well as well-being in the sphere of sexual relations, a woman has a constructive motive of conception and, consequently, a lower level of anxiety during pregnancy.

Doctors often explain the presence of anxiety and depression symptoms of women in prenatal and postnatal periods by "hormonal" changes (Stepowicz *et al*. 2020). However, not all pregnant women with hormonal dysfunction develop disorders of the emotional sphere although changes in the level of hormones create a favorable background for development of anxiety and depressive disorders by increasing emotional reactivity, reducing the stability of the emotional background, mental and physical asthenia. Our observations show that biological factors are mainly involved in pathogenesis, while psychological ones are involved in the etiology of depressive disorders.

Table 4. Assessment of the link between the family's attitude to pregnancy and the anxiety level of pregnant women

Attitude to pregnancy	Pearson correlation coefficient (for anxiety level)
Expected/unexpected	–0.519**
Positive	–0.426**
Calm, ambivalent	0.197*
Negative	0.366**
Positive, supportive	–0.359**
Calm, favorable	0.040
Neutral, indifferent	0.146
Negative, threatening normal childbirth	0.250*

The variance analysis revealed that women who emotionally support a man had lower anxiety about the state and character. Married women, women with fewer stress factors, and women who wanted to be pregnant had lower anxiety about their condition and character. Anxiety about the state and character was also related to lower incomes.

The work of I. Kolesnikov (2010) made a significant contribution to the study of anxiety and depression disorders of pregnant women and their relationship with family functioning. Analyzing the anamnestic data of pregnant women, he was able to identify the main psychotraumatic events that could lead to anxiety and depressive disorders. They are as follows:
– conflicts with a husband – 60%,
– social and financial problems – 37%,
– conflicts at work – 26%,
– conflicts with parents – 23%,
– a relative's death – 6%,
– other – 24%.

Preliminary studies on the relationship between stress and health of the future mother (Brown *et al*. 1986; Podkorytov and Chaika 2003; Pushkaryova and Ckrypchenko 2017) and her child showed that social support can alleviate stress and complications of childbirth. Moreover, complications during pregnancy were three times higher among women with severe stress and low social support than among women with the same severe stress, but with high social support at early terms of pregnancy. It is important that the satisfaction with a husband's support is largely correlated with lower levels of stress and anxiety and better adaptation to marriage (Tietjen and Bradley 1985).

Conclusions

The results suggest that a disharmony of marital relations, a violation of the family structure, an ambiguous attitude to pregnancy shown by a pregnant woman and other members of the family are observed in families of women with a medium-high level of anxiety. This allows such families to be considered dysfunctional, which is the cause and consequences of the development of anxiety and depressive disorders in women in these families.

Attention should be paid to the extremely high significance of the mental state of the mother in the prenatal period of child's development. In the case of anxiety and depressive disorders, the mother cannot establish a full and adequate interaction with a baby. During the prenatal period, a pregnant woman can ignore the fact of pregnancy and continue to lead the former lifestyle, using psychoactive substances (alcohol, drugs, cigarettes), not following doctors' recommendations or, conversely, against the background of the somatization of anxiety she often visits specialists, exaggerates the body sensations, etc.

In such cases the pregnant woman often does not have a sufficient formed psychological "image of the child" and an image of "herself as a mother", which violates the formation of the mother-child dyad in the prenatal period. Children whose mothers have experienced anxiety or depressive disorders during pregnancy or after childbirth may differ from other children by the fact that they cry more often, wake up at night, are worried during the day, and may show different psychosomatic reactions. In childhood, they differ by a higher level of cortisol, which even continues to be produced excessively in older age. Thus, their body is in a state of chronic stress.

The main methods of treatment of anxiety and depressive disorders include psychotherapy and pharmacotherapy. The general rule is the use of drugs only when the risk of complications for pregnancy (childbirth) or a fetus (a child) in the cases of refusal to use the medicines exceeds the risk of their side effects.

In this regard, psychotherapeutic methods of treatment of depressive disorders of women in the perinatal period should be methods of the first choice. A separate chain of preventive work with pregnant women from the medical staff of the maternity hospital and psychological service should be psychological work with spouses. This will make it possible to identify pathological trends in family functioning, problems in relations between spouses and attitudes of future parents to pregnancy and the future child at the early terms of pregnancy. It is a family approach in psychotherapy that presents the optimal treatment option because it is pathogenetic and allows a stable therapeutic effect to be achieved.

Disclosure

The authors declare no conflict of interest.

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