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The psychological portrait of pregnant women with several complications of multiple pregnancy

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BACKGROUND: Multiple pregnancies are high-risk pregnancies from both an obstetric and a psychological point of view.

AIM: The aim of this study was to identify the features of prenatal experiences of women carrying multiple pregnancies and to determine the influence of several complications of multiple pregnancy on prenatal experience.

MATERIALS AND METHODS: The study involved 80 individuals aged 19 to 43 years, at a gestational age of 21 to 39 weeks, carrying twins. The patients were divided into five groups by clinical diagnosis and were asked to complete psychodiagnostic questionnaire. The answers to the questions suggested both a quantitative assessment and a qualitative description of their experiences.

RESULTS: We revealed some differences between the study groups in the frequency of manifestations of different psychological elements of the mother's gestational dominant. Some trends were also found for differences between the groups in terms of prenatal attachment rates. An analysis of pregnant women's descriptions of their ideas about the unborn children and communication with them showed that there were qualitative differences between the groups in the following: ideas about the characters of the unborn children, actual thoughts about them and thoughts about them after delivery, and features of the mother's communication with them in several emotional conditions. The data obtained allowed for describing the psychological portrait of pregnant women with several complications of multiple pregnancy.

CONCLUSIONS: Depending on the type of multiple pregnancy complications, there are specific psychological experiences associated with pregnancy, future maternity and an emotional bond with the unborn children. Moreover, these experiences influence the behavior of pregnant women and their communication with other people and medical staff.

Keywords: multiple pregnancy; pregnancy complications; prenatal attachment; attitude toward pregnancy; attitude toward the unborn child; medical staff communication.

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Психологический портрет беременных при различных осложнениях многоплодной беременности

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Обоснование. Многоплодная беременность связана с повышенным риском как с акушерской, так и с психологической точки зрения.

Цель — выявить особенности пренатальных переживаний женщин с многоплодной беременностью и определить влияние разных типов осложнений многоплодной беременности на характер переживаний.

Материалы и методы. В исследовании участвовали 80 пациенток в возрасте от 19 до 43 лет на сроке беременности от 21 до 39 нед., вынашивавших двойню. Пациентки были распределены на пять групп на основании особенностей клинического диагноза. Женщинам предлагали заполнить бланки опросных психодиагностических методик. Ответы на вопросы предполагали как количественную оценку, так и развернутое описание переживаний.

Результаты. Выявлены различия между группами по частоте проявления разных типов психологического компонента гестационной доминанты. Обнаружены тенденции к различиям между группами в показателях пренатальной привязанности. Анализ развернутых описаний беременных — представлений о детях и особенностей общения с ними — показал, что между группами существуют содержательные, качественные различия по следующим показателям: представлениям о характере детей, актуальным представлениям о них и представлениям о них после родов, особенностях взаимодействия беременных с будущими детьми в разных эмоциональных состояниях. На основании анализа полученных данных составлен психологический портрет беременной при различных осложнениях многоплодной беременности.

Заключение. Результаты исследования позволяют утверждать, что в зависимости от вида осложнений многоплодия специфические психологические переживания, связанные с беременностью, материнством и эмоциональным контактом с будущими детьми, накладывают свой отпечаток на поведенческие особенности взаимоотношений пациентки с окружающими людьми в целом и с медицинским персоналом в частности.

Ключевые слова: многоплодная беременность; осложнения в беременности; пренатальная привязанность; отношение к беременности; отношение к будущему ребенку; взаимодействие с медицинским персоналом.

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ЭКО•ВЕКТОР

BACKGROUND

Multiple pregnancies are associated with an increased obstetric and psychological risk. Any complications during pregnancy can cause severe experiences. Thus, this psychological study aimed to identify the specific psychological characteristics of women who experienced various complications in multiple pregnancies, knowledge of which can be useful to the attending physician in ensuring an effective interaction with patients and to the psychologist in building an appropriate strategy for providing these patients with psychological assistance.

Studies of psychological characteristics in multiple pregnancies are limited. Thus, this research focused on the features of the formation of prenatal maternal attachment to future children, various factors that determine the experiences of women with multiple pregnancies [1–4], and the experience of losses in multiple pregnancies [5–8].

This study aimed to identify the features of prenatal experiences of women with multiple pregnancies and determine the impact of different types of complications of multiple pregnancies on the nature of woman's experiences.

METHODS

Study design

The study included patients from the Department of Pathology of Pregnancy, who matched the characteristics of the sample and agreed to participate in the study. The patients filled out questionnaires in accordance with four psychodiagnostic methods.

The inclusion criteria for the study were as follows: uncomplicated multiple pregnancies, multiple pregnancies complicated by feto-fetal transfusion syndrome with laser coagulation of blood vessels, multiple pregnancies complicated by impaired fetal-placental hemodynamics, and pregnancy complicated by single fetal death syndrome (SFDS).

Patients who underwent laser coagulation of anastomoses in feto-fetal transfusion syndrome filled out questionnaires no earlier than 3 days after intrauterine surgery. Patients with pregnancy complicated by SFDS were provided options for texts of methods. By contrast, patients with singleton pregnancy filled out questionnaires as part of the provision of psychological assistance.

The results of the study were entered into a computer and statistically processed, and the detailed responses of the patients were subjected to qualitative processing using content analysis.

Inclusion criteria

The study was conducted on the basis of St. Petersburg State Budgetary Healthcare Institution Maternity Hospital No. 17. The duration of the study was 2 years. In addition, the study was conducted by face-to-face interviews. Patients filled out questionnaires for psychodiagnostic methods. The answers to the questions assumed a quantitative scoring and a detailed explanation set out of the form of methodology.

Main outcome of the study

The main outcome of the study is the experiences of pregnant women with uncomplicated and complicated multiple pregnancies, which includes the pregnancy and the attitude toward future children.

Additional study outcomes

Subgroup analysis

The patients were divided into five groups based on the characteristics of their clinical diagnosis. The Norm group included 11 patients with uncomplicated multiple pregnancies; in the group with pregnancy complications, 20 patients had isthmic-cervical insufficiency, premature rupture of amniotic fluid, and placenta previa; in the group with a disorder in fetus state, 25 patients who were diagnosed with selective fetal growth retardation, impaired fetal-placental blood supply, and feto-fetal transfusion syndrome were included; the Laser group consisted of 13 patients with monochorionic pregnancy, who underwent laser coagulation of vascular anastomoses in feto-fetal transfusion syndrome; the SFDS group consisted of 11 patients whose pregnancy was complicated by SFDS.

Methods of outcome registration

Methodology test of pregnant woman's attitude [9]

The psychological component of the gestational dominant (PCGD) is a set of mechanisms of mental self-regulation, which are activated during pregnancy. These mechanisms aimed to maintain gestation and create conditions for the development of the unborn child, forming woman's attitude toward pregnancy and her behavioral stereotypes.

The test consists of a list of statements grouped into three blocks. In each block, three sections are distinguished, in which various concepts are divided into scales. Each section is represented by five statements, reflecting five different types of PCGD. The woman was asked to select one block that is appropriate for her condition.

The attitude of a pregnant woman toward herself (Block A) is presented in the following sections: (I) attitude toward pregnancy, (II) attitude to lifestyle during pregnancy, and (III) attitude toward the upcoming birth.

The relationship of a woman in the mother–child system (Block B) contains the following sections: (I) attitude of a woman toward pregnancy, (II) attitude toward your child, and (III) attitude toward breastfeeding.

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The attitude of a pregnant woman toward other people (Block B) is presented in the following sections: (I) husband's attitude, (II) attitude of relatives and friends, (III) attitude of outsiders.

The optimal type of PCGD was noted in women who treat their pregnancy responsibly without undue anxiety. This type of pregnancy is desired by husbands.

The hypogestognosic type of PCGD is characterized by the displacement of experiences associated with pregnancy. Women with this type do not feel the desire to adjust their lifestyle in connection with pregnancy and avoid talking about pregnancy, and they are skeptical about prenatal training courses. This behavior may be due to the strong fear of losing the pregnancy.

The euphoric type of PCGD is characterized by increased emotionality and exaggerated affect, and women are immersed in the topic of pregnancy and upcoming motherhood. This type of pregnancy often masks a high level of anxiety.

Anxious type of PCGD is characterized by a high level of anxiety, accompanied by hypochondria. Even minor changes in the state of health of a woman or an unborn child can cause anxiety. A woman may also feel insecure about her ability to take care of a child.

The depressive type of PCGD is manifested primarily by a sharply reduced background of mood. A woman may claim that she does not want to have a child and does not believe in her ability to bear and give birth to a healthy child or to cope with the upcoming problems associated with her characteristics.

Prenatal contact by Yu.V. Zamanaeva [10]

Prenatal contact is the cognitive, affective, and behavioral activity of a woman in establishing a connection and interacting with the unborn child. The nature of this contact is subjective: we analyze only woman's interpretations of how and why the child reacts with certain movements.

The methodology consists of two parts. The first part includes nine questions that involve a quantitative assessment of the frequency of the described phenomena and detailed answers to these questions. The frequency of occurrence of one or another form of contact was used as an evaluation scale: "almost never," "sometimes," "often," and "almost always." The second part of the methodology includes eight open-ended questions that require only a detailed answer.

The "Interaction with Children" scale characterizes the general quality and intensity of contact and the emotional involvement of a woman in this contact. Detailed answers can reveal the acceptance of future children by a woman. The "Sensitivity to movements of children" scale includes questions of woman's general attitude toward the movements of children and sensitivity to different types of movements: does she feel the difference in movements; does she track the nature of movements, strength, and duration of cycles; how does she generally perceive movements physically and psychologically. The "Intensity of "emotional messages to children" scale describes the general emotional background of gestation: the feelings that the expectant mother transmits directly to children, the way she builds contact with children in different emotional states, and her emotional involvement.

"Scale of antenatal maternal affection" by J. Condon [11, 12]

This technique aims to diagnose the relationship between a pregnant woman and an unborn child. We have carried out the translation of this technique, which is an adaptation to the Russian sample of options for singleton and multiple pregnancies. The methodology includes 18 questions. On a special scale for each question, the woman selects the appropriate option that describes the nature of her experiences over the past 2 weeks.

The questions are grouped into two scales. The "Quality" scale includes the characteristics of attitude toward the unborn child as closeness/distance in relation to the child, tenderness/irritation, despondency/joy, acceptance/rejection, and ideas about the child as a separate person. The "Intensity" scale includes questions that evaluate the time devoted to the unborn child, such as thoughts about him, talking with him, dreams about him, and tactile contact, which is interpreted as a manifestation of concern for the unborn child.

"Prenatal attachment" by M. Müller [13]

The methodology includes 18 statements distributed over three scales. The frequency of occurrence of one or another form of contact is used as an evaluation scale: "almost never," "sometimes," "often," and "almost always."

The "Sensitivity" scale includes questions characterizing the attitude of a pregnant woman toward the movement of the baby. The "Interaction" scale contains questions that characterize the attitude of a pregnant woman in communicating with her unborn child: calling him by name and stroking through his stomach. The "Anticipation" scale includes questions that characterize ideas about the future: dreams and fantasies about what the child will be like and life with him after birth.

Ethical expert review

The protocol of the clinical psychological study "Psychological aspects of difficult situations in multiple pregnancies" and the text of the informed voluntary consent of patients to conduct this study were approved at a meeting of the local ethical committee of the St. Petersburg State Budgetary Healthcare Institution.

Statistical analysis

Sample size calculation principles: The sample size was not preliminarily calculated.

Methods of statistical data analysis: Statistical processing was conducted using the SPSS package, and the results with significance of $p < 0.05$ were considered. Statistical processing methods such as frequency analysis and one-way analysis of variance were applied to identify significant differences among the groups.

Content analysis of qualitative data involved the selection of semantic units in the texts of responses and the calculation of the frequency of their occurrence in the responses of patients.

RESULTS

Objects (participants) of the study

Informed consent to participate in the study was obtained from 80 patients aged 19 to 43 years, who were carrying twins with a gestational age from 21 to 39 weeks. Forty-one patients had their first pregnancy; 16 patients already had children, 13 patients already experienced prenatal losses; 10 patients had a history of prenatal losses and children.

Main study results

The frequency distribution of selecting different types of PCGD in accordance with clinical diagnosis in the study groups is presented in Table 1. The highest proportion of woman's optimal attitude toward herself during pregnancy was observed in the "Norm" group and the lowest in the "SFDS" and "Pregnancy complications" groups. In the latter group, the highest frequency of such a euphoric attitude was revealed, masking increased anxiety in woman's feelings about her confidence in ensuring the normal course of pregnancy.

In the "Laser" and "SFDS" groups, women's anxious attitude toward themselves during pregnancy was common accounting for 28% and 24%, respectively, compared with the other groups, in which the proportion of women with anxious attitude was no more than 13%.

In the psychological mother–child system, which combines the attitude of a woman to herself as a future mother, to a child, and to the potential of breastfeeding

Table 1. Frequency of selecting different types of psychological component of the gestational dominance based on the clinical diagnosis in the study groups

PCGD type	Answers				
	Norm group	Group with complications of pregnancy	Group with disorder of fetus state	Laser group	SFDS group
Attitude of a woman toward pregnancy					
Optimal	63%	47%	60%	56%	46%
Euphoric	21%	35%	27%	13%	24%
Anxious	12%	13%	13%	28%	24%
Hypogestognosic	3%	5%	0%	2%	3%
Depressive	0%	0%	0%	0%	3%
Attitude of a woman in the mother–child system					
Optimal	60%	50%	49%	54%	42%
Euphoric	21%	32%	28%	18%	33%
Anxious	12%	15%	13%	20%	18%
Hypogestognosic	3%	1,5%	4%	8%	3%
Depressive	0%	1,5%	5%	0%	3%
Attitude of women toward other people					
Optimal	57%	52%	56%	66%	46%
Euphoric	27%	30%	37%	18%	27%
Anxious	3%	10%	2%	8%	9%
Hypogestognosic	12%	8%	4%	8%	18%
Depressive	0%	0%	0%	0%	0%

Note. PCGD, psychological component of gestational dominance; SFDS, single fetal death syndrome.

after childbirth, similar results were obtained. In the "Norm" group, the optimal type of attitude occurred with a frequency of 60%, whereas this type of attitude occurred only in 42% of cases in the "SFDS" group. A third of the answers (33%) were characterized by a euphoric attitude and 18% were characterized by an anxious attitude. In the Laser group, the proportions of patients with an anxious and euphoric attitude were 18% and 20%, respectively, and the highest rate was registered among the groups with a hypogestognosic attitude. In the "Complications in pregnancy," "Impairment of the condition of the fetus," and "Laser" groups, the following trend was observed: in the "Laser" group, a greater proportion of women with an anxious type was found, and the "Complications in pregnancy" and "Disorder of the fetus state" groups showed euphoric and masking anxiety. In the last two groups, women transmitted an exaggerated optimistic attitude to the outside, internally believing that they should "wait and hope for the best," thereby expressing their maternal care to ensure a successful pregnancy outcome. This result differed from that of patients in the "Laser" group, in which women openly expressed anxiety about the upcoming intrauterine intervention, but realized that it was the only way to eliminate the life-threatening complication of pregnancy.

In all groups, except for the "SFDS" group, woman's attitude to the reaction of people around her to the peculiarities of her pregnancy was similar: the optimal and euphoric types were noted in more than half and a third of the responses, respectively. In the "SFDS" group, the largest proportion of women with a hypogestognosic attitude (18%) among all study groups was established, whereas this option characterized the attitude of patients' husbands toward pregnancy. This result indicated the severity of the psychological situation for the whole family, in which the husband of the patient selected the strategy of hushing up the death of one of the fetuses and distancing himself from his wife as a defensive reaction.

Significant differences in the quantitative parameters of tests were insignificant and were detected in four out of 55 questions, and the method of paired comparisons based on the Scheffe criterion indicated the absence of significant differences. Table 2 presents the results of comparing prenatal attachment scores among groups, which tend to differ.

Women from the "Complications of pregnancy" group were the most sensitive to the movements of children, whereas women from the "SFDS" group were the least sensitive to such movements. In addition, the intensity of women's "emotional messages" to future children, conversations with them, and the degree of their experiences were significantly higher in women in the "SFDS" group compared with women in other groups. In the "Norm" group, the minimum values of these parameters were registered. In addition, in the "Laser" group, women rarely talked to their children, and the parameters on this scale were minimal.

Analysis of the detailed answers of pregnant women to questions about ideas about children and the characteristics of communication with them showed substantial and qualitative differences among the groups. Differences in ideas about future children are shown in Table 3.

All patients with multiple pregnancies described the nature of children before delivery by comparing them in accordance with the "activity" criterion: more and less active, active and calm, mobile and quiet, etc. Among objective comparison criteria, gender (boy or girl) and weight (large or small) were used. The women in the "Norm" and "Laser" groups differed from the other groups in simple characteristics using the words "active" and "calm."

Individually colored characteristics in the representations of children before birth were present in the responses of patients in all groups, except for the "Laser" group. Estimated

Table 2. Significant differences in mean test scores among the groups

Norm group	Group with complications of pregnancy	Group with disorder of fetus state	Laser group	SFDS group	Significant difference $p < 0.05$
"I know what caused the movements of my children" (the degree of frequency of such experiences is indicated)					
2.82	3.10	2.40	2.69	2.36	0.030
"When I want to convey to the children what I feel and think, I talk to them" (the degree of frequency of such events is indicated)					
2.27	2.85	3.12	2.75	3.18	0.063
"When I spoke or thought about the children in me, I experienced emotional experiences that were..." (the degree of emotions is indicated from weak to strong)					
3.45	3.60	3.83	4.15	4.27	0.058
"I found that when I am alone, I talk to my children..." (the degree of frequency of such experiences is indicated)					
2.45	2.40	2.96	2.15	3.27	0.041

Note. SFDS, single fetal death syndrome.

Table 3. Results of detailed answers to questions about the nature of children, current ideas about them, and ideas about them after childbirth

Group	Answers			
	Ideas about the characteristics of children before birth	The presence of individually colored characteristics in the representations of children before birth	The presence or absence of ideas about future children after their birth	The presence of individually colored characteristics in ideas about children after childbirth, similarity with family members
"Norm" — 11 patients	The description is limited to single words or simple phrases. Comparison of children by their activity: "active — calm"	Single characteristics that have a negative connotation: "demanding," "assertive," "aggressive"	75% (8) of patients had ideas, 25% (3) had no ideas	All (8) patients who had an idea about children after birth had common characteristics in their description: "beautiful," "obedient," "smart," "affectionate," "calm," "wonderful." Only one patient had any idea about the similarity with family members
"Complications of pregnancy" — 20 patients	The description of the characteristics of future children is verbose, detailed, comparative: "more active — more calm," "combat — capricious," "brisk, fidget — calm," "nimble — calm," "Boisterous — calm," "pliable — with character"	Single characteristics: "affectionate," "pliable," "responsive," "capricious," "obedient"	80% (16) of patients had ides, 20% (4) had no ideas	In 50% (8 out of 16) of patients, the characteristics emphasize the appearance of newborns and babies: "small," "defenseless," "chubby," "red and screaming." In the answers of 37.5% (6 out of 16) of the patients, emotionally colored images of future children were present: "cheerful," "cheerful," "happy," "naughty," "combat," "fighters." 25% (4 out of 16) of patients imagine children similar to themselves and their husband
"Disorder of fetus state" — 25 patients	The description of the characteristics of children is comparative: "active — more modest," "fidget — restrained," "naughty — flexible," "one is a spinning top, the second is a sleepyhead," "energetic — calm"	There were a variety of personality traits: "combatant," "persistent," "harmful," "compliant," "soft," "kind," "naughty," "restrained," "stubborn," "wayward"	76% (19) of patients had ides, 24% (6) had no ideas	In the description of children, 52.6% (10 out of 19) of the patients had individually colored characteristics: "mischievous," "active," "smart," "calm or flashy," "bold," "intelligent," "developing well," "cheerful," "self-sufficient in the future," "with confidence in the world," "curious," "friendly." In the answers of 52.6% (10 out of 19) of the patients, there were references to the similarity of future children with themselves, their husband, their elder child
"Laser" — 13 patients	The description of the characteristics is comparative, according to the criterion of "activity," most patients used dichotomous descriptions of "active — calm"	There are no descriptions using personal characteristics	54% (7) of patients had ides, 46% (6) had no ideas	Descriptions of future children in the answers of patients were divided into two non-overlapping parts: 57% (4) of patients focused on the appearance of babies: "small," "babies," "baby-spiders," and in the answers of 43% of patients (3) there were individually developed colored characteristics: "beautiful and happy, cheerful, kind," "one loves speed, fast driving, the other loves theater and classical literature," "strong, kind, courageous, persistent, brave." There were no indications of the similarity of children with themselves or their husband
"SFDS" — 11 patients	Descriptions of the nature of the unborn child are detailed and detailed in 82% of patients. One patient "does not imagine a child at all," one imagines him "defenseless, small"	In 73% of patients, the child's strength and activity prevailed in the description: "alive," "leader," "fighter," "strong," "energetic," "independent," "patient," "individual," "active," "purposeful," "strong-willed"	63% (7) of patients had ideas, 37% (4) of patients had no ideas with the wording "I'm afraid to imagine"	Descriptions of all patients are detailed, with external characteristics, individual characteristics with an emphasis on strength and activity: "strong," "active," "with character," "strong-willed," "strong," "smiling." In the answers of 28.5% (2) of the patients, the similarity of the unborn child with herself, her spouse, and the eldest child was noted. None of the questionnaires mentioned the loss of one fetus as a difficult situation for the surviving twin

Note. SFDS, single fetal death syndrome.

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Table 4. Features of the interaction between pregnant women and future children in different emotional states

Group	Answers			
	Children's reaction to changes in the emotional state of the expectant mother	Caring for children in a stressful situation	Nature of communication with children in a calm state	"Emotional messages" to children
"Norm" — 11 patients	18% (2) of patients noted that children respond to changes in the emotional state of the expectant mother	36% (4) of the patients tried to calm the children in an exciting situation	In a calm emotional state, 81% (9) patients communicated with children. The main way of communication: "rest," "stroke the stomach," "communicate, read fairy tales"	The description of the messages is concise with an emphasis on the expectation of meeting with children after childbirth: "love," "calming," "waiting for a meeting," "everything will be fine"
"Complications of pregnancy" — 20 patients	35% (7) of the patients noted changes in the activity of their children due to their emotional state	60% (12) of patients in a situation of excitement intentionally corrected their behavior in order to calm down	In a calm state, 55% (11) patients actively communicated with their children: "I talk," "I stroke my stomach and communicate," "I listen to the classical music"	The main emotions transmitted to children: "love," "care," "positive emotions," "admiration," persuading children to "stay still inside," "take your time," "be born on time"
"Disorder of fetus state" — 25 patients	40% (10) of the patients noted changes in the activity of their children because of their emotional state	In exciting situations, 40% (10) of the patients knew how to calm the children — reduce their physical activity, and 40% (10) either stopped communicating with the children or tried to force out negative emotions	In calm situations, there was a clear tendency — 72% (18) of patients — to the positive content of the contact: women sang, read fairy tales, listened to music, called children by name	In the contact of all patients, there were active attempts to convey to the children the wishes of health, strength, patience, "develop well," "be born on time"
"Laser" — 13 patients	31% (4) of patients tracked changes in children's movements in connection with their physical or emotional state	23% (3) of patients "disconnected" from children in a situation of excitement for fear of "transmitting anxiety to them," 54% of patients actively tried to improve their emotional state and "calm down" children	In a calm state, 69% (9) of the patients communicated with children, communication was calm: "I just talk," "walk calmly," "stroke my stomach," "listen to them"	Patients' appeals to future children included the theme of anxiety for them and the desire to protect them, as well as support and active positive attitudes toward further development and birth
"SFDS" — 11 patients	91% (10) of patients noticed that their emotional state affects the nature of the baby's movements	All 11 patients changed the nature of communication with the child depending on their emotional state: in a situation of excitement, they tried to calm the child by talking to him and stroking her stomach	In a calm state, all 11 patients actively communicated with the child: they talked, stroked their stomach, sang songs, talked about what was happening	The nature of "emotional messages": "love," "tenderness," "happiness," "joy," "tenderness"; "I care," "I protect," "I protect," "I warm," "they are waiting and loving." The general tone of verbal messages addressed to the child suggests active support from the family: "the whole family is waiting for the appearance," "father, mother, grandmother, sister, brother love and wait," "all your relatives are good and are waiting for you," "we are waiting and loving endlessly"

Note. SFDS, single fetal death syndrome.

negative characteristics of the unborn child, such as "aggressive," "demanding," and "assertive," were found only in the "Norm" group. In the SFDS group, a specific phenomenon was noted: 73% of patients described the nature of the unborn child through personal characteristics associated with the ability to overcome difficult situations ("fighter," "strong-willed," "leader," and "energetic").

Ideas about children after childbirth were formed in patients of all groups. This parameter was the highest (80%) in the "Complications of pregnancy" group and the lowest in the "Laser" group (54%). Descriptions of children after childbirth were characterized by a certain specificity in the "Norm" group: they were concentrated on general characteristics ("beautiful," "wonderful," and "smart"). Individually colored characteristics and detailed descriptions were common in the "Disturbances in the condition of the fetus" (53%) and "SFDS" (100%) groups. In the "SFDS" group, the semantic emphasis in the ideas about the child was strength and activity ("strong-willed," "with character," "active," and "strong").

In addition, ideas about children, particularly babies ("small," "helpless," and "red little babies"), were often encountered in the "Laser" group (57%), and these ideas only occurred in these patients–they did not combine with other characteristics, as in other groups. A significant proportion of "infant" characteristics were identified in the "Complications of pregnancy" group (50%), but they were combined with other descriptions of appearance and characteristics.

Features of the interaction of pregnant women with future children are presented in Table 4.

In the "Norm" group, only two out of 11 patients (18%) noted that their children reacted to changes in their emotional state, whereas in the "SFDS" group, a similar feeling arose in 10 out of 11 patients (91%).

In an exciting situation, patients can correct their behavior and consciously "support" children. In the "Norm" group, such a behavioral reaction was observed only in four out of 11 (36%) patients, whereas in the remaining groups, more than half of the patients showed such a behavioral reaction. Moreover, all patients in the "SFDS" group showed such a behavioral reaction.

In the "Fetal Complications" and "Laser" groups, with regard to excitement, some patients (40% and 23%, respectively) used a specific method of correction; they stopped communicating with children to protect them from their negative emotions.

The nature of communication between expectant mothers and children in a calm state was similar in all groups: they talked to children, listened to music, and told them about what was happening, perceiving children as "partners" in communication who can hear and understand speech and sounds addressed to them. By contrast, in the Laser group, communication with children, even in a calm state of the mother, proceeded passively, which was characterized by the "co-presence" of children and the feeling that they were doing something "together" with the children, and not "in interaction" with them.

The nature of the "emotional messages" to children in the groups also varied. In the "Norm" group, the main emphasis was placed on the expectation of meeting with children after childbirth and the experience of love for them. In the "Complications of pregnancy" and "Disorder of the fetus state" groups, the nature of "emotional messages" to children consisted of "wishes and requests" for timely birth, health, strength, and harmonious development. In the Laser group, expectant mothers took a more active position: on the one hand, they informed the children about their concern for their health and the desire to protect them; on the other hand, they informed the children about their love for them, that is, everything had been done for their safe birth, and faith in a good outcome. In the SFDS group, the nature of the "emotional messages" was distinguished by an abundance of various shades of positive emotions in combination with the theme of maternal protection. A specific feature of this group was the transmission to the child of the fact that not only the mother, but also all family members are waiting for his appearance.

In the methods proposed to patients, no special question about the similarity of future children to one of the family members was found, but this similarity was evidently mentioned in the answers of patients of all groups, except for the Laser group. Resemblance to oneself, a spouse, or an older child is most often seen by the patients of the "Disorder of the fetus state" group (52%). In the "Laser" group, the topic of similarity is not found, whereas in the "Norm" group, it is minimal (12%). This fact can be explained by the psychological inclusion by mothers of future children in the family even before their birth. Notably, at a certain stage of the desired pregnancy, the expectant mother speaks of the child "he is mine," already taking on the role of "his mother." Therefore, the position "he looks like us" means the subjective inclusion of the child in the family space — "he is ours."

Additional study results

No adverse events were found during the study.

DISCUSSION

Summary of the main result of the study

Analysis of the data obtained allows us to describe the psychological portrait of a pregnant woman with her own experiences and the nature of her communication with medical personnel in various complications of multiple pregnancy.

Discussion of the main result of the study

Group of patients with uncomplicated multiple pregnancy

The patients of this group are distinguished by prevailing the optimal, in combination with the euphoric, type of the PCGD. The description of future children by women is laconic, and ideas about them are often stereotyped and focused on generally accepted images, with various external characteristics. In this group, pregnant women used negative characteristics when describing future children. Patients of this group did not express significant anxiety when the nature of children's movements changed depending on their emotional state. Only a fifth of the patients noted that when their emotional state changed, the children could react with different movements. In a calm state, they actively communicated with children; in moments of excitement, only a third remembered pregnancy and children, trying to "calm" them.

Pregnant women with uncomplicated multiple pregnancies rarely communicated with children from an active position and a desire to intentionally tell them something or somehow influence them. In the nature of laconic appeals to children, the concepts of "love," "waiting for a meeting," "attachment," and "calmness" prevailed. The results in this group can be described as generally "normative." Patients in this group do not have psychological challenges associated with pregnancy complications. The psychological content of pregnancy, the nature of ideas about children, and contact with children are due to individual characteristics and are not protective in nature; thus, emotionally "investing" in the process of bearing and communicating with children to influence the course of pregnancy or the condition of children is not necessary.

The patients of this group did not need psychological help.

Group of patients with complications of multiple pregnancy

Patients with a complicated course of multiple pregnancy are characterized by a euphoric attitude toward pregnancy and themselves as a future mother, combined with an ambiguous attitude toward childbirth, breastfeeding, and the father of children. Compared with other groups, this group has the smallest proportion of women with optimal attitude and the largest proportion of women with anxious type of attitude toward breastfeeding. Women of this group were the most emotionally sensitive to changes in the nature of their children's movements and the most active in search of ways to influence their motor activity. The descriptions of the characteristics of future children in these patients are verbose and detailed, which account the largest proportion compared with other groups. Most of them formed ideas about their children after birth. A quarter of the patients imagine their children similar to themselves and/or their spouse, and the images of future children are emotionally colored. The main emotions transmitted to children include requests to children to "stay still inside" and "take your time" against the background of "love," "care," and "admiration."

When communicating with doctors, patients show suspiciousness about their condition and increased anxiety about their health and the emergence of new bodily sensations. They ask a lot of questions when communicating with doctors; they often repeat themselves, and they are afraid of any change in their condition. Sometimes there is a directly opposite strategy of emotional behavior: the patient "does not understand" the seriousness of the risks, and the patient has a medically unreasonable, optimistic, and euphoric mood. In our opinion, the euphoric attitude toward pregnancy and to oneself as a future mother, who is in the perinatal risk zone, is protective in nature, blocking increased anxiety, guilt, and worries about the possibility of bearing a child until the optimal term. In part, this finding reflects an anxious attitude toward breastfeeding, indicating doubts about their maternal capabilities after childbirth. In addition, the euphoric type of attitude toward pregnancy shows a high degree of its significance for a woman.

Patients in this group have established prenatal contact with children and developed maternal attachment to them in general. Women's feelings about children and ideas about children are detailed and varied, and they are dominated by a positive personal attitude. The images of children are psychologically filled; they are actively included in the family system, and their presence is considered — women consciously correct their behavior if they are worried to compensate for the possible "harm" of their negative emotions. In communicating with future children, patients convey their desire to protect them and ask that they do not rush to be born prematurely. Compared with patients with uncomplicated multiple pregnancies, women in this group more often feel themselves involved in actual emotional and bodily contact with future children through the movements of children, and the psychological content of pregnancy is more diverse and dynamic.

One third (6 out of 20) of patients needed psychological help. During psychological work, the patients reported that they had feelings of guilt and a sense of helplessness from the inability to influence the situation and the unreliability of their bodies for safe bearing of children. When communicating with doctors, they needed clear and minimal recommendations about their real capabilities in

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following the regimen, taking medication, and performing procedures.

Group of patients with fetal-state disorders in multiple pregnancies

In this group, a large proportion of patients have a euphoric attitude toward pregnancy, themselves as mothers (the maximum among all groups), and the father of children, combined with an optimal attitude toward lifestyle changes during pregnancy, childbirth, and breastfeeding and an explainable high proportion of patients with anxious relationship with their unborn children.

Parenthood in this group is characterized by a high degree of significance, which is confirmed by the high values of the euphoric attitude toward oneself as a future mother and toward the father of children. In this group, more often than in other groups, active attempts were revealed to trace the similarity of characters or appearance with family members, including the eldest child, the woman herself, and the father of the children, which suggests that future children are already in the psychological space of the family and are receiving emotional support from its members. Sharing experience of pregnancy in the family is the internal resource through which women cope with the anxieties associated with the health of their children. In addition, a feeling of a "community of children" is found, that is, the possibility of their contact based on mutual support presented by a woman.

Diverse, emotionally filled contact with children is aimed at creating the most favorable conditions for gestation, which causes women to develop a sense of capacity and maternal activity. A large proportion of women with an optimal attitude toward breastfeeding has developed self-confidence as a future mother and a mood for active maternal care of children after childbirth.

In this group, 14 patients (56%) needed psychological help. The requests concerned difficulties in overcoming anxiety about the health of children. In experiencing a "mismatch" of interests, one child feels good in the utero, and the second suffers psychologically. Moreover, in selecting further tactics for continuing pregnancy, emergency cesarean section in the interests of a fetus with deterioration or continuation of pregnancy in the interests of a fetus without developmental features may be selected. In addition, against the background of worries about children, intra-family conflicts can become aggravated in women, and experiences of traumatic life events and childhood experiences associated with relationships with their parents in the past are actualized.

In communicating with doctors, patients try to get as much information as possible about the state of children's health and their ability to positively influence it. These patients are in close contact with neonatologists; detailed information is extremely important for them to form adequate ideas about what is happening with the children at the moment and about the options for the development of events with newborns after childbirth.

Group of patients with monochorionic pregnancy complicated by feto-fetal transfusion syndrome and subsequent laser coagulation of vascular anastomoses

This group is characterized by a large proportion of women with an anxious attitude toward pregnancy, lifestyle during pregnancy, and future children. In addition, the internal resource of women in this group is the importance of motherhood, that is, clearly prevailing optimal attitude toward childbirth, breastfeeding, and oneself as a future mother. These women should influence the health of their children and ensure their normal development after childbirth. This finding is supported by women's description of future children as having individually colored features, in the absence of an up-to-date description of their characteristics before intrauterine fetoscopic intervention. Moreover, in this group, the ideas about children were divided into two almost identical parts: only as babies without additional fantasy characteristics and already as grown-up children with their own tastes, individual manifestations, and appearance. Compared with the other groups, in this group, no women indicated the similarity of children with family members, that is, children are not yet included in the family space. We suggest that this finding is partly due to a preventive psychological protective reaction against possible loss because laser photocoagulation as an intrauterine intervention is associated with high risks.

Patients from this group were significantly less likely to talk to their children when they were alone and less likely to imagine how they called their children by name. This group of patients had the lowest scores among all groups on prenatal attachment scales, which describe the interaction with children, ideas about them, and sensitivity to their movements. Prenatal contact with children differed from other groups in specific features: the patients reported more about the "co-presence" of children than active "interaction" with them.

In the case of excitement, a quarter of patients use the strategy of "disconnecting" from contact with children, although more than half know how to "calm" children when their activity increases. When "applying" to future children, women take an active position: they inform them not only about their concern for their health and the desire to protect them, but also about their love for them, that is, everything has been done for their successful development and birth, and they believe in a good outcome.

The high level of anxiety that distinguishes the patients of this group is quite understandable because of the difficult situation in which even intrauterine surgery does not ensure a successful outcome. In addition, the operation is frightening for patients because it is an invasive procedure. When communicating with surgeons, patients ask questions about the likelihood of successful delivery after surgery, and they are always interested in what they can do to improve the result.

Anxiety in this group is directed at both poles — in relation to oneself because of the operation and to children. Patients must realize that the upcoming procedure is literally the only chance to save children. Given this inner attitude, patients cope better with their experiences. The fear of losing one fetus or the entire pregnancy results from low sensitivity to the movements of children, unwillingness to emotionally engage in contact with them, personify future children, and fantasize about the future. However, despite such a background of communication, women are making active attempts to influence the situation toward a successful outcome in the form of "persuasion" of children and psychological work on the topic of their protection.

Therefore, all patients in this group need psychological help before and, if necessary, during surgery. Comprehensive awareness of the operation and the features of its implementation and psychological preparation can reduce the severity of anxiety by eliminating speculation and negative fantasies to the maximum.

Patients with multiple pregnancy complicated by SFDS

The peculiarity of this group is in a wide range of types of the PCGD. The most harmonious is the attitude toward lifestyle changes during pregnancy and breastfeeding. In other areas, the proportion of women with an anxious attitude is high. The mother–child system, including woman's attitude toward herself as a future mother and a child, is the most unfavorable among all other groups: the optimal attitude is found in less than half of the patients, and a third of them show a euphoric and anxious attitude.

A specific feature of this group is the description of the characteristics of the surviving twin through personal qualities associated with the ability to overcome difficult situations. These patients are sensitive to the behavior of children, and their emotional state affects the nature of the child's movements. They change the nature of communication with the child depending on their emotional state: in the case of excitement, they try to calm the child by talking to him and stroking his stomach. In particular, in this group, the love, desire, and caring attitude from all family members are actively transmitted through "emotional messages" to the child, which are accompanied by active physical contact, that is, women stroke their stomach and try to feel the child, showing detailed ideas about the child after childbirth.

The parameters of prenatal attachment in this group clearly differed from those of women with uncomplicated pregnancy. The strength of emotional experiences about the unborn child in women from the "SFDS" group is significantly greater than in women with uncomplicated pregnancy: the emotions associated with the child in patients from the "SFDS" group are assessed as "strong," whereas patients from this group with uncomplicated pregnancy are characterized as "average." In addition, patients from the SFDS group often talk to their child when they are alone, whereas representatives of other groups report that they rarely do so. Active, mother-to-child contact is combined with uncertainty about the causes of child's movements: representatives of the SFDS group note that they can rarely determine the causes of child's movements.

From our point of view, the projection of the qualities of a "fighter" onto the child by the expectant mother is a direct consequence of the loss of another fetus, which is perceived as a difficult event for a developing child. Therefore, the subjective image of the child, which has certain personal power, can create in a woman the feeling that the child has the resources and opportunities to "cope" and win the struggle for his life.

All patients in this group needed psychological help. When women in this group communicate with doctors, fears about the health of the surviving twin are clearly manifested, and they desire to understand whether the death of a twin can harm him. The explanation of the doctor regarding this situation can help a woman to be in contact with a living child and focus on the actual tasks of bearing. Significant differences were obtained precisely on the "Intensity of emotional messages from mother to child" scale, indicating the active role of a woman as a future mother. Such a strategy is a response to the loss of one fetus, and it is based on the feeling that maternal care and capacity in general can be manifested precisely through active, positive, and supportive contact with the unborn child.

CONCLUSION

In the case of multiple pregnancies, specific psychological experiences associated with pregnancy, motherhood, and emotional contact with future children are found. Based on the type of complications of multiple pregnancy, personal experiences leave an imprint on the characteristics of patient's relationship with other people in general

and with medical personnel in particular. Understanding the causes of the behavior and emotional response of a woman in a complicated course of multiple pregnancy provides an opportunity for medical workers to identify patients who need psychological help, which, if necessary, allows them to establish the effective emotional contact with the patient.

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