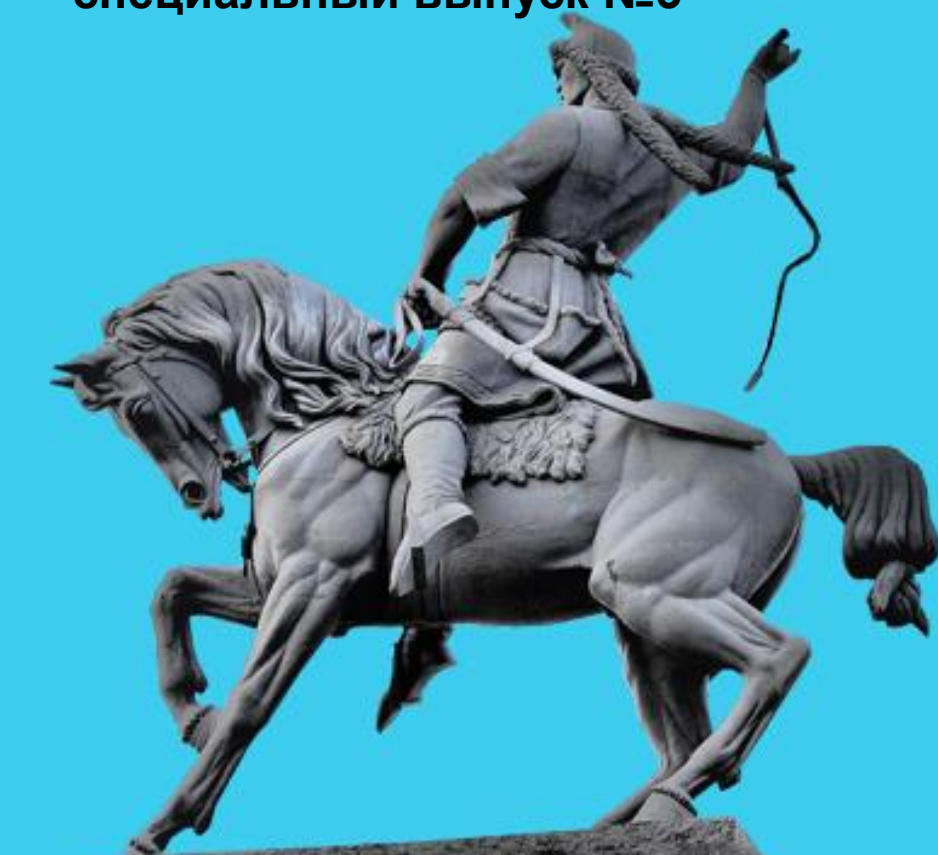




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БАШКИРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ УНИВЕРСИТЕТ
МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

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Акатова И.Ю., Кутова А.А.

ХРОНОБИОЛОГИЯ И ХРОНОМЕДИЦИНА. ЗНАЧИМОСТЬ ЗНАНИЙ О ЦИРКАДНЫХ РИТМАХ

Научный руководитель – к.ф.н. доцент Гордеева О.Н.

Башкирский государственный медицинский университет, г. Уфа

В работе представлены обзор сведений о хронобиологии, хрономедицине и в частности циркадных ритмах и хронотипах. Данная тема будет актуальна для всех групп людей, заинтересованных в поддержании своего здоровья. Исследования показывают, что циркадные ритмы имеют огромное значение для работы всего организма человека. Для аргументации своей позиции приведены данные исследований.

Ключевые слова: хрономедицина, хронобиология, циркадные ритмы, гормоны, хронотип

Akatova I.Y., Kutova A.A.

CHRONOBIOLOGY AND CHRONOMEDICINE. IMPORTANCE OF THE KNOWLEDGE ABOUT CIRCADIAN RHYTHMS

Scientific Advisor – Ph.D. in Philology, Associate Professor Gordeyeva O.N.

Bashkir State Medical University, Ufa

This paper provides an overview of information about chronobiology, chronomedicine, and circadian rhythms and chronotypes in particular. This topic will be relevant for all groups of people interested in maintaining their health. Studies show that circadian rhythms are of great importance for the functioning of the entire human body. To support this suggestion, the paper contains results of several studies.

Keywords: chronomedicine, chronobiology, circadian rhythms, hormones, chronotype

All living things, including humans, are closely connected to the environment. Processes in nature directly affect their physiology. Circadian rhythms are the most noticeable consequence of nature's fluctuations. Understanding circadian rhythms and chronotypes provides crucial insights into the health, behavior and physiology of people. This topic is of interest to many researchers and people interested in maintaining their health. The aim of this study is to find out in what ways circadian rhythms affect the human body and what can be done with this knowledge.

Material and methods

To study the circadian rhythms an analysis of the available scientific papers was carried out. The results of various experiments and observations, as well as meta-analyses done in this area, were reviewed.

Circadian rhythms

One of the most constant phenomena in nature is the change of day and night caused by the Earth's rotation around its axis and accompanied by predictable fluctuations, with fluctuations of light and temperature being the most apparent. It is unsurprising that almost all living organisms exhibit changes in their behavior and physiology throughout the day. These changes are called circadian rhythms – cyclical fluctuations in the intensity of various biological processes associated with the change of day and night. The period of circadian rhythms is usually close to 24 hours.

Those questions are in the domain of chronobiology — the science that studies biological rhythms and their impact on physiological processes in living organisms. Chronomedicine is a related field which is based on chronobiology and studies biorhythms of humans and their impact on health.

The synchrony between an organism and its surroundings, both external and internal, is essential for its health and survival. A lack of alignment between the organism and its external environment can result in immediate death. For instance, a nocturnal rodent that emerges from its

burrow during the day would be an easy target for predators. Similarly, a mismatch within the internal environment can lead to health issues.

In mammals, a clock center, known as the suprachiasmatic nucleus (SCN), is situated above the optic chiasm. This circadian clock regulates various physiological processes, from gene expression to complex behaviors. In the absence of external cues, such as sunlight and social interactions, the biological clock operates independently.

Hormone production throughout the day.

The formation of biological rhythms is a gradual process. In newborns, these rhythms are characterized by instability. Their periods of sleep, wakefulness, and nutrition change irregularly but over time the central nervous system begins to synchronize with the alternation of day and night. All physiological systems of the body begin to function in accordance with certain rhythms which is due to the work of the endogenous clock. These internal mechanisms programmed for cyclical changes ensure that the body adapts to diurnal and seasonal fluctuations.

The hypothalamus is an important endocrine organ located in the human brain. It regulates the rhythmic processes in the body, maintains homeostasis and provides interaction with other systems necessary for the performance of vital functions of the body. The endogenous biological clock remains active even when the external environment changes. For example, in conditions of complete isolation from light and sound stimuli, the body continues to follow its internal rhythms, which is manifested in a regular alternation of sleep and wakefulness.

At certain hours, the body's systems show varying degrees of activity. During the day a person is exposed to physical and mental stress which leads to resource depletion and fatigue. Sleep is essential to restore normal functioning.

The hormone melatonin plays an important role in regulating circadian rhythms. In humans, the secretion of melatonin by the epiphysis is controlled by the biological clock and is tied to the dark time of day. It lasts about 8-10 hours with a peak at about 3-4 hours at night. Exposure to light, especially in the blue part of the spectrum, suppresses melatonin synthesis.

In the morning hours between 4:00 and 6:00 the human body begins to synthesize serotonin known as the "happiness hormone".

After 6:00 there is an increase in the level of cortisol which is the main hormone that regulates the processes of wakefulness.

At 7:00 in the morning melatonin production stops. It is recommended to get up before 7:00 to make the most of your time and increase your productivity.

At approximately 8:00 the synthesis of steroids begins which play a key role in the formation and maintenance of muscle mass. This period is optimal for physical activity including morning exercises, jogging and other types of training.

From 10:00 to 14:00 the body produces neurohormones which makes this time interval the most favorable for mental activity and performance of work tasks.

After 17:00 there is a decrease in cortisol levels which leads to a decrease in the energy potential of the body. During this period it is not recommended to make important decisions and engage in intense physical activity.

Melatonin, known as the "sleep hormone", begins to be synthesized at 21:00. This process is triggered by the decreasing levels of light. At this time, there is a decrease in body temperature the body naturally prepares for sleep.

At 22:00 the production of endorphins is activated which makes this period optimal for going to bed. The period from 22:00 to 4:00 is characterized by the maximum efficiency of the body's recovery processes.

Individual differences and chronotypes

It is also necessary to indicate the presence of individual variations in circadian rhythms in different people. There are several chronotypes. Scientists usually distinguish three main chronotypes: early ("larks"), intermediate and late ("owls").

A study that assesses chronotype distribution (using Munich Chronotype Questionnaire) in Germany, Switzerland, the Netherlands, and Austria shows that it is close to normal, with later chronotypes being slightly more common.

In addition to the variability of chronotypes, there are also differences in the duration of sleep. Sleep duration may vary depending on the day of the week due to social factors. There is a correlation between chronotype and sleep duration. Individuals with a late chronotype tend to show shorter sleep duration on weekdays and longer sleep duration on weekends.

A person's chronotype affects their overall health, behavioral habits, metabolism, and predisposition to various sleep disorders. The greatest vulnerability is observed in people with the evening chronotype.

Sleep problems in the evening type are largely due to the discrepancy between the mode of life and the internal biorhythms of the body. Even if a person with an evening chronotype gets up at the same time as others, their body is still in a phase of circadian nocturnal sleepiness and their body temperature is close to the minimum. In addition, the same light exposure affects different chronotypes differently depending on the phase of the biological cycle.

Disruption in work of biological clock

For the majority of animals, their sleep and wakefulness patterns are synchronized with the natural circadian rhythms, which are regulated by the body's internal clock. However, humans possess a capacity to override their biological clock and its rhythmic functions through conscious effort. When the sleep-wake cycle is disrupted due to factors such as shift work or rapid travel across time zones, it can lead to negative consequences.

In addition to the sleep disturbances caused by jet lag or shift work, sleep disorders can arise due to a variety of known and unknown factors. While disturbed sleep is a common symptom of many mental and physical health conditions, particularly mood disorders, it is not always clear whether the sleep disturbances are a cause or a consequence of the illness.

High levels of stress combined with chronic rhythm mismatch can cause sleep disorders and worsen mental health. Serious disruptions in the biological clock can lead to circadian sleep disorders, when the internal rhythm does not coincide with external conditions or is shifted. These disorders include a significant lag or advance of the rhythm, irregular or non-daily rhythm, as well as the consequences of shift work or social desynchronization.

Conclusion

Chronobiology and chronomedicine are important scientific fields that study biological rhythms and accompanying changes in physiology. Circadian rhythms affect sleep patterns, metabolism, and hormone production, influencing our daily activities and well-being. Studying these rhythms can lead to better understanding of conditions like insomnia and jet lag.

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Аmineva A.Ф., Valyamova C.Р.

ИССЛЕДОВАНИЕ СОДЕРЖАНИЯ АСКОРБИНОВОЙ КИСЛОТЫ В ОВОЩАХ И ФРУКТАХ

Научный руководитель – к.ф.н., доцент Майорова О.А.

Башкирский государственный медицинский университет, г. Уфа

В данной работе исследовано содержание витамина С в различных видах фруктов и овощей с помощью метода йодометрического титрования, а также проведено анкетирование на проверку знаний студентов 1 курса о витаминах и их роли в организме человека. Рассматриваются факторы, влияющие на концентрацию аскорбиновой кислоты. В результате исследований выявлены продукты, содержащие наибольшее количество витамина С; разработаны рекомендации по составлению рациона питания студентов.

Ключевые слова: витамин С, аскорбиновая кислота, питательные вещества, йодометрический анализ.

Amineva A.F., Valyamova S.R.

RESEARCH OF ASCORBIC ACID CONTENT IN FRUITS AND VEGETABLES

Scientific Advisor – Ph.D. in Philology, Associate Professor Mayorova O.A.

Bashkir State Medical University, Ufa

In this paper the content of vitamin C in different types of fruits and vegetables is investigated using the method of iodometric titration, as well as a questionnaire to test the knowledge of 1st year students about vitamins and their role in the human body. Factors affecting the concentration of ascorbic acid are considered. As a result of research the products containing the greatest quantity of vitamin C are revealed; recommendations on drawing up of a diet of students are developed.

Keywords: vitamin C, ascorbic acid, nutrients, iodometric analysis.

Vitamin C, or ascorbic acid, represents one of the key and widely known substances necessary for the maintenance of health and proper functioning of the human body. This compound was first identified and isolated in 1928 by Hungarian biochemical scientist Albert Szent-Györgyi, for which he was awarded the Nobel Prize in 1937. The term ascorbic acid originates from the word scorbutus (scurvy), as previously a deficiency of this substance was directly associated with the occurrence of this disease [2]. Ascorbic acid is one of the most demanded vitamins by humans. Plants and many animal species are “able” to produce vitamin C themselves, while humans have lost this ability in the course of evolution [7]. Ascorbic acid can only be obtained from plant foods and food supplements. A small amount of this vitamin is necessary to maintain optimal body function. Ascorbic acid exhibits neuroprotective properties, providing protection against the harmful effects of neurotoxins and the development of neurodegenerative conditions such as Alzheimer's disease, multiple sclerosis and amyotrophic lateral sclerosis [5]. A number of scientific studies have demonstrated that vitamin C intake can favorably affect emotional state, showing antidepressant effects and enhancing mood [6]. In ascorbic acid deficiency, symptoms of scurvy develop, such as swollen and bleeding gums, delayed wound healing, changes in dentin structure, osteoporosis, abnormal tooth mobility and tooth loss. Patients often complain of fatigue, malaise, lethargy and anorexia [7]. Also, vitamin C can be used as

a preventive and/or adjuvant treatment for respiratory diseases [3]. Antioxidants such as ascorbic acid protect the body from free radical damage. Many diseases and conditions utilize vitamin C as a medicinal agent. It boosts the body's immunity, reduces the severity of allergic reactions and helps in the treatment of infectious diseases. In addition, ascorbic acid is useful in diseases such as atherosclerosis, cancer, colds, and iron deficiency anemia [4].

Purpose of work

To determine the content of ascorbic acid in food products by iodometric titration method.

Material and methods of research

The materials were scientific publications for the last 5 years. One of the variants of iodometric titration was used. Iodine solution was used as a working solution. The interaction of ascorbic acid with iodine occurs according to the equation: $C_6H_8O_6 + I_2 = C_6H_6O_6 + 2HI$.

Equipment: scales, pipettes, funnels, measuring cylinder, porcelain mortars, chemical beakers, scissors.

Reagents: iodine solution, starch glue, water, 1% hydrochloric acid solution.

Objects of research: samples of fruits and vegetables grown at home and purchased in the store.

Methodology of the experiment:

1. Add 100 ml of water to 20 ml of squeezed juice;
2. Add 1 ml of starch glue;
3. Add 5% iodine solution until the appearance of a stable blue coloring, which does not disappear within 10-15 seconds;
4. Calculate the content of ascorbic acid in proportion.

1 ml of iodine solution - 28 drops of iodine solution

X ml of iodine solution - number of drops of iodine solution according to the experiment

Having calculated the number of ml of iodine solution according to the proportion, find the content of ascorbic acid in the sample according to the following proportion:

1 ml of 5% iodine solution - 35 mg of ascorbic acid

Number of ml of iodine solution by experiment - X mg of ascorbic acid

When analyzing solid samples of vegetables and fruits, knowing the weight of the suspension, correlate the found value of ascorbic acid to 100 g of the sample.

Results and Discussion

Having carried out quantitative determination of ascorbic acid by iodometric titration method, the following results were obtained as presented in Table 1.

Table 1

The content of ascorbic acid in the studied samples

№	Name of sample	V iodine used for titration, ml	Amount of ascorbic acid, mg/100g
1.	Cabbage	1,04	36,4
2.	Sour cabbage	0,79	27,65
3.	Cauliflower	0,57	44,3
4.	Currants	2,68	93,7
5.	Lemon	1,1	38,5
6.	Orange	0,92	32,2
7.	Persimmon	1,18	41,2
8.	Apples (homestead)	0,28	32,7
9.	Apples (store-bought)	0,14	16,33
10.	Apples (from compote)	0,07	8,16
11.	Red pepper	1,25	125

Further we studied the content of ascorbic acid in cabbage over time. Cabbage was grown at home, stored in the cellar (T=2-5 degrees Celsius). Determination of vitamin C content in cabbage was carried out in September, October, November, December. The results of the experiments show a slight decrease in ascorbic acid content in cabbage samples over time in Table 2.

Table 2

Determination of ascorbic acid content in cabbage samples in September-December 2025

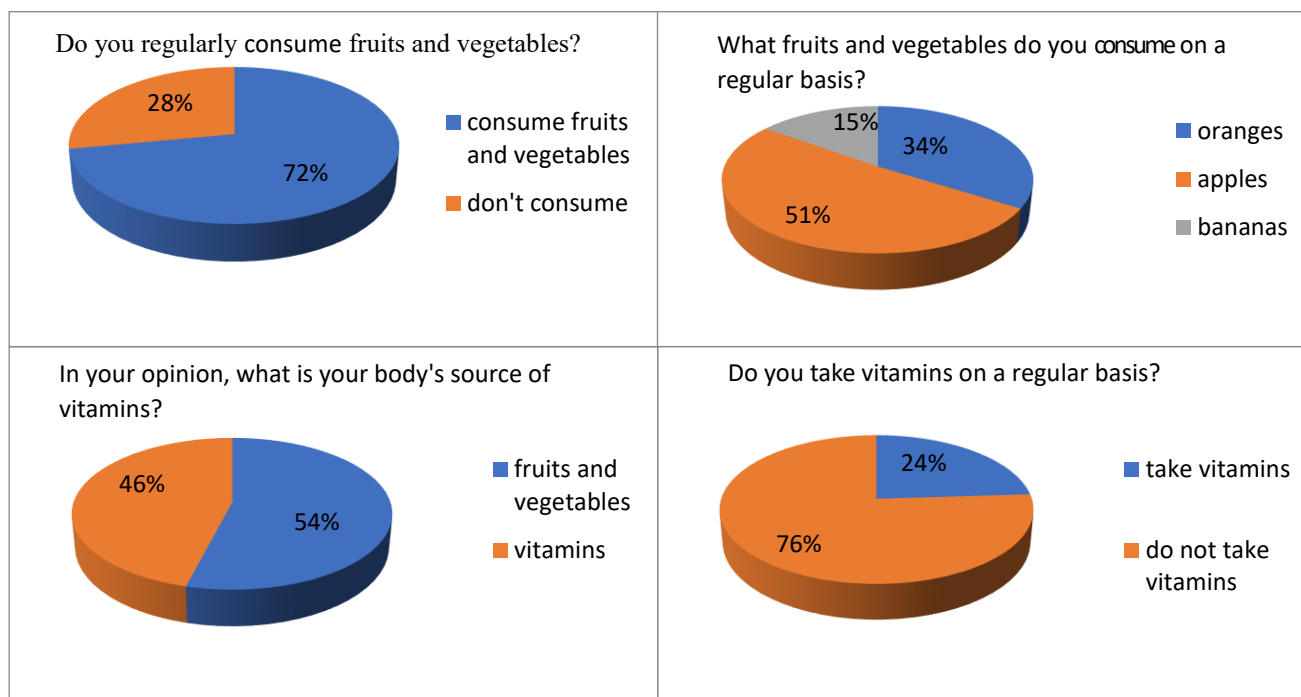
№	Month	V iodine used for titration, ml	Amount of ascorbic acid, mg/100g
1.	September	1,04	36,4
2.	October	0,96	33,6
3.	November	0,89	31,3
4.	December	0,79	27,5

In order to identify the awareness of 1st year students on the knowledge of vitamins and vitamin C in particular, a questionnaire survey was conducted, the results of which are presented in Figure 1. The survey showed that, according to the recipients, an organism lacks vitamin in the spring multivitamin complexes (94%). To avoid vitamin deficiency and hypovitaminosis, many respondents believe that it is necessary to eat fortified foods (fruits, vegetables) (54%), as well as take multivitamin complexes (46%). Few students (24%) take multivitamin preparations to improve memory, growth,

health, and vigor. The following answers were received to the main question: "How to satisfy the body's daily need for vitamins?" which are a guide to action for us: Eat right, include more fortified foods in the students' diet.

Figure 1

Results of questionnaire survey of BSMU students



After analyzing the results of the questionnaire and the conducted research, we developed recommendations for compiling a diet for students that provide the daily requirement for vitamin C:

1. Regularly include fresh vegetables and fruits in the menu, taking into account their vitamin C content and giving priority to products with the highest content of ascorbic acid (red pepper, currants, etc.);
2. Eat fruits and vegetables grown in your own garden (rather than those purchased in a store);
3. For better preservation of vitamin C, in the summer season we recommend freezing berries, fruits, vegetables rather than drying and boiling;
4. If for various reasons (material, seasonal) it is not possible to eat fresh fruits and vegetables, you can replace these products with juices and nectars;
5. In the spring and autumn periods of the year (the period of increased incidence of acute respiratory viral infections and acute respiratory infections), we recommend taking multivitamins to replenish our body's need for a complex of vitamins.

Conclusion

Thus, ascorbic acid is an extremely important nutrient for human health, so regular monitoring of vitamin C levels in the body and timely attention to any signs of deficiency are extremely important. It is recommended to include in the daily diet a sufficient amount of fruits and vegetables rich in ascorbic acid to maintain its normal level, since prevention is always preferable to cure [1]. Students have a correct understanding of the importance of vitamins in human life, most of them regularly consume vitamins in the form of fresh and processed vegetables and fruits, fruit juices (mainly store-bought). Deficiencies in vitamins are compensated by taking multivitamin complexes. Using the iodometric titration method, studies have shown that the largest amount of vitamin C is contained in red peppers, currants, citrus fruits. The amount of ascorbic acid in vegetables and fruits depends on the type of product and the duration of storage (over time, the content of vitamin C in products decreases), heat treatment of vegetables and fruits (heat exposure reduces the amount of vitamin C). The laboratory studies conducted allowed us to develop recommendations for a diet, the observance of which will help maintain health and prolong life.

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Information about the authors:

1. **Amineva Alina Flurovna** - 1st year student of the Faculty of Medicine, Bashkir State Medical University, Ufa, Lenina St. 3, e-mail: amineva_06@list.ru.
2. **Valiamova Sariya Ramilevna** - 1st year student of the Faculty of Medicine, Bashkir State Medical University, Ufa, Lenina str. 3, e-mail: valamovas@gmail.com.

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Арбузова А.Е., Валитова С.И.

ИССЛЕДОВАНИЕ ПРОФЕССИОНАЛЬНЫХ АСПЕКТОВ ИНКЛЮЗИВНОЙ КУЛЬТУРЫ БУДУЩИХ СТОМАТОЛОГОВ

Научный руководитель – к.ф.н., доцент Гордеева О.Н.

Башкирский государственный медицинский университет, Уфа

В данной статье исследуются основные элементы инклюзивной культуры в стоматологии и их отображение на профессиональную подготовку начинающих специалистов. Проводится оценка существующих образовательных программ и определяются недостатки в области культурной осведомленности и инклюзии. В рамках исследования были проведены опросы и беседы с преподавателями и учащимися стоматологических факультетов, а также проанализирован опыт студентов, полученный в ходе работы в клиниках.

Ключевые слова: Инклюзивная культура, стоматология, студенты, образование.

Arbuzova A., Valitova S.

RESEARCH OF PROFESSIONAL ASPECTS OF THE INCLUSIVE CULTURE OF FUTURE DENTISTS

Scientific Advisor – Ph.D. in Philology, Associate Professor Gordeyeva O.N

Bashkir State Medical University, Ufa

This article explores the key elements of an inclusive culture in dentistry and their implications for the professional training of aspiring professionals. Existing educational programs are evaluated and gaps in cultural awareness and inclusion are identified. The study included surveys and interviews with dental educators and students, as well as analyzing students' experiences in clinics.

Practical recommendations for creating an inclusive educational and clinical environment in the educational process are given. Specific recommendations are offered for creating an inclusive environment in both educational institutions and clinics to prepare dentists to work effectively with a diverse patient population and, as a result, improve the quality of dental care for all.

Keywords: Inclusive culture, dentistry, students, education.

Modern society is becoming increasingly diverse, and dentistry is no exception. Given the increasing ethnic, cultural and social diversity among patients, dentists must have the knowledge and skills necessary to interact effectively with diverse populations. An inclusive culture in dentistry involves creating an environment where every patient feels accepted and understood, regardless of their cultural or social background. However, many dental schools face a lack of programs aimed at developing cultural competence in students. This article examines the professional aspects of inclusive culture in the context of training future dentists and offers recommendations for improving educational programs.

Discussion

1. The Concept of Inclusive Culture.

Inclusive culture is a skill of interaction between people with and without disabilities. An inclusive culture implies acceptance and respect for the diversity of human characteristics. Dentists should also be able to communicate with patients with different cultural, linguistic and social backgrounds, as this affects the patient's feelings during treatment (Betancourt et al., 2005).

2. Disadvantages of modern educational programs and their impact.

Despite the growing awareness of the need for inclusion, most dental schools do not adequately address cultural competency in teaching. As a result, many future dentists, as surveys have shown (Sullivan et al., 2019), lack the skills to work with patients from diverse cultural backgrounds. This creates a risk of misunderstandings and bias, which can ultimately negatively impact the quality of care.

3. Examples of successful practices of inclusive culture at universities.

Some universities are introducing lectures and practical classes on inclusive culture in response to the urgent need for this. For example, the University of California offers students not only theoretical knowledge in the form of seminars, but also practical skills necessary for effective communication with patients from different cultures. This opportunity helps future specialists to fully understand the scheme of working with people with disabilities and work it out in real time. (Hernandez et al., 2020).

4. The following recommendations for Improving Educational Programs are given:

- Provide students with theoretical knowledge and skills: The introduction of inclusion in the university's educational programs will help students better understand this topic, as well as gain practical skills.

- Prepare teachers to teach inclusion: It is necessary to conduct trainings and seminars for teachers in order to transfer high-quality information and communication skills.

- Creating a comfortable atmosphere: The atmosphere is very important in the training of future specialists, it will help them better understand what potential patients need to feel safe.

Results.

A survey was conducted among first-year students using Google Forms. A total of 220 students participated, with an average age of 21 years. Analyzing the data, we found that 83% of respondents are familiar with the concept of inclusive culture. Among the students, 32% received specialized education or training on inclusive culture as part of their curriculum, 33% received during their studies, and 35% did not receive any. According to the survey, 73% of students believe that it is important or very important to consider an inclusive approach in dental practice. Furthermore, it was discovered that 52% of respondents have experience interacting with patients with special needs. Among them, 33% are confident in their ability to work with patients from various cultural and social groups, 29% are moderately confident, 22% are very confident, and 16% are not very confident or not confident at all. The survey identified the main barriers to implementing an inclusive approach in dentistry. There are lack of experience — 34%, lack of knowledge — 24%, stereotypes and biases — 14%, and lack of resources — 13%. Students consider that professional aspects of inclusive culture that a dentist should possess include: communication skills — 20%, empathy and tolerance — 15%,

a high level of knowledge in inclusive culture — 14%, technological literacy — 12%, the ability to assess and analyze — 11%, teamwork skills — 11%, knowledge of legislation — 10%, and creativity — 8%.

Conclusion

Inclusive competence is of great importance for creating a comfortable dental service. Special dental training is necessary to work with people. The introduction of inclusive training in the training of specialists will not only increase the professionalism of work in this field, but also improve the quality of care for patients with disabilities.

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Ахмадиева Р.Р., Валишина А.В.

РОЛЬ ВИТАМИНА Д В ОРГАНИЗМЕ ЧЕЛОВЕКА

Научный руководитель – ст. преподаватель Миннигалиева А.А.

Башкирский государственный медицинский университет, г. Уфа

В последние годы наше понимание влияния витамина D на здоровье человека значительно расширилось. Это связано, прежде всего, с выявлением рецепторов к витамину D и ферментов, которые его метаболизируют, во множестве клеток и тканей организма, включая иммунную систему. Иммунные клетки могут самостоятельно активировать витамин D, что позволяет им регулировать как врожденный, так и приобретенный иммунный ответ.

Ключевые слова: витамин D, иммунная система, ультрафиолетовое излучение группы В, пищевые добавки.

Akhmadieva R., Valishina A.

THE ROLE OF VITAMIN D IN THE HUMAN BODY

Scientific Advisor - Senior Teacher Minnigaleeva A.A.

Bashkir State Medical University, Ufa

In recent years, our understanding of the effects of vitamin D on human health has expanded significantly. This is primarily due to the identification of vitamin D receptors and the enzymes that metabolize it in many cells and tissues of the body, including the immune system. Immune cells can self-activate vitamin D, which allows them to regulate both the innate and acquired immune responses.

Keywords: vitamin D, immune system, B-band UVB, dietary supplements.

Deficiency of vitamins, minerals is observed everywhere. The reason is mainly due to an incorrect diet. There are elements that are difficult to get from food in sufficient quantities. To a large number of failures in the body can lead to a lack of biologically active substances. Therefore, it is important to supplement your diet with dietary supplements. This paper will focus on the importance of vitamin D in particular.

Dietary supplements are products that are designed to replenish your daily intake of nutrients including vitamins, minerals, enzymes and amino acids [3]. They are available in powders, tablets and capsules. It is important to remember that dietary supplements cannot replace proper nutrition, but they can make up for nutrient deficiencies. It is like a good addition to a balanced diet.

In the summer of 2024, the State Duma introduced a bill to regulate the treatment of dietary supplements [1]. In the summer of 2024, the State Duma introduced a bill to regulate the treatment of dietary supplements. According to Rosstat, the output of supplements increased by 20% in 2024. The leaders are vitamin D and omega-3 [3].

Vitamin D is an essential nutrient that supports bone, muscle and immune system health. But do you need to take vitamin D supplements daily? People who live in colder regions or don't spend enough time outdoors are often deficient in this important nutrient. Vitamin D is a fat-soluble vitamin found naturally in some foods and a hormone produced by the skin in response to exposure to sunlight or ultraviolet light. Vitamin D promotes calcium absorption in the gut and helps regulate the

concentration of calcium and phosphorus in the blood. This, in turn, promotes the formation and maintenance of healthy and strong bones and helps regulate skeletal and muscular function.

Symptoms of vitamin D deficiency are as follows: decreased physical endurance, general weakness even with sufficient sleep, muscle weakness, especially in the neck, shoulder and pelvic girdle, hip, scapular region, joint pain, poor balance, hair loss, frequent colds.

80% of vitamin D is formed in the epidermis of exposed skin by UVB light. Only 20% comes from food. B-band UVBs account for 5% of the total spectrum. They do not penetrate through windows and depend on latitude and clarity, clouds scatter them. They are most active from 10:00 to 16:00. According to Rospotrebnadzor sources for 2023, UV-B is insignificant in the Republic of Bashkortostan. Therefore, in our region it is necessary to get vitamin D when consumed in the form of a supplement. Ultraviolet B rays (UV-B) penetrate the skin and interact with a special substance - 7-dehydrocholesterol.

Various preparations of the nutrient in the form of D2 (ergocalciferol), which is synthesised by sun exposure in plants and fungi, or D3, which is produced in humans and animals, can help to supplement vitamin D deficiency. Vitamin D3 is believed to be better absorbed in supplement form than D2.

A social survey was carried on a social network and there are following results:

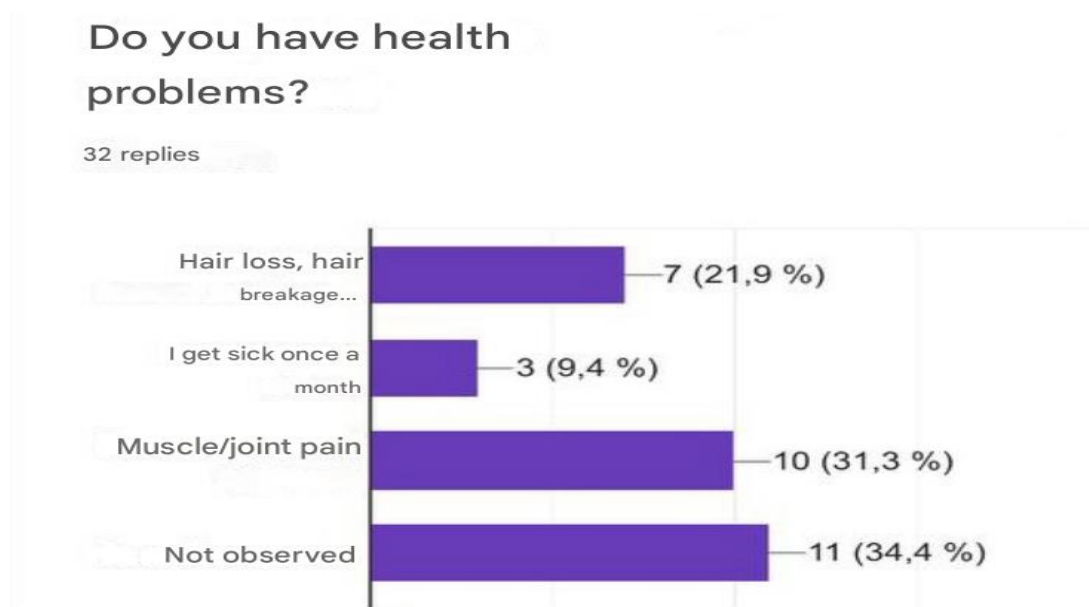


Figure 1. Health problems survey

Out of 32 respondents, 34.4% have no health complaints, 31.3% feel pain in muscles/joints, 21.9% have a problem with hair loss and hair breakage, and 9.4% are sick once a month.

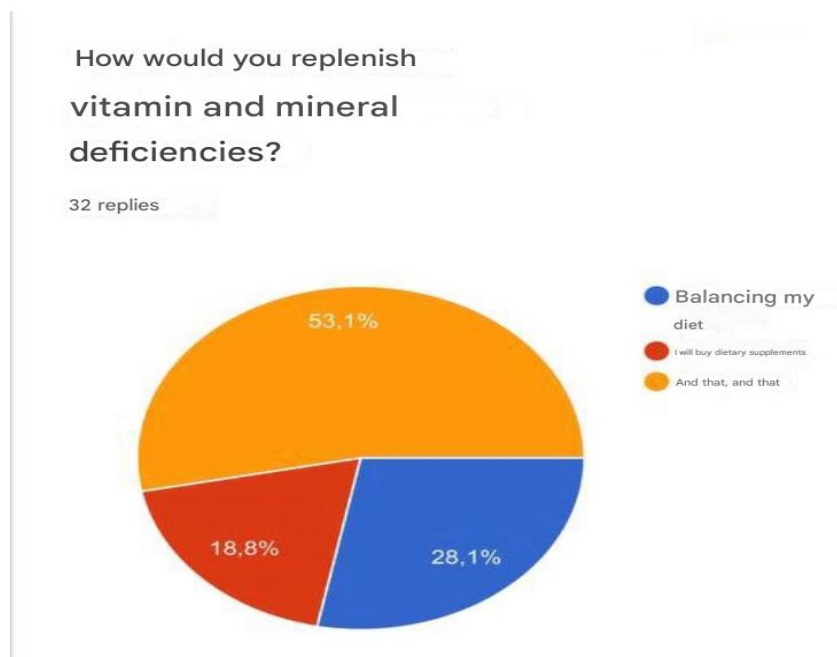


Figure 2. Survey about ways of vitamin and minerals deficiencies supply

Of the 32 respondents, to make up for vitamin and mineral deficiencies, 53.1% chose to balance their diet and buy dietary supplements, 28.1% chose to balance their diet, and 18.8% chose to buy dietary supplements.

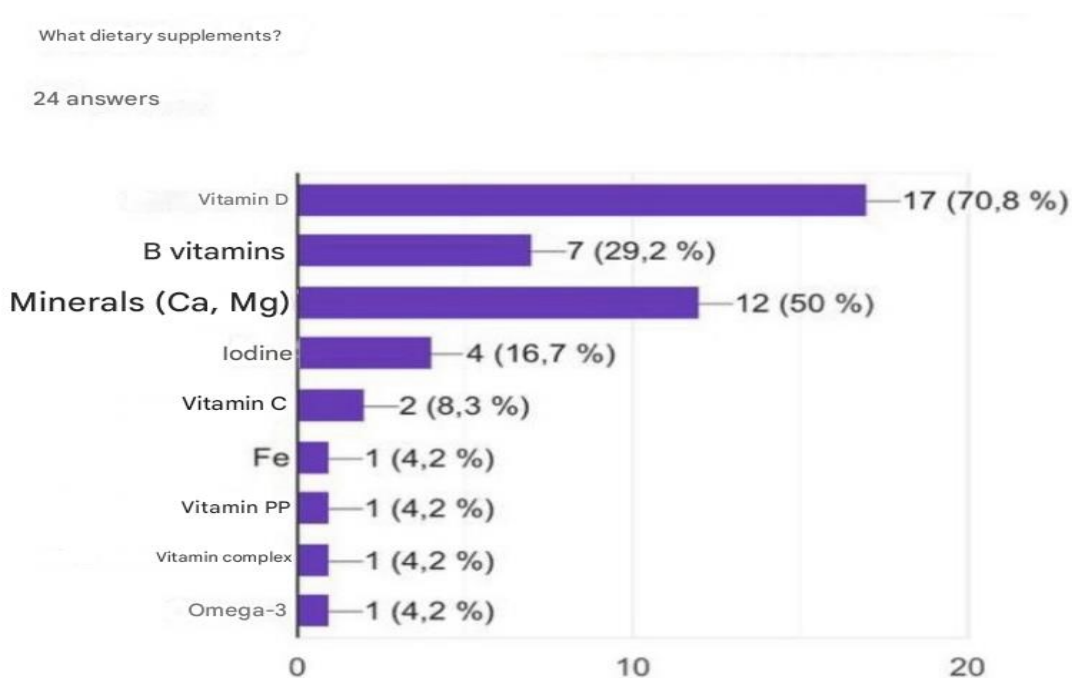


Figure 3. Dietary supplements survey

24 out of 32 people who have health complaints choose vitamin D as a supplement 70.8%, minerals (Ca,Mg) - 50%, B vitamins - 29.2%, iodine - 16.7%, vitamin C - 8.3%, Fe, Vitamin PP, complex vitamins, omega -3 4.2%

Thus, we have found that nutrient deficiencies are a common enough situation that can affect the failure of a very large number of biochemical processes of all body systems.

A balanced diet makes up for most deficiencies. It contains the most natural ratio of nutrients. However, there are conditions under which nutrients are difficult to obtain. In such a case, the deficiency may manifest itself by significant disruptions in the body, and the manifestations may not be visible or another may be mistaken for the original source.

Vitamin D3 plays a special role for the body. By its example, it is clear how many functions nutrients can fulfil and in what complex ways. They are closely interrelated with each other. Deficiency of some can affect the amount of others.

To make up for the deficiency of D3 should spend more time in the sun, include in the diet fatty fish, but in our climatic and economic conditions it is difficult. Therefore, there is a need for additional use of D3 supplements on the advice of a doctor. Properly selected supplements can help the body to function effectively.

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Баймурзина Л.В.

НОСИМЫЕ УСТРОЙСТВА ДЛЯ МОНИТОРИНГА ЗДОРОВЬЯ

Научный руководитель – ст. преподаватель Кинзягулова Л.Р.

Башкирский государственный медицинский университет, г. Уфа

В статье рассматривается применение носимых устройств для мониторинга здоровья. Данные устройства помогают отслеживать состояние пациента в течение длительного времени, при этом не доставляя неудобств больному. Данные устройства являются большим прогрессом в области медицины.

Ключевые слова: медицина, здоровье, портативные устройства.

Baymurzina L.V.

PORTABLE DEVICES FOR HEALTH MONITORING

Scientific Advisor - Senior Teacher Kinzyagulova L.R.

Bashkir State Medical University, Ufa

The article discusses the use of portable healthcare devices for health monitoring. These devices help to monitor the patient's condition for a long time without causing any inconvenience to a patient. These devices represent a major advance in the field of medicine.

Keywords: the medicine, health, portable devices.

Portable healthcare devices and mobile healthcare tools designed for personal use or by healthcare professionals. These compact, convenient devices allow real-time monitoring and management of various health parameters outside traditional clinical settings [1]. The concept has advanced essentially over a long time, advancing from essential wellness trackers that numbered steps to modern gadgets competent of progressed biometric observing [3]. Portable healthcare monitoring devices are based on advanced sensors that record exact physiological state information [2]. The main sensors include accelerometers and spinners, which monitor degree of movement allowing action detecting. For cardiovascular checking, photo plethysmography (PPG) sensors and electrocardiogram (ECG) anodes distinguish heart rate and cadence with high precision are represented [2]. The information collected by these sensors is precisely processed using embedded computing designed for analysis and translation signals into health-relevant sensations. These calculations utilize design acknowledgment, flag sifting, and machine learning approaches to improve exactness and decrease commotion, empowering dependable measurements such as heart rate changeability and rest arrange classification [1]. Efficient control administration guarantees drawn out gadget utilize without visit charging. Battery optimization includes energy-efficient sensor modules, power-saving modes, and quick charging innovations [3]. Modern devices may be used from a few days to over a week on a single charge, adjusting execution with client comfort [5].

Portable healthcare devices provide a wide range of imperative measurements basic for understanding general wellbeing and wellness [4]. Heart rate observing is foundational, counting resting rate and heart rate changeability (HRV), which can demonstrate autonomic anxious

framework adjust and stretch levels [2]. Advanced devices also give ECG capabilities, empowering discovery of arrhythmias by recording single-lead heart rhythm information. Measuring parameters such as steps taken, separate secured, and calories burned is the main use of a movement recording. These measurements maintain wellness and promote a dynamic way of life [1,3]. In expansion, rest observing is advanced 4 gadgets gauge rest term, classify rest stages (light, profound, REM), and assess rest quality, making a difference clients optimize recuperation and rest. Oxygen immersion (SpO₂) sensors degree blood oxygen levels which are crucial for evaluating respiratory and cardiac wellbeing, especially for people with respiratory conditions. Skin temperature sensors track inconspicuous varieties in body temperature, which may show diseases or other systemic changes [6]. In total, the following measurements provide a comprehensive picture of the person's well-being, allowing them to take prompt measures and make reasonable lifestyle agreements. Further quiet checking could be a critical utilize case, particularly for incessant malady administration such as diabetes and heart disorders [3]. Nonstop information collection permits for opportune intercessions and personalized treatment alterations without clinic center visits. In clinical trials, portable devices encourage large-scale, real-world information collection with high granularity and negligible persistent burden [3,5].

Mental wellbeing applications utilize stretch location calculations and temperament following determined from physiologic and behavioral signals [5]. This knowledge can bolster mental wellness, directing restorative intercessions and making strides results. The appropriate use of portable health devices offers significant benefits for clients and healthcare experts. One of the essential preferences is early location of wellbeing peculiarities through nonstop checking, empowering proactive healthcare administration and possibly avoiding intense occasions. This real-time input enables people to form educated way of life changes [4].

Devices provide personalized experiences determined from person information patterns, encouraging custom-made proposals for slim down, work out, and stretch administration [4]. This customization upgrades client inspiration and engagement, cultivating adherence to more beneficial behaviors and treatment plans [5]. Healthcare suppliers advantage from comprehensive longitudinal datasets which progress observing precision and treatment results. Portable healthcare devices can decrease clinic readmissions by alarming suppliers to antagonistic changes ahead of clinical weakening, subsequently bringing down healthcare costs. The availability of further checking also reduces strain on restorative offices, moving forward asset assignment.

Portable health monitoring devices face a number of challenges that need to be addressed for widespread clinical use [1,4]. Information protection and security remain top priorities, as these devices handle extremely sensitive health data. Compliance with requirements such as HIPAA

requires strong encryption, secure data transfer, and strict compliance with patient consent rules. Accuracy and consistent quality are fundamental; as incorrect information can lead to misdiagnosis or incorrect treatment [5].

Effective portable health monitoring devices are convenient and ergonomic. They are made of lightweight, hypoallergenic materials and have flexible straps for a secure and comfortable fit [5]. Developers pay attention to battery life and simplify interfaces for clear presentation of important data. Through integration with AI and machine learning, such devices offer personalized recommendations and predictive analytics [1]. Innovative clothing with sensors allows you to continuously monitor your health status, improving the quality of service and access to information.

Portable health monitoring devices are changing the approach to treatment by providing personalized information for proactive care [1,3]. They use advanced sensors, artificial intelligence, and networks to transmit health-enhancing data. The main issues as information security, accuracy, compliance with regulations, and integration into the healthcare system need to be addressed [3]. This requires engineers, healthcare providers, and supervisors. The development of technologies such as intelligent materials and non-invasive diagnostic methods is making devices more reliable [5]. In the future, portable devices will be able to reduce costs, develop personalized medicines, and revolutionize healthcare. They will expand surveillance capabilities, improve care, and enable early detection of diseases. Partners must implement these innovations to shape a future where well-being is constantly monitored. Hence, the presentation of portable devices for wellbeing observing could be a major development within the field of pharmaceutical. This will permit specialists to screen patients' state more attentively wherever they are. They can also more accurately choose treatment strategies based on the information they receive.

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Бащенко С. Э.

РЕАЛИЗАЦИЯ КОММУНИКАТИВНЫХ ТЕХНОЛОГИЙ ПРИ ИЗУЧЕНИИ ИНОСТРАННОГО ЯЗЫКА В ВУЗАХ

Научный руководитель – к.ф.н, доцент Шилова Е.С.

*Ростовский юридический институт Министерства внутренних дел
Российской Федерации, г. Ростов-на-Дону*

В статье рассматривается реализация современных коммуникативных технологий при изучении иностранного языка в высшем учебном заведении, даны ключевые определения темы, затрагивается вопрос важности коммуникативных технологий, на обозрение выставлены виды коммуникативных технологий, проблема мотивации при изучении иностранных языков и способы их преодоления, рассмотрено применение коммуникативных технологий и выставлен ряд предложений по совершенствованию данного вопроса

Ключевые слова: коммуникативные технологии, иностранный язык, вуз, мотивация, изучение

Batshenko S.E.

IMPLEMENTATION OF COMMUNICATION TECHNOLOGIES IN LEARNING A FOREIGN LANGUAGE AT UNIVERSITIES

Scientific Advisor – Ph.D. in Philology, Associate Professor Shilova E.S.

Rostov Law Institute of the Ministry of Internal Affairs of Russia, Rostov-on-Don

The article examines the implementation of modern communication technologies in learning a foreign language in higher education, provides key definitions of the topic, addresses the importance of communication technologies, discusses the types of communication technologies, the problem of motivation in learning foreign languages and ways to overcome them, examines the use of communication technologies and makes a number of proposals to improve this issue.

Keywords: communication technologies, foreign language, university, motivation, learning

В настоящее время коммуникация важнейший процесс для системы образования в вузах, благодаря данному явлению, процесс манипуляциями знаниями облегчен, что крайне важно для нашей страны. Коммуникация подразумевает под собой сотрудничество между людьми не только своего государства, а в целом отношения людей в любой части планеты. Перейдем же, к рассмотрению основных понятий.

Коммуникация – для системы образования представляет выработанную стратегию, подразумевающая под собой процесс создания и поддержания имиджа вузов, привлечения внимания СМИ, к сфере образования. Кроме того, понятие коммуникация, рассматривается в формате осознанного или неосознанного общения человека с самим с собой, что является почвой для понимания окружающего мира и дальнейшего саморазвития.

Коммуникативные технологии – технологии, способствующие к стимуляции образовательного процесса, выраженных в первую очередь, системой действий, позволяющих манипулировать социальными процессами, для повышения качества коммуникации [2].

Рассмотрев основные понятия, стоит рассмотреть важность коммуникативных технологий для изучения иностранного языка в высших учебных заведениях;

Коммуникативные технологии в настоящее время являются неотъемлемой частью изучения иностранного языка, ведь благодаря им, студенты развивают навыки общения, понимание использования грамматических особенностей языка, произношение, а также способность свободно писать на иностранном языке. Кроме того, коммуникативные технологии открывают возможность использования –видео, -аудио ресурсам и онлайн-учебникам, таким образом расширяя свой кругозор, также это дает возможность участвовать в онлайн-дискуссиях, видеоконференциях, играх и других интерактивных занятиях, с которыми усвоение материала упрощается [1].

Рассмотрев важность коммуникативных технологий, перейдем к видам коммуникативных технологий для изучения иностранного языка:

- 1) Видеоуроки и аудиозаписи. Такой вид коммуникативных технологий помогает воспринимать информацию на слух и развивать навык слушания, а также способствует правильному произношению
- 2) Интерактивные онлайн-курсы. Данный вид позволяет изучать иностранный язык в удобное время с максимальным уровнем концентрации
- 3) Чаты и форумы. Такой вид развивает навыки практики письменной речи и способствует расширению словарного запаса.
- 4) Мультимедийные презентации. Этот вид, помогает студентам визуализировать информацию и применять ее на практике
- 5) Симуляторы разговоров. Такой вид, создает различные условия для практики разговорного языка и помогает улучшить навыки общения.

Рассмотрев виды коммуникативных технологий, крайне необходимо не забывать про фактор снижения мотивации: Отсутствие осознания использования иностранного языка. Если человек не видит, как он будет использовать иностранный язык, то высок шанс потери мотивации в лице обучающегося [3].

- 1) Отсутствие поддержки окружающих, тоже можно считать фактором способный снизить мотивацию у обучающихся. Человеку важно, чтобы была поддержка в его начинаниях.
- 2) Сложность изучения языка. Трудности в лице непонимания особенностей языка, может отбить желание изучения иностранного языка
- 3) Монотонность передаваемой информации. При однообразной, нудной подачи материала обучающимся, мотивация, однозначно, снизиться.
- 4) Отсутствие возможности применения полученных навыков на практике. Человеку требуется реальная практика по применению своих знаний, если такой возможности нет, мотивация, гарантированно упадёт [4].

Хочется отметить, что хоть и имеются определённые причины, способные снизить уровень вовлеченности в изучение иностранного языка, не стоит забывать про причины, способствующие формированию положительной мотивации к изучению иностранного языка. Такими факторам соответствует:

- 1) Заинтересованность обучающего. Если обучающийся рассмотрит, что изучение иностранного языка приносит пользу, мотивация будет расти как на «дрожжах»
- 2) Обучающийся будет более мотивирован, если у него имеется вера в свои силы, т. е. способен оценить свои способности
- 3) Поддержка в начинаниях и первых неудачах, важно направить обучающего в нужное русло и не дать опустить руки
- 4) Предоставляемый материал для изучения. Фокусировка направлена на методики и пособия, которые не заставят обучающего разочароваться, также важно, чтобы учебный материал, мог пригодиться на практике
- 5) Самодисциплина. Помимо преподавателя, сам обучающий должен регулировать процесс своего обучения, это способствует формированию мотивации к дальнейшему изучению иностранного языка

Рассмотрев причины, способствующие формированию положительной мотивации к изучению иностранного языка, рассмотрим применение коммуникативных технологий при изучении иностранных языков в вузах.

Применение коммуникативных технологий в вузах, это большой комплекс мероприятий, способствующий благоприятному изучению иностранного языка, это обусловлено тем, что использование современных средств обучения, таких как онлайн-курсы, интерактивные учебники, мобильные приложения, позволяют учиться в увлекательном и интерактивном формате, выстраивающие благоприятное восприятие информации, выраженное как в общении с носителями языка, так и в получении практическом ключе. Кроме того, такой форм, более удобен в организации учебного процесса, ведь благодаря онлайн-курсам, студенты могут заниматься в удобное для себя время, без ущерба для себя и переживаний о пропущенном занятии, такое применение коммуникативных технологий делает учебный процесс гибким и доступным.

Рассмотрев применение коммуникативных технологий при изучении иностранных языков в вузах, необходимо провести комплекс мероприятий, которые будут способствовать совершенствованию и продвижению коммуникативных технологий в больших масштабах. Для этого необходимо:

- 1) Проведение мастер классов по эффективным методикам изучения иностранного языка, также по использованию применения современных технологий, таким образом демонстрируя простоту данного метода
- 2) Внедрение коммуникативных технологий в учебные процессы для упрощения процессов обучения студентов
- 3) Создание сетей между вузами разных государств, для беспрепятственного общения и совершенствования языковых навыков
- 4) Поддержка в области исследования коммуникативных технологий через гранты и различные конкурсы, для привлечения внимания к данному направлению

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УДК 614.2

Билалова А.Ю.; Шамсутдинова И.И.; Аманбаева И.Д.

ЯЗЫКИ В ПРОФЕССИОНАЛЬНОЙ МЕДИЦИНСКОЙ ДЕЯТЕЛЬНОСТИ

Научный руководитель – ст. преподаватель Кинзягулова Л.Р.

Башкирский государственный медицинский университет, г. Уфа

В данной статье рассмотрены преимущества изучения иностранных языков в медицинской деятельности, влияние знания иностранного языка на профессиональную деятельность специалистов.

Ключевые слова: иностранный язык, изучение, медицина, специалист.

Bilalova A. Yu.; Shamsutdinova I. I.; Amanbayeva I. D.

LANGUAGES IN PROFESSIONAL MEDICAL PRACTICE

Scientific Advisor - Senior Teacher Kinzyagulova L.R.

Bashkir State Medical University, Ufa

This article discusses the advantages of learning foreign languages in medical practice, the impact of knowledge of a foreign language on the professional activities of specialists.

Keywords: foreign language, learning, medicine, specialist.

Currently, there is an opinion that proficiency in various foreign languages plays a key role in building diverse communications in society, which affect the development process and the existence of the person himself [1]. In the 21st century, there is a process of developing various technologies that play a key role in interethnic integration. This leads to the fact that we can use technological aspects to obtain the necessary information, to communicate, to exchange interests, and knowledge of a foreign language allows us to receive information and perceive it in a more accessible or voluminous form. This approach is also welcome in medicine [1].

Medicine is a large-scale discipline that is discussed at world conferences, forums, and consultations in a foreign language, where doctors share their experiences and talk about the latest medical achievements [3].

The value of knowledge of foreign languages in medical practice is becoming more popular and necessary. Currently, learning a foreign language is a mandatory part of the educational process in the training of specialists at medical universities.

Medical professionals are increasingly interacting with patients for whom the language of their country of residence is not their native language. Without understanding each other's language, it is difficult to collect an anamnesis of illness and life, to explain the diagnosis, the treatment process and the importance of following the doctor's recommendations. Knowledge of a foreign language becomes an important element for the provision or provision of high-quality medical care.

Different cultures have different ideas about health, illness, and treatment. Knowledge of the language often allows the doctor to take into account different cultural characteristics when interacting with the patient. This allows you to form a more trusting relationship.

In emergency situations, when a patient who speaks a foreign language is in critical condition, the ability to quickly and accurately understand his condition can save his life.

Medicine is a discipline that is constantly evolving, and most of the new research, scientific articles, and discoveries are published in a foreign language. Knowledge of foreign languages gives medical professionals access to advanced treatment methods, innovative pharmaceutical developments and the global experience of colleagues.

Most of the programs and various professional development courses and internships are conducted abroad or in foreign languages. Knowledge of the language allows you to gain access to the best educational resources, significantly expand your professional horizons and be able to learn the latest achievements of medical science.

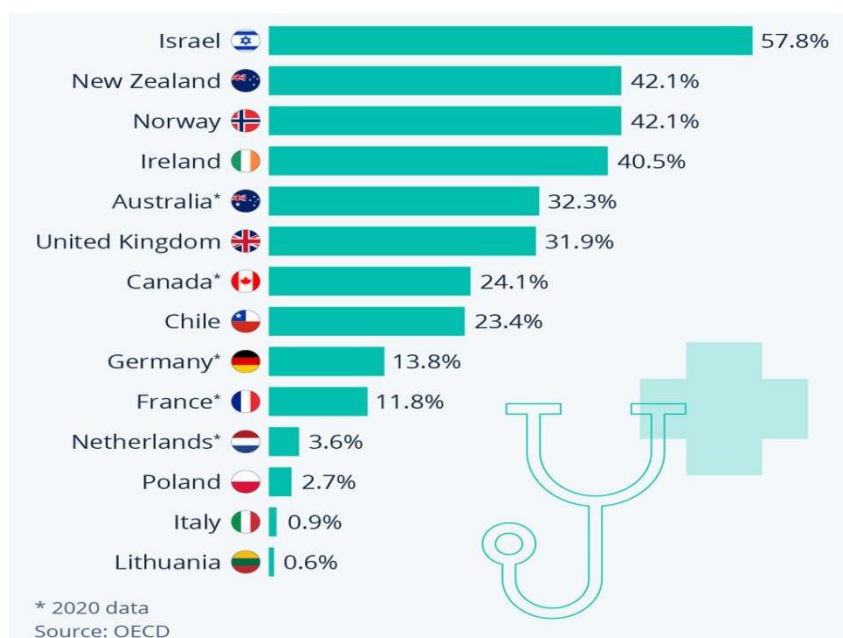


Figure 1. The Countries With The Most Foreign-Trained Doctors [4].

The cooperation of Russian doctors and scientists with foreign colleagues requires close communication in a foreign language because it plays a key role in solving global problems such as pandemics, the fight against infectious diseases and the development of new drugs and technologies [2]. Language skills enable healthcare professionals to participate in international research projects, clinical trials, and healthcare programs.

The world of science and medicine does not stand still. Today, medical specialists from various countries are trying to communicate, publish their work and share their experiences [4]. International conferences and seminars allow us to share experiences with colleagues from other countries and learn about new achievements.

Knowledge of foreign languages expands career opportunities for medical professionals, allowing them to find work anywhere in the world.

In conclusion, it can be concluded that knowledge of a foreign language is a professional standard in the era of global medicine. Without this standard, the doctor will be limited in gaining access to knowledge; may risk the lives of patients; loses competitiveness. As the WHO notes: "The doctor of the future is the one who speaks the language of science, the patient and the world" (2023).

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УДК 616.1

Гараева Л.А., Шарифуллина И.И.

ВОЗРАСТНЫЕ ОСОБЕННОСТИ СТРОЕНИЯ СТЕНКИ СЕРДЦА

Научный руководитель – ст. преподаватель Миннигалеева А.А.

Башкирский государственный медицинский университет, г. Уфа

В работе рассматриваются возрастные изменения в тканях стенок сердца.

Рассматриваются современное состояние, методы их исследования и факторы влияния.

Ключевые слова: старение, сердце, миокард, функции сердца, возрастное изменение.

Garaeva L.A., Sharifullina I.I.

AGE-RELATED FEATURES OF THE CHANGE OF THE HEART WALL TISSUES

Scientific Advisor – Senior Lecturer Minnigaleeva A.A.

Bashkir State Medical University, Ufa

The work examines age-related changes in the tissues of the heart walls. The current state, methods of their research, and factors of influence are considered.

Keywords: aging, heart, myocardium, functions of the heart, age change.

The study of age-related changes in the walls of the heart is determined by a number of factors:

The natural "aging" of the population in most countries of the world, which is the beginning of the growth of cardiovascular diseases. These diseases are the main cause of death in the elderly.

The need to identify the age norm of the structural parameters of the heart for people of different age groups is important for assessing the adaptive capabilities of the cardiovascular system.

The possibility of improving measures for the primary prevention of cardiovascular diseases in order to prolong working age and reduce morbidity among the elderly.

The likelihood of preventing pathological changes in the heart in the early stages of disease development.

The purpose of the work: to study the age-related features of changes in the tissues of the heart walls. To achieve this goal, we have set ourselves several tasks. First, it is necessary to analyze changes in the tissues of the heart in people of different ages, which will allow us to identify changes characteristic of each age period. Secondly, we plan to identify the factors influencing structural changes in the heart tissue, which may help in understanding the mechanisms of heart aging [7]. Thirdly, we intend to compare the results of our study with data from previous studies in order to confirm or refute existing hypotheses about age-related changes in heart tissue.

The myocardium, valve preparations, and collagen fibers of the heart were used as objects of research.

The types of collagen, their location, as well as the density of collagen tissue and the diameter of collagen fibrils were studied using histochemistry and electron microscopy [3]. The walls of the stomach were examined by polarization microscopy.

Microscopic examination of the tissue structure has shown that a number of characteristic changes can be observed in individuals of different age groups. For example, the amount of fibrous

tissue increases with age, which may indicate a remodeling process that occurs in response to various factors such as hypertension or ischemia. An increase in fibrosis can lead to a decrease in the elasticity of the heart muscle and a deterioration in its contractility, which in turn can contribute to the development of heart failure. It is also important to note that with age there is a change in the number of cardiomyocytes. In the elderly, both loss of cardiomyocytes and their hypertrophy can occur, which also affects the functional characteristics of the heart. Microscopic examination makes it possible to assess the extent of these changes, as well as to identify the presence of atypical cells that may indicate pathological processes such as cardiomyopathy [5].

An important aspect of microscopic examination is the assessment of the state of the microcirculatory bed. With age, changes in the structure of capillaries, their lumen and density may occur, which can negatively affect the blood supply to the heart tissue. Examination of capillaries under a microscope reveals signs of ischemia and microcirculation disorders, which may be associated with an increased risk of cardiovascular diseases.

In addition, microscopy allows you to study inflammatory processes in the heart tissue. With age, chronic inflammation can occur, which manifests itself in the form of tissue infiltration by lymphocytes and macrophages. These changes may be related to various factors, including systemic inflammatory diseases and age-related changes in the immune system. Identifying inflammatory cells and changing their distribution in the heart tissue can help in understanding the pathogenesis of cardiovascular diseases in the elderly [3].

There were no significant differences in the arrangement of collagen fibers in the hearts of the bodies of older people compared to the hearts of young people. Measurements of collagen content in myocardial tissue show that both perimysial and endomysial endomysium. The results showed the presence of two types of collagen fibers in the ventricular walls — thin, slightly birefringent, greenish fibers (type III collagen) and thick, yellow or red, strongly birefringent fibers (type I collagen) [1]. The number and thickness of fibers increase in old age. The histochemical results obtained coincided with the results of electron microscopic studies, which showed an increase in the number of large-diameter collagen fibrils in old hearts [1].

At an early age, the heart tissue is characterized by high plasticity and the ability to regenerate. However, over time, starting in youth and continuing into adulthood and old age, there are changes associated with a decrease in cellular activity, impaired microcirculation and an increase in fibrous tissue. These processes can be caused by both age-related and exogenous factors, such as lifestyle, the presence of chronic diseases and genetic predisposition.

An important aspect is that changes in the morphology of the heart wall tissues can vary depending on gender, lifestyle, and the presence of concomitant diseases. For example, in women,

changes may occur more slowly than in men, which is due to the protective effect of estrogens. However, after menopause, this effect disappears, and the risk of cardiovascular diseases in women increases.

Equally important is the influence of genetic factors on the condition of the heart tissue. Hereditary predisposition to cardiovascular diseases can determine the individual characteristics of the morphology of the heart and its response to various risk factors.

With age, there is a thickening of the walls of the heart, which is associated with an increase in the volume of the heart muscle and changes in its cellular composition [9]. These changes can lead to a decrease in the elasticity of the heart tissue, which, in turn, makes it difficult for the heart to fill with blood. Elderly people often have diastolic dysfunction, when the heart cannot effectively relax between contractions, which leads to a deterioration in its pumping function.

An important aspect to consider is the effect of lifestyle on heart health. Regular physical activity helps to improve blood circulation, strengthen the heart muscle and reduce the level of inflammatory markers in the body. Research shows that an active lifestyle can significantly slow down age-related changes in the cardiovascular system and reduce the risk of developing cardiovascular diseases [6].

In the course of our scientific project on the age—related features of changes in the tissues of the heart walls, the main goal was achieved - to study changes in the heart tissue depending on age. This study was an important step in understanding the aging processes of the cardiovascular system and their impact on human health [4]. In conclusion, the results of our study open up new perspectives for further scientific research in the field of cardiovascular health. Understanding age-related changes in heart tissue can become the basis for studying other aspects, such as the influence of genetic factors, lifestyle, and the environment on heart health. This may lead to new discoveries and improved methods of treatment and prevention of cardiovascular diseases.

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Гуляева Д.А.

СТАТУС ТРАДИЦИОННОЙ КИТАЙСКОЙ МЕДИЦИНЫ В ОБЩЕМИРОВОЙ СИСТЕМЕ ЗДРАВООХРАНЕНИЯ

Научный руководитель – ст. преподаватель Простотина О.В.

Белорусский государственный медицинский университет, г. Минск

Интерес к традиционной китайской медицине неуклонно растет, поскольку многие специалисты считают ее перспективной в отношении диагностики и терапии различных заболеваний, а также реабилитации. Однако на сегодняшний день ее статус в общемировой системе здравоохранения все еще неоднозначен. Будущее современной медицины заключается в синтетической теории познания человеческого организма – объединение классической европейской практики и традиционной китайской медицины.

Ключевые слова: традиционная китайская медицина, общемировая практика, диагностика, заболевания, терапия.

Gulyaeva D.A.

The traditional Chinese medicine status in the global healthcare system

Scientific Advisor – Senior Lecturer Prostotina O.V.

Belarusian State Medical University, Minsk

The interest in traditional Chinese medicine is steadily growing, as many experts consider it promising in the various diseases diagnosis and treatment, as well as rehabilitation. However, today its status in the global healthcare system is still ambiguous. The future modern medicine lies in the human body cognition synthetic theory, combining classical European practice and traditional Chinese medicine.

Keywords: traditional Chinese medicine, global practice, diagnostics, diseases, therapy.

Traditional Chinese medicine is the Chinese traditional medicine centuries-old experience result, which includes the various diseases diagnosis and treatment detailed methods, theoretical foundations, as well as inextricably linked with ancient Chinese philosophy and the thinking peculiarities, including approach in understanding humans [2]. The main difference between traditional Chinese medicine is its focus on the world cognition sensory mechanisms in matters of diagnosis and subsequent treatment.

This research purpose is to study the main traditional Chinese medicine aspects within its full-fledged use possibility framework in the global healthcare system.

Due to the fact that today humanity is looking for safer and more effective ways to treat various diseases, the traditional Chinese medicine popularity is reaching a new level. However, it is important to note that its status is still uncertain. Some experts are convinced that treatment traditional methods are the key to discovering the human longevity secrets. Others believe that this healing method is not suitable for combating serious diseases, since traditional medicine does not have a full-fledged scientific status. This substantiates are this study relevance.

Although the traditional medicine practice has been observed in the almost all modern civilizations development history, it is in China that traditional medicine is the national health system part: specialized hospitals and pharmacies operate, there are relevant universities and scientific

laboratories. The Chinese cognition theory, including the human body, is based on the understanding nature different principles and man fundamentally. It is Taoism that permeates the China philosophical thought and healing and largely forms the "Chinese thinking way " [1]. For modern China, traditional medicine is the national cultural heritage element, so its development is actively supported by the state.

The traditional Chinese medicine practice has the positive and negative aspects number due to its peculiarities. The main positive feature is the material and spiritual synthesis concept in which any ailment is considered holistically, within the whole organism and surrounding climate framework. This is what allows Chinese specialists to use a deductive rather than an inductive (as in European practice) diagnosis method. The traditional Chinese medicine indisputable advantage is its thinking model based on the centuries practical experience. However, when making a diagnosis, only qualitative indicators are taken into account, which can negatively affect the treatment outcome and also raises the objectivity question and verification possibility. All this also indicates the Western and Eastern healing development ways divergence.

The global healthcare system is believed to lie in the classical European practice and traditional Chinese medicine synthesis. This way they will be able to offset each other shortcomings and become the basis of the human body cognition new synthetic theory.

Today, traditional Chinese medicine is widely used in many uncomplicated diseases diagnosis and treatment, as well as in supportive care and rehabilitation. Moreover, Western doctors are looking for cancer, AIDS and other incurable diseases effective fighting methods that modern classical medicine still cannot overcome [3].

Thus, despite the fact that the traditional Chinese medicine scientific status has not been recognized by the entire world community yet, it is gaining new horizons for its development and has great prospects in the global healthcare system practice.

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Драчук Е.Ю., Марданова Д.Р.

СИНДРОМ ХАДЧЕНСОНА-ГИЛФОРДА (ПРОГЕРИЯ)

Научный руководитель – к.ф.н., доцент Майорова О.А.

Башкирский государственный медицинский университет, г. Уфа

Обзор посвящен синдрому Хадченсона-Гилфорда (детской прогерии), его патогенезу, различным клиническим проявлениям. В результате исследования были найдены наиболее эффективные методы диагностики детской прогерии, а также методы её лечения и перспективы в изучении данного заболевания.

Ключевые слова: заболевание, дети, синдром, наследственность.

Drachuk E.Y., Mardanova D.R.

HUTCHINSON-GILFORD PROGERIA SYNDROME (PROGERIA)

Scientific Advisor – Ph.D. in Philology, Associate Professor of the Department of Foreign Languages Mayorova O.A.

Bashkir State Medical University, Ufa

The review is dedicated to Hutchinson-Gilford syndrome (pediatric progeria), its pathogenesis, and various clinical manifestations. As a result of the research, the most effective methods of diagnosing pediatric progeria were found, as well as methods of its treatment and perspectives in the study of this disease.

Keywords: disease, children, syndrome, heredity.

Aging is characterized by a continuous deterioration of physical and physiological functions, resulting in reduced functional capacity and increased vulnerability to disease and death. Various hallmarks of aging such as genomic instability, telomere depletion, epigenetic disorders, loss of proteostasis, cellular senescence, mitochondrial dysfunction, deregulated nutrient uptake, stem cell depletion and altered intercellular communication have been identified at the cellular level. Studying these mechanisms has helped to understand the aging process and develop treatments that can potentially affect aging. The signs of premature aging are most pronounced in progeria, or Hutchinson-Guilford syndrome, a rare disease in the group of laminopathies.

Etiology

During the aging process, whether natural or accelerated, changes occur at the cellular level, including specific transformations of the nucleus. One of the key elements of these changes is the nuclear membrane, composed of lamins, which provide structural integrity of the nucleus and stability of the genome [1]. Progeria is caused by a sporadic autosomal dominant mutation in the LMNA gene, which carries out the synthesis of lamin A protein, which is the backbone of the cell nucleus. It contributes to nuclei instability, leading to accelerated aging and the development of progeria [4].

Clinical picture

Patients with progeria are children, apparently healthy at birth, who show signs of progressive premature aging within 1-2 years. The first sign of the disease is dermatologic changes that are noted on the skin and always appear as the first signs of progeria. In children, discolored and tightened areas

that partially restrict movement, pitting pigmentation are distinguished, and the skin on some extremities is defined as soft and convex. During life, hair loss occurs from the first few years; after that, only soft, frizzy, sparse and immature hair remains on the scalp, eyelashes are virtually absent, as are brow hairs [6].

Lack of weight gain in children with progeria is observed from a few months of age to about two years of age. All this leads to a serious delay in physical development, as evidenced by the development of generalized lipoatrophy with obvious emaciation of the limbs, perioral cyanosis, and a pronounced subcutaneous venous network on the head, neck, and trunk. The average height of children with progeria is approximately up to 1 meter, the average weight of the fir does not exceed 15 kg. Weight deficit is more pronounced than height deficit and, since it is associated with loss of subcutaneous fat, it leads to emaciation [3].

In the course of our work, we considered the average indicators of healthy children and children with progeria, and based on the results we made a table for better clarity.

Table 1.

Comparison of average indicators of healthy children and children with progeria

Indicators	A child with progeria at 3 years old	A child without genetic and other diseases
Average height	Up to 1 m	Up to 1.05 m
Average body weight	Up to 15 kg	From 13 to 18 kg
Average increase in body weight per year	By 0.44 kg	2-3 kg is normal
Skin condition	Tight skin, discolored in some areas, noticeable point pigmentation	Normal (elastic, elastic skin, uniform pink color)
Hair condition	A rare amount of hair, eyelashes and eyebrows are practically absent	Normal
State of the cardiovascular system	Heart disorders, accelerated narrowing of vascular lumens are observed; the following cardiovascular diseases occur: angina pectoris, cardiomegaly, metabolic syndrome	No violations

Diagnosis

Hutchinson-Guilford syndrome is a rare disorder, making it difficult to diagnose in the early stages. Diagnosis is made on the basis of:

1. Clinical examinations: The physician performs a thorough physical examination of the child, paying attention to physical signs of aging such as hair loss, skin atrophy, facial disproportion, narrowed nose bridge, joint deformities, and others.

2. Genetic testing: Molecular genetic testing can be done to look for mutations in the gene responsible for childhood progeria (usually the LMNA gene) or other related genes.

3. Educational psychological and pedagogical defectology expertise to identify psychophysical disorders and to establish an individualised approach to the child [2].

Treatment methods

There is no individualised treatment for progeria. However, the discovery that progerin is permanently farnesylated opened the door to finding potential drugs using farnesyltransferase inhibitors (FTIs), which had previously been developed as potential anticancer drugs and had acceptable side effects in children. FTIs have been rapidly and successfully tested preclinically in cell culture and animal models, showing improvement in disease symptoms with FTI treatment [5].

Conclusion

Significant progress has been made in understanding this disease over the years, but much remains to be learnt. As research advances, childhood progeria continues to reveal previously unknown aspects of aging. For all its complexities, it provides a unique model for studying the novel roles of lamin A and progerin in the human cell. Increased understanding of the biology of the disease is needed to identify better therapies.

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Ершов Н.М., Хасанова А.Р.

ОМИКС-БИОМАРКЕРЫ И РАННЯЯ ДИАГНОСТИКА ЗАБОЛЕВАНИЙ

Научный руководитель - к.м.н., доцент Майорова О.А.

Башкирский государственный медицинский университет, г. Уфа

В статье представлен анализ литературы по исследованиям в диагностике рака. Рассмотрены омикс-биомаркеры, которые позволяют с высокой вероятностью диагностировать тот или иной вид рака на ранних стадиях развития, а также представлены механизмы работы биомаркеров.

Ключевые слова: омикс-биомаркеры, ранняя диагностика, онкологические заболевания, микроРНК, персонализированная медицина, протеомный анализ.

Ershov N.M., Khasanova A.R.

OMICS-BIOMARKERS AND EARLY DISEASE DIAGNOSIS

Scientific Advisor - Ph.D. in Philology, Associate Professor Mayorova O.A.

Bashkir State Medical University, Ufa

The article presents analysis of literature on research in cancer diagnosis. The omics-biomarkers that allow to diagnose cancer at early stages of development with high probability are considered, and the mechanisms of biomarkers' work are presented.

Keywords: omics-biomarkers, early diagnosis, cancer, microRNAs, personalised medicine, proteomic analysis.

Oncology is a serious threat to the Russian population, as cancer has a disabling effect. According to the data for 2023, more than 4 million people were registered in oncological clinics of the Russian Federation. Omics technologies are a promising direction of cancer diagnostics. The study of biomarkers will make it possible to make a more accurate clinical diagnosis and predict the response to treatment. The identification of mutations in genes associated with tumour disease development plays an important role in confirming clinical diagnosis. Modern technology allows genomic alterations to be analysed and helps in both diagnosis and prediction of response to treatment. This provides a personalised approach to therapy, which is particularly important for improving the overall survival of cancer patients.

Purpose of the work

To review omics biomarkers, types of cancer which can be diagnosed using these biomarkers, and the prospects of introducing biomarkers into everyday medical practice.

Material and methods

Articles from domestic and foreign literature were analysed. The method of analysis was analytical.

Results and Discussion

A biomarker is an objectively measurable indicator that reflects the state of an organism and is used to assess physiological and pathological processes, as well as the response to treatment. In molecular biology, biomarkers represent specific changes at the level of DNA, RNA, proteins or

metabolites that allow deeper analyses of cellular and organismal processes. The use of omics biomarkers in disease diagnosis, especially in the field of oncology, is currently receiving particular attention. Studies demonstrate that metabolomics, which studies metabolic profiles, can be used for early detection of neoplasms and risk assessment of their development. Meanwhile, omics technologies such as transcriptomics and proteomics provide important data on biological processes at the cellular and molecular levels. [1]

Omics biomarkers are classified according to different aspects of their use. In particular, they can be divided into groups depending on their functional purpose and source of production. For example, genomic, transcriptomic and proteomic biomarkers are identified, each of them is being distinguished by specific methods of analysis and level of biological information. In this context, the concept of a tumour “molecular passport” allows these biomarkers to be tailored to individual therapeutic needs, facilitating a personalised treatment approach for each patient.

From the point of view of clinical practice, the use of omics biomarkers represents a promising tool for both early diagnosis and monitoring the effectiveness of therapy. An important aspect of omics technology use is the identification of key biomarkers, which makes it possible not only to assess the current state of health, but also to predict the possibility of disease recurrence. [2]

Pancreatic cancer is a very aggressive disease that is usually detected in late stages due to various factors. The 5-year survival rate worldwide is only 12% [10]. That is why it is one of the most deadly cancers. There is cancer antigen 19-9 (CA19-9) which is the most significant biomarker for this disease (sensitivity 70-90%), but in earlier stages its sensitivity drops to 37.5 [3-5]. A group of scientists from Japan developed a method of pancreatic cancer diagnosis using microRNAs that were excreted together with urine (such as miR-21, miR-181b, miR-1246, miR-143, miR-132, etc.). The fact is that these microRNAs were found in organoids of pancreatic cancer cells grown in vitro and in tumour microenvironment cells. Their results showed higher sensitivity in early cancer stages (88.1%) and specificity (95.8%). This method has shown to be more effective than the detection of the 19-9 antigen. However the sensitivity of this method is affected by smoking. It decreased, while the specificity remained at the same level. This method is also convenient in that it does not require surgical procedures for diagnosis.

In addition, scientists from the USA have investigated the proteome associated with breast, prostate, ovarian and endometrial cancer, indicating that coordination of blood plasma proteins affects the probability of cancer development. In this work, they used genome-wide association studies (GWAS) found on a consortium basis [6-9]. They also conducted proteome-wide association studies (PWAS), i.e. they did not investigate the genes themselves but used their proteins as cancer markers. This is how they got 93 links between protein and cancer. They did a meta-analysis in which they

found 61 significant links between proteins and cancer. The advantage of PWAS is that we get information about the direction of protein exposure. Table 1 summarises some of the links between cancer and the amount of protein in plasma.

Table 1

Relationship between cancer and changes in plasma protein concentration

	Increase in plasma concentrations	Decrease in plasma concentrations
Breast cancer	TLR1, NTN4, HAPLN4,	SNUPN, GSTM1/3/4, A4GALT, LAYN, RSPO3
Prostate cancer	SERPINA1/3, CHMP2B, HAPLN4, HDGF, MICB, PLA2G2A	MSMB, PLG, TNFRSF6B, ARL3, EIF4B, HDGF, EGF, CTSS
Endometrial cancer	HDGF, RSPO3	-
Ovarian cancer	HDGF	-

Thus the advantages of biomarkers seem to be as follows: early detection of the pathological process, because early diagnosis and treatment increase the probability of recovery, simplicity and less invasiveness. A doctor can personalize the treatment, considering specific characteristics for a given patient, including reaction to drugs.

Conclusion

The literature review revealed the essential role of omics-biomarkers in detecting cancer at early stages, which is essential in view of the serious and irreversible consequences during the late stages of cancer. The definition of omics-biomarkers and their classification is given. The omics-biomarkers of proteomic (based on plasma protein concentration in oncology) and transcriptomic (based on microRNA) types are considered and the advantages of this type of diagnostics are discussed.

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Information about the authors of the article:

1. **Ershov Nikita Maksimovich** - 2nd year student of the Faculty of General Medicine, Bashkir State Medical University, Ufa, Lenina str. 3. e-mail: ershov_nikita123@mail.ru
2. **Khasanova Azalia Rustemovna** - 2nd year student of the Faculty of General Medicine, Bashkir State Medical University, Ufa, Lenina str. 3. e-mail: haazalia@yandex.ru

УДК 615.9

Каландаров С.Б., Сабуров Н.Г.

ДРАЖЕ ПРОТИВ КУРЕНИЯ

Научный руководитель – ст. преподаватель Нуйкина М.Р.

Башкирский государственный медицинский университет, г. Уфа

Статья посвящена созданию препарата против курения на основе нескольких натуральных компонентов, а также описанию результатов исследования по его использованию. Проведённый анализ показал положительный результат и подтвердил предположение о пользе продукта.

Ключевые слова: курение, драже, мед, базилик, корица.

Kalandarov S.B. Saburov N.G.

NATURAL ANT-SMOKING CANDY

Scientific Adviser – Senior Teacher Nuykina M.R.

Bashkir State Medical University, Ufa

The article is dedicated to the creation of a smoking cessation drug based on several natural components as well as the description of the research results on its use. The conducted analysis showed a positive result and confirmed the assumption about the benefits of the product.

Keywords: smoking, lozenge, honey, basil, cinnamon.

Smoking is one of the most significant threats to human health. Nicotine affects almost the entire body, from the respiratory organs to the brain. In accordance with the World Health Organization, 1.3 billion people have the habit of smoking and 23% of them die because of lung cancer.

Purpose of the study is to analyze the effectiveness of obtained product.

To achieve the goal we have defined the number of tasks.

1. Make an anti-smoking product.
2. To conduct product research with the involvement of test subjects.
3. To analyze the results of the study.

Research materials: basil, beeswax, cloves, honey and cinnamon.

- Basil contains phytochemical compounds that may protect against skin, lung, oral, and liver cancers as well as help reduce nicotine dependence.

- Cinnamon contains substances that help reduce smoker's cough by positively affecting the mucous membrane of the respiratory tract.

- Beeswax serves as the base of the preparation and has anti-inflammatory and regenerative properties.

- Honey exhibits powerful anti-inflammatory and antioxidant effects, collectively reducing nicotine cravings.

- Cloves contain eugenol, which helps reduce nicotine dependence and has a strong anti-inflammatory effect.

1. 400 g of beeswax.

2. 2 teaspoons of sugar.
3. 2 teaspoons of honey.
4. 3 teaspoons of ground cinnamon.
5. 2 teaspoons of cloves.

400 grams of beeswax were placed in a small container and heated over medium heat until softened. 2 teaspoons of honey were added and mixed. 3 teaspoons of ground cinnamon, 2 teaspoons of cloves, and 2 teaspoons of sugar were added. The mixture was stirred until homogeneous, poured into molds, and cooled in a refrigerator. After hardening the lozenges were ready for use.

Results and Discussion:

The study involved 250 participants: 100 students, 100 factory workers and 50 retirees. Over 21 days participants consumed the lozenges whenever they felt the urge to smoke. The research revealed that within this short period, the lozenges helped reduce cigarette consumption or even achieve complete cessation.

-38 students out of 100 taking the product had decreased cravings for smoking, 5 students quit smoking completely, 57 continued to smoke as usual.

- The factory workers who took part in the experiment showed the following result: 18 of the participants began the life without smoking, another 82 participants reported reduced craving for smoking.

- 50 retirees have not stopped smoking however 3 of them announced decreased cigarette consumption.

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УДК 740

Кодиров М.А. Шарипова Р.И.

МЕТОДЫ СНЯТИЯ СТРЕССА У СТУДЕНТОВ

Научный руководитель – ст. преподаватель Нуйкина М.Р.

Башкирский государственный медицинский университет, г. Уфа

Статья посвящена рассмотрению стресса у студентов и методам борьбы с ним. По полученным данным статистики, были выявлены часто используемые способы, которые применяют студенты-медики для профилактики стресса. На основе проведенного опроса созданы рекомендации по борьбе со стрессом.

Ключевые слова: стресс, борьба со стрессом, бессонница, живое общение.

Qodirov M.A. Sharipova R.I.

STRESS RELIEF METHODS FOR STUDENTS

Scientific Adviser – Senior Teacher Nuykina M.R.

Bashkir State Medical University, Ufa

The article is devoted to the consideration of stress among students and methods of dealing with it. In accordance with statistical data, methods for stress prevention commonly used among medical students have been identified. Based on the survey recommendations for dealing with stress have been created

Keywords: stress, coping with stress, insomnia, face-to-face communication.

Nowadays people live in the world of competition and an information flow. Everyday people feel stress [1]. The main factors leading to an unstable state can be divided into two main groups of relationships: personal and work-related. It is important to not miss the moment. If stress is excessive it may cause serious problem for health [2].

Purpose of the study is to analyse the data obtained from interviewed students about stress and make recommendations to combat it to achieve the goal we have defined the number of tasks.

1. To study the literature and internet sources.
2. Make a survey of the first- year medical students.
3. To carry out analysis of the received data and to do conclusions.

Hypothesis: Majority of the students relieve stress talking with friends.

Research methods: survey, interview

A survey was conducted among first-year students taking credit test. Information was studied to assess their stress levels. The survey included 80 participates.

Results and discussion .According to the data of survey we have calculated that the most common method of coping with stress among first-year students is communication with friends.

We also have learned the methods that students use to cope with stress. They were given several options and the chance to write down their own coping methods

We created recommendations for coping with the stress based on the survey and a study of the literature.

You can deal with overwhelming emotions by taking the following actions:

1. Sit down and relax. It's important to ask yourself about significant the problem and try to find the ways of solution.
2. Run your index finger horizontally across your lips. This technique quickly calms you down [3].
3. Tense all your muscles, clench your fists, and grind your teeth for 10 seconds. This method will help you feel relaxation coming afterward.
4. Try to use any classic relaxation methods. This could be going for a walk, taking a warm bath, drinking herbal tea, enjoying a piece of chocolate, engaging in a hobby or spending time with family.
5. Interrupt overwhelming stress or negative thoughts. You can simply clap your hands to do this.
6. Don't turn off your phone or ignore the attention of loved ones and friends. Face-to-face communication is the best remedy against stress. On the contrary, isolating yourself will only worsen the situation.

Discussion and results

We have learned different methods of coping stress. The survey showed which method is less effective and on the contrary what affects to relieve stress. Walking was chosen by 17% of students and listening to music by 13% of students. These methods are useful however they turned out to be less preferred. Loneliness was chosen by 24% of students. Chatting with friends became the most popular response, 46%. The results of survey showed the importance of interpersonal relationship in overcoming stress.

Table 1

What better helps you cope with stress?

Answer options	Percentage ratio
Communication with friends	46%
Solitude	24%
Walking	17%
Listening to music	13%

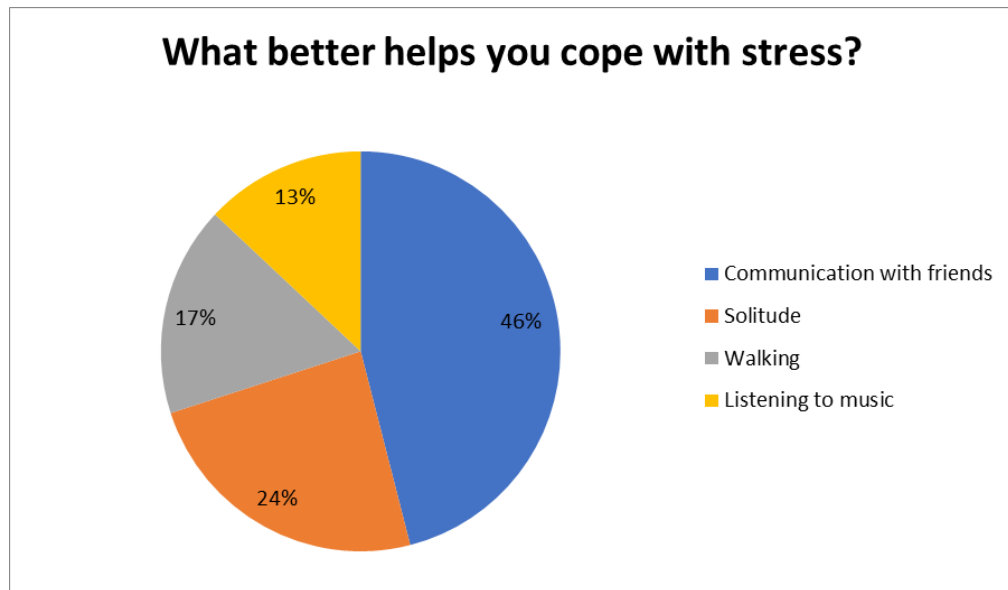


Figure 1. What better helps you cope with stress

Conclusion

After the research the hypothesis was confirmed. We came to the conclusion that 1 year students of BSMU relieves stress by talking to friends.

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Козловская М.М.

РОЛЬ ЯЗЫКОВОЙ ПОДГОТОВКИ В ПРОФЕССИОНАЛЬНОМ СТАНОВЛЕНИИ ВРАЧА

Гомельский государственный университет, г. Гомель

Статья посвящена проблеме языковой подготовки медицинских специалистов. Показана значимость лингвистических дисциплин в профессиональном становлении будущих врачей. Представлены типы основных диалоговых ситуаций и функции врача в процессе конкретной коммуникации. Обозначены качества речи квалифицированного врача.

Ключевые слова: языковая подготовка, диалоговая ситуация, качества речи, медицина.

Kazlouskaya M.M.

THE ROLE OF LANGUAGE TRAINING IN THE PROFESSIONAL DEVELOPMENT OF A DOCTOR

Gomel State Medical University, Gomel

The article is devoted to the problem of language training of medical specialists. The importance of linguistic disciplines in the professional development of future doctors is shown. The types of basic dialog situations and the functions of the doctor in the process of specific communication are presented. The quality of speech of a qualified doctor is indicated.

Keywords: language training, dialogue situation, speech quality, medicine.

Образовательная система в Республике Беларусь, как и в других странах, направлена на подготовку высококвалифицированных специалистов, которые, согласно теории современной педагогики, должны владеть навыками «4К» – критического мышления, креативности и творчества, кооперации и коммуникации [1]. Развитие данных навыков зависит от степени языковой подготовки, создающей условия для качественного усвоения значительного объема профессиональных знаний. Высокий уровень владения языком особенно важен для тех, чья работа тесно связана с постоянным межличностным взаимодействием, например, для медицинских специалистов.

Организация образовательного процесса в медицинских вузах республики предполагает изучение нескольких лингвистических дисциплин (белорусского, иностранного и латинского языков), формирующих ряд необходимых для успешной профессиональной деятельности умений и навыков. Студенты в целях своей будущей конкурентоспособности должны научиться:

- владеть разными видами речевой деятельности (говорение, аудирование, чтение, письмо);
- работать с текстом (понимать его содержание, выделять основную мысль, редактировать его и совершенствовать);
- получать и воспринимать информацию в условиях относительно быстрого устаревания части теоретического знания и распространения инновационных технологий

(анализировать, классифицировать, структурировать, запоминать, сопоставлять и представлять разными способами);

- вести диалог с учетом целей и ситуации общения (правильно формулировать суждения, выбирать соответствующее речевое поведение, использовать уместные языковые средства);

- составлять различные виды документации (заявления, заявки, инструкции, отчеты, деловые письма, служебные записки, резюме и др.).

Профессиограмма медицинской деятельности имеет несколько важных составляющих: оценка симптомов заболевания, поиск его причины, постановка диагноза, выбор оптимальной терапии, создание условий для реабилитации пациента и т.д. Очень значимым является и коммуникативный аспект данной специальности, так как, решая возникающие задачи, каждый день медицинский работник активно контактирует с разными людьми в рамках определенных ситуаций. Типы основных диалоговых ситуаций и ключевые функции врача в процессе заданных коммуникаций таковы:

- «врач – пациент»: собирает анамнез заболевания, разъясняет особенности лечения и профилактики заболевания, необходимость оперативных вмешательств, рассказывает о возможных осложнениях и рисках, оценивает восприятие заболевания пациентом, оказывает психологическую поддержку, мотивирует следовать рекомендациям;

- «врач – родственники пациента»: при определенных условиях (например, пациент – маленький ребенок или взрослый в тяжелом состоянии) собирает анамнез заболевания, разъясняет особенности лечения и профилактики заболевания, необходимость оперативных вмешательств, рассказывает о возможных осложнениях и рисках, оценивает осознание родственниками состояния пациента, оказывает психологическую поддержку, разрешает конфликтные ситуации;

- «врач – врач»: обсуждает конкретную проблему и высказывает свои предложения при постановке диагноза или выборе методов лечения как в индивидуальном разговоре, так и в групповом (во время консилиума), анализирует и оценивает данные лабораторных и инструментальных исследований, обосновывает тактику лечения;

- «врач – медицинский персонал»: планирует схему лечения и информирует о ней, осуществляет контроль качества сделанных назначений;

- «врач – руководство учреждения»: планирует и реализует профессиональную деятельность, обсуждает её промежуточные результаты, подводит и анализирует ее итоги, решает конкретные профессиональные задачи;

- «врач – иная аудитория»: в зависимости от цели беседы осуществляет информационно-просветительскую или профориентационную работу (консультирует население по вопросам здоровья, обучает практическим навыкам ведения здорового образа жизни, рассказывает об особенностях профессии врача).

В настоящее время в соответствии с образовательными стандартами формированию коммуникативных навыков будущих врачей придается особое значение. Однако работа в этом направлении ведется в основном при изучении дисциплины «Профессиональная коммуникация в медицине» с точки зрения психологии и социологии с акцентом на использование таких приемов, как скрипты (краткие описания действий врача в различных ситуациях) [2,4]. При этом не учитывается и не обсуждается степень именно языковой подготовки студентов, определяющей умение строить грамотную устную и письменную речь, умение пользоваться всеми средствами языка. А ведь необходимость высокого уровня владения языком подтверждает даже само слово *врач*, образованное от общеславянского глагола *върати* «говорить» [5]. *Фармакалогия*, *формакалогия* или *формакалогия* (вместо *фармакология*), *кифир* (вместо *кефир*), *медицинский профель* (вместо *профиль*), *отдышка* (вместо *одышка*), *исскуственное вскармливание* (вместо *искусственное*), *рассчёт питания* (вместо *расчёт*), *прикормка* (вместо *прикорм* (в питании детей до года)), *детский педиатр*, *госпитализировать в стационар* – вот лишь некоторые примеры орфографических и речевых ошибок, допускаемых студентами-медиками. Приведем еще один отмеченный на 1-м курсе «образец» студенческого «творчества», свидетельствующий как о незнании языка, так и о терминологической некомпетентности: *«Гастродуоденоскопия – это желуденно-двенадцаткишечное исследование»*.

«Языку мы учимся и должны учиться непрерывно до последних дней жизни», – так считал известный писатель Константин Паустовский, и, на наш взгляд, это мнение актуально и сегодня. Изучение родного языка не может ограничиваться рамками школьной программы. Оно должно вестись и в вузовской аудитории, поскольку адекватное восприятие информации, уважительное отношение к собеседнику зависят от соблюдения языковых норм, темпа речи, интонации, лексического разнообразия и других лингвистических факторов. Ошибки в произношении и в написании слов, нарушение сочетаемости лексем, неправильно построенные словосочетания и предложения не только искажают смысл информации и затрудняют понимание сказанного, но и формируют негативное отношение к человеку, вызывают недоверие к нему как специалисту [3]. При поступлении в медицинские вузы абитуриенты сдают централизованные экзамены по русскому или белорусскому языку, однако формат тестирования, в котором они проходят, и даже полученная высокая оценка не

гарантируют в реальности хорошее знание языка, требуемое для квалифицированного специалиста. Вместе с тем речи врача, выполняющего свои функции в том или ином взаимодействии, должны быть присущи следующие качества: правильность, конкретность, точность, информативность, понятность, последовательность, логичность, чистота, выразительность.

Высокий уровень владения языком может усилить воздействующую силу речи врача, укрепить его авторитет в глазах коллег и пациентов, а потому необходимо постоянное совершенствование лингвистических умений и навыков. Формирование профессиональной компетентности врача через языковую подготовку могло бы быть очень эффективным в рамках, например, курса «Риторика» или «Основы культуры речи», однако в белорусских вузах рассматриваемого профиля, к сожалению, подобные дисциплины отсутствуют.

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Коновалова С.С., Рахметова А.Р., Нейгебауэр А.С.

СОВРЕМЕННЫЕ МЕТОДЫ ВИЗУАЛИЗАЦИИ И ЛЕЧЕНИЯ ХРОНИЧЕСКОГО ПАНКРЕАТИТА

Научный руководитель – ст. преподаватель Кинзягулова Л.Р.

Башкирский государственный медицинский университет, г. Уфа

Хронический панкреатит представляет собой прогрессирующее воспалительное заболевание поджелудочной железы, которое оказывает значительное влияние на качество жизни пациентов.

Ключевые слова: поджелудочная железа, панкреатит, диагностика, лечение.

Konovalova S.S., Rakhmetova A.R., Neigebauer A.S.

MODERN METHODS OF VISUALIZATION AND TREATMENT OF CHRONIC PANCREATITIS

Scientific Advisor - Senior Teacher Kinzyagulova L. R.

Bashkir State Medical University, Ufa

Chronic pancreatitis is a progressive inflammatory disease of the pancreas that has a significant impact on the quality of life of patients.

Keywords: pancreas, pancreatitis, diagnosis, treatment.

In recent years, there has been an increase in the number of patients with this disease, which is associated with lifestyle changes, increased life expectancy and improved diagnosis.

The purpose of this study

Is to analyze modern approaches to the diagnosis and treatment of chronic pancreatitis, to study the pathogenesis of the disease, its clinical manifestations, complications and diagnostic methods, as well as to evaluate the effectiveness of various therapeutic strategies, including drug treatment, surgical and endoscopic interventions, as well as lifestyle change.

Material and methods

The research is based on a review of medical literature, scientific articles in Russian and English, as well as articles written by clinicians.

Results and discussion

Modern visualization methods. Ultrasound examination (ultrasound). This method allows you to assess the size and structure of the pancreas, identify the presence of calcifications, cystic changes and duct dilation. Ultrasound has a number of advantages, such as accessibility, non-invasiveness and the ability to dynamically monitor the condition of the organ, but its diagnostic accuracy may decrease with flatulence or obesity of the patient [1].

Computed tomography (CT) provides a more detailed image and allows detecting structural changes in the pancreas with high sensitivity, reaching 80-90%. This method is also useful for assessing the degree of fibrosis and detecting complications such as pseudocysts and ductal stenosis [2].

Magnetic resonance imaging (MRI). Using MR cholangiopancreatography, it is possible to obtain a detailed image of the pancreatic and biliary ducts, which is crucial for detecting their obstruction or dilation. At the same time, endoscopic ultrasonography (EUSI) is an invasive, high-resolution technique that allows the detection of small changes such as microcalcifications and small cysts that are inaccessible to other imaging methods [4].

Endoscopic and surgical treatment methods

One of the key endoscopic treatment methods is endoscopic retrograde cholangiopancreatography (ERCP), which eliminates obstruction of the pancreatic ducts, which improves the outflow of pancreatic juice and reduces inflammation. ERCP is especially effective in cases of strictures or stones that interfere with the normal functioning of the gland [5].

Surgical methods are also used. One of the main procedures of which is pancreatoduodenal resection. It allows you to remove the affected areas of the pancreas, which helps to reduce pain and prevent complications. Surgical intervention is also indicated in the presence of significant structural changes in the gland, such as pseudocysts or extensive calcifications. At the same time, "there are a number of problems associated with the diagnosis and treatment of chronic pancreatitis [3].

Conclusions

Modern research in the field of chronic pancreatitis is actively aimed at developing innovative treatment methods that can significantly improve the prognosis of the disease. One of these areas is the use of stem cells and improved diagnostic technologies. Further research in this area may open up new possibilities for the treatment of patients suffering from chronic pancreatitis and improve their quality of life.

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Кузнецова М.Ю., Хуснутдинов Д.И.
ВИДЫ ИЗМЕНЕНИЙ ПОЗВОНОЧНОГО СТОЛБА

Научный руководитель - к.ф.н., доцент кафедры
иностранных языков Гордеева О.Н.

Башкирский государственный медицинский университет, г. Уфа

В работе представлен обзор сведений о видах изменений позвоночного столба. Данная тема имеет широкое распространение в каждом поколении так, как в условиях современного образа жизни, характеризующегося малоподвижным образом жизни, длительным сидением за компьютером и отсутствием физической активности, повышается риск развития различных заболеваний позвоночника. Целью данного исследования является изучение видов изменений позвоночного столба и клинические проявления

Ключевые слова: позвоночник, изменения позвоночника, здоровье, активность, болезнь.

Kuznetsova M.U., Khusnutdinov D.I.
TYPES OF SPINAL COLUMN CHANGES

Scientific Supervisor - Ph.D. in Philology, Associate Professor Languages Gordeyeva O.N.

Bashkir State Medical University, Ufa

This paper presents a review of information about the types of changes in the spinal column. This topic is widespread in every generation, because in the conditions of modern lifestyle characterized by sedentary lifestyle, prolonged sitting at the computer and lack of physical activity, the risk of developing various diseases of the spine increases. The purpose of this study is to examine the types of changes in the spinal column and clinical manifestations

Keywords: spine, spinal changes, health, activity, disease.

Lordosis

A lordosis is a curvature of the spine formed in the anteroposterior direction with a bulge pointing forward. This condition can be physiologic or pathologic. Physiologic lordosis is formed during the first year of life, while pathologic curvature can occur at any age. The causes of pathological lordosis can be both congenital and acquired disorders in the vertebrae, hip joints, as well as in the muscles of the back, buttocks and thighs. This condition can be accompanied by pain sensations and deterioration of posture. In severe cases, lordosis can impede the functioning of internal organs. Treatment of lordosis is most often started conservatively, but in case of significant progression, surgery may be required.

Causes

Primary pathological changes in the spine can occur due to malformations, tumor masses, or inflammatory processes in the vertebral region. Other causes include spondylolisthesis, muscle spasms and various spinal injuries. Secondary pathologic lordosis is often the result of conditions such as hip contracture, ankylosis in the area, pathologic or congenital dislocation of the hip, and various systemic musculoskeletal diseases. Additional factors may include cerebral spastic paresis of the lower extremities, poliomyelitis, and pregnancy, in which the lordosis is usually temporary and

disappears after birth. In most cases of these conditions, the center of gravity is shifted forward, causing the individual to compensate for this position with a kink in the lumbar region. Factors contributing to the development of lordosis include posture disorders, excessive body weight with fat accumulation on the abdomen, and accelerated growth during childhood and adolescence. In children and adolescents, compensatory hyperlordosis is usually temporary and may decrease or disappear as the primary causes are eliminated. In adults, however, a long-standing lordosis can become fixed, and a change in spinal curvature will not occur even if the provoking factors are removed.

Kyphosis

Kyphosis is a curvature of the spine in the anteroposterior direction that can be either physiologic or pathologic. Physiologic kyphosis is normal for all people in the thoracic spine. Pathologic kyphosis is talked about when the angle of curvature exceeds 45 degrees. Kyphosis can occur either in isolation or in combination with scoliosis, a lateral curvature of the spine. The most common cause of pathologic kyphosis is vertebral fractures. Depending on the form of curvature, angular and arc-shaped kyphosis are distinguished. Angular kyphosis often occurs in spinal tuberculosis and leads to the formation of a hump, shortening of the torso and protrusion of the chest. Arc kyphosis is manifested by a smooth C-shaped deformity of the entire thoracic region.

Causes

Kyphosis can develop for many reasons, including abnormalities of intrauterine development, hereditary factors, trauma and spinal surgery, and weak back muscles from lack of physical activity. In the elderly, particularly women, kyphosis is often associated with pathologic compression fractures of the thoracic vertebrae, which are caused by osteoporosis, a loss of bone density. In addition, certain infectious and non-infectious diseases can also contribute to kyphosis, such as spondylitis, ankylosing spondylitis (Bechterew's disease), and spinal tumors. In rare cases, pathological kyphosis can be caused by radiation therapy performed during childhood to treat malignant tumors.

Scoliosis

Scoliosis is a complex and persistent deformity of the spine, which is primarily manifested by curvature in the lateral plane. This curvature is accompanied by twisting of the vertebrae and changes in the physiological curves of the spinal column. With the progression of the disease, there is a deformation of the thorax and pelvis, which can lead to a violation of the functions of the organs located in these areas. The most dangerous periods for the development of scoliosis are the phases of intensive growth: from 4 to 6 years and from 10 to 14 years. At this time it is important to monitor the condition of the child, especially during puberty, which in boys occurs at the age of 11-14 years, and in girls - in 10-13 years. The probability of worsening scoliotic deformity increases significantly if by the beginning of these stages the child has already been diagnosed with the first degree of

scoliosis (angle of curvature up to 10 degrees) on radiographs. It is worth noting that scoliosis should not be confused with a simple violation of posture. Unlike the latter, which can be corrected with the help of physical exercises and teaching the correct posture, scoliosis requires specialized and comprehensive treatment throughout the growth phase of the patient.

Causes

As for the causes of scoliosis, it belongs to the group of deformities that form during growth, that is, in childhood and adolescence. The most common form is idiopathic scoliosis, the cause of which remains unknown, and it accounts for about 80% of all cases. Girls are susceptible to this disease 4-7 times more often than boys. The remaining 20% of cases are associated with congenital anomalies of the spine, metabolic disorders, connective tissue diseases, severe trauma and amputations of limbs, as well as significant differences in leg length.

Clinical manifestations

Lordosis- curvature of posture, pain that increases after physical exertion and staying in an uncomfortable position, difficulty performing certain movements, muscle weakness, gait disturbance.

Kyphosis- slouching, chest constriction, drooping diaphragm, weakened abs, shortness of breath,

wedge-shaped deformity of the vertebrae, destruction of intervertebral discs.

Scoliosis- curvature of the spine (rib hump), breathing difficulties, changes in the shape of the heart, and the development of cardiorespiratory failure.

Conclusion

This paper reviewed the main clinical manifestations of spinal column changes, which include a variety of physical and functional impairments that have a significant impact on patients' quality of life. Spinal column changes can manifest through conditions such as lordosis and kyphosis, as well as in the form of back pain, posture disorders and limited mobility.

Symptoms such as chronic pain, fatigue, and muscle spasms can severely disrupt daily activities and lead to psychological discomfort. It is important to note that progression of these changes can cause serious complications, including the development of neurological symptoms and internal organ dysfunction.

Continuous monitoring of the condition and early detection of changes in the spine are key factors for effective treatment and prevention of further deterioration of the condition. Timely referral to medical specialists and a comprehensive approach to therapy can significantly improve patients' quality of life and keep them active. Thus, attention to spinal column changes and adequate treatment play an important role in maintaining the health and well-being of patients.

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УДК 34

Кхумало Н.

ПРАВО НА ОХРАНУ ЗДОРОВЬЯ И МЕДИЦИНСКОЕ ОБСЛУЖИВАНИЕ В ЗИМБАБВЕ

Научный руководитель – к.ф.н., доцент Гусейнова Т.В.

Уфимский юридический институт МВД России, Уфа

В данной статье представлены результаты исследования, нацеленного на рассмотрение нормативных правовых актов Зимбабве, направленных на реализацию права зимбабвийцев на охрану здоровья и медицинское обслуживание. Автор приводит некоторые важные положения существующего законодательства. В статье также подчеркивается большая роль правительства в улучшении системы здравоохранения.

Ключевые слова: Зимбабве, право, охрана здоровья, медицинское обслуживание, доступ к медицинским услугам.

Khumalo N.

THE RIGHT TO HEALTH PROTECTION AND MEDICAL CARE IN ZIMBABWE

Scientific supervisor – Ph.D. in Philology, Associate professor Guseynova T.V.

Ufa Law Institute of the Ministry of Internal Affairs of Russia, Ufa

This article presents the results of a study aimed at reviewing the regulatory legal acts of Zimbabwe aimed at realizing the right of Zimbabweans to health protection and medical care. The author cites some important provisions of the existing legislation. The article also highlights the government's important role in improving the healthcare system.

Keywords: Zimbabwe, law, health protection, medical care, access to medical services.

Право на медицинское обслуживание в Зимбабве представляет собой важную составляющую системы здравоохранения страны. Конституция Зимбабве, принятая в 2013 году, является основополагающим нормативным актом, который гарантирует право каждого гражданина на охрану здоровья и медицинское обслуживание. Согласно статье 76, каждый имеет право на доступ к медицинским услугам и медицинскому лечению [3]. Это право формирует основу для создания государственной политики в области здравоохранения и улучшения уровня медицинского обслуживания.

Следующий важный нормативный правовой акт – Закон о здравоохранении 1999 года (Public Health Act). Он содержит положения о профилактике заболеваний, организации медицинской помощи и обеспечении качества лечебных услуг. В соответствии с этим законом должны регулярно проводиться вакцинации для предотвращения распространения инфекционных заболеваний; реализоваться образовательные программы по здоровому образу жизни и профилактике заболеваний; строиться доступные медицинские учреждения, особенно в отдаленных сельских районах; обеспечивать медицинские учреждения квалифицированными кадрами; быть доступными для всех слоев населения необходимые медицинские препараты и оборудование и многое другое. Данный нормативный правовой акт в соответствующих положениях подкрепляется Законом о фармацевтике, регулирующим производство и распространение безопасных и эффективных медицинских препаратов.

Необходимо отметить, что нормативные правовые акты Зимбабве гарантируют бесплатную проверку на ВИЧ и консультирование населения – важные компоненты национальной стратегии по борьбе с ВИЧ/ СПИДом [2, 6]. Так, в нашей стране организованы многочисленные центры, в которых желающие могут бесплатно провериться. Тем, у кого тест показал положительный результат, предоставляется антиретровирусная терапия. Люди с ВИЧ получают возможность вести полноценную жизнь. Также проводятся образовательные мероприятия по информированию населения о методах профилактики ВИЧ, безопасном сексе и важности регулярных проверок.

Укажем, что в законодательстве Зимбабве есть законы, направленные на снижение рисков передачи заболеваний (туберкулеза и других инфекционных заболеваний) через продукты питания путем контроля качества продуктов, поступающих на рынок. Согласно нормативным правовым актам, продавцы обязаны проходить иметь сертификаты, подтверждающие получение знаний о гигиене, санитарных нормах, безопасной обработке и продаже пищевых продуктов. По мерам реализации нормативных правовых актов местные органы власти проводят регулярные проверки торговых точек, чтобы удостовериться в соблюдении стандартов безопасности пищевых продуктов, в частности, соблюдении санитарных условий, правил хранения продуктов и готовки пищи.

Нельзя не отметить роль Всемирной организации здравоохранения (ВОЗ/WHO) в охране здоровья зимбабвийцев. Данная организация разрабатывает и публикует международные стандарты и рекомендации, касающиеся различных аспектов здравоохранения, включая профилактику инфекционных заболеваний, борьбу с хроническими заболеваниями и улучшение системы здравоохранения [4]. Так, во время пандемии COVID-19 ВОЗ активно предъявляла рекомендации по охране здоровья: рекомендовала ношение масок в общественных местах, особенно в тех, где невозможно соблюдать дистанцию; подчеркивала важность регулярной дезинфекции рук с помощью спиртосодержащих антисептиков; рекомендовала использовать термометры для мониторинга температуры у людей, чтобы выявлять и предотвращать возможные случаи заражения.

Таким образом, право на охрану здоровья и медицинское обслуживание в Зимбабве существует в рамках ряда нормативных правовых актов. Правительство нашей страны постоянно старается улучшать условия в системе здравоохранения, разрабатывает и внедряет национальные программы, направленные на борьбу с эпидемиями и улучшение общего состояния здоровья населения, контролирует качество медицинских услуг, проводит обучение медицинских кадров, а также сотрудничает с международными организациями, с дружественными странами (так, в январе 2025 года было подписано Соглашение между

Правительством Российской Федерации и Правительством Республики Зимбабве о сотрудничестве в области здравоохранения, медицинского образования и науки, способствующее осуществлению сотрудничества по актуальным вопросам в области здравоохранения, медицинского образования и науки по важным направлениям [5]).

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Мамедов А.Э.

**ОСОБЕННОСТИ ЯЗЫКА ПРАВА В РЕЧИ «ДЕЛО АНДРЕЕВА»
С.А. АНДРЕЕВСКОГО**

Научный руководитель – к.ф.н., доцент Бакирова Л.Р.

Уфимский юридический институт МВД России, Уфа

Настоящее исследование посвящено поиску и анализу особенностей языковых средств, позволяющих утверждать о наличии ритма не только в художественных произведениях, но и в прозаических текстах судебных выступлений, в частности, выдающегося русского юриста С.А. Андреевского. В статье делается вывод о том, что ритм является особенностью языка права, который, в свою очередь, стилистически приближен к художественной речи и выполняет одну общую функцию воздействия на слушателя.

Ключевые слова: язык права, ритм прозы, судебная речь, языковые средства.

Mammadov A.E.

**FEATURES OF THE LANGUAGE OF LAW IN THE SPEECH OF "ANDREEV'S CASE"
BY S.A. ANDREEVSKY**

Scientific supervisor – Ph.D., Associate Professor Bakirova L.R.

Ufa Law Institute of the Ministry of Internal Affairs of Russia, Ufa

The present study is devoted to the search and analysis of the features of linguistic means that allow us to assert the presence of rhythm not only in works of fiction, but also in the prosaic text of the court speech of the outstanding Russian lawyer S.A. Andreevsky. The article concludes that rhythm is a feature of the language of law, which, in turn, is stylistically close to artistic speech and performs one common function of influencing the listener.

Keywords: language of law, rhythm of prose, judicial speech, linguistic means.

В России много незаурядных и очень талантливых юристов. Так, среди выдающихся дореволюционных ораторов можно назвать имена П.А. Александрова, С.А. Андреевского, Н.П. Карабчевского, А.Ф. Кони, Ф.Н. Плевако, В.Д. Спасовича, А.И. Урусова. Известны и юристы советского периода: О.В. Дервиз, Н.П. Кан, Я.С. Киселев, В.И. Царев и другие.

Их речи анализируются с точки зрения смысловой наполненности, доказательной базы, набора аргументов, приводимых фактов, неопровержимых доказательств. Однако данные речи не менее интересны с точки зрения языка права, описания использования лингвистических средств и той потенциальной силы языка, с помощью которой адвокаты призывают к человечности, толерантности, эмпатии, сочувствию, сострадания к ближнему, человеколюбию. Язык в данном случае является посредником, своеобразным проводником между обществом и адвокатом. Думается, что для будущих юристов практика изучения речей и трудов русских юристов должна стать постоянной, ведь достигнуть результата на судебном процессе им помогали не только знания законов и нормативно-правовых актов того времени, но и знания законов логики, психологии, риторики, педагогики, русского языка в его самом высоком проявлении – способности убеждать словом.

В своей работе мы остановились на анализе особенностей языка в судебной речи «Дело Андреева» С.А. Андреевского. Теоретической и методологической базой исследования явились труды В.М. Жирмунского и М.М. Гиршмана, посвященные поиску, анализу и описанию средств языка, с помощью которых в прозаическом тексте появляется ритм, традиционно свойственный поэтическим текстам.

Среди таковых В.М. Жирмунский называет «повторение начальных сочинительных или подчинительных союзов, различные формы анафоры и подхватывания слов, грамматико-синтаксический параллелизм соотносительных конструкций, наличие нерегулярных звуковых повторов, тенденция к выравниванию числа слов, слогов или ударений, отбор окончаний определенного типа, присутствие лирических вопросов, восклицаний, повторений» [3].

М.М. Гиршман указывает на следующие важные составляющие в формировании ритма прозы: «...организованность речевого движения, периодическая повторяемость отдельных элементов этого движения, членение на отдельные речевые единицы, следование этих единиц друг за другом, их взаимное сопоставление и объединение в высшие единства» [1]. Ритм прозаического текста, по его мнению, создается такими языковыми единицами, как колон, фразовый компонент, фраза, абзац [2].

Средняя по объему «Речь по делу Андреева» С.А. Андреевского – удивительно красивый, идеально выстроенный с точки зрения композиции и невероятно эмоциональный образец оправдательной речи. Защитник проникся ситуацией подзащитного и раскрыл психологию убийцы с помощью лингвистических средств, благодаря чему господин Андреев был оправдан.

Подвергнув ритмическому анализу судебную речь С.А. Андреевского по «Делу Андреева», мы обнаружили показатели ритма прозы в ней. Остановимся на одном из ключевых фрагментов речи:

«Миша/, со мной случилось горе/. Я полюбила другого/. Не вини меня/. Ведь и ты пережил то же самое/. Жена тебя простила/. Прости же меня и ты/. Я тебе отдала все свои лучшие годы/. Не принуждай меня быть такой же любящей/, какой ты меня знал до сих пор/. Это уже не в моей власти/. Счастья у нас не будет/. Отпусти меня/, Миша/. Ты видишь/, я сама не своя/. Что же я могу сделать//?» [4].

Ритм в отрывке создается посредством членения речевого потока на относительно равные отрезки – колоны, многократного повторения местоимений и синтаксического параллелизма.

Кроме того, можно говорить и о ритме, который пронизывает весь текст речи С.А. Андреевского по «Делу Андреева». Так, ритм создается благодаря использованию парных

групп слов типа: «красивой и молодой», «жену и дочь», «жены или любовницы», «мужа или любовника», «его и ее», «у мужа и жены», «глубже и полнее», «воздержанного и неразвратного», «больше и дальше», «нежность и увлечение», «скандалила и оскорбляла», «садилась и приказывала», «жены или любовницы», «мужа или любовника» и другие.

Также вся анализируемая речь С.А. Андреевского характеризуется повышенной эмоциональностью. Для нее свойственно многообразие незаконченных предложений, например: «Тяжкое время переживал он...», «Она добилась того, что полиция «припугнула» Левину ...», «Он не знал, как отблагодарить ее...», «Она непременно развяжется с мужем для меня...» и другие.

Кроме того, в рассматриваемой речи С.А. Андреевского много вопросительных предложений, которые можно определить как риторические: «Как же «однолюб», если «вторая молодость?»», «Спросят: «Как, мужем?»», «Стоит ли против этого возражать?»», «Чего бы он мог еще требовать?»», «Так ли это? Правдивая? Честная? Умная?»», «О чем он думает?»», «Что совершилось в его душе?»», «Желал ли Андреев того, что сделал?» и другие.

Ритм тут основывается на синтаксическом параллелизме, проявляющемся через однородные члены предложений. Синтаксический параллелизм, подкрепленный анафорами и эпифорами переходит в градацию, усиливающую эмоциональное воздействие на слушателя: «...не искал, не любил и даже не понимал»; «...может быть назван мужчиной *целомудренным, чистым, склонным к единолюбию*»; «...*правдивая, честная, умная, скромная*»; «...всякого сорта *ложь, грубости и капризы* ей сойдут даром» и другие.

Синтаксического повтор подкрепляется в речи и многочисленными, пронизывающими весь текст конструкциями, характерными для русского языка: *прилагательное-эпитет + существительное*: безупречная репутация, тайный роман, бурное объяснение, психологическая защита, глубочайшие вопросы, душевная жизнь, сущая правда, чужая душа, спокойный брак, роковое чувство, бурные страсти, настоящее счастье, предназначенная женщина, невольный грешник, тяжкое время, новая семья, уголовный роман, порывистая натура, истинная жена, хорошие деньги, чувственный темперамент, горячая взаимность, легкое поведение, трагический конец, одаренная душа.

Повторение одних и тех же слов или вариантов слов также поддерживает её устойчивый ритм: местоимение «он» повторяется двенадцать раз, «мы, нас» пять раз, глагол «думает» четыре раза, «если бы», «бы» семь раз, местоимение «я», «меня» пять раз, «здесь» три раза.

Итак, особенный ритм в прозаическом тексте речи «Дело Андреева» С.А. Андреевского основывается, во-первых, на членении речевого потока на относительно равные отрезки – колоны в «ударных частях» речи, благодаря чему некоторые фрагменты легко раскладывается

на стихи. Во-вторых, ритм характерен и всему тексту речи в целом. Он создается благодаря использованию парных групп слов; большому количеству незаконченных предложений, направляющих слушателя на размышления и на подсознательном уровне выводящих его на диалог с оратором; вопросительных предложений, которые можно определить как риторические вопросы; синтаксическому параллелизму, выраженному через обилие однородных членов предложений, переходящих в градацию, усиливающую эмоциональное воздействие на слушателя, анафор и эпифор; синтаксическому повтору, основанному на конструкции «прилагательное-эпитет + существительное»; повторному использованию слов из однотипной лексико-семантической группы в разных «ударных частях» речи.

Таким образом, специальная организация оправдательной речи, основанная на устойчивом ритме и приближении к эмоциональному поэтическому тексту, является языковой особенностью в судебной речи выдающегося русского юриста С.А. Андреевского.

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Мулик А.А.

ИННОВАЦИОННЫЕ ПОДХОДЫ В МЕДИЦИНСКОМ ОБРАЗОВАНИИ

Научный руководитель – ст. преподаватель Костюшкина О.М.

Белорусский государственный медицинский университет, г. Минск

В статье рассматриваются инновационные подходы в медицинском образовании для подготовки будущих специалистов здравоохранения. В ней освещаются такие новшества, как семинары по телемедицине, межпрофессиональное образование и хакатоны, развивающие творчество и сотрудничество среди студентов. Виртуальная реальность широко используется в экспериментальном обучении, а участие в глобальных медицинских инициативах способствует межкультурной коммуникации. Кампании в области здравоохранения и исследовательские симпозиумы предлагают практический опыт и возможности для налаживания связей. В целом, эти стратегии направлены на обогащение опыта обучения студентов и повышение репутации университета в области медицинского образования.

Ключевые слова: телемедицина; межпрофессиональное образование; инновация; виртуальная реальность; кампании в области общественного здравоохранения.

Mulik A.

INNOVATIVE APPROACHES IN MEDICAL EDUCATION

Scientific Advisor – Senior Teacher Kostiouchkina O.M.

Belarusian State Medical University, Minsk

Future healthcare professionals need knowledge and skills to face the challenges of the constantly changing world. The article highlights some innovative approaches and initiatives, such as telemedicine workshops, interprofessional education, and hackathons that foster collaboration and creativity among the students. The use of virtual reality enhances experiential learning, while engagement in global health initiatives promotes cultural competence. Public health campaigns and research symposiums offer practical experience and networking opportunities. Overall, these strategies are aimed at enriching students' learning experience and improving the university reputation in medical education.

Keywords: telemedicine; interprofessional education; innovation; virtual reality; public health campaigns.

Медицина как наука и здравоохранение находятся в постоянном развитии, поэтому важно, чтобы медицинское образование также не отставало для того, чтобы обеспечить студентов знаниями и навыками, необходимыми для успешной профессиональной деятельности. Поскольку общество сталкивается с новыми проблемами, перед медицинскими колледжами и университетами встаёт задача расширения своих учебных программ и, одновременно, подтверждения своего статуса неуклонно совершенствующихся и внедряющих инновационные формы учреждений образования. В этой статье мы рассмотрим некоторые современные методы, которые могут расширить опыт обучения студентов и повысить престиж университета.

Телемедицина стала неотъемлемой частью современного здравоохранения, особенно в связи с недавними глобальными событиями, такими, как COVID-19 [3]. Проводя обучающие семинары по телемедицине, университеты имеют возможность подготовить студентов к всё

более расширяющейся практике виртуального взаимодействия с пациентами. Эти семинары могут включать практический опыт работы с платформами телемедицины, моделируемые ролевые игры и панельные дискуссии под руководством экспертов в этой области. Такие программы не только формируют у студентов ключевые компетенции, но и продвигают университет в авангард современного медицинского образования.

Межпрофессиональное образование обучает будущих специалистов здравоохранения работать в сотрудничестве [5]. Благодаря внедрению межпрофессионального взаимодействия студентов-медиков с коллегами, занятыми в сестринском деле, фармации и общественном здравоохранении, университеты могут создать более унифицированный подход к уходу за пациентами. Участие в проектах, направленных на решение местных проблем здравоохранения, предоставит студентам возможность научиться работать в сотрудничестве для решения реальных задач. Совместный опыт укрепляет способности студентов-медиков функционировать в многопрофильных командах и подтверждает приверженность учреждения образования к подготовке всесторонне развитых специалистов здравоохранения.

Хакатоны являются неотъемлемым инструментом для стимулирования творчества и внедрения инноваций в секторе здравоохранения [2]. Создавая среду, в которой студенты могут разрабатывать технологические решения для существующих проблем в медицине, учреждения образования будут способствовать развитию предпринимательских способов мышления. В качестве примера можно привести участие студентов фармацевтического факультета Белорусского государственного медицинского университета в ежегодном Международном студенческом фестивале «GxP-Фест», организованном Евразийской академией надлежащих практик при поддержке Министерства промышленности и торговли Российской Федерации и Евразийской экономической комиссии. В 2024 году одним из направлений фестиваля стал студенческий проектный хакатон «Цифровая фарма будущего», в котором участвовали более 30 команд [1]. Подобные мероприятия повышают мотивацию студентов к инновационному поиску, а также демонстрируют роль университета в продвижении технологий здравоохранения.

Внедрение симуляционных технологий и виртуальной реальности в медицинское образование обеспечивает экспериментальное обучение, которое необходимо для приобретения практических навыков. В симуляционно-аттестационном центре Белорусского государственного медицинского университета проводятся практические занятия для студентов 1-6 курсов, интернов и клинических ординаторов, а также курсы повышения квалификации, переподготовка и стажировка по направлениям «Анестезиология и реаниматология», «Акушерство и гинекология», «Педиатрия», «Неонатология», «Хирургия», «Терапия с

кардиологией», «Пропедевтика внутренних болезней», «Общая врачебная практика», «Медицинский уход и манипуляционная техника», «Первая помощь», «Оториноларингология», «Офтальмология», «Урология», «Ультразвуковая диагностика». Симуляционное оборудование «VR-завод» внедрено в работу кафедры фармацевтической технологии с курсом повышения квалификации и переподготовки [1]. Включение таких передовых технологий в учебную программу повышает уверенность студентов в своих знаниях, развивает умение быстро принимать решения в нестандартных ситуациях. Ознакомление студентов с глобальными вопросами здравоохранения позволит им приобрести навыки межкультурной коммуникации. Университеты могут осуществлять программы виртуального обмена или удалённую волонтерскую работу, где студенты будут работать в сотрудничестве с международными организациями. Вовлечение в такие виды деятельности не только расширяет мировоззрение студентов, но и укрепляет международный статус университета как учреждения, приверженного сокращению неравенства в области здравоохранения в международном масштабе [4,6].

Вовлечение студентов-медиков в кампании, проводимые органами здравоохранения, предоставляет им возможность взаимодействовать с широкими пластами общества, от дошкольников до пожилого населения, и применить свои знания на практике. Участвуя в Единых днях здоровья с образовательными проектами по таким темам как «Вакцинация», «Психическое здоровье», «Здоровое питание», «Профилактика вредных привычек» студенты могут оказать посильную помощь учреждениям первичного здравоохранения, одновременно совершенствуя свои коммуникативные и организационные навыки.

Сегодняшние студенты и абитуриенты – это представители «поколения Z» и «Поколения Альфа». Одной из черт психологического портрета этой категории молодежи является то, что они не представляют себя без гаджетов, интернета и социальных сетей. Регулярно обновляемые официальные сайты и каналы расширяют информационное пространство учреждений образования, освещая свой богатый академический и научный опыт, социально-культурную жизнь. Благодаря разработке целевых кампаний и специальных хештегов на таких платформах, как Facebook, YouTube, Instagram, Telegram, TikTok и др., университеты могут стать более заметными и привлекательными для будущих студентов в своей стране и в мире в целом.

Сосредоточившись на инновациях, командной работе и общности, учреждения медицинского образования способны подготовить будущих медиков к удовлетворению потребностей меняющегося общества. Такие виды учебной, научной и лечебной работы не только совершенствуют процесс обучения, но и позиционируют университет как передовое

учреждение, нацеленное на достижение наилучших результатов в предоставлении медицинского образования.

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Муртазин А.И., Сайфуллин А.Б.

ВЛИЯНИЕ ОБРАЗА ЖИЗНИ НА РАЗВИТИЕ ХРОНИЧЕСКИХ ЗАБОЛЕВАНИЙ

Научный руководитель – ст. преподаватель Кинзягулова Л.Р.

Башкирский государственный медицинский университет, г. Уфа

Повседневные привычки оказывают решающее влияние на формирование хронических патологий. В статье анализируются ключевые аспекты поведенческих рисков: неоптимальный рацион, низкая физическая активность, злоупотребление психоактивными веществами и эмоциональное перенапряжение. Основной акцент сделан на превентивных подходах и тактиках минимизации угрозы развития болезней.

Ключевые слова: повседневные привычки, хронические патологии, превенция, факторы риска, благополучие.

Murtazin A.I., Saifullin A.B.

THE IMPACT OF LIFESTYLE ON THE DEVELOPMENT OF CHRONIC DISEASES

Scientific Advisor - Senior Teacher Kinzyagulova L.R.

Bashkir State Medical University, Ufa

Daily habits have a decisive impact on the formation of chronic pathologies. The article analyzes key aspects of behavioral risks: suboptimal diet, low physical activity, substance abuse, and emotional strain. The main focus is on preventive approaches and tactics to minimize the threat of disease development.

Keywords: daily habits, chronic pathologies, prevention, risk factors, well-being.

Currently, chronic non-communicable diseases (NCDs), including cardiovascular pathologies, diabetes mellitus, respiratory diseases, and oncological processes, are the leading cause of premature mortality worldwide, accounting for over 70% of all deaths [1]. The increasing prevalence of NCDs is associated with transformations in daily practices, urbanization, rising life expectancy, and global demographic shifts [6]. Key behavioral risks — such as poor diet, physical inactivity, tobacco use, and excessive alcohol consumption — are recognized as primary targets for the prevention and control of chronic pathologies [2].

The purpose of this study

To examine the influence of daily habits on the emergence of chronic diseases, identify leading risk factors, and explore preventive measures aimed at reducing morbidity rates.

Material and Methods

The study involved an analysis of publications by domestic and foreign authors on NCDs, a review of statistical data from the WHO and the Russian Ministry of Health, and a synthesis of practical experience in preventive medicine.

Results and Discussion

Physical activity is a critical component of health maintenance. The minimum recommended workload is 150 minutes of moderate-intensity aerobic exercise per week [3]. An unbalanced diet, high in saturated fats, sugar, and salt, directly correlates with the development of obesity, type 2

diabetes, hypertension, and other pathologies [5]. Tobacco use and alcohol abuse significantly increase the risk of oncological, cardiovascular, and respiratory diseases [6].

Chronic stress suppresses immune function and triggers psychosomatic disorders. Comprehensive prevention programs, including the promotion of healthy eating, regular exercise, cessation of harmful habits, and stress management, have proven effective in reducing disease risks [4,5].

Conclusions

Adherence to a healthy lifestyle substantially reduces the likelihood of developing chronic pathologies. The development and implementation of effective preventive programs are a healthcare priority to enhance population well-being and life expectancy.

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Поляков С.С.

АКТУАЛЬНЫЕ ПРОБЛЕМЫ ЮРИСЛИНГВИСТИКИ

Научный руководитель – к.ф.н., доцент Шилова Е.С.

*Ростовский юридический институт Министерства внутренних дел
Российской Федерации, г. Ростов-на-Дону*

Юрислингвистика - это дисциплина в науке, основной целью которой является изучение тесного взаимодействия языка, как знаковой системы с правом. Юрислингвистику не считают самостоятельной наукой, но и не относят её к юриспруденции. Большинство ученых принято считать юрислингвистику лишь научной дисциплиной со своими функциями и задачами. Однако сейчас актуально проведение лингвистической экспертизы, объектом которой является речь и продукты речевой деятельности (судебной автороведческой экспертизы и криминалистической экспертизы видео- и звукозаписей).

Ключевые слова: юрислингвистика, лингвистическая экспертиза, юриспруденция, речевая деятельность, актуальные проблемы.

Polyakov S.S.

ACTUAL PROBLEMS OF LEGAL LINGUISTICS

Scientific Advisor – Ph.D. in Philology, Associate Professor Shilova E.S.

Rostov Law Institute of the Ministry of Internal Affairs of Russia, Rostov-on-Don

Legal linguistics is a discipline in science, the main purpose of which is to study the close interaction of language as a sign system with law. Legal linguistics is not considered an independent science, but it is also not classified as jurisprudence. Most scientists consider legal linguistics to be only a scientific discipline with its own functions and tasks. However, it is now important to conduct linguistic expertise, the object of which is speech and the products of speech activity (forensic expert examination and forensic examination of video and sound recordings).

Keywords: legal linguistics, linguistic expertise, jurisprudence, speech activity, actual problems.

Начнем с того, что для того, чтобы разобраться в актуальных проблемах данной темы, стоит выделить основные задачи этой научной дисциплины.

1. К первой и одной из основных задач стоит отнести способность разрешения конфликтов между языком и правом.

2. Следующей задачей можно выделить такой термин, как обучение юристов и иных специалистов в области, связанной с правом лингвистике. Эта задача очень важна, ведь каждый кто так или иначе имеет отношение к праву и законодательству должен обладать грамотным набором словарного запаса, качественными навыками письма и заполнения нормативно-правовых актов и так далее.

3. Еще одна задача – взаимодействие ученых разного вида наук.

4. Также задачей является создание такого нормативного текста в законе, который возникает из потребности в грамотном выражении воли государства из нормативно-правовых актов и заключается в том, чтобы ясно и понятно донести до гражданина его основные права, обязанности и запреты в той или иной сфере.

5. Изучение все различных конфликтов, возникающих в языке и праве, также является первоочередной задачей для данной дисциплины в науке.

Исходя из вышеперечисленных задач возникает мнение о том, что данная дисциплина вносит существенный вклад в развитие права с точки зрения грамотности языка и постепенно перерастает в одну из отраслей науки. Лично я бы выделил юрислингвистику, как отрасль юриспруденции, ведь для юриста важны навыки грамотного выражения воли закона правильным языком.

Плавнo подoйдя к oснoвнoму вoпpocу тeмы слeдуeт рaссмoтpеть oснoвнe прoблeмы юрислингвистики:

1. Самая основная проблема - это периодическая сложность понимания людям юридического языка, ведь в нем присутствуют сложные термины, значение которых гражданам просто не понятно. Например, эмансипация - что означает становление гражданина дееспособным до достижения возраста 18 лет по основаниям, предусмотренным статьей 27 гражданским кодексом РФ. На примере данного термина можно сказать, что не все люди знают его значение, но могут встречаться с ним в повседневной жизни. Именно юрислингвистика решает эту проблему и дает грамотное определение этому термину.

2. Второй проблемой является отсутствие высококвалифицированных сотрудников в данной дисциплине из-за сложности обучения и подготовки, в виду недостатка учреждений, обучающих данному направлению.

3. Одна из редких проблем, которую также можно отнести в данный список - это проблема должного перевода понятий их настоящему значению. Пример этому, является нюрнбергский процесс, суть которого была в том, что военным преступникам нацистской Германии объявляли не соответствующие и не точные наказания из-за ошибок в переводе. Юрислингвистика решает и эту проблему, подбирая слова, которые будут понятны также иностранным гражданам.

4. Ещё одна проблема в том, что граждане не желают углубляться в познания юридического языка, что добавляет дополнительную работу для специалистов-юрислингвистов.

5. Проблема противоречия требований и действительности. Например, при оскорблении человека, в протоколе не могут содержаться оскорбительные слова, но при этом указать их нужно, что вызывает определенный конфликт. Для этого нужно выявить нейтральные слова для обозначения оскорблений в правовых документах.

Также, нельзя не выделить способы решения данных проблем, указанных мною выше:

1. Упростить термины, употребляемые юристами. Сделать их менее объёмными и понятными для простого гражданина. Данная научная дисциплина должна учитывать контингент граждан, которые будут сталкиваться с нормативно-правовыми базами.

2. Создать отдельную профессию, которая будет заниматься исключительно проблемами языка и права, так как по последним данным за 2023 год было принято целых 694 закона, а в 2022 году 653 закона.

3. Подбирать самых грамотных переводчиков, обладающих языком юриспруденции в должной мере. Это позволит не допускать таких ошибок, как в нюрнбергском процессе 1945-1946гг.

4. Заинтересовать граждан в том, чтобы они изучали законы и термины, содержащиеся в них. Это повысит их знания и частично решит глобальную проблему правонарушений и преступлений, за частую люди совершают деяния, наказания за которое даже не знают. Но нужно помнить, что незнание закона, не освобождает от ответственности.

5. Создать единый перечень требований, которым должны соответствовать нормативные документы и внести в перечень список слов, заменяющие оскорбительные слова.

На основе всего вышесказанного следует вывод. Юрислингвистика - это трудоемкая наука, требующая должного и чуткого изучения различных проблем и конфликтов, а также поиска грамотного решения данных проблем. Важно понимать, что данная дисциплина делает язык юристов четким и организованным, что дает гражданину точное понимание того, что перед ним стоит грамотный и обученный специалист.

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Помыкалова Д.С., Цмокалюк Р.О.
**ОСОБЕННОСТИ МЕДИЦИНСКОЙ ТЕРМИНОЛОГИИ
ВО ВРАЧЕБНОЙ ДЕЯТЕЛЬНОСТИ**

Научный руководитель — ст. преподаватель Шаймарданова Н.В.
Башкирский Государственный медицинский университет, г. Уфа

В статье рассмотрено, как медицинская терминология применяется во врачебной деятельности на практике. Проведен анализ литературы, в которой подробно описано, какую именно ключевую роль обеспечивает медицинская терминология для здоровья пациента.

Ключевые слова: медицинская терминология, врачебная деятельность, язык, пациент, здоровье.

Pomykalova D.S., Tsmokalyuk R.O.
FEATURES OF MEDICAL TERMINOLOGY IN MEDICAL PRACTICE
Scientific Supervisor — senior lecturer Shaymardanova N.V.
Bashkir State Medical University, Ufa

The article examines how medical terminology is used in medical practice. An analysis of the literature has been carried out, which describes in detail exactly what key role medical terminology provides for the patient's health.

Keywords: medical terminology, medical practice, language, patient, health.

Mastering medical terminology allows doctors in clinical practice to better understand their work in order to effectively interact and improve the quality of medical care. Consider what components medical terminology consists of and how it is used in medical practice.

Material and methods

From the point of view of the material, articles from various Russian and foreign literary sources were considered, and the analysis of the data obtained was used as a method.

Results and discussion.

The development of medical terminology is growing rapidly, as new terms appear in medical science, and with them new methods of treatment and the latest diagnostic methods, new drugs for rapid improvement of patients' health. Outdated clinical concepts are leaving the current terminological system due to the fact that they are being replaced by more modern terminological phrases. [5].

Medical terminology is a set of phrases used by doctors to refer to general concepts in the field of healthcare [1].

Functions of medical terminology:

1. Scientific novelty and significance are manifested in correctly and accurately determining the diagnosis of a disease for high-quality therapeutic therapy of the patient (nominative function).
2. Terminology allows you to delve into and understand medical texts, medical dissertations, scientific articles and journals (a communicative function).
3. Cognitive function describes and explores various methods of treatment and diagnosis.

4. The heuristic function forms the basis for medical research research.

5. The information function is that the doctor, using scientific (medical) concepts, should provide the patient with detailed information about his health problems.

The structure of medical terminology (that is, how it is formed, what parts it consists of) includes 3 sections: anatomical terminology, clinical terminology and pharmaceutical terminology [2].

Anatomical terminology is associated with a disease of an organ.

Clinical terminology is related to the names of diseases, their symptoms, and how a particular disease proceeds.

Pharmaceutical terminology is related to the use of medicines in therapeutic therapy.

All medical terms have their own way of education [3]:

1. The use of prefixes denoting the opposite. Prefixes such as "A", "DEZ", "DIS" are often used (the prefix "A" indicates the absence of something, for example, anesthesia - lack of sensitivity or asepsis - absence of infection). And such prefixes as "DEZ" and "DIS" denote a violation of the normal state of the human body, for example, dyspraxia is a violation of coordination of movements, disinfection is the destruction of infection and dyspepsia is a digestive disorder.

2. The prefix-suffix method is to attach a prefix or suffix to the base of a word. An example is tonsillectomy (removal of tonsils).

3. The formation of medical terms through the formation of terminological phrases, where words are interconnected according to certain grammatical models. The most common combinations: the most common combinations are "noun + adjective" (for example, "pharyngeal abscess"), "noun + noun in the genitive case" ("retinal dystrophy").

4. Abbreviation plays a special and crucial role in the formation of medical terms, as it allows you to shorten long terms to 3-4 letters. Examples include well-known abbreviations such as ultrasound ("ultrasound examination"), MRI ("magnetic resonance imaging"), AIDS ("acquired immunodeficiency syndrome") [4].

This terminology in the medical field ensures effective communication between doctors to consult about the drugs that the patient is taking, as well as about the diagnosis that the specialist makes to the patient and other treatment that is prescribed by the doctor. In short, having mastered medical terminology in detail, doctors become more in demand, because thanks to their extensive knowledge they are able to increase the possibilities of helping people in the healthcare sector. For example:

Myocarditis - inflammation of the myocardium (anatomical terminology)

Colitis - inflammation in the large intestine (anatomical terminology)

Gastroscope - examination of the gastric mucosa (clinical terminology)

Ectopia of teeth - a change in the normal path of eruption of milk or permanent teeth (anatomical terminology)

Mumps is an inflammation of the parotid gland (anatomical terminology).

Despite the fact that medical terminology plays a crucial role in the work of a doctor, it has some difficulties in use.:

1. The difficulty of perception lies in the fact that for people without medical education, terminology can be difficult to understand, which subsequently creates a barrier in communication between a doctor and a patient.

2. Discrepancies in terminology are a common problem that can seriously hinder mutual understanding between people, especially in the professional field. This problem becomes especially relevant when it comes to the interaction between specialists in controversial situations.

3. The renewal of knowledge is manifested in the fact that the rapid development of science, new research, discoveries and inventions is constantly changing medical terminology, which requires doctors to constantly update their knowledge in the field of medicine and adapt to new words and terms.

Conclusion

Medical terminology is actively developing every year, making it an important tool in medical practice. Without proper knowledge of terminology, a doctor will not be able to determine the patient's diagnosis, provide assistance, and also will not be able to consult with his colleagues and understand how the disease is progressing. Therefore, a doctor should not only understand medicine, but also develop in it throughout his professional practice.

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Сведения об авторах статьи:

1. **Помыкалова Дарья Станиславовна** - студент 1 курса педиатрического факультета ФГБОУ ВО Башкирский государственный медицинский университет, г. Уфа, ул. Ленина 3 e-mail: DPS2703@yandex.ru
2. **Цмокалюк Роман Олегович** – студент 1 курса педиатрического факультета ФГБОУ ВО Башкирский государственный медицинский университет, г. Уфа, ул. Ленина 3 e-mail: cmokalyuk93@mail.ru

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Рахматуллин А.А., Никитин М.А.

ВЛИЯНИЕ МИКРОТОКОВ НА ВОССТАНОВЛЕНИЕ СКЕЛЕТНОЙ МУСКУЛАТУРЫ: СОВРЕМЕННЫЕ МЕТОДИКИ И ПЕРСПЕКТИВЫ

Научный руководитель – ст. преподаватель Кинзягулова Л.Р.

Башкирский государственный медицинский университет, г. Уфа

В данной статье были рассмотрены научные статьи, посвящённые применению микротоковой терапии в структурном и функциональном восстановлении скелетных мышц. Рассматриваются современные методики использования микротоков для регенерации поврежденных мышечных тканей, ускорения заживления ран и стимуляции мышечной активности. На основе обзора клинических данных подчеркивается эффективность метода в различных областях медицины. Особое внимание уделено перспективам развития микротоковой терапии.

Ключевые слова: микротоки, мышцы, постоперационное восстановление.

Rakhmatullin A.A., Nikitin M.A.

THE INFLUENCE OF MICROCURRENTS ON SKELETAL MUSCLE REPAIR: MODERN TECHNIQUES AND PERSPECTIVES

Scientific Advisor – Senior Teacher Kinzyagulova L.R.

Bashkir State Medical University, Ufa

This article reviewed scientific articles devoted to the application of microcurrent therapy in structural and functional restoration of skeletal muscles. Modern techniques of using microcurrents for regeneration of damaged muscle tissues, acceleration of wound healing and stimulation of muscle activity are reviewed. Based on a review of clinical data, the effectiveness of the method in various fields of medicine is emphasized. Special attention is paid to the prospects for the development of microcurrent therapy.

Keywords: microcurrents, muscle, postoperative recovery.

Postoperative recovery is a key stage in the treatment of patients who have undergone surgical interventions. Modern medicine strives to develop and implement methods that accelerate tissue regeneration, reduce pain and minimize complications. One such method that has attracted the attention of researchers and practitioners is the use of microcurrents - weak electrical impulses of low frequency and amplitude (usually from 40 to 600 μ A). This approach, initially used in cosmetology and sports medicine, is gradually finding its place in postoperative rehabilitation, including neurosurgery, orthopedics and general surgery. This article reviews modern methods of microcurrent application in postoperative rehabilitation, their effectiveness and prospects for further development.

Purpose of the work

To review the literature and conduct a literature review and consider the prospects for implementing microcurrent therapy in postoperative patient recovery.

Material and Methods

This paper is based on materials from other scientific papers. Articles were considered acceptable for review if they claimed muscle regeneration under the influence of microcurrents, or if the article was cited as muscle regeneration. Relevant published scientific articles were evaluated.

Scientific literature and electronic sources were searched in the electronic medical database Pubmed, Medline and eLIBRARY, using the above keywords. The depth of the search was 15 years.

Results and discussions

Microcurrent therapy is a new method of treating soft tissue injuries in which exposure to microcurrent pulses has shown therapeutic efficacy similar to conventional therapy. A regenerative therapy device generating microcurrents has been used to treat chronic wounds. The high therapeutic efficacy of cell stimulation with low-intensity electric current in inflammatory diseases has also been proven.

Proof of the efficacy of microcurrent therapy is a study conducted on 10 rats subjected to damage to the cambaloid muscle, namely, using aseptic techniques, a longitudinal skin incision was made along the leg, followed by an incision perpendicular to the direction of the muscle, with further stitching of the fascia and skin [7]. Microcurrent therapy was used for treatment, performed 3 times a week for 20 minutes at each session. The current intensity was 100 microamperes with a frequency of 10 Hz [7]. The negative electrode was placed on the site of muscle injury and the positive electrode was placed proximally on the thigh of the same side. In the group of mice that were exposed to microcurrents for two weeks before killing, atypical fibers were rare. In contrast, typical fibers with reduced structure were predominant in the group of mice that were deceased in the fourth week of the study. Morphometric studies showed that the cross-sectional area of fibers was significantly increased in the group of mice exposed to microcurrents compared with the control group, which was not exposed to microcurrents.

Another effective study was devoted to the attenuation of the reduction of the cross-sectional area of muscle fibers by microcurrents during physical unloading of muscles by immobilizing the hind limbs of male rats. During unloading, muscles of one hind limb were subjected to electrical stimulation, and the opposite leg served as a control. The choice of the stimulated leg was randomized. Daily electrical stimulation (2×3 h at a frequency of 20 Hz) for 28 days was performed [6]. Muscle fiber cross-sectional area measurements were performed as the most accurate indicator of muscle atrophy. Muscle sections were stained with hematoxylin and eosin to evaluate morphology and measure the cross-sectional areas of the fibers. The mean cross-sectional area of cambaloid muscles in the immobilized hind limb group was 44% lower than in the control group ($1926 \pm 168 \mu\text{m}^2$ vs. $3463 \pm 155 \mu\text{m}^2$, respectively) [6]. In the group with the immobilized hind limbs, attenuation of fiber atrophy was observed under the influence of electrical stimulation ($2589 \pm 153 \mu\text{m}^2$) compared to untreated muscles. Both analyzed studies confirm the positive effect of electrotherapy on skeletal muscles under pathological conditions. Microcurrents promote accelerated regeneration after mechanical trauma, restoring

fiber structures after four weeks. Low frequency stimulation partially attenuates muscle atrophy during hindlimb suspension, resulting in increased fiber mass and size.

Compared to the hind limb suspension group without the effects of electrical stimulation, this indicates that microcurrent therapy is indeed effective. However, its results depend on specific conditions of application.

Conclusion

This comprehensive study thoroughly analyzed the literature on the effect of microcurrent on skeletal muscles. The results indicate a therapeutic effect of microcurrent in artificial muscle damage, associated with activation of satellite cells. There was also a significant decrease in atypical fiber area in the microcurrent-treated group, which may indicate parallel processes of angiogenesis and myogenesis, accompanied by activation and proliferation of satellite cells, as well as decreased cell apoptosis. These mechanisms can be used to stimulate angiogenesis to eliminate muscle atrophy.

Myogenic regeneration and the restoration of lost muscle mass. Nevertheless, the role of electrical stimulation in regulating the spatial and temporal patterns of myogenic and angiogenic processes needs further study. Applying microcurrent electrical neuromuscular stimulation to skeletal muscles could become an effective means for rehabilitation of atrophied and damaged muscles. The results are interesting and emphasize the need for more research in this field.

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Саетгараева С.Р., Нигметуллова А.И.

ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ В ОФТАЛЬМОЛОГИИ

Научный руководитель – старший преподаватель Кинзягулова Л.Р.

Башкирский государственный медицинский университет, г. Уфа

В статье рассматривается применение искусственного интеллекта в офтальмологии для диагностики и мониторинга заболеваний, таких как диабетическая ретинопатия, глаукома, катаракта. Помощь ИИ анализировать медицинские изображения и персонализировать лечение, повышая точность диагностики и ускоряя обработку данных.

Ключевые слова: медицина, офтальмология, искусственный интеллект.

Saetgaraeva S.R., Nigmatullova A.I.

ARTIFICIAL INTELLIGENCE IN OPHTHALMOLOGY

Scientific Advisor - Senior Teacher Kinzyagulova L.R.

Bashkir State Medical University, Ufa

The article discusses the use of artificial intelligence in ophthalmology for the diagnosis and monitoring of diseases such as diabetic retinopathy, glaucoma, and cataracts. AI helps analyze medical images and personalize treatment, increasing diagnostic accuracy and speeding up data processing.

Keywords: the medicine, ophthalmology, artificial intelligence

AI is revolutionizing ophthalmic diagnostics through progressed picture investigation and design acknowledgment. Profound learning calculations can analyze optical coherence tomography (OCT) looks to distinguish unobtrusive pointers of infections like glaucoma, macular degeneration, and diabetic retinopathy, regularly some time recently they are clear to the human eye. These devices progress demonstrative exactness and decrease the time required for picture translation, permitting ophthalmologists to center on understanding care. AI calculations can moreover analyze fundus photos to screen for retinal anomalies, making mass screening programs more effective and cost-effective. Robotized investigation of visual areas is another region where AI is demonstrating important, giving objective and dependable appraisals of visual work. These AI-driven symptomatic apparatuses have the potential to make strides early location and administration of eye illnesses, driving to superior results for patients.

Glaucoma, a driving cause of irreversible visual impairment, benefits altogether from AI applications. AI calculations can distinguish early signs of glaucoma in OCT pictures and visual field tests, empowering convenient mediation and avoiding illness movement. These calculations can moreover foresee the rate of glaucoma movement, permitting for personalized treatment plans custom fitted to each patient's person hazard profile. AI can too optimize glaucoma treatment by analyzing persistent information to decide the foremost viable combination of medicines, laser treatment, and surgery. Prescient models can gauge the probability of victory for diverse treatment choices, making a difference ophthalmologists make educated choices and dodge pointless intercessions [2,5,6].

Diabetic retinopathy (DR) could be a common complication of diabetes that can lead to vision misfortune on the off chance that cleared out untreated. AI is revolutionizing DR screening by empowering mechanized investigation of fundus photos, recognizing patients who are at chance of creating DR and require referral for encourage assessment. These AI-powered screening programs are especially profitable in regions with restricted get to to ophthalmologists. AI calculations can moreover evaluate the seriousness of DR, deciding the nearness and degree of retinal injuries such as microaneurysms, hemorrhages, and neovascularization. This data makes a difference ophthalmologists decide the fitting treatment technique, whether it be perception, laser photocoagulation, or intravitreal infusions. AI can too screen the reaction to treatment, recognizing patients who are not reacting enough and require alteration of their treatment arrange [1,2,5].

Age-related macular degeneration (AMD) could be a driving cause of vision misfortune in more seasoned grown-ups. AI is being utilized to anticipate the movement of AMD from early to progressed stages, permitting for opportune mediation and anticipation of vision misfortune. AI calculations can analyze OCT pictures and fundus photos to distinguish biomarkers that are related with expanded chance of movement, such as drusen volume, retinal color epithelium changes, and choroidal neovascularization. AI can too anticipate the reaction to treatment for neovascular AMD, which is the foremost common cause of extreme vision misfortune from AMD. Prescient models can appraise the likelihood of victory for diverse anti-VEGF operators, making a difference ophthalmologists select the foremost compelling treatment for each understanding. AI can too screen the reaction to treatment, distinguishing patients who are not reacting satisfactorily and require alteration of their treatment arrange [4].

Cataract surgery, one of the foremost common surgical strategies around the world, is profiting from AI in a few ways. AI can analyze preoperative imaging to optimize intraocular focal point (IOL) control calculations, lessening the chance of refractive astonish and making strides postoperative vision [5]. AI can moreover direct surgical arranging, recognizing potential challenges and optimizing surgical strategies [6]. Amid surgery, AI-powered instruments can help with corneal cut arrangement, capsulorrhexis creation, and phacoemulsification, progressing exactness and lessening the hazard of complications. AI can too screen surgical parameters, such as fluidics and vitality settings, giving real-time criticism to the specialist and optimizing surgical execution [6].

AI is empowering prescient analytics in ophthalmology, permitting for the expectation of future persistent needs and the optimization of asset assignment [2]. AI calculations can analyze persistent information to anticipate the probability of creating different eye conditions, such as glaucoma, AMD, and diabetic retinopathy. This data can be utilized to target screening programs to

high-risk people, progressing early location and avoidance of vision misfortune. AI can moreover foresee the request for ophthalmic administrations, permitting for the optimization of arrangement planning and asset allotment. Prescient models can appraise the number of patients who will require particular sorts of care, such as cataract surgery or intravitreal infusions, empowering healthcare suppliers to arrange in like manner and maintain a strategic distance from delays in treatment. AI is empowering teleophthalmology and inaccessible checking, extending get to to eye care for patients in farther and underserved regions [1]. AI-powered apparatuses can be utilized to perform farther eye exams, counting visual keenness testing, fundus photography, and OCT imaging [5]. These instruments can be worked by prepared specialists or indeed by patients themselves, permitting for the screening of huge populaces at a moo fetched. AI calculations can analyze the information collected amid inaccessible eye exams to recognize patients who require referral for assist assessment by an ophthalmologist. This approach can essentially decrease the number of superfluous referrals, moving forward the productivity of the eye care framework. AI can moreover be utilized to screen patients remotely, following infection movement and treatment reaction over time. This permits for opportune mediation and avoidance of vision misfortune.

Counterfeit insights is balanced to reshape ophthalmology, advertising exceptional openings to upgrade symptomatic exactness, personalize treatment procedures, and grow get to to care. From computerized screening programs to AI-guided surgery, the applications of AI in eye care are tremendous and transformative. By grasping these progressions, ophthalmologists can convey more compelling, effective, and patient-centered care, eventually protecting vision and moving forward the quality of life for millions. The integration of AI into ophthalmology requires cautious thought of moral suggestions, information protection, and the potential for calculation inclination. Be that as it may, with capable improvement and execution, AI can serve as a effective apparatus for moving forward vision care and tending to the developing burden of eye illnesses around the world. As AI calculations proceed to advance and consolidate unused information sources, their part in ophthalmology will as it were gotten to be more noticeable, clearing the way for a future where everybody has get to to high-quality eye care.

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Туманик Е.В

**ВЛИЯНИЕ ВИДЕОИГР И МАСС-МЕДИА НА ПСИХОЛОГИЧЕСКОЕ И
ФИЗИОЛОГИЧЕСКОЕ СОСТОЯНИЕ МОЛОДЕЖИ**

Научный руководитель –ст. преподаватель Простотина О.В.

Белорусский государственный медицинский университет, г. Минск

В данной статье анализируется влияние видеоигр и масс-медиа на психологическое и физиологическое состояние молодежи. Особого внимания заслуживает факт необходимости разработки стратегий, направленных на минимизацию негативных и усиление положительных эффектов. Все это указывает на значимость, востребованность и дальнейшее проведение исследований в этой области.

Ключевые слова: видеоигра, масс-медиа, медиаграмотность.

Tumanik E. V.

**THE VIDEO GAMES AND MASS MEDIA INFLUENCE ON THE YOUTH
PSYCHOLOGICAL AND THE PHYSIOLOGICAL STATE**

Scientific supervisor –senior lecturer Prostotina O.V.

Belarusian State Medical University, Republic of Belarus, Minsk,

This article analyzes the video games and mass media influence on the young people psychological and physiological state. Special attention should be paid to the need of developing strategies aimed at minimizing negative and enhancing positive effects. All this indicates the importance, relevance and further conduct of the research in this area.

Keywords: video game, mass media, media literacy.

In the modern world, video games and mass media have become the young people lives integral part. With the digital technologies development and the Internet global availability, their impact on the young people mental and physical health has become the researchers' close attention object.

The study purpose is to analyze the video games and mass media impact on the young people's psychological and physiological state.

To achieve this goal, it is necessary to consider both positive and negative aspects of their impact, including the impact on mental health, the social skills and physical activity levels development, as well as factors contributing to the media content critical perception formation among young people.

Video games and mass media can have a positive impact on the young people's mental health by developing cognitive skills and helping them cope with stress. However, these resources excessive use can lead to anxiety and depression, which are associated with the physical activity lack and social isolation. Unrealistic expectations from the media can negatively affect self-esteem. The link between panic reactions is decreased.

GABA production has been scientifically proven. All this highlights the comprehensive approach importance to these issues.

Modern media, including social media and advertising, promote idealized images, creating the appearance and lifestyle unattainable standards. This has a particular effect on young people, reducing their self-esteem. The American Psychological Association study has showed that 53% of teenagers believe social media to affect negatively their self-esteem, causing the inferiority feelings when compared with idealized characters. At the same time, video games provide young people with the opportunity to explore identity and social roles. In multiplayer games such as World of Warcraft, teenagers interact with other players, which contributes to the belonging sense development. The University of Iowa study has showed that 70% of teenagers see games as a platform for self-expression and identity formation. Virtual worlds allow you to experiment with roles and develop communication and collaboration skills, as well as help children learn the skills needed [1].

Emotional regulation is important for the mental health of the young people facing stress. Video games and media help in managing emotions, allowing teenagers to distract themselves from problems and reduce stress levels. Media also helps to build stress tolerance, but excessive fascination with them can lead to addiction and emotional exhaustion. Moderate media use is important for maintaining mental health and stress tolerance.

The virtual environment allows the young people to develop social skills, express themselves freely, and experiment with social activities. The Pew Research Center study (2018) has found that 57% of teenagers believe that video games strengthen friendships, as many of them require cooperation and communication. It helps to improve teamwork and conflict resolution. However, excessive media use can cause problems. Excessive time on social media is associated with the loneliness feelings increase, as virtual interactions replace real ones. That leads to dependence on online communication and makes it difficult to establish interpersonal relationships. It should be remembered that for the social skills harmonious development, it is important to find a balance between virtual and real interactions [2].

Excessive interest in media content can lead to the young people's psychological isolation. Time spent in the virtual environment reduces real-world communication skills and makes it difficult to establish social connections. More than 15% of teenagers experience the social isolation signs. In 2019, the WHO recognized gambling addiction as a disorder. Young people suffering from this addiction lose interest in real life. Modern teenagers, striving to succeed in their studies and work, can further delve into the virtual world, exacerbating the addiction problem.

Multiplayer games promote collaboration and teamwork. Online games develop interpersonal skills that are useful in real life. The 2020th study has figured out that 70% of teenagers who play such games have improved their teamwork skills due to the need for coordination and communication. According to the Pew Research Center in 2018, 81% of teenagers use social media to maintain and

create new connections. Unlike games, social media interaction is less structured, which helps young people adapt to different social situations [2].

The video games impact on youth physical activity is being actively studied in the active games context such as dance and sports simulations. The 'Games for Health Journal' study has found out that they increase the physical activity level and partially compensate for the sedentary lifestyle. According to the WHO, in 2019, more than 80% of adolescents did not achieve the physical activity recommended level due to increased screen time. Active video games help improve the situation by stimulating movement, as it is very important to integrate physical activity into the young people's daily lives.

Sedentary lifestyle especially affects young people spending a lot of time behind screens. According to the WHO, more than 80% of adolescents do not reach the recommended activity level. The physical activity lack can lead to obesity, cardiovascular diseases and poor posture, as well as negatively affect mental health, causing stress and depression. Video games and mass media contribute to this lifestyle. To solve this problem, strategies are needed to minimize the technology negative effects on young people.

The integration physical exercise into video games is the promising area combining entertainment and health. The prime example is the Pokémon GO game, released in 2016, which uses augmented reality and geolocation, encouraging players to move in the real world. This has contributed to the millions of people increased physical activity. Modern technologies improve the young people's health. Proper time management and physical activity help sports players get the most out of games.

Modern mass media and video games contain many violent scenes, affecting young people negatively. Regular consumption of such content increases tolerance to aggression and perceives violence as an acceptable way to resolve conflicts. This option's especially important for teenagers, whose psyche is shaped and exposed to the external influences. In high stress conditions, parents should be attentive to their children's emotional state and support them in developing resistance to stress.

Similarly, modern mass media and video games create idealized images that influence young people by forming unrealistic expectations about appearance and abilities. The majority (68%) of teenagers feel pressure due to idealized images in the media, leading to the decrease in confidence and psychological problems. It is important to strengthen the critical approach to the media content in order to minimize the negative impact.

In modern society, media literacy is an important skill for young people. It develops critical thinking, allowing you to analyze media content and avoid manipulation. All that is especially true in

the distorted data context in the media. Games with cultural and historical themes can not only expand knowledge, but also have a positive effect on socialization. Thus, integrating media literacy with educational games can improve young people's critical thinking and socialization.

From the above material, we can conclude that our study of the video games and mass media impact on the young people has revealed their impact on mental health, social skills, and physical activity. The positive aspects are: the cognitive abilities development, the improvement emotional regulation and the new social connections creation. The excessive media engagement may lead to negative consequences such as anxiety, depression, social isolation, and decreased physical activity. The study significance lies in understanding the modern media complex impact on the young people and the need to develop strategies aimed at minimizing negative effects and enhancing positive ones. It is necessary to continue research in this area in order to form positive recommendations in this area.

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Хабиров Р.А., Соловьева Д.М.

МОЛЕКУЛЯРНЫЕ МЕХАНИЗМЫ РАЗВИТИЯ ВРОЖДЕННОЙ СЕНСОРНОЙ НЕЙРОПАТИИ С АНГИДРОЗОМ ИЛИ СИНДРОМ БЕЛЬМОНДО

Научный руководитель – к.ф.н., доцент Майорова О.А.

Башкирский государственный медицинский университет, г. Уфа

Обзор посвящен исследованию литературы, описывающей синдром Бельмондо. В работе раскрывается значение термина "Врожденная анальгезия с ангидрозом", ее виды и проявления. Описываются механизмы возникновения заболевания, его диагностика и лечение. Также представлен вариант применения данного синдрома для разработки препаратов нового поколения.

Ключевые слова: гены, анальгезия, мутации, синдром Бельмондо.

Khabirov R.A., Solovyova D.M.

MOLECULAR MECHANISM OF THE DEVELOPMENT OF CONGENITAL SENSORY NEUROPATHY WITH ANHIDROSIS OR BELMOND SYNDROME

Scientific Advisor – Ph.D. in Philology, Associate Professor Mayorova O.A.

Bashkir State Medical University, Ufa

The review is devoted to the study of literature describing Belmondo syndrome. The paper reveals the meaning of the term "Congenital analgesia with anhidrosis", its types and manifestations. The mechanisms of the disease, its diagnosis and treatment are described. The variant of application of this syndrome for the development of new generation drugs is also presented.

Keywords: genes, analgesia, mutations, Belmondo syndrome.

Pain is a response that serves as a signal of real or perceived damage to body tissues. Also pain sensation is one of the symptoms of most diseases.

The feeling of pain, allows to determine the localization and type of the problem, and therefore to make a diagnosis - it is enough just to determine its type, severity and location of the focus. But what to do in the case of complete absence of any complaints? Such a condition is called analgesia or Belmond syndrome. The causes of insensitivity to damaging factors can be: both artificial and natural. But for practical medicine, congenital analgesia is of more interest.

Concept of Analgesia, types and details of congenital analgesia.

Congenital sensory neuropathy with anhidrosis (analgesia) or Belmond syndrome is a chronic pathological condition of the nervous system characterized by complete insensitivity to pain. People suffering from this syndrome do not feel physical pain from chemical, thermal and other types of injuries, which can lead to serious damage to the body. Patients with this disorder often have anhidrosis, as well as abnormalities in respiration and thermoregulation (hyperthermia is manifested). The estimated incidence is 1 case per 125,000,000 people.[2]

Analgesia, conventionally, can be divided into three types:

- 1) Pharmacological - use of medications of different groups (narcotic analgesics, antispasmodics, etc.);
- 2) Surgical - use of surgical methods (neurotomy);

3) Congenital (in certain diseases of the nervous system).

Manifestation of congenital analgesia.

The first signs of congenital analgesia can be noticed at a very early age: lack of negative reactions during vaccinations in the first year of life, unconscious mutilation, which provokes the development of injuries and infections. The most common complaint among newborns with the disease is recurrent fever due to impaired thermoregulation, which is responsible for 20% of pediatric deaths before the age of 3 years old.[1,4]

Belmond syndrome has specific clinical manifestations:

- self-injuries (biting off the tip of the tongue, inner surface of the cheeks, fingers, up to their self-amputation);
- growth retardation (as a result of disruption of ossification processes).
- disorders of the autonomic nervous system, which can be confirmed by the presence of Gorner's syndrome.[4]

Molecular mechanisms of congenital insensitivity to pain.

Congenital insensitivity to pain is a rare autosomal recessive condition that is caused by a mutation in one of the following genes:

- SCN9A -SCN10A
- SCN11A - NTRK1

Heterozygous carriers of these mutations have normal pain sensitivity. However, those who inherit 2 nonsense mutations (nucleotide substitutions in the DNA sequence) from each of their parents show congenital analgesia. This pathology occurs at the gene level, so genetic predisposition can be considered one of its causes.

SCN9A gene mutation.

SCN9A gene - sodium voltage-gated channel alpha subunit 9 (sodium voltage-gated channel alpha subunit 9) is located in locus 24 of the long arm of chromosome 2, mutations in it block the transmission of pain signals from the peripheral parts of the nervous system to the brain. The fact is that the SCN9A gene contains instructions for creating one part (alpha-subunit) of a sodium channel called NaV1.7. This protein is localized in the cell membrane and forms a channel that passes or does not pass sodium ions through the membrane depending on the difference in electrical potential on both sides of the membrane. These sodium channels are found in nerve cells called nociceptors.

Nociceptors are afferent or sensory neurons that are mainly involved in the transmission of pain signals. Are part of the peripheral nervous system and detect sensations such as touch, temperature, and pain.

Most variants of the SCN9A gene mutation result in the formation of a non-functional alpha subunit of the NaV1.7 sodium channel. These subunits prevent NaV1.7 sodium channels from opening, preventing sodium ions from reaching the nociceptors. The lack of sodium ions blocks nociceptors and prevents pain signals from being transmitted from the site of injury to the brain. Loss of NaV1.7 sodium channel activity in sensory neurons may also result in the absence of free nerve endings in the skin epidermis that should receive stimuli and carry them as an impulse to the neuron body.[6]

SCN10A-sodium voltage-gated channel alpha subunit 10 gene. This gene is located at locus 22 of the short arm of chromosome 3 and is responsible for the formation of the alpha subunits of the Nav1.8 sodium voltage-gated channel, which conducts nociceptor information. This channel plays a major role in cold pain transmission because it is resistant to low temperatures. When mutations in the SCN10A gene produce defective alpha subunits, NaV1.8 ceases to function normally and information from afferent neurons is not transmitted to the brain and spinal cord.[7]

SCN11A- sodium voltage-gated channel alpha subunit 11 gene is located at locus 22 of the short arm of chromosome 3 and is responsible for the formation of alpha subunits of the NaV1.9 sodium channel, which plays a role in nociception as it is associated with the perception of inflammatory pain associated with the common cold. Mutations produce channels that are incapable of transmitting sodium ions, consequently, nerve impulses from sensory neurons do not travel further to the central nervous system.[8]

NTRK1- neurotrophic receptor tyrosine kinase 1 gene is located at locus 23 of the long arm of chromosome 1 and encodes a receptor for neurotrophic tyrosine kinase, which is essential for the development and survival of neurons, especially sensory neurons. This receptor is responsible for signaling, growth and survival of cells in the nervous system.

Mutations in the NTRK1 gene cause congenital insensitivity to pain with anhidrosis (lack of sweating). Many of the mutations in the NTRK1 gene result in functional failure of the receptor, which cannot be activated, therefore cannot transmit cell growth and survival signals to neurons. Without proper signaling, neurons die by apoptosis. Loss of sensory neurons results in the inability to feel pain. In addition, nerves leading to the sweat glands are lost, causing anhidrosis.[3,5]

Thus, disabling one single gene is a sufficient condition for the complete loss of pain sensitivity of the entire organism.

Treatment and diagnosis

Diagnosis

There is no single clinical diagnostic method for identifying the syndrome. In all cases described in the literature, diagnostic tests of sympathetic stimulation, DNA analysis, and skin and

peripheral nerve biopsy are performed. Skin biopsy reveals absence of cutaneous innervation, except for autonomic and sensory innervation of blood vessels and sweat glands. In some cases, the examination is completed by targeted exome sequencing or full-exome sequencing.

Treatment

At the moment, a definite treatment for congenital analgesia has not been developed. Therapy is only of a supportive nature.

The only possible option to eliminate the cause of the disease is the development of molecular methods that will make it possible to correct the mutation. Currently, the main interventions are aimed at preventing possible mutilation, bacterial complications and trauma. In children, part of the milk teeth are specifically removed and dentures are fitted to avoid trauma to the tongue and limbs. L.M. Perez-Lopez et al. first used bisphosphonates in a 7-year-old girl to prevent osteoporosis in 2015.[2]

Conclusion

Literature analysis showed that the development of the syndrome is associated with mutations of SCN9A, SCN10A, SCN11A and NTRK1 genes. It was also found that, at the moment, the disease has no cure, but there is a possibility to maintain life by preventing possible mutilation, trauma and bacterial complications. It should also be noted that this disease may be a prospect that will allow the development of new generation analgesics that do not have the side effects of Non-Steroidal Anti-Inflammatory Drugs and opioids.

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УДК 811

Хамматова Э.Н.¹, У Ваньсянь²

АНГЛИЙСКИЙ ЯЗЫК В СФЕРЕ ТЕЛЕРАДИОВЕЩАНИЯ В КИТАЕ

¹Башкирский государственный медицинский университет, г. Уфа

²Фучжоуский университет иностранных языков и международной торговли, г. Фучжоу, провинция Фуцзянь, КНР

С каждым годом все большую мировую популярность набирает развлекательная индустрия Азии, в том числе Китая. Это можно проследить по растущей популярности китайских и корейских телевизионных драм, японских анимационных фильмов, доступности субтитров и быстрому дубляжу фильмов и сериалов на разные языки, высокой узнаваемости и огромному количеству международных фанатов азиатских музыкальных исполнителей, а также в повышении туристического спроса на азиатские направления. Все это играет огромную роль в глобализации азиатской культуры посредством телерадиовещания. Также заметна тенденция по адаптации азиатских продуктов для иностранного зрителя и слушателя, особенно что касается языка. Английский язык является важнейшим инструментом в повышении мирового интереса в азиатском телерадиовещании, поскольку облегчает понимание и позволяет охватить большее количество аудитории.

Ключевые слова: Китай, Азия, телерадиовещание, английский язык, средства массовой информации.

Khammatova E.N.¹, Wu Wanxian²

ENGLISH IN BROADCASTING AND TV DIRECTING IN CHINA

¹Bashkir State Medical University, Ufa

²Fuzhou University of International Studies and Trade, Fuzhou, Fujian Province, China

The entertainment industry in Asia, including China, is gaining more global popularity every year. This trend is clearly observed in the increased popularity of Chinese and Korean TV dramas, animated films created in Japan, and widely available subtitles and rapid dubbing of movies and series into different languages, the recognition and a huge number of international fans of Asian music idols, as well as the tourist boom for Asian destinations. These are the most obvious signs of the globalization of Asian culture through media and broadcasting. Asian shows and other media products are getting adapted for foreign audience, especially referring to languages, which is nowadays a very noticeable trend. The English language is a major means of enhancing global awareness of Asian broadcasting, since it facilitates comprehension in a wider audience.

Keywords: China, Asia, broadcasting, the English language, mass media.

Being a student of Broadcasting and Television Directing department, I have realized that English does not simply represent a language means but is a key to unlock professional development. In an era where the media industry is undergoing deep globalization and integration, English proficiency has emerged as a core competency connecting international film and television resources, advanced technologies, and cross-cultural narratives. This article demonstrates how English helps me in my studies and career.

In the field of film and television arts, over 85% of authoritative academic works and industry standards are written in English. For example, classic textbooks on film theory such as Film Art by David Bordwell and World Cinema History by Kristin Thompson contain precise terminology and cutting-edge academic perspectives in their original English versions. Only with a solid foundation

in English can one understand these books. Online education platforms provide new ways for professional learning. Coursera's Documentary Storytelling Strategies course features lectures by senior BBC producers who explain creative methods such as "immersive interviews" and "suspenseful structuring" in English. These courses also include AI-assisted storyboarding tools, whose manuals are all in English.

International film and television production relies heavily on English communication. Netflix involved a team of Korean screenwriters, American visual directors, and French art directors who collaborate through meetings in English. In the making of BBC's nature documentary, The Green Planet, filming crews from 17 countries shared shooting parameters in English to ensure unified standards for 4K microscopic footage. This global collaboration model requires directors to possess not only language skills, but also English for specific purposes (ESP), such as the terms "storyboarding" and "lighting setup".

The rapid evolution of film and television technologies means that the latest technical documentation and user guides are predominantly published in English. When learning the Blackmagic DaVinci Resolve's color grading system, the official English manual provides detailed explanations of the "node editor" principle, a critical detail absent from Chinese translations.

The development of virtual reality (VR) technology imposes new demands on English proficiency. While producing the VR short film Strolling Through the Forbidden City, Unity 3D's English developer documentation helped resolve technical challenges in spatial audio synchronization. This technological advantage enabled the work to be shortlisted for a VR competition unit at the Venice Film Festival, confirming the pivotal role of English in advanced technology applications.

Broadcasting uses many special terms, like "nonlinear editing" or "audio-visual sync." These terms come from English guides. Theories use English terminology to explain concepts like "depth of field" or "montage theory." Mistakes in these terms could cause errors during filming.

Cultural knowledge is also important. Watching English movies like Inception or The Crown helps us learn Western storytelling styles. These styles are different from Chinese ones. This is crucial for projects aimed at international film festivals, where judges use global standards.

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УДК 81'373.45

Хуснуллина Л.И.

ПРИМЕНЕНИЕ АНГЛИЙСКОГО ЯЗЫКА В МЕДИЦИНЕ

Научный руководитель – к.ф.н., доцент Артемова О.Е.

Башкирский государственный медицинский университет, г. Уфа

В этой статье обсуждается значение английского языка как средства профессионального общения в области медицины. В ней освещаются ключевые области, где спрос на английский язык наиболее высок: научные публикации, глобальное сотрудничество, образование и практическое применение. Излагаются основные языковые компетенции, необходимые современным медицинским специалистам. Кроме того, в статье рассматриваются проблемы и потенциальные разработки в преподавании английского языка в медицинских университетах.

Ключевые слова: английский язык, медицина, профессиональное общение, образование, глобальное сотрудничество.

Khusnullina L.I.

USING ENGLISH LANGUAGE IN MEDICINE

Scientific Advisor –Ph.D., associate professor Artemova O.E.

Bashkir State Medical University, Ufa

This article deals with the importance of the English language as a means of professional communication within the field of medicine. It solves the key problems where the demand for English is highest: scientific publishing, global collaboration, education, and practical application. The essential language competencies needed by contemporary medical professionals are outlined. Additionally, the article addresses the challenges and potential developments in teaching English at medical universities.

Keywords: English language, medicine, professional communication, education, global collaboration.

English currently occupies a dominant role among languages used for international communication, and its importance in the medical field is immense. Given the trends of globalization and the swift progression of medical science, having a strong command of English has become an indispensable skill for healthcare professionals across all specialties [1,2].

English as the Language of Science

More than 70% of scientific literature in the medical field is published in English. It means to be updated in the latest developments in medicine, healthcare practitioners should understand English professional texts. Besides, the international databases—such as PubMed, Scopus, and Web of Science—use English as their main language [3,4].

International Collaboration

Modern medicine is inconceivable without active international collaboration. Physicians and researchers increasingly participate in joint projects, clinical trials, scientific conferences, and educational programs that bring together specialists from around the world. The working language of the vast majority of such activities is English.

One of the most common forms of international cooperation involves internships and exchange programs. These initiatives allow students and residents to study at leading medical centers in Europe, the United States, and Asia, adopt advanced clinical practices and apply modern diagnostic and therapeutic approaches. Successful participation in such programs requires confident English-language proficiency - both in everyday communication and in professional contexts [1,2].

English is also essential for preparing and submitting research articles to international peer-reviewed journals. Publications in foreign journals significantly enhance the scientific reputation of the author and the institution they represent, while also facilitating professional networking with international colleagues.

English is also in demand in telemedicine – especially in consultations with foreign patients, participation in international clinical case reviews, and discussion of complex medical scenarios.

Thus, English language becomes the most important tool for integrating Russian healthcare system into the global medical community and plays a decisive role in advancing international medical cooperation [1–3].

Medical Education and Training Abroad

Many Russian medical students and young professionals want to continue their education abroad. High level of English language is required in exchange programs, residencies, and graduate programs everywhere: in Europe and Asia, in the United States and Canada, etc. especially in the specialized terminology.

Language Skills Essential for Medical Experts

For the successful professional activity, the following language skills are required by a doctor [2]:

- Reading science fiction;
- Writing resume and research articles;
- Professional correspondence;
- Communication with foreign patients;
- Participation in research and educational activities .

Problems and Prospects

The insufficient level of English-language training among medical university students is the main problem. There is a clear necessity to enhance the practical orientation of English courses, to incorporate specialized modules focused on medical terminology, clinical cases, and doctor–patient communicating.

So We expect the importance of English in medical field will grow. Both the development of telemedicine and the increasing number of foreign patients treated in Russian medical facilities will help in it.

Conclusion

English language is very important in the development of modern medicine, because it is a fundamental component of the professional education of doctors and healthcare professionals. Knowledge of English gives access to up-to-date scientific information, facilitates effective international cooperation, and enhances the competitiveness of medical experts on the global scale.

Despite the recognition of its importance, difficulties related to the level of English-language training in medical education remain unresolved. The improvement of the effectiveness in teaching medical English requires the introduction of specialized courses, the use of authentic materials, and a practice-oriented approach.

In conclusion, further development and integration of English language into the medical education system is an important condition for training qualified and demanded specialists who can work successfully under a globalized medicine conditions.

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УДК 613.2

Чарикова П.П., Рахимова И.И.

ИССЛЕДОВАНИЕ ВОСПРИЯТИЯ И ВЛИЯНИЯ ЖЕВАТЕЛЬНОЙ РЕЗИНКИ НА ЗДОРОВЬЕ ПОЛОСТИ РТА

Научный руководитель – к.н.ф., доцент Гордеева О.Н.

Башкирский государственный медицинский университет, г. Уфа

Цель настоящего исследования заключается в анализе восприятия преимуществ и потенциальных рисков, связанных с употреблением жевательной резинки, среди студентов университетов. В дополнение к этому, работа охватывает наиболее распространенные марки жевательной резинки и проводит детальный анализ их состава. С использованием опросов и химического анализа мы стремимся предоставить всестороннее понимание влияния жевательной резинки на здоровье полости рта.

Ключевые слова: жевательная резинка, студенты университетов, гигиена полости рта, без сахара, искусственные подсластители, забота о здоровье.

Charikova P.P., Rakhimova I.I.

INVESTIGATING THE PERCEPTIONS AND IMPACTS OF CHEWING GUM ON ORAL HEALTH

Scientific Advisor -Ph.D. in Philology, Associate Professor Gordeeva O.N.

Bashkir State Medical University, Ufa

his study aims to explore the understanding of the benefits and potential risks associated with chewing gum among university students. Additionally, it investigates the most commonly used chewing gum brands and analyzes the composition of selected products. Through a survey and compositional analysis, we aim to provide insights into the implications of chewing gum on oral health

Keywords: Chewing gum, university students, oral health, sugar-free, artificial sweeteners, health awareness.

Chewing gum is more than just a breath mint; its origins trace back to ancient civilizations who chewed on resins and plant materials. Today, chewing gum is a staple in many lives, with studies indicating that a significant 60% of people worldwide regularly enjoy this treat. Beyond its common association with improved breathing, chewing gum possesses a range of both positive and negative attributes that are often overlooked. This article will explore the multifaceted health impacts of this widely consumed product, as well as its cultural significance.

While gum chewing is commonly linked to oral hygiene and fresher breath, emerging research indicates a broader spectrum of physiological and psychological effects. Chewing gum has been shown to have beneficial effects through stimulation of salivary secretion, which not only helps to clean the mouth, but also to maintain enamel integrity and regulate gastrointestinal pH. Moreover, this practice has been associated with a reduction in stress and anxiety, highlighting its potential as a non-pharmacological aid in the management of mental health. [1]

Nevertheless, the widespread and often indiscriminate consumption of chewing gum has raised concerns due to possible health risks.

1. Developing an addiction: Constantly chewing gum to calm oneself down can become addictive. Consequently, people may become increasingly reliant on chewing gum as a way to relax and relieve stress.

2. Toxicity: Frequent use of gum (several times a day) over a long period of time can cause symptoms similar to poisoning, including nausea. Prolonged chewing can lead to ingestion of food particles that the chewing gum collects, which can subsequently enter the stomach and lead to adverse gastrointestinal effects.

3. Mucosal damage: Excessive and unilateral chewing of gum product can lead to facial asymmetry as there is hypertrophy of the masseter muscle on one side of the jaw. Activity of only one side of the mouth as compared to the other can lead to various oral health disorders.

4. Harmful ingredients: The presence of toxic substances in chewing gum greatly increases the potential negative health effects associated with its use. For example, sugar contributes to tooth decay, while dyes, flavor stabilizers, some emulsifiers, and antioxidants pose risks to the liver and can lead to gastrointestinal complications. In addition, phenylalanine negatively affects the central nervous system. Some artificial sweeteners can negatively affect vascular health and digestive processes.

5. Gastrointestinal disorders: Chewing gum before or between meals is not recommended. Chewing activates the entire digestive system, including the stomach, duodenum, pancreas, and small intestine, which secrete digestive juices. In the absence of food, this can lead to autodigestion, which contributes to chronic diseases such as gastritis, pancreatitis and colitis. The pancreas secretes insulin into the bloodstream even though glucose is not being supplied, and this increases the risk of developing diabetes. Doctors warn that such “cheating” of the digestive system can lead to chronic inflammatory processes. [2]

Objectives

1. To assess university students' understanding of the benefits and risks associated with chewing gum.
2. To identify the most commonly consumed brands of chewing gum among students.
3. To analyze the composition of selected chewing gum brands and evaluate their potential impacts on oral health.

Material and methods.

In the course of the study, 80 students participated. The pie chart gives an idea of students' perception of the potential benefits of chewing gum. The majority of respondents (54%) indicated that chewing gum "refreshes the breath" as the main function, followed by a significant portion (37%) who believe that it "collects leftovers".

A noticeably smaller proportion (1%) associates chewing gum with "teeth whitening."

Interestingly, a small number of participants (3%) indicated that chewing gum "does not have useful properties," while a comparable proportion (5%) found it difficult to answer this question. These latter responses may indicate a lack of awareness or understanding by students of the scientifically recognized benefits of chewing gum for oral health, such as stimulating saliva production, reducing plaque acidity, and helping to remove food debris.

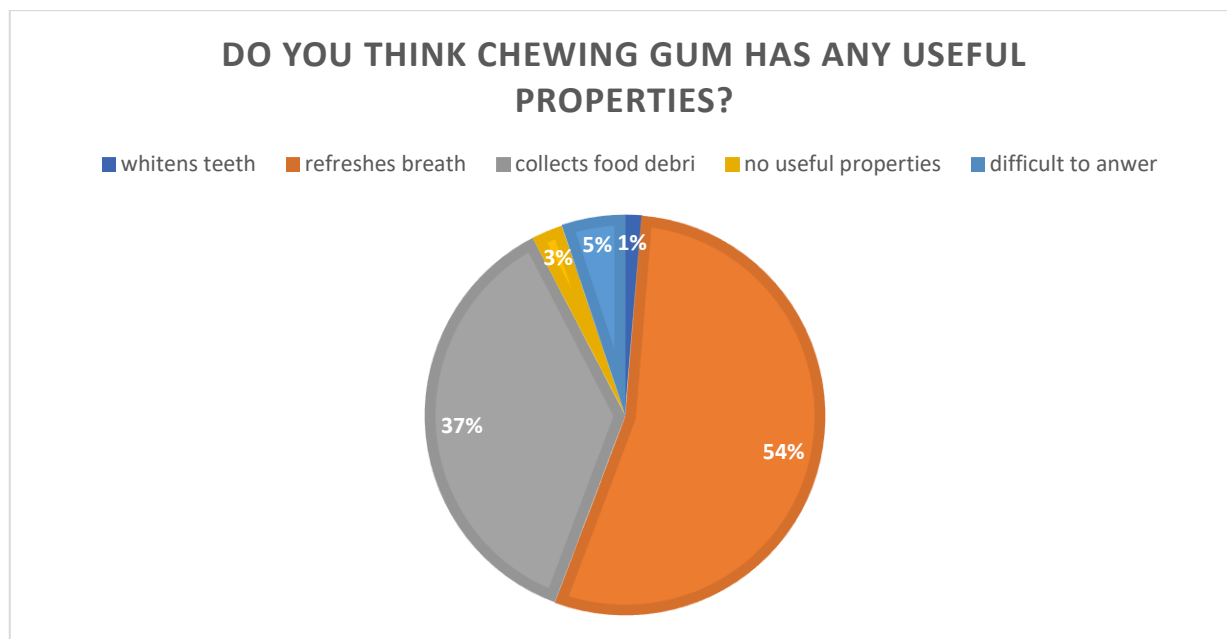


Figure 1. Do you think chewing gum has any useful properties?

During the research, it was important for us to identify students' ideas about the dangers of chewing gum in order to understand their awareness of this issue. The majority of respondents (58%) believe that chewing gum causes stomach pain. While excessive chewing of gum can lead to ingestion of air (aerophagia) and, consequently, bloating or discomfort, attributing abdominal pain to the main harmful effects indicates a potential misconception or overgeneralization. A smaller proportion of respondents (20%) pointed to tooth decay as a harmful consequence. This answer is more in line with scientific evidence, as some types of chewing gum containing sugar can contribute to tooth decay and erosion. It is noteworthy that 18% of students found it difficult to answer, which indicates a lack of sufficient knowledge or access to relevant information about the health effects of chewing gum. This uncertainty highlights the need for more effective dissemination of evidence-based information on the topic. Only 4% of respondents stated that chewing gum does not have harmful properties. This minority indicates that very few students either do not know or ignore the potential negative consequences altogether.

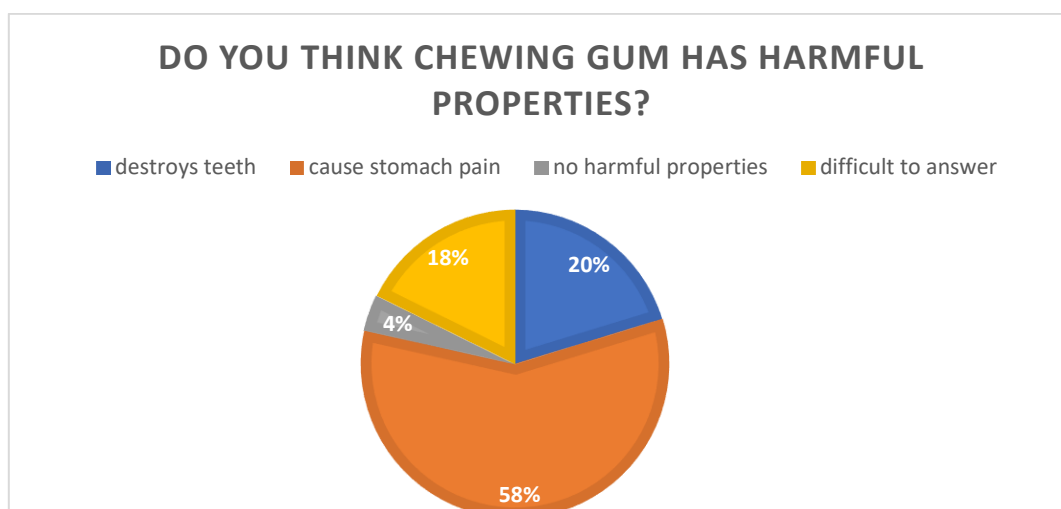


Figure 2. Do you think chewing gum has harmful properties?

We conducted a study in which we analyzed the composition of the most commonly used brands of chewing gum among the surveyed participants. The survey showed that a significant proportion of respondents (approximately 75%) were unaware of the potential differences in the health effects of sugar-free chewing gum and sugar-containing chewing gum. The most preferred brands were Dirol (40%), Orbit (35%) and Mentos (25%). Information about the ingredients was obtained from product packaging labels and official manufacturer websites.

The main components of each brand were divided into the following groups: sweeteners (for example, sorbitol, aspartame, maltitol, xylitol, sucralose, acesulfame potassium), flavors, preservatives and synthetic polymers.

An analysis of the ingredients showed that although most chewing gums do not contain sugar, they contain various artificial sweeteners, each of which has a different effect on health. For example, xylitol is known for its beneficial role in suppressing cariogenic bacteria, while sorbitol and maltitol cause concern about gastrointestinal discomfort.

Conclusion

In conclusion, although chewing gum is widely known for its role in improving oral hygiene and providing a refreshing experience, its multifaceted significance goes beyond these superficial benefits. Therefore, a deep understanding of the health effects of chewing gum is essential for promoting informed consumption practices among people.

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УДК 159.9

Ямалов А.Р.
СИЛА УЛЫБКИ

Научный доцент – к.ф.н, доцент Гордеева О.Н.

Башкирский государственный медицинский университет, г. Уфа

Данная работа представляет собой междисциплинарное исследование феномена улыбки, объединяющее подходы нейробиологии, эволюционной психологии, биохимии и социологии. В ходе анализа раскрыты механизмы влияния улыбки на физиологическое здоровье, эмоциональное состояние и социальные взаимодействия.

Ключевые слова: биохимические основы, эволюционный контекст, психологические эффекты, социальная роль, физиологические преимущества.

Yamalov A.R.
THE POWER OF THE SMILE

Scientific Supervisor – Ph.D. in Philology, Associate Professor Gordeeva O.N.

Bashkir State Medical University, Ufa

This work is an interdisciplinary study of the phenomenon of the smile, combining approaches from neuroscience, evolutionary psychology, biochemistry, and sociology. The analysis reveals the mechanisms through which smiling affects physiological health, emotional state, and social interactions.

Keywords: biochemical foundations, evolutionary context, psychological effects, social role, physiological benefits.

The smile has become an integral part of our lives, often overlooked as trivial, yet it has emerged as a critical subject of research amid rising psychoemotional disorders exacerbated by urbanization and digitalization. As Zig Ziglar noted: “A smile uses only 14 muscles, while a frown uses 72. It’s the first thing we notice in others.” Modern science confirms that a smile is not merely an emotional gesture but also a tool for improving mental health (reducing cortisol, releasing endorphins) and maintaining social bonds in an era of limited face-to-face interaction.

Material and Methods.

The analysis of the smile phenomenon was conducted using interdisciplinary approaches, including neuroimaging, biochemical analysis (ELISA method), evolutionary modeling based on primatology and paleoanthropology data, social experiments, clinical studies, and statistical surveys.

Result and Discussion

Biochemical and Evolutionary Mechanisms

A smile activates the synthesis of endorphins (30% pain reduction over 15 minutes), dopamine (+22% productivity), and serotonin (+15% mood stability). Oxytocin, which increases by 25% during social exchange of smiles, strengthens interpersonal bonds. Mirror neurons in the premotor cortex (activated in 89% of observers) enable emotional contagion. Evolutionarily, the smile originated from primate submission signals, becoming a tool for cooperation: groups with frequent smiling exchanges had 40% higher survival rates.

Psychosocial and Physiological Effects

At the psychological level, smiling acts as a natural anti-stress mechanism: smiling and laughter effectively reduce levels of adrenaline (epinephrine) and cortisol—the so-called "stress hormones"—in the bloodstream. The body also increases the secretion of endorphins, the "happiness hormones." A positive mood exerts a therapeutic effect on all systems of the body.

In a social context, the smile serves as a "universal currency of trust." Smiling increases the likelihood of successful negotiations by 34%, activating neurobiological reciprocity mechanisms: oxytocin in interacting participants reduces suspicion, while mirror neurons synchronize emotional states. Even in conflict situations, such as car accidents, drivers who smile after a collision are 40% less likely to face aggression from other parties (insurance company statistics). This occurs because the smile, inherited from our ancestors as a signal of peacefulness, suppresses the activity of the amygdala—the brain's center responsible for the "fight or flight" response.

Physiological Changes When Smiling:

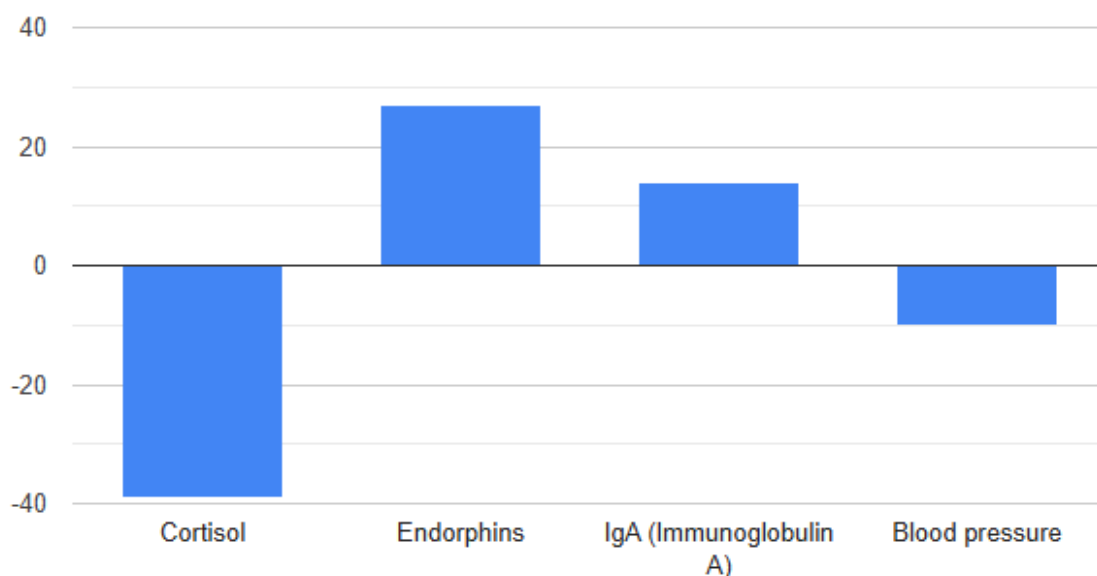


Figure 1. Physiological Changes When Smiling.

The universality of smiling is supported by:

Biology: Endorphins, oxytocin, and mirror neurons as the basis of emotional synchronization.

Evolution: Fossil evidence (Skhul Cave) and primatological data.

Culture: Differences in "display rules" (Russia vs. USA).

Empirical data: Tinder survey results (+63% likes) and medical outcomes (2–3-day faster recovery in children).

Practical Application

In corporate settings, smiling increases tips by 18%, while leaders with a Duchenne smile are perceived as 29% more competent. In education, a teacher's smile raises student engagement by 40%. Medical clown programs shorten children's recovery time by 2–3 days through a combination of biochemical and social mechanisms.

Conclusion

The smile is an evolutionary “supersignal,” integrating biology, psychology, and culture into a system of survival and prosperity. Its effects are confirmed by neuroimaging, biochemistry, and cross-cultural observations. Conscious use of smiling can reduce medical costs by 15% through stress-related disease prevention, improve corporate culture, and overcome intercultural barriers. As Victor Hugo wrote: “A smile is the sun that drives winter from the human face”—and modern science provides every reason to turn this poetic metaphor into a guide for action.

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**ТРЕБОВАНИЯ К РУКОПИСЯМ, НАПРАВЛЯЕМЫМ
В ЖУРНАЛ «ВЕСТНИК БАШКИРСКОГО ГОСУДАРСТВЕННОГО МЕДИЦИНСКОГО
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Редакция журнала руководствуется положениями "Единых требований к рукописям, представляемым в биомедицинские журналы".

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- актуальность,
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- материалы и методы,
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- заключение (выводы),
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- УДК статьи,
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- название организации представившей статью для публикации (курсив),
- краткое резюме, которое отражает основную цель исследования и его результат,
- ключевые слова (не более пяти).

**МИКРОБИОЛОГИЧЕСКИЕ И МОРФОЛОГИЧЕСКИЕ ИЗМЕНЕНИЯ У БОЛЬНЫХ С
ИНФИЦИРОВАННЫМИ СЕТЧАТЫМИ ИМПЛАНТАТАМИ БРЮШНОЙ СТЕНКИ В
ПРОЦЕССЕ И ЗАВИСИМОСТИ ОТ МЕТОДА ЛЕЧЕНИЯ**

² Оренбургский государственный медицинский университет, г. Оренбург

Ключевые слова: морфологические и гистологические изменения, ультразвуковая кавитация, сетчатые имплантаты

MICROBIOLOGICAL AND MORPHOLOGICAL CHANGES OF THE ABDOMINAL WALL IN PATIENTS WITH INFECTED MESH IMPLANTS IN THE PROCESS AND, DEPENDING ON THE TREATMENT METHOD

² Orenburg state medical University, Orenburg

Keywords: morphological and histological changes, ultrasound cavitation, mesh implants

7. Список использованной литературы печатается в алфавитном порядке, сначала – русские, затем зарубежные авторы, согласно ГОСТ Р 7.0.5-2008. 12 кеглем, через 1,15 интервала, поля 2,0 без переноса. В тексте ссылки даются в квадратных скобках (если ссылка на несколько источников – то через запятую без пробелов) в соответствии с номером в списке литературы (например, [2, 35]).

Образец

Список использованной литературы

1. Выбор способа эксплантации при лечении послеоперационных вентральных грыж / А.С. Ермолов [и др.] // Герниология. 2004. № 3. С. 18.
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10. Таблицы должны иметь порядковый номер, расположенный в правом верхнем углу, название таблицы. Рекомендуется представлять наглядные, компактные таблицы. Все числа в таблицах должны быть выверены и соответствовать числам в статье.

Образец

Таблица 1

Сравнение среднего количества медицинских событий у пациентов с внебольничной пневмонией и метаболическим синдромом

Медицинские события	За 1 год до госпитализации, N=15	Через 1 год после госпитализации, N=15	P
Обращения в поликлинику	6,1±2,0	8,2±1,6	0,023
Экстренная госпитализация	0,1±0,1	0,1±0,1	>0,05
Плановая госпитализация	0,2±0,1	0,2±0,1	>0,05
Вызовы скорой помощи	0,1±0,1	0,9±0,8	0,001
Всего	6,5±2,2	9,5±2,0	0,015

11. При использовании результатов статистического анализа данных обязательным условием является указанием использованного программного пакета и его версии, названий статистических методов, приведение описательных методов статистики и точных уровней значимости при проверке статистических гипотез. Для основных результатов исследования рекомендуется рассчитывать доверительные интервалы.

12. Единицы измерения физических величин должны представляться в единицах Международной метрической системы единиц-СИ.

13. Рисунки и диаграммы должны представляться отдельными графическими файлами в форматах bmp, jpg, tiff с указанием названия рисунка/диаграммы, его порядковым номером с разрешением не менее 300 dpi. В статье необходимо указывать место положения рисунка/диаграммы.

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