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ESSENTIAL CONDITIONS OF THE ALIMONY PAYMENT AGREEMENT: ANALYSIS OF THE EXISTING LEGAL REGULATION

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Annotation. *The article analyses essential terms of the alimony payment agreement. It is concluded that the low enforcement practice on the subject is controversial, uniform conditions recognized as essential for this type of the agreement are missing. The concrete definition of the subject and clarification of other essential terms of the alimony payment agreement is required, which in turn should make legal regulations more predictable and, consequently, lead to legal certainty.*

Keywords: *alimony payment agreement, essential terms, subject matter, alimony indexation, family law, legal certainty.*

In family law the alimony payment agreements are a variety of civil-legal agreements and are regulated by both family and civil law [1, p. 98].

In the absence of legislative consolidation of the definition of "alimony agreement", there is a sufficient number of difficulties associated with the ambiguous definition of its essential conditions.

The analysis of family-legal doctrine allows us roughly distinguish two approaches to addressing this issue.

According to the first approach, the essential condition of the alimony agreement is its subject, i.e. alimony, such a vague concept not specified by absolute criterion. It can be distinguished as an essential condition based on an analysis of the provisions of Art. 99 of the Family Code of the Russian Federation (hereinafter - RF IC). In this case, there is a strict division of the subject of the agreement on the payment of alimony into

alimony and other conditions, such as the amount, procedure and method of payment. The parties independently determine the last of the conditions in accordance with the family law and, therefore, the conditions are not included in the subject of the alimony payment agreement [2].

The second approach considers aliments itself as essential term of payment agreement. In turn, aliments include the amount, method and procedure of their payment [3].

In addition to the terms of the amount, procedure and manner of alimony payment of, the term of the period of alimony payment (child support) can be assigned as essential.

The remaining conditions are accidental. Those, for example, include conditions on alimony indexation, if the parties did not include them in their agreement, the provisions of Article 105 FC RF shall apply.

In our opinion, we should come from a detailed analysis of the provisions of family and civil law when highlighting the essential conditions of the alimony payment agreement. Primarily, it should be decided which conditions fall under criteria of essential ones, namely, required and sufficient, otherwise the agreement cannot reach a conclusion.

All the essential conditions of the agreement in the civil law are divided into an objectively and subjectively essential. Objectively essential conditions are those that apply to any type of an agreement. Subjectively essential conditions are named as such for particular type of an agreement structure.

Family law does not contain defined provisions on the required and sufficient conditions for family law agreements. In this case, it is possible to apply and consider the civil law regulations on the issue. So, according to Civil Code of the Russian Federation (hereinafter CC RF) the agreement scope condition (objectively essential), conditions named as such by the legislations of the Russian Federation, and conditions the agreement on which should be reached at the request by one of the parties (subjectively essential) represent the essential conditions.

Analysis of the agreement structures embodied in the civil law allows us to conclude that accidental conditions may be those for which law provides alternative parties' conduct, in case the parties do not reach an agreement. See Paragraph 3 Article 424 CC RF.

Based on the current approach applicable to agreements in civil-law relations, essential conditions are provisions on the amount, method and procedure for alimony payment under the agreement. That is, the family law regulations in this case do not establish possible ways of resolving these issues if the parties do not agree with them, in contrast, for example,

to alimony indexing conditions given earlier.

In support of this conclusion, we should provide an example from the judicial practice, in particular, ruling on the appeal of the Khabarovsk territory court. In this case, a nonprofit agency Notary Chamber of Khabarovsk Territory (claimant) filed a claim against the Mr. Y.O (defendant), a notary, to deprive him of the right for notary practice.

According to the case records, the president of the Notary Chamber announced 49 violations revealed in the examination of the plaintiff's professional activity at the general meeting of the notary agency. Most of violations were classified as gross and grave. The general meeting of notaries also referred violations of CC RF regulations as gross and grave with regard to conclusion and notarial certification of the alimony payment agreement.

During the proceedings, the court also established violations of the norms of family law made by the defendant. Regarding the issue of notarial certification of an alimony payment agreement, the court points out that the parties indicated the deadline for its execution in the notarized agreement, but there were no provisions on the method and procedure for their payment, which referred to gross violations [4]. From this provision, it can be concluded that such conditions are essential when concluding an agreement on the alimony payment.

A special provision regarding the maintenance payment agreement on minor children is also important. Family Code of the Russian Federation has established a minimum amount of payments under such an agreement, which amounts to a maintenance payment not lower than that would have been established in this case when this issue was considered in court. Thus, we can conclude that if the above condition is not met, this type of agreement on the alimony payment will be invalid.

In addition, some authors cite as a condition on the specifying a deadline for the maintenance payment before the child's attainment of majority as the essential one. The absence of such a condition may be a ground for recognizing such an agreement as invalid, since it violates the interest of a minor [5]. That is, an agreement on the maintenance payment cannot be concluded for a period until the child reaches twelve, fourteen or sixteen years of age.

It seems that the conclusion about the invalidity of the agreement on the maintenance payment, from the point of view of establishing the terms of its validity, equated to the age of a child under eighteen years old, is not based on the law. Based on the fundamental principle of private law, the principle of freedom of an agreement (Article 421 of the Civil Code of the

Russian Federation), the parties independently specify the period of its validity, which can be established both after and before the child's attainment of majority. Art. 120 FC RF also provides that maintenance obligations under this agreement shall terminate upon the expiration of its term or on the grounds established by them, as well as with the death of one of the parties. Moreover, parties can terminate the alimony agreement or change it by mutual agreement at any time under family law.

To sum up, we can conclude that current provisions of the Russian family law concerning an alimony payment agreement require specification for a more precise definition of its subject matter and clarification of other essential conditions of such family law agreements.

Therefore, at the beginning of the 20th century, the classic of pre-revolutionary jurisprudence I.A. Pokrovsky wrote, "If every single person must obey the law, if he should adapt his behavior to its requirements, it is clear that the first condition of orderly social life is the certainty of these requirements. Any ambiguity in this respect contradicts the very concept of the legal order and puts a person in a very awkward position, i.e. it is not known what to perform and what to adapt to." [6, p. 91].

Predictability of legislative policy and the accuracy and specificity of legal norms are necessary for the participants of the relevant alimony legal relationships in order to reasonably anticipate the consequences of their behavior and be confident in the invariability of their officially recognized status, acquired rights, the effectiveness of state protection.

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SEPARATE GROUNDS FOR INVALIDITY OF A MARRIAGE AGREEMENT: ISSUES OF THEORY AND PRACTICE

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***Annotation.** The article analyzes some grounds for the invalidity of a prenuptial agreement. It is concluded that there is a lack of uniformity in law enforcement practice, which negatively affects the implementation of the principle of legal certainty. For a more accurate content of the assessment categories, the adoption of guidance clarifications by the highest court is required, which will contribute to the formation of a uniform practice in the application of the relevant rules on the invalidity of the marriage contract.*

***Keywords:** prenuptial agreement, invalidity of the transaction, contestability, nullity, extremely unfavorable situation, marriage, property relations.*

Institution of prenuptial agreement eventually gaining more and more popularity. In 2017 88 672 prenuptial agreements were concluded in the Russian Federation, in 2018 it amounted to 109 640, in 2019 the amount reached 114 352 and we approached 147 948 prenuptial agreements in 2020[1].

Based on these data, we can conclude that the number of registered prenuptial agreements in the Russian Federation has increased by more than 1.5 times over a four-year period. That shows the relevance of researching such a legal instrument for regulating marriage and family relations as a prenuptial agreement.

From the point of view of legal nature, a prenuptial agreement is a civil law agreement. Its certain specificity does not mean that it is a special family law agreement, different from the civil agreements [2, p. 54]. However,

according to any authors, the prenuptial agreement should be considered as a separate type of civil agreements that unites agreements aimed at establishing or changing legal regime of property [3, p. 156].

This type of agreement between the parties allows determining the property rights and the obligations of the spouses during marriage and in the event of its dissolution as well. In such a situation, the parties to the agreement do not have a need for lengthy litigation regarding the distribution of property rights and obligations. However, there are some nuances in this issue as well.

To begin with, let us take a closer look at the legal aspects of a prenuptial agreement. The main provisions are enshrined in the Family Code of the Russian Federation (hereinafter – FC RF). So, Art. 40 of the FC RF defines a prenuptial agreement as an agreement between persons entering into marriage or being spouses regarding the provisions on their property rights and obligations, determined both during marriage and in the event of its dissolution. Art. 41 of the FC RF regulates the procedure for its concluding and the form of this type of family law agreement, and Art. 42 of the FC RF IC regulates its content.

Art. 44 FC RF regulates the issue of invalidity of the prenuptial agreement, which refers to the reasons provided by the Civil Code of the Russian Federation (hereinafter - the CC RF) for the nullity of transactions. Depending on each, prenuptial agreement can be found either contestable or void if the law does not contain any effects of the wrongdoing, which were not related to the nullity of the prenuptial agreement. This conclusion can be drawn from the provisions of Art. 168 of the CC RF.

The first reason is the conclusion of a prenuptial agreement by a citizen who is declared as an incapable due to a mental disorder by a court decision. In this case, such an agreement will be null and void. An exception is the case when the conditions of such an agreement constitute a benefit for a disabled citizen. In this case, the agreement is recognized as valid upon the request of the guardian in accordance with the interests of such citizen.

When a citizen concludes a prenuptial agreement, but he or she is limited of legal capacity, such an agreement will be nullified if concluded without the consent of the guardian of such a citizen. The court recognizes the agreement as such when the trustee submits a statement of claim. These provisions are regulated by Art. 171 and Art. 176 of the CC RF.

The third reason is the conclusion of a prenuptial agreement by a citizen, who at the moment of its conclusion was not able to understand the meaning of his or her actions or control them but who was not declared as an incapable. In this case, the provisions of Art. 177 of the CC RF are ap-

plied. The provisions of this article can be applied in the following cases:

- violation of the rights and legitimate interests of such a citizen, as well as other persons by the conclusion of a prenuptial agreement. The nullity of such an agreement is recognized at the request of the relevant persons;

- a citizen who entered into a prenuptial agreement was later declared incapable. In this situation, the guardian of such a person files the statement of claim and the contract is nulled if there is an evidence that the prenuptial agreement was concluded at the time of the citizen's inability to understand the meaning of his actions or to direct them;

- a citizen who entered into a prenuptial agreement was recognized of limited legal capacity later due to a mental disorder by a court. In this case, the trustee has the opportunity to file a statement of claim. A prenuptial agreement will be declared invalid if there is necessary evidence that the other party knew or should have known about the inability of the citizen to understand the meaning of his or her actions or control them at the time of the conclusion of the agreement.

There is also a reason for the nullity of a prenuptial agreement in judicial practice, if it was concluded only for the sake of appearance, when the parties did not intend to engender the corresponding legal consequences. Such a transaction is considered null and void in accordance with the provisions of paragraph 1 of Art. 170 of the CC RF.

The decision of the Leninsky District Court of Orenburg provides evidence for the following position. Ms Prisyazhnaya I.S. (the plaintiff) and Mr Nikiforov D.S. (the defendant) entered into a prenuptial agreement for the purpose of safeguarding the property jointly acquired from foreclosure. The spouses signed and notarized that agreement after PJSC Rostelecom applied to law enforcement agencies with the appropriate filing for bringing the defendant to criminal liability and recovering the required amount of damage caused. The defendant did not notify his creditors about the conclusion of the prenuptial agreement. On the basis of this, the court concluded that the agreement was invalid as it was concluded without the intention to generate legal consequences” [4].

The next aspect of the nullity of a prenuptial agreement is its conclusion under the influence of a significant misleading. It is necessary to consider the conditions under which the misleading can be understood as significant. That is, one of the parties would not conclude the transaction if it had an idea of the actual state of affairs. Such conditions are determined by the paragraph 2 of Art. 178 CC RF.

It is important to consider the provision that the court may refuse to recognize a prenuptial agreement null and void and keep it in force if the other

party agrees to the terms, the idea of which was available to the parties entered into an agreement with a significant misleading.

A prenuptial agreement will also be recognized as null and void by the court if it was concluded under the influence of deception, the definition of which is given in paragraph 2 of Art. 179 of CC RF, and if there was the influence of violence or threat.

The above mentioned article notes the circumstances of extremely unfavorable situation when the agreement will be recognized as null and void as in cases mentioned earlier. Namely, one party was forced to conclude such an agreement due to the desperate situation, while the other party used it to their advantage.

Non-compliance with the notarial form of the prenuptial agreement stand out a particularly important reason, the binding power of which is indicated in paragraph 2 of Art. 41 of the FC RF. So, in accordance with paragraph 3 of Art. 163 of CC RF, if this rule is not observed, such an agreement will be declared null and void.

It is important to comply with the requirements specified in paragraph 3 of Art. 42 of the FC RF. Among them, for example, there is impossibility to specify the terms limiting the legal capacity or capability any of the parties and those relating to the personal non-property relations or relating to the rights and obligations of persons entering into the prenuptial agreement with respect to their children. It is clear that if this rule is disregarded, the terms of such a prenuptial agreement will be deemed null and void.

The final reason for recognizing the nullity of a prenuptial agreement are such terms, in the event of which one party finds itself in an extremely unfavorable situation. In our opinion, this is a contestable point, since there are some contradictions in the practical application of this provision by the courts.

Firstly, this is evident that there is no strict list of terms falling into a category of “extremely unfavorable situation” that allows the courts to construe broadly this provision.

The Resolution of the Plenum of the Supreme Court of the Russian Federation №. 15 “On judicial practice in marriage dissolution cases” indicated the only case that makes it possible to recognize a prenuptial agreement as invalid on the basis of an extremely unfavorable situation of the party, if the agreement comes into force, when one of the parties is deprived of ownership of all property acquired by the spouses during marriage” [5].

The definition of the Constitutional Court of the Russian Federation №. 779-O-O suggests that the court individually establishes such a category as an extremely unfavorable situation for one of the parties to a prenuptial

agreement when analyzing specific circumstances [6]. It is also necessary to mention the legal margin of appreciation of this category of circumstances in making decision on a specific case by the courts.

A concept of a significant disparity in property can also be found in judicial acts, for example, in the Definition of the Judicial Devision for Civil Cases of the Supreme Court of the Russian Federation №. 18-KG16-10 [7]. However, no signs for the subsequent application of such a concept are found in this act.

Secondly, it can be concluded that nullity of a prenuptial agreement is ambiguous. It is based on the analysis of judicial practice in relation to cases on the above-mentioned reason.

In one case, judicial practice confirms the provision on the possibility of the parties to deviate from the equality of the shares of the property when concluding a prenuptial agreement. This is due to the freedom of contract doctrine, including a prenuptial agreement, which in turn stipulates the necessity of preserving the continuity of such transaction. It should be noted that such a case is rather common in the judicial practice.

As an example, we can provide the Decision of the Vasileostrovsky District Court of St. Petersburg [8]. According to the terms of the prenuptial agreement and its supplementary agreement, Ms. Kuznetsova I.B. (the defendant) possessed 87% of property, while Mr. Kuznetsov R.Yu. (the plaintiff), possessed, respectively, 15%, with a ten to twelve ratio of property shares.

The plaintiff asks to declare the terms of the prenuptial agreement invalid due to the fact that during their implementation he was in an extremely unfavorable position. The court cites the provisions of clause 10 of this agreement on the voluntariness of determining its conditions and astipulation. In addition, this paragraph contains a direct indication that such a procedure for the distribution of property does not put any of the parties in an extremely unfavorable position.

As a substantiation of its position, the court also argues that no significant disparity in the shares transferred to the spouses' property has been revealed in the course of the proceedings. It is important to note that for resolving this category of disputes, the court established that, the terms of the prenuptial agreement provided the transfer of ownership of both movable property and immovable property to each of the spouses, the same referred to residential premises and non-residential buildings, shares, deposits and other income. Accordingly, this prenuptial agreement cannot be nullified.

The courts took a similar position of in the Decision of the Nevsky Dis-

trict Court of St. Petersburg [9], and in the Decision of the Achinsk City Court [10].

Further, it is necessary to consider the situation when similar provisions of the prenuptial agreement are recognized as nullified by the courts because they put one of the spouses in an extremely unfavorable position.

Thus, we can notice the similarity of the terms of the prenuptial agreement and the ratio of spouses' shares in the event of divorce in the appellate decision of the Moscow Regional Court [11]. In this case R.I. (the defendant), would receive 25 percent of the property if the terms of the prenuptial agreement were implemented, and R.T. (plaintiff), respectively, 75 percent, with a ratio of shares of one to three. In the above case, the prenuptial agreement was nullified by the court as violating the provisions of paragraph 2 of Article 44 FC RF.

The similar case is found in the Appellate decision of the Saratov Regional court [12].

Another example of such category of cases is the appeal decision of the Nizhny Novgorod Regional Court [13]. A compensatory nature of a prenuptial agreement is an interesting argument regarding the conditions necessary to certify and to make it valid. That contradicts the courts' explanation about the right of spouses to depart from the principle of equality of their shares. The position of the court is that the absence of clearly defined property in the prenuptial agreement breaches the terms of the Art. 42 FC RF, since property division should provide compensation to one of the spouses when transferring to the personal property to the other.

In our opinion, the notary certification of a prenuptial agreement is an important circumstance. Since a notary explains the rights and obligations to the parties and legal consequences if the terms of such an agreement come into force, namely, as mentioned earlier, the deviation from equal shares in the distribution of property acquired by spouses during marriage. Therefore, it is impossible to conclude this type of family law agreements through a representative.

That is, a notary examines the provisions of the prenuptial agreement for compliance with the legislation of the Russian Federation (the terms of the agreement should not put one of the parties in a deliberately unfavorable position), and if contradictions are found, the notary refuses to certify a prenuptial agreement.

Summing up, we can conclude that family law and the most part of civil law contain the terms for the nullity of the prenuptial agreement. Judicial practice is rather diverse on implementation of such reason for the agreement invalidity as highly unfavorable situation of one of the spouses. This

is facilitated by the evaluation category of highly unfavorable situation.

In this situation, it is necessary to recall the principle of legal certainty, which implies the stability of legal regulation and existing legal relations. Though this principle is not directly enshrined in the Constitution of the Russian Federation, the Constitutional Court of the Russian Federation indicates that the general legal criterion of certainty, clarity, and unambiguity of a legal norm is implied by the constitutional principle of equality of all persons before the law and the court, since such equality can be ensured only by a common understanding and uniform interpretation of the legal norm by all judiciaries [14].

European Court of Human Rights keeps to the similar position, believing that a legal norm should be “formulated with sufficient precision to enable the citizen to regulate his conduct: he must be able – if need be with appropriate advice – to foresee, to a degree that is reasonable in the circumstances, the consequences which a given action may entail” [15].

Therefore, we believe it is necessary to review of judicial practice in this category of cases at the level of the highest court, i.e. the Supreme Court of the Russian Federation, to provide more details to the evaluation category of “an extremely unfavorable situation”. That, in turn, should lead to uniformity of judicial practice and, as a result, to legal certainty.

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THE HUMAN RIGHTS SYSTEM: A HOLISTIC UNDERSTANDING AND MEANING

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Abstract. *The article is a continuation of the material previously published by the authors on the foundations and content of human rights activities and is devoted to the consideration of the concept of the human rights system. Analyzing various positions on this issue, the authors come to the conclusion that they do not reveal the signs of human rights activity as a system, limiting themselves to listing arbitrarily selected processes and phenomena. According to the authors, the necessary elements arising from their essence of human rights activities include: the need to protect human rights, subjects of human rights activities, human rights will, human rights activity, human rights relations, their implementation and the achievement of the final result in the form of asserting human rights as a social reality. These components together and consistently taken together form the necessary elements of the human rights system as a single functioning whole.*

Keywords: *protection of human rights, human rights activities, subjects of human rights activities, human rights relations, human rights system.*

This article is a continuation of the material published a little earlier, where the authors tried to substantiate the idea that human rights activity, like any social activity, has its origins in the form of real social needs, which are not always realized in their real sense [1, p. 63-68]. Human rights abuses are most commonly associated with human rights violations,

but this approach has been shown to be narrow and one-sided.

Human rights, which acquire a special meaning and significance due to the fact that they assert in social reality the status of a person as the highest value of a civilized society and determine the possible forms of realizing a person's creative potential as the main driving force of our time, constitute one of the spheres of functioning of the integral content of law. This content includes the processes of the formation of legal needs, their expression in various official and unofficial sources of legal norms, the implementation of law in the behavior of subjects of social life, the identification of the facts of offenses, the implementation of legal responsibility and the maintenance of the required law and order.

The need for the protection of human rights may arise at any stage of the functioning of this content, in the event that the course of its normal functioning is deformed by various kinds of anomalies of law [2, p. 170-180]. These anomalies can be caused by objective factors, including special historical circumstances - economic, financial and political crises, wars, epidemics, etc., but most often stem from subjective factors, where the level of legal culture of the country's population and interest play an important role. ruling elites in the establishment of legal principles, regardless of their economic, financial, political, ideological interests.

The need to protect human rights in the event of anomalies in law is realized through the implementation of a special kind of human rights activity, the purpose of which is essentially to eliminate deformations in the content of law and to establish human rights as a social reality in accordance with the level of development of social relations and public consciousness achieved by society. Therefore, human rights activity cannot be reduced to a simple response to certain violations of the current legislation, it has a broader content in terms of its goals and refers to the entire process of the substantive structure of law and, in a certain part, intersecting, does not coincide with law enforcement activities.

In this article, we will consider another aspect of human rights protection associated with its manifestation in reality as a special human rights system. The concept of the human rights system is substantiated in different ways in modern Russian legal literature.

So, according to T.M. Kalinina, in methodological terms, we are talking about the relationship between the special (the human rights system) and the general (the legal system). If the concept of "legal system" in science is quite stable, then the term "human rights system" needs to be clarified. The author proposes to understand the human rights system as "a set of methods and means of protecting human rights and freedoms, existing

in the form of a complex of interrelated human rights sectors, norms and institutions; subsystems of humanitarian legislation and human rights institutions; subsystems of humanitarian information, education, accumulation, storage, reproduction and development of humanitarian ideology"[3, p. 6].

Let us make some preliminary considerations about these statements. First of all, it is difficult to share the author's optimism regarding "stability" in the Russian legal theoretical consciousness of the concept of a legal system. Let us recall that its content in the Russian legal literature varied from a system of formalized legal norms to a set of legal awareness, legal norms and legal relations. The fact that this concept has a rather different meaning becomes obvious when you look at works on the types of legal systems of our time [4].

Methodologically, it should be noted that the concept of the legal system of society was developed in the Soviet, and then in the Russian legal literature as a kind of opposite to the narrowly normative concept of law. N.I. Matuzov and A.V. Malko, for example, noted: "If law is traditionally understood as generally binding norms emanating from the state, then the legal system is a broader reality, embracing the entire set of internally coordinated, interconnected, socially homogeneous legal means (phenomena) with the help of which the official (public) power has a regulatory, organizing and stabilizing effect on social relations, people's behavior. This is an integrating category that reflects the entire legal organization of society, an integral legal reality"[5, 83].

It is unlikely that even here, with the exception of a clear methodological orientation, the concept of the legal system of society can be considered fully established, since such concepts that allow various theoretical interpretations, such as "legal organization of society" and "legal reality", are taken as the basis for its definition. In any case, it was not possible to find a fixed definition of these concepts in the work cited by us.

As for the content of the human rights system derived from the legal system of society, in the concept under consideration we see just a set of terms about very vague phenomena and processes, such as human rights branches of law, humanitarian education and information, etc., which, for some reason, form a system; not because the author called them a complex of interrelated means.

In approximately the same vein, but with a different set of elements, P.V. Anisimov, L.V. Medveditskov, understanding by it "a set of human rights elements: legal norms; competent subjects of human rights relations; human rights methods, methods and special legal means; as well as activities aimed at a legally effective impact on public relations deformed as a result

of human rights violations, in order to achieve a state of legal protection of human rights by ensuring, suppressing, restoring violated human rights and punishing the perpetrators"[7, p. 44].

Here a similar question arises: why, on what basis does this particular set form a human rights system, why the authors did not add any other elements here, for example, human rights legal status or human rights awareness.

The human rights system is defined somewhat differently by V.N. Kartashov, understanding by it "a single complex of interconnected state and non-governmental organizations and individuals (human rights defenders) and legal phenomena (law, legal awareness, legal culture, various types of legal practice, etc.), with the help of which the protection is effectively and efficiently carried out (protection, etc.) the rights and legitimate interests of people and their associations"[6, p. 12].

This definition shows an attempt to directly link the human rights system with the components of the legal system of society (law, legal awareness, legal culture, legal practice) and highlight the human rights system as its special part, within which the rights of people and their associations are protected. However, the matter does not go further than such a general statement, and the specificity, its own components of human rights activity as a system remain undefined.

We believe that the considered provisions have one methodological problem. They deliberately and consistently did not carry out the idea of consistency in relation to the object under consideration - human rights activity. A basket of apples can also be viewed as a complex or collection of certain objects. However, this aggregate is not a system, unlike, for example, a clock or a human body. In a systemic phenomenon, you can always find a clearly fixed set of elements that have a single source, are interconnected in a certain regular sequence, forming in this connection a single functioning whole.

It is precisely this logical sequential connection of the necessary elements of human rights activity, arising from one source, as a result of which a single functioning whole in the form of a human rights system is formed, is not revealed in the positions under consideration. As a result, the definitions of the human rights system presented in them are positioned as a random, changeable set of phenomena and processes in any sequence, which, perhaps, are necessary, but this need remains scientifically unproven.

Not being able to reveal in detail the necessary constituent elements of the human rights system within the framework of the article, we will briefly

point out their content and logical sequence, within which the human rights system forms a special independent integral branch of the legal system of society.

The first thing that should be paid attention to is the source of human rights activity - the need to protect human rights, which can appear at any stage of the functioning of the content of law if the course of its normal functioning is deformed by various kinds of anomalies. The emergence of the need to protect human rights constitutes the primary element of the human rights system.

This need is recognized by the interested subjects of social life, which can be individuals and their various associations (organizations), both public and state. The presence of actors interested in identifying the need to protect human rights is the next necessary step in the human rights system. It should not be assumed that if there is a need to protect human rights, all absolutely social actors are interested in realizing it; for a number of them, deformations of the content of law, leading to violation of human rights, can bring additional economic, financial, political or ideological benefits, and they are rather interested in their preservation.

Following the presence of subjects of human rights activity, a necessary step in the structure of the human rights system is the human rights will of these subjects, aimed at changing the existing situation and establishing human rights as a social reality. The needs of human rights protection can remain an element of individual, group or public consciousness, as long as they are not expressed as the will of subjects with clearly defined goals.

Human rights will is the thinking of the subjects identified above, which includes the conscious needs of protecting human rights, which is expressed in human rights actions, the social activity of these subjects, using certain methods, ways and means to achieve their goals. They can be of a legal, organizational, ideological or other nature, depending on what elements of the content of the law are deformed and cause the needs of the protection of human rights.

Human rights actions give rise to the next necessary step in the structure of the human rights system - human rights relations, which link the subjects of human rights activities with other subjects of social life. Within the framework of these relations, which are, as a rule, legal in nature, there is a correction of social ties, leading to the deformation of the content of the law, and their implementation results in the satisfaction of the initial need and the establishment of human rights as a social reality.

The need to protect human rights, the subjects of human rights activities, human rights will, human rights actions, human rights relations,

their implementation and the achievement of the final result in the form of asserting human rights as a social reality - all this together and consistently taken forms the necessary elements of the human rights system as a single functioning whole.

In conclusion, we note that the position presented is not simply to call human rights activities a system and to offer a random set of phenomena and processes that are part of it, based on subjective preferences. It consists in defining a coherent relationship of the necessary elements of human rights work that lead to the achievement of its goals.

In this process, the features of the human rights system are manifested, its natural connection with the legal system of society, it becomes possible to clearly identify the problems and failures of individual stages of human rights activities, their timely correction and, therefore, more effective functioning of the human rights system as a whole.

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INTERNATIONAL ORGANIZATIONS IN THE FIELD OF HUMAN RIGHTS PROTECTION AND PROBLEMS OF THEIR FUNCTIONING AT THE BEGINNING OF THE XXI CENTURY

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Abstract. *The article is devoted to the study of the problem of the functioning of international organizations for the protection of human rights. The authors note a certain decrease in the degree of influence of international human rights organizations on the possibility of effective protection of human rights in the world. They consider the reasons for this to be the intensification of political confrontation between states and their blocs, as well as the presence of a significant bias in favor of protecting civil and political rights to the detriment of social and cultural ones.*

Keywords: *international human rights organizations, human rights, democracy, legality, social welfare, political confrontation of states.*

In the field of human rights protection, one of the most key positions, as you know, belongs to international organizations. There are many such organizations, but the question is not in their number, but in the effectiveness of their activities and approach to the problem of protecting human rights. The modern world is beginning to realize that the active role of democracy does not always coincide with the growth of universal respect for human rights. In this regard, the following questions are not always resolved: what approach is necessary, or rather will become the most effective for the protection of vulnerable groups of the population, how should the proper functioning of institutions that support democracy and ensure compliance with laws should be monitored, which should be applied equally to all.

Currently, there is often a certain degree of dissatisfaction in society with the inability of democracy to ensure the progressive development of society as a whole, as well as to ensure full protection of human rights. It is obvious that democracy itself is in crisis today¹. Constant and growing social inequality, poverty and social insecurity, lack of confidence in the future lead to disappointment and mistrust within society. This leads to the desire of citizens to actively participate in the adoption of many strategic decisions, to new forms of such participation, which is often expressed in protests, demonstrations, which have become massive in recent years in a number of countries. Very often, such protests are a form of struggle for political influence in the country. Sometimes representatives of human rights organizations take part in them, trying to express their civil position or to ensure the protection of the rights of participants in such actions.

In essence, human rights organizations are so-called "goodwill" organizations that abandon the interests of the market seeking to maximize profits and political associations seeking to concentrate power. In this sense, human rights organizations are "micro-powers" that can both stabilize and vice versa, destabilize political power, and sometimes create difficulties for leaders of different states, especially when it comes to demanding justice based on human rights. However, this does not mean that they have and use more opportunities than government institutions and law enforcement agencies.

Perhaps the active concern of human rights organizations is based on the redefinition of their roles, especially when they are associated with negative assessments from the political authorities. How, in modern conditions, a human rights organization can successfully prove itself, have a significant impact on state power and at the same time maintain a largely leading role in the implementation of human rights protection - these are the pressing questions for such organizations today. Human rights organizations are not "representative" in the strictest sense of the word, as they do not seek to act on behalf of individuals or groups².

Given the significant complexity of society and the many connections between social phenomena, it is not possible to predict the outcome of a specific action taken by a human rights organization. For example, losing a lawsuit can lead to the most unexpected consequences (inability to support

1 Grachev N.I. Transformation of public authorities and the crisis of democracy in the context of globalization // Legal culture. 2020. № 3 (42). P. 13.

2 Malak El-Chichini Poppovic and Oscar Vilhena Vieira Reflections on the international human rights movement in the 21st century [Electronic resource]. URL: <https://sur.conectas.org/en/reflections-on-the-international-human-rights-movement-in-the-21st-century/> (appeal date: 31.05.2021).

human rights in the face of concerns about some injustice). On the other hand, reports of a series of unfair practices simply remain unexplored. It is, therefore, hoped that the chances of successfully building respect for human rights will increase in line with the growing diversity of organizations and their strategies for action. Opportunities for the advancement of human rights can arise from a range of short- and long-term actions, structural and economic interventions, or actions with public and diplomatic impact. It is important to remember that the activeness, consistency and perseverance in the actions of international human rights organizations are the secret keys to success in the protection of human rights around the world, including the protection of human rights in the courts.

Much of the success of international human rights organizations stems from their ability to take risks, set goals, change plans, test multiple strategies, and use different opportunities to uphold their values. The world is constantly faced with the emergence of new forms of struggle for the recognition of human rights and new requirements for social well-being. Technological and environmental changes are profoundly affecting the way people relate to each other and organize themselves as a society.

Obviously, a normative approach to human rights should not distract from their political and social dimensions. Strict standards of equality and demands for freedom and dignity undoubtedly run up against the obstacles that characterize the power structures of all kinds of societies. Abuses and deviations from the requirement of legal regulations to some extent exist in all societies to a greater or lesser extent. It follows that any process of change that includes human rights as an objective must take into account the need to function both within social structures and political institutions. In other words, the ideal of human rights must be expanded through social standards, education and culture. In addition, human rights and freedoms should be recognized as non-negotiable for those who seek the legitimate exercise of power in society.

Modern digital and communication technologies obviously have an impact on the field of human rights, as well as on virtually all other areas of society. The monopoly on information is significantly destroyed, and the time factor is increasingly truncated. The challenge for human rights organizations today is to understand what their new role is and find ways to change their agenda to help those who seek social change through the realization of human rights. When you take into account street protests around the world that used social media as a communication platform, the presence of human rights discourse was noticeable: improved quality of public services, democracy, justice and equality were required. The ques-

tion is whether human rights organizations play a particularly significant role, as they did in the last decades of the last century. As in the case of print media and communication networks, human rights organizations must be prepared to find new space for themselves.

Given that human rights are the result of a particular historical context and a series of decisions taken at a particular time and place, they do not necessarily have the same impact on different cultures and societies. Politically, however, human rights have become a kind of moral guideline. Despite the systematic violations on the part of many governments that do not want to eliminate social tensions in their countries, it has become difficult for the governments of several countries to argue that such human rights violations are one-off or less frequent. The Internet and telegram channels very often increase the feeling of injustice and social instability in society.

Human rights non-governmental organizations, in defining their key priorities, are obliged to a certain extent to limit their activities to specific areas in the broad area of human rights. Since most human rights organizations have focused their priorities on protecting civil and political rights, faced with the specific challenge of fighting authoritarian right and left regimes around the world, there are not so many organizations defending social and cultural human rights in the world today. Despite the enormous importance of these organizations, their activities began to be questioned not only by those who tried to evade their obligations in the field of human rights, but also by those whose criticism was more legitimate, and who realized that one-dimensionality and control over a certain direction in the case protecting human rights undermines the very idea of priority and full respect for human rights.

As international human rights policy has gradually expanded, traditional organizations such as Amnesty International and Human Rights Watch have pledged to take action in different directions, expanding the scope of rights protected and restructuring their relationships with regional and local organizations. These changes also gradually influenced the specifics of international cooperation of states in the field of human rights protection, placing a significant emphasis on providing international human rights organizations with all opportunities to monitor violations of human rights and freedoms on the territory of national states and to influence governments to eliminate and prevent them in future.

The surge of optimism in the protection of human rights that occurred in the 90s of the XX century, which determined the content of the conferences in Rio de Janeiro (1992) and Vienna (1993), gradually faded as it became clear that the commitment to new democracies ideas and val-

ues of human rights was partial. The heated debate over the inclusion of provisions on justice, the rule of law and security in the new Millennium Development Goals illustrates the level of tension. Political relations between states, which today quite often can be characterized as tense and mistrustful, undoubtedly have a negative impact on the development of international human rights organizations and their ability to defend and protect human rights around the world.

A key challenge faced by international human rights organizations is the need to focus on the fundamental aspect of human rights, which is to view everyone as a goal in themselves and treat people with equal respect and consideration in the many different situations in which they find themselves. That is why the main problems of the functioning of international human rights organizations at the present time should be recognized as a decrease in their influence on the processes taking place in states, due to the prevailing atmosphere of political confrontation in a number of states and blocs, as well as the presence of a significant bias in favor of protecting civil and political rights to the detriment of social and cultural. It is obvious that the role of international organizations in the field of human rights protection is now gradually decreasing, and the international community should be interested in finding ways to revitalize their activities. Without a solution to this problem, the degree of guarantee of human rights in the global dimension will undoubtedly only decline. This state of affairs in the future threatens to turn into serious problems in the field of legal independence and personal protection.

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CUSTOMS REGISTER OF INTELLECTUAL PROPERTY AS A TOOL FOR THE PROTECTION OF COPYRIGHT AND RELATED RIGHTS

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Abstract. *The article deals with the essence of the customs register of intellectual property objects and its types in the EAEU member states, as well as the measures to protect intellectual property by customs authorities.*

Keywords: *customs register, intellectual property, copyright holder, customs authorities, counterfeit*

In the Russian Federation, among the components of the state system for protecting the rights of rightholders, there are customs authorities (CA) that ensure the protection of rights to intellectual property (RIP) in the customs territory of the Eurasian Economic Union (EAEU). Thus, by the end of 2020, domestic customs officials were able to prevent damage to RIP copyright holders in the amount of 4.7 billion rubles. More than 13 million units of counterfeit goods were identified.

The subjects of offenses were often toys, clothing, confectionery, car parts, alcoholic and tobacco products, and medication (M). In the first quarter of 2021, CA installed more than 2 million units of counterfeit products and was able to prevent damage to copyright holders in excess of RUB 750 million. [1]

The key areas of the FCS of the Russian Federation in activities related to the fight against the circulation of counterfeit products are the digitalization of the tools used to protect IP rights and the integration of promising technologies to improve customs operations with goods containing RIP. The effective tools for protecting the rights of trademark owners were TRIPS, the risk management system, and the suspension of the release date for goods with signs of counterfeit.

The above mechanisms help in identifying counterfeit products in various areas of CA's activities, incl. for customs declaration, sending goods in international mail, customs control after the release of goods. All of the above allows us to judge the relevance of the topic under consideration in

this article.

TRIPS contains information about all objects of related and copyright, trademarks (TM) and places of origin of products, the release of which is suspended by the decision of the federal authorities. This is an open and constantly updated database, which protects the interests of rightholders who have entered their TM in the register. TRIPS maintenance is subject to the federal executive body, which implements the functionality associated with control and supervision in the field of customs (FoC).

Entry into the customs register (CR) is carried out free of charge. TRIPS is intended to enter objects of copyright and related rights, TM (service marks) and appellations of origin, if:

- they are controlled and supervised by federal executive bodies in the field of FoC;

- there is a decision on their inclusion in the CR;

- there is a preliminary decision on the introduction of RIP into the CR, subject to compliance with the conditions reflected in parts 13 and 14 of art. 328 of the Federal Law of 03.08.2018 N 289-FZ (as amended on 24.02.2021) "On customs regulation in the Russian Federation and on amendments to certain legislative acts of the Russian Federation" [2].

The federal executive body that implements the functions of control and supervision in the field of FoC establishes:

- 1) the procedure for maintaining TRIPS;

- 2) the form and procedure for filling it out;

- 3) the format and structure of the electronic form of a number of documents, including:

- a statement on the inclusion of RIP in the CR;

- an appeal to change the data reflected in the application for the inclusion of the RIP in the CR or the documentation attached to it;

- a statement on prolongation of the period of inclusion of RIP in CR;

- a statement on the exclusion of RIP from the CR;

- notification of the decision made regarding the inclusion/rejection of the inclusion of RIP in the CR;

- notification of the decision made regarding the introduction of changes/refusal to amend the CR;

- notification of the decision made regarding the prolongation of the period of RIP inclusion in CR;

- notification of the decision to exclude RIP from CR.

The federal executive body exercising control and supervision in the field of FoC posts CR information on the official website on the Internet in accordance with the approved procedure.

The Commission maintains the Unified Customs Register of Intellectual Property Objects (UCRIPO) of the EAEU Member States. At the request of the copyright holder or a person who represents his interests or the interests of several copyright holders, it includes RIPs, which are protected by each EAEU member country. If there are several copyright holders similar to RIP, one of them, by agreement, may represent common interests.

Among the RIPs, the following countries can be admitted to the UCRIPO:

- objects of copyright;
- objects of related rights;
- TM service ;
- appellations of origin of goods.

The copyright holder has the right to submit an application for the inclusion of RIP in the UCRIPO of the participating countries (hereinafter referred to as the application), if he has sufficient grounds to prove a violation of his rights to RIP, which are provided for by international treaties and acts within the framework of EAEU law, and/or the legislation of the countries -participants, in cases:

- transportation of goods across the EAEU customs border;
- in the course of performing other actions with goods controlled by CA.

The application is submitted to the Commission for one type of RIP. If the copyright holder does not have a permanent establishment in the customs territory of the EAEU, it can be submitted through persons registered in the territory of one of the participating countries. The application is accompanied by documentation that indicates the existence of the right to RIP in each participating country (certificates, agreements, including the transfer of rights and licensing, other documentation confirming the rights to the RIP of the copyright holder or a person representing his interests in each country - participant in accordance with its legislation) and documentation that confirms the information reflected in the application.

It is accompanied by product samples that testify to the violation of the rights of the copyright holder or the person who represents the interests of the copyright holder (several copyright holders) on the RIP. When submitting an application by a person who represents the interests of the copyright holder (several copyright holders), the application must be accompanied by a power of attorney (powers of attorney) received from the copyright holder (several copyright holders) and relevant for the entire EAEU territory. If different copyright holders have rights to similar RIPs in the territories of the participating countries, the application must be accompanied by a power of attorney from each of them.

The documentation package must be in Russian or another language. In the latter case, their translation into Russian is attached. In addition, an obligation must be provided by the rightholder (several rightholders) regarding compensation for property damage that may be incurred by the declarant, owner, recipient of goods or other persons if its release is suspended.

If different rightholders have rights to similar RIPs in the territories of the participating countries, obligations to compensate for property damage from each of them are presented. The Commission establishes the regulations [3] for the conduct of the UCRIPO of the Member States, which include:

- requirements for registration and consideration of the application;
- requirements for the composition of the submitted data and documentation;
- the term and procedure for considering the application;
- the order of inclusion in UCRIPO;
- the procedure for exclusion from UCRIPO RIP;
- the procedure for making changes (additions) to UCRIPO;
- the procedure for extending the established period of protection of the rights of copyright holders to RIP;
- the procedure for interaction between CA and the Commission when RIP is included in the UCRIPO of the participating countries;
- the procedure for conducting UCRIPO (hereinafter referred to as the regulations).

To guarantee the fulfillment of the obligation in accordance with paragraph 9 of art. 385 of the EAEU Customs Code [4], the copyright holder must, within 1 month from the date of notification of the possibility of including RIP in the UCRIPO of the participating countries, submit to the Commission an agreement(s) of liability insurance for property damage to persons related to the suspension of the release of goods or other agreement(s) that reflect the enforcement of this obligation, which is relevant for all participating countries. The insured amount or the amount of security for the fulfillment of the obligation must be equivalent to at least 10 thousand euros in accordance with the current exchange rate at the time of the conclusion of the contract(s) of liability insurance or other contract(s), as well as the implementation of amendments to them.

International practice presupposes the right of the importer to receive goods, the release of which is suspended, if the amount of security has been paid, sufficient to protect the interests of the copyright holder. Then the amount of collateral is set according to the parameters of a certain batch of goods. Such a measure ensures the protection of the interests of importers and minimizes the possible negative commercial consequences

of the application of the procedure in relation to the imported goods. But in the Russian customs legislation, such a rule does not appear.

Power of attorney (powers of attorney) to represent the interests of the rightholder (several rightholders) in CA or other documentation that proves the powers, obligations under clause 9 of art. 385 of the EAEU Customs Code [4], and contracts must be duly executed in accordance with the first paragraph of clause 11. art. 385 of the EAEU Customs Code [4]. Otherwise, the RIP cannot be included in the UCRIPO of the participating countries, about which the applicant notifies in the manner and terms according to the regulations. The inclusion of RIP in the UCRIPO of the participating countries is free of charge.

The information available in the UCRIPO of the participating countries is reflected on the official websites [5] of the EAEU and CA on the Internet. According to art. 386 of the EAEU Customs Code [4], the authorities of the participating countries maintain NTROIS, the rights to which are protected by CA in the territories of the participating countries. The conditions and procedure for the inclusion [6] and maintenance of NTROIS are stipulated by the legislation of the participating countries on customs regulation.

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ROLE OF THE EDUCATION SYSTEM IN OVERCOMING CRISIS EVENTS¹

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Annotation. *The possibilities and ways of adapting the thinking style of learners to the conditions of development in various areas of society's activity of crisis phenomena are considered. Now such phenomena are largely the result of the development of the COVID-19 pandemic. The need for more complete coverage in the educational process of the provisions of the dynamic chaos theory, fractal and aesthetic concepts is pointed out. The characteristics of such serious obstacles to the development of mankind as technological singularity and cognitive dissonance are given. The description of the results of interdisciplinary research is of great importance. The prerequisites have emerged that make it possible to consider interdisciplinarity as an independent scientific direction. Attention is drawn to the important role played by the methods of process the received data. It is shown that the methods of Fourier analysis and fractal formalization are distinguished by their efficiency. The Fourier transforms of the processes under study, their fractal and scaling parameters demonstrate greater clarity and resistance to disturbing factors. The presence of fractal invariants in the processes and structures under consideration makes it possible to study a wide range of environmental problems and find solutions to pressing social issues. The characteristics of the attributes of a new style of thinking in assessing crisis situations contained in the article may be useful in teaching and educating personnel of a new formation.*

Keywords: *crisis, pandemic, thinking style, dynamic chaos, fractal, aesthetics, interdisciplinarity*

Introduction

To increase the effectiveness of pedagogical activity, it is necessary to

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take into account changes in the socio-economic, cultural and scientific areas of society. Particularly rapid changes requiring consideration occur during periods when crisis phenomena are observed in various directions of social activity. Now such phenomena are largely the result of the development of the COVID-19 pandemic. Educational technologies in such a situation can provide guidelines for neutralizing negative consequences if they rely on the achievements of modern science.

The purpose of this work is to develop new setting points to ensure the necessary analysis of the events in the course of the educational process and the formation of an adequate response to them.

General analysis of unstable development

To date, a lot of mathematical models have been developed that make it possible, on a rigorous scientific foundation, to predict the emergence and ways of overcoming emerging obstacles to the sustainable development of the socio - economic basis of the human community. Among them, a special place is occupied by synergetic models based on ideas about the predictability horizon. The presence of such a horizon, determined by a sequence of bifurcations, requires new approaches to studying the nature of cyclical crisis phenomena [1,2]. At the same time, the views on short-term and long-term plans need a radical revision. Their successful implementation largely depends on a correct assessment of the relationship between the duration of the crisis and the horizon of predictability.

A society can go through a crisis in a rapid “power mode”, when the predictability horizon is commensurate with the time of the crisis and the necessary economic and financial resources have been accumulated. A slow passage of an unfavorable situation is also possible, when the predictability horizon is much less than the time spent in the crisis zone. This will require a probabilistic assessment of possible future alternative solutions. It is advisable to manage the course of events in this situation through small systematic efforts, changing tactical and strategic moves, ensuring shifts in ideology, public opinion and education.

As follows from the literature data, it is necessary to take into account such a serious obstacle to the development of mankind as a technological singularity [3]. The reason for the technological singularity is too rapid technological progress and the loss of human control over artificial intelligence. Technological singularity can be combined with the so-called cognitive dissonance [4] - with the state of mental discomfort of a person caused by the collision in his mind of conflicting scientific, ideological and cultural ideas. Cognitive dissonance has negative manifestations due to the inconsistency of past experience with the present situation. This psychological

phenomenon affects our behavior and perception of the world. The desire to reduce dissonance is intensified in an environment of destructiveness during a crisis. These factors are serious obstacles to the stable progressive development of society. However, it should be considered that the chain of events that are immanent in nature can be disrupted by random, inherently large-scale phenomena, such as the Covid-19 pandemic. It seriously disrupted the established socio-economic life of society. Despite this, attempts are being made to preserve the general vector of development of society at all its hierarchical levels. Great hopes are pinned on the development of the digital economy, a remote form of performing production duties. At the same time, there is an understanding that the qualifications of workers in the production and management spheres, their general intellectual level are an important factor in neutralizing the above-mentioned challenges. But qualifications are determined not only by the sum of knowledge and skills. Now, in the "covid era", due to the rapidly changing environment and the emergence of new uncontrollable factors, a radical change in the general style of thinking is required for both managers and ordinary workers. The transformation of the thinking style is an urgent requirement of the time and is directly related to the introduction of an innovative approach to learning at all levels of the educational process.

Methodological base of the educational process

Let us consider the attributes of the training process and education of specialists of various profiles and status, capable of making responsible decisions in an environment with signs of instability. They should be based on the ideas of convergence of knowledge and interdisciplinarity. This is due to the logic of the development of breakthrough areas of scientific research. Their feature is the combination of previously independently existing conceptual attitudes, methods and approaches to achieve the set goals. Since the most interesting scientific results are obtained in the border areas of various disciplines, the role of interdisciplinary views has increased significantly [5-7].

Now interdisciplinarity should be considered as an independent scientific direction. This can be done because it is characterized by a certain subject, the role of which is played by the search for the most general and universal laws and phenomena. Like any autonomous discipline, interdisciplinarity has its own specific instrumentation, physical and mathematical apparatus. The most important components of the apparatus are the theory of probability and mathematical statistics, the theory of dynamic chaos with fractal elements, the foundations of nanotechnological processes. They allow you to find the necessary guidelines for action in a rapidly changing

environment and find means to dampen negative processes. It should be noted that in the educational process these disciplines should be taught as a single unit, since the ideas embedded in them are closely intertwined and mutually complement each other. A modern teaching system should include the following aspects:

Let us list the attributes of the process of training and education of specialists of various profiles and status, capable of making responsible decisions in an environment with signs of instability;

1) **Ambivalence and multivariance.** In sociology, ambivalence is considered as a social phenomenon, the sources of which lie in the contradictions of the system of values of the human-loot, in contrast to its relation to yourself, to other people around the world. In a pandemic, when the disunity of people increases, the established forms of their interaction collapse, the usual channels of information are broken, the ambivalence of judgments and internal assessments can make serious changes in the state of society. There are attempts to apply the category of "ambivalence" to the analysis of conflicts of norms inherent in science as a social institution that. This is due to the initial ambivalence of the most valuable samples that scientists follow. The emerging situation requires, when making decisions, a competent goal setting, identifying potential results, establishing decision criteria, separating criteria and comparing "yes, no" alternatives, and, most importantly, identifying and assessing risk. However, it is necessary to compare each alternative individually with some ideal pattern created. Some innovation should also be envisaged, i.e. formation and implementation of a previously unknown alternative. In this case, managers are faced with a situation where they need to make a choice in the absence of ready-made alternatives. Therefore, in this case, creative thinking should prevail over rational.

Due to the nonlinearity of social processes, it is impossible to make a reliable forecast, because development occurs through the randomness of the choice of the path at the moment of bifurcation. However, the question arises: is the number of options for the development of the system at the bifurcation point limited? Synergetic modeling made it possible to prove that even at bifurcation points not "everything" can happen: the number of real scenarios is always limited. As soon as the events have entered one of the modes, the system irreversibly changes in the direction of the corresponding final state (attractor). At the point of bifurcation, the so-called "catastrophe" occurs - the transition of the system from the region of attraction of one attractor to another due to fluctuation processes. The presence of noise is a condition for the transition from one stable state to another, but

for this, these stable states must be sufficiently close to the unstable point.

2) Cognitive elements. Cognitiveness is the ability to perceive and process data that comes to us in various ways. An actively developing cognitive psychology has begun to explore how information processing affects behavior and how various mental processes are related to the acquisition of knowledge. Acquiring new knowledge we make decisions in response. Various cognitive abilities are involved in these processes: perception, attention, memory, thinking. The most important cognitive process is thinking. It allows you to combine all the information received and establish the relationship between its constituent data. For this reasoning, synthesis and problem solving are used, i.e. executive functions. Despite the multichannel nature of the analysis carried out one should take into account the fact that in crisis situations there is a possibility of making erroneous decisions. The cognitive research perspective depends on the creation of a neurocomputer interface based on direct contact between human and "computer" consciousness. It can significantly change the idea of human intelligence and the ways of its development.

3) Metaphysical representations. Sometimes a person faces questions that he cannot evade, since they are imposed on him by his own nature or objective circumstances; but he cannot correctly answer them, since they exceed all his knowledge and capabilities. However, with the help of intuitive considerations and a chain of hypotheses, he is able to obtain solutions with varying degrees of reliability. Further development of scientific concepts and experimental research can confirm or refute the constructed concept. The disadvantage of metaphysical ideas is the difficulty of detecting erroneous statements, since they go beyond the limits of all experience and do not satisfy the previous experimental criteria. Despite the imperfection of the metaphysical method, it is one of the ways to form a forecast for the possible development of events.

4) Aesthetic component. The presence of an aesthetic component in the style of thinking provides a transition from one logic to another and allows one to discover deep meanings before their universally significant manifestation and justification. This indicates the enormous epistemological and heuristic potential of the aesthetic principle. The subject of aesthetics is human sensibility, which is responsible for a holistic, figurative comprehension of the world by a person. Such a definition also includes the sphere of the beautiful, the sublime, the comic, the tragic, and other aesthetic categories that characterize a person's sensual comprehension of the world. It also covers the field of science, confirming the correctness of the chosen direction of search.

Presentation of analysis results

When implementing the above approach to the orientation of training in the conditions of unstable processes, an optimal choice of the form of presentation of the results of the analysis is required. So, in many cases it is necessary to analyze not the obtained dependences and structures themselves, but their Fourier transforms, which demonstrate greater clarity and resistance to disturbing factors [6,7]. This property of the Fourier transform was confirmed when conducting test exercises with students on the basis of numerical modeling of processes with varying degrees of order. Fig. 1a,b graphically shows two such processes, modeled using the Weierstrass fractal function [6,7]. Such dependences can characterize both a change in some physical parameters (for example, temperature fluctuations in the atmosphere), and a change in some economic indicators (for example, the stock price on the stock exchange). Fig. 1b in comparison with Fig. 1a is characterized by a higher value of the fractal dimension and, accordingly, stronger fluctuations. Despite significant external differences between the processes, the Fourier spectra demonstrate almost complete coincidence (Fig. 2). Additional calculations performed using other models have confirmed the effectiveness of the Fourier analysis from the point of view of the stability of the studied characteristics. In all the cases considered, the fractality of the object gave rise to the fractality of the Fourier image.

The use of fractal representations has proven to be effective in interpreting the results of the analysis of a particular changeable situation. Thus, the presence of fractal invariants allows one to study a wide range of environmental problems and find solutions to acute social issues,

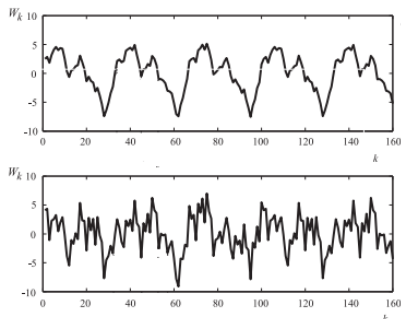


Fig. 1. Graphical representation of processes based on the Weierstrass function. W is the value of the Weierstrass function, k are significant digits on the time scale. *a* - fractal dimension $D = 1.15$, *b* - fractal dimension $D = 1.95$.

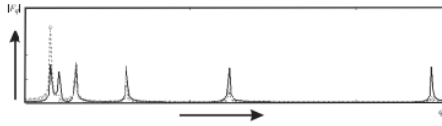


Fig. 2. Spectral composition of the processes shown in Fig. 1. Continuous curve - $D = 1.95$, dotted line - $D = 1.15$; F_q is the amplitude of the spectral components, q is the spatial frequency.

The properties of Fourier transforms and fractal parametrization make it possible to interpret a number of provisions of modern neuroaesthetics, in particular, they allow, on the basis of physical and cognitive ideas, to give an explanation of the phenomenon of the beauty of fractals [6]. These ideas are based on the concept of spatial frequencies selection of the fractal image in the cerebral cortex. The discovered stability and fractality of Fourier images indicates the possibility of accelerated processing of optical signals in specialized areas of the cerebral cortex. Fast Fourier processing of visual signals creates a feeling of comfort and evokes a sense of beauty when contemplating a fractal object. Thus, the results obtained make it possible to substantiate from a physical point of view the effectiveness of using visual art therapy in medicine based on the presentation of fractal images to patients, as well as to give a physical interpretation to some of the provisions of modern aesthetics. The given example should be attributed to the use of transdisciplinary technology, which combines the concepts of significantly remote areas of scientific research.

Conclusion

The development of society at the present stage is unstable due to the influence of factors that are difficult to predict, which include the spread of the Covid-19 pandemic. The dramatically changed situation requires the introduction of qualitative changes in the teaching system, which should be focused on highlighting alternative approaches to making forecasts for the short and long term prospects for the development of society. Teaching should use concepts that have been formed in an interdisciplinary field, including synergetic and fractal ideas, as well as innovations in the field of technology and, above all, nanotechnology. The characteristics of the attributes of a new style of thinking in assessing crisis situations contained in this article may be useful in teaching and educating personnel of a new formation.

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**METHODOLOGICAL ASPECTS OF THE STUDY OF
NEURODIDACTICS IN HUMANITARIAN STUDENTS**

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Annotation. *In the proposed wide pedagogical community, the article sets forth the methodology for studying the neurodidactics of students at a specific scientific (pedagogical) level. An analysis of the federal state educational standard for higher education (bachelor's and master's degrees) in humanitarian specialties revealed an omission in the formation of cognitive competencies. The universal competence of UK-1, within which systematic and critical thinking is formed on the basis of a systematic approach, does not fully disclose the intellectual mission of higher education, namely, the disclosure of thinking abilities and the maximum use of the brain resources of university students.*

To research and solve this problem, the author has identified research methods. The formulations of goals, objectives, academic subject within the framework of academic training are proposed. The preferred forms and methods of teaching students have been selected. Highlighted the positions (programs, teaching materials, federal state educational institutions) for the embodiment of the neurodidactic component of education of students of the humanitarian profile.

Keywords: *methodology, neurodidactics, students, pedagogical level, teaching students, component of education, humanitarian profile*

In previous publications, we have outlined the philosophical and general scientific aspects of the methodology for studying the neurodidactics of students. In this article, we will consider the pedagogical aspect of this problem. Neurodidactics of students correlates with the cognitive paradigm of education, in the center of which is the process of cognition. This branch of pedagogical knowledge informs him of the rationale from the standpoint of the functioning of the human brain and the focus on the maximum use of its resources.

A great influence on the formation of the named educational paradigm and neurodidactics was exerted by cognitive psychology (G. W. Neiser, M. Brodbent, D. Norman, J. Bruner, etc.), which loudly declared itself in 1960-1980. and focused on knowledge, semantic memory, awareness, perception and processing of information, forecasting, understanding, cognitive styles. A significant milestone in the development of cognitive psychology was the introduction of information tools into education. Neurodidactics is still fueled by the ideas of cognitive psychology and is successfully developing in organic unity with the latter.

The logic of our research leads us to documenting neurodidactic positions in academic education. Neurodidactics sees its place in the Federal State Educational Standard of Higher Education in the list of universal competencies. In particular, the group (category) "Systemic and critical thinking" in the competence of UK-1 for undergraduate studies is deciphered as "the ability to search, critical analysis and synthesis of information, to apply a systematic approach to solving problems" [1], for a master's degree - as "the ability carry out a critical analysis of problem situations based on a systematic approach, develop an action strategy [2]. In both interpretations of CC-1, the priority approach for the formation of these types of thinking (systemic and critical) is called the systemic one, which, in our opinion, does not reveal the essence of the declared universal competence. In support of this assumption, we analyzed the indicators of competencies in different areas of humanitarian knowledge. It did not reflect the neurodidactic component, which is clearly demonstrated by the indicators of achieving universal competencies at the levels of higher education, developed by a team of authors (M.D.Bershadsckaya, E.A. Zima, A.V. Serova) with the support of leading universities in Russia.

The descriptors of the UK-1 indicator for bachelor's degree developed by the named team of authors include: analysis of the task, highlighting

its basic components (UK-1.1), determination and ranking of information required to solve the problem (UK-1.2), search for information to solve the set task according to different types of requests (UK-1.3), when processing information, the ability to distinguish facts from opinions, interpretations, assessments, the formation of their own opinions and judgments, argumentation of their conclusions, including using a philosophical conceptual apparatus (UK-1.4), analysis of ways to solve problems ideological, moral, personal character based on the use of basic philosophical ideas and categories in their historical development and socio-cultural context (UK-1.5). Descriptors of the UK – 1 indicator for master's programs are presented in a similar way, based on systemic and interdisciplinary approaches.

We see an omission in the formal wording of the universal competence of Criminal Code-1. The types of thinking declared in it are disclosed one-sidedly, without involving the latest neuropedagogical data. In this regard, we propose to introduce the following neurodidactic indicators into the indicators of achievement of CC-1: 1) the graduate's operation with mental operations of analysis and synthesis, induction and deduction, concretization and generalization, 2) adherence to consistency, logic, anticipation in the implementation of cognitive activity, its implementation evaluative function, 3) flexibility of thought processes and abilities, 4) mastering different ways of assimilation and processing of information, 5) reflection of achievements and omissions, development of self-awareness.

The development of the neurodidactic process of cognition in the student audience involves the formulation of goals and objectives, substantiation of the content, selection of forms, methods, teaching aids from the standpoint of neurodidactics.

The goal involves the development of the thinking abilities of the individual: the actualization of neuropsychological and professional potential, the formation of key competencies, the prediction of personal and professional growth).

Tasks include: 1) motivation of professional formation and self-development, 2) the formation of students' neuropedagogical, psychological, socio-economic, legal, special (professional) competencies, 3) the development of an individual style of activity, taking into account data on the lateral asymmetry of the brain, 4) grafting positive self-concept of a professional, 5) reflection of cognitive achievements and professional development.

These positions are determined by the specialty and direction of training of students. Let us dwell on the selection of forms and methods of teaching students. Following A.A. Malsagov and V.V. Lezina [3], the forms

of learning include individual educational trajectories, network training programs, information and communication technologies, telephone "tutoring", radio and video conferences, video courses, interactive training programs, correspondent training using e-mail, network projects, self-education.

Teaching methods are diverse and are divided into oral (lecture, explanation, conversation, conference, discussion, individual survey, frontal, condensed), written (dictations, essays, essays, written assignments), practical (experiments, practical work), programmed (machineless, machine), graphic (diagrams, graphs, tables), practical (exercises, practical tasks), visual (illustration, demonstration), inductive and deductive, reproductive, constructive learning, problem-search, independent work, design, cognitive learning (cognitive instruction , problem-developing, simulation planning, design, experimental teaching), interactive (role, simulation, business), "case studies", trainings, organizational.

The academic subject is considered from the point of view of neuropsychological processes of perception, attention, memory, speech, cognitive and emotional intelligence, etc.

From the standpoint of the organization of training in programs, educational and methodological complexes, funds of assessment tools, effective neurodidactic models and methods, the mental activity of students, the boundaries of the study load, the organization of the scientific organization of labor are embodied. Learning is carried out taking into account their individual brain parameters: the speed of mental and sensorimotor reactions, the type of temperament, the volume of memory, the possible dominance of one of the cerebral hemispheres, linguistic behavior (monolingual, bilingual). This is the manifestation of the individualization of learning, which neurodidactics insists on. We see its personal aspect in the formation of motivation for learning, the disclosure of cognitive abilities, the identification and use of subjective experience, creative intentions.

Control of students' learning activities should be corrected neurodidactically. In particular, in the current control and intermediate certification, tests should be introduced to identify the degree of understanding of what has been studied in order to take into account the teacher's psychodynamic characteristics of students (motor skills, activity), the individual dynamics of the development of their psychological processes, the permissible volume and speed of information processing to determine the correspondence of the level of complexity of educational cognitive tasks, the cognitive capabilities of students and the subsequent correction of the didactic process. For the same purpose, a column "Type of student's thinking activity" can

be introduced into the instructions for the assessing teacher, where information about neurodidactic barriers and learning difficulties will be placed. The column "Degree of awareness of understanding" should contain a reflection of achievements with subsequent correction of the neurodidactic profile of students.

Let's return to the research apparatus of neurodidactics of students and the allocation of research methods. Among them is a theoretical analysis of the teaching of students, taking into account their mental activity. Empirical methods include: observation, survey (conversation, interview), collection and processing of empirical data.

Let us highlight the project method and the development of the author's technology of neurodidactic content in a separate line. The compositional components of such a technology should include motivation, motivation, goal setting, intention for professional activity, 2) the content of training, 3) its program, 4) the development of the educational process, 5) technological methods of teaching, 6) control of the formed competencies.

An experiment in this kind of research involves the development of its methodology, experimental modeling of students' neurodidactics at the ascertaining, formative and control stages, a description of the conditions of the experimental process, its reflection.

Let's summarize the above. The pedagogical aspect of the research methodology of students' neurodidactics is presented in this article by reasoning about the correlation of students' neurodidactics with the cognitive paradigm of education. Based on the analysis of the Federal State Educational Standard for Bachelor's and Master's Degree in Humanities, the necessity of documenting neurodidactic provisions in academic education is substantiated. Research methods are highlighted. The formulations of the goal, objectives, academic subject are offered. The preferred forms and methods of teaching students have been selected. The positions (programs of teaching materials, federal state educational institutions) for the embodiment of the neurodidactic component of the education of students of the humanitarian profile are highlighted.

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**SAND THERAPY AS AN INNOVATIVE TECHNOLOGY FOR THE
DEVELOPMENT OF COGNITIVE ABILITIES IN PRESCHOOL
CHILDREN**

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Abstract. *The article discusses the possibilities of using sand therapy means in the development of cognitive abilities in older preschool children, discloses the principles of implementing this technology in the process of interaction between a teacher-psychologist and children. According to the authors, the advantage of innovative sand technology is that the joint cognitive activity of a preschooler with an adult and peers contributes to the expansion of cognitive motivation, fills the child's own cognitive activity with a new personal meaning.*

Keywords: *sand therapy, non-traditional approaches, innovative technologies, individual approach, interaction, cognitive activity, preschool education.*

Today, the main priority in education, in accordance with the Federal Law "On Education", is the personality-oriented interaction of the teacher with the child: acceptance, support of his personality, interests and needs, development of creative abilities, concern for his emotional well-being. The modern world is becoming more and more diverse and complex every day, it requires from the younger generation not routine, habitual actions, but the activity and mobility of thinking processes, quick orientation, a creative approach in solving both life and professional tasks. Under these conditions, the problem of the development of cognitive abilities in older preschool children by means of sand therapy is becoming more and more urgent, specifying various forms and means of organizing children's activi-

ties, the development of all higher mental functions, cognitive processes and creative abilities in a child. The relevance of the study is also due to the fact that nowadays non-traditional approaches are increasingly used in the development of mental processes, including cognitive abilities in children from an early age.

In turn, the Federal State Educational Standard of preschool education requires the introduction of innovative technologies into practice that can provide an individual approach to each child with the aim of all-round development. In the modern educational system of preschool education, we consider sand therapy as a new innovative technology, one of the types of scientifically grounded creative therapy – art therapy.

It should be noted that in foreign and domestic psychology and pedagogy the issues of studying the theoretical basis, methodology and practice of using sand therapy concerned many researchers (K.G. Jung, M. Lowenfeld, D. Kalf, L. Steinhard, S.L. Rubinstein, M.M. Bakhtin). An invaluable contribution to the development of the problem under study was made by Zinkevich-Evstigneeva T.D., Grabenko T.M., Bolshebratskaya E.E., Osipuk E.I., Sakovich N.A., Loginova O.I., Berezhnaya N.F., Vorobyova Yu.V., Novikova N.A., Permyakova M.E., Podzorova A.O., Sapozhnikova O.B., Leontiev A.A., etc.

However, despite the sufficient knowledge of individual issues of this problem in theoretical terms, practice-oriented foundations of this technology are not fully developed, as a result of which teachers do not have sufficient experience for its successful implementation. Insufficient development of some questions in theoretical aspects and its practical orientation made it possible to formulate the research problem: what are the possibilities of sand therapy in the development of cognitive abilities in children? The goal of the study follows from the problem, which is to substantiate the possibility of using sand therapy means in the development of cognitive abilities in older preschool children.

Active development of the cognitive sphere in senior preschool age creates the basis for successful learning at the next stage of development [1]. Recently, teachers have noted a significant decline in the level of independent cognitive activity in preschoolers. Children are not interested in accepting and memorizing new information, the need for independent learning of the environment, an independent search for answers to questions of interest, a cognitive attitude to the world is not formed. In some children, cognitive activity is poorly manifested, which is expressed in insufficient development of mental processes: blurred perception, instability of memory, distraction of attention, lack of formation of the internal plan of

speech, etc. Preschoolers are often not capable of full regulation of mental actions.

To solve the problems of the development of the cognitive activity of children through their active participation in the educational process in the conditions of a preschool educational institution, we consider it necessary to use in educational and educational practice new, effective pedagogical technologies aimed at personal development, as well as mastering the necessary practical knowledge, skills, logical and verbal thinking designed to teach children to independently search for solutions in various situations [3].

One of these innovative technologies that contribute to the development and disclosure of the creative potential of the child's personality is sand therapy. The advantage of this type of art therapy is that the joint cognitive activity of a preschooler with an adult and with peers has a beneficial effect on the development of cognitive motivation, fills the cognitive activity of children with a new personal meaning.

The implementation of sand therapy technology in the process of interaction between a teacher and children requires the use of certain principles. We will list some:

- the principle of a comfortable environment – presupposes the creation of such conditions in which children should feel the safety, convenience, comfort of a partnership with a teacher;

- the principle of unconditional acceptance of the child encourages a teacher to accept the child as he is, regardless of the physical and aesthetic state, life values, experience, and most importantly, to accept all the child's actions in the sandbox;

- the principle of accessibility of information means that all recommendations of a teacher-psychologist must be accessible and understandable to a child, a psychologist must speak "the same language" with children;

- the principle of concretization and objectification assumes that the teacher-psychologist helps a child to find an adequate solution, concretize the problem, shows a holistic picture of what is happening, since children often lose a holistic vision of the situation, emotionally reacting to the details of what is happening;

- the principle of focusing on the potential resource of a preschooler orients the psychologist to the fact that he should always, in parallel with the child's problem, explore his various potential resources, as the information obtained in this way about the potential of a child helps the specialist in the development of counseling programs and specific recommendations regarding the problems of personality formation.

The teacher-psychologist chooses the forms and options for sand therapy himself, taking into account the theme of the sand painting, based on the number and age characteristics of children, the temperament and condition of a particular child, the goals and objectives of the educational game. Actually, the sand therapy procedure itself is filled with a rich fantasy play, arouses interest and a storm of positive emotions in children [3]. The child is liberated, he can express himself, there are no boundaries of standard forms of education. The speed of assimilation of knowledge and skills by children determines the positiveness of socialization and individualization of children and is of great importance for preparing children for school education.

In the process of experimental work, we have developed a set of integrated lessons for the development of cognitive abilities of older preschool children by means of sand therapy, including both educational games – fairy tale games, games for the development of memory, speech, phonemic hearing, correction of sound pronunciation, development of fine motor skills, and cognitive (the world around, geography, ecology). In order to activate cognitive interest, one should practice the learning process mainly in the form of conversation, discussion, projective and cognitive games, drawing, with elements of fairy tale therapy.

The implementation of the method of sand therapy in the process of training requires the creation of favorable conditions for the harmonization of the mental state and personal growth of children. By participating in playful forms of classes, children receive a charge of positive emotions, showing independence: they themselves come up with stories, obstacles and ways to solve them. Children gain experience of independent conflict resolution, learn to listen and hear each other while neuropsychic tension and stress states of children decrease. Children noticeably increase cognitive and creative interest, the ability to think logically, self-esteem increases markedly, children become much bolder and more confident. The sandbox encourages children to take new opportunities for development.

A comparative analysis of the levels of indicators of the development of cognitive needs can be seen in Table 1.

Table 1 - Comparative analysis of indicators of the cognitive need of a preschooler (methodology "Cognitive need of a preschooler" (author V.S. Yurkevich, modification and adaptation in relation to pre-school age by E.A. Baranova)

The level of development of cognitive needs Ascertaining stage Control stage	The ascertaining stage		Control stage	
	Absolute number	%	Absolute number	%
high	15	55,5	22	81,5
moderate	8	29,6	5	18,5
low	4	14,8	0	0

A comparative analysis of the indicators of the cognitive needs of preschoolers using this methodology allowed us to draw the following conclusions: the level of cognitive needs of children with high needs increased from 55.5% at the ascertaining stage to 81.5% at the formative stage of the experiment, thus improving by 26%. And this, in turn, influenced the level of the children with moderate needs (from 29.6% to 18.5%), which indicates a trend towards an increase in the level of cognitive needs in children. There were no children with low cognitive needs in terms of development at the control stage.

In terms of awareness, the number of children with a high level of needs also increased: from 6 (22.2%) at the ascertaining stage to 20 (74%) respondents at the control stage, which enhanced the number of "good" children from 15 (55.5%) to 6 (22.2%); at the middle level there were 3 children (11.1%). A low level at the control stage was not found in any child while at the ascertaining stage there were 3 of such children.

As for the development of memory, it should be noted that it improved in all respondents: we found a high level of memory development in all 26 children (96.2%).

Indicators of attention also improved, it became more concentrated and stable: 23 children (85.1%) coped with the task successfully compared to 16 children (59.2%) at the beginning of the experiment; at the middle level, 4 children coped successfully (14.8%) compared to 7 children (25.9%) at the beginning; 4 children from the category of "unsuccessful" also improved their results and no one from this group was left at the control stage.

So, a comparative analysis of the assessments of the completed tasks at the ascertaining and control stages of the experiment showed a tendency towards a decrease in low assessments and an increase in high ones.

Thus, the results of the experimental work indicate that the developed and implemented system of exercises for the development of cognitive abilities by means of sand therapy in older preschool children is effective and contributes to an increase in the level of development of cognitive abilities.

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MODERN EDUCATIONAL TECHNOLOGIES IN POSTGRADUATE TRAINING OF DOCTORS - CLINICAL PHARMACOLOGISTS

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Abstract. *This article presents modern tendencies of the development of continuous medical postgraduate education of doctors - clinical pharmacologists aimed at increasing the quality of specialist training. The significance of modern educational technologies in postgraduate training is discovered on the basis of the experience of the clinical pharmacology teaching. They are such as: distant learning, modular type of learning, multidisciplinary approach, problem learning, modeling of clinical situations, evidence-based Medici.*

Keywords: *clinical pharmacology, postgraduate training, modern educational technologies.*

One of the most important stages in the formation of a doctor-specialist is postgraduate education. In The Krasnoyarsk Territory namely postgraduate education gives the future doctors - clinical pharmacologists the opportunity to acquire necessary qualifications, master social and professional competences in the main sections of clinical pharmacology and learn the principles of rational pharmacotherapy needed for their professional activity [1,2].

Postgraduate training of doctors in the speciality of clinical pharmacology began in the Krasnoyarsk Territory simultaneously with the introduction of the speciality a “doctor -pharmacologist” in 1997 in our country. However, to date the problem of stuffing in the hospitals of the Krasnoyarsk Territory on the speciality of a doctor - clinical pharmacologist has not been resolved. The situation, prevailing in the region, involves deep transformations in the field of training the specialists in clinical pharmacology in our

University [3,4].

One of the features of the modern pedagogical process in postgraduate education of doctors is a wide use of modern information technologies. The usage of high technologies in education created a special branch of telemedicine that is distant training. Distant training is very actual for implementation of postgraduate education of doctors - clinical pharmacologists.

The purpose of this article is to study the role of modern innovative technologies in the postgraduate training of clinical doctors - pharmacologists and to define the goals and tasks of the usage of the modern educational technologies.

Materials and methods. To achieve the goal, stated in the article, we studied the problem of the usage of the modern innovative technologies in postgraduate training of doctors in general. We analyzed the possibilities of the using of the suggested technologies in postgraduate training of doctors in the speciality "clinical pharmacology".

Considering that postgraduate education needs modern educational methods [5], one of the ways to solve the shortage of clinical pharmacologists in the region is the introduction the innovative educational technologies in postgraduate education of doctors - clinical pharmacologists including the continuous medical education (CME), which will allow to increase the possibilities of training specialists for practical health care in clinical pharmacology.

According to experts, the most promising for changing the learning strategies in postgraduate education are: modular type of learning, multidisciplinary approach, problem learning, evidence-based medicine. Particular attention is paid to distant training of doctors [6, 7].

Russia's entry into the European educational space made changes in the postgraduate education of doctors. Replaced since 2021 certification for the accreditation of specialists will contribute significant changes in the training of doctors. All physicians must gain 250 educational credits five years before the accreditation. 144 credits of these are credits in the full-time thematic cycle. Doctors gain the rest 106 credits by independent work, namely by visiting conferences, conducting research, attending educational sites CME, remote conferences, webinars, passing short-term remote cycles.

One of the most important tasks at present is the compliance of methodology in postgraduate education with the needs of the health care system. One of the effective mechanisms for solving this problem is the introduction of modular training [7,8] that takes place in our department. It got its name from the word "module" (from the Latin *modulus* - measure). Modu-

lar training is the training of specialists in the relevant discipline consisting of separate complete fragments (modules), that are demanded most in the practical work. The number of such modules is defined by a doctor himself or herself within the framework of the ongoing cycle.

Multidisciplinary strategy while studying the subject “Clinical pharmacology “ consists in that the aspects of pharmatherapy are united according to pharmacological or pharmacotherapeutic topics. Specific issues of pharmacotherapy, clinical cases or other professional situations in medical practice are considered simultaneously from the position of related disciplines, allowing students to reproduce the most complete picture of what is happening [1, 9].

Problem-based learning implies such an organization of the educational process in which a teacher does not deliver knowledge in a finished form but leaves the problematic tasks for the doctors, prompting them to look for the ways of solving them, that is the problem itself paves the way for the knew knowledge and methods of action. The doctors, together with the teacher, choose diagnostic and therapeutic tactics in a specific clinical situation. They learn not only to solve it but also to predict the result, deeply understanding the nature and mechanisms of the ongoing process. The modern strategy of medical postgraduate education lies in the concept from the knowledge of what to do to move to the knowledge and skills on how to do, from passive learning to active, from simple transfer of information to learning, from teaching independent disciplines to move to their integration around practical problems, from individual learning to multi-professional, from the educational system focused on a teacher’s interest to the system focused on the interests of the trained professionals.

In addition, a systematic focus on modern educational technologies is implemented by reflecting innovations in the principles of teaching in the programs; modularity of training - till “the result; variability of training periods should depend on the initial level of students’s readiness; forms and methods of teaching should include active methods of distant learning, telemedicine, differentiated learning; methods of control and educational management should include distributed control by modules, testing and ratings, adjustment of individual programs based on the results of control; the teaching aids should include computer programs, integrated and personal databases, simulators[10].

Recently, special importance has been attributed everywhere to distant education of doctors [6,11]. The peculiarity of the modern pedagogical process in postgraduate education is the widespread use of various information technologies. The internet is an integral part of the professional

education of doctors. Network technologies make it possible to conduct effectively distance learning (DL) for doctors.

DL is especially important for young specialists, it is impossible without information and communication technologies [10]. DL has been successfully used for several years at the department of pharmacology in pharmaceutical consulting and postgraduate education of doctors - pharmacologists.

DL allows to organize the educational process without interrupting the main work of postgraduate students. The DL system involves conducting distance lectures either within the framework of thematic courses or practical classes in current areas of medicine on various methods of diagnosing the treatment of various nosological units and individual telemedicine consultations. In addition, DL allows you to effectively control the educational process, accumulate credits, summarize them and take them into account in the future accreditation of specialists, confirming their professional competence [10]. Currently, there are the following types of telemedicine training systems: real-time teleconferences, telelectures and tele-seminars, master classes, thematic and elective courses with monitoring systems, electronic textbooks [13]. Telemedicine is used also for the real training of postgraduate students.

The main goal of distant learning in clinical pharmacology at our department is to orient the doctors in the matters of the discipline studied, to create motivation to study the topic, to determine the connection with other topics of the course sections. The tasks of DL are to provide postgraduate students with remote access to the databases of a source of medical information. Conducting tele-lectures and tele-seminars, conducting remote exams and qualified testing in real time.

A mandatory stage of DL is to control the knowledge of doctors - pharmacologists through testing and solving situational tasks. At the end of the cycle, a three-stage examination is carried out.

Conclusion. Summing up the above, we can say that modern educational technologies are promising methods of postgraduate education that optimize the training of specialists in clinical pharmacology. Training with CME corresponds to the goals and objectives of the modern system of health care in carrying out pharmacotherapy and to the needs of physicians - clinical pharmacologists in accordance with the professional standard of "Physician - clinical pharmacologist".

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THE PROBLEM OF ALIENATION IN THE GLOBAL TECHNOGENIC WORLD

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Annotation. *The author's purpose in this work is to show an understanding of scientific and technological progress in the history of the development of socio-philosophical thought, in various teachings, and to explore the features and relevance of the alienatio problem in the modern technogenic world. These questions matter because today technology has invaded personal relationships, creating new forms of communication, and has affected the psychological, personal, spiritual, ethical, political, economic, scientific and other aspects of human life. The article studies modern trends that are the result of the growth of such negative consequences of alienation as are deterioration of social health, loss of trust in public institutions, impossibility of fulfillment of a person's creative potential.*

Keywords: *scientific and technological progress, globalization, alienation, spirituality, technogenic civilization.*

Social and philosophical understanding of the globalization process. The profound changes, taking place in the modern world community, appear due to various reasons of the political, economic, social and spiritual nature. The rapid pace of development of information society, affecting the processes of globalization should be mentioned among the determinants. It leads to a change in the process of the acquisition of personal identity. First of all, it is connected with information of great significance for a person, which is becoming increasingly individualized, personalized, and also reflecting the characteristics of the personal perception of the world.

While addressing main problems of modern global society, we should note the problem of intrusion of technology into interpersonal relations creates qualitatively new forms of social communication and affects deep spiritual, psychological, personal, ethical, political, economic, scientific

and other spheres of human existence.

Up to the middle of the XX century, the period of development of technology philosophy reflected the era of mass production and consumption. The problem of alienation began to generate interest again after the boom in the 1960s and a surge of attention in the 1990s.

Since 1960s anxiety appeared instead of optimism regarding the scientific and technological revolution in connection with the alienation of technology, with the "extrusion" of a person as a subject, creator and consumer of culture from the technologized social reality. Individualized production and consumption is typical of the post-industrial society.

Globalization is a multifaceted phenomenon that influences the life of every person through the education system, art, culture, information system, science, social and economic development, environmental problems, technical and technological processes, as well as directly the lifestyle of people and moral atmosphere of the society.

If we consider the constructive and destructive components of globalization, then, unfortunately, the latter prevail. In modern conditions, globalization contributes more to the development of negative trends in the world than to positive and progressive changes.

On the one hand, globalization contributes to the spread of human progress and universal human values. For instance, there are such positive trends as the dissemination of ideas and principles of democracy, humanism, freedom, individual rights, protection of children's rights, equality of women and men, a departure from the trend of exploitation of man by man, familiarizing of broad masses with culture and art. It is also obvious that, without globalization, the fruits of civilization such as mobile communications, computerization, the Internet, modern household appliances, automobiles, etc., would not be widely available for most countries of the world today.

On the other hand, globalization gives an unstable position to a person in the world; such trends as an alienation of the system of spiritual values and human connections, the development of various human vices, degradation and social apathy occur. The impoverishment of spiritual being emerges in a context of the gigantic growth in the volume of information. It indicates the presence of contradictions, which the previous historic periods have never faced.

Negative trends in the development of technological civilization, spiritual and ethical problems of man. The main problem in the social development of society and an individual in the modern era is that the Internet has no definite value orientation. Therefore, it is difficult to determine

how much useful, positive and practically necessary information prevails over destabilizing, negative and demotivating one. The danger is that a person can become a passive consumer of poor-quality and destructive information without proper upbringing of spiritual, moral and ethical standards. Moreover, the vast majority of people do not have a proper level of critical thinking. Indeed, a person in cyberspace is forced to encounter information that has no cultural, spiritual and practical value along with information useful for social and cultural development, as well as for scientific activities, moreover, he is faced with the dominance of pornographic information, the demonstration of scenes of violence and cruelty. Wasting his time and sometimes money on useless and destructive informational sites, an Internet user thereby passively maintains ratings of these resources.

Another problem, pushing a person towards alienation, is the problem of self-identification, since a person cannot associate or identify himself with any particular culture. It happens as a result of the cultural forms' mixing and unsystematic information on the Internet.

Previously, a person was more clearly aware of his development path, his goals and ideals. In agrarian and industrial eras the identity of the person was determined by his position in society, the cultural and social environment, and the religious faith of his family. Also, the person could identify himself with different goals and ideals. But this process was rather individual. The ongoing global changes in the society in the information age lead to the identity crisis.

In modern conditions, the person is disintegrated, he has no life plans and an identity crisis emerges. As a result, apathy, depression, cruelty, aggression, various forms of complexes and addictions and even mental disorders appear.

The solution of the problem might be in the integrated development of the whole personality based on the integration of such components of the spiritual development of the personality and its identity as social, religious, cultural, technology-related and psychological components. [6, 161-169] All of them are the determinants of the formation of the spiritual world of an individual, and perhaps elements of a person's withdrawal from the state of alienation. We believe that the most effective determinants and regulators of human development are such spiritual and moral imperatives as social, moral and ethical, environmental ones, as well as the imperative of responsibility.

The relevance of the study is determined by the tendencies of increasing negative consequences of alienation, such as deviant behavior, deterioration of social health, political apathy and loss of confidence in public

institutions, the impossibility of realizing one's own creative potential. [8, 9]

Society is characterized by high rates of technology development at the present stage of its development. However, technological development leads to the separation of individuals, that is alienation.

The breakthrough of the technogenic nature that we are witnessing today, undoubtedly, leads to changes in all spheres of human existence - in economic, social, spiritual terms, as well as in mentality. Personality and its needs, habitual ethical and aesthetic attitudes and the pyramid of values are changing. It creates premises for the next round of human alienation. The negative consequences of alienation are deviant behaviour, deterioration of social health, political apathy and loss of confidence in various public institutions [8, 10].

The problem of alienation in Marxism, classical German philosophy and existentialism: historical insight. The problem of alienation has a number of conceptual solutions (in Marxism, existentialism, dialectical theology, postmodernism).

Alienation occurs in several systems: in the "man - the results of activity" system (Marxism, classical German philosophy, the theory of social contract); in the system of relations between people and between people and public institutions (existentialism), as a result, according to the psychological concept, the "personality-I-image" and "personality-other personalities" connections are broken [12].

Ways of overcoming alienation depend on the standpoint, from which various philosophical, sociological and psychological theories study it. It is possible to cope with alienation by changing the situation and the society, for example, by revolutionary social transformations (Marxism), creating a democratic system, overcoming social inequalities (social contract theory) or using a person's rebellion against total alienation (A. Camus, Marcuse), or by activating the spiritual life of a person (N.A. Berdyaev, E. Fromm). A special role in overcoming alienation is played by the development of subjectivity, which occurs in the process of cognition (Hegel, I. Kant) and in all other activities (V.A. Petrovsky, S.L. Rubinstein).

In the framework of existentialism, E. Fromm used the concept of "alienation" as such a state in which a person loses contact with the inner world [11].

Alienation reveals oneself in the loss of a sense of self-worth. "Alienation, as we find it in modern society, is almost total; it pervades the relationship of man to his work, to the things he consumes, to the state, to his fellow man, and to himself" [10].

Alienation affects all aspects of human life: the need for connections

with his family, other people, the need for self-identity and creativity.

According to E.Fromm, a person tries to overcome the contradiction between security and freedom by “escaping from freedom”, a person has a desire to have his own controlled small world: "... I am what I have and what I consume"[11, 56]. Therefore, human activity is aimed at solving the problem of choosing a strategy.

Causes of alienation in the technogenic world and ways of its overcoming. The modern technological order is characterized by a special digital culture, which is a product of the computer revolution and global informatization of the end of the 20th century [5].

There is an imposition of the system of values of the consumer society, typical of Western culture through the Internet [2, 62].

Today, in the era of postmodernism, the mass distribution of social networks is a particular threat. On the one hand, social networks allow people to find each other and communicate at a distance. On the other hand, many personal factors are not involved in such communication and, therefore, it alienates people. Many do not see the point in a personal meeting, when, formally, this is precisely what can be said by means of virtual communication. Such a trend is alarming: people lose interest in each other and in live communication.

Despite the fact that there are obvious tendencies towards universal alienation through human technicalization, however, spiritual values are able to withstand the pressure of technicalization.

Spirituality is an activity of consciousness. Spirituality is aimed at finding the meaning of life, to determine the criteria of good and evil in people's behaviour. Spirituality allows an individual to control his behaviour, to act meaningfully and achieve moral goals.

Morality, art, religion, ecology, philosophy and sense of justice appear as the powerful potential of spiritual culture which is necessary for mental, physical and mental health. Thus, the subject of V. Frankl's study was a number of semantic configurations of philosophy, considered by him as the concepts of “God” and “faith”. In addition to the principle of historicism, he also used the approaches and methods of philosophical and anthropological research. The merit of V. Frankl is not only that he identified the problems of the existential vacuum, but he also revealed positive ways to overcome it [3].

According to S.L.Frank, a person is not capable of knowing himself without believing in God as a transcendence beyond his limits, with a constant appeal to Him. According to Frank, concepts of "personality", "God", "culture", "humanity" represent a single whole, which is revealed only in

the internal interaction with each other. The separation of one of the parts entails "alienation", provoking the weakening of spiritual forces to confront the growing evil in the modern world [9].

We take the view of V.A. Saprykin, who believes that at the present stage, the phenomenon of alienation encompasses a complete alienation from labour and its results, from property, from power, alienation from morality and culture. The social system of values is deteriorating: traditional spiritual values are replaced by surrogate ones, which are imposed by mass culture. Labour has lost its meaning of the basic value of society. Dehumanization of the individual occurs in the post-Soviet society [7, 57-58].

The problem of alienation cannot be solved without an integrated approach. If psychology is looking for answers to the questions of determining the essence of the social subject, as well as the process of alienation at the level of the individual, then sociology addresses the following problems: how alienation is manifested at the social level and what is its cause.

Alienation is multidimensional and manifests itself in various forms. The phenomenon of alienation is characterized by various degrees of alienation, which should be considered in their interrelations and investigated in a comprehensive manner, that is, as a whole.

It should also be noted that, at present, an epoch, which is related to production based on the capabilities of NBIC-technologies, is forming, that is, the hypothetical core of the sixth technological order, which is based on combining **N**ano, **B**io, **I**nformation and **C**ognitive technologies. They inspire certain optimism, because they can overcome the alienation of man, technology and nature, at a new, higher level - in the form of the molecular production [4].

The reason for the emergence of alienation, for instance, for existentialists is the conflict of intuitive and rational knowledge. For existentialists, the overcoming of alienation is achieved through love, freedom, creativity, religion, that is, all things that allow a person to gain meaningfulness of his existence [1].

This is an individual existential task for each person. Therefore, there is not any stage of social development that guarantees complete liberation from the alienating nature of human activity.

The feeling of instability and the destruction of the usual way of life, associated primarily with stress and psychological pressure, provoke the onset of breaks and crises in society, leading to alienation. The traditional development paradigm, where rivalry and personal gain are priorities, is one of the main reasons of this crisis. In this paradigm, firstly, the technogenic principles are superimposed on the ethnic and national ones; sec-

only, it is important that the cultural conditions of the society, as well as the geoeconomic and political space, undergo transformations, which are a kind of reaction to the emerging challenges, threats and ruptures, including alienation.

The main social gaps caused by the globalization of the economy and the culture of modern society are the following:

1. The gap between man and technology, generating new human needs. Moreover, the level of satisfaction of needs is reducing. Paradoxically, the needs become one of the main factors of human alienation. The clear example is the case when a Chinese student sold his kidney in order to buy a new iPhone. Social networks and the virtual world replace the need for real communication. In practice, we are witnessing a growing alienation between people in the real world, which is now being replaced by social networks.

2. The gap between institutions and values. Institutions change too fast and do not take into account changes in value criteria. Newly created institutions are forced to push out the old ones and embrace those social segments that do not need these institutions, and do not even imply any institutional regulation (for example, the sphere of religious freedom and the sphere of family relationships).

3. The gap between technology and institutions. The increased ability of modern technologies to market diffusion does not allow to control their turnover through the existing legal and market mechanisms effectively. On the contrary, there is a tendency to the development of non-market and extra-legal forms of control with the help of special means, as well as the trend of toughening the punishments of millions of people, whose behaviour does not go beyond the usual consumer and market forms. Therefore, the highest percentage of prisoners is in the U.S., which is one of the most technologically advanced countries in the world.

4. The gap between real information (structure of the world) and interpretation (subjective picture of the world). The structure of the world is not so much connected with values as with technologies and resources. As for the picture of the world, then for a subject it is a reflection of the values of this subject. The behaviour, which is based on the picture of the world, alienates man from the changes taking place around him. Thus, there is a significant gap between the structure and the picture of the world. This gap can be bridged through the mutual adaptation of the picture and the structure of the world.

5. The gap between human freedom and regulation. In the case when a person's inner potential of his individual freedom is less than the strength

of the regulatory institutions that put pressure on him, then, probably, it leads to a person's degradation, reduction of his abilities and simplification of needs. Socialization is the answer to it.

The above-mentioned gaps are inevitable, as they are the result of multidirectional and various-speed changes. Gaps mean the growth of alienation, the expansion of the zone of chaos and uncertainty. It is reflected in the efficiency of resource use and the level of realization of values. Currently, technological development is a factor of human alienation and institutions are repressive. Values does not contribute to socialization, since they have lost the property of universality.

The role of socialization grows in the face of increasing attempts to reformat values. Declared universal human values were not able to eliminate the restrictions on inhuman directions of technological progress, the strategy of changing values is becoming relevant on the agenda. An alternative to traditional values is the lifting of restrictions on the choice of a person and on the unimpeded construction of his values by him. The new structure of civilization implies that there is no place for traditional values, although, at the same time, tolerance for any ideology and views is declared.

However, we emphasize that social values are given a fundamental role in the development of the society.

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FEATURES OF THE PHONETIC MODALITY OF SONG LYRICS

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Abstract. *The present paper deals with the features of the transfer of phonetic modality to achieve the communicative goal of the statement when translating Russian song poetic texts into English. The means of expressing phonetic modality are analyzed in the article, the dominant means singled out and their ways of interaction defined. Particular attention is paid to the transfer of semantic accents during translation, preservation of the expressiveness of the work and the special intonation of the original of the poetic work in translating it into English.*

Keywords: *phonetic modality, psycholinguistic level, expressiveness of the work.*

The purpose of this article is to analyze the phonetic modality of poetic texts in their translation from Russian into English. The object of our research is the means of expressing phonetic modality in English translations of song poetic texts. The material for the study was the poems of the famous Russian bard Vladimir Semenovich Vysotsky.

In our work, we use various methods, since the modality presupposes a large set of tools for its study: descriptive, structural, transformational method, the method of neutralizing meanings, the scale method and the method of the functional-semantic field [2]. However, since the emphasis is on the study of phonetic components, the first place is taken by methods of studying phonetics (observation, as well as instrumental methods (acoustic and articulatory: sound recording). Our research examines the features of the phonetic modality of a poetic text, reaching the psycholin-

guistic level, which "allows us to demonstrate the influence of the structure of speech activity (in the context of conventionality and ritualization of didactic speech interaction) on the generation, perception, interpretation and understanding of the communication product (text) » [4].

According to Yu.M. Lotman, "additional restrictions are imposed on a poetic text that obeys all the rules of a given language, consisting in the requirement to comply with certain metro-rhythmic norms and strict organization at the phonological, rhyme, lexical and ideological-compositional levels" [3]. So, for example, a restriction on the poetic meter, which creates an inversion within the polypredicative syntactic constructions, contributes to the transfer of semantic accents, an increase in the expressiveness of a work, the creation of a special intonation, etc. [5].

The peculiarity of the phonetic modality is that it depends on the division of the utterance into phrases and syntagmas (minimum segments of a sentence, which are characterized by intonation and semantic completeness). This process is always conditioned by the meaning, the meaning that the author wants to convey in his statement. Syntagmas are separated by pauses, and in the translation of prose texts this division may not be preserved, in contrast to song texts, which must always correspond to the melody of a musical phrase. All this presents a certain difficulty for the translator.

It should be noted that poetic presentation imposes certain restrictions on the use of the number of temporal and modal plans of polypredicative sentences with parataxis and hypotaxis. Monotemporality of a polypredicative sentence with a predominance of the past tense prevails over bitemporality and polytemporality, since it defines the boundaries of the temporal sphere in which the thoughts, feelings, emotions of the lyric hero are expressed. Polypredicative sentences have mainly a monomodal structure that implements real modality [5].

The phenomenon of Vysotsky's song has existed for several decades, and his precise and biting lines of songs about life, war, friendship, loyalty and love have repeatedly become the object of interest for the translators. A story has always taken the first place in his songs. A story that has always been really true, taken from life, told in simple and precise language. But it is only in the sound that the strength and the power of his songs exist, and therefore the ways to achieve an adequate translation are of particular interest, provided that the phonetic modality of his songs is preserved.

One of the ballads is "Private Borisov", written as a transcript of the interrogation of a man who shot at the offender at the post. It is rather difficult to save short, chopped phrases, elliptical sentences in translation

into English so that they could convey accurately enough the speech of a person who answers questions not of their own free will. Translated into English, the parallelism of the construction of a polypredicative sentence with the parataxis is preserved:

“Private Borisov!” – “Here!” – “Tell me how this went down!”

“It was cold. I barely hung on.

Then it rained, then it got dark, and I was getting tired...

But I warned him, as per protocol!

(translated by Julia Deshtor, 2011)[1].

However, the ellipsis of the Russian phrase *potom ustal* is not preserved in the English translation (“and I was getting tired”), which smoothes the sound, and the torn rhythm is somewhat lost. In addition, the choice of the translator to repeat the refrain at the end of each stanza, although it preserves the rhythm and sound, slightly shifts the emphasis in the logic of the narrative, revealing the intrigue from the very beginning:

I didn’t argue, didn’t get upset,

Spat out my smoke and shot him in the head [1].

In the original poem, only at the very end do we see a line that leaves the listener the opportunity to think out the ending of the story himself.

Tatiana Vardomskaya’s translation is closer to the original story in terms of vocabulary, although, perhaps, it does not quite coincide with how these lines sound phonetically:

Luck was with me then, that he survived the year...

While I just did my duty well that night.

It was true, rain, dark and fog, I was on guard right here...

By all the rules, shooting him was right.

For he joked when “Who goes there?” I shout,

At my shot in the air he yelled, “Cut it out!”

I hesitated, but I didn’t quarrel;

I spat out my fag and discharged the barrel [1].

In the ballad “A Road Story”, written in 1972, a day in the life of truck drivers appears to the audience very vividly, replete with samples of spoken language and elliptical sentences that are not at all easy to convey in translation. An English sentence necessarily has a grammatical basis in its composition: the subject and predicate, and the phonetic sound of such lines slightly smoothes out the tension of the plot and does not convey so vividly the atmosphere of an emergency, one of the many that people of this profession have to overcome:

We both knew all about the road

And how they needed our load

And that our job was sit and drive through day and night
Who could have said - New Year's day,
500 miles either way
The blizzard's strong, and we can honk with all our might.

"Shut down the truck", he says at last,
"You see yourself that we won't last,
You see yourself that there's no use to even pray
500 miles on either end
By dawn for sure we'll be dead
And snowed in so well we will not need a grave." (translated by Alex
Tolkachev, 1999) [1].

And, of course, the emotional pressure of the author and performer of his songs, his inimitable booming RRR, sounding in the line *glushi motorr...* ("Turn off the engine") makes it almost impossible to achieve an adequate translation and communicative purpose of the poetic utterance when translating the songs of V. S. Vysotsky, but gives a completely accurate answer to the question of representatives of the younger generation of modern music lovers: is this a song? – In fact, it is more than a song, it is a living life that never ends.

Thus, speaking about the complexity of translating poetic texts from Russian into English, one should bare in mind the importance of transferring not only grammatical constructions and equivalent vocabulary for the translation, but, and this is the main thing, preserving the phonetic modality of the text, which undoubtedly is of decisive importance for achieving the communicative goal of the statement.

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**THE SYMBOLISM OF THE FORMULA "OVER THREE-NINTH LAND
IN THREE-TENTH KINGDOM" (FROM THE "HISTORY OF THE
SYMBOLS OF SLAVIC MYTHOLOGY")**

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Abstract. *This report is part of the research work on deciphering the symbols of Slavic mythology. Developments on this topic were repeatedly presented by the author at conferences of past years [Zaporozhets 2020 a), b), c), d), e)]. Today we will look at the symbolism of one fairy-tale formula, which is known as "Over three-ninth land in three-tenth kingdom". What does it mean? Where did it come from? What changes have been made? All these questions, which interested the author at one time, will be considered in our report.*

Keywords. *Children's fairy tale folklore, over three-ninth land in three-tenth kingdom.*

We all know from childhood a fabulous formula that is present in almost all fairy tales, denoting some distant land, which has come down to us in such versions as:

a) "in three-ninth kingdom, in three-tenth state" (the formula is at the beginning of the tale);

b) "over three-ninth lands in three-tenth kingdom" (the formula is in the middle of the tale).

So, in connection with this formula, we are faced with several questions:

1. What exactly does this formula mean?
2. Which wording is correct?
3. Why are some "kingdoms" designated this way?

Let's try to figure it out.

Let's start with the fact that, probably in Russia, the "dual", "triple" measure of counting (doubling, tripling any number) was very popular in antiquity. It is described, for example, in P.P. Ershov's fairy tale "The Little

Humpbacked Horse" as "two-five caps of silver" (that is, ten). What is it connected with: the binary form of the scales - two bowls, or some other factor of convenience, the question remains open. We have the very fact of the existence of such an account.

In the fairy tale, there is a ternary counting formula. But the counting principle is the same: three measures of one thing (three-nine, three-ten ...). Let's say right away, "three-ninth kingdom or three-tenth state", designated as one whole - in this case does not fit into any single measure of counting. Therefore, let's look at the second, more precise counting system: "Over three-ninth lands in three-tenth kingdom", and then return to the first consideration.

"Three-tenth kingdom" is a triple something, coming in tenth in the overall "large" account. Therefore, there is additional information, such as clarification of the description - "Over three-ninth lands". That is, the *trinity* of some "objects", that are similar to each other ("lands") persists throughout a certain space or time. By analogy with the previous myths, where each animal, plant, etc., symbolized a certain period of time, let's see, what time the dominant symbol "three-tenth kingdom" can mean. Despite the seeming impossibility of understanding the three-tenth code, the answer lies on the surface. We just have to answer two questions, combined in the cipher under consideration:

1. What are the three components which time is divided into?
2. What is the tenth time in a row?

Here are the answers.

1. A **month** is divided into three components in the calendar structure. **Each month is divided into three decades** (plus one more day, in some months, which we will trace in other myths). Therefore, they are described in the same way - **three-ninth lands!** But! These are simply "lands", they do not dominate the separate name "STATE".

2. What is the "three-tenth kingdom" famous for? And the fact that it is the tenth month in a row. How is the tenth month different from all the others? And the fact that if the count is from the March New Year (the point of the spring solstice, the entry of the Sun into the sign of Aries), then we will get a month - December ("December" - that is, "ten"), the month before the winter solstice! This is the hardest and darkest time of the year! This is the time dominated by winter, night, sleep and death of nature. The time of the reign of Koshchei, with whom Summer fights, life, warmth, with which the main character of the fairy tale - the Sun - Ivan Tsarevich fights, conquering the Earth for himself! This is the meaning of the myth!

Thus, it turns out that:

1. The first earth, consisting of three decades – March;
2. Three-second land – April;
3. Three-third land – May;
4. The three-fourth earth – June;
5. Three-fifths of the earth – July;
6. The three-sixth earth – August;
7. The three-seventh earth – September;
8. Three-eighth earth – October;
9. Three-ninth earth – November;
- 10. Thirtieth kingdom – December;**
11. The three-eleventh earth – January;
12. Three-twelfth earth – February.

Here is the whole bill of the annual solar circle.

In this case, the version, of the code "three-ninth land, three-tenth kingdom" that exists at the beginning of some fairy tales is a destroyed, late, distorted formula.

(In some tales, the "three-tenth kingdom" is also called the "mouse state" [Afanasyev 1985]. In the previously considered myths, we also came to the conclusion that the symbol of the Mouse denotes the month of December! [Zaporozhets 2020 b]).

So, what conclusions can be drawn from all of the above? Deciphering the myth formula tells us that:

1. The formula "Over three-ninth lands in three-tenth kingdom" describing the time of the dominance of the power of Winter, is the month of December, after which, after passing the point of death, the point of the winter solstice (when Ivan Tsarevich was killed), the Sun "resurrects" (Raven or Wolf revives the Main Hero, having sprinkled it with Dead and Living water), the Sun is gradually gaining strength and the rebirth of nature begins. In ancient times, after the Winter Solstice, when the Sun entered the constellation Aquarius (one stream of which was considered Dead, still belonging to Winter, and the other - Living, belonging to Summer), the awakening of nature began. And even now, in greenhouses, plants begin to hatch from seeds precisely in February, according to the old cycles, when the Sun enters the constellation Aquarius!

2. Also, once again we saw how, in connection with the likely resettlement of the people to warmer regions due to a sudden cooling of the climate, the New Year's point from the winter solstice moved to the moment of the spring solstice. But, despite this, the Winter Turning Point remained dominant in the legends.

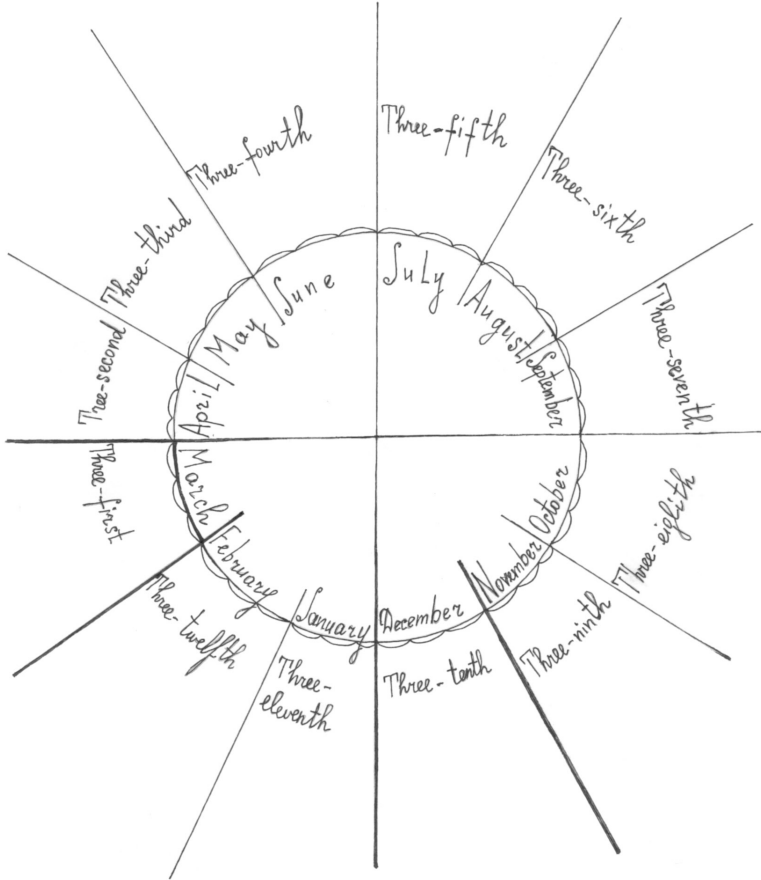
3. And also, considering the myths, we see clearly not a spontaneous

appearance of certain fairy-tale images and their transformation. How could a people move the same dominant symbol from one solstice point to another? This should have been the absolute consent of ALL people. And perfect knowledge of the code! To all the people! The whole race! If everything really was so, then why then this knowledge has not been openly preserved at least in part to this day? It was preserved precisely encoded, in a cipher. It turns out that **knowledge was sacred**, and belonged to a certain clan of people - guardians-priests, who: both adjusted the points of the New Year celebration, and corrected myths to preserve information in a figurative, easy-to-remember structure! For example, in the deciphering of the fairy tale "Hen pock-marked" [Zaporozhets 2020 b)], we saw how the initially dominant New Year at the point of the Winter Solstice, then moved to the point of the Spring Solstice. In other myths (which have already been considered by us, and which are awaiting publication), there is also a clear confusion of several New Year traditions, it is specially noted: the entry of the Sun into the constellation of Aquarius, and the rising above the Pleiades horizon, etc. ...

Probably later, due to the danger of loss of information, the keepers of knowledge were forced to throw out all the legends to the people, so that in this way the knowledge was somehow preserved, at least in some form could reach us. Thus, the Main Heroes of the legends acquired the status of Gods. And even later, among the common people, the myths acquired a social and moral background, where a stepmother or an evil witch offends a stepdaughter and then receives a well-deserved punishment, etc., etc. ...

So, all the myths say the same thing: about the rebirth of the Life of the Earth after death - the Winter Dream. A myth is, fixed in a figurative structure, a calendar of nature, a star map of the ancient sky, created in order to preserve the memory of the original place of residence of the people and preserve the history of the resettlement of the people along the earth through easy-to-remember symbols!

Scheme



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**THE FIGURATIVE COMPONENT OF THE MENTAL STRUCTURE
"LAUGHTER" (BASED ON A FRAGMENT OF THE RUSSIAN AND
ENGLISH LINGUISTIC PICTURE OF THE WORLD)**

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Abstract. *This article presents a study of the military metaphor "laughter" as a cognitive mechanism. The ambivalence of this psychosocial and cultural phenomenon in Russian and English linguocultures, as well as a person's susceptibility to its influences, is emphasized, which is a demonstration of affectivity, irrationality in the actions of an individual.*

Keywords: *laughter, military metaphor, mental structure, imagery, linguistic picture of the world.*

Despite the fact that laughter belongs to society and culture, which means it is an actively studied phenomenon, it still seems difficult to completely exhaust its controversy and versatility. Metamorphoses in the cultural and socio-political space, the dynamics of research discoveries in the field of history, literary criticism, psychology, political science, etc. create the need for a constant philosophical understanding of the cultural scenario. As a rule, laughter becomes the subject of scientific research in psychology, medicine (in connection with the study of a special emotional state of a person, which is an extremely strong short-term emotional arousal, flowing rapidly and characterized by sudden onset, short duration of the course, significant nature of changes in consciousness, violation of volitional control over actions) or aesthetics (in connection with the artistic category of the comic), but the social characteristics of laughter remain poorly understood; its social nature is not described. It should be noted that laughter is generally read as a positive beginning, however, its destructive properties remain out of sight. Although the conceptual sphere of "aggression" belongs to the most mastered aspects of the experimental and cognitive activity of a person, it organizes the consciousness of native speakers

more actively than collegiality.

This circumstance determines the **relevance** of the study.

This means that laughter can be viewed as a "military metaphor" that causally the work of cognitive mechanisms. Therefore, we consider laughter to be a mental structure that allows us to compare and characterize the same conceptual information from different sides, to identify the general and the particular. All this is reflected in the linguistic picture of the world (perception of the world through linguistic material, language) [15, p. 47].

The **purpose** of the work is connected with the above provision - to study the military metaphor "laughter" on the material of the Russian and English discourses in order to try to reconstruct and compare the Russian and English linguistic picture of the world.

So, the core of the mental structure "Laughter" is a sensually visual image of the subject of laughter, which arises in our consciousness as a result of representation, visualization of a laughing person. "Look at the laughing man: the face that had just been calm has suddenly changed. With a strained exhalation, the mouth opened, eyes closed when the eyelids were squeezed, the lips crawled in length, revealing two rows of teeth. Laughter intensifies, muscle spasms translate it into laughter ..." [6, p. 24]. "When laughing, the whole body leans back and shakes, the mouth is wide open, the corners of the lips are pulled back and up, the upper lip rises, the face and entire head are filled with blood, the circular muscles of the eyes contract convulsively. A wrinkled nose seems to be shortened, eyes shine, tears often appear" [5, p. 28].

The figurative side of laughter is a military (military) metaphor.

In the minds of Russian speakers, laughter appears in the image of an enemy/adversary in a war, that is, it has an anthropomorphic property. He can suddenly attack a person and embrace him: 1) God is with you! laughter will attack such that you grab hold of the stomach [2, p. 147]; 2) So, after these words of mine about incest, laughter suddenly attacked me and Dimka [7, p. 55]; 3) We remember Volodya, and again, as in the evening, we are seized by hysterical laughter [3, p. 65]. In the examples given, the laughing person performs the function of a passive object of influence, since he cannot resist the will of laughter.

A laughing person can also take the position of an active figure who fought with laughter and seeks to resist him. A person begins to fight, wants to defeat the "enemy", for example: 1) Struggling with the approaching laughter, I looked at the squinting eye [13, p. 80]; 2) I tried to cope with laughter, but suffered a crushing failure [4, p. 168]. 3) Burmistrov finally overcame a fit of laughter, went up to Pantov, poked his finger in his chest

[10, p. 150]. Example–3 illustrates the situation of a person winning over laughter. As a creature hostile to man, laughter is quite aggressive.

To defeat the opponent in a fight, he affects the physical state of a person: he takes apart him, does not allow him to breathe calmly, strangles, for example: 1) And then I began to make out laughter, unexpected and somehow unrestrained [8, p. 130]. 2) I kick with my hands and feet, laughter suffocates me more effectively than a pillow [11, p. 59]. This conceptual feature (laughing as an enemy/adversary) has a linguistic embodiment in English:

1) His laughter choked him and he coughed into his handkerchief [Steinbeck, 18, p. 48] ;

2) If she did not fly at once the laughter that was worse than tears would kill her [Kipling, 16, p. 115].

As you can see from example 2, laughter can even kill the subject. Having won a victory over a person, laughter takes him prisoner and does not let him go: 1) It happens that you get up in the morning, nothing, nothing, you haven't even had breakfast yet, and laughter takes [14, p. 6]; 2) Hysterical laughter did not let us go for several minutes, until the lungs got sick [9, p. 48]. Laughter "captivates" the subject, subordinates him to its power, as if it turns into his master: Her face turned purple from strain, but laughter took possession of her, and a mad, frightening laughter was heard in the hall, resembling rather sobs [12, p. 143]. Comp. in English: They were taken with a fit of laughing. Metaphors describing laughter as an enemy/adversary actualize the semantics of the strength and power of laughter at a person, as well as the spontaneity, uncontrollability and intensity of the emotional state of the laughing person. It is important to emphasize that in the semantic structure of metaphorical statements of the compared languages, laughter most often plays the role of an actively acting subject, capable, like any other emotional category, of "capturing" a person and controlling him. The denotation of the uncontrollability and intensity of laughter can be traced in the following proverb of the Russian language: A laugh got into one's mouth. (Comp.: A laughter-bug got into one's mouth.) [17, p. 579]. So laughter is a small creature with a huge life potential and resource, prevailing over the energy principle of a person [1, p. 286].

Thus, the representation of the mental structure "laughter" is based on a complex of military metaphorical names that describe the studied psycho-socio-cultural phenomenon as an instigator of action, a certain provocateur of a person's further emotional state. The figurative component of the compared mental structures is characterized by universality for the Russian and English language picture of the world. These figurative uni-

versals can be found only by conducting a comparative research method. In addition, the study of military metaphors of laughter and its subject in Russian (against the background of English) proved the hypothesis of its duality: on the one hand, laughter is a creative force, on the other, it is destructive and harmful. It follows that human experience is pre-logical.

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STRUCTURAL MODELING OF THE POSITION OF THE SUBJECT OF THE STUDY

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Abstract. *In the article proposes a theoretical model of the concept of the position of the subject of the study. The position of the subject of the study of is seen as a phenomenon of the unity of the process and the result in the system of psycho-pedagogical criteria of the effectiveness of education. The position of the subject of the study has a systemic nature and should be studied as system object. The structure of the position of the subject of the study consists of three components: cognitive, regulatory, and personal-semantic. The criteria and specific indicators of the components of the position of the subject of the study are used to analyze variability and to determine a range of conditions for developing education. In the article presents a diagram of the concept with using the method of structural modeling (method - structural equation modeling (SEM)). The stages of application of the method are described. structural modeling and the main tasks of each stage. Considered problems of substantiating causal relationships between the components of the position of the subject of the study.*

Keywords: *positions of the subject of the study, structural equation modeling, cognitive component, regulatory component, personal-semantic component.*

Introduction

The position of the subject of the study - a psychological system. The psychological system is formed under the influence of the emergence and development of a number of formations and connections between them. These formations: meta-knowledge, reflection, self-regulation in learning,

selectivity and emotional assessment of one's own achievements, determine the consistency of the development of the cognitive and personal spheres of the individual "meeting of affect and intellect" (Vygotsky's metaphor).

Schoolchildren and students are the subject of learning. They master educational knowledge and correlate this knowledge, abilities, and skills with the content of their own experience. Own experience is formed in the process of accumulating knowledge spontaneously formed in life practice and knowledge formed at the previous stages of the educational process. This method of teaching leads to the emergence of a selective attitude towards academic subjects and to a more detailed understanding of the educational material.

Each schoolboy and student study within a strictly regulated curriculum (training programmes, mode of instruction, teaching methods, etc.). Their subjective activity is manifested in an emotional attitude to the educational process, in questions to the teacher, in the search for their own methods of educational work, in their preferred types of educational activity.

Selectivity in relation to different areas of knowledge can stimulate the need to independently find and use new methods of processing educational material, transforming them, monitoring and correcting them. At the same time, the regulation of cognitive activity is possible only on the basis of reflection of its process and result.

In this study, the dynamic system of the position of the subject of the study, developed by ED Bozhovich, was used as a starting point for SEM [1].

Structural equation modeling, or SEM, as a statistical method for analyzing empirical data, is a combination of many known methods: factor analysis, correlation, analysis of variance and covariance, multiple regression.

The SEM methodology provides, firstly, the preliminary construction of a structural model with directed, undirected connections between the studied constructs, and secondly, checking for compliance with empirical data and corrections. The software allows you to assess the degree of conformity of the model to the original data and the model parameters (regression and correlation coefficients). A model is recognized as consistent (confirming the initial hypotheses) if, according to the accepted criteria, it corresponds to the initial data, and the model parameters are statistically significant [5].

Materials and methods

In the article presented a diagram of the concept of the position of the

subject of the study using the method of structural modeling (Fig. 1). The factors of the model are the components of the concept ("cognitive component", "regulatory component", "personality-semantic component").

Factor F1 ("cognitive component") includes such criteria as subject knowledge and skills (Fig. 1.-v7) (reproduction of learned material; interpretation of facts related to the studied material), techniques and means of information processing (v8) (formalization of acquired knowledge in the form of tables and diagrams; techniques for working with text; building an action based on a sample of a finished product). The specific indicator "methods of educational work" (v9) of the "meta-knowledge" criterion, that is, (supra-subject) knowledge about knowledge, techniques and means of processing information given in different sign forms, can be correlated with factor F1 ("cognitive component") and with the factor F2 ("regulatory component"). It is obvious that the indicators of the cognitive and regulatory components are in a relationship not of mutual influence, but rather of the unidirectional influence of a weaker criterion on a stronger one, lowering its level and development prospects. For example, a student with high competence in the discipline can successfully solve a non-standard problem. However, by acting non-reflectively, become unable to find a solution to a non-standard problem on another educational material. In this case, his level of competence suffers. A low level of competence limits the search for new methods of educational work with academic material, and, consequently, techniques, means of regulation, since reflection in this case is simultaneously directed at the object (educational task) and at one's own actions with the object.

Factor F2 ("regulatory component") contains the criterion - self-management based on reflection (self-correction of educational work (v4), critical analysis of the given techniques, their transformation; secondary criticism (v5)). Another criterion of the regulatory component is the factors of success and failure of educational work (v6) (locus of control). Locus control is viewed in psychology as a search for causes in external circumstances and a search for reasons in oneself. There is one more understanding of the locus of control - self-control in the process and self-control in the result of the educational process. The adequacy and completeness of autodiagnosics, the development of methods for overcoming errors are specific indicators of the criterion "autodiagnosics of the causes of mistakes" of the regulatory component. Intersections of self-correction indicators and adequacy, completeness of autodiagnosics are possible, since full-fledged self-correction is possible only on the basis of autodiagnosics. This issue requires empirical verification that can be done using a simulated structural

equation.

Factor F3 ("personality-semantic component") includes education as a value (v1) (a type of value attitude towards education in the context of personal values); motivational plan of cognitive activity (v2) (achievement motivation - to be the first in the class, in a group, or at least not the last. Social motivation - the satisfaction of others. This motivation has intersections with the orientation towards social assessment and with the orientation towards self-assessment). Another important motive is the avoidance of punishment (v3). If a child is punished at home for poor performance, then he will teach without even understanding the teaching material. The motive (avoidance of punishment) intersects with the value of education and intersects with metazeniya. The child will create meta-knowledge in himself, since he is interested in the very process of learning activity [6].

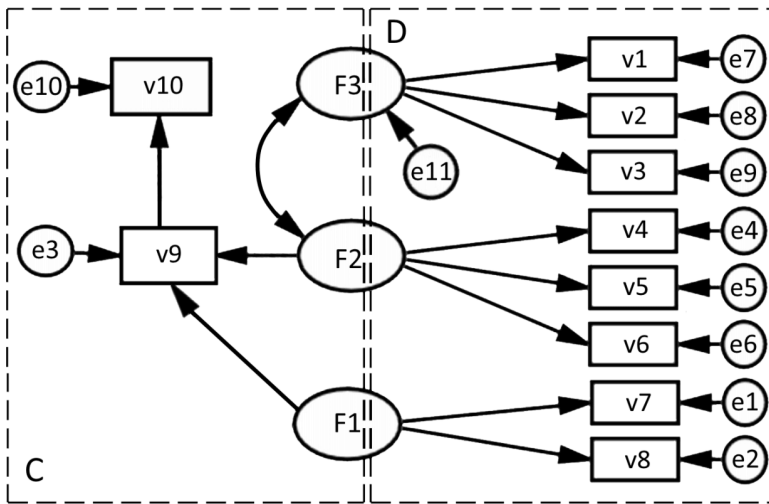


Figure 1. Structural model of the concept of the position of the subject of the study.

D – Measuring component of the model; C – Component of the model paths.

The emphasis in this study is on the formulation of the problem - to what extent the concept of the position of the subject of the study lends itself to formalization with the help of new research methods that are currently proposed in science.

Results

Schematization makes the work fundamentally relevant. We assume

that the identified indicators of the components of the position of the subject of the study have intersections with each other. So, the indicator of selective attitude to a subject and to a specific educational material is associated with self-government and with factors of success and failure. The indicator of selective attitude to the subject is also associated with motivation and value attitude to education. These assumptions require empirical testing.

In the previous publications of E.D. Bozhovich, external and internal connections between the components ("cognitive component", "regulatory component", "personality-semantic component") of the system of the position of the subject of the study were shown, but connections between the indicators of these components were not considered [2,3]. As in previous publications by S.V. Persiyantseva, steps were taken to study the relationship between individual indicators of the dynamic system of the study, and not the entire system as a whole [7,8,9].

With the help of structural modeling of the method, it is possible to determine the type of relationships between variables: directed (causal) or undirected (correlation); explicit (measured) or latent (hypothetical constructs). Research hypotheses are formulated in these terms.

Using the scheme, we can empirically check the presence or absence of relationships between the indicators of the components of the position of the subject of the study, which are the variables of the given model. Relationships between variables are graphically depicted in the form of a block diagram, which is transformed into a system of linear regression equations using a computer program (for example, SPSS; AMOS; IBM) [5]. The software makes it possible to understand the degree to which the model matches the original data. The model is recognized as consistent - the parameters of the model are statistically significant.

When starting to test hypotheses of a study, you must go through all the stages of applying SEM.

The first stage - formation of the model. The model graphically depicts the researcher's speculation about the structure of directed and undirected relationships between variables and latent constructs. Variables should be quantitative and normally distributed. It is possible to use categorical variables if the categories are ordered. It is permissible to include in the model binary variables (taking only two values - 0 or 1 from a combination of factors), for example, the gender of the subject. Since the method of structural modeling is quite new, the generally accepted requirements for assessing a satisfactory sample size have not yet developed. In international and domestic science, they are still guided by certain criteria proposed by R.

Kline [4], based on the ratio of the number of subjects and the number of evaluated parameters. In accordance with his recommendations, the ideal sample size should be considered to be 20 times the number of parameters being evaluated. If the number of subjects is 10 times greater than the number of evaluated parameters, then such a sample can be considered acceptable. A 5-fold excess of the sample size over the estimated parameters is considered insufficient for confidence in the reliability of the results obtained.

The second stage of SEM - the level of model identification is quantified by comparing the number of free variables and the amount of initial information. Initial data are presented as the number of elements of the covariance matrix of variables. Moreover, the covariance matrix must be positive definite, otherwise the analysis will be impossible. This means that there are no equal or close relationships between the variables.

The third step of SEM - evaluate and test the model for agreement. To evaluate the model, the Maximum Likelihood method is used if the requirement is met: normal distribution of variables. Alternatively, the Approximately free of distribution method is applied. When checking the fit of the model, the value between the original data and what the model predicts is estimated, focusing on the indices of goodness. The decision on the agreement of the model is made on the basis of a number of criteria, the traditional of which is the Chi-square distribution and its statistical significance.

The next and final stage - model correction. When constructing a model, a researcher often encounters a discrepancy between the original covariance matrix and the reproduced matrix in according to the model. In this regard, it becomes necessary to correct the model. This is done either by eliminating statistically unreliable relationships, thereby increasing the value of the model, or by adding new relationships between indicators to improve model agreement. Of course, in this case, the model becomes more cumbersome, and therefore less concise and economical.

The logic of the organization and conduct of the experiment is aimed at proving the causal relationship between the independent and dependent variables, while it is necessary to control additional variables and take into account the influence of side variables on the dependent variable. It is the consideration of these conditions that makes it possible to build a well-planned experiment. An important advantage of SEM is the ability to draw conclusions about the more likely direction of causation based on correlation studies. This possibility appears if the model includes explicit variables that can only be exogenous (independent), such as gender, age,

environmental influences, sociodemographic characteristics, etc.

Conclusion

The theoretical assumptions put forward in this work, about the presence of internal and external connections between the criteria of each component and specific indicators of the position of the subject of the study, require empirical confirmation. For empirical verification, it is necessary to translate the qualitative characteristics of indicators into quantitative values. We will be guided in the future if there is a certain indicator for a specific score or number of points. At the same time, points are selected taking into account the weight category, i.e. the specific weight of each point. The schematization of the concept of the position of the subject of the study using the method of structural modeling (SEM) represents a new step in scientific methodology. The method of structural modeling is dominated by deductive logic and conformational approach. With the help of SEM, we will be able not only to build alternative models of the dynamic system of the position of the subject of the study, but also to check their consistency with the initial data, to draw conclusions about the direction of causal connections, which requires further empirical research and statistical processing.

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**PERSONAL RESOURCE OF SELF-ORGANIZATION OF LIFE
ACTIVITY OF OLDER ADOLESCENTS IN THE CONTEXT OF
DISTANCE LEARNING¹**

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Abstract. *The relevance of research into the psychological aspects of digitalization of education; in particular, the issues of psychological well-being of students in the digital educational environment, has significantly increased when modern society collides with the realities of distance learning and realizes the possibility of personal resources and risks created by the format of distance learning. The aim of this work is to study the relationships between the personal characteristics of older adolescents and their possibilities for self-organization of the educational activity of schoolchildren during the period of distance learning. To collect empirical data, we used 4 scales of the author's methodology "Personal resource of a student": responsibility, self-confidence, self-government, volitional control of emotional reactions; the author also used the author's method of identifying the factors of passivity in educational activity "Laziness, or Reasons for unwillingness to learn." On a sample of Moscow schoolchildren in grades 8-11 (n=269), it was shown that in older adolescents, the personal resource of self-organization of life in conditions of distance learning includes such personal properties as volitional control of the emotional sphere, responsibility, adequate self-esteem, and developed skills of self-government. The lack of formation of this particular personal resource gave rise to crisis phenomena in the adolescent's self-organization of educational and daily activities during the period of distance learning. It was also found that a certain emotional-effective state that blocks the*

¹ This work was carried out with the financial support of the Russian Foundation for Basic Research, project 20-013-00667 A "Personal resource for the formation of subjectivity of senior pupils in the modern conditions of school education."

activity of the subject of educational activity and is qualified by everyday consciousness as laziness is a number of states of a different nature, the causes of which vary in space from psychophysiological to social, and they themselves are factors of stagnation in the formation of subjectivity in adolescence.

Keywords: *older adolescents, subjectivity, personal resource, laziness, self-organization, distance learning.*

Distance schooling, which was practiced in most educational institutions of the world in 2020, can be considered as a natural experiment that made it possible to study the psychological aspects of digitalization of education; in particular, the issues of psychological well-being of students in the digital educational environment, the possibilities of personal resources and the risks created by the format of distance learning. The aim of this work is to study the relationships between the personal characteristics of older adolescents and their possibilities for self-organization of the educational activity of schoolchildren during the period of distance learning.

In modern psychological science, in the regulation of behavior at the personal level, the position of the leading role of self-assessment processes and reflection dominates. The efficiency of his activities and communication, his personal development depend on the level of self-awareness and self-understanding of a person [Chesnokova, 1977]. In other words, possession of the skills of conscious self-regulation as a dynamic and multi-level controlling metasystem of processes, properties and states aimed at maintaining activity in the conscious advancement and achievement of subjective goals [Morosanova, 2017] is a necessary element of subjectivity.

In the concept of developmental ecopsychology, an ecopsychological model of the formation of subjectivity from the subject of perception to the subject of productive development has been developed [Panov, 2018, 2018a], within the framework of which ideas about its (formation) personal determinants are developed. A method has been developed for diagnosing the personal resource of the development of subjectivity, including older adolescents [Sunnatova, 2019], which allows to verify the hypothesis that in older adolescents the personal resource of self-organization of life in conditions of distance learning includes such personal properties as volitional control of the emotional sphere, responsibility, constructive self-esteem, developed self-management skills. It was also hypothesized that a certain emotional-effective state that blocks the activity of the subject of educational activity and is qualified by everyday consciousness as laziness

ness is a number of states of a different nature, the causes of which vary in space from psychophysiological to social, and they themselves are factors of stagnation in formation subjectivity in adolescence.

The study was conducted in September 2020.

The study sample consisted of 269 Moscow schoolchildren in grades 8-11.

To collect empirical data, we used 4 scales of the author's methodology "Personal resource of a student": responsibility, self-confidence, self-government, volitional control of emotional reactions [Sunnatova, 2019].

The author also used the author's method of identifying the factors of passivity in educational activity "Laziness, or Reasons for unwillingness to learn." Laziness, understood as inaction, as a block for activity, is, in the opinion of both schoolchildren and their parents and teachers, one of the most common psychological reasons for low educational productivity, which means that laziness can be considered an important factor in the formation of subjectivity. At the same time, laziness as a psychological phenomenon encompasses a vast space of various psychological processes, states and qualities, which poses the task of differentiating them and identifying the specifics of various manifestations of laziness.

In modern psychological ideas about laziness, the following conditions for its manifestation in educational activity are distinguished: a decrease in educational motivation, self-doubt, an external locus of control, a destructive psychophysiological state, a low level of conscious self-regulation, destructive relationships with teachers [Yakimanskaya, Vorobyova, 2003; Possokhova, 2011, 2019; Chugui, Kashchenko, 2019; Lenggono, Tentama, 2020; Madsen, 2018; Price, 2021]. These 6 conditions, as well as the hedonistic orientation of the personality and the infantilizing educational environment made up 8 scales of the questionnaire "Laziness, or Reasons for unwillingness to learn."

According to the empirical data obtained, the main reason for the reluctance to study is the lack of appropriate motivation (33.1% of older adolescents), dissatisfaction with the form and content of school education (only 11.3% of students in grades 8-11 demonstrated the presence of motivation for learning activity). Next (30.4% of respondents) are poor health, fatigue (only 1.7% of adolescents noted that they were feeling well); in third place (25%) - lack of constructive attention on the part of teachers.

Correlation analysis of the links between the personality traits of schoolchildren and the reasons for unwillingness to learn, or laziness, using Spearman's nonparametric criterion, revealed statistically significant correlations, all of which turned out to be negative. Thus, the personal quality of

adolescents "self-management" is inversely related to dissatisfaction with the attitude of teachers to students: it is perceived by schoolchildren as objective, as ignoring the child's personality (-.412, $p < 0.001$). The same negative relationship between self-government and the adolescent's lack of confidence in his academic success (-.466, $p < 0.001$) and with the level of motivation to learn as a condition for personality development and thereby ensuring, among other things, future psychological well-being (-.417, $p < 0.001$). The reduced psychophysiological state is also negatively associated with the level of self-organization of the adolescent in his life (-.492, $p < 0.001$), the same applies to the hedonistic tendencies of the adolescent (-.461, $p < 0.001$) and the lack of formation of his skills of conscious self-regulation (-.448, $p < 0.001$).

Apparently, the complex of psychological and behavioral manifestations that is characterized by the common word "laziness" can be considered a derivative of some kind of emotional-effective state that stagnates not only the subject's activity in learning activity, but also his ability to self-organize.

Such personal characteristics as responsibility, belief in oneself, self-government and volitional control of emotional reactions can be considered as a personal resource that serves as a condition for the self-organization of the life of older adolescents. It can be assumed that the lack of formation of this particular personal resource gave rise to crisis phenomena in the adolescent's self-organization of educational and daily activities during the period of distance learning. To realize this personal resource in the ability of a student to self-organize his activities, it is necessary to satisfy the needs of older adolescents in subject-subject interaction with teachers and to ensure their safe psychophysiological state. It is known that the constructive interaction of the subjects of the educational process contributes to the formation of educational motivation in the student, self-confidence as in the subject of learning, and the acceptance of responsibility.

So, the empirical data obtained show that the personal resource can be considered as a condition for the formation of subjectivity in older adolescents, and an emotionally effective state that blocks the activity of the subject of educational activity is a factor of stagnation in the formation of subjectivity.

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THE CREATIVE PRINCIPLE IN THE MODEL OF BUILDING RUSSIAN PSYCHOLOGICAL SCIENCE BY PROFESSOR G. I. CHELPANOV

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Abstract. *The article highlights various aspects of the activities of the founder of scientific psychology in Russia G.I. Chelpanov. The creative orientation of the scientist's personality is emphasized as the dominant beginning of his creative asceticism in the field of Russian psychological science. The data of analytical consideration of the creative contribution of G.I. Chelpanov in the development of fundamental psychological research. On the basis of documentary sources, the history of G.I. Chelpanov as the inventor of technical means for teaching and popularizing psychology among young people. The value of scientific-theoretical and organizational creative innovations of G.I. Chelpanov to solve the problems of modern scientific psychology, emphasizes their spiritual and moral content.*

Keywords: *history of psychology, history of Russian psychology, G.I. Chelpanov, personality creativity, scientific creativity, metaphysical aspects of psychological research, universal psychological device*

Georgy Ivanovich Chelpanov (1862-1936) - the creator of the original meanings of Russian psychological science, a thoughtful reading of the theoretical heritage of which can significantly clarify a number of problems facing modern psychology, and also serve to "revive among scientists-researchers that" strong and creative love for truth - sacrificial and persistent ", which has always been filled with the soul of Georgy Ivanovich Chelpanov himself" [3, p. 245].

Words by V.V. Zenkovsky about creative love for truth [2], cited by a modern researcher, like no others, reveal the personal dominant of G.I. Chelpanov. Creativity was the principle of his life, and Chelpanov built Russian psychology as a science ready for the creative rethinking of scientific stereotypes and the semantic integration of psychological knowledge from different eras. But due to negative sociocultural reasons, the integral scientific and theoretical model of the development of psychology, developed

by G.I. Chelpanov, is practically unknown to the world scientific audience. In Russia, the fate of Chelpanov's legacy was also not easy: for more than half a century, Chelpanov's philosophical and psychological ideas were subjected to inadequate interpretation, since they contradicted the ideologically determined principles of the "new" post-revolutionary science. But thanks to the work of historians, the name of Georgy Chelpanov is again returned to its rightful and honorable place - the founder of the scientific tradition of Russian psychological science. As a result of historical and psychological research aimed at restoring the true historical picture of the formation of Russian science and carried out in the period 2011-2020 [5, 6, 14], the existential-ontological meaning of the scientist's ideas and their actual significance for the scientific comprehension of the innermost psychological depths of the soul human life, to understand the true and transitory in the history of scientific thought and to determine the real value of the scientific achievements of Russian psychologists on the scale of world psychology.

The set of ideas reflected in the general psychological, psychological, pedagogical, psychological and social works of G.I. Chelpanov, is a program for the creative development of psychology as an integrative and independent science, with its own subject and research methods, including those drawn from the field of natural science. Chelpanov was sure that due to the peculiarities of the very subject of psychological study in the research field of scientific psychology, experimental and analytical methods do not exclude, but complement each other [9]. Psychology was conceived by him as a philosophical discipline, included in the circle of the sciences of the spirit. Therefore, Chelpanov approved the humanitarian meaning of the goals and objectives of Russian psychology and the moral requirements for experimental psychological research. The scientist defended the need for a synthesis of two methodological approaches - the humanitarian, historically rooted in the Russian intellectual tradition, and the natural science, characteristic of the Western European intellectual tradition, but with the leading role of the humanitarian principle. Consolidating creative intuition was a feature of the methodological foundation on which G.I. Chelpanov built a scientific school of Russian psychology.

Chelpanov was one of the first to recognize in the content of the era the perspective of scientific psychology as the leading direction of global knowledge. He also provided scientific arguments for the development of a new scientific field - social psychology [12]. The reliability of the scientist's scientific forecasts was due to the experience of semantic synthesis of a large amount of data, which was characteristic of his thinking, obtained

in the analysis of theoretical attitudes that distinguished world scientific schools and specific researchers. The specificity of Chelpanov's creative approach in developing a theoretical research model was to identify the cognitive meaning of each theory of basic content and determine its significance in the general explanatory system of world psychological knowledge.

Analysis of a major theoretical work by G.I. Chelpanov's "The Problem of Perception of Space" (1896-1904) [11,12], in which the creative foundations of his scientific worldview were fully revealed, allows us to speak of a large scientific contribution of the scientist to the solution of fundamental problems of psychology. In our short article, we can only designate its main facets in the naming order: 1) substantiated the integrative spiritual-physical nature of psychological phenomena, which are the result of a single activity of consciousness - extra-empirical and empirically conditioned; 2) a psychological model of space perception and a diagram of the functional role of various systems of the perceptual complex of a person in the process of forming the image of space (visual, auditory, tactile modality) have been developed; 3) the importance of physiological structures as necessary secondary conditions for the emergence of psychological phenomena is noted; 4) it is proved that the process of formation of the concept (image) of space is not only determined by objective conditions, but is also a product of the activity of consciousness itself, the internal conditions for the perception of space and the mechanisms of complication of its forms are described; 5) shows the existence in consciousness of a priori, independent in their origin from empirical human experience, psychological elements that have a spiritual-logical nature and act in the form of ideals as necessary prerequisites for the adequacy of perception, to which only one of them corresponds at the level of cognitive abilities - this is faith; 6) approved the philosophical basis of psychology - the principle of transcendental realism, following which psychology should be based on an understanding of the inner integrity of the spiritual and physical nature of a person. In the scientific picture G.I. Chelpanova's perception of space, accordingly, has a spiritual aspect. It is a living, dynamic phenomenon, a creative act of re-creation through the symbolism of the psychological image of infinity and the unity of absolute being.

Chelpanov is the founder of the first national specialized center of scientific psychology - the Psychological Institute in Moscow (1912), within the walls of which Professor Chelpanov educated a galaxy of scientists selflessly devoted to psychology [8]. In Russia, through the efforts of Chelpanov, a unified system of scientific psychology and scientific and psycho-

logical education was formed, creatively using the institutional and structural achievements of Western European and American science for the development of Russian psychology and culture [9].

As director and organizer of scientific work of the Psychological Institute G.I. Chelpanov put at the disposal of research scientists a material and technical base that meets the best world standards. In this regard, Cornell University professor E.B. Titchener wrote to G.I. Chelpanov: "Your facilities and equipment rival if they do not surpass those of the existing laboratories of the world" [4, p.32]. It is no coincidence that the first experimental studies of Russian psychologists were distinguished by a very high level of performance and their results were reflected in well-known European publications.

A very interesting and little-known page in the scientific life of G.I. Chelpanov is his creative activity as the inventor of technical means for teaching and popularizing psychology. In one of the last works - the monograph "Essays on Psychology" (1926) - the scientist was presented with a unique device invented by him - "Russian universal psychological apparatus of prof. Chelpanov ". The device was designed to carry out basic psychological experiments known at the beginning of the XX century. The simplicity of the design, which distinguished the apparatus, provided wide possibilities for its use not only in laboratory, but also in domestic conditions.

The scientific archive of the Psychological Institute of the Russian Academy of Education (Moscow) contains materials that reveal the history of this invention [1]. The documents were kept in the family archive of Georgy Ivanovich's daughter Natalia Chelpanova-Paren (Paris) and were transferred to the archives of the Institute by his granddaughter Tatyana Mayard-Paren. In the collection of the archive: a patent for an invention (1930), an inventor's certificate (1933), a certificate from the People's Commissariat of Education of the RSFSR about the beginning of work on the implementation of the apparatus (1933), an illustrated description of the apparatus compiled by the author (1935). The documents allow you to get an idea of those specific research and pedagogical tasks that were supposed to be solved through the use of the apparatus in a variety of conditions.

The "universal combined psychological apparatus" was a single set of the following devices: a color turntable, a kymograph, a chronoscope, a mnemometer, a tachistoscope, an ergograph. Each of them was among the most used in experimental psychology at the beginning of the XX century. Thus, Chelpanov's apparatus was a small psychological laboratory, the tools of which made it possible to reproduce typical experiments relat-

ed to various branches of psychology (sensation, perception, memory, will, feeling, mental work, etc.). Knowledge of the patterns of mental processes formed the scientific foundation of such disciplines that were actively developing in the time of Chelpanov and focused on practice, such as psychotechnics and pedagogy. On this basis, new theories of giftedness, color discrimination, fatigue, personality types, correlation of mental and physical phenomena, etc. were built. So, when studying giftedness, the psychologist had to investigate the type of reactions of the individual, the features of his sensory perception, observation, attention, performance, memory, etc. In order to train psychologists and teachers, such studies could be carried out on the Chelpanov apparatus using a chronoscope, tachistoscope, mnemoneter, ergograph. The solution to the main problem of psychotechnics - increasing labor productivity - directly depended on measuring fatigue during physical and mental effort, and the time of its onset and the characteristics of its course were best studied using the same ergograph that was included in the Chelpanov apparatus. To study the typological characteristics of a personality, it was necessary to use several devices in a complex manner: to determine the types of attention - a tachistoscope, types of memory - a mnemoneter, types of reaction - a chronoscope. When combining a pneumograph and a kymograph, it was possible to register the body processes associated with a change in respiratory activity during the experience of a feeling of pleasure/displeasure and to identify correlations within psychophysical processes. With the help of a color wheel, specific professional abilities and limitations, associated, for example, with the presence of the phenomenon of "color blindness" or the level of a person's threshold of sensitivity, were confirmed. In general, on the Chelpanov apparatus, it was possible to carry out 56 types of experiments to study color sensitivity, motor activity, measure the time of simple reactions, memory, attention, fatigue, and so on. in the context of socially significant psychological tasks.

Chelpanov's universal psychological apparatus had a high marketing appeal: its price was low, it was distinguished by its portability, mobility, originality of the engineering solution, the design of the apparatus was ingeniously simple, and therefore every person who was keen on psychology could learn how to use it correctly or eliminate any malfunctions.

Practical accessibility in use helped to ensure the pedagogical functionality of the apparatus: attractive for any secondary school, it was able to bring knowledge of experimental methods of psychology to the most remote corners of Russia. Chelpanov strove to ensure that scientific psychology became the property of student youth of any age group and ensured

continuity in the work of secondary and higher education. The educational value of the apparatus consisted in the ability to prepare students for professional scientific work.

Despite the high scientific and practical significance, the fate of the Chelpanov invention was difficult. In the conditions of social upheavals and the ideological defeat of science, the new apparatus, declared by the author as an invention back in 1926, could be patented only four years later, the author's certificate for it was obtained three more years later, then for another three years there was an agreement on different instances about its serial production. In 1934, it was decided to launch the device into production, but the first production samples were released only in 1936. But the author himself did not have time to see them... It is known that the psychological apparatus of Chelpanov was distributed throughout the pedagogical institutions of Russia, and one copy of it was transferred by the Russian psychologist A.P. Nechaev as a gift to the University of Sydney (Australia). And one more important remark: having exchanged a patent for a copyright certificate, G.I. Chelpanov transferred his invention to the ownership of the state and deliberately refused any material benefits associated with its implementation into practice.

A universal psychological apparatus, the work on which G.I. Chelpanov devoted the last years of his life and with the help of which basic psychological measurements could be carried out in everyday conditions, became a real embodiment of his tireless concern for the development and dissemination of scientific and psychological knowledge in Russia.

Conclusion

As follows from the above, the founder of scientific psychology in Russia G.I. Chelpanov was distinguished by the brightness of her personal creativity. His professional activity is a continuous creative endeavor both in theory and practice. The creative principle was also laid down in the science of psychology, which he built, a dynamic science that vividly responds to the pressing needs of thought and life, and therefore is very consonant with the movements of the human soul itself, in which everything that the world breathes resonates with. The words spoken by A.A. Smirnov - one of the direct students of G.I. Chelpanov, who preserved the scientific traditions of the Psychological Institute laid down by the teacher, that the one who "deals with psychology seriously will never leave it" [7, p. 10].

Turning today to the creative heritage of Chelpanov, we are amazed at his innovation and relevance, first of all, from the point of view of understanding the scale of the ontological possibilities of scientific and psychological research. The development by Chelpanov of the philosophical

and theoretical foundations of psychology as a fundamental science, in which the integrative relationship and interdependence of spiritual-logical, psychological and psychophysical structures are postulated, is directed towards the future in terms of its implementation. At the present stage, the scientific paradigm is changing, the process of forming the structure of thinking is underway, which adequately recognizes the multilevel tendencies of the emerging new world. In this regard, the content of the scientific works of G.I. Chelpanov and the achievements of his organizational and pedagogical works represent a promising and logically flawless material for the formation and filling of both the scientific-theoretical and institutional fields of psychology of the third millennium.

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**REFLECTING ON THE “WAY TO NOTHING. ESSAYS ON RUSSIAN
NIHILISM” BY P.A. SAPRONOV**

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Annotation. *The article is devoted to the understanding of the phenomenon of nothing. The authors appeal to the historical emergence of nihilism in literature and also discuss the reasons for the emergence of nihilism in culture, dwelling on the facts from several traditional cultures. The article contains illustrative examples of the strengthening of nihilistic position in culture. The authors discuss the problems of superfluous people, giving examples from different literary works.*

Keywords: *nihilism, being, cultural tradition, phenomenon of existence, a superfluous person, transcendental, self-reflection.*

We live in the surrounding world, a social, political, and above all cultural space. It accompanies us throughout our life, playing a decisive role both in our socialization and in the formation of us as people and individuals. We can change the cultural tradition around us, more precisely, we can try to do it. After all, if a person finds himself in a different cultural environment in early childhood, then, most likely, he will grow up to be a bearer of a different culture, even if his parents will try to properly give him an idea of the abandoned homeland. One way or another, but this will be only a part, albeit significant, of the spiritual world of a person, which does not necessarily determine his attitude to the environment, and therefore, his being.

It is difficult, if not impossible, to overestimate the function of culture in this context. It forms a linguistic picture of the world that determines a person's thinking, ideas about the ethical, laid down in us in childhood, religious, aesthetic and many other things. Despite all the advantages of

culture, at the same time, it is not devoid of disadvantages. Like any living organism, it is capable of growing and developing, both in time and space. Its crises and illnesses can and do manifest themselves in the fullness and significance here.

Nihilism, as one of these diseases, is the subject of the book written by P.A. Saprnov "The Way to Nothing. Essays on Russian Nihilism". Finding the phenomenon of the existence of a text which contains the concept of annihilation of being and "sliding into Nothing" as a symptomatic phenomenon, the author seeks to identify the means leading to the cure of culture. Recognizing the seriousness of the current situation, stating the textual manifestations of nihilism as a problem that "requires serious intellectual work to overcome it in spirit and sense" [1, 54], based on scientific methodology. It is noted as insufficient to obtain the necessary result of philosophy, "the impossibility of a philosopher is not something to occupy a nihilistic position, but at least only to think about nihilism philosophically, to find one's own logic in it", and the inappropriateness of the requirement for theology" to contemplate nihilism to the end, to make it accessible to thought" [1, 51].

On this important point, one should agree with the author of the study and accept as the basis for finding a way out of the current situation, not a philosophical or theological, but a cultural tradition with its tools. The tools allow, in addition, to try to find the answer to two more important questions that are of decisive importance. The first question is illness and crisis. This is a natural or accidental phenomenon in the life of culture. The second question is what is primary, the work, in the context of our research, primarily the literary, or social reality surrounding the text and its author.

In order to identify the problem and clearly define its boundaries and limits, it is necessary to turn to the historical component of the emergence of nihilism in literature. Since the creation of "the Song from the House of the Departed King Antisthenes" and "the Book of Ecclesiastes, or the Preacher", the authors declared and comprehended such fundamental themes of human life as being, existing (that is, man) and his life. But this is not at all surprising, but the conclusions and attitudes that are made and possessed by the writers, which is why they "lose ground from under their feet, the world of primary meanings is shaking" [1, 55]. Undoubtedly, a person is able to realize himself as a being, to understand his "I", to feel a part of being.

Arguing about the reasons for your existence, you inevitably come to reflections on the root cause, the source of being. According to J.P. Murdoch, any culture is characterized by the idea that the visible, empirical world surrounding a person is not the only possible reality, that there is

also an area of the transcendental, inaccessible to human understanding, which constitutes the dominant religious representation. The concept of the end of human life, the subjective moment of the end of the earthly existence of a person, namely, death, is also a cultural universal. The authors of "Song of the Harper" and "Book of Ecclesiastes" are engaged in the problematization of these main components of culture as such and the life of an individual person in particular - being, life, death, as well as their connection with the sacred.

Understanding and accepting the transcendental foundations of being and the existence of a person, recognizing the presence of hope for help from the absolute, nevertheless, both textually and by referring to the context, it becomes obvious that the authors are "double-minded and double-minded", a kind of "pendulum of two, basically polar, mental states" [1, 63]. If Being is present in the world, then, at the other end, there must necessarily be its opposite, defined as Nothing.

Here it is necessary to understand one important point for research. What makes a person creating a work, who has the concept of the transcendent as the source of human existence, nevertheless, consciously or not, enter and stay in another "polar state of mind"; the source of nihilism is a point phenomenon in culture, rather an exception, an annoying misunderstanding than a rule, a strained and artificial invention of a loner who is distanced for one reason or another from others?

In this case, the position of the author of "The Way to Nothing", at a superficial glance, is not so optimistic: "Commonplaces and platitudes were not uttered for the first time. They arose by themselves and not in one, but in many heads at once. This kind of wisdom seemed to have always existed, unless it was repeated" [1, 55]. The first, so far preliminary, reason for the emergence of nihilism in culture is emerging. It is not transcendental, but rather anthropological. In this regard, it is completely possible to assume that a culture created and developed by man without the mediation of the absolute has in itself an initial, so to speak, genetic predisposition to nihilism.

The works mentioned earlier belonged to the pagan and Old Testament traditions. If we appeal to the Christian tradition, of course, taking into account its culturological, and even more precisely, literary embodiment, then it becomes obvious that here too the theme of denial of being has found its continuation, and its "grateful" admirers. In it, the striving for Nothing was even more clearly shaped, structured, at the same time acquiring complexity, and, if you may say so, its gloomy beauty.

Focusing on the list of questions posed at the beginning of the essay,

one should proceed to the analysis of the Russian cultural tradition directly, since "our task is to comprehend precisely Russian nihilism ... which led us to develop the topic further than anyone else in the West" [1, 110]. Mysteriousness, so to speak, the unpredictability of the Russian cultural tradition (the word "uniqueness" was used so often and in most cases unsuccessfully in this discourse that to a certain extent it is possible to talk about the loss or distortion of its meaning in relation to the subject in question), in relation to the East, and the West is that in Russia literature, history and everyday reality are so closely intertwined that sometimes it is almost impossible to clearly define their boundaries and root causes that give rise to consequences. According to the famous Soviet dissident Vladimir Bukovsky, Russia has always been a liteart-centric country.

What is worth focusing on in the first place is the topic of "superfluous people" in Russian literature, as one of the illustrative examples of the strengthening of nihilistic positions in culture. Usually these are bright, intelligent, capable and strong people. The phrase taken from the Soviet school literature lesson: "who entered into an irreconcilable conflict with the world around them" perfectly fit here. There is no particular point in arguing about conflict and irreconcilability. Difficulties arise with the determination of the initiator of the confrontation.

A "superfluous person" can choose several strategies for his behavior in the social sphere: he begins, as they say, "swimming against the tide", denying by his behavior, by all his activities the foundations, traditions and orders that surround him, criticize and annihilate everything that they find important and valuable characters around him; to turn (speaking with a large degree of convention) to the Chinese tradition of "wu-wei", that is, non-action, stepping aside and from the sidelines of reality with mixed feelings, observing the events passing by him. Both strategies of behavior do not provide him with the main thing - complete freedom and, as a consequence, independence from the world. A person needs him, his own, albeit negative, reaction to him indirectly confirming his value for his existence.

The tragedy of the situation for the hero is that he is not able to find a place for himself in the world, and not because he is trying badly, or is somehow "wrong" to act. This situation is very difficult to describe in words, as it is said: "A spoken thought is a lie." But it's worth trying. Sometimes, from early childhood, a character begins to understand with ever-increasing intensity and acuteness (not always accepting) his otherness, his dissimilarity from those around him. The rest, in turn, as they can, try to strengthen this confidence in him.

This dissimilarity may not necessarily have a positive (stronger, smarter,

more talented than others) or negative (weaker, dumber, more mediocre, and therefore more envious, deceitful, heartless) character. It's just that a person does not organically fit into what is happening around him: games, relationships with friends, elders. He quite sincerely does not understand why it is necessary to behave in this way and not otherwise, why he should do what, in his opinion, is uninteresting and absolutely unnecessary. Over time, the situation does not get better for him.

The second case of "being superfluous" of a person is that he does not accept the surrounding reality and the orders that exist in it, because he sees, acutely feels the blatant contradiction of reality and the postulates and values proclaimed by it as a shrine, instilled and requiring worship from childhood. This usually happens through disappointment and shifting to the edge of the social (the term marginalization, supposingly, is not entirely appropriate here).

Not understanding the general, not finding ways and opportunities to integrate into it, the hero comes to a choice: to passively resist, pulling back and enclosing himself in an "ivory tower" (or to act in a diametrically opposite way, going underground); try to annihilate the surrounding world. The first option leads to a recession (with all the conventionality of this term in the context of this study) and, with the unwillingness or inability to focus on the acquisition and structure of the inner world, "thereby opens the prospect of self-destruction" [1, 112]. The second option, if implemented, will lead the "winner" to an almost identical result, that is, the threat "to become superfluous for himself as well. And this is already a direct path to nihilism" [1, 112]. The one and the other path, if we consider it to the end, are equally dead ends and destructive, both for the subject and for the object.

So, the hero finds himself, at first glance, in a hopeless, more precisely, desperate situation, without addressing the transcendental situation. He is not able to find himself, even to begin laying the foundation of the inner space. He is quite successful in devaluing the value of this world in his own eyes. What keeps him in the space of the common, not allowing him to make a final decision regarding his own existence? This feeling used as a "last resort" is love. It does not seem appropriate to give a clear unambiguous definition of this feeling within the framework of this study. Therefore, the behavior of the characters should be considered in the context of the understanding and ideas of the author of the work.

Throughout his literary life, the hero cannot find his place in the world around him. To enter the realm of the immanent, he needs to understand his subjective space, at least try to put some semblance of order in it. It is impossible to do this for various reasons: due to weakness of will, lack

of rational, excessive sentimentality, confusion, all of the above inevitably leads to banal anger or deadening indifference. Hence the nature of the relationship with others is basically not carrying anything but negative. Such communication with the world only strengthens a person in the belief that this is the only possible line of behavior.

And so, something happens that does not fit into the consciousness of the character, something that cannot be predicted rationally, explained from the standpoint of aesthetics, and overcome with the help of will: there is a meeting with the future subject of love (it's doubted if the expression "object of adoration" can be used here). It knocks out the last support from under the feet, overturns, or unceremoniously pushes into the background all the theoretical constructions created and provided by the hero, causing the latter to find himself in a state of a kind of vacuum, not knowing how to behave. The inner world with its experiences and self-reflection ceases to be relevant, external interaction also becomes problematic, focus on love comes to the fore.

In other words, the incident cannot be described as "the most tragic moment in the life of a hero". In this regard, given the indisputable weight and seriousness of the theses of the author of "The Way to Nothing", we will try to take the liberty of expressing certain objections to some of them. There is no point in denying that "... it, as it can only be in a great novel, is not only not accidental, but obligatory and inevitable" [1, 148]. Love is necessary for a person, it is vital for him, thanks to her it is possible, even if not to be healed, but at least to begin getting rid of theories and emotional states that are deadening the soul and life. The inspiring power of this feeling cannot be compared to anything else.

What follows, however, requires, in our opinion, some very significant clarifications. From a formal point of view, it is possible to agree that "Such is the statute of love for a novel, that it fulfills or does not fulfill the claim for the fullness of life: it is the decisive test of the hero according to the most significant criterion" [1, 148]. By the right of the reader, that is, being familiar with the texts of the novels referred to in "The Way to Nothing", we venture to generalize the following sentence somewhat, correcting it as follows: "And practically none of the heroes withstands this test".

Love, indeed, should enliven, even humanize a work of art, putting the characters before a choice, necessarily difficult and even painful, to succumb to the impulse and feeling or ignore it. Both the first and the second can be sudden and overwhelming, defying any available analysis, which is quite consistent with the "decisive test of the hero according to the most significant criterion." It is impossible to withstand this test simply because

this feeling has nothing to do with love!

You can start at least with the lack of freedom regarding the subject of "love" of the protagonist. This is either a completely unfamiliar person or a very superficial acquaintance, and the described circumstances do not imply an improvement in the given situation. In addition, very often a woman becomes an object of adoration, neither for social, nor for intellectual, nor for any other qualities, except perhaps external (everything is quite stereotypical here: youth, beauty, grace, etc.), not absolutely suitable for the hero.

An attempt under such conditions to establish at least some kind of relationship, in advance and guaranteed, is doomed to failure. But after all, initially, it seems, it is about love, about that feeling that is only capable of becoming a turning point in a person's life, returning him to the world, making him reject and forget the disastrous path? Instead, there is not a turning point, but, no matter how harsh it may sound, the dying cry of existence, a parody of an attempt at salvation, which becomes a "catalyst" for a denouement, no doubt dramatic, which is especially indicative of the example of Yevgeny Vasilyevich Bazarov. The "decisive test of the hero", which, without a doubt, and should be so, turns into some kind of nightmare, reminiscent of Nietzsche's "push the falling".

As for the hero, it can be seen with the naked eye that he is absolutely not ready for such a variant of "love". His life is a doubt and a search, even if the former are very often ephemeral, vague or too far-fetched, and the latter is distorted. He is among others, not understanding and not accepting their final life choices, their reassurance and complacency. If we conduct a thought experiment and assume that most of the "love lines" ended "successfully", then, frankly, it is impossible to imagine Bazarov, Chatsky, Pechorin or Onegin, quoting from memory one of Ostrovsky's characters, "sitting in the morning over a cup of coffee, in a pink robe ...". In this case, they would simply pass into the category of those characters whose life credo was rejected ontologically and ethically.

In this context, a reasonable question arises, what in this case is understood by the word "love". The definition given by Deacon Andrei Kuraev suits enough, according to which love is a gratuitous desire for the good of a loved one. Taking this as a starting point, the very understanding of the test of a literary hero by love is radically changed. From now on, it ceases to be a strange demonstration of youth, beauty, grace, or, more simply, inaccessibility in front of the main character, only accelerating the tragic denouement. Here, however, another difficulty arises: the author will have to complicate the heroine as much as possible, make her not only feel and

think, but also reflect.

Much closer to this is the man from Kuprin's story "The Garnet Bracelet". For all the controversy of Zheltkov's position and the tragedy of the result of his life, one cannot fail to note the life-affirming nature of his feelings. Love gives him the strength to live, bringing hope, hope in spite of everything, no matter what external obstacles and conventions, to stay in this state.

If we take the above definition as a basis, then in the position of a hero settling down, sliding into nothingness, there is the possibility of finding a fulcrum almost in the Archimedean sense. He manifests the need for something else, the obligation of mediation to them. Hence, not a disappearance, but a transformation of the character's test. It ceases to be the final path of life into nothingness, the last in all senses of the word, acquiring a new, opposite to the previous meaning.

Gaining through the appeal to another experience of his own responsibility to a person, responsibility and understanding behavior on his part is expected. In this case, it is impossible to call characters, for example, Chekhov's "The Seagull" lovers. The craving for a person, a deep sincere feeling for him, should be repeated, the desire for his good, presupposes communication, that is, a dialogue, not a monologue. To love means to talk, by all means hearing the other. The value of relationships lies in the fact that they should improve people's lives, not worsen them.

Considering the "complete indifference and disregard of the one whom they love, to those who love him (her)" [1, 243], Chekhov's heroes can be called in love, but not in another, not even in themselves, it would be rather strange, but love, but solely in their own suffering. Moreover, these sufferings look rather unattractive, since they occupy the characters, it seems to me, not in a love or any other context, but solely for the sake of the suffering itself. Hence the result: "Each of Chekhov's lovers feels lonely and causes a feeling of loneliness in the one who loves him. They all suffer, and they themselves give rise to suffering in others" [1, 243].

It's time to answer the questions posed at the beginning of the study.

Culture in general and literature in particular are able to develop without direct appeal to the absolute, relying solely on the mundane. The problem here is that this development is uneven and, most importantly, temporary. And it leads, one way or another, to deviations, that is, to an active or passive denial of being and life. It follows that diseases and crises in the sphere of the symbolic will repeat themselves with a certain periodicity, based on an imperfect human nature. This idea, in our opinion, is successfully expressed by Stanislav Lem in his "Return from the Stars" and "So-

laris": humanity "conquers" space, studies other worlds, encounters the unknown and incomprehensible, but not in order to understand it, but for in order to humanize it, "crush it under yourself", remaking it in your own way. Wherever a person is, everything around him should be clear and understandable, that is, the way he wants and sees, with all this not having a clear idea of the truth. This, according to the writer, is our main and only goal.

Taking into account the historical experience of our country, it can be argued with a certain degree of certainty that a literary work is primary in relation to social reality, sometimes influencing it in the most tragic way. But the situation does not lack optimism.

The source of the solution is often where the problem lies. Of course, in this context, the reasoning was conducted on the part of the readers, and they do not pretend either to the truth, much less to the generally validity of their position. Although, it is precisely going beyond the limits of the hero's inner experiences, his turning to another (at this point the natural and social principles of the individual intersect), openness to him, that are able to outlive nihilism as a phenomenon, to give a literary work something that he so often lacks, that is, not life-denying rather life-affirming character. This, in turn, opens the way for culture to the topic of the absolute.

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PREVENTION OF ADHESION FORMATION IN ACUTE ADHESIVE INTESTINAL OBSTRUCTION

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Abstract. *In order to study the effectiveness of treatment in 88 patients with acute adhesive intestinal obstruction, we studied the results of surgical treatment: in the departments of surgery № 1, № 2, № 3, city clinical hospital № 2 Makhachkala for a two-year period. The age of the patients ranged from 25 to 85 years. There were 30 men (43.2%) and 50 women (56.8%).*

All studied patients were divided into 2 groups:

The first group - 48 (54.5%) patients underwent adhesiolysis with the introduction of 5-fluorouracil in the projection, where adhesiolysis was given - 15 ml and postoperative administration of sulodexide - 2 ml per day 1 time for 5-6 days.

In 40 (45.5%) of the second group, mesogel was injected intraoperatively in an amount of 350-400 ml, followed by removal with the opening of the drainage tube after 5 hours.

In the early postoperative period, the first group had no complications. All were discharged for 4-5 days. In the second group, three patients had high fever, intestinal paresis, and on the 6th day, pelvic abscess was observed in 2 patients.

Control study after 6 months in patients of the first group, no complaints. Ultrasound showed no signs of visceroparietal battles, and in the second group, in four cases, ultrasound revealed pathological battles.

The use of 5-fluorouracil with sulodexide made it possible to develop adhesions.

Keywords: *acute adhesive intestinal obstruction, surgical treatment, laparoscopic adhesiolysis, 5-fluorouracil, sulodexide.*

Introduction

Surgery is the most common cause of peritoneal adhesions. Predisposing factors include mechanical damage to the peritoneum and local ischemia due to manipulation and retraction of abdominal tissues during surgery [1,2]. The incidence of postoperative adhesion formation ranges from 67 to 93% [3]. The recurrent nature of acute adhesive intestinal obstruction (AAIO) is a serious clinical problem. The recurrence rate after AAIO surgery varies from 19% to 53% [4-5]. Peritoneal adhesions are a consequence of irritation of the peritoneum by infection or surgical trauma and can be considered as a pathological part of healing after any injury to the peritoneum, in particular, due to abdominal surgery [6]. The balance between fibrin deposition and degradation is critical in determining normal peritoneal healing or adhesion formation [7]. Postoperative peritoneal adhesions are the main cause of postoperative acute adhesive intestinal obstruction, leading to multiple complications, many of which may appear several years after the initial surgery. In addition to AAIO, peritoneal adhesions can cause pelvic or abdominal pain and infertility in women. Prevention of adhesive intestinal obstruction is an important task of practical surgery [8] with the development of new medical technology, minimally invasive interventions with the use of various anti-adhesive agents are being actively introduced into clinical practice. The prophylactic use of minimally invasive surgery and pharmacological agents is justified [9].

Purpose of the study

Evaluation of the effectiveness of means of prevention of adhesion of the abdominal cavity.

Materials and research methods

Analyzed the results of treatment of 88 patients with acute adhesive intestinal obstruction (AAIO) treated at the city clinical hospital № 2, Makhachkala. The age of the patients ranged from 25 to 85 years. There were 38 men (43.2%), women - 50 (56.8%). All patients were divided into 2 groups.

In the first group, 48 (54.5%) patients underwent laparoscopic adhesiolysis with 5-fluorouracil injection into the adhesiolysis projection site and postoperative administration of 2 ml sulodexide within 5-6 days from the moment of surgery.

In 40 (45.5%) patients of the second group, after laparoscopic adhesiolysis, "mesogel" of 75-400 ml was injected intraoperatively, followed by removal with the opening of the drainage tube 5-6 hours after the operation. Along with clinical, laboratory and X-ray examinations, an important place is occupied by ultrasound examination for the first time in the hours

of admission of patients. In our study, there was a conversion due to the risk of damage to internal organs. Informed consent was obtained from all patients for the study. Statistical analysis was performed using GraphPad Prism version 4 (GraphPad Software Inc., San Diego CA). The Mann-Whitney test was used to compare adhesion formation between individual groups. Intergroup differences were assessed using two-way ANOVA. Linear regression and Pearson correlation were used to analyze the spike data. The criterion was considered significant ($p < 0.05$).

Research results

During adhesiolysis, the prevalence of adhesions, syntopy of fusion bowel loops, their degree of mobility, dilatation of intestinal loops, the state of the intestinal walls, the presence and nature of effusion in the abdominal cavity, the presence and severity of perifocal changes were determined. The leading goal was to determine the zone of intestinal obstruction. The laparoscopic criteria for intestinal obstruction were swollen bowel loops due to fluid and gas, effusion in the abdominal cavity. Inflammatory changes in the peritoneum, dyscirculatory changes in the intestinal walls, low mobility or fixation of welded bowel loops, low mobility or fixation of welded bowel loops, deformation due to adhesions of the small intestine segment was important for laparoscopy of the proximal and collapsed bowels.

Revision of the small intestine was performed using two clamps from the ileocecal part of the intestine in the proximal direction to the bowel deformity zone with signs of enlargement of the bowel loops (laparoscopic retrograde bowel revision) with the direction of the examined area of the intestine relative to the instruments was about 45° .

In case of widespread adhesions in the abdominal cavity with bowel loops deformities, stage-by-stage laparoscopic adhesiolysis was used in order to reach the bowel deformation zone with adhesions that caused intestinal obstruction.

At the pharmacological stage, intraoperatively for the prevention of adhesions, it is necessary to use the cytostatic 5-fluorouracil.

The action of 5-fluorouracil is based on blocking the cell-cytokine transmission at the stage of changing the nonrophilic and macrophage phases to fibroblastic 5-fluorouracil has a direct suppressive effect on a wide range of cellular elements in the abdominal cavity, disrupting the main process of synthesis of collagen fibers and glycosaminoglycans necessary for the formation adhesive process [6]. Before using 5-fluorouracil, we remove as much as possible all blood clots from the abdominal cavity and the pelvic cavity. In the postoperative period, 250-300 ml - 5% glucose with 12 g / c of the patient's body surface is kept through the established drainage. The

administration of 5-fluorouracil was performed in 21 patients according to indications.

In the postoperative period, sulodexide - 2 ml/1 time per day for 5-6 days.

At the pharmacological stage of intraoperative prevention of adhesions, anti-adhesion gels ("Mesogel") were used to prevent the formation of adhesions.

We used the anti-adhesive agent Mesogel in 20 patients. The number of interventions that we initially performed laparoscopic operations without the use of mesogel was - 20 patients, due to the refusal and counterpunishment of the use.

When using mesogel during laparoscopic adhesiolysis, the drug was poured into the abdominal cavity through a 10 mm trocar.

The postoperative period in patients to whom we applied the anti-adhesion agent mesogel was uneventful in 15 patients. From the first postoperative day, the drainage was periodically opened, releasing 20–30 ml of fluid and its character was assessed, after which the drainage was closed. Ultrasound monitoring of the content and nature of the fluid in the abdominal cavity was carried out from the second postoperative day, followed by monitoring every second day. The drug creates the effect of hydroflotation in the abdominal cavity for at least 3-4 days, for the entire critical period of formation of interorgan adhesions. According to our data, the maximum amount of the drug is contained in the abdominal cavity within 3-4 days after administration. Subsequently, the remains of free fluid are determined by ultrasound for another 7 days. Elimination of the drug was noted in patients after laparoscopic adhesiolysis, in 5 (20%) patients there was a complication in 3 patients with a high temperature, and in 2 patients with pelvic abscess.

The use of mesogel can be carried out both with laparoscopic and open interventions, practically not in all patients due to the development of complications after the operation.

Laparoscopic decompression of the small intestine was used only in 4 patients of the second group. There was no fatal outcome in the postoperative period in both groups. The average bed-day was (7.6 ± 1.9) days.

The postoperative period in patients to whom we applied 5-fluorouracil was uneventful. Starting from the first day, the trapping drainage was opened for a short time to determine the nature of the discharge from the abdominal cavity.

Starting from day 2, ultrasound control of the abdominal cavity was performed for the presence of free fluid and the state of the intestine. In 3

patients of dynamic laparoscopy, pneumoperitoneum was applied through a previously installed trapping drain. The first port was installed through the wound after removal of the drainage, the second - in the area as free as possible from postoperative scars. After the introduction of the optics, the abdominal cavity was revised, the drainage was removed, and additional ports were installed if necessary. Free liquid was aspirated. The small intestine was revised throughout. In 14 patients after the introduction of the mesogel, newly formed loose visceroparietal adhesions of the small intestine in the area of the postoperative scar were revealed, which corresponded to the adhesion process of the I-II degree. The adhesions were bluntly separated, while the intestine was easily separated from the anterior abdominal wall, no patient had bleeding in the adhesiolysis zone. After dissection of adhesions, 5-fluorouracil was injected into the abdominal cavity in 3 cases.

The postoperative period in patients after staged adhesiolysis was uneventful. The passage was restored on days 2–3. The average postoperative bed-day in the hospital after staged laparoscopic adhesiolysis using 5-fluorouracil was (12.3 ± 2) days.

Control examination, within 6 months passed - 39 (81.3%) patients. Ultrasound showed no signs of visceroparietal adhesions. In 4 patients, after the application of mesogel for ultrasound, there were signs of visceroparietal battles.

Thus, the use of the developed techniques aimed at reducing the risk of recurrence of adhesions of the peritoneum made it possible to reduce the cases of violation of the passage through the gastrointestinal tract from 11.3 to 4.2%, acute adhesive intestinal obstruction from 4.8 to 1.3%.

Discussion

The goal of adhesion prevention is to reverse or reduce the frequency, severity, severity, and sequelae of adhesions while maintaining normal healing and preventing infection [10]. Several strategies have been proposed over the years to prevent postoperative adhesion formation based on what has been studied in the field of underlying pathophysiology. Unfortunately, while numerous different strategies have been evaluated, few have been successful and some have been harmful. To this day, there are no means that completely prevent the formation of postoperative adhesion. The only available treatment for already formed adhesions is surgical adhesiolysis. Adhesion lysis is usually performed only in patients who develop complications from adhesions such as AAIO pain, infertility, since most adhesions that are surgically removed are simply reformed [5, 9].

Strict adherence to careful surgical technique has been promoted for

many years by surgeons and surgical texts as a means of reducing adhesive formation after transperitoneal surgery [4], such efforts rarely prevent adhesions in most patients, the principle of good surgical technique to reduce peritoneal injury should not be discounted, since this practice may also influence the risk of complications associated with surgical procedures [6]. Measures described and recommended to reduce adhesion formation include minimizing exposure of the peritoneum to foreign bodies (for example, using suture material only as needed, removing glove powder by washing gloved hands before surgery), careful tissue handling, economical use of coagulators and retractors, ensuring thorough hemostasis to avoid drying out and ischemia, preventing infection and preventing the use of overheated irrigation fluids [4, 8].

Given that strict adherence to careful surgery does not eliminate or prevent adhesion formation, there are some surgical adjuvants that have been developed and evaluated to reduce postoperative adhesion formation. An in-depth, in-depth discussion of each agent is beyond the scope of this study. There are 6 main mechanisms that prevent the formation of adhesion: they reduce damage to the peritoneum, reduce the initial inflammatory response, prevent the formation of fibrin, increase fibrinolysis, prevent collagen deposition, and barrier drugs [10].

We have found that the use of the drug mesogel leads to significant side effects. Apparently, these side effects of the mesogel are due to the potentiation of the infectious process, the absence of substances in the preparation that can prevent the agiziogenic process in the abdominal cavity.

The use of 5-fluorouracil with sulodexide has shown encouraging results. The experience of laparoscopic adhesiolysis with the use of 5-fluorouracil in many authors is small and this tactic has not yet found wide application. However, the tactics of administering such patients with the use of 5-fluoro-ruracil with sulodexide with an indication and a contraindication is of particular interest.

Conclusions:

1. Laparoscopic adhesiolysis can be considered an effective AAIO treatment with 5-fluorouracil with sulodexide.
2. The use of mesogel in clinical practice requires further experimental and clinical research.

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SOME FEATURES OF THE STRUCTURAL AND MORPHOLOGICAL REORGANIZATION OF THE MYOCARDIUM IN HYPOTHERMIC LESIONS. PROSPECTS FOR FURTHER STUDY

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Abstract. *This article presents a review of the literature on the structural reorganization of the myocardium in conditions of exposure to low temperatures. Currently, a large number of studies are devoted to the study of the effect of low temperatures on the heart muscle of humans and animals. The main place in these studies is given to the diagnosis and differential diagnosis of general hypothermia when this type of death is combined with various intoxications, diseases and other conditions. However, despite the large number of published works to date, the study of the thanatogenesis process as a result of exposure to low temperatures from hypothermia remains a complex and poorly studied process. The accumulated knowledge allows us to conclude that there are no specific signs found in all 100% of deaths from hypothermia. Any symptom characteristic of hypothermia, at least in isolated cases, occurs with other causes of death. At the moment, morphological changes occurring in the nuclei of cardiomyocytes remain practically unexplored.*

Keywords: *hypothermia, cold injury, myocardial injury.*

The problem of cold injury is currently very relevant and socially significant, due to its high share in the structure of causes of death. More than 30,000 people die from cold injury worldwide every year [25].

In the Russian Federation, at least 20,000 people die from this type of injury every year, which is about 65% of the total number of deaths in the world as a result of exposure to low temperatures. The share of death from cold injury in the structure of causes of violent death in Russia is about

5.5-7.0%, and in some regions of the Siberian Federal District it reaches a level of at least 11% [17]. The high share of cold injury in the structure of causes of death is associated with the peculiarities of the climate (Russia is a country with a relatively cold climate, this is due to the fact that about 64% of the total area of the country belongs to the polar territories), a high level of ethylization of socially unadapted layers of society, as well as individual characteristics of the organism (decrease in resistance to low temperatures, decrease in overall resistance of the organism, etc.) [8, 25].

At present, a large number of studies are devoted to the study of the effect of low temperatures on the human and animal organism. The main place in these studies is given to the diagnosis and differential diagnosis of general hypothermia when this type of death is combined with various intoxications, diseases and other conditions. However, despite the large number of published works to date, the study of the thanatogenesis process as a result of exposure to low temperatures from hypothermia remains a complex and poorly studied process.

The main method for diagnosing death from hypothermia is the morphological method. [20]. At the moment, a huge number of morphological changes (both macro- and micromorphological) are known that can be detected in the study of deaths from low temperatures, but most of them are low-specific, and therefore cannot be fully used. [6,7,20].

The effect of the cold factor on the human and animal organism causes various functional and morphological changes in tissues. These changes depend on a huge number of factors of the external and internal environment and in some cases are fatal. A special condition for maintaining vital activity under the action of low temperatures is an increase in the blood supply to tissues and organs, which primarily depends on the functional activity of the myocardium.

At the moment, it has been found that it is precisely the adequate blood supply to organs and tissues, which can be carried out only with prolonged adequate functional activity of the myocardium, is one of the important conditions for survival in conditions of low temperatures. [21]. In this case, certain functional changes develop in the cardiovascular system in the form of the following stages: compensation and decompensation. The stage of compensation (the development of tachycardia, an increase in the level of systolic and diastolic blood pressure, an increase in cardiac output, an increase in peripheral resistance). Stage of decompensation (bradycardia, decreased blood pressure, decreased cardiac output, arrhythmias. Most often, death occurs as a result of ventricular fibrillation or the development of progressive bradycardia turning into asystole [1]. The fact of a direct

connection between the above-mentioned changes and the effect of low temperatures on the body was proved by T. Tveita only in 1994. [25].

Most researchers described only single, separate morphological changes occurring in organs during hypothermia, without revealing the sequence of their appearance and the relationship [15].

In a macroscopic examination of the cardiac muscle of persons who died from hypothermia, some authors noted: an increase in the heart in the volume of predominantly left sections, thickening of muscle tissue, the formation of a reddish-brown tint, the appearance of a shine, overflow of blood in the left ventricle, the appearance of lighter blood in the left atrium and ventricles [nine]. Chudakov A.Yu. (2000) in his studies noted only a pronounced expansion of the cavity structures of the heart, the formation of a huge number of clots, mostly in the left sections [19].

For the first time, systematically and consistently, a detailed study of microscopic changes arising in the myocardium Asmolova N.D., Rivenson M.S. [3]. They were able to identify the following microscopic changes that occur in the parenchyma, stroma and microvasculature of the myocardium:

- Changes in cardiomyocytes: swelling (edema) of muscle fibers with the phenomena of myolysis: uneven clearing of the cytoplasm, formation of optical voids, loss of striation; tight fit of muscle fibers to each other, indistinctness of their boundaries, the formation of muscle layers; the appearance of the phenomena of karyopycnosis or, on the contrary, swelling and enlightenment, the nuclei of muscle fibers are pycnotic, hyperchromic or swollen, light, with coarse or melted chromatin; many nuclei are deformed;

- Disturbances of microcirculation, in most cases arising precisely in places of edema of cardiomyocytes: pronounced uneven filling of arteries with blood, thickening of arterial walls due to edema and swelling, pronounced plethora of capillaries and venules, segregation of blood into components;

- Changes in the stroma: compression of the connective tissue stroma of the myocardium, the appearance of the phenomenon of erasure of its borders, basophilia; coarsening and basophilia of the perivascular stroma; development of hyperchromia, karyopycnosis, striae in the nuclei of connective tissue cells;

- Formation of overcontraction bands [3].

The above changes in the opinion of Asmolova ND and Rivenson M.S. (1982) allow us to talk about the frequency of occurrence of the above structural changes in the myocardium in more than 90 percent of cases and are fundamentally different from the changes occurring in the myocar-

dium during death from coronary heart disease and alcohol poisoning [3].

In turn, Weil S.S. (1959) noted the following changes: the appearance of multiple hemorrhages in the myocardium, the "clear" state of the capillaries [4].

Research conducted by E.M. Koludarova. (1999, 2005) allow us to talk about reactive changes in the vascular bed: expansion of venules, arterio-arterioleolar vasoconstriction, venous-venular congestion, the occurrence of stasis and sludge-phenomenon. In addition, the following parenchymal-stromal changes were identified: the formation of a homogeneous cytoplasm, vacuolization, areas of metachromasia according to Selye and Gendaygain, the presence of zones of intracellular edema, the disappearance of glycogen, the appearance of signs of both relaxation and contractions of I-II degrees in cardiomyocytes. [15,16].

Research results of Asmolova N.D. (2008) talk about the occurrence of the above changes in case of sudden death from complications of coronary heart disease. But with death from coronary heart disease, these signs are expressed evenly, and edematous changes occurring in the parenchymal – stromal structures are insignificant [3].

Analyzing the research results of Koludarova E.M. (2005), it can be concluded that the studies did not give any fundamentally new results. Thus, today, many of the above signs of morphological changes are not very informative, it is extremely difficult to objectify [15].

It should be noted that further research by Asmolova N.D. and Rivenson M.S. (2008) made it possible to find out the following features:

- fuchsinophilic degeneration, the phenomena of granular-lumpy decay of cardiomyocytes are found only in death from complications of ischemic heart disease;

- formation of layers of cardiomyocytes, their edema occurs mainly in cold injury;

- edema of the connective tissue structure predominates in deaths from acute alcohol poisoning [3].

Some authors note the appearance of foci of fuchsinophilia in the heart of those who died from cold injury [11].

The diagnosis of death from hypothermia was given in her research by Filippenkova E.I. (2011). Analyzing the results of her research, it can be concluded that the Asmolova – Rivenson sign is not constant and specific for death from hypothermia [10].

At the moment, there is an opinion that these changes are primarily associated with hypoxic damage to cardiomyocytes. This judgment is confirmed by the results of research conducted by V.P. Desyatov. (1981),

Chudakov A. Yu. (2000), Kapustin A.V. (2000) [7,9,13]. The results of research conducted by L.A. Sumbatov (1980) suggest that many cardiomyocytes remain intact despite the effect of low temperatures [19].

Studies conducted by A.V. Kapustin are of great practical importance. (2000) Based on the results of these studies, it was concluded that the severity of morphological changes occurring in tissues, the frequency of their occurrence is largely determined by the process of thanatogenesis [13].

Thus, microscopic changes have different diagnostic significance: some are noticeable are more common in certain nosological forms and can be considered characteristic (but not specific) for them; others occur with many causes of death, but more often with certain causes, therefore, are rated as relatively informative; still others indicate only the immediate cause of death (acute heart failure, ventricular fibrillation or asystole) or its rate; the fourth occur with equal frequency for any cause, mechanism and rate of death and should not be taken into account in histological diagnosis. However, among the nosological forms studied by Kapustin A.V. (2000) based on this approach, hypothermia is not entered. In addition, the value of its results is reduced by the lack of statistical analysis - the main means to assess the very frequencies of occurrence of signs on which their diagnostic value depends.

At the present stage of development of medical knowledge in the field of thermal injuries, great importance is attached to the study of morphological changes occurring apparatus of cells. However, at the moment, the described morphological changes occurring in the nuclei of cardiomyocytes during hypothermia are rather scarce. Particularly noteworthy are the results of studies conducted by I.P. Bobrov. et al. (2019), who showed that the effect of the cold factor has a damaging effect on the nuclei of liver cells in experimental animals, while pronounced morphological changes are noted: a decrease in the number of binuclear hepatocytes, a decrease in the morphometric parameters of nuclei, an increase in the proportion of heterochromatin in the nucleus, a decrease in INDNA and a decrease in the number of nucleoli, with the occurrence of nucleolar segregation phenomena [5,6]. These studies confirm the importance and practical orientation of further study of morphological changes occurring in the nuclei of cardiomyocytes.

Thus, the pathomorphological picture of the heart muscle in hypothermia has been described, but the diagnostic and differential diagnostic significance of its elements, as well as their relationship with the variants of thanatogenesis, are unclear. The accumulated knowledge allows us to conclude that there are no specific signs found in all 100% of deaths from

hypothermia. Any symptom characteristic of hypothermia, at least in isolated cases, occurs with other causes of death. In the future, the study of morphological changes occurring under the influence of low temperatures in the area of intercellular junctions and nuclei of cardiomyocytes is of scientific interest.

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ELECTROMYOGRAPHIC AND ULTRASOUND RESULTS OF MASTICATORY FUNCTION OF MASSETER MUSCLES IN PATIENTS WITH THE ODONTOGENIC PHLEGMONS

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Abstract. *This article shows the significance of odontogenic purulent infections of maxilla-facial area and reveals the physiotherapeutic methods of rehabilitation of masseter muscles. The aim of research is to study the effectiveness of electrovibromassage in patients with odontogenic phlegmons of maxillofacial area and evaluate the functional state of masticatory muscles. The mejtearial pof research were 54 patients with phlegmon of maxillofacial are who were treated in the maxillofacial surgery department of the Osh Interregional Joint Clinical Hospital during the period from 2019 to 2020. Most of the patients 62,9% had phlegmons localized under the masticatory 21 (38.9%), wing-mandibular 33 (61.1%) facial cervical spaces. All patients were divided into two groups: comparison (24 patients) and main (30 patients), in both groups were held similar algorithm of surgical and therapeutical treatment, but in main group in addition was used electrovibromassage, myogymnastics and mechanotherapy of affected area in order to boost rehabilitation process. The results of research, according to electromyographic and ultrasound diagnostics show that proposed method of treatment-rehabilitation complex increases the effectiveness of rehabilitation.*

Keywords: *odontogenic phlegmons, rehabilitation, electrovibromassage*

Introduction

The significance of the problem is a rapid increase in the number of pa-

tients with purulent inflammatory diseases of the maxilla-facial region, violation of the balance of reactive mechanisms of the body, the specificity of the microflora of purulent wounds, sensitization of the body and reducing the effectiveness of antibiotic therapy. One of the most common disorders in odontogenic purulent diseases is a violation of masticatory function. Inadequate function of the masticatory apparatus leads to disorders of the gastrointestinal tract, carbohydrate, nitrogen, water metabolism, reduces the performance of the entire neuromuscular apparatus of the body as a whole, causing psycho-emotional discomfort. All of the above changes lead to the need for rehabilitation at different stages of the disease, taking into account the individual characteristics of each patient. Stages and continuity are of great importance in the solution of the tasks. Rehabilitation measures should be carried out taking into account the peculiarities of the clinical course and the degree of disease prevalence. One of the important symptoms of odontogenic phlegmon is inflammatory contracture of the masticatory muscles of varying severity, which makes adjustments in rehabilitation. In case of maxillofacial phlegmon, the central mechanisms of regulation of the masticatory function are complicated and therefore the most effective, and sometimes the only way to strengthen and restore the nervous connections and also to create the functional system in new conditions is electro-stimulation. However, the available literature does not sufficiently cover the issues of functional state of masticatory muscles in patients with odontogenic phlegmons, the complex of treatment and rehabilitation measures for full recovery of masticatory function is not developed, electrophysiological substantiation of masticatory muscles electro-stimulation in this type of pathology is absent.

Objective of the study

To study the effectiveness of electrovibromassage in patients with odontogenic phlegmons of maxillofacial area and evaluate the functional state of masticatory muscles.

Materials and methods of research

We have observed 54 patients with phlegmon of maxillofacial area who were treated in the maxillofacial surgery department of the Osh Interregional Joint Clinical Hospital during the period from 2019 to 2020. There were 34 male (62.9%) and 20 female (37.1%) patients. In the highest percentage of cases were patients of young age from 16 to 40 years (41 persons - 75.9%). The sources of odontogenic infectious inflammatory process were wisdom teeth in the first place (37.3%), followed by 36 and 46 teeth (28.1%), 37 and 47 teeth in the third place (18.9%), and 15.7% were diseases of other dental groups (). We chose only phlegmons local-

ized under the masticatory 21 (38.9%), wing-mandibular 33 (61.1%) facial cervical spaces. The majority of patients came to the in-patient treatment at late terms: in 5 days and more from the disease beginning - 46 (85,1%) patients and only 8 patients (14,8%) addressed after 3 days of the pathological process beginning. Clinical examination of the patients consisted of a detailed analysis of complaints, medical and life history, traditional dental examination, laboratory tests, and consultations with relevant specialists.

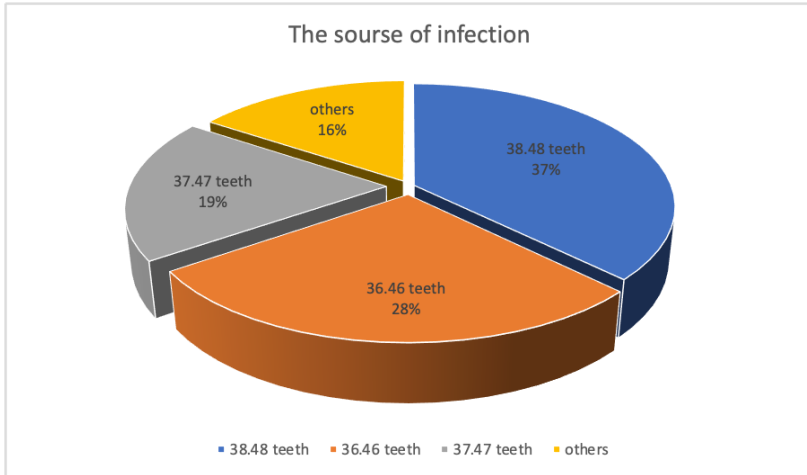


Fig.1. The percentage of teeth that caused the odontogenic infection

All patients were divided into two groups: comparison (24 patients) and main (30 patients). General principles of patient management were the same in both groups: on the day of hospitalization after preoperative preparation under general or combined anesthesia we performed adequate surgical treatment of the purulent wound, removed the "guilty" tooth, prescribed antibacterial, desensitizing, infusion, detoxifying and symptomatic therapy if indicated. All patients were dressed daily: after antiseptic treatment and drainage of the wound an aseptic gauze dressing moistened with 10% sodium chloride solution was applied; as the wound process passed to the second phase, the wound was dressed under an ointment dressing or early secondary sutures were applied.

Group I patients (comparison) underwent physiotherapeutic treatment of the pus wound with low-frequency magnetic therapy. Mechanotherapy was performed by the patients in this group independently using improvised means without time and dynamic observation. Patients of the II

group received the suggested medical-rehabilitation complex: besides the conventional treatment, electrostimulation of the masticatory muscles with the apparatus of "Electrovibromassage", the total duration of one session was 10-15 minutes, 2 times a day and therapeutic myogymnastics according to V.A. Sokolov's method. As well as mechanotherapy. The proposed treatment-rehabilitation complex in patients with odontogenic phlegmon with the use of masticatory muscles myostimulation, mechanotherapy of the lower jaw and myogymnastics has a direct relation to the practical medicine and can be used in the conditions of hospital and polyclinic. The obtained data of the positive effect of the suggested treatment of patients with odontogenic phlegmon on clinical and electromyographic data allow to substantiate extensive indications for the use of the complex of rehabilitation measures both at the hospital stage of treatment and in the conditions of the daytime hospital and in the rehabilitation room and are the method of choice in treating inflammatory diseases of the maxillofacial region soft tissues. Economic availability of "Electrovibromassage" apparatus, simplicity of its use, mobility, safety, allow using it at any stage of rehabilitation. Cheapness of materials and availability of the apparatus outside the factory conditions allow its use both in a physiotherapy room and in a dentist's workplace in a polyclinic. Therapeutic myogymnastics was carried out by the patients during the first 2 days under the guidance of a doctor and then was carried out independently if each patient had a reminder.

A set of exercises for myogymnastics of mimic and masticatory muscles was carried out as follows:

- Opening and closing the mouth 5-7 times, 2 minutes;
- Inflating the cheeks and relaxing 3-4 times, 2 minutes;
- Biting the upper lip with the lower teeth 4-5 times, 2 minutes;
- Lateral movements of the lower jaw 3-4 times, 1.5 minutes;
- Extending the lower jaw forward 3-4 times 2 minutes;
- Retracting the neck 5-6 times, 2 minutes;
- Moving the mouth corners to the side 5-6 times 1.5 minutes;
- Moving the lips into a tube 5-6 times, 2 minutes;
- Massaging the mucous membrane of the mouth with the tongue 3-4 times, 2 minutes.

The specified task was achieved by measuring the degree of mouth opening produced by the optimal load on the masticatory apparatus, with the load being equal at any value. The electrokymographic study examined the condition of the masticatory muscles in 54 patients both involved in the pathological process and clinically unaffected muscles of the opposite side in the dynamics. A total of 108 studies were carried out. For this purpose,

we used "Keypoint™ Software version 1.1" computer program on the basis of "Dantec" electrokymographic complex. Duration and amplitude, poly-phase of motor unit potentials were determined. Bioelectrical activity was studied in two states: full relaxation to reveal spontaneous activity and during voluntary muscle tension. Study of masticatory muscles condition in odontogenic phlegmonas was carried out with ultrasound analyzer "SIM 7000 CFM Challenge". Measurements were taken on the healthy side and the side involved in the inflammatory process in the state of physiological rest and at arbitrary load. The structure of masticatory muscles, their echogenic density, and the presence of pathological inclusions were analyzed in the course of the study. Materials of the study were subjected to mathematical processing with the help of statistical software packages Excel 2000, Statistica for Windows 5.0.

Results of the study and their discussion

Our observations showed that the magnitude of the mouth opening in patients with the phlegmon of the lid-mandibular space is $1,3 \pm 0,2$ cm; submasseteric $-1,0 \pm 0,3$ cm, which indicates the presence of inflammatory contracture of the mandible. In phlegmonas of the wing-mandibular and submandibular spaces, contracture of grade III is determined. At ultrasound examination of masticatory muscles of practically healthy persons the greatest thickness at rest is observed in m. masseter ($14,1 \pm 0,2$ mm), m. pterygoideus medialis ($11,8 \pm 0,3$ mm). The thickness of masticatory muscles at rest was almost the same in patients with odontogenic phlegmons and healthy individuals. On loading, there is a considerable increase of these muscles thickness in healthy people, whereas in patients with odontogenic phlegmon these indexes are considerably less.

Comparative estimation of masticatory muscles thickness in odontogenic phlegmonas showed that in the resting state it prevails on the affected side. In the phlegmon of the submasseteric space - $15,4 \pm 0,2$ mm (against $14,1 \pm 0,2$ mm), at the phlegmon of the wing-lumbar space, the thickness of m. pterygoideus medialis practically did not change ($11,8 \pm 0,3$ mm against $11,7 \pm 0,3$ mm), which can be explained by the anatomico-topographic features of this cellular space. Submasseter space in norm 14.1 ± 0.2 mm in phlegmons 15.4 ± 0.2 mm, in load 18.4 ± 0.2 mm, at rest 15.7 ± 0.2 mm. The pterygoideus medialis in norm 11.7 ± 0.3 mm, in phlegmon 11.8 ± 0.3 mm, in load 14.9 ± 0.3 mm, at rest 13.1 ± 0.3 mm. The contractility of the masticatory muscles in odontogenic phlegmons of the submandibular and wing mandibular spaces. Submaxillary space in normal 30.4 ± 0.2 , in phlegmons 9.4 ± 0.2 , wing mandibular space in normal 27.3 ± 0.2 , in phlegmons 11.0 ± 0.2 . The contractile ability of the masticatory muscles on the affected

side was significantly lower than on the opposite side, especially in phlegmonic submasseral space - by 3 times, the winglet-mandibular space contractile ability was lower by 2 times ($p < 0,005$). Thus, ultrasound examination in 96% of patients, regardless of age, showed foci of fibrosis in the form of longitudinal transverse lines along its entire length in the muscle.

Electromyographic studies showed that the average amplitude of the motor unit potential of the muscles in patients on the healthy side was within normal values, while on the side of the affected muscle there was a significant decrease in the indicators in patients before treatment. Thus, the amplitude of action potentials of m. pterygoideus medialis on the inflamed side was $116.3 \pm 0.5 \mu\text{V}$ (versus $210.3 \pm 0.5 \mu\text{V}$ of the healthy side). These figures were significantly lower in the study of m. masseter (102.3 ± 0.5 vs. 210.3 ± 0.5). The main (30 people) group of patients applied electrovibromassage and mimic exercises after 10 days, which indicates an increase in the density of muscle fibers and response to impulse stimuli with a higher stimulus threshold. Electromyographic studies at the end of treatment in the main group showed m. pterygoideus medialis $183.5 \pm 0.5 \mu\text{V}$, m. masseter 168.3 ± 0.5 . After application of the complex of therapeutic and rehabilitation measures, a significant decrease of the contracture in the main group of patients was registered, which was manifested in the improvement of the mouth opening, by the 3rd-5th day soft tissue swelling, discomfort and tension in the masticatory muscles significantly decreased, the mouth opening increased daily by 3-4 mm and reached 4.0-4.5 cm in 93% of patients by the end of treatment, and 7% of patients had a slight inflammatory contracture of degree I. In the comparison group (24 patients) the electromyographic indices remained reduced m. pterygoideus medialis $125,2 \pm 0,5 \mu\text{V}$, m. masseter $110,3 \pm 0,5$ at the end of treatment. In the comparison group, inflammatory contracture of the lower jaw of I and II degree remained pronounced in 100% of cases. Mouth opening at the end of treatment in the main group was $4,3 \pm 0,2$ cm, but in the comparison group these indexes were $2,8 \pm 0,5$ cm. Thus, the use of myostimulation electrovibromassage with contratubex gel, and myogymnastics in the complex treatment of patients with odontogenic phlegmon leads to a more rapid recovery of chewing function, reduction of postoperative complications in the form of scar deformities and contractures.

Thus, ultrasound examination in odontogenic phlegmon showed that the thickness of masticatory muscles on the unaffected side at rest was almost the same as in healthy conditions. When loaded, the contractility of masticatory muscles on the side of inflammation was 2-7 times lower than on the opposite side, especially in phlegmonic sub-masseral, wing-

mandibular space. Foci of fibrosis in the form of longitudinal transverse lines along the muscle length of various sizes and shapes were observed in 96% of patients. Clinical evaluation of the results of treatment of patients with the proposed therapeutic-rehabilitation complex showed the formation of flat, inconspicuous scars in the area of the postoperative wound, absence of scar contracture and complete restoration of masticatory muscle function.

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NEW ABOUT THE ETIOLOGY AND PATHOGENESIS OF POLYCYSTIC OVARY SYNDROME

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Abstract. *The article provides modern views on the etiological and pathogenetic factors of polycystic ovary syndrome and reviews the results of the latest research in this area. Based on the study, recommendations have been developed for the timely diagnosis and successful treatment of this disease.*

Purpose: *present a modern point of view on the etiology and pathogenesis of polycystic ovary syndrome, generalize knowledge about this syndrome and develop a list of recommendations for timely diagnosis and successful therapy.*

Materials and methods. *The analysis and generalization of modern medical literature of electronic library systems Elibrary.ru, Cochrane, Medline, PubMed, HINARY are carried out.*

Keywords: *polycystic ovary syndrome, infertility, polycystic disease, reproductive disorder, genetic predisposition*

Introduction

Relevance of the topic. Polycystic ovary syndrome (PCOS) is a widespread reproductive disorder accompanied by dysfunction of the ovaries and affecting various metabolic processes in the body [1]. The prevalence of polycystic ovary syndrome (PCOS) is high: according to various authors, in the general population it ranges from 5 to 10%, and in obese women it reaches 30% [2]. However, the fact made public by Australian researchers is even more alarming: two out of every three patients simply do not know about their diagnosis, that is, the real incidence can reach 21% and higher. Meanwhile, medical care for women with PCOS is necessary from a very

young age [3].

PCOS is manifested by menstrual irregularities, hirsutism, alopecia, hyperinsulinemia, disorders of carbohydrate and lipid metabolism, obesity, insulin resistance, mental disorders, infertility and is currently one of the leading causes of menstrual complications and infertility in women [4, 5].

The contribution of the syndrome to a decrease in reproductive function is impressive: PCOS is guilty of infertility in every third infertile woman, and on this basis, Stein-Leventhal syndrome is a serious competitor to endometriosis. [2].

Since the time of I. Stein and M. Leventhal, who in 1935 for the first time gave a clear description of polycystic ovary syndrome (PCOS), issues related to the etiology and pathogenesis of ovarian hyperandrogenic syndrome of non-tumor genesis have not lost their relevance [5].

Modern international diagnostic criteria include the following features:

- 1) signs of polycystic ovaries according to the ultrasound examination of the small pelvis (the presence of more than 10 follicles in each ovary);
- 2) oligo- or anovulation;
- 3) clinical (presence of hirsutism) or biochemical (increased androgen levels) manifestations of ovarian hyperandrogenism [6, 7].

These criteria were established by the Rotterdam Consensus in 2003. According to this document, the presence of 2 of the 3 above criteria allows for the diagnosis of PCOS [8].

Etiology of PCOS

Despite intensive clinical and experimental research in the field of PCOS, the mechanisms, issues of etiology and pathogenesis underlying the formation of this pathology and chronic anovulation are still insufficiently studied and debatable, which indicates a multifactorial etiology and the lack of a single view of this pathology, which is very difficult for diagnosis and treatment [8]. Many factors are involved in the pathogenesis of PCOS: genetic, endocrine, and environmental factors.

Genetic predisposition is of great importance in the etiology of PCOS [9]. The patterns of genetic transmission of this disease have not been completely studied, the nature of inheritance is assumed, but, taking into account the clinical and laboratory heterogeneity, research data show that PCOS most likely has a polygenic or multifactorial type of inheritance [5]. It has been proven that PCOS is a polygenic and multifactorial syndromic disease [10]. Many genes associated with PCOS directly or indirectly affect fertility [11]. The genetic factor is detected in 70% of PCOS cases [12].

Candidate genes can be combined into pathogenetic groups:

- 1) genes involved in the synthesis and action of steroid hormones;
- 2) genes responsible for the synthesis and regulation of pituitary hormones;
- 3) genes responsible for the synthesis and effects of insulin;
- 4) genes that regulate body weight;
- 5) genes encoding inflammatory mediators;
- 6) genes of the major histocompatibility complex [5].

Recently, in the pathogenesis of PCOS, special attention has been paid to insulin resistance, because in patients with PCOS, insulin resistance is detected 2-3 times more often than in the population [8]. Also, in the pathogenesis, an important role is played by obesity and the production of leptin [13].

According to the data of many years of research, it has been shown that the development of polycystic ovary syndrome (PCOS) can be influenced by various environmental factors, namely: a low socioeconomic level and an unhealthy lifestyle, but a genetic predisposition is of particular importance in the etiopathogenesis of PCOS [5].

Pathogenesis of PCOS

Over the long history of the study of PCOS, many different theories about its pathophysiology have been put forward, and it is still too early to put an end to the research, but even based on the data already available, the pathogenesis of PCOS seems to be extremely complex. Nevertheless, it is possible to formulate a list of the most studied and endocrinological and metabolic disorders in this disease.

Basically, there are three leading reasons for the formation of this syndrome:

- 1) "failure" of the feedback of neurohumoral regulation of the reproductive axis (hypothalamic-pituitary-ovarian system) [14]. Primary damage to the hypothalamic production of gonadotropin-releasing hormone (GnRH) increases the production of luteinizing hormone (LH) and reduces the formation of follicle-stimulating hormone (FSH) [1];

- 2) metabolic disorders that lead to insulin resistance (IR) and hyperinsulinemia (HI). It is well known that IR and HI play an important role in the development of hyperandrogenism and ovulatory dysfunction in PCOS. At the same time, an increased level of insulin increases the secretion of GnRH, which leads to disruption of the action of LH and FSH [15, 16, 17, 18];

- 3) enzymatic disorders of steroidogenesis, which increase the synthesis of androgens [8].

New in the pathogenesis of PCOS

The latest research from 2020-21 has identified new factors that can presumably influence the development of PCOS.

For example, in a number of works it was described that PCOS has genetically different reproductive and metabolic subtypes [10, 19].

In an attempt to find new etiological factors, scientists have found that adverse changes in the composition of the gut microbiome are present even in adolescents with PCOS, whether or not they are obese. A relationship has been established between the gastrointestinal microbiome and metabolic disorders such as obesity, type II diabetes mellitus and PCOS [20, 21].

Based on the results of the work carried out, it was not possible to form a consensus as to which bacterial taxa are most relevant for this disease, however, for the first time, an increase in the species of bacteria producing γ -aminobutyric acid was found in these patients, which positively correlated with serum LH levels and the ratio of LH to FSH [10].

Currently, data have been obtained indicating the association of vitamin D balance with the pathogenesis, signs and symptoms of PCOS [22, 23]. Vitamin D receptors and enzymes that metabolize it are found in almost all tissues of the human body, including the organs of the reproductive system [23]. In women, vitamin D imbalance is associated with ovulatory dysfunction, insulin resistance, and hyperandrogenism [2].

In a small experiment (n=57), Austrian researchers demonstrated that vitamin D treatment can improve glucose metabolism and normalize the menstrual cycle in women with PCOS [22].

Another study showed that PCOS increases ovarian blood flow and, presumably, the blood supply to follicles in ovarian tissue. It is hypothesized that abnormal angiogenesis may disrupt the maturation of the pre-ovulatory follicle, inhibit ovulation, and promote cyst formation. [2] Recent studies have identified several types of ovarian angiogenesis abnormalities in PCOS, in which the blood supply to the ovaries and, possibly, the supply of nutrients, oxygen and hormones to the follicles are impaired [24]. The authors suggest that these vascular disorders may be responsible for anovulation and cyst formation, considering the restoration of normal angiogenesis as a promising approach to the treatment of PCOS [25].

Research results

Summarizing the main modern ideas about this syndrome, it can be noted that PCOS is a multifactorial pathology, genetically determined, in the pathogenesis of which the central mechanisms of the gonadotropic

function of the pituitary gland (from puberty), local ovarian factors, extra-ovarian endocrine and metabolic disorders that determine the clinical symptoms and morphological changes in the ovaries [26].

To reduce the risks and the possibility of complications, first of all, it is necessary to timely identify the signs of the disease and start therapy. It is necessary to conduct a thorough examination of girls of puberty to identify the first symptoms of the disease [13, 27]. In order to exclude the possibility of untimely diagnosis of polycystic ovary syndrome, it is recommended:

- 1) Conduct thorough preventive examinations of schoolgirls 16 and 17 years old;
- 2) Conduct regular preventive conversations with adolescent girls;
- 3) Conduct educational activities with parents;
- 4) To popularize the relevance of the topic of maintaining reproductive health, starting from puberty.

In order for PCOS therapy to be most successful, it is recommended:

1. The diagnosis is established according to the Rotterdam criteria;
2. At each visit, determine the body mass index, measure the waist circumference and blood pressure;
3. Assess metabolic and other risk factors for cardiovascular diseases (dyslipidemia, obesity, impaired glucose tolerance, type 2 diabetes mellitus, smoking, low physical activity, high blood pressure);
4. To study the socio-economic status of patients, their lifestyle and dietary habits;
5. Inform women about the importance of lifestyle modification, giving up bad habits;
6. Analyze the psychoemotional state of patients;
7. Conduct differential diagnostics.

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MALDI -TOF EVIDENCE OF GDP20 ANTIBACTERIAL ACTIVITY AGAINST CUTIBACTERIUM ACNES

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Objective. *To evaluate the anti-C.acnes activity of twice-daily GDP (granulysin-derived peptide) 20 .*

Material and methods. *The pilot study included 12 subjects. Determining the colonization of C.acne with help of MALDI-TOF (matrix-assisted laser desorption/ionization Time Of Flight) method. In the acne treatment patients were using the GDP-20 as monotherapy daily for 2 weeks.*

Results. *Topical GDP-20 therapy contributed to rapid dynamics of colonization of C. acnes. All subjects with mild to moderate severity of acne was marked by clinical remission. 41.7% subjects having excellent results, 33.3% with good results, 25% with fair results. No serious adverse effects occurred.*

Conclusion. *The application of topical agents GDP20 in this pilot study appeared to demonstrate a remarkable effect on the improvement of acne.*

Keywords: *antimicrobial peptide; acne vulgaris; cutibacterium acnes; GDP-20; MALDI TOF*

Background

Acne vulgaris(AV) is the eighth most prevalent disease worldwide [1] and affects pilosebaceous units with the multifactorial pathogenesis. It's typically begins in adolescence when androgen hormones stimulate the production of sebum and proliferation of follicular epidermis[2]. In consequence, comedones is further colonized by Cutibacterium acnes (C. acnes) which promote inflamed acne lesions characterized by papules and

pustules.

By affecting the visible areas of the skin lesions, acne with negatively affect psychosocial distress, occupational consequences and potential psychiatric disturbances like anxiety states and depression, which leads to a significant decrease the quality of life [3].

Although the pathogenesis of acne remains uncertain, *C.acnes* is considered to plays an essential role in acne vulgaris. *C.acnes* is the relatively slow-growing, aerotolerant anaerobic, gram-positive bacteria that is the main inhabitants of the hairline and is closely associated with the development of acne [4]. Although they are also found on the surface of healthy skin. *C. acnes* as the dominant flora in the sebaceous glands of hair follicles in acne patients, accounting for up to 90% of all detected microbiota[5].

Antibiotics are considered first-line therapy in the management of moderate to severe acne[6]. Topical and oral antibiotics play an important role, providing anti-inflammatory effects, in addition to antibacterial actions. However, currently available agents may be associated with adverse effects, their prolonged usage potentially leading to antibiotic resistance ,which may occur in *C. acnes*, and limit the efficacy of antibiotics for the treatment of AV. These limitations demonstrate a need for antibacterial agents for acne with improved safety profiles and a targeted, well-tolerated.

An antimicrobial peptide(AMP) called GDP20 (granulizin-derived peptide) is novel , topical agents has anti-inflammatory properties and the highest antimicrobial activity against *C. acnes* among other granulisin-derived peptides (1000 times higher than GDP 04) [7]. It may destroy tumor cells and induce apoptosis. At a concentration of 0.6-57 μM , GDP-20 also has a bactericidal effect against many Gram-positive (*S. aureus*, *S. mutans*), Gram-negative (*E. coli*) and acid-fast bacteria, as well as fungi[8].

Objective

To evaluate the anti-*C.acnes* activity of twice-daily topical antimicrobial peptides GDP-20 a novel, broad-spectrum antimicrobial peptide, in mild to moderate acne.

Material and methods

Twelve subjects with mild to moderate acne were enrolled into this pilot study. All subjects were under dermatologic care and were maintained on their acne agents throughout the study. To identify bacteria was taken swabs from each patient untreated cheek skin lesions, then the patient applied the topical agents containing GDP-20 (lotion or gel) to the skin

of the face, mainly of the cheeks. Patients applied to the bacteriological analysis by method of MALDI-TOF mass spectrometry at two weeks intervals. The results were documented at baseline and after visits and simultaneously assessed the dynamics of the clinical manifestations and *C. acnes* growth.

Results

At the end of the therapeutic study, the number of skin lesions and *C. acnes* growth of all patients and compared the result with the before indicators. According to the MALDI-TOF data, in 5 of 12 patients, the initial colonization of *C. acnes* was especially pronounced, therefore it was in them that the contamination was assessed after two weeks of treatment of the facial skin with GDP20. The results of this comparative analysis, expressed in CFU / cm², are presented in Fig. 1.

A clinical assessment of the dynamics of the severity of acne manifestations showed that in 41.7% (5/12) subjects having excellent results, 33.3% (4/12) with good results, 25% (3/12) with fair results. The results of this pilot study convincingly demonstrate the pronounced antimicrobial activity of GDP20 against *C. acnes*, leading to a 5-10-fold decrease in the number of CFU / cm².

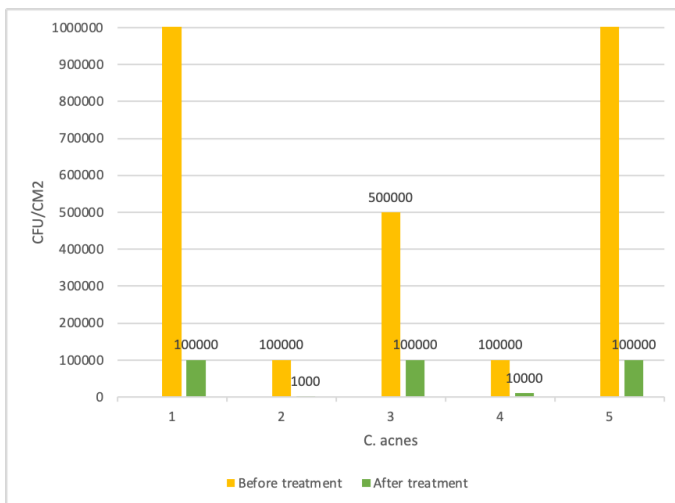


Fig.1. Comparison of the colonization of *C.acne* before and after treatment of Acne patients

Discussion

Currently, there are various oral and topical antibiotic agents such as doxycycline, minocyclin and clindamycin are effectively utilized in the treatment of acne. However, associated with formation of resistance in *C.acnes* and other bacteria, with clinical consequences including increased skin dryness, scaling and photosensitivity limit their widespread and long-term use[9]. Therefore, increasing trend for the use of alternative treatments for acne is observed.

Conclusions

The application of topical agents GDP20 in this pilot study appeared to demonstrate a reduction in *C.acnes* growth and remarkable effect on acne manifestation. It should be noted that the treatment of acne should not be limited to the use of standard treatment methods. These results topical GDP 20 has achieved significant clinical effects, indicate the possibility to use GDP20 as a new substitute for widespectrum antibiotics due to antibiotic resistance.

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INFLAMMATORY PROCESS IN PERIODONTAL TISSUES. PERIODONTITIS. ETIOLOGY AND PATHOGENESIS

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Abstract. *The scientific article is devoted to a topic relevant to modern dentistry - the inflammatory process that occurs in the periodontal tissues, due to the high prevalence of pathology, the lack of a single concept of etiology and pathogenesis, adherence to prescribed therapy aimed at preventing and treating dental caries. Determination of the etiology and pathogenesis of such an inflammatory process as periodontitis plays a key role not only in the theoretical aspect, but also in the practice of a dentist. Due to the fact that the etiology and pathogenesis of inflammatory periodontal disease are not fully understood, I consider this topic to be significant for dentistry, healthcare and medical science.*

Keywords: *inflammation, periodontal pathology, periodontitis.*

Introduction

Inflammation is a protective and adaptive reaction of the whole organism to the action of a pathogenic factor, the expression of which is tissue damage (alteration) - the initial phase of inflammation, impaired microcirculation with an increase in vascular permeability, exudation and emigration of leukocytes, proliferation (cell multiplication) - aimed at restoring damaged tissue [1].

Inflammation includes external signs and microstructural changes. The first include - systemic or local temperature rise, hyperemia, edema, dysfunction. The second group includes the exudative-vascular reaction and the reaction of the formation of a cellular infiltrate together with migration of leukocytes to the focus of inflammation [10].

Periodontal diseases, increasing the effectiveness of complex treatment is an urgent problem of modern dentistry due to the high prevalence

of pathology, the lack of a single concept of etiology and pathogenesis. Periodontal pathologies are not only a medical problem, but also a social one, since in the absence of modern diagnostics and treatment, it can lead to the emergence of foci of chronic infection in the oral cavity, tooth loss and, as a result, a decrease in working capacity - a violation of the function of chewing, speech and the emergence of aesthetic defect [4,6]. In severe cases, inflammation in the periodontium can spread to the periosteum, and then to the bone marrow of the alveolar process. Periostitis occurs, the development of osteomyelitis of the hole is possible. Regional lymph nodes may be involved. With purulent periodontitis of the teeth of the upper jaw, projected into the maxillary sinus, the inflammatory process can be complicated by purulent sinusitis [1].

Etiology and pathogenesis

The causes of inflammation are extremely varied. The causative agents of inflammation are pathogenic microorganisms, mainly streptococci, among which non-hemolytic streptococcus is 62%, *Staphylococcus mitis* - 26%, *Staphylococcus salivarius* - 12%. Causes are also physical factors (trauma), chemicals and adherence to prescribed therapy aimed at preventing and treating dental caries. (According to the WHO, dental caries is one of the six diseases of our time, occupies one of the leading places among somatic diseases, first among chronic diseases) [1,7].

The importance of infection in the development of periodontitis is very high, since it not only itself causes the development of inflammation, but also joins other pathogenic factors [7,8,10].

Depending on the localization of the "entrance gate" for microorganisms, there are odontogenic, stomatogenic, tonsillogenic, rhinogenic, otogenic, dermatogenic acute and chronic inflammatory processes of the maxillofacial region and neck.

In the overwhelming majority of cases, inflammatory processes are odontogenic, i.e. microorganisms enter the tissue through partially or completely necrotic pulp of the tooth, or through periodontal pockets.

The pathogenesis of the disease includes a nonspecific inflammatory response [1]. The inflammatory process begins with the penetration of the contents of the root canal beyond the root apex into the periodontal tissue of lipopolysaccharides, which are products of pathogenic microorganisms. Further development of the process depends on the state of the immune mechanisms. With a pronounced protective reaction, the process is localized at the apex of the root and becomes chronic [5,6,10]. If the defense mechanisms are relaxed, then acute diffuse inflammation develops [4,7].

Lipopolysaccharides carry out polyclonal immunostimulation, cause chemotaxis of leukocytes, release of histamine, serotonin, increase the activity of macrophages and their synthesis of inflammatory mediators, such as prostaglandin E, E2, interleukins (IL-1, IL-6, IL-8), tumor necrosis factor-alpha, which, in turn, contribute to the development of microcirculatory disorders in the periodontal tissues (vascular permeability increases, edema develops), the destruction of collagen and non-collagen proteins under the action of lysosomal hydrolases (collagenase, elastase), periodontal ligaments (under the action of lymphokines), a decrease in the content of proteoglycans (play an important role in the formation of the periodontal attachment), bone resorption of the alveolar processes of the jaws [6].

Conclusion

Thus, inflammation is a reaction developed in the course of phylogenesis, has a protective and adaptive character and carries elements of not only pathology and physiology. The spread of irritating factors from the root canal to the periodontium leads, as a rule, to chronic long-term inflammation. Determination of the etiology and pathogenesis of such an inflammatory process as periodontitis plays a key role not only in the theoretical aspect, but also in the practice of a dentist.

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THE EFFECT OF SLEEP ON THE HUMAN BODY

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Abstract. *The article aims to investigate the effect of sleep on the human body, taking into account the physical and psycho-emotional state, depending on the duration of adequate sleep and in case of its lack. To study the characteristic features of the phases of REM and slow sleep, to see how they affect the quality of work and mental activity. The article also pays special attention to the causes that disturb sleep and how to eliminate them.*

Keywords: *sleep, insomnia, bruxism, pathogenesis, sleep phases, sleep disturbances, causes, elimination of causes, melatonin, collagen.*

Introduction

For the normal life of a person, high-quality and full sleep is necessary, because it is a form of passive rest of the body. During sleep, the human body not only rests, but also produces hormones useful to the body, and one of them is melatonin, which in turn regulates the activity of the endocrine system, blood pressure, slows down the aging process, enhances the efficiency of the immune system, has antioxidant properties, and important in the physical and psychological health of a person, as it helps to control our mood throughout the day. In a dream, another hormone is produced - growth hormone, or somatotropin, which helps to increase muscle mass and reduce body fat.

Sleep is a natural physiological process of being in a state with a

minimum level of brain activity and a reduced response to the world around us. Healthy sleep is a prerequisite for a good mood and well-being.

Healthy sleep is scientifically considered to be the key to success in your career, school and life. Sleep is 1/3 of a person's entire life, and if a person suffers from insomnia or does not sleep for a long time, he may die.

The effect of sleep on the human body

Sleep is a complete immersion in the subconscious of the body, it provides rest for the body, facilitates the processing and storage of information, facilitates the consolidation of the studied material and implements subconscious models of expected events. Sleep compensates for the damage caused to the body during the period of life. In a dream, biological processes occur, without which human life would be unbearable. A person feels rested, full of energy after sleep, his cells produce more protein, harmful toxins are eliminated, and blood is evenly distributed throughout the body during sleep.

A good sleep also plays an important role in the appearance of a person. Collagen is produced at night, which improves the firmness and elasticity of the skin. Dermatologists claim that every hour of sleep affects the regeneration of the epidermis. For example, if you sleep only 5 hours a day, then soon you will have twice as many wrinkles as a person with 7 hours of sleep. In addition, if you do not get enough sleep, your skin is dehydrated, which makes wrinkles more noticeable.

Sleep also affects the immune system. One of the building blocks of the immune system is proper sleep, and if you don't get enough sleep one night, your brain loses some of its tissue. With a lack of sleep, the human brain switches to more primitive forms of activity, unable to normally control emotions, the emotional zones of the brain become reactive. A person becomes 60% more emotional and irritable, memorizing new material will be difficult for him.

In a dream, special connections are formed between neurons in the human brain, which help to remember new information. Sleep deprivation makes the brain unable to adequately perform this function. Therefore, it is more difficult for people suffering from insomnia to concentrate, remember new things and remember what they learned earlier.

While a person is sleeping, his immune system works intensively. Therefore, sleep deprivation prevents the immune system from building up energy. With a decrease in immunity, a person becomes more vulnerable to respiratory infections. And those, in turn, can cause complications in the form of diseases of the respiratory system, accompanied by severe cough, nasal congestion and snoring, which in turn cause frequent awakenings at

night.

The body needs at least 3 hours of uninterrupted sleep to produce testosterone. Waking up in the middle of the night can disrupt the production of this hormone and, as a result, cause an imbalance in the overall hormonal background. Frequent awakening at night can also interfere with the production of growth hormone.

Lack of sleep is also one of the risk factors for obesity. If a person sleeps less than 7 hours a day, the level of leptin in the body decreases, but instead the concentration of ghrelin increases, which stimulates the appetite.

Causes and pathogenesis of sleep disorders

The following causes of sleep disorders are distinguished: stress, psychoemotional stress, emotional disorders, somatic chronic diseases, pain, high blood pressure, climate change, drug abuse, breathing disorders during sleep, overeating.

Primary and secondary sleep disorders are distinguished. Primary disorders are not associated with any pathology, and secondary ones arise as a result of various diseases.

The duration of a person's sleep on average should be 8 hours, and it depends on factors - the mental, physical state of a person's health and the nature of his activity.

The main sleep disorders in adults include:

Insomnia - this is a violation of falling asleep and maintaining sleep, early awakening or a feeling of dissatisfaction with sleep.

Pathogenesis.

Insomnia is a disorder that manifests itself as a disturbance in the quality, quantity, or timing of sleep required for normal vigorous activity. This pathology causes a significant decrease in the quality of life, insufficient working capacity, and even personality changes. In addition, changes in the biochemical parameters of the body during sleep deprivation are directly related to a number of metabolic disorders. The etiology of insomnia can be very diverse. According to ICD-10, sleep disorders are primarily psychogenic, emotionally conditioned states.

Breathing problems during sleep – is a breathing disorder in which there is prolonged respiratory arrest during sleep.

Pathogenesis.

In obstructive sleep apnea syndrome, there is a violation of the patency of the upper airways and their regular overlap, which makes it difficult for oxygen to enter the lungs. With an acute lack of oxygen, a stress reaction of the body arises, the sympathetic nervous system is activated and blood

pressure rises, which leads to imperceptible micro-awakenings during sleep. At this point, the brain opens the airways and breathing is restored.

Such micro-awakenings disrupt the structure of sleep, reduce the stages of sleep, which are important for the recovery of the body.

Bruxism.

In dentistry, a more frequent manifestation of the pathology of sleep disorders is bruxism.

Bruxism - paroxysmal tonic contractions of the masticatory muscles that periodically occur in a dream, accompanied by clenching of the jaws and grinding of teeth.

Bruxism has 2 circadian manifestations: during sleep-nocturnal bruxism (NB) and during wakefulness-daytime bruxism (DB)

DB – semi-voluntary "clenching" movements of the jaws under the influence of anxiety and stress during wakefulness

NB – stereotypical involuntary movements of the lower jaw that occur during sleep.

The pathogenesis of bruxism is still not clear, but there are 2 main theories: peripheral and central. The peripheral theory is based on occlusal disharmony (malocclusion), which stimulates chewing activity, and the Central theory is based on disorders in the stem, subcortical and cortical structures of the brain.

Purpose

To investigate the effect of sleep on the body, taking into account the physical and psycho-emotional state of a person, depending on the duration of full sleep and in case of its lack. To study the characteristic features of the phase of REM and slow sleep.

Sleep phases

There are two phases of sleep: slow and fast. These names are due to the peculiarities of the rhythm of the electroencephalogram during sleep by slow activity in the phase of slow sleep and faster in the phase of REM sleep.

NREM sleep has four stages: falling asleep stage, shallow NREM sleep, deep NREM sleep, deepest slow sleep. Slow sleep, dreamless sleep makes up 75-80% of the entire period of night sleep. Low-amplitude muscle potentials on electromyography are manifested in all stages of slow wave sleep. During slow wave sleep, a decrease in body temperature is observed, pulse and respiration decrease, and there is no eye movement.

The REM sleep phase is characterized by a low-amplitude rhythm of electromyography, and in the frequency range by the presence of both slow and higher-frequency rhythms (alpha and beta rhythms). Signs of

this sleep phase are sawtooth discharges with a frequency of 4-6 Hz per 1 second. The REM sleep phase is characterized by a rapid eye movement on the electrooculogram, a sharp decrease in the EMG amplitude or a complete drop in the tone of the muscles of the diaphragm of the mouth and cervical muscles, the pressure rises, breathing, the pulse becomes more frequent, and sometimes limb movement is observed. Interruption of REM sleep is dangerous for the human psyche.

The best time to sleep and wake up lightly

Waking up	Going to sleep	Waking up	Going to sleep	Waking up	Going to sleep
6:00	20.45 -22.15	7.15	22:00-23:30	8:30	23:15-00:45
6:15	21:00 – 22.30	7:30	22:15-23:45	8:45	23:30-01:00
6:30	21:15 – 22.45	7:45	22:30-00:00	9:00	23:45-01:15
6:45	21:30 – 23:00	8:00	22:45-00:15	9:15	00:00-01:30
7:00	21:45 – 23:15	8:15	23:00-00:30	9:30	00:15-01:45

The most important restorative processes and the restart of the central nervous system occur between 22:00 and 24:00. If you want to wake up refreshed and refreshed, it's best to go to bed at this time. Due to the lack of proper rest, the nervous system wears out faster, and irritability and nervousness appear.

It is best to wake up during the rapid phase of sleep, when the sensitivity and activity of the body increase. If you wake up at a slow stage, weakness and fatigue appear, which will accompany a person throughout the day. You can use a sleep sensor or fitness tracker to find your ideal time to wake up. These devices analyze pulse, blood pressure and heart rate.

Conclusion

Healthy sleep is a guarantee of vigor, good physical condition, health and energy. Therefore, a person must have a full, healthy sleep in order to restore strength and normalize the vital processes of the whole body.

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PHYSIOLOGY OF SLEEP, INTERPRETATION OF THE UNCONSCIOUS

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Abstract. *We spend about 37% of our lives in a dream, practically not a single night of our life can do without it, but in many ways it remains a complete mystery to us. The value of a dream is actualized by the fact that it performs the function of psychological protection for a person, analysis of information and its interchange between consciousness and subconsciousness.*

In connection with the important role of a dream in a person's life, methods aimed at identifying how the psychological state of a person affects the processes of a dream, analyzing the concept of explaining the essence of dreams, the causes and mechanisms of occurrence and the relationship with the psychosomatic state of a person are acquiring special relevance.

Awareness of the dreaming experience and its semantic content can prevent the development of diseases, prevent the exacerbation of pathogenic processes in the body and increase the understanding of one's mental health.

Keywords: *sleep, dreaming, psychological state, the sphere of the unconscious, psychology of dreams, archetypes, insomnia, pathogenesis, sleep phases, sleep disturbances, causes.*

Sleep is an active psychophysiological process in which a person partially or completely loses consciousness and purposeful motor activity [1]

A dream plays an important role in the life of every person, since this

phenomenon accompanies him throughout his entire existence. Human health is 90% dependent on sleep [5]. It is a fundamental biological process and has long been recognized as the most important factor in human health and performance.

Until the XIX century, there were mystical concepts associated with the interpretation of sleep. Gradually, a place was given to physiological and chemical interrelationships, and interpretations of sleep as a cause of a precursor to a morbid state appeared. The understanding of sleep as a state close to death prevailed in the minds of Europeans until the beginning of the XX century. Scientists of that time P. Cabanis and I. Müller associated sleep with stagnation of blood in the brain, being adherents of the hemodynamic theory, and K. Bernard, A. Mosso and I. R. Tarkhanov, associated sleep disturbance with anemia [5,13]. The Czech anatomist J. Purkinje believed that sleep was caused by a rush of blood to the nerve centers, their swelling, as a result of which the fibers passing through them lose conductivity and communication with other parts of the brain. Even less plausible theories have been put forward [2,10,13].

Even earlier, records were written in Sanskrit on tree bark and palm leaves that have survived to this day, where a definition of two types of sleep is given - dreamless (deep) and with dreams, since ancient times in the East, in India and China, right up to the present time, sleep and dreams take pride of place. Even then, in Indian religious and philosophical treatises, dreams were considered as a separate form of consciousness [9]. This concept is close to modern classifications of sleep, distinguishing three functional states: wakefulness, slow and REM sleep.

Although not all sleep functions are fully understood so far, it is known to restore energy, promote healing, interact with the immune system, and affect both brain function and behavior [4].

Sleep stages. According to the EEG study, two types of sleep and its different stages have been identified. There is slow wave sleep (with alpha waves, theta waves and delta waves) and paradoxical sleep (with beta waves and rapid rhythmic eye movements) [4].

In slow-wave sleep, which is preceded by a period of falling asleep with alpha waves on the EEG, there are 4 stages:

- Stage 1. At the beginning of it, theta waves appear. This is a drowsy state with half-asleep dreams, hypnagogic mentism. May last up to 9 minutes;
- Stage 2. At this stage, sleep spindles appear on the EEG. Lasts 30 to 45 minutes;
- Stage 3. Lasts a few minutes, "sleepy spindles" disappear, giving way

to slow-wave activity;

- Stage 4. The stage of deep, restorative sleep. Delta waves predominate. Lasts about 30 minutes. During this period, 80% of dreams, night terrors, sleepwalking, enuresis occur.

The sleep period consists of 5 cycles of 90 minutes. Each of them has a slow-wave sleep, and paradoxical, lasting up to 15-20 minutes. In the three subsequent cycles of slow wave sleep, there is no third and second stage.

Numerous studies state that dreams occur primarily during rapid eye movement (REM), a period of sleep that includes rapid brain activity similar to that which occurs during wakefulness. During REM sleep, dreams become more distinct, meaningful and emotional. The main functions of the REM sleep phase include processing information obtained in previous wakefulness and creating a program of behavior for the future. During REM sleep, brain cells are extremely active, but information from the senses does not come to them and is not supplied to the muscular system [3,4].

During the phase of slow sleep, the entire body is restored, and during the phase of rapid sleep, the nervous system itself. The periodization and reformatting of information also occurs in order to obtain the necessary experience for later life.

Sleep is a reaction of the intellect to events in life and a psychological and emotional state (internal feelings, troubles, secret desires) [6,11,12]. Normal physiological sleep determines the full functioning of the body during wakefulness. With insomnia, the amount of antibodies produced by leukocytes is significantly reduced, which leads to a decrease in the body's resistance to infections. Sleep and circadian rhythm have a powerful regulatory effect on the immune system. Studies of the normal sleep-wake cycle have shown that peaks in immune parameters such as T-lymphocyte counts and anti-inflammatory cytokine production occur during early night sleep, while peaks in circulating immune cells and anti-inflammatory cytokines occur during wakefulness.

The periods of wakefulness and sleep are directly related to the functioning of neurons in the brain. Thanks to research, it became known that the period of wakefulness is possible only with normal functioning of the cerebral cortex [14]. The work of neurons contributes to the maintenance of the state of tonic depolarization. In this state, wakefulness centers are formed. During the First World War, the Austrian neurologist K. von Economo, examining the brains of patients who died from infectious lethargic encephalitis, suggested that there is a "sleep center" and "wakefulness center" in the hypothalamus [1]. This assumption was confirmed in 1924 by the Swiss physiologist V.R. Hess in experiments

on electrical stimulation of the thalamus and hypothalamus: stimulation of the thalamus with a weak current caused sleep in the cat, and with a stronger one - excitement. Hess's work on the functional organization of the diencephalon was awarded the Nobel Prize in 1949.

In physiological and mental diseases, sleep and dream functions are impaired [7]. As a rule, sleep pathology is one of the earliest and most persistent signs of a mental disorder, as well as a violation of autonomic regulation, general sensitivity, drives, activity. With diseases, there is usually an increase in the frequency of dreams, a change in their content and intensity. The appearance of unusually bright, scene-like and even colored dreams is often stated. Less often, there is a loss of dreams, uncharacteristic of their earlier fading. The content of dreams can be associated with painful experiences during the waking period. Sometimes in dreams, the symptoms of the disease that have not yet been formed are reflected [8].

The purpose of our study was, on the basis of monitoring and analyzing the characteristics of dreams, to show the significance of the dreaming experience for the psychosomatic health of a person.

When performing this work from 2020 to 2021, at the first stage, a clinical and anamnestic examination was carried out on 70 practically healthy people of different sexes and ages 14+. The examination consisted of the traditional collection of anamnesis, questioning and interpretation of the result.

All participants in the survey were asked questions of the same sample about the state of health. They analyzed the data of the anamnesis (age, presence or absence of the disease, the likelihood of hereditary pathologies, the frequency of visits to the polyclinic).

At stage II, according to the results obtained during the survey, two groups were formed: a group with chronic diseases and a control group (people with an unburdened history).

The first and second groups were asked to comply with the recommendations set out in the annex.

The control group consisted of practically healthy people (52% of the respondents). With a state of complete physical, spiritual and social well-being, not registered at the clinic.

To study the patterns of sleep and human psychosomatic health, I created a psychological test based on the following methods:

1. "Questionnaire of the semantic content of dreams: theoretical foundations and an attempt to validate" Petrova V.A. and Tsvetkov A.The. 2017.

2. The book of Dr. Kasatkin V. N. "Theory of Dreams" 1983.
3. Sigmund Freud's book "The Interpretation of Dreams" 1899.

In the course of the obtained results of this question, 2 groups of healthy people and people with chronic diseases were formed for further research.

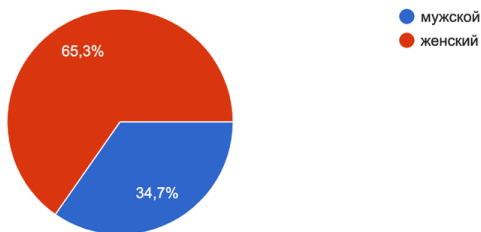


Fig.1. Gender of respondents

The predominant number of participants was female, namely 65.3% of women and 34.7% of men.

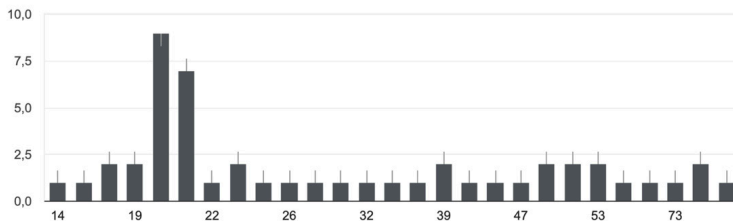


Fig.2. Age of respondents

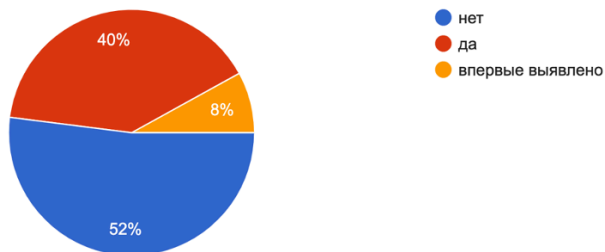


Fig.3. Previously identified chronic diseases

The first place among the respondents with chronic diseases according to the results of the study came out - diseases of the cardiovascular system, in second place are diseases associated with the digestive system, in third place - colds.

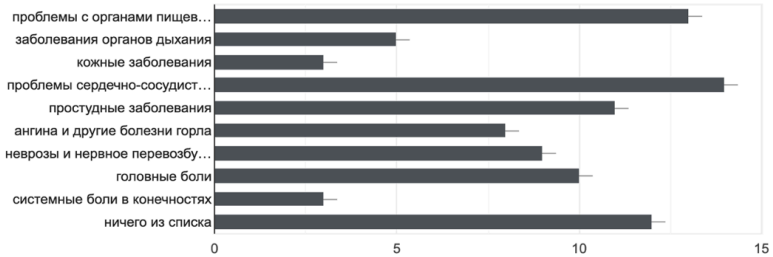


Fig.4. Types of Chronic Diseases

In the first group, without identified chronic diseases, dreams are calm, without cases of nightmarish awakenings with a rapid heartbeat.

In the second group, with chronic diseases, the respondents had a high level of sleep anxiety. The presence of a feeling of fear, anxiety and unpleasant sensations at night does not leave 90% of those participating in the second group of the study.

Also, several people were noted without identified chronic diseases, but with pronounced signs of anxious sleep, which require the recommendation of a specialist, it was proposed to undergo a study by a specific specialist. In conditions where anonymity would be ruled out, the patient would be asked to undergo screening to detect or prevent the development of a chronic disease. It is the study of the nature of sleep in a particular person that takes place as an additional method for diagnosing a patient.

Thus, all the diagnostics carried out indicate the need to include methods that contribute to the identification of psychosomatic diseases in the health-saving medicine section in order to achieve a high level of diagnostics. This will make it possible to carry out medical diagnostics in full, to prevent diseases and their complications, thereby quickly reaching high rates in the standard of living.

It is supposed to continue the research in the future and prepare the respondents for the questionnaire in advance. The survey participants noted their interest in this type of diagnosis, noting the dependence of the flow and duration of sleep, the dreams themselves as a reflection of their psychosomatic health. From the beginning of the questionnaire, to the interpretation of the results and the assessment of the research results,

we and the participants themselves noted the dependence of physiological and psychological health, the presence of chronic diseases on the quality of sleep and dreams. On the questionnaires themselves, assuming anonymity, the subjects provided their personal data for the purpose of further research and participation in the continuation of the survey and diagnostics.

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**RECENT ACHIEVEMENTS IN UNDERSTANDING THE
ETIOPATHOGENESIS OF INSULIN RESISTANCE AND ITS
CONNECTION WITH POLYCYSTIC OVARIAN SYNDROME**

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Abstract. *Polycystic ovary syndrome (PCOS) is a widespread reproductive disorder that affects ovarian dysfunction and affects various metabolic processes in the body. PCOS manifests itself as hyperandrogenism, polycystic ovary disease and anovulation and is currently one of the leading causes of menstrual complications and infertility in women. But, in addition to reproductive disorders, PCOS is often accompanied by hyperinsulinemia, dyslipidemia, overweight or obesity, which is a risk factor for diabetes and cardiovascular disease. Despite the prevalence of this disease and the long history of its study, the problems of etiology, pathogenesis and treatment of this syndrome have not been fully resolved. Currently, there is no single treatment regimen for PCOS, and it depends to a large extent on the prevailing symptoms.*

Moreover, the mechanism by which insulin resistance can lead to reproductive dysfunction requires further investigation.

Purpose: *present a modern point of view on etiopathogenesis, clinical and biochemical relationships, as well as the main diagnostic markers of insulin resistance in PCOS and summarize the results of research in this area over the past few years.*

Relevance of the topic. *It is known that the frequency of detecting disorders of carbohydrate-lipid metabolism in PCOS is significantly higher than in a healthy population of women of reproductive age [37] [38]. Nevertheless, insulin resistance often goes unnoticed and the percentage of cases of late diagnosis of insulin metabolism disorders in PCOS and the subsequent development of complications remains at a high level. Therefore, the main objective of this review is to provide concepts of the relationship between insulin resistance and PCOS, which is important for a correct understanding of clinical objectives and the development of*

individual treatment regimens.

Materials and methods. *The analysis and generalization of modern medical literature in the electronic library systems PubMed, Elibrary.ru, Cochrane, Medline, HINARY, etc., including data on the etiopathogenetic factors of the development of PCOS, as well as on the links of PCOS with metabolic abnormalities and, in particular, with resistance to insulin.*

A total of 296 publications (2011 - 2021) were found that met the search criteria.

Keywords: *polycystic ovary syndrome, insulin resistance, infertility, polycystic ovary disease, reproductive disorder.*

Incomplex approach and delayed diagnosis of metabolic disorders in PCOS sometimes leads to irreversible reproductive (infertility, miscarriage) and endocrine (diabetes mellitus, hormonal changes, obesity) disorders. Also, serious concomitant manifestations in PCOS are psychoemotional disorders, increased cardiovascular risks and risks of venous thrombosis [24]. Insulin resistance plays an important role in the development of all these complications.

The pathophysiological mechanisms of PCOS development are not fully understood, but it is known that they include a complex of interactions between gonadotropins, ovaries, androgens, and insulin. Insulin resistance (IR) leads to compensatory hyperinsulinemia (HI), which stimulates androgen production by the ovaries in women genetically predisposed to PCOS [43].

According to some authors, the secretion of insulin by the beta cells of the pancreas is increased in order to compensate for insulin resistance. This HI mechanism in polycystic ovary syndrome (PCOS) may be adaptive [29].

HI's play an important role in androgen hypersecretion and the development of PCOS. This follows from the observation of a decrease in fasting insulin levels during therapy with insulin sensitizers, which is accompanied by a decrease in the level of androgens and an improvement in ovarian function [8]. Increased androgen production is one of the consequences of HI.

One of the main theories regarding the relationship between insulin resistance and PCOS is that IR underlies the pathogenesis of both metabolic syndrome and PCOS [46].

It is assumed that IR can result from disturbances at one of three levels: pre-receptor, receptor, and post-receptor [48].

IR at the pre-receptor level can develop due to mutations in the coding

gene for insulin, the presence of autoantibodies to insulin, or due to the synthesis of proinsulin instead of insulin by the pancreas. However, it is still unclear whether pancreatic dysfunction in PCOS is primary or secondary to IR.

At the receptor level, IR can be the result of a disturbance in signal transmission from the insulin receptor, which uncouples the action of insulin and the corresponding insulin receptor, the IRS protein.

IR in PCOS can also develop in visceral adipose tissue at the post-receptor level, which is characterized by a decrease in the amount of the carrier protein.

The close relationship of PCOS with insulin resistance explains the alertness of doctors about the possible adverse metabolic consequences of taking hormonal contraceptives, since they are aimed more at relieving the symptoms of PCOS.

Quite a lot of studies have been carried out on this topic, but it is problematic to fully generalize their results: the data are contradictory, probably due to the different types of drugs used, different sample parameters (age, anthropometric and genetic differences), the assessment methods used and the duration of observation.

Pathogenetically grounded treatment of patients in these groups involves not only the appointment of hormonal drugs in order to regulate the menstrual cycle, but also the correction of the pathophysiological processes accompanying insulin resistance leading to ovarian dysfunction. Otherwise, metabolic disorders can cause more serious consequences and affect not only the reproductive system, but also cause diseases of the cardiovascular, nervous, endocrine and other systems [50].

Observations show that the combination therapy of combined oral contraceptives with metformin (a drug that increases the sensitivity of peripheral receptors to insulin and the utilization of glucose by cells) in women with PCOS without clinical manifestations and glucose tolerance increases insulin sensitivity, which in turn leads to an improvement in temporary and quantitative indicators of insulin secretion and a decrease in the integral production of insulin upon stimulation with glucose [49]. The consequence of changes in carbohydrate metabolism is a decrease in the degree of compensatory HI, which was present against the background of insulin resistance characteristic of PCOS.

At the biochemical level, insulin stimulates the hormonal activity of all parts of the ovary: granulosa, theca, and stroma, which leads to an increase in the synthesis of all sex steroids. However, the most significant effect of insulin is on increasing the activity of 17α -hydroxylase and 17α -lyase, key

enzymes in the biosynthesis of androgens in the ovaries. Activation of steroidogenesis also occurs due to an increase in the number of luteinizing hormone (LH) receptors in granulosa, caused by hyperinsulinism. The growth effects of insulin on the ovary are manifested in the stimulation of theca cells, which, in addition to hyperandrogenism, leads to the formation of a polycystic structure and an increase in its volume. An excess of androgens inhibits folliculogenesis, causing premature atresia of the follicles.

The central mechanisms of insulin action are sensitization of pituitary cells to the action of gonadotropin-releasing hormone (GnRH). LH secretion is more sensitive to its effects, in addition, the half-life of LH is longer than that of follicle stimulating hormone (FSH).

The consequence of this is an imbalance of gonadotropins due to a predominant increase in the synthesis of LH. This condition is aggravated by the influence of monotonic levels of ovarian estrogens, which inhibit FSH more strongly. A high basal LH level, in addition to overstimulation of theca, inhibits follicular development, causing chronic anovulation.

Summarizing the data, we can say that ovarian steroidogenesis in insulin resistance is characterized by excessive formation of androgens, and the effect of hyperinsulinism on the gonadotropic activity of the pituitary gland is to increase the level of LH secretion, which leads to an increase in the vicious circle leading to anovulation, oligomenorrhea, hyperandrogenism, polycystic morbidity.

The above-mentioned features of the functioning of the reproductive system in IR form a typical symptom complex of PCOS: chronic anovulation, hyperandrogenism, polycystic morphology of the ovaries.

Metabolic syndrome is characterized by the presence of tissue insulin resistance, hyperinsulinemia, impaired glucose tolerance, arterial hypertension, dyslipidemia, as well as abdominal obesity and hyperuricemia. Accordingly, when confirming the diagnosis of polycystic ovary syndrome, patients should be examined for the above associated diseases. It is important to note that the central role of insulin resistance is traced in the pathogenesis of all of the above diseases. The prevalence of polycystic ovary syndrome among women of reproductive age ranges from 4% to 12%, and metabolic syndrome - from 3% to 23% [44]. This is a fairly high degree of prevalence, which determines the importance of studying and timely diagnosis of associated diseases.

Currently, there are opinions regarding one of the important metabolic disorders in patients with PCOS, which also indirectly affects the development of insulin resistance. The central role of this disorder is occupied by the so-called "mitochondrial dysfunction", which is closely related to oxida-

tive stress (OS). Mitochondria play the most important role in the metabolic activity of cells, and disruption of their functioning leads to profound changes in cellular activity. The universal process of catabolism of carbohydrates and fats occurs in mitochondria resulting in aerobic processes of the Krebs cycle in the matrix and oxidative phosphorylation in the membrane complex of high-energy molecules (adenosine triphosphate, ATP), which provides energy to all cells. When any of these processes are disturbed, reactive oxygen species (ROS) can accumulate, causing an increase in oxidative stress (OS). This stimulates the inflammatory response of cells, triggering apoptosis, and, conversely, in OS conditions, the generation of ROS by mitochondria is autocatalytically enhanced, and the processes of OS and apoptosis are further aggravated in the future [13] [15] [18] [33].

A wide range of publications presented in the literature demonstrates the important role of mitochondrial dysfunction imbalance in the formation of a number of disorders associated with PCOS. OS and decreased antioxidant activity in women with PCOS contribute to IR. In this regard, OS markers are advisable to use in the complex diagnosis of PCOS and the prediction of associated complications. The issue of using antioxidants in the complex correction and prevention of disorders accompanying PCOS deserves special attention.

From all of the above, it can be argued that until now there is no consensus about whether metabolic syndrome is a simple combination of risk factors or there is some one reason that serves as a triggering factor for the galaxy of pathological conditions that make up this syndrome - genetic anomaly, abdominal obesity, dysfunction endothelium, oxidative stress, or inflammation.

Without denying the importance of insulin resistance in the development of PCOS, it should be emphasized that, nevertheless, the main marker of this syndrome is hyperandrogenism, and not IR, since IR is not the only mechanism for the formation of hyperandrogenism.

Methods for detecting metabolic syndrome

1. Glucose tolerance test with determination of insulin levels.
2. Lipid metabolism disorders (total CS, TG, CS HDL, CS LDL, CS VLDL).
3. Purine metabolism disorders (uric acid).
4. Oxidative stress (7 indicators): malonic dialdehyde, total coenzyme Q10 (ubiquinone, oxidized form), vitamin E (alpha-tocopherol), vitamin C (ascorbic acid), vitamin A (retinol), beta-carotene (trans-form), glutathione free

Assessment of hormonal status

Determination of hormones on the 3rd - 5th day of the spontaneous cycle: total testosterone, SHBG (with the calculation of the index of free androgens), prolactin, LH, FSH, daily urinary excretion of free cortisol.

Morphofunctional research methods

Also, to detect metabolic syndrome, it is important to conduct an ultrasound scan of the liver, adrenal glands, pelvic organs, mammary glands and calipermetry (measuring the thickness of subcutaneous fat in the region of the anterior abdominal wall and triceps muscle of the shoulder).

Identifying insulin resistance

1. Study of the concentration of glycosylated hemoglobin;
2. Standard glucose tolerance test - blood sugar is determined on an empty stomach and 2 hours after oral ingestion of 75 g of glucose;
3. Study of lipid profile (cholesterol, triglycerides, HDL, LDL).

For a unified assessment of insulin resistance, the HOMA-IR indicator was developed, measured in arbitrary units (formula 1)

$$HOMA - IR = \frac{\text{fasting glucose (mmol/l)} \times \text{fasting insulin } (\mu\text{U/l})}{22.5}$$

Formula 1 – Calculation of the index of insulin resistance

If the HOMA-IR index is more than 2.7, then we can talk about insulin resistance.

A literature review of the relationship between insulin resistance and PCOS has shown that insulin is a reproductive as well as a metabolic hormone that acts as a co-gonadotropin through its cognate receptor to modulate ovarian steroidogenesis. This effect may persist despite resistance to the metabolic effects of insulin in the periphery, as well as on the ovaries, which is an example of selective insulin resistance. Insulin signaling to the CNS is also critical for ovulation. Human studies have confirmed that hyperinsulinemia increases androgen production in PCOS. Intrinsic abnormalities in steroidogenesis appear to be necessary for this action of insulin to manifest, because a decrease in insulin levels does not affect circulating androgen levels in normal women.

Since insulin has a direct effect on androgen production in the ovaries in vitro, insulin resistance may play a decisive role in the pathophysiology of PCOS [43].

PCOS requires changes in terminology, diagnosis and treatment. Par-

ticular attention should be paid to metabolic disorders, venous and arterial risks. The drugs used for PCOS, especially COCs, should be relatively metabolically neutral.

Also, it must be remembered that, like any complex endocrine pathology, polycystic ovary syndrome is a serious diagnosis that requires examination for a number of associated diseases and an understanding of the entire complex of pathogenetic mechanisms in order to normalize both the hormonal and metabolic status of patients in general.

Thus, insulin resistance can directly and indirectly affect the development of PCOS, and, in some cases, be one of the main causes of this syndrome. However, there are no confirmed clinical studies on this issue in the medical community, since the mechanisms of IR development are not fully understood. However, this does not negate the fact that it is necessary to take into account the possibility of inheritance and early development of IR and the prospects of its influence on the development of PCOS, since IR, acting as a compensatory reaction aimed at protecting the body, can acquire a pathological orientation, contributing to various metabolic disorders directly or indirectly. Perhaps, in the future, testing for insulin resistance in children and adolescents before menarche will be a mandatory routine examination.

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BORDERLINE PERSONALITY DISORDER: DIAGNOSTIC AND THERAPEUTIC ISSUES

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Abstract. *The article discusses the diagnosis and treatment of borderline personality disorders, presents the process of modern understanding of this personality pathology, outlines the principles of classification of its clinical variants, and also provides information on the effectiveness of the main classes of psychiatric drugs and psychotherapy in the treatment of borderline personality disorders. In an outpatient psychiatric network, borderline personality disorder is diagnosed in 16% of cases using special questionnaires. Identifying borderline personality disorders is essential for depression, addictive behavior, etc.*

Keywords: *borderline personality disorder, diagnosis, therapy.*

Borderline personality disorder (BPD) is a nosological category that has been hotly debated for years. In the ICD-10 (WHO, 1994), the borderline type of emotionally unstable personality disorder is understood as a disorder of mature personality, which is characterized by some characteristics of emotional instability and, in addition, “self-esteem, intentions and internal preferences, including sexual (characterized by a chronic feeling of emptiness) are often incomprehensible or disturbed. A tendency towards tense (unstable) relationships can lead to recurring emotional crises and be accompanied by a series of threats and self-harm (although this can also occur without obvious provoking factors)

Purpose of the study. Revealing the prevalence, clinical and diagnostic features of BPD.

Today, there are several problematic disagreements regarding BPD diagnostics. First of all, these are different classifications in different countries, also in Russia. For the diagnosis of personality disorders in Russia,

the ICD 10 classification is used. The concept of BPD is absent in this classification, the closest in meaning is “emotionally unstable personality disorder”.

The factors provoking this disease may be the following:

1. Hereditary predisposition
2. Sex characteristics (women are more prone to this disorder)
3. Unfavorable living conditions
4. Severe psychological trauma
5. Lack of parental attention in childhood
6. Violent behavior of loved ones
7. Domestic or parental abuse
8. Dissatisfaction with yourself
9. Certain requirements for a person, which he does not meet or of which he is afraid, etc.

Borderline personality disorder can be subtle and overt. The latter is distinguished by specific behavior with pronounced signs, these are:

1. False awareness of your own self
2. Impulsive behavior, inability to control it
3. Constant feeling of emptiness
4. Deterioration of personal relationships and the impossibility of long-term relationships Disadaptation in society with the approach of adulthood, antisociality
5. Manipulative behavior (tyranny, tension, alternation of accusations and rewards, ignorance)
6. Parasuicidal and suicidal tendencies (aggression, self-harm) Alcohol or drug abuse
7. Secretiveness
8. Lack of one's own point of view
9. Promiscuous sex
10. Fear of loneliness, paranoia

Manifestation of the disease:

Borderline personality disorder finally manifests itself when a person can already be assessed as fully developed (without such a concept in psychology as a phenomenon of social childhood), i.e. by about twenty years. The patient's own “I” is destabilized: self-esteem and attitude towards oneself vary greatly depending on the circumstances. Hence the fear of being abandoned, which leads to the desire to build relationships that reproduce his idea of the ideal. But with a mental disorder, this cannot be achieved, and breaking this illusion only exacerbates the result.

A person with such a diagnosis not only has difficulty in defining his

own "I" - it is usually difficult for him to navigate in reality. He often lingers in memories and illusions, in a state of distrust: he does not trust himself or others - hence the paranoid component of behavior. It is also characterized by the presence of spiritual emptiness and boredom.

This disease is also characterized by a combination of high levels of fear and suspicion with absolute irresponsibility.

The fear of loneliness makes you want to have a relationship to be accepted.

Excessive demands are made on the partner, and non-compliance leads to the patient's disappointment, which in turn leads to impulsive behavior (scandals, fights). People with personality disorder tend to have different attitudes towards others and towards themselves. That is, the idealization of another person is abruptly replaced by a violation of perception. Such people sometimes experience feelings of guilt, then impose this feeling on others (manipulative behavior). All this makes it difficult not only to build a relationship between the patient and the partner, but also complicates his normal stay in society.

People with BPD suffer on their own and make loved ones suffer. It is difficult for such patients to convey the problem in the format of an ordinary dialogue: they are not able to perceive criticism, react violently and impulsively, they are sure that they only want to harm them, and not help (although they themselves seek help). This is due to distorted psychological attitudes that do not allow them to correctly perceive the surrounding reality. Emotional deprivation is also characteristic of the behavior of such people: accusations that they are not cared for and that they do not regret it, fear of being abandoned. They are surprisingly withdrawn and afraid to express their own feelings, but at the same time, they are extremely hot-tempered with loved ones and have problems with uncontrollable emotions. They usually feel guilty after outbursts of anger and ask for forgiveness. Their whole life is like a deep depression, their attitude to the world is like a vicious circle: in one case, they believe that others expect something from them, and they do not live up to expectations; on the other hand, that those around them do not expect anything from them, and this imaginary indifference frightens them and prompts them to think about suicide.

The constant feeling of guilt causes the patient to mutilate himself in order to switch his attention from psychological pain to physical pain. Thus, he punishes himself, the painfully changed character of such people often leads them to the Hermitian way of life and isolation. They would rather stay at home than go to the company of other people: each of these detachments evokes new outbursts of emotions in them. This highlights a

reluctance to change behavior depending on the situation.

Diagnostics.

To diagnose this disease, the specialist needs to study the complete picture of the patient's condition. After a mandatory medical examination, the patient is examined by a psychiatrist specializing in this disease. It is necessary to find out the features of behavior, to record all the manifestations of the disorder, to study chronic diseases: all this will help to establish a real disease. When the decision about the disease has been made, therapy can be started.

Therapy.

The most important element in the treatment of personality disorders is psychotherapy. It can be individual, family and group. Dialectical Behavioral Therapy is the most effective treatment for this condition. But it is very difficult to persuade such patients to take long-term treatment, due to the bifurcation of thinking: today he listens to the therapist, and tomorrow he closes. The patient is extremely suspicious and considers himself "not like that", hence the fear that others will not treat him after he finds out his true character. Therefore, the task of the specialist is how to subtly explain to the patient that this is not so. In conversations with a psychotherapist, the patient's general behavior is corrected, he is taught to treat himself and others differently. But it is extremely difficult to work with such patients: they constantly try to be puzzled, get rid of responsibility, fall into hysterics and fully demonstrate theatrical suicide attempt. All this is a manipulative manifestation that cannot be succumbed to. The specialist should react coldly and indifferently to attempts at suicidal blackmail, and attempts to heal the patient, on the contrary, should be encouraged and praised. The first thing a therapist needs to do is understand the cause of the disorder. Then they must gradually approach the improvement of the patient's behavior: free him from the fear of loneliness, fear of people, explain who he is and why everyone is around. In fact, a psychotherapist is a mentor who teaches his patient to properly interact with the situation and himself, cope with his emotions and live in the human world (the patient's social skills also require refinement and adaptation). In addition to psychotherapy, antidepressants are used to treat borderline disorders. There are also mood stabilizers to help you get rid of mood swings. The use of anti-anxiety drugs is not excluded to relieve the patient of the uncomfortable feeling of anxiety. Patient care is time consuming. But not in all cases it is possible to get rid of it forever: the disease tends to relapse.

Conclusion:

In the diagnosis of BPD, early detection of the disorder is important, in

which case drug treatment can be selected, and psychotherapy can also be prescribed to correct the behavior and character of the patient. Also, for early diagnosis (in school-age children), you need to use various psychological tests, for example, a personality questionnaire developed on the basis of diagnostic criteria for borderline personality disorder according to DSM-III-R and DSM-IV in 2012 by a team of authors (T. Yu. Lasovskaya, S.V. Yaichnikov, Yu.V. Sarycheva, Ts.P. Korolenko). This questionnaire is just a convenient and valid tool for screening, everyday diagnosis and verification of diagnosis in psychiatric, general clinical and non-medical practice.

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**THE INFLUENCE OF COMPUTER GAMES ON THE DEVELOPMENT
OF PATHOLOGIES IN THE HUMAN BODY**

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Abstract. *Computer games are a fairly common hobby of modern youth. Almost every teenager has used a computer at least once in order to play games on it. Although rare sessions of the game are harmless, abuse of this can lead to many serious pathologies - both from the nervous system and from the musculoskeletal system, and from the cardiovascular system and other organs. This article discusses the main pathologies that can be caused by the constant use of a computer.*

Keywords: *computer games, gambling addiction, computer addiction.*

Nowadays it is impossible to imagine our life without a computer. Information, photographs, all important records, and even money are stored using a computer. According to the portal Gartner, there is now one computer for every third person in the world, which is approximately 2 billion pieces. Currently, almost 90% of people on this planet cannot live normally without using a computer or other electronic device (smartphone, tablet)

Computer technologies are developing by leaps and bounds, and if some ten years ago a computer was just a monitor and a system unit, now you can connect equipment unthinkable at that time to the "standard" configuration: surround sound, virtual reality glasses (VR), wireless joysticks (gamepads) that follow your movements.

It is very often said on the Internet that games cause bouts of uncontrolled aggression, but is that so? In addition, the abuse of computer games can

become an etiological factor in the development of serious pathologies.

The influence of computer games on the human body

Computer addiction

No matter how much is said about the benefits of computer games, all this is almost completely negated by one (but not the only) significant disadvantage - computer addiction. Starting to play, a person will sooner or later win. Having won the victory, he will undoubtedly enjoy it and want to win again. In the end, the person will not be able to stop and will continue to play over and over again in order to enjoy the victory.[2]

The main signs of computer (gaming) addiction:

- Euphoria during the game
- Excessive playtime
- Constant uncontrolled spending of large sums of money on computer games
- Impossibility of giving up video games
- Decreased social activity
- Constant problems in the family, at work, school, etc.

Scientists from the University of Ghent, Belgium conducted an experiment. They studied the brains of 154 teenage gamers at the age of 14. About half of them were avid computer gamers who played at least 9 hours a week. The rest played less often.

Using magnetic resonance imaging, the researchers scanned the brains of adolescents and found that avid gamers had more gray matter in the left ventral striatum, an area that is responsible for pleasure and addiction.

Next, the scientists suggested that the teenagers take a test. Participants had to answer the questions, thereby receiving points. The task of the scientists was at this moment to monitor the activity of the brain, when the participants answered the questions correctly or incorrectly. Avid gamers were more active in these areas of the brain when they got more points. The same activity is observed among gamblers - gamblers with addictions.

Attacks of uncontrolled aggression

The main problem, in addition to dependence, is most often called attacks of aggression. A number of scientists (A. V. Grishina, S. P. Kozhevnikov, I. B. Lebedev, O. S. Lobanova, E. N. Saladovnikova, Yu. V. Serebrennikova, S. V. Fadeeva, T. P. Filatova, K. Kardellan, G. Gabriel) note the relationship of computer games with elements of violence and increased aggressiveness of gamers [2] "Games urge children to be ruthless and cruel!" the Internet. According to statistics, only 4% of all players suffer from bouts of uncontrolled aggression. Most often these are people who play games in which scenes of violence are demonstrated.[1]

"Of course, violence in play has a negative impact on the formation of a child's character: it increases aggressiveness. Many games simply celebrate and reward crime. So in a social sense, video games with violent content play a negative role. However, there are other categories of video games as well. In particular, related to medicine. The content of video games can contain information about diseases, for example, allergies, asthma, diabetes. These games can be allowed in schools and children's hospitals. The child learns through play how to live with diabetes, how to take care of his health. So it's not about the computer or video games, but about their content. Unfortunately, violent computer games are in much greater demand in the marketplace" - says New York City Child Psychologist Elizabeth Karl.

Most often, according to Elizabeth Karl, it is children and adolescents who are susceptible to increased aggressiveness, which makes this problem even more important, since it is this category of people that are easily suggestible.

Effects on vision

First of all, you need to remember that a long stay in front of the monitor is a huge strain on the eyes. In 1998, scientists from the United States coined the term Computer Vision Syndrome. This term means visual impairment caused by the influence of a computer on a person. [5] According to researchers, this syndrome occurs every day in 40% of users, and from time to time in 92%. The following symptoms of the syndrome are distinguished:

- Burning and gritty sensation in the eyes
- Redness of the conjunctiva
- Blurred vision
- Double vision
- Headaches
- Dry eyes
- Neck and back pain

It should be noted that science does not stand still. Special glasses have already been invented to reduce eye strain. Also, computer companies have long been producing monitors with increased contrast, which also reduces eye strain.

Effect on hands

Computer games affect not only the brain, eyes, but also the hands. Distinguishing an avid gamer from an ordinary person is very simple - just look at his hands. Avid gamblers have one distinctive feature on their hands - mazol in the area of the pisiform bone of the wrist. Spending a long time

at the computer, a person does not notice that he constantly performs the same monotonous movements, as a result of which the so-called Carpal Tunnel Syndrome or Carpal Tunnel Syndrome can occur.

Carpal tunnel syndrome symptoms:

- At the onset of the disease, discomfort in the hand is disturbed: tingling, burning, numbness.
- Pain is one of the main symptoms. It is dull, aching, can grab fingers, a hand, part of the forearm.
- Feeling of numbness in the hands in the morning.
- Muscle disorders gradually develop. It becomes difficult for a person to hold small objects with his fingers, they fall out of his hands. Difficulties arise in performing precise movements.
- Since nerves regulate vascular function, vascular disorders can develop. Brushes may become pale or bluish, and often become colder.
- Disruption of the innervation of the sweat glands leads to increased sweating or dry skin.
- Violation of the innervation and blood supply to the skin and nails leads to a deterioration in their appearance.

Preventive measures:

Correct use of a computer mouse:

- The palm should be positioned so that the bottom of the mouse is near the wrist.
- The ring and thumb should be slightly on the sides and lightly touch the side edges of the mouse.
- The index finger should lie lightly on the left mouse button, the middle one on the right. While moving the mouse, try not to make strong movements in the wrist joint - the whole arm should move freely behind the mouse.

Correct use of the keyboard:

- The arms should be relaxed, bent at the elbows at an angle of 90° and lie freely on the table.
- The toes should be slightly bent. The keyboard buttons should only be touched with the pads, applying short soft blows.
- When typing, it is better to make movements not in the wrist joints, but with your fingers.
- Do not place your palms on the table or keyboard.

Effects on the cardiovascular system

The main factor that negatively affects the heart is a sedentary lifestyle. Disorders that can develop:

- **Atherosclerosis (high blood pressure).** Due to a sedentary

lifestyle, especially if a person is addicted to fatty foods, overweight develops, cholesterol accumulates in the vessels. If you do not engage in prevention and treatment for a long time, complications in the form of heart attacks and strokes can occur.

- **Venous insufficiency (varicose veins) in the legs.** Due to the action of the force of gravity, it is difficult for blood to return from the vessels of the lower extremities to the heart, as a result of which edema occurs on the legs.

- **Hemorrhoids.** As a result of a sedentary lifestyle, blood stagnates in the veins that surround the rectum.

- **Stagnation of blood in the veins of the pelvis.** It manifests itself in the form of pulling pains, discomfort, discomfort. This condition is not so harmless: it increases the risk of inflammatory diseases of the genitourinary system in men and women, and over time it can even cause infertility.

Influence on the musculoskeletal system

Most people know that prolonged sitting can cause spinal curvature. In addition, people leading a sedentary lifestyle may acquire a stoop, which will only get worse in the future.

Continuous work at the monitor for more than 2 hours leads to tonic muscle overstrain, spasm of the arterial vessels of the spinal column, deterioration of metabolism and blood circulation in the structures of the spine.

Symptoms of dysfunction of the spinal column:

- Stiffness of movements in the back;
- Pain in the cervicothoracic and lumbar spine;
- Numbness in the fingers;
- Crunching on neck movements;
- Dizziness, headache;
- Drowsiness;
- Decreased working capacity.

Preventive measures for diseases of the musculoskeletal system:

- Using special chairs when working with a computer
- Take breaks for 10-15 minutes every hour of working at the computer
- During work, keep your back straight, do not tilt your back and neck
- Legs should be flat on the floor and bent at a 90 degree angle
- During rest, try to move more.

Conclusion

To prevent negative consequences, one should avoid not only excessive

being in computer games, but also in front of the computer in general. It is necessary not only to limit the time at the computer, but also to adhere to certain rules of prevention and work at it, both during the game and during the work process.

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