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ESSENTIAL OIL CULTURE OF MONARDA BIFIDA: INTRODUCTION AND UTILIZATION

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KULTURA OLEJKU ETERYCZNEGO Z MONARDA BIFIDA: WPROWADZENIE I ZASTOSOWANIE

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Abstract

The thesis presents materials on the distribution and introduction of the monarda bifida culture, its features and growing conditions in the Southern Steppe of Ukraine. The main directions of application of essential oil of this culture in food, medicine and agricultural production are given. The conclusion is made about the need for further research and introduction of Monarda didyma L., as well as the influence of various factors on improving the quantitative and qualitative characteristics of the substances that make up the essential oil of the culture.

Streszczenie

W pracy przedstawiono materiały dotyczące rozmieszczenia, wprowadzenia kultury monardy podwójnej, jej cech i warunków uprawy na południowym stepie Ukrainy. Podano główne kierunki zastosowania olejku eterycznego tej kultury w żywności, medycynie i produkcji rolnej. Wyciągnięto wnioski dotyczące potrzeby dalszych badań i wprowadzenia Monarda didyma L., a także wpływu różnych czynników na poprawę ilościowych i jakościowych właściwości substancji wchodzących w skład olejku eterycznego tej kultury.

Keywords: essential oil crops, introduction, Monarda didyma, properties, directions of use, biologization.

Słowa kluczowe: uprawy olejków eterycznych, introdukcja, Monarda didyma, właściwości, kierunki wykorzystania, biologizacja

W ostatnich latach na południowym stepie Ukrainy znacznie rozwinęło się wprowadzanie i uprawa roślin oleistych. Produkcja olejków eterycznych jest obiecującym obszarem rozwoju rolnictwa, ponieważ może zaspokoić wiele potrzeb w różnych sferach życia. Jednak obszary upraw tych roślin są nadal niewystarczające, aby zapewnić surowce dla wszystkich gałęzi przemysłu wykorzystujących olejki *eteryczne, a także wprowadzić nowe obszary ich wykorzystania. Udział eksportowanych surowców do produkcji olejków eterycznych wciąż stanowi ponad połowę całkowitej ich ilości [1].*

Problem ten stwarza nowe wyzwania i możliwości dla badań i rozwoju nowych, wysoce produktywnych i dochodowych upraw olejków eterycznych [2-8]. Jednym z potencjalnych kandydatów w tym kierunku jest Monarda didyma L.. Chociaż większość upraw tej rośliny znajduje się we wschodniej części Ameryki Północnej i niektórych regionach Eurazji, z powodzeniem adaptuje się ona również w zachodnich regionach Ameryki Północnej. Dzięki nowoczesnym technologiom agronomicznym istnieje możliwość rozszerzenia obszaru uprawy tej rośliny, ponieważ może ona z powodzeniem dostosować się do różnych warunków glebowych i klimatycznych. Musimy również wziąć pod uwagę fakt, że zmiany klimatyczne stwarzają nowe możliwości dla wprowadzenia upraw olejków eterycznych w naszym regionie, w szczególności dla wprowadzenia monarda bifida [8].

Na Ukrainie wielokrotnie prowadzono badania nad specyfiką wprowadzania i uprawy Monarda didyma L., ale większość z nich przeprowadzono w warunkach leśno-stepowych i Polesia. Na przykład przeprowadzono badania nad wpływem czasu siewu i przechowywania nasion na produktywność tej rośliny na północnym stepie leśnym. Jeśli chodzi o południowy step Ukrainy, przeprowadzono badania nad produktywnością odmian uprawnych i wpływem cech odmianowych na jakościowy i ilościowy skład olejku eterycznego Monarda didyma L. Badano odmiany Slava, Serpanok i Snizhana, wśród których najlepsze wyniki uzyskano w odmianie Snizhana. Oznacza to, że perspektywy w tym obszarze badań są znaczące, ale w chwili obecnej istnieją już pewne osiągnięcia, które pozwalają nam stwierdzić, że wskazane jest wprowadzenie tej rośliny w warunkach południowej Ukrainy [8-9].

Liście monardy podwójnej zawierają znaczną ilość użytecznych związków chemicznych, co czyni ją szczególnie cenną i atrakcyjną. Obejmują one różnorodne związki aromatyczne, które przywołują zapachy grzybów, bergamotki, oregano i mentolu. Związki te mają właściwości bakteriobójcze, owadobójcze, immunostymulujące i przeciwutleniające, które przyczyniają się do zdrowia roślin i mogą mieć korzystny wpływ na organizm ludzki, gdy są wykorzystywane do różnych celów, w tym leczniczych i kulinarnych [10].

Monarda bifida jest stosowana w przemyśle cukierniczym, a najbardziej obiecującym obszarem w tej branży na Ukrainie jest produkcja pikantnych krakersów z wykorzystaniem olejku eterycznego rośliny. Badania pokazują, że wysoka zawartość związków przeciwutleniających sprawia, że monarda jest doskonałym naturalnym przeciwutleniaczem, który może być z powodzeniem stosowany w celu utrzymania zdrowia i wsparcia organizmu [11].

Drugim obiecującym obszarem wykorzystania Monarda didyma L. jest jej zastosowanie w żywieniu zwierząt. Zastąpienie syntetycznych antybiotyków monardą w żywieniu zwierząt może stać się obiecującym kierunkiem w hodowli zwierząt. Zastosowanie monardy jako naturalnego antybiotyku może pomóc zmniejszyć ryzyko oporności na antybiotyki i zapewnić bezpieczniejsze i bardziej przyjazne dla środowiska warunki produkcji zwierzęcej [12].

Badania przeprowadzone przez niektórych naukowców pokazują, że monarda bifida zawiera związki, które mogą stać się składnikami produktów biologicznych o działaniu przeciwbakteryjnym i przeciwgrzybiczym. Na podstawie badań stwierdzono, że olejki eteryczne M. didyma wykazują wysoką aktywność przeciwbakteryjną wobec rodzajów Xantomonas i Pseudomonas. Badania aktywności przeciwgrzybiczej olejku eterycznego monarda wykazały negatywny wpływ na rozwój wszystkich grzybów badanych przez naukowców [13].

Niektóre badania przeprowadzone przez zagranicznych naukowców wskazują na potencjał olejku eterycznego Monarda didyma L. do stosowania jako składnik bioherbicydów. Planowane są dalsze badania tych właściwości olejku eterycznego w terenie, aby lepiej zrozumieć rzeczywisty efekt jego stosowania [14].

Tak więc Monarda didyma L. ma duży potencjał do wykorzystania w różnych dziedzinach, począwszy od cukiernictwa i medycyny, a skończywszy na biologizacji produkcji rolnej poprzez wykorzystanie produktów uzyskanych z przetwarzania upraw w produktach biologicznych o działaniu grzybobójczym i chwastobójczym. Jednocześnie regulacja warunków uprawy, wprowadzenie dodatkowych środków technologii uprawy roślin, a także badanie cech odmianowych może przyczynić się do akumulacji pewnych substancji w roślinie i określić najlepsze obszary do jej wykorzystania.

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EFFECTS OF HOUSING ON BROWN CALVES BEHAVIOURAL PATTERNS – CASE STUDY

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Abstract

The aim of the study was to assess the effects of housing on Romanian Brown calves behavioural patterns. In this respect, 31 calves were separated from dams immediately after birth, being housed either individually (n=15) or in pair (n=8 pairs). The inactive standing and habitat exploring were recorded on days 10, 20, 30 and 45 after birth. Individually housed calves spent more time (P≤0.006) standing inactive (means ±SEM) 4.22±0.13 bouts / day compared to pair housed calves (2.67±0.97 bouts / day). The pair housed calves spent significantly less time (P≤0.029) to explore the habitat (3.11±0.22 bouts / day) compared to individually housed calves, which induced a higher frequency of this pattern (6.17±0.34 bouts / day). These outcomes highlighted that pairs housing increase benefits for calves with respect for welfare condition, social opportunities and expression of desired behaviours patterns.

Keywords: *behaviour, Brown, calves, housing, welfare*

Introduction

Increasing the efficiency in calves rearing is largely dependent upon the welfare condition and ability to exert the natural behaviours patters related to external stimuli. Intensive rearing systems, significantly alter the environment of the natural habitat. Calves welfare is obviously depreciated in terms of health, behaviour, growth and productive performances. However, this kind of system cause stress since birth, through the separation from dams.

Individually housing constitutes in an easy way to assess the growth rate [Le Blanc et al., 1981] and to avoid the unwanted events [Maatje et al., 1993; Tomkins, 1991]. Moreover, individual housing is able to decrease the incidence of health issues [Qigley et al., 1994] and also decrease mortality and morbidity in herds [Lance et al., 1992; Gulliksen et al., 2009]. Conversely outcomes were recorded by other studies that have not obtained significant differences in this respect [Hanninen et al., 2003]. Individually housing recorded an increased body weight and growth rate than paired [Qigley et al., 1994]. Roy JHB (1990) calculated inconsistent results in a previous study [Roy, 1990]. Individual housing could constitute the premises of docile cows at the milking time or in an animal-stockholders relationship [Arave et al., 1985].

Pair housing induce the reduction of labour (for nursing, feeding, refresh the straw beddings) and space requirements [Kung et al., 1997]. Moreover, housing in pairs or small groups (with max. 6 head) allows externalization of some specific age category behaviours with significant impact in providing of welfare condition or as indicators of its (ingestion, exploration, playing behaviour) while reducing agonistic behaviour, fear, frustration or anxiety [Jensen et al., 1998].

The aim of the study was to assess the effects of housing on Romanian Brown calves behavioural patterns.

Materials and method

The study was carried out in livestock farm from the Research and Development Station for Bovine Arad, Romania (location: 46° 10' 36" N, 21° 18' 4" E, 107 m altitude). In the current study 31 Brown calves were randomly assigned either individually (2 x 2 m, n=15) or paired (3.2 x 2.2m, 16 heads, 8 pairs). Calves were separated from their dams immediately after birth. Calves were feed with whole milk 6 L / day and pre-starter (18.15 CP, 2510 Kcal/Kg) from day 5 to day 14. After day 14 until day 40 the calves were feed with milk replacer 6 L /day (95% DM, 22% PC, 18% Fat), alfalfa hay (84% DM, 13% PC) and concentrates (88% DM, 17% PC, 2.5% Fat) ad libitum. After 40 days of age, all the calves were moved in *group (6 heads / box) up to pre-weaning interval of 10 days (56 days of age). Calves had constantly visual and auditory contact with congeners from neighbouring pens. The calves were pre-weaned between day 56 and 66, all calves being totally weaned at 66 days of age. Inactive standing (minimum 10 seconds) and exploring the habitat (sniffing the walls or any parts of pen, extend their neck over the pen or extend the head through the frontal openings of pen) were recorded.*

Behaviour patterns were recorded for 24 hours on days 10, 20, 30 and 45 after birth, using 4 cameras (Sony HDR-CX24OE) and analysed by The Observer XT specialized software. Comparisons between behavioural patterns were performed using the one way ANOVA protocol, with categorical factor being considered the housing method. All the statistical inferences were carried out using Statistica® software v. 13 [Hill and Lewicki, 2007]. Decisions about the acceptance or rejection of statistical hypothesis have been made at the 0.05 level of significance.

This research was mainly observational and non-invasive. Ethical considerations of this study were evaluated according to the European Union's Directive for animal experimentation (Directive 2010/63/EU).

Results and discussion

Significant differences (P≤0.006) were recorded related to inactive standing bouts frequency according to housing (Table 1). Individually housed calves spent more time standing inactive (4.22±0.13 bouts / day) compared to paired calves (2.67±0.97 bouts / day). Inactive standing pattern was observed mainly before feeding, at feeding of other categories of animals due to the noise made by machinery used, and after certain operations that were not included in daily routine. Individually housed calves showed an increased insecurity state compared to pair housed ones.

The frequency of daily inactive standing bouts was influenced by dimension of the group; a large group reducing the frequency of it. The results are consistent as the previous ones obtained by Faerevik Gry (2007), 4.3±0.7 bouts in 4 calves group, 1.2±0.6 in 16 calves group, respectively [faeverik et al.,2007]. Chua B. (2002) obtained inconsistent results from a study conducted on Holstein Friesian pair housed calves, in which recorded an increase in inactive standing bouts frequency of 4.77±0.34 bouts / day compared to individually housed calves 3.33±0.4 bouts / day [Chua et al., 2002]. Pair housing has reduced the time spent by Holstein Friesian calves standing inactive in a study conducted by Hanninen L. (2007) [Hanninen, 2007]. Previous studies highlighted that individually calves spend more time standing inactive on the days after introduction to a group (Horvath 2018) or near another calf compared with calves previously pair housed [Horvath and Miller, 2018; Overvest et al., 2018].

***Table 1.** LSM (±SEM) of calves' behaviour patterns according to housing*

Behaviour	*Individual*	*Pair*
Inactive standing	*4.22 ± 0.13^a*	*2.67 ± 0.97^b*
Explore environment	*6.17 ± 0.34^a*	*3.11 ± 0.22^b*

*Rows with different superscript differ significantly at p≤0.05*bouts / day*

Exploratory behaviour is an instinctive behaviour pattern in calves in order to identify sources of water and feed, resting areas or potential sources of danger [Acatincai, 2013]. Individually housed calves showed an increased exploratory activity (6.17±0.34 bouts / day). Pair housing led to a significant decreased (P≤0.029) exploratory bouts frequency (3.11±0.22 bouts / day). These outcomes are inconsistent with those obtained by Faerevik (2007) who found no significant correlation between group size and exploratory behaviour [Faeverik et al., 2007]. Decrease time spent exploring the areal could increase the time spent by calves feeding or resting particularly in ad libitum feeding. However, cognitive processes necessary for adapting to the habitat are easier to accomplish in pairs or groups than in individually housed calves [Gaillard et al, 2014]. In general, there was no effect of housing method on calves' abilities to find the feed or water places. This results are conversely with those obtained by Knauer in 2021 witch observed a delay of 10 min for paired calves to find feed [Knauer et al., 2021].

Exploratory behaviour patterns provide clues related to calves secure / insecure state, according to either environment or stockpersons [Ellingsen et al., 2014]. Thus, a good animal-stockholders relationship could provide calm animals while reducing the exploratory bouts frequency. Individually housing favour unwanted behaviours after the relocation. Thus, individually housed calves showed a longer latency to socially interact with others calves with an important share of agonistic patterns. The frequency and length of exploring bouts were higher. In the same study, pair housed calves showed a less exploring activity, being much calmer and available for non-agonistic interactions [De Paula et al., 2018].

Conclusions

Pair housing meet calves psychological and emotional needs. Also, pairing leads to a significant decrease of inactive standing and exploring bouts frequency, stimulating the non-agonistic social contacts.

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Geological and mineralogical sciences

MONITORING THE STATE OF UNDERGROUND MINING AND DESIGNING NEW ENGINEERING STRUCTURES USING DISTANCE LEARNING METHODS

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ЖЕРАСТЫ ТАУ-КЕН ҚАЗБАЛАРЫНЫҢ ЖАЙ-КҮЙІН МОНИТОРИНГІЛЕУ ЖӘНЕ ҚАШЫҚТЫҚТАН ОҚЫТУ ӘДІСТЕРІН ҚОЛДАНА ОТЫРЫП, ЖАҢА ИНЖЕНЕРЛІК КОНСТРУКЦИЯЛАРДЫ ЖОБАЛАУ

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Abstract

This article describes the possibility of using remote methods, such as 3D laser scanning and photogrammetry, which make it possible to obtain three-dimensional models of mines, underground mine workings and other structures. These models can be used both for monitoring the condition of the studied objects and for the purposes of object reconstruction.

In the last decade, laser scanning data has been increasingly used in monitoring industrial facilities. Laser scanning is one of the most modern types of photography that allows you to get information about the area [1,2]. This technology allows you to create a digital three-dimensional model of an object, representing it as a set of points with spatial coordinates [3]. Three-dimensional models help to assess the condition and determine the deformation at any point [4]. This work was carried out as part of the reconstruction of the conveyor drift. The purpose of the survey was to identify the presence of dislocations and monitor the condition of the support in the drifts. Previously independent, separately used technologies, such as 3D scanning, aerial photography using unmanned aerial vehicles, have combined into an innovative complex, which currently provides more accurate, detailed results [5].

Аңдатпа

Бұл мақалада шахталардың, жерасты тау-кен жұмыстарының және басқа құрылыстардың үш өлшемді модельдерін алуға мүмкіндік беретін лазерлік 3D сканерлеу және фотограмметрия сияқты қашықтықтан оқыту әдістерін қолдану мүмкіндігі сипатталған. Бұл модельдер зерттелетін объектілердің жай-күйін бақылау үшін де, объектіні қайта құру мақсаттары үшін де пайдаланылуы мүмкін.

Соңғы онжылдықта өнеркәсіптік объектілерді бақылау кезінде лазерлік сканерлеу деректері көбірек қолданыла бастады. . Лазерлік сканерлеу - бұл жер бедері туралы ақпарат алуға мүмкіндік беретін ең заманауи түсірілім түрлерінің бірі [1,2]. Бұл технология *объектінің сандық үш өлшемді моделін құруға мүмкіндік береді, оны кеңістіктік координаттары бар нүктелер жиынтығы ретінде ұсынады [3]. Үш өлшемді модельдер күйді бағалауға және кез келген нүктеде деформацияны анықтауға көмектеседі [4]. Бұл жұмыс конвейерлік штректі қайта құру аясында жүргізілді. Зерттеудің мақсаты вывалдардың бар-жоғын анықтау және штректердегі бекіткіштердің күйін бақылау болды. Бұрын тәуелсіз, жеке қолданылатын технологиялар, мысалы, 3D сканерлеу, пилотсыз ұшу аппараттарын қолдана отырып аэрофототүсірілім инновациялық кешенге біріктірілді, бұл қазіргі уақытта дәлірек, егжей-тегжейлі нәтижелерге қол жеткізуді қамтамасыз етеді [5].*

Keywords: *Monitoring, aerial photography, 3D scanning, underground mining.*
Түйін сөздер: *Мониторинг, аэрофототүсірілім, 3D сканерлеу, жерасты тау-кен қазбалары.*

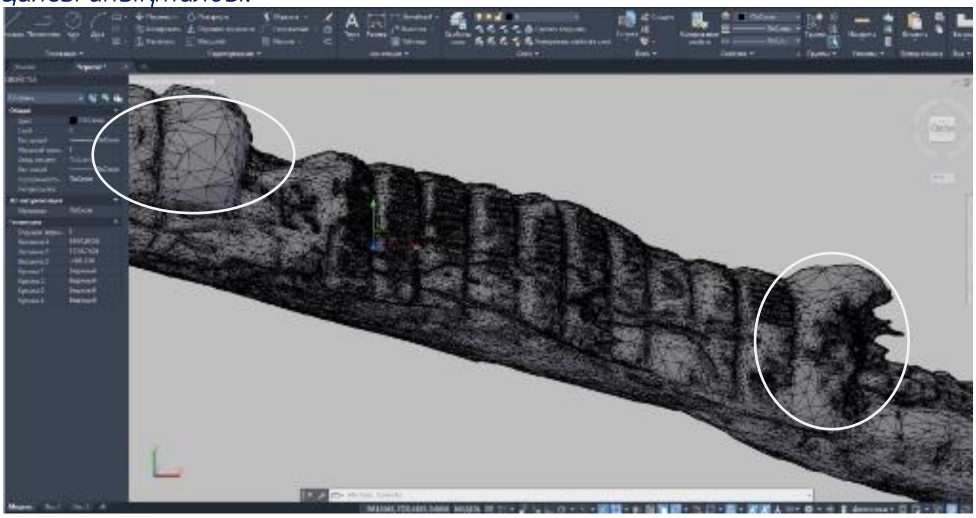
Кіріспе.

Соңғы жылдары бүкіл әлемде пилотсыз аэрофототүсірілім құрылғыларын қолдана отырып зерттеулер жүргізуге қызығушылық артты. Пилотсыз ұшу аппараттарының аэрофототүсірілімі дәстүрлі рельефті түсіруге лайықты балама болды. Пилотсыз ұшу аппараттарын пайдалануға деген үлкен қызығушылық бірқатар факторлармен қамтамасыз етілген жұмыс құнының төмендеуімен түсіндіріледі. Пилотсыз ұшу аппараттарын пайдаланып топографиялық түсіру әртүрлі салаларда кеңінен қолданылды. Пилотсыз ұшу аппараттары зиянды табиғи және антропогендік факторлардың әсеріне ұшырауы мүмкін жер бетінің, тұрғын үй қорының, су объектілерінің, жер қойнауын пайдалану объектілерінің жай-күйіне мониторинг жүргізуге мүмкіндік береді.

Зерттеу материалдары мен әдістері.

Суреттерді алу және оларды оптикалық жүйелермен өңдеу технологиясы (лидар камерасы) дәл координаттарды алу болып табылады X, Y, Z. Лидардан алынған ақпарат - бұл 1:1-ден 1:100-ге дейінгі масштабтағы объектінің жоғары дәлдіктегі суреті, ол нүктелер жиынтығынан тұрады, нәтижесінде "нүктелер бұлты" деп аталады. Триангуляция әдісімен (үшбұрыштармен) 0,5 мм-ден 1 см-ге дейінгі қашықтықты байланыстыратын нүктелер саны 1 миллионға дейін болуы мүмкін (1-сурет).

Бастапқы деректер 2D форматында ұсынылды, осыған байланысты маркшейдерлік қызметпен бірлесін Trimble M3 электронды тахеометрімен көлденеңінен 1:100 және тігінен 1:500 масштабында геодезиялық түсірілім жүргізу қажеттілігі туындады [6]. Лидарлық түсірілім нәтижесінде үш өлшемді триангуляциялық модель және үш метрлік қадаммен штректің ішкі контурының қималарының сызбалары жасалды, тіректердің орналасуы, сынуы және деформациясы анықталды.



1-сурет. Триангуляциялық үш өлшемді штрек моделі

Қималардың құрылысы CYCLONE ПП-де, ал соңғы дизайн AutoCAD-та жасалды.

Объектінің белгілі координаттары болған кезде және суреттерді геобайланыстыру процедураларын орындау кезінде барлық "нүктелер бұлты" камералдық өңдеу нәтижесінде *нақты координаттарды алады. Координаттар болмаған жағдайда жергілікті шартты координаттар жүйесі құрылады. Лидар түсірген кезде біз объектінің биіктігі бойынша жоғары немесе төмен инфрақызыл спектрі бар мультиспектрлі суреттерді аламыз, бұл үш өлшемді ауданның цифрлық модельді (АЦМ) немесе сандық рельефтік модельді (СРМ) жасауға мүмкіндік береді.*

Лидар түсіру процесі көлденең профильдегі әрбір 3 метр үшін 4-қадаммен фотограмметриялық түсіріліммен бірге жүрді.

Жұмыс процесі екі кезеңге бөлінді. Бірінші далалық, пилотсыз ұшу аппараттарының көмегімен аэрофототүсірілім жасалады. Екінші камералдық, бағдарламалық өнімнің көмегімен ауданның сандық моделі жасалады. Аэрофототүсірілім арқылы алынған мәліметтер негізінде ортофотоплан, биіктік картасы, рельефтің цифрлық 3D картасы және рельефтің сандық моделі жасалады, бұл оның визуалды түрде ажыратылмайтын шамалы өзгерістерін де анықтайды.

Аэрофототүсірілім басталмас бұрын, пилотсыз ұшу аппараттарына маршрут беріледі. Процестің өзі толығымен автоматтандырылған және оператордың минималды қатысуын қажет етеді, бірақ бұл түсірілім үшін қолмен басқару режимі таңдалды.

Конвейер штректің осі бойынша түсірілім сұлбасын 3D құрастырушы анықтайды, ол нақты уақыт режимінде Z осі бойынша нүктелерін салу үшін көлденең профиль осін жасайды. 3D құрастырушыны қайта орнату қадамы - 50 метр. Тахеометрді қайта орнату қадамы 25 метр. Түсіру процесі тау-кен шамдарымен қосымша жарықтандырумен жүргізілді, өйткені жергілікті жарықтандыру жеткіліксіз болды. 3 метрлік қадаммен үш көлденең профильді орындағаннан кейін, алынған "шикі" деректер файлын ақ аймақтар мен профильдердің көлденең қабаттасу аймағын анықтау мақсатында тексеру үшін түсірілім тоқтатылды. Нәтижесінде түсірілім қадамы 2 метрге дейін қысқартылды, өйткені нашар жарықтандыру профильдердің жұптасу аймақтарының 35% - на дейін жабылмады. Түсірілім барысында геобайланыс жасалады және шпурларды бұрғылау және анкер маяктарын соғу арқылы реперлер қойылады. Түсірілім аяқталғаннан кейін тексеріліп, LAS, LAZ форматына ауыстырылады [6].

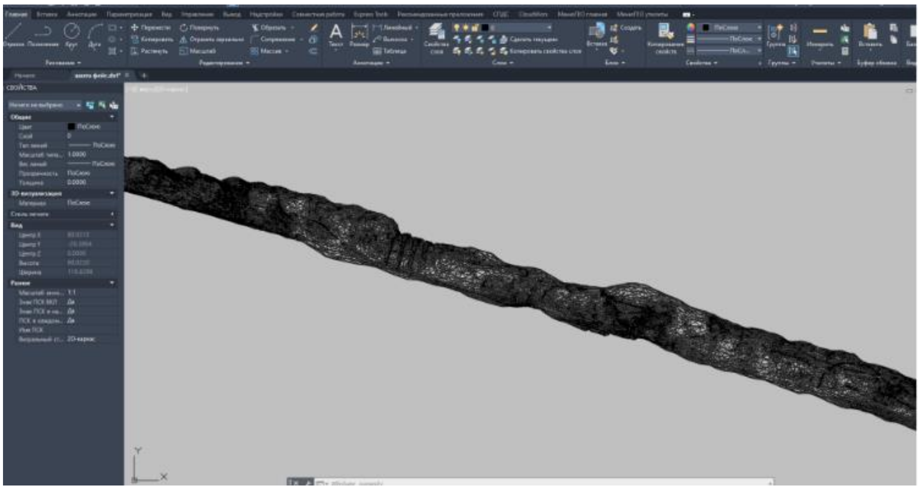
Лидар суреттерін камералдық өңдеуі Cyclone Cloud, ReCap Pro 2023 және PHOTOMOD 7.3-те жүргізілді.

Фотограмметриялық түсірілімнің камералдық өңдеуі AGISOFT Metashape Professional бағдарламасын қолдану арқылы жүргізілді, содан кейін AutoCAD 2022 де нүктелік бұлтты шығару БЦМ, АЦМ және 3D моделін құру арқылы жүзеге асырылды. Бағдарлама алынған деректерді 2-6 сағат ішінде өңдейді (өңдеу ұзақтығы компьютер мен бағдарламалық жасақтаманың өнімділігімен анықталады).

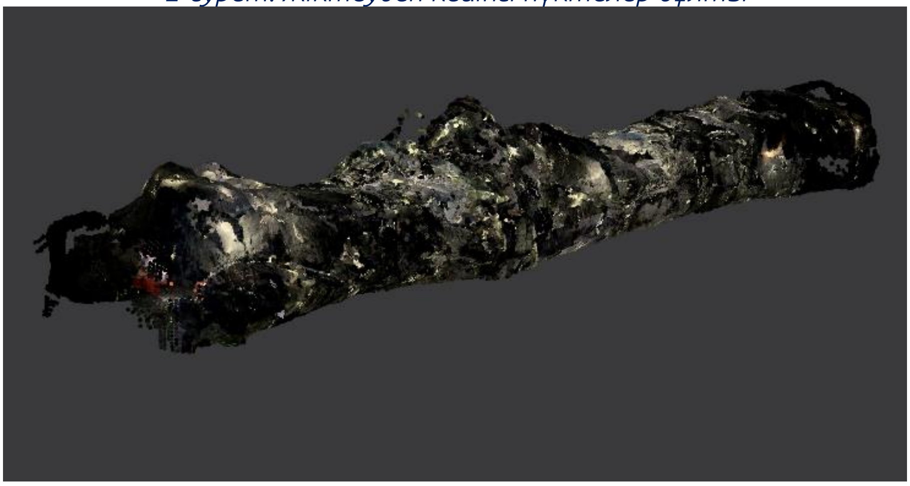
Тахеометриялық түсірілім AutoDesk CIVIL 2021-де 3D моделін құрумен өңделді.

Нүктелер бұлтын компьютердің техникалық мүмкіндіктерін ескере отырып, қолайлы масштабқа және жұқару жиілігіне дейін фильтрлеу керек және де жоғарыда айтылғандай, түсірілім деректерін қарау керек. Келесі кезең - берілген объект параметрлері бойынша беттер бойынша нүктелер бұлтының квалификациясы (2-сурет).

Сондай-ақ, камералық өңдеу процесінде жасырын беттер бөлінді. LIDAR беттерден бірнеше шағылысуды қолдайды және жарықтар мен басқа бос беттер арқылы еніп, олардан тыс деректерді алады [7,8,9]. Сонымен, суреттердегі ағаш балласт толық контурда – дөңгелек бөренелер болып көрсетіледі. Торкретбетон қабырғасының артында бос орындар мен жасырын электр байланыстары табылды. Барлық жасырын нысандар интерпритацияланды (3-сурет). Нәтижесінде экспресс геотехникалық болжам және тау-кен жұмыстарын жүргізу қауіпсіздігін қамтамасыз ету бойынша жедел өндірістік маневр үшін жоғары технологиялық деректер алынды.



2-сурет. Жіктеуден кейінгі нүктелер бұлты



3-сурет. Лидармен түсірілген 3D моделі

Нәтижелер және оларды талқылау.

Пилотсыз ұшу аппараттарымен жүргізілген аэрофототүсірілімнің нәтижесі 3D форматындағы рельефтің шынайы моделі болып табылады [10]. Деректерді ұсынудың осы форматының артықшылықтары сөзсіз. Осы формада ұсынылған ақпаратты бағалау үшін маман болудың қажеті жоқ. Бұл, әсіресе, геодезиялық зерттеулерде білмейтін жоғары буын басшысы жобаны бақылауды жүзеге асыратын жағдайға қатысты. Үш өлшемді модель техникалық есептен айырмашылығы, не болып жатқанын қол жетімді түрде түсінуге мүмкіндік береді, оны қабылдау үшін зерттеу тақырыбына тереңірек үңілу керек [11,12,13].

Конвейерлік штректі зерттеу нәтижелері бойынша әртүрлі сипаттағы деформациялар анықталды. Фотосуретте штрек көлденең қимасының кейіннен деформациясын және тау массаларының бақылаусыз қозғалысын қалыптастыру үшін торкретбетонның бөлінуі айқын көрінеді (4а -сурет).

Бұл деформациялар түсірілім деректерінде де байқалады, жоғарыдағы суреттерде олар ақ контурмен белгіленген.

а *б*

4-сурет. а - Штрек көлденең қимасының деформациясы, б - Бекіткіштің деформациясы

Бекіткіштер арасында балласттың болмауы, нәтижесінде пайда болған тау массасының қуыстары түсірілім нәтижелері бойынша тіркелді. Бұл деформациялар 4б-суретте келтірілген, сонымен қатар 1, 2 және 3-суреттерде контурмен белгіленген.

Қашықтықтан әдістерді қолдану арқылы алынған деректерді интерпретациялау нәтижесінде қауіпсіздік мақсатында адамға осы аймақтарға өтуге тыйым салынғандығын ескере отырып, геодезиялық түсірілім жүргізу мүмкін болмайтын авариялық учаскелер де табылды (5-сурет).

Геоақпараттық технологияларды қолданудың негізгі нүктелер тобынан кеңістіктік деректер модельдеріне 3D форматында көшу [5].

Тау-кен кешені объектілерінің пайдалану жағдайларын мониторингтеу және бағалау үшін қашықтық әдістерін қолдану классикалық түсіру әдістеріне қарағанда бірқатар артықшылықтарға ие. Бұл дәстүрлі түсіру әдістерімен салыстырғанда жоғары рентабельділік және ортофотосуреттерді, цифрлық рельеф үлгілерін және цифрлық рельеф үлгілерін алу жылдамдығы. Түсірілім уақытын қысқарту - бұл жобаның қысқа мерзімдері жағдайында маңызды плюс. Жоғары дәлдік. Сурет 1:500 немесе 1: 2000 масштабтағы объектінің дәл көшірмесі. Сондай — ақ, деректерді талдау мен қабылдаудың қарапайымдылығы - сөзсіз плюс [14,15].

5-сурет. Авариялық учаске (11 көкжиектен 12 көкжиекке көліктік еңіс)

Қорытынды.

Жалпы, бұл зерттеу қашықтықтан оқыту әдістерін қолдану ортофотопландарды, цифрлық модельдерді және топографиялық карталарды құру процесін едәуір жеңілдетуге, сондай-ақ алынған материалды көрнекі, ақпараттық және түсінікті етуге мүмкіндік беретіндігін көрсетті.

Заманауи технологияларды қолдану әртүрлі объектілерді зерттеу мен бақылауды әлдеқайда қызықты, ақпараттандырады.

Түсірілім нәтижелері бойынша конвейерлік штректің визуалды күрделі геотехникалық жағдайы анықталды.

Зерттеу барысында штрек конструкциялары мен учаскелеріндегі деформациялар мен басқа да зақымдар анықталды. Түсірілімде ерекше үйінділер, штректің көлденең қималарының пішіндерінің өзгеруі айқын көрінді. Лидарлық түсірілім мүмкіндігінің арқасында штрек учаскелері туралы ақпарат алуға мүмкіндік туды.

Зерттеулер Қазақстан Республикасы ғылым және жоғары білім Министрлігінің қаржыландыру қаражаты есебінен AP14870280 "Геологиялық барлау тиімділігін арттыру мақсатында сирек металды кен орындарын іздеу және тау-кен өнеркәсібі кешені объектілерінің мониторингі үшін қашықтықтан әдістерді қолдану технологиясын әзірлеу" гранты шеңберінде дайындалды.

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Jurisprudence

CONSTİTUTİONAL PROTECTİON OF HUMAN RİGHTS AND FREEDOMS İN NORTH MACEDONİA

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Abstract

The guarantee and protection of human rights and freedoms is the central pillar of a state of law. While the guarantee of human rights and freedoms is done by legal acts, the Constitutional Courts in many European countries have jurisdiction for the protection of human rights and freedoms.

As for North Macedonia, human rights and freedoms are guaranteed by the Constitution, while it, like many European countries, has recognized the jurisdiction of the Constitutional Court for the protection of constitutional rights and freedoms, but the latter has provided for the protection of only some human rights and freedoms and not all rights and freedoms guaranteed to citizens by the Constitution.

Therefore, the purpose of this research consists in reflecting the current form of constitutional protection of human rights and freedoms in North Macedonia, as well as arguing the need to change this form of constitutional protection of human rights and freedoms by the Constitutional Court in North Macedonia, this after constitutional jurisprudence has proven that the current form of the request for the protection of human rights cannot be considered as an effective remedy of constitutional protection of human rights and freedoms.

Keywords: Constitutional court, human rights, North Macedonia.

Research questions

RQ1: Has the current form of limited constitutional protection of the rights and freedoms guaranteed by the Constitution in North Macedonia been effective?

RQ2: Does the limited constitutional protection of constitutional rights and freedoms affect the increase of complaints against North Macedonia in the European Court of Human Rights?

RQ3: Is it necessary to change this limited form of constitutional protection of human rights and freedoms, so as to provide constitutional protection for all human rights and freedoms guaranteed by the Constitution?

Research hypotheses

H1: The constitutional jurisprudence in relation to the constitutional protection of the rights and freedoms guaranteed by the Constitution proves a low number of constitutional requests that have been accepted and examined and most of them have been rejected.

H2: The limited number of constitutional rights and freedoms protected by the Constitutional Court is the reason for the submission of many complaints against North Macedonia to the European Court of Human Rights and Freedoms.

H3: The dominance of the decisions of the Constitutional Court of Macedonia, where requests for the protection of constitutional rights and freedoms have been rejected, proves the need to change the current form for the protection of constitutional rights and freedoms.

Methodology

There are different methods that can be applied to verify the hypotheses and answer the research questions related to the topic that we have treated. Some used methods in this topic are: quantitative and qualitative data analysis, comparative analysis and document analysis.

The main findings

The main findings of this study ar listed as below:

The Constitutional Court in North Macedonia represents limitted protection of human rights and freedoms guaranteed by the Constitution. So, the Macedonian constitution guarantees the protection of only three rights and freedoms through the procedure in the Constitutional Court.

As a result, the constitutional practice in Macedonia shows a very low number of requests for the protection of human rights and freedoms before the Constitutional Court, respectively in the period from January 1, 2010 to December 31, 2019, a total of 148 requests were received, which were reviewed and decision was made only for three of them, while the other 145 were rejected on various grounds (Constitutional Court of the Republic of NM, 2010-2020).

Furthermore, the Venice Commission also concluded that the low number of rights and freedoms protected by the Constitutional Court was the cause of many complaints submitted against North Macedonia to the European Court of Human Rights (Venice Commission , Report of the TAIEX , 2018, p. 16).

Based on the above elaboration of the practice of the Constitutional Court, there is a need to change this restrictive approach for the constitutional protection of human rights and freedoms.

Conclusion

Human rights and freedoms at the national level are guaranteed through the Constitution of the Republic of North Macedonia.

The guarantee of human rights and freedoms is strengthened through the constitutional protection carried out by the Constitutional Court. In this direction, North Macedonia has represented the restrictive protection of human rights and freedoms, offering constitutional protection only to " freedom of conviction, conscience, expression of thought, political association and activities and prohibition of discrimination of citizens on grounds of sex, race, religious, national, social and political affiliation."

Such restricted competence of the Constitutional Court of the Republic of Macedonia resulted in a small number of requests received and rare use of this instrument, and it should be emphasized that most of the requests have been rejected.

Based on the constitutional jurisprudence regarding the restictive constitutional protection of human rights and freedoms, the need for amending the Constitution in the direction of providing the constitutional protection of all the rights and freedoms guaranteed by the Constitution through the incorporation of the constitutional complaint which would affect the effective protection of all constitutional rights and freedoms at national level and the reduction of complaints against North Macedonia in the European Court of Human Rights.

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HUMAN SECURITY CHALLENGE OF THE NEW INTERNATIONAL ORDER

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Abstract

Based on the new reality created after the Cold War and the ever-increasing process of globalization in all its directions and dimensions, the vision of the United Nations Development Program on human security covers seven main directions including economic, food, health security environmental, personal, group and political security. The expansion of the concept of security is a requirement of the new world reality, created in the conditions of a rapid development of international relations and globalization in every sector of life, a concept which for a long time has been narrowly interpreted as territorial security from external aggression, either as protection of national interests in foreign policy or as global security from the threat of nuclear holocaust. Human security has changed the reference object, not being satisfied only with guaranteeing territorial security, but guaranteeing human security on a national and international scale, to support security through sustainable human development. The main mission of human security at the international level is the protection of people from physical violence, internal or external, from individuals or state structures, where efforts to avoid gender or age abuses, trafficking of women or children are included here. of accidents in transport, at work, etc. Part of the security of the individual is the protection from phenomena such as ethnic cleansing and genocide, protection from weapons strictly prohibited to be used by international agreements and conventions, etc. Precisely in the framework of the realization of the main mission of human security at the international level, the efforts of the international community to prevent and fight totalitarian systems, corruption at the international level, wars and genocide, discrimination in many regions of the world such as in Africa (Arab Spring), Asia (China and North Korea), and currently in Europe with the increase in the Russian threat, now in action for the invasion of Ukraine and the threat to peace and stability in the region and beyond. The division of the world after the Second World War into two diametrically opposed ideological, military and political blocs really guaranteed the territorial security of the military blocs, and therefore of the small states included in these blocs, as a result of the fear of conflict at the global level , but seriously undermined individual security in all directions where more (Eastern Bloc) and where less (Western Bloc), seriously undermined the world economy by prioritizing staggering expenditures in the feverish arms race, and caused grave consequences in the global environment as a result of the nuclear arsenal race. Many ethnic conflicts and territorial claims inherited over the centuries between different countries around the globe took the form of temporary pacification, creating the vision of a permanent solution, but which immediately reawakened strongly after the end of the Cold War and the dissolution of the Eastern bloc Soviet and former Yugoslavia. The consequences of the bloody wars and genocide in the Western Balkans that accompanied the disintegration of the former Yugoslavia and the problems of territorial annexation and re-establishment of borders greatly slowed down the process of European integration of the region. The states that were once the republics of the Soviet Union and the former Yugoslavia have partially become part of the European Union with equal rights to the founding states, and others aspire to and are at different levels of the EU membership process.1 Currently, the entire international community failed to stop a bloody war in the middle of the old European continent, the invasion of Ukraine by Russia, the consequences of which have not yet appeared in all economic, political, humanitarian dimensions and will undoubtedly be felt in every region of the globe. Unlike traditional state or national security, human security brings the security of the individual to the fore, even opposing traditional security in some cases, when his security is threatened. This new concept began to develop especially in the period after the Cold War, including, in addition to international relations, the problems of political and social-economic development, and other areas such as Freedoms and Human Rights, environmental protection, comprehensive education, etc. These concepts were born in the world of politics. However, its roots are earlier. Fen Hampson points out; "since the creation of the International Committee of the Red Cross in the 19th century, it has been widely accepted the notion that people must be protected *from violent threats and when they are harmed or injured, then the international community has an obligation to help them".* *1*

Keywords: *human rights, armed conflict, human security, welfare, genocide.*

Based on the new reality, the vision of the United Nations Development Program on human security covered seven main directions including economic, food, health and environmental security, personal, group and political security.

The overall goal is to expand the concept of security, which for a long time has been interpreted narrowly as territorial security from external aggression, or as protection of national interests in foreign policy or as global security from the threat of nuclear holocaust. So human security changed the reference object "from a special tension for territorial security to a greater tension, that of human security" and somewhat more problematic, to support security through sustainable human development.

The main goal of human security is the protection of people from physical violence, internal or external, from individuals or state structures, where efforts to avoid gender or age abuses, trafficking of women or children, accidents in transport, at work, etc. Part of the security of the individual is the protection from phenomena such as ethnic cleansing and genocide, protection from weapons strictly prohibited to be used by international agreements and conventions, etc.

Vision for security

There are two visions of human security that are in competition with each other and belong to two different political concepts.

One is defined as "freedom from desire", where human security is about providing basic human needs in terms of the economic, health, nutritional, social and environmental fields.

While the other has as its slogan "freedom from fear", where human security is guaranteed by prohibiting the use or threat of force or violence in people's daily lives.

Both these visions can be pursued simultaneously as implied in the Final Document of the World Summit. But viewed from a narrow view of human security, "freedom from fear" is intellectually and programmatically more coherent, as it focuses on the primary responsibility of political institutions to maintain social order, which is a prerequisite for the security and well-being of individuals and communities. Also the vision of human security as "freedom from desire" involves labeling a number of issues not necessarily related to each other as threats to human security, which lead to a certain point where human security seems to occupy almost everything that can be considered a threat to well-being.

Actors and institutions of international and national politics, governance, knowledge and science, together with civil society and other social protagonists, began to project a new model of society's development, the model of sustainable development. This model will provide the best possible solution for the health and well-being of society, a development model that cares for and focuses on the human and natural environment, across natural boundaries, generations and social strata. Several events at the world level starting from the 70s of the last century began to project the perspectives of society at the global level on the relations between members of society, as well as the relations of society with nature.

The United Nations Conferences "On the Human and Natural Environment" of Stockholm 1972, the United Nations Commission on Sustainable Development 1983, the United Nations Summit "On the Millennium Challenges", the Johannesburg Summit 2002, Rio 20 with the report "E the future we want" in 2012, the United Nations Summit on Sustainable Development in New York, September 25-27, 2015, are some of the most important events of an international character that have institutionalized the efforts of leadership and societal actors in global level to design and implement the sustainable development model as a development model for the society of the future. The objectives in question are integrated and indivisible and balance the three pillars of the sustainable development model: economy, society and the environment which are estimated to be extremely important for society and the planet, a program of action for humanity, the planet and the future good of society, through which the strengthening of peace and general freedom is sought.

The eradication of poverty in all forms and dimensions, including extreme poverty, is the greatest global challenge and an inalienable requirement for the model of sustainable development. Basic food insecurity is a concern for about one billion people, income inequality is increasing between different *countries and within the same country, while wars and natural disasters are displacing people from their countries of origin.*[1]

Many indicators that define sustainable development, ranging from poverty reduction, access to education, global warming and air pollution, occur at local and national levels and are determined by laws and processes set at these levels. But, more and more, many of these indicators are determined by the rules that govern the world economy, by investments and financial markets, by capital investments, by the mechanisms of international presence in different countries and the resources related to these countries, and finally last from the way our global commons are managed.

Some worry that the duration of the new peace ended with the Russian threat to Georgia and more recently to Ukraine. The containment of the superpowers during the Cold War had imposed a cautionary discipline on how to protect its rights, each nation was obliged to cooperate for the benefit of the security of the alliance. The disappearance of the threat reduced the need for cooperation, making it easier for the states of the new continent to reveal old obsessions and ambitions.[2]

Will the end of abstinence bring "the end of history" and the world in an unparalleled peace?

Or the return of history and old patterns of violence?

Or a new chapter in history in which social identity, conflict between cultures and original threats from international or religious groups replace confrontations between states as the greatest danger?

To understand whether international relations in the next millennium will be profoundly different from the past, we need to understand what forces have operated for war or peace in the past, and which of these forces are more or less important. for the new world.

To continue the idea of cooperation between nations both for the protection of their own rights and for the benefit of the security of the alliance, but not based on coercion or the use of force. States must use the "method" of self-restraint so that conflicts never precipitate into the declaration of war.

Social identities, conflicts between cultures or beliefs are discussed and treated with understanding between states avoiding greater risks, knowing that recent conflicts have been caused by clashes between ethnic and religious affiliations.

Regarding the stance on peace or war, we encounter three different stances.

Optimists explain that international relations have taken on the appearance of naturalness and permanent peace, only by the fact that ideas about war have been shaken if not discredited by the catastrophes of the first half of the last century (the two world wars). And they have found that this is only an external appearance rather than a consolidated reality.

While pessimists raise the question of whether political and economic changes affect more the prospects for peace or war? Or are they defined as having no impact in these areas?

Constructivists, on the other hand, assert that governments and other people are motivated not only by material interests, but also by a sense of identity, morality, and what is considered appropriate in a society or culture. They also underline the importance of ideas and culture in shaping international reality and politics.

As noted above, all viewpoints have their arguments which can be considered correct or incorrect, complete or incomplete. In order to give more comprehensive ideas, the pros and cons of each side should be seen and analyzed, and then all forces should be joined to contribute to the development of the theory of international law so that it is accepted by all.

The notion and definition of Humanitarian Law

The protection of human rights in armed conflicts has preoccupied people since ancient times, but it became the preoccupation of the international community only in the 20th century. This topic has entered the literature as the so-called humanitarian law, by which the authors mean the rules of international law, especially the law of war in the narrow and broad sense, which aim to humanize war.[3] *Seen from this point of view, humanitarian law consists of international legal rules created by treaties or by custom, the specific purpose of which is the solution of humanitarian problems that appear directly in armed conflicts of an international or non-international character and which, for humanitarian reasons, limit the rights of the parties to the conflict to use the methods and means of their choice, or that protect persons and property that is or may be affected by the conflict.*[4] *Moreillon with international*

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1 Mulita, R. (2015): "Një botë me zhvillim të qëndrueshëm", Tiranë.

2 2 Cashman, G. (2000): "What causes war - an introduction to theories of international conflicts", fq.78.

3 Ibler, V. (1972): Fjalori i së drejtës ndërkombëtare publike, Zagreb, fq 93.

4 Meurant, J. (1987): .Inter arma Caritas: Evolution and Nature of International Humanitarian Law, Journal of Peace Research vol. 24. No. 3, p. 237.

humanitarian law means the rules that have always had as their main goal to limit the bad effects of the war that has broken out,[5] while Pictet considers it as an important part of international law that is inspired by the feelings of humanity and is focused on the protection of individuals in times of war. Authors of international law pay different attention to humanitarian law. The wide amplitude is made by authors who dedicate whole books to those who are silent about it. Greater space has been given to international humanitarian law in Luterpach's text, but also in some other texts such as those of Rousseau, Andrassy and the Institute of State and Law of the USSR. Many other authors, such as Schwarzenberger, Verdross, Akehurst, etc., also dedicate separate chapters to humanitarian law. Some other authors elaborate international humanitarian law as a separate part but within a more general chapter dealing with the use of force by states or in relation to the resolution of international disputes. Finally, there are some authors, including some of the most well-known, who do not pay special attention to international humanitarian law and mainly talk only about a connection with the responsibility of individuals and war crimes. The position of the first authors is more than understandable if the understanding of international law is taken into account until the 18th century. Some states put the writing Ultima radio regis on their cannons, which meant that in disputes with others, the rulers used the cannons (armed forces) as a last argument for their solution or even for the realization of their own goals. Based on these facts, Clausevic said that "war is an act of violence, in which the use of force is unlimited".

These attitudes were able to be valid until the middle of the 19th century, when many rules began to be adopted which prohibited some means of war, some methods of war, some categories of persons and objects are protected, until it is impossible to derive the rules which war is expressly forbidden. Unfortunately, this topic is still relevant because, despite some prohibitions, war has not been excluded from international life, because internal wars, defensive wars or wars for the establishment of peace often take place.

History of Human Rights Protection in Armed Conflicts

International Humanitarian Law has been developed within the framework of International Law. The first humanitarian precepts have their origins in the religious and moral teachings contained in almost all major faiths such as Buddhism, Christianity, and Islam. Such rules have been few and sporadic, but each time they had as their main goal the limitation of atrocities in war. Religious and state leaders, military commanders, philosophers, jurists, etc., who in ancient times were committed to limiting the atrocities of war, as evidenced by many written documents that have been preserved. Thus the ancient Indians distinguished between just wars and unjust wars. War could begin only after attempts at reconciliation or the softening of the state of honor failed. The Indians distinguished between combatants and non-combatants and had a system of the law of war, which was based on humanity and nobility that was respected even during civil wars. Warriors were required to observe the rules of war under any circumstances regardless of whether the war was between believers and infidels. There are many documents for this. In the second book of the Vedas (Jagjur Veda), which contains the formulas and instructions for the sacrificial mass and ritual prayer and formula, two prayers of the profane rulers, contain the register of groups of protected persons in which groups composed of elders are mentioned , children and women. The epics Ramayana and Mahabharata contain evidence for the existence of the right of war and the right of peace.

The Bahmani king and Vijayanagar as early as 1367 BC had entered into an agreement for the humane treatment of prisoners of war and for sparing the lives of the enemies who were unarmed. Even the ancient lawgiver Manu, about a thousand years before our era, had forbidden the use of infidelities and certain kinds of weapons such as poisoned arrows, red-hot arrows and clawed spears. According to the Laws of Manu,[6] which Indian tradition holds to be of divine origin and to contain admonitions, prohibitions, and moral teachings relating to all forms of social and religious life in ancient India, protection was enjoyed not by warriors, fugitives, those who have surrendered, those who are asleep, those who are not able to defend themselves, etc. The Laws of Manu permitted war only between those who are equally armed, and ordered the healing of even enemies. According to some data, the persons who surrendered were not killed, while the captives were treated humanely. It is interesting that Emperor Ashoka, during his reign (274-237 BCE), had given up war as an instrument of social policy, while King Rama had ordered his brother not to use weapons for mass liquidation.[7]

5 Moreillon, J.Contemporary Challeges to Humanitarian Law, p. 215.
6 Meurant, J. (1987): .Inter arma Caritas: Evolution and Nature of International Humanitarian Law, Journal of Peace Research vol. 24. No. 3, p. 253
7 R.C.Hingorani, (1982): Modern International Law, Second edition, Oxford and IBH publishing CO. New Delhi Bombey Calcuta, p.14.

The ancient Greeks were aware of many rules of the law of war, such as those concerning the declaration of war, its cessation during public games, the protection of heralds and priests, the conclusion of truces, the burial of the slain, the exchange of captives etc. These rules have been respected in most cases.

Even Islamic International Law contained many prohibitions aimed at reducing the horrors of war. According to those rules, cruel murders, abuses and rapes, the killing of women, children, the sick, those who cannot defend themselves such as the elderly, the blind, the paralyzed, the mentally ill, the killing of mediators, the murders committed by treachery, mutilation, burning alive, and slaughtering and mutilating victims.

Conclusions and Recommendations

At the end of this analysis we can say: the results highlight that the current system is not sustainable and will continue to require state subsidies unless the contributory base is broadened, especially by wider participation from the private sector. For the urban scheme, the analysis concludes that a combination of parametric reforms could consist of an increase in the contribution ceiling combined with a reduction in contribution rates and an increase in the retirement age. To encourage more private sector participation, private pension funds are initially created for high-wage workers by offering supplementary old-age pensions. However, participation in these funds must be conditional on participation in the state pension fund. For the rural pension scheme, it is concluded in a union of the urban scheme of the self-employed with the rural one, and if this is not possible, then the second column of pensions should be applied. Also, financial and administrative reforms in this sector are necessary in order to strengthen the collection of income and achieve the financial stability of the system. This practice was best expressed by Abu Bakr's famous order addressed to the military commanders where he wrote; "when you are at war, fight like men and knights".

Efforts to stop or limit war.

As stated, international humanitarian law is designed to protect people from the disasters of war. Unfortunately, all the efforts of thinkers, philosophers, theologians and pacifists for the prohibition of war have not yielded results, except for the fact that it has been possible to proclaim some rules for the prohibition or limitation of the right of war; prohibition of war on certain days (holidays) or certain months (months of divine peace); the prohibition of some military methods and tools and to affirm some rules of the nobles (rites). War had remained a permanent phenomenon of human society. A Swiss scientist claimed that in the last 5550 years,[8] *1413 small or big wars have been fought in the world, while out of 3640 years of written history, only 292 have been without war. War was considered divine law, fatal law or providential law. Thus, Bacon did not consider wars as "massacres and confusion, but a higher trial of justice, where rulers and states do not recognize anyone above them and for the resolution of their conflicts they submit to God's justice."*[9] *Some other authors (Bacon, Hegel, Spengler, etc.) but also some military men considered war an instrument of progress, a human ideal, a great moral value, an educational tool, etc. and some even declared that "eternal peace would be as harmful as continuous war". According to these authors, war has its origins and reasons in human nature itself, where the different ideas of peoples have necessarily been limited, partial and exclusive, they are the hostile, aggressive and tyrannical properties that make war inevitable. According to Moltke, war "is a part of the general order that God has created". In such wars weaker ideas are defeated, absorbed or assimilated by stronger ideas. In this way, a considerable number of philosophers, statesmen, soldiers and jurists justify war as something that originates in human nature, "in which everyone with every angle is in a state of war and where everyone is a wolf to the other (homo hominis lupus)".*[10] *According to Hegel, the triumph of the absolute spirit and natural selection is achieved through war, in this case good ideas and strong individuals and nations triumph, therefore wars must be fought every twenty years. In war, noble virtues (courage, loyalty, sacrifice) are developed, the strength of the people is revived, patriotism is encouraged, and what has become old and worn out is renewed. These teachings later served as the basis of fascist and national-socialist ideas about superior and inferior races, about peoples who are by nature called to rule and peoples who should be ruled, about those who have contributed to the development of civilization and the peoples of uncivilized, barbarian peoples, etc. Most of the jurists have treated war as a natural right that originates from state sovereignty and which, according to the concept of just and unjust wars, has the character of a sanction in relations between states, since the international community has not had institutions and mechanisms to distribute justice and ensure the fulfillment of*

8 Prokofjev, B. (1970): OON-25 let, Izd MO, Moskva, str 25.
9 Osnovi, A. (1898): medjunarodnoga prava, Knjiga druga, Beograd, str, 171.
10 Hobes,Th. (1651): Leviathan, kreu XIII.

decisions. In these conditions, the states have no other means but war as a last resort to try to realize their rights or the rights they assume belong to them. Of course, the reasonableness and sustainability of the concept of war as a sanction can easily be disputed because war does not guarantee that it can work as a sanction, since in no case does it ensure that only the guilty will suffer and it does not guarantee that the war will be won by the one who he is right, but he who is stronger. According to this reasoning, war cannot be a reaction against injustice if the side that has suffered injustice is weaker than the other.

Attempts to stop the war have been made before, however few and however largely unsuccessful until our century, they should not be ignored. On the contrary, they have a deserved place in history. Among these, the efforts of the French Enlightenment have a particularly important place. Voltaire said in one of his writings: "I understand perfectly the right of peace; this right means keeping one's word to ensure that every man fully enjoys his natural rights; but I don't know what the right of war is. A codex for murder seems to me a rather strange concept".[11] War is always and more often treated as a denial of the right, respectively as the reign of force or as one of the most egregious actions of people to demonstrate their perfection. "In essence, Montaigne wrote, this science or art of killing, destroying and exterminating one's own kind is a condition that even savages do not do." The same author wrote in another place that savages are superior to humans because they do not know the art of destruction, while the philosophy that supports war elevates force over right and aims to transform crime into heroism and the judge of the strongest.[12] These were the reasons why demands have begun to be articulated much more clearly, not only to avoid the evils that war brings, but also to stop war in its entirety.[13] With the adoption of the Statute of the League of Nations, the Brian-Kellogg Pact and especially the Charter of the United Nations, the previous right of war (ius ad bellum) is transformed into the right against war (ius contra bellum), which is the end of fortunate for the efforts of humanists to stop war as one of the greatest evils and gravest crimes.

The aims and basic content of Humanitarian Law.

As can be concluded from the explanations so far, the basic content and purpose of Humanitarian Law is the protection of human personality. International and Humanitarian Law since the middle of the 19th century becomes an important instrument for reducing inhuman actions; instrument for prohibiting the irrational use of force and instrument for the protection of war victims. However, the concept of Humanitarian Law has been greatly expanded in recent times. The humanitarian rules contained in the Geneva Conventions and the Hague Rules on the law of war make Humanitarian Law applicable to war and armed conflict. These represent Humanitarian Law in the narrow sense.[14]

In the evolution of the theory of Humanitarian Law, a new, broader worldview of this law is increasingly penetrating, which includes human rights that apply in peacetime. According to some contemporary worldviews, the future development of Humanitarian Law will increasingly place a focus on the future of human rights instead of war relations, methods and means of war.

Non-prescription of war crimes and crimes against humanity.

One of the most important measures to ensure that those guilty of war crimes and crimes against humanity could not escape punishment is related to the work on the preparation of the Convention on the Non-Prescription of War Crimes and Crimes Against Humanity and the adoption of the relevant convention. The first step was the preparation of a project by the Secretary General of the United Nations, based on which the Human Rights Commission and the Economic and Social Council prepare their project. This new draft was submitted for consideration to the General Assembly at its XXII session in 1967. The draft was adopted on November 26, 1968.

In this matter, the international community has started from the conviction that war crimes and crimes against humanity are considered among the most serious crimes, therefore the convention provides:

1. That war crimes and crimes against humanity are considered among the most serious crimes and are non-prescriptible, Article I, II;

2. That the provisions of the Convention are applied both to representatives of the state authority and to private persons, who either as perpetrators or accomplices have participated, directly incited others, participated in the conspiracy or tolerated their commission, Article II;

11 Voltaire, (1741): Elogio de los oficiales muertos en la Guerra de 1741; cituar sipas Pasquale Fiore, op. Cit. P 24.
12 Fiore, P. (1880): "Treatise on International Law, Oxford and IBH publishing CO.
13 Lawrence, L. (1875): Letër e botuar në Alvany journal.
14The united Nations and Human Rights, New York, 1984, pp. 208-209; United Action in the field of Human Rights New York, 1988, p. 286-287.

3. That the states will take all necessary measures to extradite the persons mentioned in Article II;

4. That they will take all the necessary measures to ensure that the statute of limitations will not be applied when it comes to the prosecution and punishment of those who have committed these crimes, and where it has existed it will be removed.

The problem of criminal responsibility has been actualized again in recent years, as a result of serious crimes committed in the territory of the former Yugoslavia. The international community, through the Security Council, after an extension, has decided to establish an impartial Commission of experts to investigate serious violations of humanitarian law, which have been committed in the territory of the former Yugoslavia, and to notify the Secretary General of the conclusions. and his testimonies. The commission of experts in the interim report (S/25274) concluded that serious violations of International Humanitarian Law were committed in the territory of the former Yugoslavia, such as murder, ethnic cleansing, mass murder, torture, rape, looting and destruction. of private goods, disappearance of cultural and religious objects, arbitrary imprisonment, etc.[15] *With resolution 808, the Security Council assessed that the existing situation poses a danger to international peace and security and expressed its determination to stop the frequent violations of International Humanitarian Law, mass killings, the practice of ethnic cleansing and to bring to justice the persons responsible for them. , and for this purpose decided to establish the International Court for the prosecution of the persons responsible for the serious violations of International Humanitarian Law Committed in the Territory of the former Yugoslavia since 1991.*[16]

Finally, on May 25, 1993, the Security Council adopted the Secretary-General's report, which included the Statute of the International Criminal Court, on Serious Violations of International Humanitarian Law in the territory of the former Yugoslavia, from 1991 to the present day. to be designated by the Security Council, and has ordered all states to cooperate fully with the International Court of Justice and its bodies.

The court is an ad hoc court and in many elements it is based on the decisions and practices of the Nuremberg and Tokyo Courts. The Statute of the Court has determined the personal, subject, territorial and temporal competence, the organization of the court, the elections of judges, the rules of procedure, etc. According to the statute, the Court is competent for the trial of persons responsible for serious violations of the Geneva Conventions since 1949, for violating the laws and customs of war, for genocide and for crimes against humanity (Articles 2,3,4,5) .

The Statute has determined that the persons responsible are: the persons who planned, ordered, instigated, committed, assisted or participated in the planning and commission of the crimes from Articles 2-5 of the Statute. The Statute has provided that the International Court and the National Court are competent for the trial of such persons (the first has priority over the second), which explains the primacy of International Law. It follows from this that states cannot avoid fulfilling the obligations imposed by International Law and agreements in force by relying on their own laws and thus avoid responsibility.

Conclusions and recomandation

The bodies of international institutions or international conferences occupy an important place in international relations today. Humanity has finally avoided world conflict, but local, regional conflicts, civil and liberation wars have increased a lot, which undoubtedly imposes not only the need for existence, but also the need to supplement and expand the rules of humanitarian law. Of course, the existence of humanitarian rules is not in every case a sufficient guarantee for the avoidance of inhuman actions. As we know from history, even from this recent time, there have been many examples of flagrant violations of the most basic rules of war. The activity of the United Nations and some of the most important events with an international character have institutionalized the efforts of leadership and society actors at the global level to design and implement the model of sustainable development as a development model for the society of the future. The objectives in question are integrated and indivisible and balance the three pillars of the sustainable development model: economy, society and the environment which are estimated to be extremely important for society and the planet, a program of action for humanity and a good future of society, through which the strengthening of international and national peace and general freedom is sought. The idea of cooperation between nations, both for the protection of their own rights and for the benefit of the security of the alliance, should continue to be implemented and acted upon, but not based on coercion and coercion. States must use the "method" of self-restraint and dialogue so

15 Raporti i dytë i përkohshëm i Këshillit të Sigurimit të OKB-së, (1993):. Rez. 780 e datës 16. XI. 1992.
16 Rez. 808 datë 19.II.1992.

that conflicts never precipitate into the declaration of war. The new century has not started as quietly as predicted, instead it has begun with new threats, which pitted an entire nation organized into a sovereign state against an organized terrorist network that had no base states, but had support and shelter widespread in almost the entire Muslim world and, as evidenced later by the cases of terrorist attacks, there was support even within those countries where these attacks were carried out. The attacks on the UK subways were organized and carried out by British citizens born and raised in Britain, but of Arab origin.

The international organizations responsible for maintaining security and peace are concerned that the duration of peace at the global level is doubtful, especially with the increase of the Russian threat, the feverish race for nuclear weapons of some countries such as North Korea or Iran, etc., and tensions within the countries themselves. member of NATO like the one between Turkey and Greece.

The collapse of Soviet control over Eastern Europe in 1989 marked the end of a sixty-year period between the superpowers that was primarily an ideological war. For some, it was the culmination of long efforts to end the use of war as a means to resolve problems between the great powers. States, instead of trying to build and maintain an international order that would ensure stability, tried to strengthen themselves militarily and politically and have more superiority over potential opponents.

The international order that was established was a product of this competition. Here we mention, e.g. the order established during the Cold War. No state intended to create it. In fact the USA and its allies on one side the Soviet Union and the Eastern bloc on the other in the first years of this war tried to undermine each other's position in Europe, which would necessitate the bipolar system in Europe.

Some researchers suggest that we will soon "miss" the Cold War. Will we miss the Cold War or not, this is an argument that remains to be discussed. Of course, I will not miss anyone for some serious events that accompanied this war, e.g. the conflict in Korea and Vietnam, the missile crisis in Cuba or the construction of the Berlin Wall. No one wants to experience this war again precisely because of purges and xenophobia. However, some theorists have expressed their longing for this war, perhaps initiated by the balance of power, which kept local and regional ethnic conflicts under control. The end of the Cold War was an abrupt end, not because the war would not end, but because a silent war ended without direct combat. However, even against the success that was achieved in ending this "war", without having a clash between the superpowers, many dilemmas arose not only among skeptics, but also among war theorists. Opinions about what will happen after the end of the Cold War varied greatly. From the thoughts of Fukajame, who announced the end of history to Huntington's warnings about a new dimension of wars, that of the clash of civilizations. However, after the end of the Cold War we have seen more wars than during the sixty year period of this war. The wars that took place later were of different characters, starting from the ethnic ones, which were in the majority, to the ideological wars, which was the American clash with the Islamic ideology. In order not to allow the repetition of tragedies such as that in Kosovo and Bosnia-Herzegovina in the future, it is imperative that the international community reach a consensus on the essential principle and not only that, measures must be taken against massive and systematic violations of rights of man, regardless of where they occur, but also the way of making decisions about what measures are necessary and when they will be implemented. The American clash with Islamic ideology after September 11 has given birth to a new war, which has taken on global proportions and has changed the character of wars. For the first time in history, a sovereign state declares war on an international criminal organization and fights it even while violating the sovereignty of others. This war has given international relations theorists a new space for studying the nature of war and has given them the opportunity to redefine theories about war and the actors of international relations.

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Medical sciences

MEDICAL EFFICACY AFTER ACUTE CORONARY SYNDROME IN CORONAVIRUS INFECTION

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МЕДИЦИНСКАЯ ЭФФЕКТИВНОСТЬ ПОСЛЕ ПЕРЕНЕСЕННОГО ОСТРОГО КОРОНАРНОГО СИНДРОМА ПРИ КОРОНАВИРУСНОЙ ИНФЕКЦИИ

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Abstract

Since the beginning of the COVID-19 infection pandemic, discussions about the tactics of examination and treatment of patients with acute coronary syndrome (ACS) against the background of coronavirus infection have not subsided. The most urgent issues have become the assessment of the degree of mutual influence of these diseases on the severity of the patients' condition and on clinical outcomes.

Аннотация

С начала пандемии инфекции COVID-19 не утихают дискуссии о тактике обследования и лечения пациентов с острым коронарным синдромом (ОКС) на фоне коронавирусной инфекции. Наиболее актуальными вопросами стали оценка степени взаимного влияния этих заболеваний на тяжесть состояния больных и на клинические исходы.

Keywords: acute coronary syndrome, coronavirus infection, survival rate.
Ключевые слова: острый коронарный синдром, коронавирусная инфекция, выживаемость.

Актуальность: *Несмотря на некоторые опасения, высказанные в начале пандемии, отсутствуют доказательства серьезных побочных эффектов, влияния на выживаемость, частоту обращения за неотложной медицинской помощью или на качества жизни пациентов с COVID-19, как это следует из заявления Всемирной организации здравоохранения [1].*

Тем не менее, имеющиеся в настоящий момент данные не позволяют дать однозначный ответ на влияние препаратов, использующихся в стандартной схеме лечения пациентов с ОКС на течение и прогноз COVID-19 в общей популяции [2].

Цель: *Оценить выживаемость пациентов, которые перенесли острый коронарный синдром при сопутствующей коронавирусной инфекции.*

Материалы и методы исследования:

В городском кардиологическом центре (ГКЦ) г. Алматы было пролечено 72 пациента с острым коронарным синдром с сопутствующей коронавирусной инфекцией в 2021 году. Для *исследования нами были использованы статистический, аналитический, описательные методы.*

Результаты и обсуждение:

Демографическая характеристика контингента пациентов с острым коронарным синдромом с сопутствующей коронавирусной инфекцией была распределена следующим образом – всего было 72 пациента, из них мужчин – 43 (59,7%), женщин – 29 (40,3%).

Средний возраст пациентов составил - 65,16 ± 11,87 лет, медиана – 64,5 лет, минимальный возраст – 40 лет и максимальный возраст – 91 год. При этом среди мужчин средний возраст составил 61,79± 11,49 лет, медиана 59 лет, и среди женщин 70,17± 10,75 лет, медиана 73 года.

Большая часть прооперированных пациентов были жителями г. Алматы (72,1%), прибыли из других регионов страны – 27,9%.

По социальному статусу преобладали пенсионеры – 66,9%; остальные также не работали: инвалиды по заболеванию – 16,4%, безработные – 16,7%.

Как правило, пациенты поступали в стационар по скорой медицинской помощи (90,2%). Остальные пути поступления представлены самостоятельным обращением пациентов – 2,6%, направлением организациями консультативно-диагностической помощи – 7,2%.

Всем пациентам была проведена диагностическая КАГ, по результатам которой проведено стентирование в 31 случае (43,0%), рекомендовано коронарное шунтирование в 2 случаях (2,7%), имплантирован ЭКС в 5 случаях (7,0%), в остальных случаях рекомендовано консервативное лечение – 47,3%.

Основному заболеванию чаще всего сопутствовала артериальная гипертензия, которая зарегистрирована у 89,4%. Также встречались: сахарный диабет 2 типа (22,3%), нарушение толерантности к глюкозе (3,7%), хроническая болезнь почек I-III стадий (7,8%). В анамнезе пациенты указали на ранее перенесенные острое нарушение мозгового кровообращения (9,7%), ранее перенесенный инфаркт миокарда (70,2%), хроническая сердечная недостаточность со сниженной фракцией выброса наблюдалась в 49,2% случаях.

Количество койко-дней, которые пациенты провели в стационаре, в среднем составило 10,36 ± 4,55; максимально – 22, минимально – 2; в реанимационном отделении пациенты находились от 1 до 12 дней.

Положительная динамика (выздоровление, улучшение) наблюдалась у 100% пациентов.

Одногодичная выживаемость пациентов с острым коронарным синдромом с сочетанной коронавирусной инфекцией составила 91,7%, среди мужчин – 93:, среди женщин – 89,7% (Лонг-ранг p=0,61; Бреслоу p=0,62; Тарон-вар p=0,62).

Среднее время дожития пациентов составило 515,93±16,88 дней (ДИ 482,83 – 549,03) при максимальном времени наблюдения 559 дней после госпитализации. Среднее время дожития среди мужчин составило 501,20±19,40 дней (ДИ 463,16 - 539,25), а среди женщин составило 506,03±29,09 дней (ДИ 449,01 – 563,05).

Повторная госпитализация пациентов в течение года по поводу заболеваний сердечно-сосудистой системы составила – 34%.

Заключение: *Основной причиной смертности во всем мире по-прежнему остаётся ишемическая болезнь сердца (ИБС). Описывать возможные патогенетические связи между COVID-19 и острым коронарным синдромом (ОКС), учет которых будет способствовать оптимизации ведения пациентов с коморбидной патологией. Обращено внимание на высокую частоту (от 7,2% до 12%) острого повреждения миокарда у больных COVID-19 с возрастанием в структуре острой коронарной патологии удельного веса инфаркта миокарда (ИМ) 2-го типа [3].*

Несмотря на то, что в фокусе внимания систем здравоохранения во всем мире находится COVID-19, все же основной причиной смертности во всем мире остается ишемическая болезнь сердца (ИБС). Так, в России в 2019 г. на долю болезней системы кровообращения пришлось 46,7% общей смертности населения, а доля ИБС составила 25,6% [4]. Во время пандемии возникли вопросы о влиянии COVID-19 на частоту развития и течение острого коронарного синдрома (ОКС), которые в течение 1 года не были полностью разрешены. Как отмечают итальянские исследователи, перегрузка системы здравоохранения во время пандемии привела к тому, что острые формы ИБС стали регистрироваться реже, но течение их стало более тяжелым, сопряженным с развитием осложнений [5]. В исследовании были продемонстрированы катастрофические показатели госпитальной летальности в когорте ОКС и COVID-19 – 34,5%, *кроме того, отмечена высокая 60-дневная смертность – 21,1%. Таким образом, кумулятивная 60-дневная выживаемость составила лишь 51,7%. В недавнем Английском многоцентровом исследовании, основанном на анализе 12 958 пациентов, в том числе, 517 положительных на COVID-19, показана 24,2% госпитальная летальность и 41,9% 30-дневная смертность инфицированных больных с ОКС [6].*

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CANCER OF THE ORAL CAVITY AND OROPHARYNX: CURRENT ISSUES AND CLINICAL ASPECTS

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Abstract

This scientific and analytical work presents in detail the current global and local-regional epidemiological indicators of such a common oncological pathology as oral cavity and oropharyngeal cancer, including morbidity, mortality, lethality and five-year survival rate. The issues of etiology and pathogenesis, peculiarities of spread, clinical manifestations, modern principles of diagnosis and treatment results, methods of prevention are considered in detail. In the comparative aspect, the epidemiological characteristics of this pathology in our republic in the context of the regions of the country, as well as the results of preventive examinations, are consecrated.

Keywords: oncology, cancer, oral cavity, oropharynx, epidemiology, morbidity, mortality, lethality, five-year survival rate, prevention.

To date, malignant neoplasms of the oral cavity and oropharynx occupy a leading place in incidence among oncological pathologies of the ENT organs.

Oral cancer is a malignant tumor of epithelial origin that affects organs entering the cavity limited from the mucous membrane of the lips to the anterior palatine arches. Oral cancer develops in men 5-7 times more often than in women. The peak morbidity occurs at the age of 60-70 years, but the risk of getting sick increases from 40 years of age. It most often develops in the anterior floor of the mouth and accounts for 20% of all types of squamous cell carcinoma of the oral cavity. 3% are adenocarcinomas of the minor salivary glands. Among the clinical and anatomical forms, ulcerative forms predominate. Of the malignant neoplasms of the oral cavity, tongue cancer ranks 1st. More often it develops in the middle third of the lateral surface (up to 70% of cases) and in the root of the tongue. Much less often on the lower surface of the tongue, rarely on the dorsal surface and tip of the tongue. Cancer of the buccal mucosa occurs in up to 13% of cases; typical localization is the corners of the mouth, the line of closure of the teeth, and the background process is leukoplakia. Also quite often the mucous membrane of the alveolar part of the lower jaw is involved, less often - the alveolar process of the upper jaw or both jaws, the retromalar area. Even less common is cancer of the soft palate, uvula and anterior palate. Regional metastasis is observed in approximately 30% of patients [1].

The morbidity of malignant neoplasms of the oral cavity is determined by household habits, nutrition, and exposure to the external environment. Among the etiological factors for the development of oral cancer, it is necessary to highlight the following: bad habits, such as smoking, especially in combination with drinking strong alcohol, chewing various mixtures (nasvay, betel, etc.); background processes - leukoplakia, erythroplakia, chronic ulcers and cracked lips, cheilitis, chronic infection in the oral cavity; chronic trauma to the oral mucosa (destroyed teeth and their roots, poorly made dentures). Also at risk are people working in hazardous industries (exposure to harmful substances, elevated *temperatures, etc.). The influence of diet on morbidity is the consumption of too hot and spicy foods, as well as a lack of vitamin A in the diet.*

A very interesting and informative historical review was conducted by Inchingolo F. et al. [2]. This review of historical medical literature aims to understand the evolution of the medical existence of oral cancer over time, especially to better understand whether the apparent lower prevalence of this type of cancer in ancient times is actually due to the absence of modern environments and lifestyles or whether it is related with misinterpretation of ancient foreign terms found in ancient medical texts relating to oral neoplasms. The authors analyzed the databases MedLine, PubMed, Web of Science, Elsevier's EMBASE.com, Cochrane Review, the National Library of Greece (Stavros Niarchos Foundation, Athens) and the Library of the School of Medical Sciences of the National Kapodistrian University of Athens (Greece). A thorough search was conducted for relevant studies published in the last century on the history of oral cancer and its treatment from antiquity to the present day, as well as the WHO website for analysis of recent epidemiological data. In addition, the researchers included historical books on the topic of interest and primary sources. As the authors note, historical references indicate that the cradle of oral oncology was in Ancient Egypt, the Asian continent and Greece, and cancer treatment was limited to rough surgical practice to remove abnormal lesions and prevent bleeding through cauterization. During the Middle Ages, little progress was made in medicine in general, including the treatment of oral cancer. It is only from the Renaissance to modern times that knowledge of its pathophysiological mechanisms and histopathology, as well as approaches to surgical and pharmacological treatment, has become increasingly profound throughout the world, evolving into a true comprehensive treatment. Despite the abundant literature on oncology in past civilizations, the actual prevalence of oral cancer in ancient times is much less known; however, a review of the literature cannot rule out a continued prevalence of this cancer in past populations, probably with a lower morbidity than today, since many descriptions of its aggressiveness have been found in ancient medical texts, but it is still difficult to be sure that each individual description may be associated with cancer, especially in the pre-medieval period. The researchers conclude: modern oncologists and oral surgeons have much to learn from their historical colleagues to avoid past failed attempts to treat oral malignancies. The few descriptions of oral cancer in antiquity that the authors found suggest that the disease may be associated with mechanisms not strictly dependent on environmental risk factors, and this may direct future oral treatment research toward strategic cellular and molecular approaches.

Paré A. et al. [3] note that the oral cavity is the most common anatomical site of malignant neoplasms of the upper digestive tract. Squamous cell carcinoma is the most common histological type and accounts for more than 95% of oral cancers. The main risk factors are exposure to tobacco and alcohol, and potentially malignant lesions. These precancerous lesions are a chronic disease of the oral mucosa and are responsible for about 20% of oral cancers. Treatment of oral cancer depends on the clinical, radiological and endoscopic stage and in accordance with the decision of the multidisciplinary oncological committee. Indeed, tumor staging provides information on locoregional and metastatic spread. Treatment may include surgery, radiation therapy, and chemotherapy. However, the prognosis mainly depends on the resectability of the tumor and the patient's comorbidities. Tumor removal is often associated with reconstructive procedures to restore phonation, swallowing, and breathing functions with an acceptable aesthetic result. The usual late diagnosis explains the poor prognosis of oral cancer, despite attempts to prevent relapses and use anti-relapse therapy. Indeed, the profile of tobacco smoking and alcoholism outside the medical system, the high relapse rate and the incidence of secondary primary malignancies explain the stable morbidity over many years.

As indicated by Montero P.H. et al. [4], although early diagnosis of oral cancer is relatively easy, manifestations of late stages of the disease are not uncommon. The standard of care is primary surgical resection with or without postoperative adjuvant therapy. Improvements in surgical techniques combined with the routine use of postoperative radiation or chemoradiation therapy have resulted in improved survival. Successful treatment relies on multidisciplinary treatment strategies to maximize oncologic control and minimize the impact of therapy on form and function. Prevention of oral cancer requires better education about lifestyle risk factors, as well as increased awareness and tools for early diagnosis.

Wong T. et al. [5] emphasize that the treatment of oral cancer is an interdisciplinary task, since each patient poses a unique set of problems to treating physicians, the solution of which affects both survival and quality of life. This article focuses on the treatment of oral cancer. The authors highlight the epidemiology and risk factors of oral cancer in Australia, various clinical manifestations and the course of the oncological process at various stages of the disease. In the vast majority of cases, surgery remains *the main treatment method. Radiation medical oncology techniques are typically used in the adjuvant context. Dental professionals play a critical role in many stages of treatment, from initial identification to optimizing dental health before treatment and managing the short- and long-term effects of treatment. Monitoring for relapses and the development of second primary tumors is key.*

D'souza S. et al. [6] in their literature review, which concerns the prevention of this pathology, say that oral cancer creates an alarming situation throughout the world and causes global concern, since it is the 11th most common carcinoma in the world. After cardiovascular disease, cancer is the next biggest killer. Approximately 90% of all oral malignancies are squamous cell carcinoma. The etiological basis of oral cancer is tobacco use, smoking, smokeless tobacco (snuff or chewing tobacco), alcohol and areca nut consumption, excessive sun exposure, reverse smoking and human papillomavirus (HPV). Treatments for oral cancer are very expensive and accessibility is low. Therefore, taking preventative measures in the first place is of great importance in itself. Prevention is an interdisciplinary approach involving coordinated efforts from all sectors of society. Preventive measures are divided into primary, secondary and tertiary. Along with various screening tests used to detect oral cancer, the review focuses on biomarkers, melatonin, tea components, polyphenols, chemoprevention, Chios mastic extract, optical imaging agent targeting poly (ADP-ribose) polymerase 1 (PARP1), and their role in the prevention and control of oral cancer.

As for the development of the oncological process and the clinical picture, in the initial period there are painless nodules, compactions, superficial ulcers or cracks that are not amenable to conservative treatment. Patients may also complain of discomfort when eating in the form of burning or tingling. In the developed period, pain is observed in almost 100% of cases and can have varying intensity and radiate to the ear and temporal area. Due to the addition of a secondary infection and the disintegration of the tumor, foul odor appears from the mouth. The tumor is characterized by three forms of growth: exophytic, endophytic (ulcerative, infiltrative or ulcerative-infiltrative) or mixed. In the exophytic form, mushroom-shaped, plaque-like growths on the mucous membrane with clear boundaries are noted. In the endophytic form, the ulcer may be limited to a tumor ridge, and the tumor may spread deep into the tissues in the form of an infiltrate without clear boundaries. In the advanced period, there is massive destruction of surrounding tissues involving bone structures, the vestibule of the mouth, skin, and muscles [1].

The diagnosis is established on the basis of: 1) anamnestic data, namely the presence of a neoplasm that is not amenable to conservative treatment within 2-3 weeks; 2) physical examination, including a thorough clinical examination, palpation of the formation and adjacent tissues and regional lymph nodes; 3) cytological examination of scrapings, smears, punctate from the primary tumor, punctate from enlarged or suspicious lymph nodes; 4) pathological examination of biopsy (surgical) material; 5) instrumental examination methods, including ultrasound examination of oral tissues, ultrasound of the neck, computed tomography (CT)/magnetic resonance imaging (MRI), positron emission computed tomography, fibrolaryngoscopy according to indications [1].

Regarding diagnosis, Bron G. et al. in their work [7] describe a new dynamic CT method "Mouth open with tongue extended" which, according to the authors, can optimize TNM staging of oral and oropharyngeal cancer. Colleagues describe that cross-sectional imaging is essential to determine the local extent of oral and oropharyngeal cancers and determine TNM staging, but complex anatomy and frequent dental metal artifacts make this difficult. This study assessed the clinical benefit of the dynamic mouth-open-tongue-out maneuver on CT (CTmote) compared with conventional CT (CTconv) and MRI. Retrospectively, the study included 58 patients with histologically confirmed cancer of the oral cavity - 34 patients, oropharynx - 24 patients. All of them underwent endoscopy with biopsy, MRI, and CT. Data were divided into 3 data sets, and measurements were performed blinded by 2 independent radiologists. The gold standard was pTNM in 31% of cases; otherwise, cTNM obtained at a multidisciplinary team meeting using endoscopy and biopsy mapping was used. CTmote was applicable to all patients, including those already treated with surgery or radiation therapy. Accurate TNM staging was obtained in 68%, 83%, and 83% of cases on CTconv, CTmote, and MRI, respectively. The best pairwise comparison exam scores were 3%, 47%, 50% for CTconv, CTmote, and MRI, respectively. CTmote and MRI observer agreements, image quality, and confidence ratings were comparable and higher compared with CTconv ($p<0.001$). As a result of the data obtained, the researchers concluded that CTmote improves the assessment of the stage of tumors of the oral cavity and oropharynx compared to CTconv, while its performance is close to that of MRI. In clinical practice, the combination of CT with "Mouth open with tongue extended" maneuver and MRI appears to be the optimal imaging strategy for local staging.

A similar study on a comprehensive evaluation of the dynamic open mouth maneuver and an *algorithm for reducing metal artifacts on CT images of the oral cavity and oropharynx was carried out by Bae Y.J. et al. [8]. The purpose of the study was to determine the optimal utility of the open mouth technique and the orthopedic implant metal artifact reduction (O-MAR) technique for oral and oropharyngeal CT. Between July 2017 and May 2019, this retrospective study included 59 subjects who underwent both conventional head and neck CT and open-mouth head and neck CT. All images were reconstructed using the O-MAR algorithm. Using conventional CT with/without O-MAR (CTc_O/CTc) and open-mouth CT with/without O-MAR (CTo_O/CTo), one reader measured noise levels in several anatomical areas of the oral cavity and oropharynx. Visual scores for banding artifact and overall subjective image quality were assessed by two independent readers. The following results were obtained. For the mobile tongue, retromolar trigone, and tonsil, mean noise was significantly lower and mean visual scores were significantly higher with CTo than with CTc or CTc_O (all $p<0.001$). Mean vision scores were higher with CTo_O than with CTo for the mobile tongue and tonsil (all $p<0.001$). In contrast, for the floor of the mouth and base of the tongue, mean noise was significantly higher with CTo_O than with CTc or CTc_O, and mean visual scores were significantly higher with CTc than with CTo or CTo_O (all $p < 0.001$). Conclusions: The open mouth maneuver and O-MAR technique may have different effects on CT image quality depending on the anatomical areas of the oral cavity and oropharynx.*

In addition, there are data from Tota J.E. et al. [9] on inflammatory conditions of the tongue and the risk of oral cancer. The authors note that the morbidity of tongue and oral cavity cancer has increased since the 1980s among men and women in the United States for unknown reasons. The association of inflammatory diseases of the tongue with the risk of oral cavity and oropharyngeal cancer among older adults in the United States (age 65 years and older) was examined. The researchers conducted a case-control study (2,534 oral cancers, 6,832 other oral cancers, 9,373 oropharyngeal cancers, and 200,000 controls) within the SEER-Medicare dataset (1992–2013). Medicare records were used to identify patients with clinically diagnosed inflammatory conditions of the tongue (glossitis, benign migratory glossitis, median rhomboid glossitis, atrophic glossitis, glossodynia, other specified conditions (eg, atrophy and hypertrophy), and other unspecified conditions) and precancerous oral conditions (leukoplakia /erythroplakia). Only conditions preceding cancer/control selection by more than 12 months were included. The following results were obtained. The prevalence of tongue inflammatory disease was significantly higher in patients with tongue cancer than in controls (6.0% vs. 0.6%; odds ratio [OR] adjusted for age, gender, race, Medicare use, and precancerous lesions, 5.8 [95% confidence interval (CI), 4.7-7.2]). This overall association was primarily due to glossitis - 5.6 (95% CI 4.4 to 7.2); other specified conditions - 9.1 (95% CI 5.5 to 15.2); and other unspecified conditions – 13.7 (95% CI 8.0 to 23.7). These associations remained strongly elevated for more than 5 years before tongue cancer (argument against reverse causation), in specialist-diagnosed conditions (argument against misclassification), and among patients who had an oral biopsy (argument against missing cancer). In 2013, approximately 1 in 11 patients with tongue cancer had previously been diagnosed with inflammatory tongue disease. Associations with inflammatory tongue disease were relatively weak for other oral cancers (OR 1.8 [95% CI 1.5 to 2.3]) and oropharyngeal cancers (OR 1.3 [95% CI 1.0 to 1.6]) and were observed only in those closest to the diagnosis of cancer. The authors concluded that inflammatory diseases of the tongue are associated with a significantly increased risk of oral cancer and precede cancer diagnosis by several years, highlighting the need for increased clinical surveillance among patients with such apparently benign diagnoses.

Tang M. et al. [10] emphasize that the molecular etiology and pathogenesis of tongue cancer remains unclear. In their study, the authors elucidated the pathogenesis of tongue cancer and explored new potential diagnostic and therapeutic targets. Four matched pairs of cancerous and paracancerous tongue tissues were collected for RNA sequencing (RNA-Seq) and differentially expressed genes were analyzed. RNA-Seq data from tongue cancer tissues were further analyzed using bioinformatics and quantitative reverse transcription-PCR analysis. Sequenced reads were quantified and qualified according to analysis requirements. Transcriptomes of tongue cancer tissues and paired paracancerous tissues were analyzed, and 1700 upregulated genes and 2249 downregulated genes were identified. Gene Ontology analysis revealed significant enrichment of terms related to extracellular matrix (ECM) organization, cell adhesion, and collagen catabolic processes. Kyoto Encyclopedia of Genes and Genomes analysis revealed that these differentially expressed genes were mainly present in the focal adhesion pathway, ECM-receptor interaction pathway, phosphoinositide 3-kinase (PI3K)-Akt pathway, and cell adhesion molecules. Comprehensive gene tree and pathway network analysis revealed that most cell cycle genes were upregulated, while most genes related to intracellular response, cell adhesion, and cell differentiation were downregulated. The ECM receptor, focal adhesion kinase (FAK) and PI3K-Akt *pathways were closely related to each other and occupied key positions in differential signaling pathways. The ECM receptor, FAK, and PI3K-Akt signaling pathways have been found to synergistically contribute to the initiation and progression of tongue cancer and may serve as potential diagnostic and therapeutic targets for this type of cancer.*

Malignant neoplasms of the oropharynx - a malignant tumor affecting the middle part of the pharynx; the border is a line drawn along the anterior palatal arches, roller-shaped papillae of the tongue, along the border of the soft and hard palate. The upper boundary of the oropharynx is a horizontal plane passing at the level of the hard palate, the lower is a horizontal plane located at the level of the highest point of the free edge of the epiglottis. Risk factors for oropharyngeal cancer: the presence of untreated inflammatory and precancerous diseases of the oropharynx (chronic ulcers from dentures, leukoplakia, erythroplakia); bad habits (smoking, alcohol abuse); genetic predisposition (presence of malignant diseases in relatives); carriage of human papillomavirus (HPV) (type 16,18) [11].

HPV is an important risk factor for oropharyngeal cancer and is associated with better treatment responses compared with non-HPV oropharyngeal cancer. Regardless of location, there are no clinically available biomarkers for the early detection of these cancers, and many are detected at advanced stages and have poor 5-year survival rates [12].

As noted by Poelman M.R. et al. [13], worldwide, as well as in the Netherlands, there has been an increase in the morbidity of oropharyngeal cancer caused by HPV. This type of cancer occurs more often at a younger age than classic oropharyngeal cancer, which is usually caused by smoking and excessive alcohol consumption. Most often, the tumor occurs in the tonsils and at the base of the tongue. This study examined dentists' knowledge of oropharyngeal cancer, its association with HPV, and their willingness to play a role in prevention. 7,364 digital questionnaires were sent to dental providers and data from 607 dentists were analyzed. More than half of the respondents answered 48% of knowledge questions correctly. Significantly more female caregivers were aware of the relationship between HPV and oropharyngeal cancer and the availability of the HPV vaccine. Respondents felt it was important to discuss the relationship between HPV and oropharyngeal cancer with patients and to develop a protocol that would be useful in screening for oral and throat cancer.

Menezes F.D.S. et al. [14] note that HPV is responsible for the increased morbidity of cancer in the oropharynx, tonsils, and base of the tongue (i.e., sites associated with HPV). HPV has caused changes in the epidemiology of oropharyngeal and oral cavity cancer (OPC/OCC) in Asia, Europe, North America and Oceania. Thus, cancer morbidity in HPV-associated regions increases while in other non-HPV-associated regions decreases. In South America, although the morbidity of HPV-positive tumors is gradually increasing, there is an atypically low prevalence of HPV in people with OPC/OCC. To examine whether this dramatic shift in morbidity trends also occurred in this population, the authors assessed the burden of HPV on OPC/OCC morbidity trends in the city of São Paulo in Brazil. In this population-based study, we classified OPC/OCC into HPV-related and non-HPV-related subsites. Brazilian colleagues used Poisson regression to estimate age-standardized morbidity rates (ASRs) stratified by gender and age group and to examine age cohort effects. There were 15,391 cases of OPC/OCC diagnosed in HPV-related (n = 5898; 38.3%) and non-HPV-related (n = 9493; 61.7%) subdistricts. Overall, ASRs decreased for most sites, for both sexes, and for all age groups, with the exception of HPV-related OPC/OCC in young men and women, which increased by 3.8% and 8.6% per year, respectively. When analyzing the effect by birth cohort, the authors found an increased risk of HPV-related OPC/OCC in both sexes in recent birth cohorts; however, this risk was sharply reduced in non-HPV sites. Our data demonstrate an increasing risk of developing HPV-associated OPC/OCC in young adults, supporting the need for prophylactic HPV vaccination in this group.

According to Fan K.M. et al. [15] the morbidity of oropharyngeal cancer is rapidly increasing throughout Australia, particularly among men. Although the proportion of cases in the country caused by HPV is unknown, it is clear that vaccination has not yet had any impact. The aim was to analyze trends in oropharyngeal cancer morbidity in Australia from 1982 to 2017, with implications for prevention. Data were obtained from the Australian Cancer Database, compiled by the Australian Institute of Health and Welfare. An analysis of connection points is presented. There was a striking increase in the age-standardized morbidity rate by more than 1.5 times; the most significant increase occurred between 2007 and 2017 with an annual percentage change (APC) of +5.24% (p<0.001). A slow but gradual increase in age-standardized morbidity rate was observed in women with a statistically significant APC of +1.02% (p<0.001). Statistically significant bimodal trends of increasing APC were also observed in overall age-standardized morbidity rate. These growing trends are largely due to the increase in the practice of oral sex. The largest number of cases of the disease were detected in patients aged 55-69 *years, which is associated with ongoing exposure to alcohol and tobacco. Between 1982 and 2017, the most common areas affected were the base of the tongue and the oropharynx.*

Sharma D. et al. [16] studied treatment outcomes for oral and oropharyngeal cancer in young adults. As the authors note, the morbidity of oral squamous cell carcinoma (young age <40 years) ranges from 0.4% to 3.9%. As many studies show, there is a growing trend in the younger age group across the world as well as in India. The aim of the study was to compare the clinicopathological profile, treatment and outcome of squamous cell carcinoma of the oral cavity and oropharynx in a young age group <40 years. This retrospective observational study was conducted by obtaining data from a selected cohort from 2013 to 2015. Patients were divided into 2 groups: group 1 (10-30 years) and group 2 (31-40 years) for comparison. SPSS software version 16 was used for statistical analysis. A cohort of 217 patients was analyzed. The male to female ratio was 11:1. The most common areas of primary tumor were the tongue and buccal mucosa. The primary location of oropharyngeal cancer was present in 3 (5.17%) and 22 (13.83%) patients, respectively, in the two groups. The mean overall survival in the two groups was 22.53 and 25.14 months, respectively (P = 0.119). The median disease-free survival in the two groups was 7 and 8 months, respectively. The present study showed that the morbidity of oropharyngeal cancer increases with age; however, the course of the tumor process is more aggressive in the younger age group under 30 years of age.

Mäkinen L.K. et al. in their work [17], concerning the neglect and survival of patients with cancer of the tongue, oral cavity and oropharynx, provide the following data: approximately 30 to 40% of all patients with tongue cancer still die from this disease within five years. Early diagnosis of the disease is vital because treatment in this case will cause much less harm. The diagnosis is confirmed by a histological sample, which should be taken from each suspicious lesion and easily collected under local anesthesia using a punch. Already when seeking treatment, 25% of patients with tongue cancer are found to have metastases in the neck, which affect the prognosis. Heavy tobacco and alcohol use are the most important risk factors for tongue cancer.

Bai X.X. et al. [18] in a 10-year continuous single-center study and analysis of primary squamous cell carcinoma of the oral cavity and oropharynx found that among Beijing inhabitants who were diagnosed with cancer of the oral cavity and oropharynx, more than half were at an advanced stage, and the stage of cancer was the main prognostic factor oral cancer. The authors note that it is therefore necessary to strengthen recognition of oral cancer, as well as ensure its early detection and treatment to improve survival. This study aimed to describe some of the characteristics of the inhabitants of Beijing with oral and oropharyngeal squamous cell carcinoma who had received treatment at the Stomatology Hospital of Peking University and to analyze the survival rate and the prognostic factors of patients following surgical treatment. Data for 603 consecutive cases of primary oral cavity and oropharyngeal cancer between 2004 and 2013 were obtained from the Stomatology Hospital of Peking University. Clinical data including age, gender, living district, localization of the primary tumor, TNM stage, history of drinking and smoking, pathological differentiation, treatment, and survival were retrospectively analyzed. The male to female ratio was 1.1:1. The following results were obtained. The frequency of localization lesions in descending order: tongue (34.3%), gums (25.0%), buccal mucosa (13.8%), floor of the mouth (9.0%), oropharynx (8.5%), lip (6.3%) and palate (3.2%). Female patients with cancer of the oral cavity and oropharynx were significantly older than males (p<0.05). The proportion of patients with TNM stage III-IV cancer of the oral cavity and oropharynx was 52.4%. The results revealed that 65.3% of male patients and only 6.3% of female patients smoked or drank. The overall 5-year survival rate was 64%. Female patients had a worse prognosis than male patients. Among the patients who received surgery, tumor size and lymph node involvement were independent prognostic factors. Smoking and drinking were not prognostic factors.

Su W.W. et al. [19] assessed the effect of different anatomical areas on the late stage and survival of oral cancer (a 9-year prospective cohort of 27,717 cases in a population-based imaging program in Taiwan from 2004 to 2009) and analyzed the effect of different anatomical areas on the advanced stage and survival of oral cancer mortality from oral cancer found that, using lip cancer as the reference, the OR (95% CI) for advanced cancer was 2.20 (1.92-2.51) for the tongue, 2.60 (2.28-2.97) for the buccal area, 2.68 (2.20-3.28) for the floor of the mouth, 2.96 (2.52-3.47) for the hard palate, 6.04 (5.17-7.05) for the gums and 10.83 (9.20-12.74) for the oropharynx. Estimated hazard ratios (95% CI) for oral cancer mortality increased from 1.48 (1.31-1.67) in buccal area, 1.61 (1.43-1.82) in tongue, 1.68 (1.41-1.99) in the floor of the mouth, 1.79 (1.57-2.05) in the gum, 1.97 (1.71-2.26) in the hard palate and 2.15 (1.89-2.45) in the oropharynx. The conclusions are that differences in advanced stage and mortality from oral cancer were observed across anatomical areas and vigilant surveillance is required.

Jehn P. et al. [20] studied survival depending on tumor location in patients undergoing surgical treatment for cancer of the oral cavity and oropharynx. In a retrospective study, tumor lesions in 1486 patients were divided into 6 groups depending on tumor location. Patient age, gender, classification of tumor nodes and metastases, resection status, 5-year and disease-specific survival were statistically analyzed between groups. The results showed significantly lower disease-specific and lower 5-year survival rates for tumors located at the base of the tongue, oropharynx, due to higher disease stage and incomplete resection status. Metastases to the cervical lymph nodes and distant spread of metastases were more often observed when the base of the tongue and oropharynx were affected. In conclusion, the authors indicate that careful examination and precise clinical examination of specific areas of the oral cavity and oropharynx are critical for early diagnosis and treatment. The location of tumors in the oral cavity and oropharynx plays an important role in the prognosis of the disease.

Dhanireddy B. et al. [21] indicate that optimal treatment strategies for oropharyngeal squamous cell carcinoma remain unclear. When evaluating the results of treatment of surgically resectable oropharyngeal cancer with transoral robotic surgery (TORS) compared with radical chemoradiotherapy, researchers found that although there were no significant differences in survival between treatment groups, they persisted despite an increased comorbidity index in surgical patients. Given the potential for de-escalation and/or withdrawal of adjuvant therapy, especially in a less healthy population, TORS may prove to be the viable treatment option that it has become. The purpose of this study was to examine the effect of TORS on functional and long-term outcomes. A retrospective review of patients with tonsil and base of tongue cancer who underwent TORS with neck dissection ± adjuvant therapy between January 2011 and December 2016 was used and compared with a matched cohort of patients receiving primary chemoradiotherapy. Demographic, treatment, and outcome data were collected. Fifty-four patients received primary chemoradiotherapy, and 65 patients (surgical group) received TORS ± adjuvant therapy for clinical stage disease meeting study criteria. 25% (n=17) were treated with surgery alone. The remainder of the surgical group received postoperative radiation therapy (n=48), half of whom received adjuvant chemotherapy in addition to radiation therapy (n=24). 63% (n=41) of patients had no risk factors for chemotherapy. No differences in overall or disease-free survival were observed with TORS compared with chemoradiotherapy (p=0.9), although the Charlson comorbidity index was higher in the surgical group (p=0.01). The strongest predictor of long-term gastrostomy tube use was found to be comorbidities rather than treatment (p=0.03), with no significant differences beyond 12 months.

Now, as for this pathology in our country. The morbidity of cancer of the oral cavity and oropharynx (including cancer of the tongue and Kaposi's sarcoma of the palate) in the Republic of Kazakhstan in 2022 was 2.5 (3.0 - men; 2.0 - women) per 100 thousand population, which in absolute numbers amounted to 483 people, taking 18th rank place, just like the year before. The share of cases diagnosed for the first time in life, recorded by oncology organizations, was 1.4%. At the same time, 283 men fell ill (specific gravity - 1.9%, rank 14), women - 200 (specific gravity - 1.0%, rank 18) [22].

The morbidity of cancer of the oral cavity and oropharynx is higher than the national average in 10 regions of the country: North Kazakhstan – 5.8 (maximum rate); East Kazakhstan – 4.4; Karaganda and Pavlodar - 4.1; Kostanay - 3.9; Akmola - 3.7; Abay - 3.4; West Kazakhstan - 2.8; Atyrau and Aktobe - 2.6. The indicator is less than the national average in 9 regions: in Turkestan - 0.8 (the lowest level); Astana city – 1.5; Zhambyl - 1.6; Almaty and Shymkent city - 1.7; Kyzylorda - 1.8; Almaty city – 1.9; Zhetysu and Mangistau regions - 2.4 per 100 thousand population.

The mortality rate from this pathology was 1.3 (men - 1.8; women - 0.8) per 100 thousand population. In the structure of causes of mortality for both sexes in 2022, it ranks 15th, amounting to 1.9%, and in absolute numbers - 253 people (173 men and 80 women).

The regions where the mortality rate from cancer of the oral cavity and oropharynx is higher than the national average (1.3 per 100 thousand population) include: North Kazakhstan – 3.3 (maximum level); Abay - 3.1; West Kazakhstan – 2.3; East Kazakhstan - 2.2; Almaty city – 1.9; Kostanay - 1.7; Pavlodar - 1.6 and Akmola - 1.5. The lowest indicators were noted in Shymkent city - 0.5 (minimum level); Turkestan - 0.7; Almaty and Mangistau – 0.8; Atyrau, Karaganda, Kyzylorda and Astana city - 0.9; Aktobe – 1.0; Zhetysu - 1.1 and Zhambyl - 1.2 regions per 100 thousand population [22].

At the same time, the one-year mortality rate was 26.9%, occupying a high 7th ranking place for this indicator. The ratio between one-year mortality and neglect (stage IV) was 1.9 in 2022. Let us recall that the furthest distance from "1" is the worst ratio between the indicators of one-year mortality and neglect. This localization of malignant neoplasms took 12th rank after esophageal cancer - 5.2; lips – 4.0; cervix – 3.5; malignant lymphomas, malignant neoplasms of the skin, laryngopharynx – 2.8; malignant tumors of connective and soft tissues, liver, bladder – 2.4; larynx – 2.3; uterine body – 2.1;

ovaries – 2.1.

It should also be noted that during preventive examinations in 2022, cancer of the oral cavity and oropharynx (including cancer of the tongue and Kaposi's sarcoma of the palate) can be classified as actively detected tumors with a significant increase compared to the level of 2021: the proportion of patients identified during medical examinations was 73.7% (59.2% in 2021).

At the same time, the proportion of patients identified during preventive examinations in the early stages in 2022 was 65.5%, while a year earlier it was 2.7% more (68.2%).

The regions where the proportion of patients with stages I-II of the pathology in question is above the national average (56.3%) include the following regions: Aktobe - 83.3% (maximum figure); Mangistau – 82.4%, Kyzylorda – 80.0%; Zhambyl - 78.9%; Almaty – 76.0%; Pavlodar - 71.0%; Zhetysu – 70.6%; Atyrau – 66.7%; North Kazakhstan - 63.3% and Almaty city - 63.2%.

The lowest rates of early diagnosis were found in Abay - 19.0%; Kostanay - 27.3%; Astana city – 31.6%; Akmola - 39.3%; West Kazakhstan - 42.1%; Turkestan - 47.1%; Karaganda - 49.1%; Shymkent city - 50.0% and East Kazakhstan - 53.1% regions of the country [22].

Of course, it is necessary to take into account migration processes and other factors influencing early diagnosis rates, but nevertheless, the results speak for themselves.

For cancer of the oral cavity and pharynx, the level of morphological verification in the country was 97.4%; at the same time, in 9 regions a 100% result was achieved; in the Kyzylorda region - the fourth year the worst result in the country - 80.8%, below the average level in the Mangistau - 85.7%, Pavlodar - 94.5%, Akmola - 95.1% and Turkestan - 95.2% regions.

The share of stage IV cancer of the oral cavity and oropharynx among all nosological forms of malignant neoplasms was 16.8%, occupying, together with kidney cancer, a fairly high 8th rank place in this indicator.

The share of stage IV above the national average was noted in 5 regions of the country: Akmola - 39.3% (maximum level); Abay - 38.1%; Karaganda - 35.8%; Astana city - 26.3% and East Kazakhstan - 21.9%.

The proportion of stage IV is less than the national average in 14 regions of the country: Zhambyl and Aktobe - 0.0% (not a single patient); Pavlodar - 3.2%; Atyrau – 5.6%; Almaty - 8.0%; Almaty city – 10.5%; Zhetysu, Mangistau and Turkestan – 11.8%; Kostanay - 12.1%; Kyzylorda and North Kazakhstan – 13.3%; Shymkent city - 15.0% and West Kazakhstan - 15.8% [22].

Statistical data on patients diagnosed with malignant neoplasms, being under observation for five years or more, and continuing to be observed in 2022, showed that the number of patients under the supervision of oncological organizations in Kazakhstan for more than five years continued to grow and at the end of the reporting year amounted to 110,790 people, with an increase of 6.6% (2021 year – 103,935 people, +4.4%) (form No. 7). The share of this category of patients or five-year survival rate for malignant neoplasms with a growing trend is 55.3% (55.0% in 2021).

We cannot ignore such an important clinical aspect as the coverage in the Republic of Kazakhstan of special treatment for patients diagnosed for the first time in their lives with cancer of the oral cavity and oropharynx. At the end of 2022, the absolute number of people who completed specialized treatment was 244 people, and 152 patients were continuing treatment. The following results were obtained in percentage terms by methods and types of treatment. 17.6% of patients received surgical treatment only, 11.5% only radiation treatment, 18.4% only drug treatment, 16.4% combined treatment, 24.2% complex treatment, and 8.6% chemo-radiation treatment.

Next, with regard to five-year survival rate of patients. As for cancer of the oral cavity and oropharynx, at the end of 2022, 1,858 people or 9.5 per 100 thousand people were registered at the dispensary. At the end of 2021, there were 1,780 patients or 9.3 per 100 thousand population, respectively.

At the same time, the mortality rate of the observed contingents in 2022 decreased compared to the previous year and amounted to 13.6% in 2022 (15.2% in 2021).

The five-year survival rate of patients with cancer of the oral cavity and oropharynx was 44.2% in 2022 and 42.5% in 2021 [22].

Summarizing the above, we can conclude that cancer of the oral cavity and oropharynx occupies a significant place among all malignant neoplasms, ahead of the "grands" of oncological pathology in some indicators. At the same time, despite the fact that oral cancer and, of course, tongue cancer are among visually accessible localizations, this pathology continues to be a serious problem in modern clinical oncology. Great variability of symptoms, its similarity with inflammatory and other processes, leads to neglect of the disease. All this requires both oncologists and, first of all, primary health care workers, *ENT doctors and dentists to increase the level of cancer alertness, inform the population about early symptoms that may indicate this pathology or the onset of proliferative changes and carrying out other high-tech preventive and diagnostic measures and, as a result, timely treatment.*

An epidemiological assessment of the situation with cancer of the oral cavity and oropharynx in our country suggests that there are sometimes significant differences across regions not only in incidence rates, but also in the parameters of early diagnosis and mortality from this pathology. At the same time, it should be noted that a significant percentage of patients are actively detected during preventive examinations, which makes these activities indispensable in the general algorithm for early diagnosis and prevention of this pathology.

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IMPROVE OF "UZBEK INDEX OF PREMATURE EJACULATION"

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Abstract

A questionnaire developed to test the "Uzbek Premature Ejaculation Index". The main goal is to exclude the gray zone (13-16 points) from the scoring system of the Uzbek Index of Premature Ejaculation. The study was conducted from October 2020 to April 2023 at the Republican Specialized Scientific and Practical Medical Center of Urology in partnership with the Department of Urology of the Tashkent Medical Academy. In our study, 200 male patients aged 20 to 50 years who had been in a stable sexual relationship for at least six months completed the Uzbek Index of Premature Ejaculation Questionnaire. They were monogamous. A group of 30 patients, each with a score between 13 and 16, was randomly assigned to the UIPE Questionnaire, which was filled out by 200 male patients who had experienced premature ejaculation. Other accompanying illnesses were examined and treated for them. The treatment control group was prompted to complete the questionnaire. Treatment-free patients with concomitant diseases who scored 13 in the control group demonstrated a significant increase in IELT. The IELT of patients with 14 16 scores showed no change. Despite the fact that a 13 score is not indicative of PE, it can be used to treat concurrent diseases and alleviate symptoms of early childhood illness. It has been determined that a score of 13 or higher is not diagnosticable in PE and should not be sought through further diagnosis. "Uzbek Index of Premature Ejaculation" is the validated measure for outcomes measured by the patient.

Keywords: Uzbek index of premature ejaculation (UIPE), Premature ejaculation (PE), Premature Ejaculation Diagnostic Tool (PEDT), Intra-vaginal ejaculatory latency time (IELT).

Epidemiology: Premature ejaculation (PE) is very common among sexually active men. There are several definitions developed with various organizations regarding PE. It is considered as an inability to consciously control the ejaculatory reflex or as a condition in which a man reaches orgasm and ejaculates earlier than he desires. [1]. The World Health Organization (WHO) describes premature ejaculation as "the inability to delay ejaculation sufficient to enjoy lovemaking, which is manifested by either an occurrence of ejaculation before or very soon after the beginning of intercourse or ejaculation occurring in the absence of sufficient erection to make intercourse possible [1].

During the last decade, the prevalence of PE is increasing in all countries. Prevalence of PE as a 'sexual dysfunction' according to the modified International Society of Sexual Medicine (ISSM) definition of was 3.3% (n=81), whereas the prevalence of PE as a 'sexual complaint' (i.e., men who estimated their time to ejaculation was occasionally very short, suffered to some extent from PE and had a lack of ejaculation control) was 14.5% (n=356). Men attributed PE predominantly to particularly high sexual arousal (75%) or a long time since the last sexual intercourse (53%), but less than one third of all men with PE (30%) considered PE a 'disease'. Potential self-reported risk factors showed significant differences PE [2].

The overall age-adjusted prevalence of self-identified PE increased from 19.0% in 2006 to 21.6% in 2016; however, the result was not statistically significant (P = .244). The overall age-adjusted prevalence of PE increased from 1.8–4.0% in 2006 and 2016, respectively (P = .012). [3].

Additionally, 30% of men with premature ejaculation also report experiencing erectile dysfunction; in this case, early ejaculation occurs in the absence of a full erection [1]. Furthermore, prevalence of PE proportionally increased with age. 64.6% of patients presented lifelong PE vs 35.4% of patients who reported acquired PE. Estimated prevalence of coexisting PE and erectile dysfunction was 7.0% [4].

Introduction:

Premature ejaculation (PE) is an ejaculatory disorder with a highly variable estimated prevalence which is partly explained by the lack of standardized definitions and diagnostic tools [5]. There are various definitions of premature ejaculation in literature. In the Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revision (DSM-IV-TR), PE was defined according to patient description and clinician assessment of a few other factors [6]. The International Society for Sexual Medicine (ISSM) adopted the first evidence-based objective definition of PE [7]. Premature ejaculation (lifelong and acquired) is a male sexual dysfunction with following features:

1. Ejaculation that always occurs before or within about one minute of vaginal penetration (lifelong PE) or a clinically reduced in latency time, to about three minutes or less (acquired PE).

2. Unable to delay ejaculation on all or nearly all-vaginal penetrations.

3. Negative personal consequences, such as distress, bother, frustration, and/or the avoidance of sexual intimacy.

The UIPE's eight questions investigate premature ejaculation and include questions on control, frequency, duration, anxiety, partner'd opinion, and sexual satisfaction. A score of 0 to 4 points can be given to each question, with a range of between 0-32. The UIPE begins with two unscored question at the end and can help determine PE males' gender. Why. The score for PE can be adjusted to indicate patient have not PE (0,01), patient having PE requiring further diagnosis (13 16) (gray zone), or patient had PE (17 32). There is internal consistency and reliability in the eight question set that are sensitive to treatment response. Questioning methods include those that establish the diagnosis and consider specific treatment options, as well supplementary questions that gather information for administering treatments. The health care practitioner's office often experiences patients with embarrassing, timid, and hesitant reactions when they bring up their sexual complaints. Through UIPE, patients can avoid the need for face-to-face contact with doctors and instead answer all questions independently. Why is this so. The short duration and simplicity of its administration make it a valuable tool for measuring treatment effectiveness in clinch.

Methods:

This cross-sectional study was conducted on base of Republican Specialized Scientific and Practical Medical Center of Urology, Tashkent Medical Academy, for three years duration, from October 2020 to April 2023. In our study 200 patients, aged 20 to 50 year males, who were in a stable sexual relationship for a minimum duration of six months, were asked to fill the UIPE Questionnaire. All patients with age 20 to 50 years, who were in a stable sexual relationship for a minimum duration of six months, visiting the Republican Specialized Scientific and Practical Medical Center of Urology that agreed to participate in the study were included. Study participants were given information about the study procedure and informed written consent was obtained. The UIPE questionnaire was accurate in diagnosing PE and the questions were easy to read and understand by the participants. Data was collected for demographics including age, frequency of intercourse, marital status, duration of the relationship, self-reported IELT, type of PE (lifelong vs acquired).

Results:

Initially, 200 eligible participants filled all the questionnaires at the first interview. Among them 20 (10%) patients gathered from 0 to 12 score in questionnaire and according to the UIPE scoring system they did not have PE. An average score of 150 (75%) participants was between 17-32score and they had an exact PE. Other remain 30 (15%) patients gathered from 13 to 16 score and were considered as a gray zone. It means they may have PE but to put an exact diagnose other additional diagnostic methods are necessary. (Table 1.)

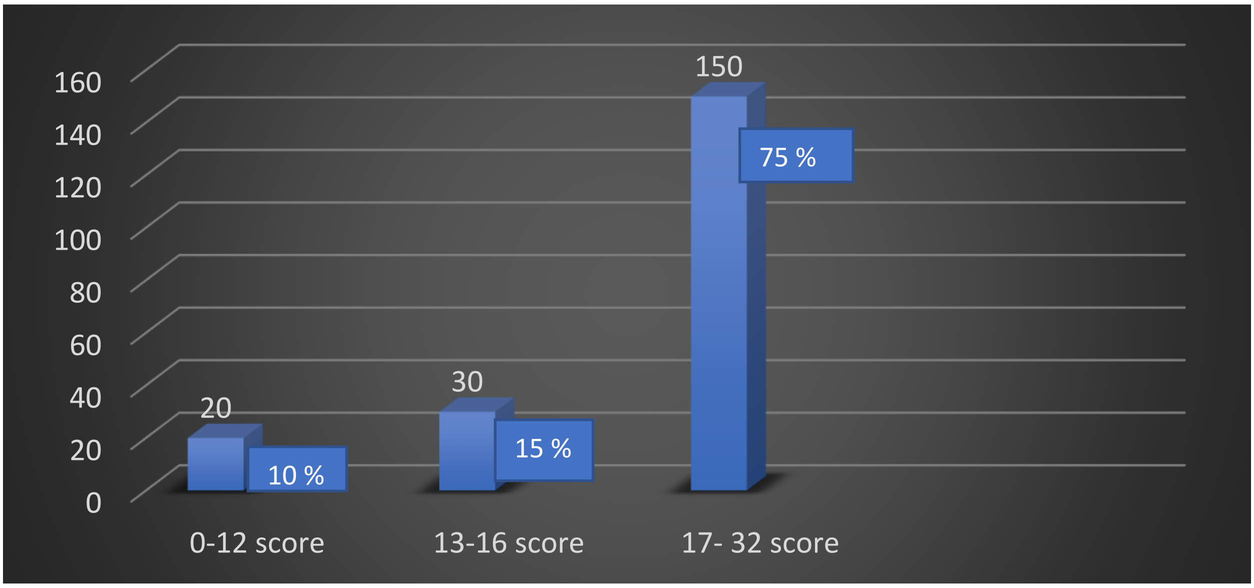


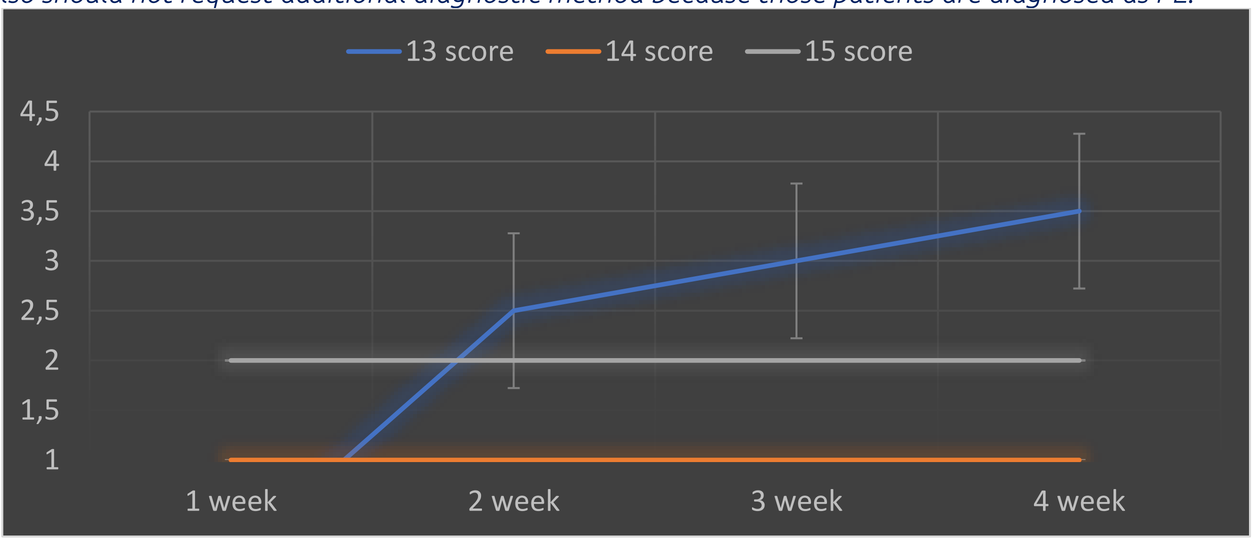
Table 1.

In the second step of our study we separated 30 patients in the gray zone and tested them other concomitant diseases that can make PE symptoms. We tested Testosterone, Estrogen, Follicle stimulating hormone(FSG), Luteinizing hormone(LH), Meares and Stamey 4-glass test and ultrasound(US) of the prostate. The results showed that all hormone level in all patients were normal but they all had an inflammation and bacteria in their 3-glass in Meares and Stamey test. It means they had chronic bacterial prostatitis (CBP). Table 2.

Analysis	*Results*
Testosterone	*Normal*
Estrogen	*Normal*
FSH	*Normal*
LH	*Normal*
US of prostate gland	*Slightly enlarged*
Meares and Stamey 4-glass test	*3-glass indicated inflammation and bacteria.*

Table 2.

After finding out concomitant disease (CBP) we treated it with Levofloxacin 500 mg oral tablet for 4 weeks according to European Association of Urology guidelines 2020. After treatment we asked control group to fill UIPE questionnaire. We witnessed that the IELT (intravaginal ejaculation latency time) increased noticeably in patients who gathered 13 score in the first interview. However, IELT did not change in other patients (14-16 score) report. (Line 3.) It is proved that 13 and above score cannot be considered or diagnosed PE and it ca be enough to treat concomitant disease. And 14-16 scored patients also should not request additional diagnostic method because those patients are diagnosed as PE.



Line 3.

Discussion:

Premature ejaculation evaluation with UIPE is an excellent tool that helps clinicians in objectively defining and quantifying the condition. PE possess a highly variable estimated prevalence worldwide and very limited literature is available from local studies performed on sexual dysfunction.

There have been variety of studies concerning the validity of premature ejaculation diagnostic tool (PEDT) in the diagnosis of PE. One of these studies Development and validation of a premature ejaculation diagnostic tool. The questionnaire development involved three stages: (1) Five focus groups and six individual interviews were conducted to develop the content; (2) psychometric validation using three different groups of men; and (3) generation of a scoring system. For psychometric validation/scoring system development, data was collected from (1) men with PE based on clinician diagnosis, using DSM-IV-TR, who also had IELTs < or =2 min (n=292); (2) men self-reporting PE (n=309); and (3) men self-reporting no-PE (n=701). Standard psychometric analyses were conducted to produce the final questionnaire. Sensitivity/specificity analysis was used to determine an appropriate scoring system [10].

Urdu translational and validation of premature ejaculation diagnostic tool. This cross-sectional study was conducted at the urology section of the Aga Khan University Hospital, Karachi, for six months duration, from July 2018 to December 2018. In their study 108 subjects, aged 20 to 50 years, who were in a stable sexual relationship (heterosexual) for a minimum duration of six months, were asked to fill the Urdu version of PEDT, 61 with PE and 47 without PE [8].

Additionally, Yan-Ping Huang MD, PhD and his colleague tried to validate A Chinese version of PEDT. A Chinese version of PEDT was confirmed by andrologist and bilingual linguist. Participants were recruited among seven different communities of Shanghai from 2011 to 2012, and their information regarding self-reported PE, self-estimated IELT, expert diagnosis of PE, and PEDT scores were collected [9]. A total of 143 patients without PE (mean age 55.11 ± 7.65 years) and 100 men with PE (mean age 53.07 ± 8.08 years) were enrolled for validation. Of the patients in PE group, the number of men reporting self-estimated IELTs of ≤1, 1–2, and >2 minutes were 34 (34.0%), 22 (22.0%), and 44 (44.0%), respectively. The Cronbach's alpha score (a = 0.77) showed adequate internal consistency, and the test–retest correlation coefficients of each item (r ≥ 0.70, P < 0.001) indicated excellent stability over time. The frequency of agreement showed that there was excellent concordance between PEDT diagnosis and clinician diagnosis when the PEDT scores ≥11. An adequate correlation was found between total PEDT score and self-estimated IELT (ρ = −0.396, P < 0.001), and sensitivity and specificity analyses suggested a score of ≤8 indicated no time-defined PE (self-estimated IELT ≤1 minute) [9].

However, perfect PEDT should have additional parts. For example, our study resulted in development of reliable and valid questionnaire for assessing PE. Sensitivity and specificity of the tool as well differences in the gained scores between men with PE and without PE, so it may vouch for good discriminant ability of the tool. Moreover, thanks to its ability to discriminate lifelong and acquired PE it also may be useful in decision making between indication of pharmacotherapy only for lifelong PE or pharmacotherapy and/or behavioral therapy for acquired PE. In addition, removing gray zone from questionnaire can improve its sensitivity toward diagnosing an exact PE.

Study limitations. *Our study is conducted in a small number of respondents and has limitations that we need to state. Therefore, in future research, a large number of respondents are required to increase the sensitivity of our questionnaire.*

Conclusion: *It was thought that patients who scored 13 on the UIPE questionnaire might have PE. The study proved that 13 points is not an indicator of PE, and physicians should pay attention to their comorbidities to clarify PE.*

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Pedagogical sciences

MODELING EMOTIONS IN MUSIC

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MÜZİK'TE DUYGULARIN MODELLENMESİ

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Abstract
Modeling of Emotions in Music

In the historical development of society, the perception of music, which is one of the components of music culture, has not changed. Clearly, in the past, people listened and heard more different music than they are now. Throughout its century of history, humanity has tried to penetrate the secrets of the voices in the world and use them in their own interests.

The main aim of this study is to examine the psycho-physiology of sound perception and emotional perception of music.

For analysis, the definition and perception of music, quotes of musicians, texts of musical works are used. In order to clarify some aspects of the psychology of music perception, we also refer to the comparative analysis of music and speech. Psychological issues related to the impact of previous experiences on the perception - from the point of view and many more are emphasized.

Özet

Toplumun tarihsel gelişimi sürecinde, müzik kültürünün bileşenlerinden biri olan müzik algısı değişmedi. Açıkçası, geçmişte, insanlar şimdi olduğundan daha farklı müzikler dinliyor ve duyuyorlardı. Asırlık tarihi boyunca insanlık, dünyadaki seslerin sırlarına nüfuz etmeye ve onları kendi çıkarları doğrultusunda kullanmaya çalışmıştır.

Bu çalışmanın temel amacı ses algısı ve müziğin duygusal algısı psiko-fizyolojisini incelemektir.

Analiz için, müziğin tanımı ve algılanması, müzisyenlerin alıntıları, müzik eserlerinin metinleri kullanılır. Müzik algısı psikolojisinin bazı konularını netleştirmek için, aynı zamanda müziğin ve konuşmanın karşılaştırmalı analizine başvururuz. Önceki deneyimlerin algı üzerindeki etkisiyle ilgili psikolojik konular - bakış açısıyla ve daha pek çok şey üzerinde durulur.

Keywords: *Music modeling, ethos,Pythagoras,Arystotales.*
Anahtar Kelimeler: *Müzik modellemesi, ethos, Pisagor, Arystotales.*

Giriş

İletişim yoluyla müzik sanatı, diyalog bir insanı yaşam modeline "çeker", gelişim ve kendini geliştirme şartlarını koyar, sosyo-kültürel çevreyi değiştirmesini, kişisel ve bireysel değerleri evrensel değerlerle aynı hizaya sokmasını sağlar. Müzik harmonik birliği yaratır, iç dünyası bir insanda en yüksek ve en ince duyguları uyandırır, hem yaşamı boyunca hem de anlık dürtülerinde değişime teşvik edici olarak hareket eder.

Duyguların müzik aracılığıyla ifade edilmesi, Ethos öğretisine dayanan ve eski Yunanlıları etkileyen uzun bir geleneğe sahiptir. Ethos teorisinin önemli kısımlarından birisi olan müzik eğitimi; müziği, insanın ahlaki terbiyesinin en önemli aracı olarak değerlendirmektedir.

Ethos teorisinin temellerini oluşturan Pythagoras (M.Ö. 586)[17], tarihte ilk olarak, sözü, müziğin tamamlayıcı bir unsuru olarak görmüştür. Eski Yunan' da müzik, matematiğin 4 ana dalından biri olarak kabul edilmiştir. Pythagoras okulunun (Quadrivium) programına göre Müzik; Aritmetik, Geometri ve Astronomi ile aynı düzeyde kabul görmüştür. Pythagoras, iyi bir müzisyendi ve harp çalıyordu. Sesteki

17 Pisagor (Pythagoras, M.Ö. 580 – M.Ö. 500) - Yunan filozofu ve matematikçisidir.

matematik oranlarını saptamak için çeşitli denemeler yapmış, matematik ve müzik arasındaki ilişkiyi bulmuştur.

Pythagoras'çılar uyumlu seslerle sayısal oranlar arasındaki bağlantıdan hareket ederek, her şeyin temelinin sayı olduğu, evrendeki tüm oranların sayısal olduğu sonucuna ulaşmıştır. Ayrıca müzikteki uyumun etkilerinin ve oranlarının sayısal olduğunu da görüyorlardı. Evrende herşeyin sayılar üzerine kurulu olduğunu ispat eden Müzik Bilimi de yedi nota üzerine kurulu teoremi kabul eder. Işığın yedi renginin birleşiminin beyazı, saflığı oluşturması gibi, müziğin yedi notasının da 1/2,2/3,3/4,5/8 gibi ölçülerle çalınması müzikteki saflığı, ritmi ve armoniyi meydana getiriyordu. Pythagoras, müziği; ahlak eğitiminin esas ve en güçlü araçlardan birini olarak anlayışının temellerinin oluşturmuş ve onun ilkelerini ampirik olarak belirlemiştir.

Pythagoras öğrencilerinin ifadesine göre, gençlerin ruhlarının etkilenebileceği melodiler ve ritimler kuruldu. İşte sınırsız tutkulara, umutsuzluğa ve ruhsal ülserlere, tahrişe, öfke ve diğer ruhsal rahatsızlıklara karşı melodiler.

Aristo'ya **18***göre, müzik hareketi yeniden üretir ve her hareket belirli etik özellikleri içeren enerjiyi taşır. Benzer bir kişi benzer olma eğilimindedir ve bu nedenle, dinlediği müzik onun o andaki karakterine veya ruh haline tekabül ettiği ölçüde olan müzikden keyf alır.*

Aristo, Pythagoras'ın göz merkezci, oran ve hesaba dayalı yöntemi'nin yerine, kulak ve duymanın merkezde olduğu işitsel yöntemi kullanmıştır (Aristoxenus Tarentum 1902: 14-15).

Etki teorisinin savunucuları, sebepsiz yere, müziğin insanın tüm ruhsal tutkularını ifade edebileceğine inanmadılar. Müzisyenden, dinleyicilerin ruhları üzerinde daha güçlü ve inandırıcı bir etki yaratabilmesi için kendilerine aktarılan tutkuyu deneyimlemesi gerekiyordu. Bu nedenle, 18. yüzyılın ünlü Çello ustası Philip Emmanuel Bach, "Bir müzisyenin dinleyicinin kalbine ancak duyguları doluysa dokunabileceğini belirtti. İzleyiciye iletmek istediği tutkunun sıcağında olmalı; üzgün ve durgun ifadeler yaparken bu üzüntüyü hissetmesi gerekir "[İ.L.Galinskaya (1982) s.269].

Etkiler teorisinin araştırmacıları, hangi şartlar altında, dinleyicideki veya bu duyguyu uyandırmak için bir veya başka bir müzikal ifade aracı kullanmanın gerekli olduğunu tespit etmişlerdir. Bu yüzden, Fransız besteci Rameau, müzikte ünsüzlük ve uyumsuzluk kurallarından bahseden, şöyle demiştir: "ünsüz akorları her yerde kullanılır, ancak çoğu zaman, eğlenceli ve ihtişamlı şarkılarda kullanılmaları gerekir; Böylece uyumsuzluklar doğal olarak görünür, böylece olabildiğince hazırlıklılar ve üst ses ve bas gibi en çok öne çıkan sesler daima birbirleriyle uyumludur. Yumuşaklık ve hassasiyet bazen oldukça iyi pişmiş küçük uyumsuzluk ifade edilir. Terörist ve sefalet, özellikle de kromatik uyumsuzluklar, tutma ile mükemmel şekilde ifade edilir. Çaresizlik ve bir çılgınlığa neden olan veya dikkat çekici bir şeyin olduğu tüm duygular, hazırlıksız ve özellikle de üst sese hükmeden her türlü uyuşmazlığı gerektirir."

[İ.L.Galinskaya (1982)s. 254].

Müzikal anlatım kalıplarını etki kuramı açısından inceleyen İngiliz araştırmacı J. Harris, müzikte ifade edilen duygunun her zaman belirli bir fikirle ilişkili olduğunu ve fikrin kendisinin belli bir ruh hali taşıdığını belirtti.

"Müziğin amacı, fikre karşılık gelebilecek etkileri heyecanlandırmaktır. ... İçsel doğal akrabalık temelinde, belirli fikirler, içinde sırasıyla karşılık gelen fikirlerin ortaya çıkma etkisi altında olan belirli etkileri heyecanlandırır"

Modern kavramların verilerine göre, duygu, duyguların farklılaştırılmasının temelini hareket, özlem, renk ve müzikal deneyiminin gerginliği olduğu anlamsal anlamlardan sentezlenir.

Aspirasyon, dedi ki V.V. Meduşevski, birçok duyguya işaret ediyor. "Uyumsuzluk, üzüntü, melankoli, tefekkür ruh hali ile uyumsuz. Pastoral nitelikteki eserlerde, akut ağırlaşmalar yaratmak anlamına gelir - diziler, modülasyonlar, sapmalar, önlenir ". [V.V.Meduşevskiy (1976) s.70]

Gerilim değerinin tanımlanması, V.V. Meduşevski, yokluğunun veya varlığının orijinal duyguları tasvip ettiğini belirtiyor: "karşılaştırmak sevinci sessiz, sakin, sevinçle tefekkür - derin bir duygu, dolgunluk hissi eşliğinde, bu sevinç, hakkında nefes kesici olduğunu söylüyorlar" [V.V.Meduşevskiy (1976) s.70]

Çeşitli duygusal durumların kodlanması aşağıdaki matris ile mümkündür:

Yavaş tempo + Minör renklendirme = dalgın, üzgün, kederli, trajik ruh halleri.

Yavaş tempo + Majör renklendirme = müzik eserlerinin doğası tefekkür, sakin, dengelidir.

Hızlı tempo + Minör renklendirme = müzik eserlerinin karakteri yoğun dramatik, ajite, tutkulu, protesto, isyankar, saldırgan ve iradeli.

18 *Aristo (Aristotales ,M.Ö. 384- M.Ö. 322) – Platon'un öğrencisi, Yunan Filozofu.*

Hızlı tempo + Majör renklendirme = müzik neşeli, hayat veren, neşeli, sevinçli [G.B.İvançenko(2001) s.310].

Bir müzik parçası, tonları çok çeşitli olabilen birkaç duygu içerebilir. VG Razhnikov, insanın nesneye olan tutumunu ifade eden, yaklaşık 27 model üzerinde yoğunlaşan insan deneyimlerinin tamamını yönetti. Her biri 20 ila 40 arasında işarete sahiptir. Deneyde, örneğin, - Mozart'ın B-daire binasında Minuet ruhunun niteliğini 10 puanlık bir ölçekte belirlemek görevi verilmiştir. Böyle bir duygusal içerik analizinin sonucu olarak, ses maddesinin maddi kompozisyonunun bir yansıması olan, duygusal bir puan gibi bir şey elde edilir. Bir müzik çalışması, belirsizliği nedeniyle, birçok yoruma izin verir ve bu nedenle, işin içeriğinin yorumlanmasına belirli bir anlam kazandıran, dolayısıyla kendisinden ve tutkularından bahseden dinleyicinin kişiliğini araştırmak için uygun bir araçtır. Bu durumda, algı kalıpları açıkça ortaya çıkar, yani geçmiş tecrübenin etkisi. Bu modeller, E.V. Nazaikinsky, V.V. Medushevskogo, G.L. Golovinskiy çalışmalarında görülmüştür. Golovinsky, Shostakovich'in 4. senfonisinin ilk bölümünün izleyiciler tarafından algılandığını inceledi. Derecelendirmelerin dağılımı çok büyüktü - olumsuzdan ("kötülüğün zaferi", "kıyamet günü", "kanlı savaş") pozitif kutuplara - "tatil" duyguları, "özgürlüğün ilahisi" [İ.L.Galinskaya (1982) 266]

Golovinski'ye göre, algının doğası üzerine - belirli bir sosyal çevrenin genel kültürü, içinde benimsenen okuma çemberi, tercih edilen sanat türlerinin seçimi, dinleyicinin algı deneyimleri, dinleme sırasındaki psiko-fizyolojik özellikleri ve diğer birçok faktör etkilemiştir.

Bununla birlikte, orijinal yaşam kaynaklarından bütün farklılıklarla birlikte, müzikal duygular temelde, aynı unsurlardan inşa edilir ve müzikal duyguların "gramer" i, hayati duygularının yapısının ve dinamiğinin insan sezgisel temsilinden başka bir şey değildir.

Sonuç

Müzik algısı psikolojisinin temel sorunlarına genel bir bakış verdik, müzikal aktivite türlerinden birinin psikolojik modellerini analiz etme prizması - müzik algısıdır.

Müzik algısı yelpazesi geniş bir aralıkta - sadece canlı bir sese hayran olmaktan, müzikal anlamlara derinlemesine nüfuz etmekten dinleyicinin kişiliğinin bilincini zenginleştirmenin yanı sıra bu izlenimleri sosyal eyleme dönüştürmeye yardımcı oluyor.

Müzikal algının geleneksel tanımı, bestecinin ifade ettiği duygu ve ruh hallerini bir müzikal çalışmada deneyimleme ve bu estetik zevkten alma yeteneğini içerir. Müziksel algı problemi sadece müziğin özelliklerinin, dilinin tanımlanmasıyla değil, aynı zamanda insanın doğası, yetenekleri hakkındaki düşüncelerimizin derinleşmesi ile de ilgilidir.

Müzikolojide psikolojiyle ilgilenmeyen tek bir problem yoktur. Ayrıca, müzik ve müzikal etkinlik çalışmasında psikolojik bilgi kullanılmadan yapılması imkansızdır. Böylece, psikoloji ile etkileşime giren müzikoloji bize insanın bilgisinin sınırlarını genişletme fırsatı sunar.

Burada incelediğimiz temel müzik terimlerinin antik kullanımlarında, görüş farklılıkları ayrı tutulmak üzere, asgari terminolojik tutarlılık görülmektedir. Bununla birlikte armoni, melodi ve ritim gibi kimi temel terimlerin günümüzdeki kullanımlarıyla yer yer kimi uyuşmazlıklar tespit edilmiş; bu uyuşmazlıkların müzikolojik bağlam, tarihsel koşullar ve dönemin bilimsel kapasitesi ile ilgileri belirlenerek çözüme yönelik kimi terminolojik öneriler sunulmuştur.

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WAYS TO FORM NATIONAL CULTURE OF FUTURE TEACHERS

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БОЛАШАҚ ҰСТАЗДАРДЫҢ ҰЛТТЫҚ МӘДЕНИЕТІН ҚАЛЫПТАСТЫРУ ЖОЛДАРЫ

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Abstract

In this article topical issues of training future teachers are discussed. The problem of forming national culture among future specialists is especially touched upon. The works of scientists and educators on this problem are widely covered.

Түйін

Бұл мақалада болашақ ұстаздарды дайындаудың өзекті мәселелері қарастырылады. Болашақ мамандарда ұлттық мәдениеттің қалыптасуы проблемасы ерекше қозғалады. Осы проблема бойынша ғалым-педагогтардың ең- бектеріне тоқталады.

Аннотация

В данной статье рассматриваются актуальные вопросы подготовки будущих учителей. Особо затраги- вается проблема формирования у будущих специалистов национальной культуры. Широко освещаются труды ученых - педагогов по этой проблеме.

Бүкіл әлемде болып жатқан жаһандану және ақпараттандыру процестері қоғам мен әр адамның тұрақты дамуы мен болашағын сақтауға бағытталған рухани-адамгершілік негіздерін іздеу қажеттілігіне әкеледі. Бұл үдерістегі білім беру жүйесі ерекше рөл атқарады, өйткені ол әлеуметтік құндылықтарды бейнелейді және оларды жеке тұлғаның тұтас жүйелік қабылдауына айналдырады. Осыған байланысты кәсіптік білім беру жүйесі кәсіби қызметтің құндылық және нормативтік сипаттамаларына негізделген қоғамдық-экономикалық дамудың перспективалық тенденцияларына сәйкес мамандарды даярлаудың мазмұны мен технологияларын жаңартуға бағытталған.

Бүгінгі таңда білім үрдісінде оқытудың мәдени қаруланған арнаулы әлеуметтік, технологиясы бар, неғұр- лым жаңа, қазіргі заманға сай әдістемесін жасау, қазіргі қоғамның жаңа келбетін қалыптастыратын бәсекеге қабілетті ұстаздың ұлттық мәдениетін қалыптастыру – үлкен мәселе. Қазақ халқының мәдениетіндегі тәрбие мен оқыту ерекшеліктері оның ғасырлар бойы дамып, қалыптасқан ұлттық рухани болмысын көрсетеді.

Қазақ мәдениетінің тарихы – ғасырлар бойы қалыптасқан ұлттық мәдениет екені баршамызға мәлім. Себебі, ұлттық тәлім-тәрбиенің негізінде дамып, қалыптасты және сол ұлттың мәдениетін дамытудың қозғаушы күші болып табылады. Әрбір халықтың өзіндік тарихи тіршілігі мен рухани тәжірибесі бар. Біздің ойымыз- ша, тәрбиелеу мәселесі – мәдениетке баулуды білдіреді. Қазақ халқы өзінің тәрбиелеу, дүниетаныту жүйесін көшпелі және отырықшылық тұрмысқа байланысты, тарихи-әлеуметтік жағдайларға сәйкес дамытып, өзінің ұлттық (этностық) мәдени ерекшеліктерін қалыптастырды.

Әрбір ұлттың қасиеттері ұлттық тәрбиеге (халық педагогикасына) байланысты дамып, қалыптасқан. Қазақ халқының ұлттық тәрбие жүйесі халықтық тәлім-тәрбие ретінде қарастырылады. Осы орайда, болашақ ұстаз әдеби көркем шығармалар арқылы сан үйретуден бастап, шығарма кейіпкерлерінің тілін, ойын, іс-әре- кеттерін, мінез-құлқын, ұлттық қасиеттерін үлгі ретінде әсерлі баяндап, содан соң көркемдеп көрсетіп үйрету арқылы *оқушының жеке тұлғаның адамдық қасиеттерін қалыптастырып, кісілік сана сапасын арттырады.*

Қазақ халқының аса бай ұлттық әдебиеті, қайырымды, әдепті салт-дәстүрлері оның этностық (ұлттық) ерек- шеліктерін көрсетеді де, ол жеке тұлғалардың ұлттық мәдениетін қалыптастырады.

Өмірге жол алған әрбір адамды ұстаз тәрбиелеп, білім берген. Ата-ана баланы асырап, тәрбиелесе, ұс- таз баланы тәрбиелеп қана қоймайды, оған білім береді, рухани болмысын, мінезін қалыртастырады. Халық даналығына сүйенсек «Ұстазсыз шәкірт – тұл, шәкіртсіз ұстаз – тұл». Шын мәнінде нағыз ұстаз болу үшін, «ұстаз болып туу керек». «Мен үйрену, әрекеттену арқылы ғана ұстаздық дәрежеге жеттім» дейді тәлімгер ұстаз А.С.Макаренко. Ғалымдардың пайымдауынша, тумысынан дарынды ұстазды - данагөй деуге болады.

Ол кез келген шәкірттің ең сүйікті жақыны, жанашыры, қамқоршысы, болашағын болжаушы, адамзатқа «ал- ланың ақ жолын» (өмір заңдылықтарын) айқындап көрсетуші құрметті де, құдіретті тұлға. Дарынды ұстаз шәкірттерінің сапасынаадамдық асыл қасиеттер сіңіріп, өшпес рухани өрнек қалдырады, ең сүйікті бейне ретінде оның жүрегінде мәңгі сақталады.

Біздің ойымызша, ең әуелі ұстаз «сегіз қырлы, бір сырлы», білімді, өнерлі, ұлттық мәдениетті бойына сіңірген болуға тиіс. Мәселен, математика пәнінен сабақ беретін ұстаз әдебиетті де өнерді де, философияны да, экономиканы да жақсы білетін, жігер-қайраты толысқан тұлға болмаса, оның «нағыз ұстаз» екендігі бай- қалмайды да, ұстаздық беделі белгілі дәрежеге көтеріле қоймайды. Осы орайда ұстаздарға мынадай ереже- лерді ұстануы қажет деп ойлаймыз: 1. Ұстаз шәкірттерін сүйеді, оларға қамқор болады. Егер ұстаз өз ісін, шәкірттерін сүймесе, ол – ұстаз емес, өз ісін сүймейтін, ықылассыз ұстазда бедел болмайды. Оның бойында бойында эмпатиялық қасиет болуы қажет.

2. Болашақ ұстаздың саяси сауаттылығы, оның қоғамдық белсенділігі – ұстаздық беделін арттыра түседі. Елін сүймеген, ұлттын қастерлемеген «ұстаз» шәкірттерін отансүйгіштікке тәрбиелей алмайды. Ұстаз өзі өмір сүріп отырған қоғамдық құрылыстың мән-жайын, болашағын, мемлекеттік өркениеттік өмірдің ықпыл-жықпылын жақсы біліп, айқындай ажыратуға тиіс. Өйткені ұстаз тәрбиесі қоғамдық өмірмен байла- нысты болмаса, ол – баянсыз тірлік.

3. Ұстаз өз пәнін өте жақсы білумен қатар, барлық ғылым негіздерін, әсіресе, әдебиет пен өнерді, халық педагогикасын жан-жақты терең білуге міндетті. Өз халқының әдебиетін, дүниежүзі халықтарының таңдаулы әдеби шығармаларының, ұлттық өнер мен ұлттық тәрбиені (халық педагогикасын) жақсы білмеген ұстаз, көп жағдайда, «әмбебап» емес екендігін шәкірттерге сездіріп қойып, өз беделіне нұқсан келтіреді. 4. Болашақ ұстаз өз халқының ұлттық мәдениетін терең біліп, ол білімін оқу-тәрбие сабақтастығында саралап пайдалануға тиіс. Халық педагогикасы (этнопедагогика) – ұлттық мәдени мұра болғандықтан, ұлт- тық мәдениет – ұлттық тәрбиенің нәтижесі болғандықтан, осы сабақтастықты тәрбие ісінде қолдана білу – ұстаздық парыз. Ол үшін ұстаз ұлттық әдебиетті, этнографияны, әдеп пен рәсімдерді, дәстүрлер мен салт-сананы, тіпті рәміздерді де жақсы біліп оны тәрбие ісінде тәптіштен пайдалануға шебер болуға міндетті.

Ұстаз – иманды ұрпақты тәрбиелеуші. Ол - әдепті және әдептілікті шәкірттеріне үйретуші үлгілі тұлға. Иманды, әдепті, ілтифатты, ізетті ұстаздың киімі де, шаш қоюы да, жүріс-тұрысы да – бәрі жарасымды болуға тиіс. Таңдаусыз киім, талғамсыз киіну – жарамсыз болады да, ұстаздың беделіне үлкен нұқсан келтіреді.

Ұстаздаң жаны да, тәні де, жолы да, орны да бәрі таза болуға тиіс. Хадисте «бір күн ұстаздық еткен – бір айлық ораза тұтып, намаз оқумен бірдей» деп бекер айтылмаған.

Тәлімгер ұстаздың тұлғалық бейнесі осылай толымды болса, ол нағыз ұстаз, халқының қадірлісі, шәкірт- терінің ең сыйласымды, сүйікті жақыны болатыны анық.Осы орайда қазіргі және болашақ ұстаздардың алдына қойылатын міндеттерге тоқталсақ:

а) өркениетті елдердің болашағы – жастарды жан-жақты тәрбиелеп, оларға терең білім беру үшін, ұстаз алдына қойылатын жоғарғы міндеттерді толық орындауға тиіс;

ә) ұлағатты ұстаз өмір сұраныстарына сәйкес өз білімін үздіксіз көтеріп, сана сапалығы мен жан таза- лығын, ардың асқақтығын, ұлттық намысты қастерлеуге міндетті.

б) өскелең өмір талаптары күн сайын жаңа міндеттерді алға қойып, ұстаздарға көп нәрсені жүктейді. Ұс- таз өзіне міндеттегенді ғана атқармайды, ол үнемі «міндеттенеді», жаңалық табады, іс-әрекетті жаңғыртады (инновациялайды), ғылыми-әдістемелік *жұмыстарын үздіксіз дамытып отырады. Сонда ғана қазіргі және болашақ ұстаздардың қоғамдағы тұлғалық бейнесі айқындала түседі. Ұстаздың сөз мәдениеті, тілі, ұлттық тілді терең білуі, дауыс ырғағы, бетқимылы, бәрі ұлағатты ұс- таздық бейнеге сәйкес болуға тиіс. Ұстаздың сөзі «қысқа да нұсқа», айқын да ашықты болу керек, әсіресе сөз қисыны (логика) жағынан аз да болса, жіберген «кемшілік», «ұстаз бәрін біледі» деген шәкірт ойына нұқсан келтіреді де, ол өз беделін жойып алады.*

Ұстаз ұлттық тілін, мемелекеттік тілді жан-жақты жақсы білмесе, ол – нағыз ұстаз емес. Тілді білу бар да, сөзбен ойды жеткізу бар. Сөз – ойдың көрінісі. Ал бір сөздің өзі дауыс ырғағына байланысты оңдаған ұғымды беруі мүмкін (мысалы: Келші? Келші! Келші... Келші?! т.б.). сондықтан сабақ үстіндегі ұстаздың дауыс ырғағы сөз мәнін түрлендіріп, тыңдаушының ұғымын арттырады, өте бәсең сөйлеу, өте қатты дауыс көте- ру тиімсіз. Тыңдаушының ықыласына, аудиторияға, жалпы жағдайларға байланысты дауыс ырғағын жүйелі түрде құбылтып отыру (актерлық шеберлік) оқытушының беделін арттыра түседі, оқушылардың ықыласын, ынта-жігерін, қызығуын арттырады.

Сабақ беріп тұрған ұстаздың бетқимылы биязы, ілтифатты, иманжүзді, мейірмаңды бейнеде болуға тиіс. «Қанша қасіретті көрсең де, шәкінттеріңе қабақ шытпа», - деп А.С.Макаренко көрегендікпен айтқан. Бұл жерде, шыдамдылық пен төзімділік қажет болады. Ұстаздың бет бейнесі жадырап шығып, жылы шуағын шашқан күн іспеттес болу керек. Тәлімгер ұстаздың тұлғалық бейнесі оның сабырлылығын, салуаттылығынан, әдептілігінен де ай- қын көрінеді. Сабырлық (педагогикалық такт) болмаса, ұстаздың ұлағаттылығы көрінбейді. Шәкірттің «тілін табу», әрбір шәкірттің психологиялық рекшеліктеріне сәйкес педагогикалық тәсіл табу – білікті ұстаздың ұстаздық қасиеті. Ұстаз – халықтың салауатты өміріне басшылық жасаушы тұлға.

Ұстаздық шеберлік іс-қимыл, іс-әрекет арқылы білімді іс жүзінде қолдану барысында қалыптасып, дамиды. Тәлімгер ұстаздың (тәрбиешінің) беделі оның шеберлігімен қатар, шәкірттеріне деген сүйіспеншілігі, қажымас қамқорлығы, талап қоя білуі, қойған талаптарын шәкірттердің орындауын бақылай білуі, шәкірттің іс-әрекетін бағдарлап, әділ бағалай білуі арқылы қалыптасады. Сөз – адам психикасының өмір сүруінің аса маңызды факторы. Қарым-қатынассыз қоғам ыдырап кетеді. Коммуникацияның түрлі формаларын зерттеу, адамның қарым-қатынас жайлы білімімізді кеңейтті. Сөйлеу құралымен қатар адам қарым-қатынасының сөзден тыс жолдары: келбет, ым, мимика, серіктестердің бір-біріне қатысты жағдайы, бейнелеу кең зерттеле баста- ды. Адам келбеті физиономиялық маскадан, киімнен, жүріс-тұрыс кейпінен құралады. Физиономиялық маскалардан ызғарды, жайдарлылықты, өр көкіректікті, мейірбандықты және басқаларды аңғаруға болады.

Мектеп оқушыларымен жұмыс істейтін мұғалімдер вербальды (сөз) және вербальды емес (ым не ишара) қарым-қатынастың түрін пайдаланады. Ал, қарым-қатынастың қай түрі болмасын ол мұғалімнің шеберлі- гіне, тәжірибесіне байланысты. Соңғы кезде психологиялық зерттеулерде қарым-қатынас жасаушылардың аралығындағы қашықтықтың, серіктестердің отырысының коммуникативтік мәніне көңіл аударылуда. Аме- рикандық қарым-қатынас психологияда бұл бағыттағы зерттеулерге просемика деп ат қойды. Төрт түрлі ара қатынас бар: көңілдестік, жекебастық, әлеуметтік, көпшіліктік. Алдыңғы екі қарым-қатынас бір-біріне жақын, достық байланысты аңғартады, ресми байланысты адамдар әлеуметтік қатынасты ұстанады.

Мұғалім мен мұғалімнің, мұғалім мен басшының қарым-қатынасы қарама-қарсы нақтылық пен сөз мәдениетін талап етеді.

Сөз жүйесі, сөйлемдер айтылуы тез әрі түсінікті болуы шарт. Ең бастысы-іскерлік қарым-қатынаста екі жақты пікірдің келісім табуы. Білімділіктің, кәсіби шеберліктің жемісі ең басты нәтиже болмақ. Ол үшін:

Сөз өте жинақы, тұжырымды болып құрылуы;
Уақытты шебер пайдалану;
Істің жоспары, шарты, заңдылығы болуы;
Мұғалім білім, білік, кәсіби шеберліктің шебері болуы;
Құқықтық білімнің болуы;
Сөз мәдениетін меңгеруі;
Азаматтық, адамгершілік тәртіптерді қатаң сақтау;
Әдеп нормаларына сай жүріс-тұрыс, киім кие білу мәдениетіне мән беру.

Әдепті болу – әрбір адамға өнегелі, әдепті болуды талап етеді, әсіресе, ол мұғалімге қажет, себебі мұғалім жеке тұлғаның дамуына қатысып, өзіндік қасиеттерді қалыптастырады. Педагогтық әдеп әр мұғалімде әртүрлі және әрқалай көрініс беруі мүмкін. Бұл оның жас ерекшелігіне, темпераментіне, мінез-құлқына және т.б. ерекшеліктерге байланысты. Мұғалімнің әдебін құрайтын компоненттер көп. Олардың бастылары: педагогтық оптимизм, педагогтық такт, педагогикалық техника, шеберлік, байқағыштық, психологиялық қырағыштық, күшті ерік-жігер, сөйлеу және сезім мәдениеттілігі, қылық сұлулығы, ұстамдылығы, талант, бейімділік, ұйымдастырушылық.

Этика – мораль туралы ғылым. «Этика» терминін б.з.б. IV ғасырда Аристотель енгізді. Ол этика адамгер- шілік, мораль туралы ілім деп көрсетті. Этика – педагогтың бір ерекше қасиеті. Педагогикалық әрекет эти- касы жай ғана сыпайылық білдіру ғана емес, ол шығармашылық, ақыл-ой әрекеті, мәдени мінез-құлықтың саналы іс-әрекеттің, білімділікпен іскерліктің жиынтығы. Синица И.Е. «...Әнші үшін үн, ал мұғалім үшін педагогтік әдеп сондай қажет» - дейді. Сонымен, этика – адамдардың өзара жақсы қарым-қатынас жасауы- на қажетті жағдай туғызу. Кәсіби этика –еңбектің моральдың бір түрі,ол әр түрлі мамандық иелеріне тән моральдық нормалар, мінез-құлық ережелері және моральдық бет-бейнесі туралы бағалау түрінде көрініс табады

Болашақ ұстаздың педагогтық мәдениеттілігі (этика, этника) жаңаша тетікте (новая технология) іс ұй- ымдастыра білуі, өркениетті өмірден оза іс-қимыл жасап, прогрестік, оптимпстік (көрегендік) әрекеттерімен көрінуі – оның нағыз ұстаз екендігін көрсетеді.

Қазіргі ұстаздардың алдына болашақ өркениетті, дәстүрлі демократиялы мемелекетті құратын жас ұр- пақтың ең әуелі адамгершілік қасиеттерін қалыптастырып, содан кейін оның жан сапасын, тән сапасын арт- тырып, техникалық прогреске сәйкес жан-жақты қолданбалы білім беру міндеттері қойылған.

Білім беру мазмұнын жаңарту кезінде білім алушылардың оқу қызметі зерттеушілік қызметке мән берілуі - өзекті мәселе, сондықтан да қазіргі таңда оқу үдерісіне студенттердің ғылыми-зерттеушілік және экспери- менталды-конструкторлық қызметін ендіру ерекше мәнге ие болып отыр. Қазіргі таңда заманымызда болып отырған өзгерістерді, жаңа талаптарды ескеретін болсақ, бәсекеге қабілетті маман міндетті түрде зертте- ушілік әрекет пен дағдыны меңгеруі тиіс. Ал ғылыми-зерттеу әлеуеті бар ғылым адамының ғылыми ұжым мүшесінің қалыптасу үдерісінің бастапқы кезеңі жоғары білімге дейін және жоғары білім алу үдерісінде жүзеге асырылады. Жоғары білім беру саласындағы бүгінгі күнгі алға қойылған мақсаттардың бірі – білім беру үдерісіне қатысушылардың зияткерлік белсенділігін арттыру, сол арқылы білім беру жүйесінің дамуын жетілдіру.

Қазіргі кезеңде болашақ маманның білім сапасын арттыру жолдарына мән бермейінше, заман сұраны- сын қанағаттандырып, экономиканың дамуын қамтамасыз ете алмаймыз. Жоғары білім берудің басты мақ- саты – білімді, жаңа идеялармен қаруланған, кәсіби құзыреттілігі қалыптасқан маман даярлау. Бұл мәселеде студенттің кәсіби, технологиялық дайындығы ғана емес, сонымен қатар оның білімінің жан-жақтылығы мен ғылыми-зерттеу әрекетін меңгеруі басты болып табылады.

Қоғам мен тұлға дамуы гуманистік тенденцияларына құндылық құрылымдары тұрғысынан назар аудару құндылық теориясының әртүрлі аспектілері туралы хабардар болуды қамтиды. "Құндылық" анықтамасын ғылыми-теориялық талдау, оны түсінудің түрлі тәсілдерін көрсетеді, бұл келесі маңызды сипаттамаларды анықтайды:

- *философиялық интерпретациялар құндылықты жеке немесе әлеуметтік эталон ретінде әрекет ететін жаңа идеямен анықтайды; құндылық жалпы субъективті образ ретінде қабылданады және белгілі бір өмірлік идеялар арқылы белгіленеді, мәдени-тарихи стандарттардың синонимі ретінде әрекет етеді, белгілі бір өмір салтымен байланысты. Құндылықтар адам өмірінің мағынасын беретін, шындықты идеалдарға, анықтамалық бағалауларға және жалпы қабылданған нормаларға сәйкес реттейтін рухани негіздер ретінде қарастырылады;*
- *психологиялық-педагогикалық идеялар құндылықтарды адам өмірінің әртүрлі салаларына (жеке, кәсіби, әлеуметтік) қатынастары жиынтығын анықтайтын саналы жалпы семантикалық формациялар ретінде қарастырады; салыстырмалы түрде тұрақты, адамның моральдық ұстанымын қалыптастырады. Демек, әр адамның құндылықтары оның мінез-құлқының бағытын, іс-әрекетке деген ұмтылысын, сезімдер, бағалаулар мен қатынастардың көріну ерекшеліктерін анықтайтын ұғымдар ретінде әрекет етеді және адамның даму*

процесінде алған жалпыланған әлеуметтік тәжірибені түсінуінен тұрады және көбінесе қоршаған шындықтың әлеуметтік-мәдени және тәрбиелік жағдайларына байланысты.

Қазақстанда кәсіби құзыреттілікті қалыптастырудың теориялық және практикалық қырларын Ш.Х.Құр- маналина [5] (колледж жағдайында бастауыш сынып мұғалімдерін кәсіби даярлау), Б.Т.Кенжебеков [6] (жоғары оқу орны жүйесінде болашақ мамандардың кәсіби құзыреттілігі), Г.Әбілқасымова (болашақ кәсіптік оқыту педагогтарының кәсіби құзыреттілігін қалыптастыру), Г.Ж.Меңлібекова (болашақ мұғалімнің әлеу- меттік құзыреттілігі) [7] және т.б. ғалымдар зерттеген.

Болашақ педагогтардың кәсіби мәдениетінің мәнді бөлігі, оның кәсіптік қызметті жүзеге асыруға қа- білеттілігі және даярлығының бейнесі болып табылатын кәсіби құзыреттіліктің негізі жоғары оқу орнында қаланады. Педагогтың инновациялық іс-әрекетті жүзеге асыру құзыреттілігі, жалпы кәсіби құзыреттілік си- яқты, оның бүкіл кәсіптік өмірі барысында қалыптасып, дамиды. Жоғары оқу орындарында болашақ педа- гогтардың инновациялық технологияларды жүзеге асыруға кәсіби құзыреттілігін қалыптастыру мәселесі, кең мағынасында, отандық экономиканың, өндірістің инновациялық дамуымен байланысты жаратылыстану пәндерін оқытудың жаңа міндеттерінен туындайды.

Осыған орай, қазіргі кездегі жоғары білім беру алдында студенттер мен оқытушылардың жұмыстарының түрлері мен әдістерін жүзеге асыру мәселесі тұр. Бүгінгі таңда еліміздің білім беру саласында бәсекеге қа- білетті ұрпақ тәрбиелеу үшін маңызды міндеттерді шешуге бағытталған күрделі бетбұрыс жасалуда.

Сол себепті бүгінгі күні Қазақстан Республикасының жоғары оқу орындары алдына әлеуметтік-эти- калық, экономикалық және ұйымдастыру-басқарушылық, кәсіби құзыретті, сауатты мамандарды даярлау міндеті қойылып отыр. Педагог мамандардың кәсіби іс-әрекетінің өзіндік ерекшеліктері бар. Мұның өзі оларды жаңа ғылыми-педагогикалық идеяларды шығармашылықпен қабылдай алатын, оқыту теориясы мен әдістемесін игерген кәсіби-педагогикалық құзыреттіліктің жоғары деңгейін игерген маман ретінде даярлау мәселесін тудырады.

Қорыта келе айтарымыз, болашақ ұстаз мәдениеті – кәсіби қызмет іс әрекеттің мінездемесі, ал іс-әрекет жеке тұлғамен тығыз байланысты болғандықтан, мұны шын мәніндегі жеке тұлғаның шоғырланған сипат- тамасы деп таныған орынды. Бұл орайда, жеке тұлғаның өзі белгіленген нақты бір құрылымды құрайтын күрделі әлеуметтік-психологиялық тұтастыққа ұмтылуы шарт, яғни заман талабына сай, бәсекеге қабілетті маман болуға ұмтылу.

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INFORMATION-PSYCHOLOGICAL SAFETY AMONG ADOLESCENTS FROM THE PERSPECTIVE OF DEVELOPING MEDIA LITERACY SKILLS

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Abstract
The aim of the study was to emphasize the importance of utilizing media education in teaching information-psychological safety to teenagers. The article outlines directions for media education both as a teaching tool and as a subject of research in information-psychological safety. Media education is intended to assist learners in mastering the media space. The article examines media education as a means of ensuring the informational-psychological safety of individuals and considers the significance of developing critical thinking in this area. This article analyzes the concept of media literacy among teenagers in today's information society. It also addresses the issue of personal safety in the evolving media environment and underscores the importance of cultivating media culture within the current young generation. A study was conducted to assess the level of media literacy among teenagers. Based on the results of the survey, it is evident that the problem necessitates thorough and comprehensive research to develop a comprehensive program of measures aimed at enhancing the level of media and information literacy among young people.

Keywords: *information-psychological safety, media education, media literacy, information culture, teenager*

Introduction. *Modern education cannot be imagined without information technology and mass communication. The work of many specialists in society is closely connected with the Internet. More than 90% of the general population are active consumers of mass information. Currently, the most popular sources of information are television, journals, Internet, and radio. They are not only a carrier of information, but also a powerful apparatus of manipulation. These sources serve not only as carriers of information but also as powerful instruments of manipulation. While individuals select their own sources of information, social studies indicate that internet products are increasingly favored by the public today. Each of these sources possesses unique value and significance, alongside potential risks to both mental and physical well-being. The targeted preparation of the younger generation for life in our rapidly evolving information society spans across various domains. It should include methods of imparting knowledge, general information about media literacy and media competence to teenagers, methods of critical analysis of information [1].*

In this regard, alongside the benefits derived from public information, new threats and challenges have emerged, demanding immediate attention and resolution. The evolving information environment not only influences the minds and psychological well-being of the younger generation but also reshapes their needs, values, social landscapes, and modes of communication across various disciplines. In 1983, A.N. Leontiev said: "It is important to ensure that the soul does not become spiritually impoverished in an age full of information" [2]. Information is classified as negative if it leads to psycho-emotional and socio-psychological tension. These adverse effects manifest in individuals' daily lives, exerting significant influence, particularly during childhood and adolescence, when mental formation is still highly unstable [3].

Research procedure and methods. *The article employed both theoretical and empirical methods, including surveys and data analysis. Specifically, a survey was conducted as part of an empirical study to assess the level of media literacy among students.The purpose of the article is to clarify the concept of "media literacy" in the context of information-psychological safety.*

Discussion*. Being prepared to interact with the modern information environment means that the information environment is safe when people are media literate consumers. Because interacting with information today is more complex than ever before, the ability to communicate with information and critically evaluate media texts through media literacy is important today. The mass media can offer genuine and comprehensive information regarding the history, culture, and values of every nation, serving as a catalyst for improving human life, fostering national identity and development, and* *promoting international understanding and peace. However, concurrently, mass media wield significant cultural influence and pose a potential threat to moral and ethical norms, as well as to cultural and artistic values.*

Media literacy implies the ability to critically understand and analyze information received from various sources. It helps people understand the media landscape, understand the basics of journalism and distinguish between facts and opinions. Lack of media literacy can lead to superficial perception of information, belief in manipulative materials and spread of fake news. Therefore, learning to be media literate means being a conscious user of information who can distinguish between true and false information, form your own opinion and make informed decisions.

Information security, in turn, is aimed at protecting users and their data in the information space. Every day, the number of threats in the online environment increases: from viruses and hacker attacks to cyberbullying and cyber fraud. Possession of information security skills helps to prevent many negative consequences related to leakage of personal data, theft of financial resources and moral damage. This includes the use of strong passwords, understanding the dangers of publishing personal information on social networks, the ability to recognize phishing attacks, and much more [4].

Doctor of Pedagogical Sciences N.I. Gendina, in his writings, discussed the concept of a person's information culture. He emphasized the necessity of an information worldview and knowledge system, along with a set of skills, enabling individuals to independently pursue their information needs efficiently using both traditional and new information technologies. This component stands as a crucial factor in ensuring an individual's social security within society [5]. The most comprehensive definition of media literacy comes from A.V. Fedorov: it encompasses a set of motivations, knowledge, skills, and competencies of an individual. These attributes aid in the selection, use, critical analysis, evaluation, creation, and transmission of media texts across various types, forms, and genres. Furthermore, it involves the analysis of complex processes. In the latter half of the 20th century, a distinct field known as "media education" emerged within pedagogical science in leading countries worldwide [6]. Its purpose is to assist schoolchildren and students in better adapting to the realm of media culture and acquiring proficiency in its language. Media education provides the essential knowledge for students to engage and communicate effectively with mass media. Serving as a comprehensive developmental process, it facilitates the cultivation of students' abilities to articulate and defend their opinions.

Today, as part of the development of information culture and information security for individuals, media education is being implemented both domestically and internationally. It emphasizes the detailed examination of the language used in various media forms. To ensure both information-psychological safety, it is imperative to approach the goals of individual training and the pedagogical education system from two perspectives. Universities should create conducive environments for safeguarding the personal information and psychological well-being of students, who are the future educators. Being a graduate teacher who has mastered the pedagogical education program, he should be able to ensure the informational-psychological safety of schoolchildren. The qualification of teachers in the field of informational-psychological safety depends on the readiness of schoolchildren for a safe life in modern society. Currently, there is a pressing need to explore novel methodologies in the professional development of pedagogical staff, with a focus on fostering relevant informational and psychological competencies. The imperative for instilling information competence in aspiring educators, which plays a pivotal role in ensuring information and psychological security, is explicitly outlined in the state educational standards for pedagogical education. Consequently, the following skills can be integrated into the broader cultural competencies expected of high school graduates:

- Understanding the meaning and importance of information in the modern information society;

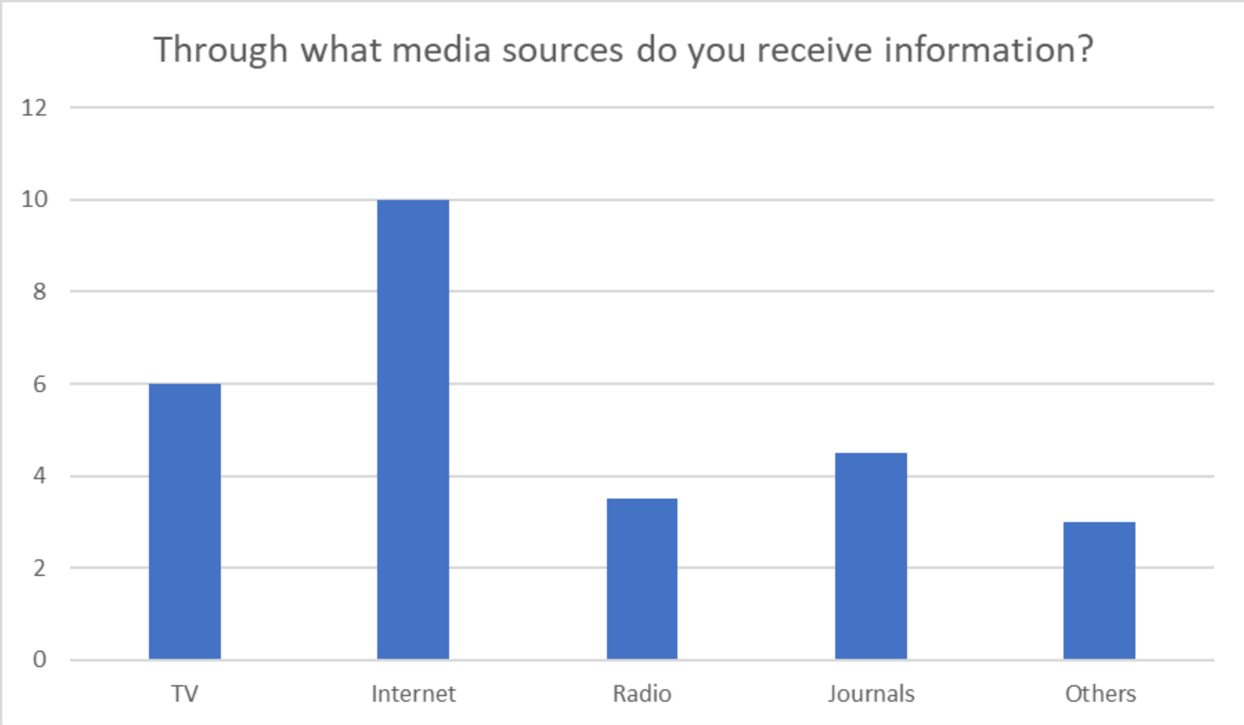
- Recognizing threats and dangers inherent in the information society;

- Implementing and adhering to the fundamental principles of information security.

So, we've established that individuals require media literacy to effectively interact with information resources. Primarily, this entails the ability to utilize modern computer technology and possess foundational knowledge of computer science and information technology. In this context, information literacy involves the capacity to analyze, and synthesize information, thereby intertwining with media literacy. It entails the ability to comprehend media texts, proficiency in utilizing media technology, and understanding the fundamentals of media culture, all of which are outcomes of media education (Khvorost, 2016). In our perspective, the concept of information culture extends beyond media culture. While the latter pertains solely to an individual's interaction with media tools, the former encompasses a broader spectrum, encapsulating the complex relationship between an individual and all forms of information, including, of course, media sources.

Modern young people tend to passively consume information, meaning they often do not exert effort to analyze the information they receive. Socialization of individuals in a mediatized society occurs predominantly through mass information channels. Consequently, there is a pressing need to educate young people who possess the ability to discern, acquire, disseminate, and respond appropriately to received messages.

A survey was undertaken to assess the media literacy levels among teenagers. The study involved the participation of 20 teenagers, with the ensuing results presented below.



Picture 1 - Sources of information for teenagers

Figure 1 shows the results of question 1 of the survey. The main media source for receiving information from teenagers is the Internet, which is 60%, and the rest of the teenagers noted that the source of media information for them is television (news channels), journals, radio and other sources of information.

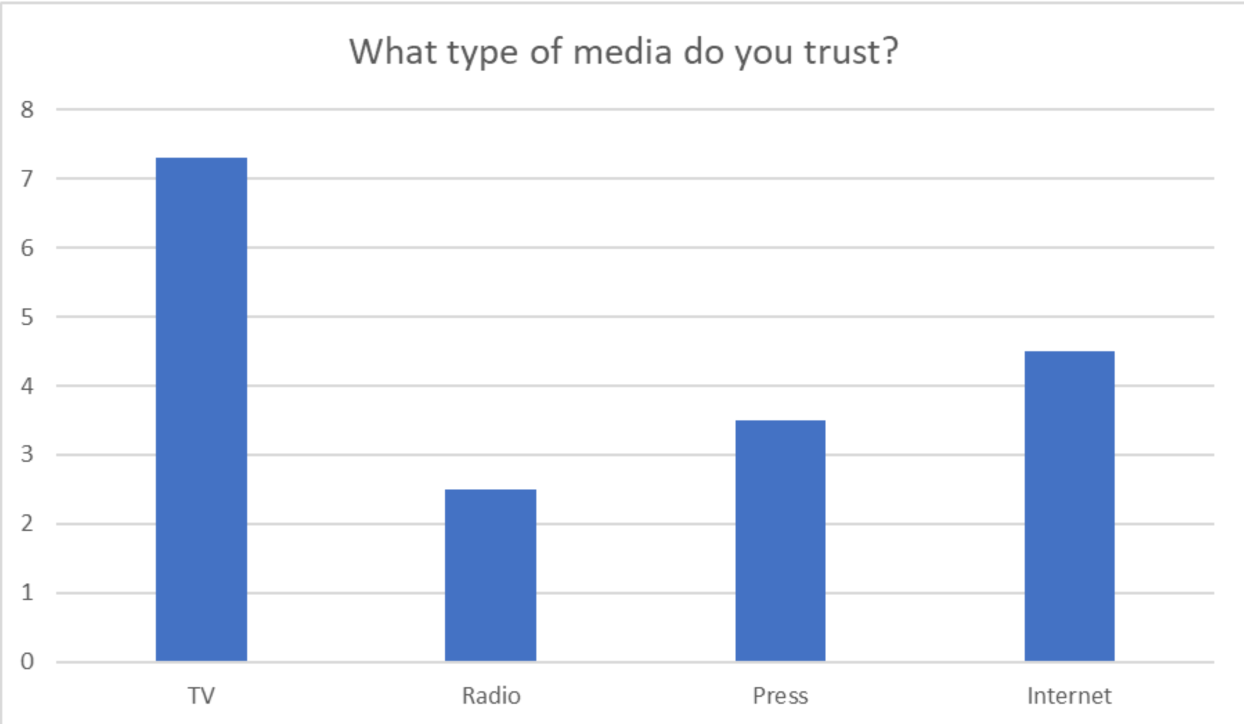


Figure 2 - Types of media that teenagers trust

Based on the findings depicted in Figure 2, it is evident that teenagers exhibit a greater level of trust in information obtained through television compared to the Internet. This suggests a prevailing inclination among most teenagers to rely more on news channels than online sources. Additionally, while there are adolescents who place trust in print media and radio, their proportion is notably lower than those who express confidence in both television and the Internet.

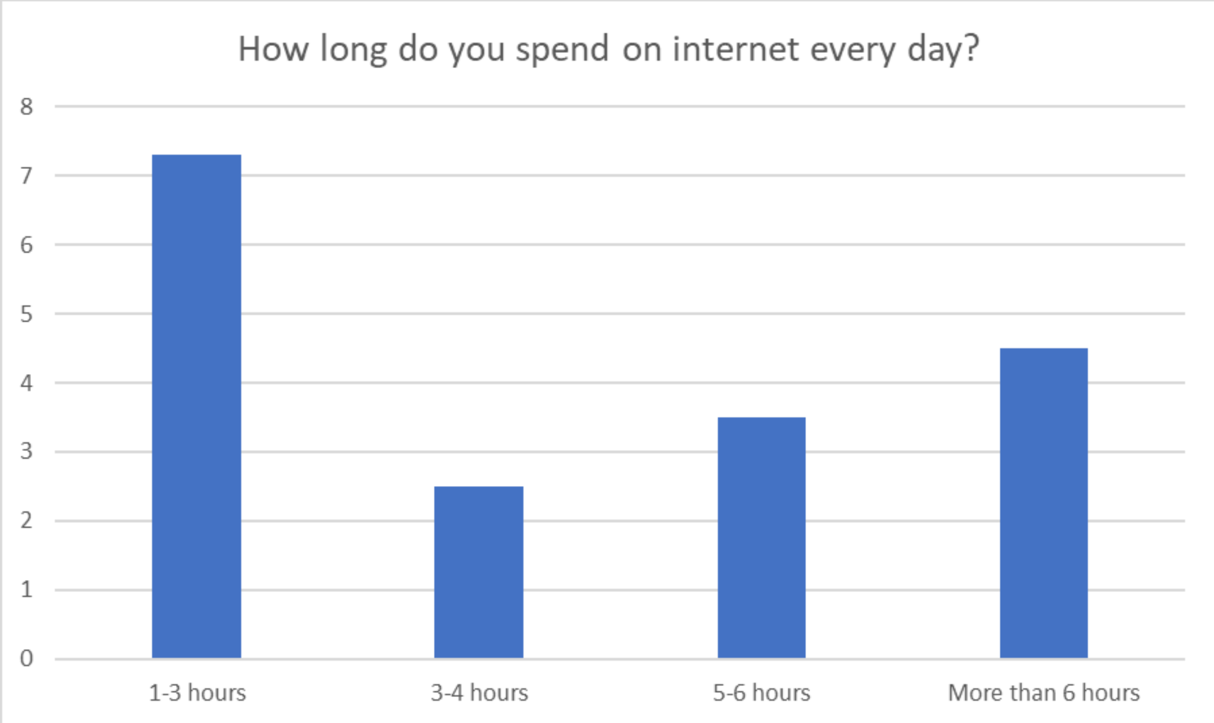


Figure 3- duration of time spent engaged in internet

According to the results of Figure 3, it is pleasing that most teenagers spend no more than 3 hours on the Internet, and there are also teenagers who spend 5-6 hours and more than 6 hours on the Internet.The survey data within our study's scope indicates that contemporary youth dedicate over five hours daily to smartphone or computer usage. Predominantly, they engage in social networking activities or indulge in online gaming. Typically, teenagers maintain personal profiles across multiple social platforms and frequently visit questionable websites. The heightened risk of negative consequences arises when users lack adequate media literacy. Examination of contemporary research on overall information security concerns underscores the imperative to enhance media literacy among schoolchildren and students. In the current landscape of information and digital connectivity, the importance of media competence cannot be overstated for individuals to lead fulfilling lives and function efficiently in their professional endeavors.

Conclusion. *Leveraging the information and educational environment effectively by both teachers and students proves to be a vital strategy in fostering the media literacy of schoolchildren and students. In today's digital society, media literacy and information- psychological safety stand as pivotal concepts. Through our efforts, we have prioritized these concepts, recognizing their integral role in shaping a high-quality information landscape and safeguarding teenagers from the adverse impacts of diverse information sources. In today's world, where information technology plays an increasingly important role, it is important to have knowledge about media literacy and information- psychological safety. Their absence can lead to serious negative consequences for ourselves and our environment. Therefore, the conscious acquisition and application of these skills should be a priority in each of our educational programs as in our daily lives.*

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MUSIC IN SCHOOLCHILDREN'S DRAWINGS

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МУЗЫКА В РИСУНКАХ ШКОЛЬНИКОВ-ДЕТЕЙ

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Музыка влияет на эмоциональное состояние детей, вызывая разнообразные эмоции и настроения. Например, мелодии могут вызывать радость, грусть, волнение или спокойствие, а ритмы могут повышать энергию или успокаивать. Это происходит за счет активации нейронных путей в мозге, которые связаны с эмоциональными реакциями. Музыка также может помогать детям выразить и управлять своими эмоциями, что способствует их психологическому благополучию.

Дети дошкольного возраста очень любят играть, петь, танцевать и рисовать. Именно в этих видах деятельности открываются большие просторы для творческого проявления дошколят.

Музыка, изобразительное искусство – источник особой радости в дошкольном возрасте. Маленький человек открывает для себя волнующую силу искусства и, при богатстве впечатлений, стремится выразить их в собственном творчестве. Всегда живой отклик находит у ребят предложение «нарисовать музыку». Рисунок помогает детям лучше понять и представить музыкальный образ, содержание музыкального произведения.

Еще Д. Б. Кабалевский говорил о необходимости открывать детям не только внешнесюжетные, но и глубокие внутренние связи между музыкой и другими видами искусства, учить «видеть музыку» и «слышать живопись».

Музыка- это источник энергии, способствующий оздоровлению человеческих душ.

Власть музыки выходит далеко за пределы царства слова.

Дети рисуют музыку, передавая свои сиюминутные впечатления, фиксируя в отображении своё настроение, отношение с помощью красочных звуковых пятен, клякс, набрызгав, монотипии. Колорит является одним из важнейших средств эмоциональной выразительности в живописи; в музыке же колорит (тембр) — один из главных факторов изобразительности.

«Нарисовать музыку» - дети принимают эту задачу как свою. При этом педагог ориентирует детей на то, что они могут рисовать не только тот или иной сказочный образ или сюжетную композицию, а также просто «музыку» с учётом настроения, которое создаёт музыка.

В рисунках детей находят отражение не только настроение но и выразительные средства музыки: тембр, мелодия, ритм. Эти занятия способствуют развитию у детей образного мышления, воображения, креативности. Созданный рисунок помогает детям более глубоко постичь музыкальный образ, содержание и выразительные средства музыки.

Музыка, живопись, рисунок, скульптура – это все неразрывно связано. Можно творить замечательные картины, сидя в машине и слушая музыку. Музыка вдохновляет на шедевры, и иной раз помогает раскрыться таланту. А что вы знаете о взаимосвязи музыки живописи?

Звуки можно рисовать. Да какие там звуки, целые произведения! И это не выдумка. Существуют социальные проекты, которые это доказывают.

Как выглядят ноты? На этот вопрос есть несколько ответов:

• На протяжении года воспитатели и дети слушали произведения знаменитых композиторов и создавали работы на основе музыки. Рисовали обычной гуашью и акварелью. Из-под кистей детишек вышли замечательные картины, которые отображали музыку Чайковского, Вивальди, Римского-Корсакова. Была сделана целая выставка работ.

• В средние века столько создано барельефов и картин с изображением музыкантов! Музыка и живопись переплетены так, что для них одинаковыми являются такие понятия, как ритм, симметрия, пропорция, колорит. Литовский художник Чюрленис пишет картины, на которых изображены музыкальные произведения.

• Однако не только художники могут писать музыку, но и сама музыка может рисовать. Существуют так называемые музыкальные зарисовки. У некоторых музыкантов есть цветной слух, к таким можно отнести А.П. Мусоргского, Римского-Корсакова, которые при помощи отдельных тональностей в музыке достигали ассоциации с определенным цветом.

Значительное место в обучении детей изобразительному искусству в детских школах искусств, отводится предмету композиция. Главной задачей, согласно принятым программам, является развитие художественно-эстетическое развитие личности ребенка, раскрытие его творческого потенциала, приобретение художественно-исполнительских и теоретических знаний, умений навыков по данному учебному предмету. При этом главной проблемой современного образования в художественных школах на уроках композиции является дефицит творческого подхода учащихся, в создании сюжетной или декоративной композиции, а также однообразие сюжета и его композиционного размещения на плоскости листа. Обращаясь к интеграции музыки и изобразительного искусства на основе изучения музыкальных произведений П.И. Чайковского и художественного наследия живописи и графики, учащимся на занятия композиции предлагается изучить базовые законы и правила композиции, изобразительную грамоту. Исследуя на занятиях возможности тона и цвета, познакомиться с многообразием форм и образов окружающего нас мира искусства, заинтересованно, осмысленно, интересно.

Музыка – неразгаданная тайна для человека. У каждого человека, изучающего искусство, всегда стоял вопрос: «Как нарисовать музыку?»

На занятиях в ДШИ, на художественном отделении, можно обратиться к «музыке», на помощь придет один из «элементов» создания образного начала нашего мира – это «звук», а именно «музыкальный звук» как образ в музыкальном произведении. Мы знакомимся с произведениями П.И. Чайковского, нашего земляка, великого композитора, огромное наследие которого позволяет открыть мир музыкальных образов.

Применение музыки обогащает творческое мышления учащихся, начиная с первых ступеней изучения изобразительной грамоты. Взаимосвязи музыки и изобразительного искусства, позволяет решать важные учебные и воспитательные задачи ученика: развивается эстетический вкус; появляется заинтересованность обучением; форсируется образное восприятие; учитываются возрастные особенности детей. Интеграция музыки и изобразительного искусства помогает осознать красоту музыкальных образов, и раскрыть их в своей учебной работе.

Актуальность занятий по музыкальным произведениям в том, что на уроках композиции объединяются и параллельно изучаются структуры создания музыкального произведения и художественного произведения, ученик их сопоставляет и находит образные взаимосвязи. Проводит сюжетное и композиционное осмысление музыки и изобразительного искусства, сравнивая законы и правила в создании произведений композитора и художника. Изучаются основные базовые понятия, по которым строится композиция произведения и происходит реализации определенного замысла. Ученики обращают внимание на схожесть терминов встречающихся и в музыке, и в изобразительном искусстве: ритм, тональность, характеристика: линии, цвета, тона; характера образной характеристики произведения.

Изобразительная и музыкальная грамота строится на ассоциативно-чувственном восприятии ученика. Слушая музыку на уроках композиции мы обогащаем наш разум оригинальным, живым решением, начиная с образного восприятия музыкального произведения через цвет, тон, видение сюжета музыки в 1-м классе; абстрактно-графическим и цветовым восприятием через законы ритма во 2-м классе и переходим от абстрактного восприятия музыкального произведения к сюжетной композиции в 3-м классе.

Основой теоретической части на занятиях рисования по музыкальному произведению, является постановка проблемы: «Что нужно знать художнику, чтобы нарисовать музыку?»

Практическая часть построена на выполнении заданий, в основе которых лежит изучение взаимосвязи изобразительного и музыкального языка. В ходе работы ученик должен прийти к соответствию образного языка музыки и изображения в учебной работе в соответствии с замыслом композитора.

В первом классе ученики изучают тему: Равновесие основных элементов композиции в листе. Главной целью этого занятия является, создание ритма, равновесия элементов композиции на плоскости листа, на основе понимания языка музыки. Начинаем знакомство с творчеством П.И. Чайковского с изучения произведения «Времена года».

Преподаватель рассказывая о творчестве П.И. Чайковского раскрывает содержание произведения: «Времена года».

Происходит осмысление сюжетов природы в музыке и в изобразительном искусстве. Обращает внимание на настроение пейзажа. Сюжет раскрывается, через осмысление характера линии - мелодии, тона - цветового пятна. Проводятся ассоциативные связи музыкального звука: тихий, громкий, густой, прозрачный, цветового окраса пятна – это тембр: от желтого к синему; от тихого звука к громкому.

Анализ музыкального произведения, на начальном этапе обучения, проходит на основе выполнения графического рисунка. Для графического анализа музыкального произведения или его фрагмента, следует 15 минут прослушать произведение и выполнить графический рисунок, придерживаться следующей последовательности:

- *Тема музыкального произведения (фрагмента).*
- *Общее тональное представление (светлое, серое, темное).*
- *Мелодическое развитие (движение, пластика рисунка).*
- *Метр, ритм (акценты в движении музыки).*
- *Тембровое развитие (окрас звучания музыки, который диктуют разные инструменты).*

Затем учащиеся выполняют композицию по музыкальному произведению. На основе тонального и цветового строя выбранного музыкального произведения, синей, красной и желтой краской в технике «монотипия» выполняют тональное и цветовое восприятие фрагмента, например: сентябрь «Осенняя песнь».

Рассмотрев полученное чередование пятен и линий в рисунке, они дорисовывают сюжет пейзажа в соответствии с сюжетной канвой музыкального произведения.

Задания предмета композиция во втором классе направлены на создание абстрактной композиции в синтезе изучения творческого подхода художников на основе, понимание образного начала музыкального произведения. Ученики выполняют декоративную (абстрактную) композицию, применяя понимание музыки, произведений П.И. Чайковского «Детский альбом».

Работа преподавателя направлена на взаимодействие двух школ: художественной и музыкальной. Педагог по предмету «слушание музыки» из музыкальной школы нашего города, помог нам понять и осмыслить музыкальное произведение, рассказал о возникновении в творчестве П.И. Чайковского произведения «Детский альбом», познакомил с его содержанием и характеристикой отдельных частей.

На уроке композиции в художественной школе, ученики познакомились с историей развития изображения музыки художниками, на основе теории В. Кандинского о ритмическом строе в абстрактной композиции, правели параллели изобразительного языка с музыкальным.

Слушание музыкального произведения П.И. Чайковского «Детский альбом» проходил в последовательности: выбор одной части: «Марш деревянных солдатиков», «Шарманка играет» и др. Затем на основе графического анализа, дети приступали к работе. Без подобных вступительных занятий уроки, вряд ли были бы успешными.

Когда учащиеся научились проводить ассоциативные связи музыки с изобразительным искусством, мы приступали к более сложным заданиям: рисование музыкального произведения, выражая образную характеристику, созданную композитором в произведении, через абстрактное восприятие музыки, затем абстрактное перевели в сюжетное. Все композиции учащихся были основаны на эмоционально – слуховом восприятии музыкального произведения.

Чтобы занятия были успешны, можно придерживаться в работе следующих рекомендаций:

- *Познакомиться с содержанием изучаемого произведения: на сколько частей делиться, по какому принципу, представить образную характеристику музыкального произведения.*
- *Прослушать 15 минут его произведение (фрагмент), например, «Детский альбом»: «Утренняя молитва».*

• Выполнить графический анализ данного фрагмента; стараться выявить общий характер, настроение, созданное композитором через выразительные средства изобразительного искусства.

• Воплотить свое восприятие музыки в учебной работе на предмете: композиция.

Далее приступаем к созданию абстрактной композиции по произведению П.И. Чайковского «Детский альбом».

В ходе учебной работы над изображением музыкального произведения мы с учениками проводим графический диктант, переводя линейное, ритмичное и тональное восприятие в цветовое, объединяя все выразительные средства в единую композицию, например: «Утренняя молитва» П.И. Чайковский.

Учебная работа выполняется на формате А3, в технике гуашь. В работах учащихся можно увидеть, как тонко и точно они передают задуманный композитором звуковой образ, применяя язык изобразительного искусства.

В ходе учебной работы дети легко отступают от привычных правил реалистического изображения, изображая абстрактные композиции во 2-м классе; раскрывают для себя композиционное видение абстрактной композиции по музыкальному произведению, накладывая на него сюжетную канву в 3-м классе. Тема третьего класса: Цвет в композиции станковой.

Задание становится сложнее, главной целью является создание станковой живописной композиции в интерьере с небольшим количеством персонажей, на основе творческого подхода художника - постановщика театра оперы и балета. Балет П.И. Чайковского «Щелкунчик» лежит в основе работы на занятиях композиции.

Учащиеся изучают опыт Н Рериха, в области театрального творчества, осознают роль художника в создании образа музыкального произведения на сцене театра. На занятиях уделяется внимание изучению символики цвета в решении образной характеристики музыкального произведения. Понятие цветовой акцент, как луч прожектора, направленный на главное в театральном действии на сцене театра. Подростки знакомятся с профессией: художник – постановщик на уроках композиции. Зрительный ряд занятий направлен на произведения Н. Рерих: эскизы декораций к опере «Валькирии» Р. Вагнера; эскизы декораций и костюмы к опере «Снегурочка» Н.А Римского – Корсакова.

Практическая работа в третьем классе это - создание сюжетной живописной композиции по музыкальному произведению П.И. Чайковского «Щелкунчик»(балет), с элементами интерьера и небольшим количеством персонажей.

Начало работы с композицией начинается с прослушания музыкальных фрагментов балета П. И. Чайковского «Щелкунчик», чтение либретто балетмейстера М. Петипа. Ученики стараются понять музыкальный язык произведения, через создание графического анализа фрагментов музыки балета, где действие происходит в интерьере дома. Придерживаются схемы: тема, мелодия, ритм, тон (светлота, насыщенность), объединение выразительных средств в единое целое.

Затем, объединив последовательный анализ музыки в изображение, учащиеся создают сюжетную композицию на основе абстрактной композиции. В третьем классе работа усложняется применением плановости, применением цветового акцента, усложняются колористические задачи в учебной работе.

Методический подход на занятиях, от музыкального произведения к изображению позволила создать осмысленные, композиционно интересные работы учащихся. Участие в конкурсах детского рисунка, посвященных П.И. Чайковскому повышают уровень самооценки подрастающего поколения «юных художников».

Объединяя направленность учебных и воспитательных целей и задач, на основе изучения музыкального произведения, применение данного учебного подхода, можно реализовать как в школах дополнительного образования (ДШИ, ДХШ) на предмете «композиция», как и общеобразовательных школах на уроках «изобразительное искусство» в интеграции с уроками «музыки».

Таким образом, на интегрированных занятиях, решается проблема расширения творческого подхода учащихся ДШИ в создании сюжетной композиции (станковой, декоративной).

В итоге учебной работе выявлены результаты:

- ученик научился создавать образы одного искусства выразительными средствами другого;

- применять одно искусство для сопоставления с другими видами искусства;

- использовать произведения музыки для создания творческой работы изобразительными средствами, что усиливает обучающий эффект:

- познакомился с разнообразием творческих подходов для создания учебной работы;

- формируется ассоциативное мышление детей, понимание искусства как формы художественно-образного осмысления мира;

- усиливается потребность и умение возможностей творческой реализации представлений ученика об окружающей действительности.

Известно, что искусство учит особо: чем меньше дидактичности, тем сильнее его воздействие. И в этом смысле взаимодействие искусств на основе анализа-сопоставления, как в процессе восприятия художественных произведений, так и в процессе собственного продуктивного творчества детей, является одним из путей совершенствования преподавания искусства. Поясним. Анализ-сопоставление рассматривается нами как целостный процесс, органично включающий в себя эмоционально-чувственную и аналитическую составляющие, и основан на взаимопереводе языка одного вида искусства на язык другого. Без излишнего технологизма, столь опасного в преподавании всех искусств в школе, минуя формальный анализ, педагогу удаётся вскрыть существенные связи и отношения содержания и формы художественного произведения, сохранив при этом непосредственность восприятия детей.

Творческие отклики детей на конкретное музыкальное сочинение выражаются как в свободной передаче впечатлений от музыки, так и в художественном воплощении музыкального образа в рисунке, который становится своеобразным вариантом художественного анализа произведения. Когда перед детьми ставится задача услышать главное в музыке и перевести на язык другого искусства («рисуем музыку»), то лучшими становятся работы тех учащихся, рисунок которых не только выразителен, хорош сам по себе, но и родственен интонационной основе музыкального образа, что свидетельствует о глубине проникновения в содержание музыкального произведения.

В силу временной природы музыки композиция музыкального произведения сложнее воспринимается детьми, чем композиция произведения изобразительного искусства. Привлечение детского изобразительного творчества («рисование» конкретного произведения) помогает школьникам в освоении драматургии музыкальных произведений, особенно содержащих более одного образа. Поясним это. Парадоксально, но уже к поступлению в школу у детей складывается песенный стереотип восприятия музыки. При восприятии музыкальных произведений с развитой драматургией, построенной на нескольких контрастных, конфликтных музыкальных образах, внимание детей, в силу большей обобщённости языка музыки, приковывается к одному, наиболее запомнившемуся образу. Произведения киноискусства, литературы, в силу большей зримости, наглядности изображения и обозначения словом, способствуют целостности и большей сбалансированности восприятия контрастных пластов драматургии. В этом отношении детский рисунок становится эффективным способом осмысления музыкальной композиции в целом. Методически целесообразно, чтобы рисование конкретного музыкального произведения, особенно на начальном этапе, осуществлялось в два этапа. На первом из них дети концентрируют своё внимание на одном настроении, на одном запомнившемся им фрагменте произведения. Например, в пьесе Л. Бетховена «Веселая. Грустная» подавляющее большинство детей рисует только весёлое настроение, остальные - только грустное. То же самое происходит и при знакомстве с музыкой Пролога к балету «Спящая красавица» П.И.Чайковского, построенного на сопоставлении тем двух волшебниц - злой феи Карабос и доброй феи Сирени. Несмотря на проработку каждого из двух контрастных образов Пролога в собственном исполнении (движение, пение, инсценировка), дети рисуют только одного героя. Анализ-сравнение рисунков подводит детей к мысли, что каждый отразил какую-то грань произведения, но ни один не передал музыку пролога в целом, не «ухватил» взаимодействие музыкальных образов. Веер разнообразных рисунков детей, бесспорно, передаёт объёмность содержания музыки. Но для того чтобы каждый ребёнок «нарисовал» музыкальное произведение, отразив идею противопоставления доброго и злого начал, необходимо повторное рисование с более детальным продумыванием композиции картины, внесением контраста, который не обязательно связан с представлением двух персонажей, но может проявиться в цвете, мазке, линии, каких-либо символах, знаках и пр.

Обобщая вышесказанное, можно уверенно сказать, что учебный процесс на предмете «композиция», в интеграции с музыкальным наследием композитора П.И. Чайковского, позволяет *детям обогатить их образный и творческий потенциал и осознанно воплощать замысел в учебной работе.*

Для преподавателей и учащихся открыто большое поле творческой деятельности, мировая культура накопила огромный багаж методов и средств, методических приемов «рисования музыки», позволяя применять их на уроке предмета «композиция» в ДШИ.

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THE PHYSICS WEB QUEST AS A COMPETENCY-ORIENTED LEARNING TECHNOLOGY

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ВЕБ-КВЕСТ З ФІЗИКИ ЯК ТЕХНОЛОГІЯ КОМПЕТЕНТНІСНО-ОРІЄНТОВАНОГО НАВЧАННЯ

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Компетентнісний підхід у сучасній освіті є важливим напрямом модернізації системи освіти та нормативною вимогою. За роки незалежності України прийнято численні закони та постанови, які стали основою для розвитку сучасного освітнього змісту.

Фізична освіта не виключення. Дослідження вчених підтверджують ефективний вплив компетентнісного підходу на перехід від знаннєвої до діяльнісної парадигми освіти. Впровадження цього підходу в шкільну фізичну освіту спрямоване на розвиток ключових компетенцій учнів та формування нових способів мислення та діяльності.

Одним із ефективних інструментів реалізації компетентнісного підходу є технологія «Веб-квест». Ця інноваційна методика навчання дозволяє учням самостійно здобувати та обробляти інформацію, розвивати критичне мислення та робити висновки. Веб-квест стимулює творчий потенціал учнів, допомагає вирішувати складні проблеми та забезпечує їхню активну участь у навчальному процесі.

Методологія веб-квесту базується на дослідницькій діяльності учнів, пошуку інформації в мережі Інтернет та використанні інтерактивних інструментів. Вчені та педагоги підтверджують, що веб-квести сприяють розвитку інформаційно-цифрової компетентності та набуттю досвіду пошукової діяльності.

Реалізація фізичних веб-квестів у шкільному курсі фізики може відбуватися через групову або індивідуальну роботу учнів. Тематика квестів повинна бути проблемною та орієнтованою на вивчення конкретних питань фізики. Кінцевим результатом веб-квесту є презентовані учнями роботи: усні виступи, есе, веб-сторінки тощо.

Важливо підкреслити, що використання веб-квестів у фізичній освіті сприяє не лише засвоєнню конкретного матеріалу, а й розвитку критичного мислення, комунікативних та дослідницьких навичок учнів. Такі проекти допомагають учням не лише розуміти теоретичні концепції, але й застосовувати їх у практичних ситуаціях, що є важливим аспектом сучасного освітнього процесу.

Реалізація веб-квестів у шкільному курсі фізики може бути ефективним інструментом для стимулювання інтересу учнів до навчання та сприяти їхньому розвитку як особистостей. Такий підхід до навчання дозволяє індивідуалізувати процес навчання та забезпечити його більшу ефективність.

Philological sciences

THE GENIUS AZERBAIJANI POET – M. FUZULI

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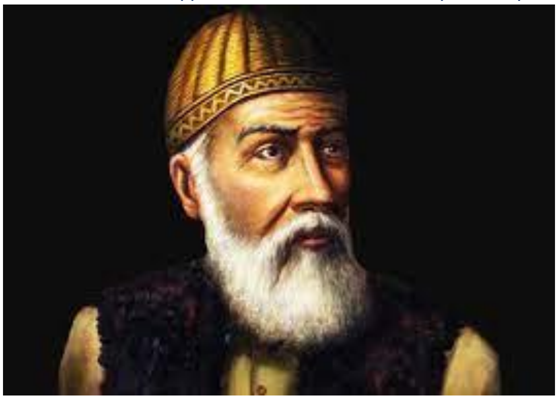
Abstract
Muhammad Fuzuli is the pride of the history of Azerbaijani Literature and culture. Muhammad Fuzuli is a powerful poet who occupies an exceptional place in the development of Azerbaijani literary and artistic thought and has a significant impact on the literature of the Near and Middle Eastern countries. As a thinker with comprehensive knowledge, his multifaceted artistic-philosophical heritage, which instils deep love for life and people and always calls to live with a sense of beauty and lofty ideals, is one of the incomparable spiritual treasures of the Azerbaijani people. Muhammad Fuzuli created excellent examples of poetry in the native language, enriched the artistic language of Azerbaijan and raised it to a new peak. His works, which are the embodiment of his brilliant genius and are read with love even today, have been spread over a wide geography since the beginning of their creation and have brought great fame to the author. Muhammad Fuzuli formed a whole literary school known for its talented representatives. Starting from his contemporaries, all prominent artists who followed the traditions of Fuzuli in later times have always remembered the name of this great master of words with respect.

Keywords: Muhammad Fuzuli, Azerbaijani Literature, thinker and philosopher of the Turkic world, genre, ghazals, gasidas, musaddas, rubai, gita, murabbe, Azerbaijani classical poetry

According to the Great Leader Heydar Aliyev, great personalities like Fuzuli help their nation to move forward in history, they become a kind of beacon for its progress in the dark twists and turns of history: "The life of the Azerbaijani people has passed through great and difficult stages. However, the works of art created by its great people and great personalities helped the people of Azerbaijan to overcome all difficulties. Fuzuli occupies a prominent place among them."



Muhammad Fuzuli is the pride of the history of Azerbaijani literature and culture. Muhammad Fuzuli is a powerful artist who occupies an exceptional place in the development of Azerbaijani literary and artistic thought and has a significant impact on the literature of the Near and Middle Eastern countries. As a thinker with comprehensive knowledge, his multifaceted artistic-philosophical heritage, which instils deep love for life and people and always calls to live with a sense of beauty and lofty ideals, is one of the incomparable spiritual treasures of the Azerbaijani people. Muhammad Fuzuli created excellent examples of poetry in the native language, enriched the artistic language of Azerbaijan and raised it to a new peak. His works, which are the embodiment of his brilliant genius and are read with love even today, have been spread over a wide geography since the beginning of their creation and have brought great fame to the author.

Starting from his contemporaries, all prominent poets and writers who followed the traditions of Fuzuli in later times have always remembered the name of this great master of words with respect.

In Eastern poetry, Fuzuli was known as a lyric and love poet.

In 2024, it will be 530 years since the birth of the great Azerbaijani poet and thinker Muhammad Fuzuli.

On January 25, 2024, the President of the Republic of Azerbaijan Ilham Aliyev signed a decree on the celebration of the 530th anniversary of the great Azerbaijani poet Muhammad Fuzuli.

Muhammad Fuzuli, who is said to be from the famous Bayat tribe of Azerbaijan, is known as one of the most magnificent representatives of the divan genre. Fuzuli was a well-educated man. He was *familiar with the medieval sciences of medicine, logic, mathematics, astronomy and several humanitarian sciences and religious-philosophical currents. He studied classical Turkish, Persian, Arabic and Indian literature. Therefore, researchers believe Suleyman was rich enough to send his son to school. Muhammad ibn Suleyman or Molla Muhammad Baghdadi was born in Karbala near Baghdad in 1494. According to some sources, Muhammad's father, Suleyman, moved to Iraq from the Aresh district of Azerbaijan.*

Fuzuli was not only engaged in poetry, but served in religious centers. He lived a simple, frugal life with the salary he received for this job. The poet, who was well-known and highly valued by both the Safavid state and the Ottoman rulers, did not go to the palaces and preferred to lead a simple life.

Fuzuli's real name is Muhammad and his father's name is Suleyman. Although his real name is written as Muhammed Suleyman oghlu in modern Azerbaijani language sources, it was recorded as Muhammed ibn Suleyman at that time. He started his creativity at an early age and chose the pseudonym "Fuzuli". this nickname is translated as "proud, many" and "exalted, superior, virtuous". He stated in his writings that he chose this name to distinguish himself because he knew that no one else would choose such a pseudonym.

Fuzuli received his first education in Karbala, continued it in Baghdad, and lived in Najaf and Hullah in Iraq for a while. Thanks to his reading, he became familiar with medieval sciences, especially religious-philosophical trends, and Greek philosophy based on Arabic translations, and studied classical Turkish, Arabic, Persian and Indian literature. (5)

Fuzuli was a sufficiently knowledgeable person. The name of the poet "Movlana" is related to this. His father was rich enough to afford his education. Fuzuli was familiar with medicine, logic, mathematics, several humanitarian sciences, and religious-philosophical currents, which are considered medieval sciences.

In 1508, Ismail I entered Baghdad and united Iraq to Azerbaijan, after which the city remained part of the Ottoman Empire for a long time. For this reason, the first periods of Fuzuli's creativity come from the times when Iraqi Arabs were under the rule of the Safavids.

He is recognized as one of the most magnificent representatives of the divan genre in the history of Azerbaijani-Turkish literature.

Muhammad Fuzuli wrote his works in three languages - Azerbaijani, Arabic and Persian. After Nasimi he was considered the second great poet who wrote poems in the Azerbaijani language. In addition to his native Azerbaijani language, he also learned Persian and Arabic languages from an early age.

Although Fuzuli dedicated his work "Bangü Bade" ("Opium and Wine") to Shah Ismail Khatai, he did not lean towards the palace. (6)

Azerbaijani classical fiction has always been the focus of national leader Heydar Aliyev's attention. Even when he was performing the most difficult state duties and difficult diplomatic missions, he was always interested in classics and highlighted their literary-historical importance.

That is why "Heydar Aliyev, who paid great attention and care to our classical heritage, classical literature and its representatives, highly valued the role played by this literature in social development and new human education, and therefore acted as a guarantor of the immortality of their art, was included in the ranks of the classics has gained immortality like them".

The worthy celebration of Fuzuli's anniversary at the international level with the decision adopted by UNESCO is connected with the name of National Leader Heydar Aliyev, who always paid special attention and care to the protection of national cultural values. The 500th anniversary of the immortal poet was the first worldwide great culture and art festival held in the independent Republic of Azerbaijan.

Heydar Aliyev said in his speech at Turkiye's Bilkend University in 1994: 'Today is a great holiday for our people. We are celebrating the 500th anniversary of the birth of the great poet, thinker and philosopher of the Turkic world, the people of Azerbaijan, the people of Turkiye Muhammad Fuzuli in the palace of this beautiful Bilkend University in Ankara, Turkiye.

M. Fuzuli enters Heydar Aliyev's concept of the literary-historical process as 'the great poet of all Turkic peoples', and this is a historically correct assessment.

The great leader valued Fuzuli's legacy as 'a great example for the present and future of the Azerbaijani people, the Turkic world, and the Turkic peoples.'

Fuzuli studies is a great science, its history begins with the genius Fuzuli himself (G. Aliyeva Kangarli). (1)

Heydar Aliyev said in his speech at the Grand National Assembly of Turkiye: 'Fuzuli was a person who united Turks in the past.' But now, when the Turkic world was divided in the 20th century, and almost *the majority of the countries belonging to the ancient Turkic world (except one Turkiye) were living in regimes that were not compatible with their life, history, and traditions, Fuzuli kept us alive and led us to these days.'*

Therefore, one of the reasons why H. Aliyev attached such great importance to Fuzuli, perhaps the most important, was to unite the Turkish world, which was divided in the 20th century, and the scattered Turkish republics. It was a wise move by a great politician. He did not choose a direct political path to unite the Turkish people, he chose a spiritual path, he chose the "Kitabi-Dade Gorgud" path, the "Manas" path, and the creativity of Fuzuli, which includes Turkic history and Turkic spirituality. The far-sighted politician and great strategist introduced Azerbaijan to the world through Fuzuli, showed the high place of Turks in the world civilization, and showed the future generations the way to unite Turks. This was the artistic-historical result born from the unity of Heydar Aliyev's intelligence and Fuzuli's genius. (1)

Fuzuli composed ghazals, gasidas, musaddas, tarjiband, rubai, gita, murabbe, etc. in three languages - Turkish, Arabic, and Persian. He created his works not only in aruz verse, both in verse and prose, but in both lyrical and epic types. He wrote works in the genres of ghazal, gasida, masnavi, gita, rubai, murabbe, mukhammas, tarjiband, takhzand, takhmis, philosophical treatise. He laid the foundation of artistic prose in his native language.

The poem "Leyli and Majnun", which is the peak of the poet's creativity, is considered one of the rare pearls of Azerbaijani, Eastern and world poetry. Even though many Turkish, Persian, Indian, Uzbek and Tajik poets addressed the theme of "Leyli and Majnun", which Nizami Ganjavi brought to written literature for the first time, Fuzuli's work in Azerbaijani Turkish stands out from the poems written earlier on this topic for its originality and it has been at that peak for nearly five hundred years.

The work, written according to all the rules of the classical masnavi genre, is dedicated to the Ottoman ruler Sultan Suleyman the Magnificent (Kanuni). Unlike Nizami, Fuzuli's "Leyli and Majnun" has more Sufi-mythical content, according to the demand of the time. In the work, the problem of personal freedom, echoing Nizami's poem is presented.

Based on the motifs of the poem, the genius Azerbaijani composer Uzeyir Hajibeyov wrote the first opera of the East - "Leyli and Majnun" in 1908, and this opera also gained great fame as a poem. The "Fuzuli Cantata" written by the composer Jahangir Jahangirov to the ghazal "Mani candan usandırdı" is among the pearls of Azerbaijani music. The feature films "Leyli and Majnun" and "Epic of Love" based on the motifs of the poem were shot.

Fuzuli was familiar with ancient Greek and Eastern philosophy. His philosophical views were reflected in his work "Matlaul-etigad" written in prose in Arabic. Here, Fuzuli was influenced by the ideas and philosophical heritage of Aristotle, Plato, Empedocles, Democritus and other Greek philosophers. Fuzuli's other works contain literary and philosophical ideas. Like Nizami, he also wanted to influence the social and political process with his works, sometimes he advised judges and officials. (2)

In his poems, Fuzuli took into account all the good practices of the poets who wrote in Azerbaijani Turkish until the 16th century, and developed it with great courage and skill. By giving the most valuable examples of lyrics, he opened a new, very big and beautiful school in the history of Azerbaijan and Turkish literature. The literary school of Fuzuli, with its richness of meaning, content, and artistic height, constitutes an artistic encyclopedia of human feelings and thoughts. This school has not only raised the artistic quality of our poetry to an extremely high level. He brilliantly demonstrated all the beauties, possibilities and power of Azerbaijani Turkish. This school has rendered a great historical service in breaking the outdated rules and norms in classical literature and in taking a brave, free and skilful approach to the traditions of classicism that hinder development.

Fuzuli dedicated works to Shah Ismail Khatai, Shah Tahmasib and their generals, and wrote gasidas for their celebration, but he never showed interest in the palace. Fuzuli, who presented several gasidas to Sultan Suleiman, met with Turkish poets who came to Baghdad with the Sultan's army. It is said that he wrote his most famous poem "Leyli and Majnun" at their request.

The most famous works of Fuzuli are: "Complaint", "Health and Disease", and "Rindu Zahid". Among his most famous ghazals are "I was tired of my soul", "Soz", "Don't Die for grief-love...", "O Doctor", "Amazed, O Idol" and dozens of other ghazals. (3)

Ahdi Baghdadi, who knew him personally and spoke with him, presented Fuzuli in his tazkirah "Gulshani-shu'ara" as an unparalleled artist who is perfect in knowledge and wisdom, profound, and has new content. He also noted that Fuzuli was known as a good-natured, sweet-talking person, a highly respected person and a scholar.

Fuzuli, who is known and loved more as a lyric poet, wrote classical poetry in ghazal, qasida, murabbe, mukhammas, musaddas, takhmis, gita (short poem), rubai, etc. applied to genres and achieved great success in each of them.

Ghazals, which occupy an important place in the poet's work, were written on various topics. Among them, the ones written on the subject of love, those devoted to the glorification of beauty and beauty, and those with religious and social motifs occupy an important place.

The explanation of love described in Fuzuli's ghazals requires special attention. The love he sings often expresses both real human emotions and Sufism's philosophical view of life and man. In many of the poet's ghazals, it is impossible to separate or differentiate these two. However, in all cases, the lyrical hero draws attention with his spiritual purity, strong will, loyalty and magnificence.

Fuzuli mostly wrote his gasidas in his native language - Azerbaijan language. His works in this genre are dedicated to the great personalities of the Islamic religion, the rulers of the time, and historical events.

The poet's poems occupy a special place in his work. Except "Leyli and Majnun" (1537), the remaining three poems are allegorical. Although these three poems are written on different topics, there are similarities in their ideas. In them, arrogant rulers slaughtering people by making senseless wars ("Bangü Bade"), ambition, selfishness ("Sohbatul-Asmar"), flaws observed in society and social structure ("Haft Cam") were sharply criticized.

Fuzuli is considered a great master of classical prose. His letter known as "Complaint" is more valuable for its social content and artistic value. The life, activities, and deprivations of famous religious figures are reflected in the work "Hadiqatus-suada" (there are those who claim that it is a translation) in the native language.

"Rindu Zahid", written in Persian, is based on the meeting and debate of different views on man and life. In the allegorical work "Health and Disease" written in the Persian language, the author's scientific, religious-philosophical and Sufi-pantheistic views were expressed in the form of unity.

Fuzuli is also known as a skilled translator in the history of literature. Among his translations, "Hadisi-arbain" ("Forty Hadiths") occupies an important place. By translating the Persian-Tajik poet Abdürrahman Jami's work of the same name into his native language, the poet aimed to make Turkish-speaking readers benefit from and enjoy this famous work.

Fuzuli wrote nearly ninety gasidas. He composed a separate divan consisting of gasidas. Unlike his contemporaries, he praised God rather than kings in his gasidas. On the other hand, he posed great social-philosophical problems and expressed his opinion in artistic language. In this respect, the gitas of the Turkish divan are particularly different.

Philosophical gasidas, "Yeddi Jam", "Anisul-galb", "Health and Disease" are products of the poet's old age. He especially collected his gasidas as a separate work and made it into a book. (4)

According to Askarzadeh, his poetry was a decisive moment for the development of the Azerbaijani language. (7)

The poet's only child, Fazli, was an intellectual distinguished by his deep scientific knowledge. There is information in the sources that he wrote elegant poems.

Muhammad Fuzuli, who never left Iraq, where he was born and lived, died of plague in Karbala in 963 by lunar date and 1556 AD (according to the Gregorian calendar) and was buried at the threshold of Imam Hussain's Mausoleum.

After Nasimi Fuzuli raised our literary and artistic language to new heights with his works, which are the most beautiful examples of poetry created in our mother tongue, had a strong influence on the poetry of classical Azerbaijan, as well as other Turkic peoples, and created a literary school. His works have been published many times in Tabriz, Baki, Istanbul, Ankara, Cairo, Tashkent, Bukhara, Ashgabat, and have been highly appreciated by world orientalists.

Fuzuli remains a famous poet in countries such as Azerbaijan, Turkiye, Iran, and Iraq. A street and a square in the centre of Baki are named after Fuzuli. In addition, an administrative district and its capital are also named after the poet in Garabagh.

Fuzuli is recognized as an outstanding poet among all Azerbaijani poets and a leading figure of Azerbaijani Literature. The Azerbaijani language matured precisely with Fuzuli's creativity, and Azerbaijani classical poetry reached its highest level of sophistication. Fuzuli's works were published in five volumes in Azerbaijan.

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Political sciences

CHARACTERISTIC FEATURES OF WOMEN'S POLITICAL ACTIVITY

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ӘЙЕЛДЕРДІҢ САЯСИ ҚЫЗМЕТТЕРГЕ ТӘН ЕРЕКШЕЛІКТЕРІ

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Abstract
The article discusses the characteristics of women's participation in political activities and important issues that need to be solved to increase the number of women in politics.
Аннотация
Мақалада әйелдердің саяси қызметке қатысуының ерекшеліктері, саясаттағы әйелдердің санын көбейту үшін шешілуі қажет маңызды мәселелер қарастырылады.

Keywords: *political participation, gender stereotype, political activity, feminism, state power.*
Түйін сөздер: *саяси қатысу, гендерлік стереотип, саяси қызмет, феминизм, мемлекетік билік.*

Саяси сала ұзақ уақыт бойы "әйелдер мәселесінен" тыс қалды, алайда феминистік дәстүр мен гендерлік қатынастардың танымалдығы артқаннан кейін ғылыми қоғамдастық әйелдің саяси дискурстағы ұстанымын талдай бастады.

Әйелдер өкілдерінің саяси қызметке қатысуы экономикалық тұрғыдан мықты және әлеуметтік жағынан қамтамасыз етілген қоғам дамуының ажырамас бөлігі болып табылады. Алайда, халықтың осы санатының өкілдігі неге әлі де төмен?

Негізгі мәселе – әйелдер саясатының "ерекшелігі", оның осы сияқты "еркектік, қатал" салаға сәйкес келмеуі туралы пікір. Бұл шындыққа сәйкес келмейтін көзқарас адамзат қоғамында қалыптасқан екі мәселеден туындайды.

Біріншіден, белгілі бір гендерлік стереотиптерді енгізуге әкелген әйелдерді саяси процестен тарихи түрде алып тастау.

Екіншіден, адамдардағы мемлекеттік билікті статизм мен патернализм негізінде қабылдау ерекшеліктері (яғни, "қатаңдық, қорғау, ауырлық" жағдайында) саяси өз кезегінде еркектік белгілері болып саналатын әрекеттер). Бұдан шығатыны, әйелдер саясатының ерекшеліктері туралы тұжырымдама бастапқыда осы саланың гендерлік бояу объективі арқылы бағаланады.

Саясаттағы әйелдердің санын көбейту үшін шешілуі қажет маңызды мәселе – стереотиптік ойлау. Бұрын айтылғандай, адамзат тарихи тұрғыдан әйелдерді саяси қызметтен шығаруға дағдыланған. Әлемнің бұл көрінісінің қарапайымдылығы саясаткерлерге де, сайлаушыларға да әйелдердің саяси қатыспау фактісін түсіндірді. Бұл көпшілік арасында "саясат әйелдерге арналмаған" деген пікірді бекітті. Сонымен қатар, мұндай стереотиптеу әйелдердің өкілдігі жеке салада, ал еркектер көпшілік алдында, бұл жағдайда саяси салада қолайлы деген түсінік қалыптастырады [1].

Алайда, саясаткерлердің пайда табу үшін гендерлік метафоралар мен айырмашылықтарды қолдануы жағдайды нашарлатады. Ең алдымен, саяси өмірде гендерлік сәйкестендірудің неліктен маңызды екенін түсіндіру қажет. Сонымен, Т. Рябова гендерлік сәйкестік негізінде өз мүдделерін түсіну, олардың мемлекеттік істердегі өзектілігінің дәрежесін түсіну, сондай-ақ сайлау науқандары кезіндегі позицияның бастамашылығы толыққанды саяси субъектінің қалыптасуына ықпал ететінін жазады [2]. Шынында да, гендерлік сәйкестік белгілі бір негізді қамтамасыз етеді, оның негізінде саяси актерге оның бейнесімен неғұрлым тиімді үйлесетін белгілі бір ерекшеліктер жатады (тиісінше, егер ол ер адам болса, онда үгіт-насихат плакаттарында оның қарулы күштерге қатысуы туралы айтуға болады, егер ол әйел болса, онда оның анасы).

Екіншіден, мұндай ойлау жақсы саясаткер бұл еркектік қасиеттерге ие – ұтымды, батыл, патриот деген пікірді қалыптастырады. Сонымен, БҚПЗО мәліметтері бойынша, әйел-саясаткерлердің ер адамдармен салыстырғанда кемшіліктеріне көбінесе "эмоционалдылық" және "мінездің жұмсақтығы" жатады [3] (яғни шартты түрде "әйелдік" қасиеттер). Бір қызығы, "әйелдік" сипаттамалар "саяси қарсыласты демаскулинизациялау үшін қолданылады, оған феминистік қасиеттерді атрибуттау (немесе оның қасиеттері мен мінез-құлқын әйелдік қасиеттермен салыстыру) арқылы да, еркектік қасиеттерге ие болудан бас тарту арқылы да қол жеткізіледі" [4].

Ақырында, егер әйелдер саясатқа қатысатын болса, онда гендерлік стереотиптеу әлеуметтік процестің салаларына сәйкес әйел жынысына тән қасиеттерге сәйкес көрінеді. Шетелдік зерттеулердің бірінде салалардың гендерлік бөлінуінің салдары қарастырылады: "еркектік пен феминизмнің сәйкесінше қоғамдық және жеке салалармен байланысы ерлер мен әйелдерге сараптаманың балама бағыттары (біріншісі – экономика, халықаралық саясат, ауыл шаруашылығы, армия, ал екіншісі – білім, денсаулық сақтау, әлеуметтік салалар) беріледі сұрақтар, қоршаған ортаны қорғау)"[5]. Мәселен, КСРО-да әйелдер Денсаулық сақтау және білім берумен айналысатын лауазымдарда болды (яғни, аналық инстинкт, қамқорлық, эмпатия көрінуі мүмкін салалар).

Алайда, гендерлік стереотиптер әйелді, оның саясатын жоғалтуды қалыптастырады. Сонымен қатар, стереотиптердің көпшілігі әйел саясаткерлердің нақты актілеріне қарағанда субъективті сипаттамаларға негізделген. Осылайша, сұрақ туындайды: әйелдер саясатының ерекшеліктері бар ма, әлде бұл стереотиптік ойлаудың нәтижесі ме?

Шынында да, әйелдердің өкілдігі саясатқа әсер етеді және оң әсер етеді. Алайда, мұны әйел табиғатының "табиғатының жұмсақтығымен" байланыстыру ғылыми емес және дұрыс емес. Әйелдер саясатының ерекшеліктері қоғам дамуының әлеуметтік түсіндірмелі заңдылықтарымен көрінеді. Мәселен, әйелдер қарулы қақтығыстардың ерекшеліктеріне байланысты саясаттағы қоғамдық өмір салаларына жиі әсер етеді: көбінесе ер адамдар өледі, ал әйелдер тірі қалады [6]. Басқа заңдылық – басқа азшылықтардың саяси өкілдігінің кеңеюі болып табылады [7], сондай-ақ экстремистік көңіл-күйді модерациялау ықтималдығы жоғары [8].

Қорытындылай келе, әйелдер саясатының ерекшелігі, ең алдымен, әйелдің қабылдаған шешімдері, олардың саяси процестерге және жалпы қоғамдық өмірге әсері негізінде талдануы керек екенін атап өту маңызды. Гендерлік метафоралар мен стереотиптерді мемлекеттің табысты дамуы үшін қайта қарастыру және мүмкіндігінше жою қажет.

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Psychological sciences

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ГРУПИ ПСИХОЛОГІЧНОЇ ПІДТРИМКИ У ЗАКЛАДАХ ОСВІТИ УКРАЇНИ

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Українське суспільство продовжує жити в умовах повномасштабного військового вторгнення росії. Кожен українець зараз на собі відчуває біль і виснаження, ознаки стресу та потребує підтримки і допомоги. Психологічної підтримки потребують багато здобувачів освіти, батьків і вчителів. У зв'язку із цим підвищилась роль фахівців психологічної служби в закладах освіти, до якої належать практичні психологи і соціальні педагоги.

Фахівці державних установ, що здійснюють науково-методичний супровід діяльності працівників психологічної служби у системі освіти України, та недержавні громадські організації, що надають послуги у сфері збереження ментального здоров'я протягом 2022-2023-2024 років, забезпечили шкільних практичних психологів і соціальних педагогів, вчителів достатньою кількістю матеріалів, посібників з теорією і практиками роботи.

Війна колосально вплинула на формування культури звернень населення за психологічною допомогою в країні. Наразі маємо констатувати підвищення інтересу учасників освітнього процесу (педагогів, батьків, здобувачів освіти) до фахівців психологічної служби закладу освіти, збільшення кількості запитів з питань підтримки ментального здоров'я у порівнянні з довоєнним періодом. У відповідь на ці запити, практичні психологи в індивідуальній чи груповій формі надають соціально-психологічну допомогу та підтримку, здійснюють просвітницько-профілактичні заходи, проводять цикли стабілізаційних занять з відновлення психоемоційного стану та посилення життєстійкості (резилієнтності) дітей і дорослих. Також окремі практичні психологи, соціальні педагоги у закладах освіти почали активніше запроваджувати у практику роботи шкільної психологічної служби групи підтримки. Фахівці психологічної служби проводять групи підтримки, групи взаємопідтримки та групи психологічної підтримки.

Разом з тим, питання організації та проведення груп психологічної підтримки в закладах освіти недостатньо розкрито в методичних рекомендаціях для працівників психологічної служби, які працюють у системі освіти України, і тому не вважається пріоритетним. За результатами опитування практичних психологів закладів освіти (прийняло участь 2243 респондента), що було проведено Українським науково-методичним центром практичної психології і соціальної роботи НАПНУ у квітні-червні 2023 році, 82% фахівців вказали, що не застосовують цю форму роботи з учасниками освітнього процесу. Серед основних причин називають (в рейтинговому порядку): 1 – відсутність знань щодо методики проведення груп психологічної підтримки (52%); 2 – цей вид роботи не зазначено в нормативно-правових чи рекомендаційних документах Міністерства освіти і науки України (15%); 3 – не думав(ла) про це раніше (14%); 4 –особистісно-професійна не впевненість для проведення таких груп (10%); 5 – впевненість, що такі групи може проводити виключно психотерапевт (8%) [1].

Серед опитаних лише незначна кількість шкільних практичних психологів (7%) зазначили, що проводять групи психологічної підтримки з педагогами та батьками, в тому числі *респонденти з Чернівецької області (3%) зазначили, що проводять рефлексивні групи для педагогів, які також мають на меті стабілізацію психоемоційного стану та взаємопідтримку, розвиток навичок самоаналізу та самодопомоги. Проведення груп психологічної підтримки для здобувачів освіти не було зазначено фахівцями взагалі, натомість, вони вказали інші групові форми роботи, які вони активно реалізують з дітьми, підлітками з метою психоемоційної стабілізації та взаємопідтримки [1].*

Розглянемо відмінності у визначеннях щодо окремих видів груп підтримки [2]:

- *Групи підтримки – керовані фахівцем добровільні об'єднання людей зі схожими проблемами чи кризовими життєвими обставинами, що зустрічаються протягом тривалого часу з метою надання взаємної допомоги та підтримки, обміну інформацією й ресурсами, які можуть бути корисними для вирішення їхніх проблем.*
- *Групи взаємодопомоги (самодопомоги) – важлива частина системи соціальної підтримки в громаді; форма соціальної підтримки одне одного людей зі схожими проблемами. Люди можуть працювати самостійно або за допомогою професіоналів, зазвичай соціальних працівників та психологів.*
- *Спільним для всіх груп взаємодопомоги вважається надання взаємної підтримки членами групи одне одному, обмін інформацією, що дає змогу знайти шляхи виживання у складній ситуації, освоїти копінг-стратегії. Групи взаємодопомоги фундаментально базуються на ідеї, що люди зі схожим досвідом проблем можуть запропонувати найкращу інформацію, яка стосується цих функцій.*

Фахівцям психологічної служби закладів освіти ми пропонуємо проводити групи психологічної підтримки з учасниками освітнього процесу. Група психологічної підтримки – це спеціально створене місце, де збирається від 5 до 12 людей, щоб конфіденційно поділитися почуттями з іншими та отримати підтримку. На групі учасники говорять не лише про свої почуття, переживання, але й отримують інформацію про те, як можна допомогти собі у стресовій ситуації поза групою. Це група де учасники та шкільний психолог (або психолог і соціальний педагог) разом створюють простір довіри та психологічної безпеки, щоб поділитись наболілим, отримати підтримку та рекомендації, вислухати інших, а також дати підтримку, відгукнутись на біль чи переживання іншої людини.

З досвіду роботи практичних психологів системи освіти Чернівецької області, які надавали психологічну допомогу вимушеним внутрішньо переміщеним особам (ВПО) у 2022-2023 роках, найбільш ефективними виявилися групи психологічної підтримки, які були створені в закладах освіти приймаючих територіальних громад. Саме такі групи дозволи охопити більшу кількість людей і створили майданчик взаємопідтримки, легалізації симптомів стресу, травматичного досвіду.

Пропонуємо ознайомитись з організаційно-методичною складовою проведення груп психологічної підтримки, яку застосовували фахівці психологічної служби спочатку в роботі з ВПО, а потім і з педагогами, батьками і здобувачами освіти старших класів.

Метою проведення групи психологічної підтримки було визначено: стабілізацію психоемоційного стану, розвиток навичок саморегуляції у постраждалих від війни.

Завдання для досягнення мети проведення групи підтримки практичні психологи формулювали наступним чином: створити умови для дослідження учасниками своїх ресурсів; надати психологічну підтримку, полегшити психоемоційний стан людей, які зазнали стресових чи травмівних переживань; ознайомити з методами психоемоційної стабілізації, механізмом їх дії; навчитися використовувати техніки психоемоційної стабілізації з профілактичною метою та за потребою.

Організаційні особливості проведення груп психологічної підтримки в закладах освіти: група проводиться у форматі 3-5 сесій (зустрічей); практична частина групи психологічної підтримки може бути використана після надання першої психологічної допомоги, або безпосередньо для осіб, що потребують невідкладної стабілізаційної підтримки; передбачає усну згоду або письмовий дозвіл на участь у групах підтримки; тривалість однієї сесії (зустрічі) – 1-1,5 год. Дуже важливим у проведенні груп психологічної підтримки є сетинг – визначені правила взаємодії, стабільний день, час, місце де відбувається група.

Структура проведення групи психологічної підтримки складається з: початок, психоедукація, практикум, зворотній зв'язок (рефлексія). На початку та перед проведенням зворотнього зв'язку кожної зустрічі вимірюється за 10–бальною шкалою рівень самопочуття і соціальної підтримки, за потреби рівень страждання чи тривоги (методом самооцінки, або за *допомогою обраних фахівцем методик). Обов'язково створюємо і щоразу повторюємо правила взаємодії.*

Кожна зустріч (сесія) складається з 2-х частин: психоедукаційної (психоосвітньої) і практичної – стабілізаційних вправ. Завдання першої частини – зосередитися на проявах хронічного стресу, симптомах учасників після переживання стресової або травмівної події, описати їх і пояснити (легалізація та нормалізація стану), щоб зміцнити здатність ідентифікувати їх в собі та інших. Також психолог знайомить учасників з можливими методами допомоги (самодопомоги) для зниження рівня тривоги, стресу тощо. Завдання 2-ї частини – пояснення, демонстрація і виконання практик емоційної стабілізації. Потрібно озвучити, назву, мету активності, особливості її застосування. І звісно попрактикуватися, виконати разом 1-2 вправи та попрости учасників висловити свої відчуття після їх проведення. По завершенню учасники оцінюють свій стан і надають зворотній зв'язок у групу.

Варто зазначити, що усі психологи, що проводили групи психологічної підтримки приймали участь у групових супервізіях, що проводились щотижня фахівцями-психологами ГО, що працювали в той період в їх територіальних громадах, або психологами Центрів професійного зростання педагогічних працівників, або психологами Науково-методичного центру практичної психології та соціальної роботи Інституту післядипломної педагогічної освіти Чернівецької області.

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METHODOLOGICAL APPROACHES DEVELOPMENT OF CREATIVE PERSONALITY THINKING

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Abstract
The article examines methodological approaches to the development of creative personality thinking. It discusses the stages of creative process as a creative process including conscious and unconscious stages and the launching of the process of the conscious sphere. The concept of giftedness as a general psychological prerequisite for creative development is proposed.

Keywords: creativity, creative thinking, intelligence, learning, process, self-actualization, personality.

In the article we analyze the nature of creative thinking and personality creativity in domestic and foreign studies. In the history of psychological science, we can distinguish two main approaches to the study and understanding of creativity: cognitive and personal.

In the first direction, creativity is studied in close connection with the study of cognitive processes. First of all, researchers of this direction consider the issue of correlation of creativity with the level of intelligence as a problem of interrelation between the creation of new things and the acquisition and application of already developed knowledge and skills.

The separation of creativity and a high level of intelligence development conceptually in psychology is found in Y.A. Ponomarev, who identifies creativity with the development of by-products of one's activity, i.e. new non-standard ideas arising during the creative process. Thus, Y.A. Ponomarev considers creative activity as a process of creating a "by-product" [9].

The concept of "intellectual range" formulated by V.N. Druzhinin is that individual and creative achievements are determined by the level of general intelligence, which is a prerequisite for creative achievements dependent on his search motivation and the level of general perceptions [5].

Within the framework of the cognitive direction in the study of creativity, many researchers give a special place to the study of the creative process. Stages, stages and phases of the creative process have been considered differently by numerous researchers. The main thing that unites the descriptions of the creative process known in psychology is the presence of conscious and unconscious stages in the vast majority of them, with the process starting in the conscious sphere, continuing in its unconscious structures, and entering the conscious sphere again.

In Russian psychology, the most holistic concept of the creative process was proposed by Y.A. Ponomarev [9]. He developed a structural-level model of the central link of the psychological mechanism of creativity. Studying mental development, the researcher came to the conclusion that "the results of experiments give the right to schematically depict the central link of psychological intelligence in the form of spheres penetrating one into another. The outer edges of these spheres can be represented as abstract limits (asymptotes) of thinking. At the bottom, such a limit will be intuitive thinking (the sphere of strictly intuitive thinking of animals extends beyond it). From above - logical thinking (beyond it extends the strictly logical thinking of modern electronic computers)" [9, pp. 23-24].

As we have already mentioned earlier, there is another direction in the study of creativity - the personal one. For representatives of this direction, the central point is the study of personal characteristics of creative people, as a result of which their generalized personality portrait is created.

It is possible to distinguish three areas of research on creative personalities. The first area consists of studies of their traits and motives. The second, very close to the first, area is formed by studies of the "I" in connection with creativity. The third area of research consists of works on creativity in the context of self-actualization.

As many researchers note, creative personality has high emotional excitability. There is evidence of a direct correlation between emotional tension with accompanying physiological shifts and the level of creative process. Such factors as joy, passion, a rush of stenic emotions, aspiration to dominance, risk, craving for independence, violation of order, removal of fear and frustration have a favorable effect on *creativity. Emotional correlates of creativity are the most indicative, and without emotional activity, according to many researchers, creativity itself is not observed [3, 4].*

O.K. Tikhomirov found that "the states of emotional activation are not just "timed" to the naming of a new principle of action, but naturally precede it" [11, p. 92], i.e. emotional involvement is necessary for creative manifestations.

Most researchers agree that the main difference of creative personality is in the specific motivation. Many authors emphasize internal motives, i.e. interest to the problem and aspiration to the creative process itself, as the leading ones in the hierarchy of creative personality motives.

These conclusions are also confirmed by domestic researchers. Thus, D.B. Bogoyavlenskaya [1, 2] considers the manifestation of internal cognitive motivation as the main feature that allows diagnosing a creative personality. In her opinion, the creative way of cognitive process presupposes internal cognitive motivation as the main condition necessary for the personality to manifest its creative abilities. She also emphasizes the external unstimulated nature of a truly creative process.

Creativity in the context of self-actualization (the latter is not identified only with the achievements of humanistic psychology) should be understood as small, or personal, creativity. Creativity here is a natural tendency to personal balance, mental health and self-actualization. The common feature of approaches in this direction is the development of holistic ideas in relation to the person, in the reliance on his positive (in opposition to negative) capabilities. The cornerstones of this direction were laid by A. Maslow and C. Rogers.

A. Maslow believes that the main impetus of creativity is the need for self-actualization, i.e. the desire of a person to fully and freely realize his or her potentials and personal capabilities. In self-actualization the personality shows integration and overcomes splitting. Through self-actualization episodes, the personality becomes more open to experience, perfect and spontaneous, humorous, transcendent, and independent of lower needs. Through self-actualization episodes, the individual discovers his or her capabilities close to the essence of his or her being. Creativity is one of the important characteristics of self-actualization [7].

A. Maslow relies on the experience of particularly creative people. However, he understands creativity broadly. Creativity is a quality that can be applied to any task in life. If personal enhancement is the primary task and painting is the secondary task, then personal enhancement is more important and creative than painting. Although Maslow favored artists, scientists, and saints, he did not exclude housewives, carpenters, and athletes from his focus [7].

K. Rogers described the tendency to self-actualization as a motivational force that develops within an environment that encourages from evaluations. K. Rogers' concept of actualizing tendency includes the whole area of motivation, tension, need, tension reduction, and creativity, which is expressed in the search for pleasure tendencies [10].

According to C. Rogers, the actualizing tendency characterizes a person as a whole, but not its individual components (such as the "I"). The ideal conditions of human life are created due to the full functioning of the personality. This means that the person freely expresses his or her feelings, performs independent actions, is creative, and lives a "good" life. The maladjusted person, on the other hand, is the opposite pole to the fully functioning individual. The misfit person is a defensive person. He maintains his life rather than improving it and increasing its value. He lives according to a predetermined plan and feels dependent on others rather than creative. A fully realized person, on the contrary, is free from defenses, open to experience, creative and able to live a "good" life [10].

Summarizing the above approaches to understanding creativity, it should be noted that each of them considers only one of the sides and manifestations of this phenomenon. In our opinion, cognitive and personal approaches are alienated from each other. The most important and urgent trend of the present time is the search for ways to study creativity in the unity of cognitive and personal variables.

D.B. Bogoyavlenskaya's studies can be referred to the integrative approach in Russian psychology [1, 2]. For D.B. Bogoyavlenskaya, the main indicator of "creativity" is intellectual activity, which combines two components: cognitive (general mental abilities) and motivational. Intellectual activity is a property of an integral personality. Its manifestations can be found in any circumstances, in any sphere of people's activity. It is not reduced to the preference of certain types of work to others and differs from the desire to achieve the greatest possible result.

In D.B. Bogoyavlenskaya's works creativity is considered not only as a productive but also a spontaneous process. She abandoned the model of a problem situation working only in one plane (problem solving) and proposed a volumetric model consisting of two layers. The first layer (surface) goes out to solve a specific problem. The second layer (deep) for the person solving the problem is often not *obvious, hidden, but discoveries of hidden patterns of problem solving are not required to solve them. The stimulus of thinking is the requirement not just to solve this or that problem, but to work out the optimal algorithm of solution. Further analysis of the problem is no longer connected with the solution of the problem itself and is the second "layer" of the creativity model. Cognitive search is stimulated mainly by the feeling of dissatisfaction with the results of one's own work.*

D.B. Bogoyavlenskaya developed a typology of creativity. Three types corresponding to the levels of intellectual activity of the personality were singled out:

1) stimulus-productive – the activity can have a productive character, but it is each time determined by the action of some external stimulus. The highest manifestations at this level reflect a high degree of development of mental abilities;

2) heuristic – the activity takes a creative character. Having a sufficiently reliable way of solution, a person continues to analyze the composition and structure of his activity, compares individual tasks, which leads him to discover new, original, outwardly more witty ways of solution. Each found regularity is experienced by the subject of activity as a discovery, a creative finding. At the same time, it is evaluated as a new, "his" way, which will allow him to solve the tasks set before him;

3) creative – independently found empirical regularity is not used as a solution technique, but acts as a new problem. The found regularities are subjected to proof by analyzing their initial genetic basis. Here the individual's action acquires a generative character and increasingly loses the form of an answer: its result is broader than the initial goal [2].

The approach to giftedness as an integral phenomenon was realized by A.M. Matyushkin, who put forward the concept of giftedness as a general psychological prerequisite for creative development. In his research, the main characteristic of the creative process is productivity. He believes that the general condition that causes the need for productive processes is a problem situation. He calls a problem situation a situation characterizing such a type of interaction between a subject and an object, in which a person has a need to discover a new unknown property, regularity of the object or method of transformation. On the side of the subject the problem situation is represented by his cognitive need and cognitive capabilities. The productive process is caused by the subject's cognitive need, which provides cognitive activity aimed at satisfying this need [8].

A.M. Matyushkin structures creative consciousness in the following way:

a) the dominant role of intrinsic (cognitive) motivation;

b) research creative activity, expressed in the ability to discover new things, to set and solve problems;

c) the ability to achieve original solutions;

d) the ability to predict and anticipate;

e) the ability to create ideal standards that provide high aesthetic, moral, intellectual evaluations [8].

L.B. Ermolaeva-Tomina's research is integrative in its essence. For the author creativity is not stimulated from outside, search and transforming activity. It is based on special creative abilities, which have a predisposition, and manifests itself in any kind of activity. The complex of primary creativeogenic properties and qualities consists of a combination of several accentuated character traits, a high level of development of the perceptual sphere and some one quality in the cognitive sphere, specificity of interaction of the left and right hemispheres regardless of the problem being solved. However, if there is no favorable combination, it can be compensated by external factors - the efforts of teachers and educators, special stimulation of creativity. Like representatives of humanistic psychology, L.B. Ermolaeva-Tomina proposes to consider creative activity (creativity) as an ideal model of mental construction of personality, as a benchmark of mental health [6].

We will conclude by highlighting some of the results we obtained while conducting our study.

It is known that there is ambiguity in understanding the phenomenon of creativity itself. Representatives of the cognitive (cognitive) direction studied the manifestations of creative thinking and consider creativity as an intellectual ability, they equate creativity with divergent thinking, thus considering it as one of the functions of intelligence.

In our opinion, there is no reason to draw unambiguous parallels between creativity and divergent thinking or completely reject the importance of the latter in the nature of creativity. Divergent functions are undoubtedly included in the structure of creativity as its components. Creativity is not identical, but reflects the processes of divergent thinking at the level of personality properties.

From the analysis of works devoted to the study of the correlation between creativity and the level of general intelligence, it becomes obvious that creativity and intelligence, even if they describe distinctly *different sets of psychological properties, nevertheless interact in the process of development, influencing each other both directly and indirectly. An increase in the level of intelligence is associated with an increase in creativity only up to a certain limit. When a certain critical level of intelligence is exceeded (according to different data - from 115 to 120 points), its links with creativity either disappear or become negative, i.e. creativity starts to decrease with further increase in intelligence.*

The analysis of works devoted to the study of the stages of the creative process shows: psychologists are united in the belief that the creative process includes conscious and unconscious stages, with the launch of the process taking place in the conscious sphere, continuing in its unconscious structures and re-entering the sphere of consciousness.

Representatives of the personal direction, considering the nature of creativity, connect it with various qualities of personality (characterological, emotional-volitional, motivational, social-role, etc.). There is no doubt that creativity requires richness and depth of personality, which are based on the desire to learn about oneself and the surrounding world, as well as to realize one's own capabilities. The qualities of a creative personality most often include: positive "self-concept", which is characterized by confidence in their abilities, strength of character; independence in judgments and actions; perseverance in solving their problems; courage (ability to take risks); psychological receptivity to new, unusual; aspiration to beauty and harmony [4].

Summarizing the above approaches to understanding creativity, it should be noted that each of them considers only one of the sides and manifestations of this property. Thus, attempts to explain the phenomenon of creativity within the framework of only cognitive or only personal approaches cannot be regarded as valid. Such attempts give rise to an inevitable narrowness in the understanding of this phenomenon and discontinuity in its study.

The conducted analysis gives grounds to believe that an integrative approach to the understanding of creativity is legitimate, which considers it as a process and a complex of intellectual and personal characteristics of an individual, contributing in a psychological sense to the formation of creativity.

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Sociological sciences

WEBER'S ROLE İN THE SOCİOLOGY OF WAR

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Abstract

There are contributions of E. Durkheim, K. Marx and M. Weber in almost every field of sociology. Their social activities and achievements have entered the lexicon as the holy trinity. When the holy trinity is mentioned in sociology, E. Durkheim, K.Marx and M.Weber come to mind. This article is devoted to the valuable ideas given by M. Weber who is one of the valuable representatives of the holy trinity in the study of the sociology of war.

Keywords: *Weber,social action, war, social life, peace*

The factor of war

M. Weber mentioned the existence of several connections between war and modernity. According to his opinion, structural violence has a large share in the emergence and expansion of modernity through the rationalization of war.

Weber considers war as the main source of social change. In this regard, he believes that the development of Western rationalism owes to war. He claimed that military discipline gives rise to all discipline. In his analysis, both technological development and economic growth require disciplined social action. As the satisfaction of political and economic needs becomes more and more rationalized, the discipline relentlessly encroaches on larger areas. Weber saw feudalism as an order based on a distinct military organization determined by the ruling class. Each victorious war increases the cultural prestige of the state.

The religious factor in war

Its historically early form, which Weber defined as holy war, defines it as war in the name of a god with the specific purpose of subduing the enemy and taking revenge on those who caused it to be destroyed. Although it existed in antiquity, it was only with the advent of monotheistic religious systems that holy war dominant by appealing to a sense of collective superiority of status.

In Islam, war was the subjugation of infidels to political power, and in Christianity it was violently accepted. The infidels had two options at this point.

1)to believe

2)destroy

The interference of war with social life

As a result of the gradual rationalization of social life, war, like other forms of social activity, acquires a routinized, bureaucratic character. General rationalization of military practice and principles replaces the individual heroism of primitive warriors. It is not personal and emotional displays of courage that characterize modern armies, but efficient bureaucratic mechanisms of war. According to Weber's analysis, war as a social activity manifests itself as a universal logic of rationalization that inevitably affects all areas of human life.

Conclusion

As one of the authors conducting research on war, M. Weber tried to reveal their social nature by analyzing the history of wars. By presenting a comparative analysis of the war periods, he tried to indicate that the creation of an alliance of states, their joint efforts against the war can lead to the improvement of the quality of life and the progress of the economy. It should also be emphasized that the results of the implementation of the European Union in the 21st century, which was put forward as an idea in the 18th-19th centuries can be seen as a confirmation of the original thoughts of thinkers. The high level of development of the countries of the European Union is related to the absence of wars in these territories for almost a hundred years and the investments made in the establishment of peace and the improvement of the social welfare of the population not in war after the II World War.

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Technical sciences

FEATURE EXTRACTION ALGORITHMS IN IMAGES

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Abstract

Feature extraction is important in solving the problems of image recognition and classification. Since the set of features includes important information about the object, it provides high accuracy and fast results in solving the task of recognition and classification. However, the issue of feature extraction is closely related to the problem being solved. This requires the use of different image formation algorithms for image types. In this work, it is aimed to study the general classification of object features in digital images and to research their extraction algorithms, and the achievements and shortcomings of algorithms for the use of certain feature extraction algorithms for certain types of features are described.

Keywords: *Geometric feature, texture, brightness, object, classification, moment, recognition, perimeter, entropy, energy.*

Extraction of object features in images is a very important step in image recognition. Because the recognition speed and accuracy can be increased by identifying the object in the image based on its features. In this case, the studied object in the image is represented in the form of a feature vector based on a priori data, and the obtained set of features is used for object recognition and their classification. The quality of the image recognition system depends on how correctly the features describing the object are determined. However, at the same time, the process of describing an image or forming a set of features is still a process that depends on the experience and skills of developers. In addition, existing algorithms for feature extraction are not universal for all types of images.

Feature extraction is an approach that effectively represents the image area of interest, that is, the object as a compact feature vector, and allows reducing the amount of image processing data. This approach is especially useful when the image sizes are large or when the image processing system increases speed.

Object features in digital images. *Features are important elements that describe objects in images, that is, the object is described by some global and local features. The feature count of an object defines the size of the feature field in which the object is defined. Global features distinguish an object from all other objects in the scene, while local features identify the location of the object in the scene. The generated feature vector can be composed of quantitative or qualitative feature. Quantitative features are characterized by numerical values, while qualitative features are defined by humans and are often* *subjective. Object features in digital images can be divided into primary and secondary types. Primary features are those computed using a digital image, while secondary features are usually computed based on the primary features. Object features in digital images are geometric, luminance, and texture features, which are divided into three classes (Figure 1).*

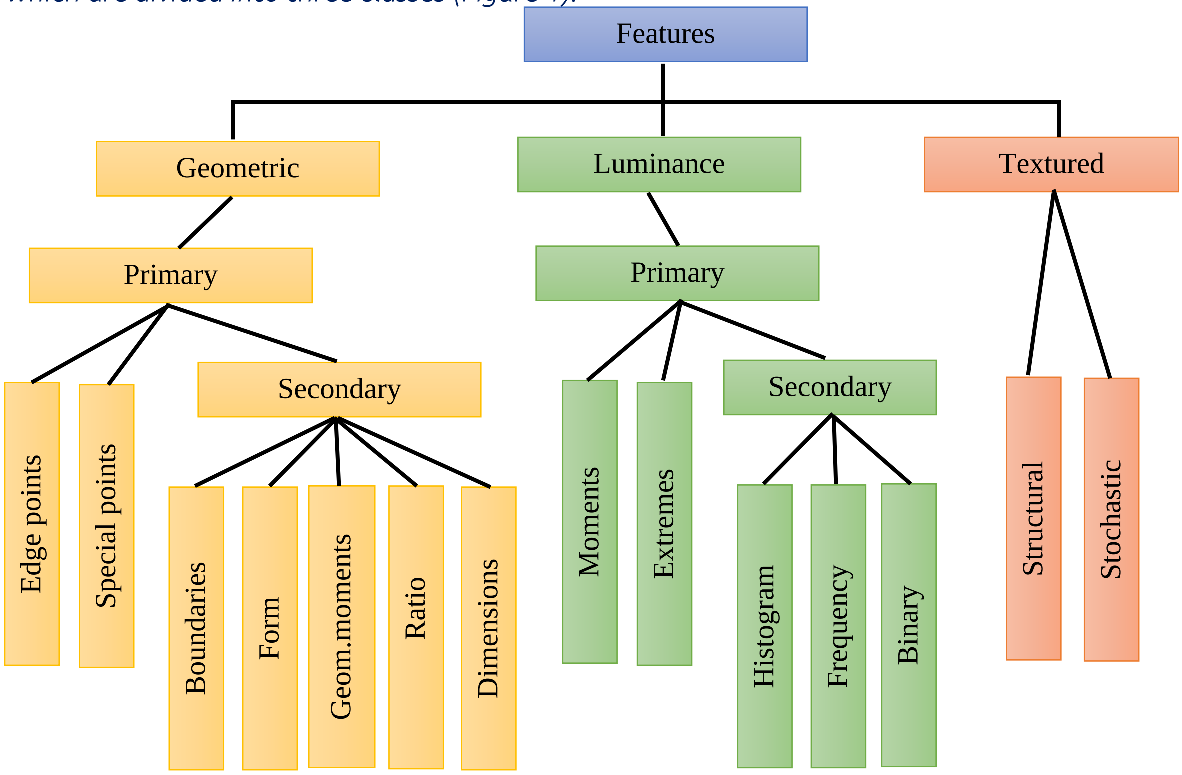

Fig.1. Feature vector

Details for each feature type shown in Figure 1 are detailed below.

Geometric features. These features are assumed to be local, and the object image is sufficiently uniform to allow seeing and computing primitive geometric features. Examples of basic geometric features are object boundary, line segment, angle, T-, Y-, L-shaped connection of lines, line beginning and end, point (region), object convexity or concavity. Secondary features can be area, distance between given points, perimeter, etc.

Special points. Objects can have unique geometric special points. For example, the special points of a rectangle are its four vertices, and the side of a rectangle is the section through two vertices. One of the special points of objects in an image is the boundary points of the object figure. Usually secondary features are formed on the basis of special points.

Object boundaries. The edges of the object form its boundaries. Object boundaries are object contour lines that describe its shape [1]. This feature is used to calculate geometric features such as object size, shape, and orientation. Borders are secondary features.

Object form. The shape of an object is determined by the contours and boundaries of the object [1] and is characterized by the presence of holes, the ratio of area to perimeter, elongation and roundness. The geometric features that determine the shape of the object consist of perimeter, area, minimum and maximum radii, angles, the degree of roundness of the body, curvature, and the degree of symmetry of the object. The shape is a secondary feature.

Object dimensions. Dimensional features include object resolution, length, width, and dimensions [2].

Features of luminance. The use of these features applies to color, grayscale, and binary images. These features describe the change in the local energy of the image and the differences in the brightness of the constituent pixels.

Extremes. An extremum is the maximum or minimum value of a pixel or pixels in an image. If it is calculated over the whole image, then it is global, if it is calculated on the image area, then it is local. Extremes are primary features.

Frequency features. Some permutations allow to form a frequency image of an image that can calculate frequency features. High-frequency features are used for edge and boundary detection, while corners are used for direction detection and are secondary features.

Histogram features. Histogram features are statistical in nature and describe the distribution of image brightness. These types of features include mean, standard deviation, skewness, energy, and entropy. Histogram features are secondary features.

Moments. Suppose a non-negative function $t(\alpha,\beta)$ *is given. The volume under this function is normalized to unity. Moments are primary features. The moment* l_{pq} *of the two-variable function* $t(\alpha,\beta)$ *is defined as follows:*

$$l_{pq} = \iint \alpha^p \beta^q t(\alpha,\beta) d\alpha d\beta \qquad (1)$$

where p, q- are non-negative integers, (p+q) is the moment order.

Texture features. Textures come in many different forms, such as sand, grain, grass, and cloth, and they can be rough, thick, blurry, grainy, regular, irregular, linear. Textures are usually divided into structural and stochastic types [3]. A set of 28 texture features is presented in [4]. Below are some of the texture features in this set:

-angular momentum of the second order

$$t_1 = \sum_i \sum_j \{p(i,j)\}^2; \qquad (2)$$

-contrast

$$t_2 = \sum_{n=0}^{N_{g-1}} n^2 \left\{ \sum_{i=1}^{N_g} \sum_{j=1}^{N_g} p(i,j) \right\}; \qquad (3)$$

-correlation

$$t_3 = \frac{\sum_i \sum_j (ij) p(i,j) - \mu_\alpha \mu_\beta}{\sigma_\alpha \sigma_\beta}; \qquad (4)$$

-variance sum

$$t_7 = \sum_{i=2}^{2N_g} (i - t_8)^2 p_{\alpha+\beta}(i) \qquad (5)$$

-sum of entropy

$$t_8 = -\sum_{i=2}^{2N_g} p_{\alpha+\beta}(i) \log\{p_{\alpha+\beta}(i)\} \qquad (6)$$

-entropy

$$t_9 = -\sum_i \sum_j p(i,j) \log(p(i,j)) \qquad (7)$$

where $p(i,j)-$ *is the (i, j)-element of the brightness occurrence matrix;* $\mu_\alpha, \mu_\beta, \sigma_\alpha, \sigma_\beta -$ *average values and standard deviations for* p_α *and* p_β*, p(i) is the i-th element of the marginal probability matrix obtained by summing the rows of the matrix p(i, j);* N_g *- is the number of gray levels in the image.*

Binary features. Binary features can have only two values, for example 0 or 1. When two binary features are compared, a single conclusion can be drawn as to whether the feature values match or not. Binary feature is also called logical or dichotomy.

Combined features. Combined features are a combination of geometric, luminance, and texture features. Some features are calculated by wrapping the filter in the image at different (α,β) *points, as a result of which the image matrix at these points corresponds to the shape of the filter used. If these points contain object attributes, then they represent information about the structure of the object.*

In image recognition and classification problems, it is possible to optimize these problems by applying image preprocessing algorithms [5-16] and by reducing the feature space or selecting features according to the importance level. In this, many research works on the formation of informative features have been carried out [17-22]. However, the issue of informative feature formation is beyond the scope of this research.

Classification of feature counting algorithms

Feature extraction algorithms are classified differently in different literature. However, in this work, the classification as shown in Figure 2 is performed.

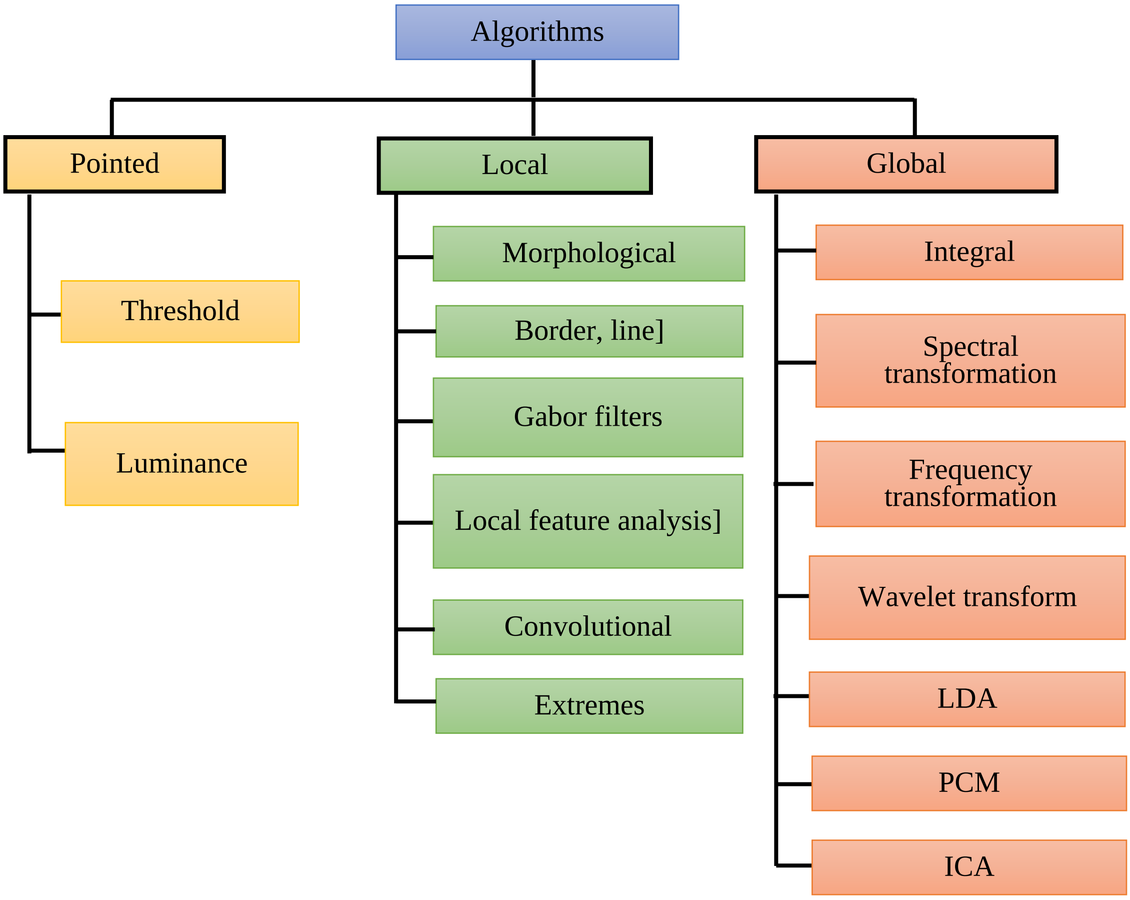

Fig. 2. Classification of feature counting algorithms

Information about the algorithm for calculating the feature presented in Fig. 2 is given below.

Point-based feature counting algorithms use the values of individual pixels in the source image without considering others. The algorithm calculates features using the value of one pixel in the image. Threshold-based algorithms select pixels in a range defined by a certain value. If the brightness level of an object is known, it can be used for detection.

Algorithms for calculating local features use the pixel values of the image region. For example, common mask operations in feature computation often use image regions of size 3x3 to 5x5 pixels. Examples of convolution are Sobel, Prewitt, Robinson and Laplacian masks. The SUSAN algorithm also belongs to the local algorithms because it uses the neighborhood of the image, where the image space is checked for brightness changes that determine the presence of features. The operators that calculate the maximum and minimum values are also local algorithms. Global algorithms for feature calculation include algorithms that use the values of all pixels of the original image.

The Karhunen-Lozve substitution is a principal component method (PCM) that transforms a signal into a set of mutually independent coefficients. Linear discriminant analysis (LDA) is used in dimensionality reduction and data classification. Independent Component Analysis (ICA) is designed to separate mixed signals by decorrelating the statistical distribution with additional higher-order moments to the first- and second-order moments to form non-statistically independent Gaussian components. There are types of ICT implementation such as FastICA, Infomax and JADE.

Wavelet transforms allow the computation of object features. The calculation of angular coordinates by one-dimensional wavelet transform of the object contour function was carried out in the research work [23]. A corner detector in gray images based on the use of wavelet transform is presented in [24]. The algorithm calculates the amplitude of the wavelet transform, which is proportional to the scale of the angle and the location of some boundary points.

In addition to the above-mentioned feature extraction algorithms, many algorithms have been developed, and this article highlights the appropriate feature extraction algorithms for some types of features (Table 1).

Table 1

Feature type and corresponding feature extraction algorithm

Feature type	Feature extraction algorithms	Algorithm advances	Algorithm flaws
Geometric features	Sobel, Robert, Prewitt, Canny detector, second-order contour separation algorithms for object boundary detection	Ability to clearly distinguish objects in the image	Not suitable for noisy images
Luminance features	Color histogram[1] , Color moments[2], Dominant color description[3], Color autocorrelogram[4]	[1]Easy to use and fast calculation [2]Provides spatial information [3]Ensures effective expression of colors [4]Covers more color variations in the image	[1]Lost spatial information, no color similarity [2]Slow computation and high dimensionality [3]Creating the wrong order in image indexing
Texture features	Tamura texture features[1] , Fourier transform[2], LBP[3] (Local binary pattern), GLCM[4] (Grey Level Co-occurence Matrix), Gabor Wavelet transform [5], Controlled pyramid [6], Wavelet transform [7]	[1]Generates a histogram for texture features [5]Get the highest search results [6]Rotational invariance [7]Less time to receive	[1]Expressing specific types of texture [5]Poor performance compared to Gabor Wavelet transform [6]More computing and storage [7]Intensive calculation

Conclusion

Feature extraction is an important step in image object recognition and affects the accuracy of the image recognition and classification system. At the stage of extracting the image feature vector, the feature space is formed and the digital values of the selected features are determined, that is, at this stage, the real image is replaced by a set of digital values of the features that describe it, and as a result, the amount of processed data is reduced. Since the problem of feature extraction depends on the task, that is, the type of image, it is difficult to solve it. Therefore, it is permissible to research the types of features in digital images.

This article provides a general classification of object features in digital images and provides detailed information about these features. As a result of the analysis of the literature, the types of features in the images were divided into three classes according to their dependence on geometric, color and texture features. Many feature extraction algorithms have been developed for these features, and in this work, based on their classification into three classes, brief information about the algorithms in each class is given.

Table 1 shows the feature extraction algorithms according to the feature type, and the advantages and disadvantages of each of them in feature extraction. From the shortcomings of the algorithms, it can be concluded that it is necessary to further study the issue of forming combined features by combining features and developing appropriate algorithms or improving existing algorithms.

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CREATION OF A FUZZY MAMDANI MODEL FOR DIGITS CLASSIFICATION

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Abstract
This paper explores the use of fuzzy logic to classify images of digits from the digits dataset. Fuzzy logic, based on Lotfi Zadeh's work in fuzzy set theory, offers an effective way to model uncertainty and fuzziness in data. Fuzzy systems such as fuzzy classifiers can be effective in classification problems, especially when dealing with data containing noise or uncertainty. To solve the problem of digital image classification, a fuzzy model was developed based on Mamdani principles. This model uses fuzzy logic to make decisions and classify input data. The model is trained on the training dataset by calculating the membership level for each input sample and defining classification rules. It is then used to predict class labels for the test dataset. Experiments were conducted on the digits dataset, containing handwritten images of the digits 0 to 9. The results show that the proposed fuzzy model achieves high classification accuracy on the test dataset, demonstrating the potential of fuzzy logic for pattern recognition tasks. This research approach to the application of fuzzy logic in classification problems is of interest for the development of machine learning methods, especially in the context of working with data where uncertainty or fuzziness is present, such as image or text data.

Keywords: *machine learning, fuzzy set, Mamdani model, digital image, classification, random forest.*

1. Introduction.

In the modern world of machine learning and artificial intelligence, much attention is paid to the development and application of effective methods for classifying data. The task of classification is to assign specific class labels to objects based on their attributes. However, many existing classification methods have certain limitations, especially when dealing with data containing uncertainty or fuzziness. In this context, fuzzy logic, based on fuzzy set theory, is a powerful tool for modeling and analyzing fuzzy or fuzzy data. Fuzzy systems are able to account for uncertainty and fuzziness in data, which makes them attractive for solving classification problems in various fields, including image processing, text mining, time series forecasting, and much more [1].

In this paper, we explore the application of fuzzy logic to classify images of digits from the digits dataset. This dataset contains handwritten images of the numbers 0 to 9 and is one of the most widely used datasets for demonstrating machine learning and classification techniques. Our goal is to develop and evaluate a fuzzy model based on Mamdani principles for accurate classification of digit images. In this context, the work will present the following key aspects [2]:

Development of fuzzy Mamdani model for digit image classification.

Training and testing the model on the digits data set.

Evaluate the model's performance and compare its results with other classification methods.

Discussion of the results and conclusions about the applicability of fuzzy logic in image classification problems.

The use of fuzzy logic in classification problems is of great relevance in the context of the development of machine learning and artificial intelligence methods. Many real data, such as images, texts, sounds and others, may be unclear or blurry. Fuzzy logic provides effective tools for modeling and analyzing such data, taking into account its uncertainty and fuzziness. Fuzzy systems are usually more robust to noise and uncertainty in data compared to classical classification methods. This makes them attractive for use in tasks where data may be inaccurate or contain errors. Unlike some more complex machine learning models, fuzzy systems are typically more interpretable, allowing for better understanding of the decision-making process and inferences about the reasons behind the classification. Fuzzy logic can be effectively applied in various fields such as image processing, text analysis, time series forecasting, medical diagnostics and others. This makes research in this area relevant for a wide range of applied problems. In light of these considerations, research on the development and application of fuzzy models for data classification remains important and relevant for the scientific community in the field of machine learning and artificial intelligence. Our work is intended to contribute to this direction and propose new approaches to solving classification problems using fuzzy logic [3-4].

The purpose of this study is to develop and evaluate the performance of the Mamdani fuzzy model for classifying digit images from the digits dataset. Specific research objectives include:

Development of a fuzzy Mamdani model capable of classifying handwritten images of numbers from 0 to 9.

Train the model on the digits training dataset using fuzzy logic principles and Mamdani methods.

Evaluate model performance on the digits test dataset using classification accuracy metrics and other relevant metrics.

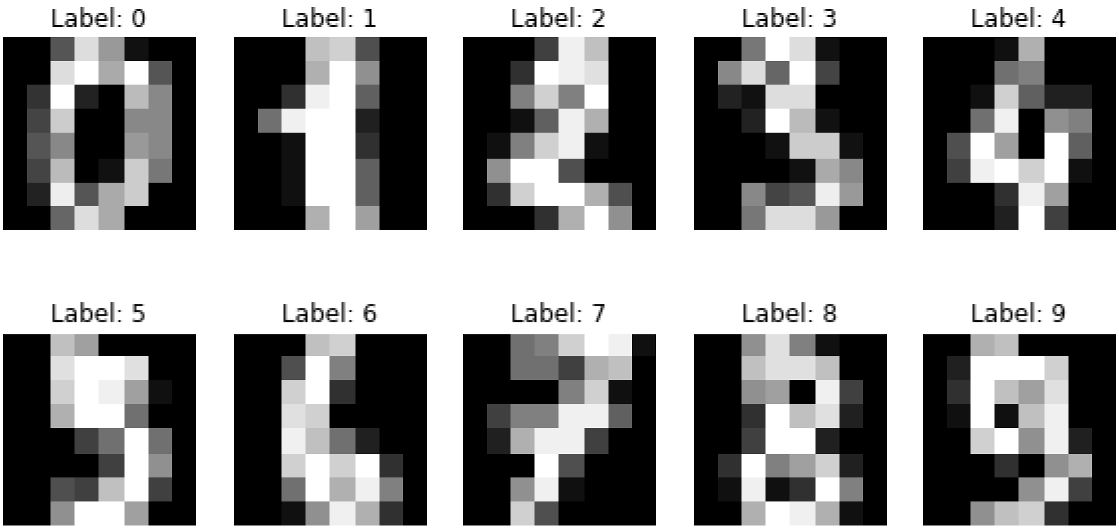
Comparison of the classification results obtained using the developed fuzzy model with the results obtained by other classification methods such as support vector machine or random forest.

Discussion of the advantages and limitations of the proposed fuzzy model, as well as possible directions for its further improvement and development.

The purpose of this study is not only to develop an efficient classification model using fuzzy logic, but also to provide an analysis of its applicability and performance on the specific task of handwritten digit recognition. The results obtained can be useful for researchers and practitioners in the field of machine learning and artificial intelligence, as well as for developers of applications that require image recognition and classification [5-6].

2.Materials and methods.

To carry out the experiments, we used the digits dataset from the scikit-learn library. This dataset contains 1797 handwritten images of the numbers 0 to 9, each image represented as an 8x8 pixel matrix.



A fuzzy classification model has been developed based on the principles of fuzzy logic and Mamdani methods. This model uses fuzzy rules and a fuzzy logic mechanism to classify images of numbers. The model was trained on the digits training dataset, including 80% randomly selected images. Testing was carried out on the remaining 20% of images. To evaluate the model's performance, we used the classification accuracy metric, which measures the proportion of correctly classified images. The model was implemented in the Python programming language using the scikit-learn library for working with data and machine learning. For image processing and feature extraction, we used standard functions *and methods of the scikit-learn library. The Mamdani fuzzy model has been implemented as the Mamdani class, which includes methods for training and prediction.*

Several experiments were carried out, including training the model with different values of the fuzziness parameter (l) and evaluating its performance on a test data set. We also compared the classification results obtained using the fuzzy model with those obtained using other classification methods such as support vector machine or random forest. The materials and methods of this study were designed to create and evaluate an effective fuzzy logic-based classification model for recognizing handwritten digits from the digits dataset. The results obtained will allow us to evaluate the applicability and performance of fuzzy models in image classification problems. Mamdani model, also known as Mamdani fuzzy control system, is one of the basic concepts of fuzzy logic. This model was proposed by Lotfi A. Zadeh in 1975 and has since been successfully applied in various fields including management, decision making and classification. In the Mamdani model, rules are expressed using logical expressions that use fuzzy conditions to make decisions. For example, "if the temperature is high and the humidity is low, then turn on the air conditioner." A fuzzy knowledge base contains a set of fuzzy rules that define the relationships between the input and output variables of the model. This knowledge base is usually represented as a set of rules in the form of "if-then". Fuzzy sets are used to represent fuzzy variables and their values. A fuzzy set is characterized by a membership function, which determines the degree to which an element belongs to the set. The Mamdani model uses a fuzzy logic mechanism to combine fuzzy rules and make fuzzy conclusions. This typically involves the operations of slicing (determining the extent to which rules are satisfied) and aggregation (combining rules to produce a common output). Defuzzification is the process of converting the fuzzy output of a model into a clear value or action. This is usually done by finding the centroid or average value of the fuzzy output. The Mamdani model provides an efficient and flexible framework for modeling fuzzy systems and solving classification, control and decision-making problems. Its simple and intuitive structure makes it attractive for a variety of research and industrial applications.

3. Results.

After training and testing the Mamdani fuzzy model on the digits data set, classification accuracy was obtained on the test sample. This indicator demonstrates the effectiveness of the model in recognizing handwritten numbers. To evaluate the performance of the Mamdani model, comparative experiments were conducted with other classification methods such as support vector machine (SVM) and random forest. The results showed that the Mamdani model shows comparable or even better performance compared to these methods. An analysis of classification errors was carried out, which helped to identify typical errors in the model and possible areas for its improvement. For example, the model often fails to recognize numbers that have similar shapes or similar structures. The classification results were visualized using a confusion matrix, which allows us to estimate the number of correctly and incorrectly classified images for each class. ROC curves were also plotted to evaluate the performance of the model. Based on the results obtained, we can conclude that the fuzzy Mamdani model is an effective tool for classifying handwritten digits. However, despite its effectiveness, the model also has some limitations that may require further research and improvement.

The results of this study confirm the applicability of the Mamdani fuzzy model for classification and pattern recognition problems, and also allow us to identify areas for further improvement and development of this model.

Classification results:
Accuracy: 96.11%
Classification report:

Classification results:
Accuracy: 96.11%

Classification report:

Class	*Accuracy*	*Completeness*	*F1-measure*	*Support*
0	*0.94*	*1.00*	*0.97*	*17*
1	*1.00*	*0.91*	*0.95*	*11*
2	*0.94*	*1.00*	*0.97*	*17*
3	*0.89*	*1.00*	*0.94*	*17*
4	*1.00*	*1.00*	*1.00*	*25*
5	*0.96*	*1.00*	*0.98*	*22*
6	*1.00*	*0.95*	*0.97*	*19*
7	*1.00*	*0.95*	*0.97*	*19*
8	*0.80*	*1.00*	*0.89*	*8*
9	*1.00*	*0.84*	*0.91*	*25*

This is a table representing the precision, recall, and F1 measures for each class, as well as the number of instances of each class (support) in the dataset.

For each class the following metrics:

Precision: Shows how many of the predicted positive cases are actually positive. For example, for class 0 the accuracy is 0.94, which means that 94% of objects classified as class 0 actually belong to this class.

Recall: Shows how many valid positive cases were predicted by the model. For example, for class 0, the recall is 1.00, which means that the model correctly classified all 17 class 0 objects out of the total.

F1-score: Harmonic mean between precision and recall. It is a measure of the balance between precision and recall.

Support: The number of instances in each class in the test dataset.

These metrics help you evaluate the model's performance for each class and identify possible problems or performance differences between classes. For example, class 8 has a lower accuracy (0.80) and F1-measure (0.89), which may indicate that the model is more likely to misclassify this class.

accuracy 0.96 180

macro avg 0.95 0.96 0.96 180

weighted avg 0.97 0.96 0.96 180

Confusion Matrix:

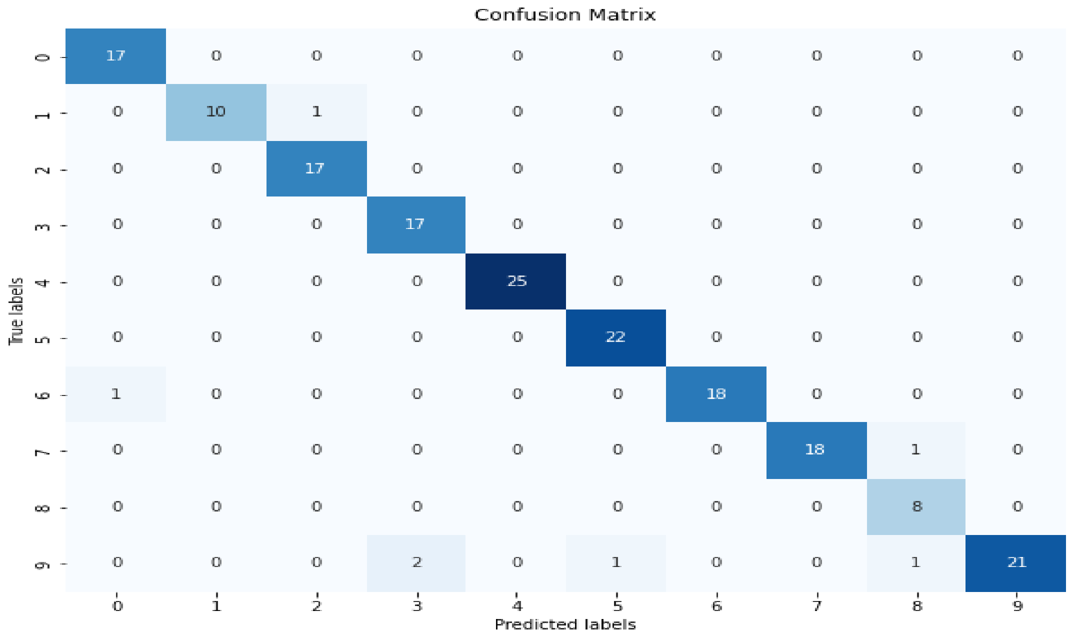
This classification report provides additional metrics:

Accuracy: 96%

Macro-averaged precision, recall and F1-measure (Macro-avg): 0.95, 0.96 and 0.96, respectively.

Weighted precision, recall and F1-measure (Weighted avg): 0.97, 0.96 and 0.96, respectively.

These metrics provide additional information about the model's performance, taking into account not only the average values, but also the weight of each class. For example, weighted precision takes into account the balance of classes in the data, which is especially useful in the case of imbalanced data sets.



This is a confusion matrix that displays the number of objects of each class that were correctly or incorrectly classified by the model. Here the rows represent the actual classes and the columns represent the predicted classes. For example, in the first line [17 0 0 0 0 0 0 0 0 0] means that out of 17 objects of class 0, none were misclassified into another class. The last line [0 0 0 2 0 1 0 0 1 21] shows that of the 25 objects in class 9, two were incorrectly classified into class 3, one into class 5, and one into class 8, and the remaining 21 objects were correctly classified into class 9. This matrix allows you to evaluate how well the model classifies each class and identify the types of errors it makes.

4. Conclusion. The classification of the "Digits" data set was carried out using the Mamdani fuzzy model. The model demonstrated high classification accuracy on the test sample, amounting to 96.11%. Analysis of the results showed that the model successfully classified most classes, achieving high values of accuracy, recall and F1-measure. However, some classes, such as class 8, showed lower performance, which may require further research and improvement of the model. The confusion matrix allowed us to analyze classification errors in detail and identify the weaknesses of the model. Most objects were classified correctly, but some objects were incorrectly assigned to the wrong classes. Overall, the Mamdani fuzzy model successfully performed the classification task on the Digits dataset, demonstrating high performance and accuracy. Future research could focus on optimizing model parameters to improve its performance on specific classes.

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ANALYTICAL RESEARCHES ON THE INFLUENCE OF DEGREE CHEMICAL OXYGEN AFFINITY OF SUBSTANCES UNDER THE REACTIONS CONDITIONS OF STEPWISE MANGANESE REDUCTION FROM ITS DIOXIDE BY CO GAS

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АНАЛИТИЧЕСКИЕ ИССЛЕДОВАНИЯ ВЛИЯНИЯ СТЕПЕНИ ХИМИЧЕСКОГО СРОДСТВА ВЕЩЕСТВ К КИСЛОРОДУ НА УСЛОВИЯ ПРОТЕКАНИЯ РЕАКЦИЙ СТУПЕНЧАТОГО ВОССТАНОВЛЕНИЯ МАРГАНЦА ИЗ ЕГО ДИОКСИДА ГАЗОМ CO

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Abstract

The article presents the results of a thermodynamic analysis of the oxidation reactions of manganese, its oxides, carbon and CO gas, which made it possible to establish the conditions for the chemical reactions of the stepwise manganese reduction from its dioxide by the reducing gas CO, and also made it possible to establish the conditions for the Bell–Boudoir chemical reactions. Using expressions existing in the literature to calculate the Gibbs free energy for these oxidation reactions, numerical values of boundary temperatures were obtained, which made it possible to establish temperature ranges for each of the reactions of the stepwise manganese reduction from its dioxide by CO gas and during gasification of solid carbon by the Bell–Boudoir reaction.

Аннотация

В статье приведены результаты термодинамического анализа реакций окисления марганца, его оксидов, углерода и CO, который позволил установить условия протекания химических реакций ступенчатого восстановления марганца из его диоксида газом-восстановителем CO, а также химической реакции Белла–Будуара. С помощью выражений, существующих в литературе, для расчёта свободной энергии Гиббса для указанных окислительных реакций получены численные значения граничных температур, которые позволили установить диапазоны температур протекания для каждой из реакций ступенчатого восстановления марганца из его диоксида газом CO и при газификации твёрдого углерода по реакции Белла–Будуара.

Keywords: reduction, manganese dioxide, carbon monoxide, chemical reaction, carbon gasification, enthalpy, entropy, Gibbs energy, boundary temperature, oxygen affinity, Bell–Boudoir reaction.

Ключевые слова: восстановление, диоксид марганца, монооксид углерода, химическая реакция, газификация углерода, энтальпия, энтропия, энергия Гиббса, граничная температура, степень сродства к кислороду, реакция Белла–Будуара.

Введение

Термодинамика процессов термического восстановления марганца из его оксидов различными восстановителями, как и аналогичный процесс восстановления железа, представляет значительный интерес с точки зрения повышения степени ресурсосбережения технологий прямого восстановления железа (чугуна или стали) из железосодержащего сырья (руда, агломерат, концентрат и т.п.) при их разработке и совершенствовании. Так как почти во всех железных рудах и в агломератах присутствует марганец (Mn) в виде его оксидов в различных концентрациях, то его восстановление в железе позволит экономить дорогостоящие марганецсодержащие ферросплавы и другие материалы.

Указанные процессы восстановления марганца, железа и других элементов относятся к числу сложных гетерогенных физико–химических процессов, в которых участвуют твёрдые, жидкие и газообразные вещества. В качестве восстановителей обычно используют вещества, обладающие более высокой степенью химического сродства к кислороду [1], нежели восстанавливаемое вещество (в нашем случае марганец и его оксиды).

Известно [2], что при высоких температурах процесс восстановления марганца из его оксидов протекает ступенчато – в соответствии с принципом последовательных превращений, т.е. путём последовательного перехода от высшего оксида к более низшему и в самом конце – от самого низшего оксида к металлическому марганцу:

$$MnO_2 \rightarrow Mn_2O_3 \rightarrow Mn_3O_4 \rightarrow MnO \rightarrow Mn \qquad (A)$$

В результате взаимодействия оксидов марганца с твёрдым углеродом С кокса в доменной печи или древесного угля в сыродутных печах (т.е. при температурах выше 570°С), а также с образующимися восстановительными газами СО и H_2 (если последний присутствует в рабочем пространстве печи) происходит указанное выше последовательное восстановление марганца из его оксидов, которое называется прямым в первом случае и косвенным (или непрямым) во вторых двух случаях [3].

Актуальность работы

Установлено, что при проведении исследований процесса ступенчатого восстановления марганца из его оксидов, а именно: твёрдым углеродом С, газами СО и H_2 с последующим анализом полученных данных и формулировкой теоретических выводов и положений, предварительный термодинамический анализ условий протекания всех реакций восстановления марганца по схеме (А) не проводился. Однако он крайне необходим, так как позволяет определять диапазон температур протекания каждой реакции процесса восстановления марганца, что с позиций второго начала термодинамики позволило бы с уверенностью констатировать о возможности их существования при температурах реального процесса, выяснив при этом, что же будет выступать восстановителем на каждом этапе процесса, и определив численные значения граничных температур $T_{гр}$ (пояснение понятия «граничная температура» см. ниже), выше или ниже которых возможны восстановительные процессы в каждой стадии схемы (А), а также выяснить условия протекания процесса газификация твёрдого углерода С по реакции Белла–Будуара. Автором работы уже были проведены такие исследования [4] на основании имеющихся в литературе выражений для расчёта свободной энергии Гиббса ΔG_T^o для химических реакций ступенчатого восстановления марганца из его диоксида за счёт восстановительного газа СО и газификации твёрдого углерода С, однако они показали сомнительные и разнящиеся между собой полученные результаты, что говорит о ненадёжности, а возможно и о неправильности имеющихся в литературе формул для определения значений свободной энергии Гиббса для указанных химических реакций.

Цель работы

Поэтому целью данной работы является применение другой методики расчёта также на основе имеющихся в литературе выражений (но только для реакций окисления марганца, его оксидов, углерода и газа СО) для расчёта свободной энергии Гиббса ΔG_T^o с целью нахождения численных значений граничных температур $T_{гр}$, ниже или выше которых возможно протекание всех реакций процесса ступенчатого восстановления марганца из его диоксида газом СО и реакции газификации твёрдого углерода С (реакции Белла-Будуара), а также сравнение полученных результатов с ранее полученными результатами автора [4].

Материалы и методы

В ходе выполнения работы для нахождения граничных температур $T_{гр}$ использован метод расчёта [5], основанный на том, что температура начала или конца восстановления продукта восстановления из исходного вещества определённым восстановителем соответствует той температуре, при которой степени химического сродства к кислороду восстанавливаемого продукта реакции и восстановителя становятся одинаковыми. При этом, степени химического сродства к кислороду в зависимости от температуры оцениваются численными значениями свободной энергии Гиббса (изобарно-изотермического потенциала) ΔG_T^o, также зависимыми от температуры Т и вычисленными по взятым из различных литературных источников формулам, которые соответствуют химическим реакциям окисления кислородом пары тех же веществ *(восстановителя до продукта окисления и восстанавливаемого продукта реакции до исходного вещества), которые присутствуют в каждой из рассматриваемых реакций ступенчатого восстановления марганца.*

Этот метод ранее применил британский физик и химик Гарольд Эллингем при построении своей всемирно известной диаграммы [6], которую очень часто применяют для предсказания термодинамических условий, при которых руда металла (обычно оксид или сульфид этого металла) может быть восстановлена до самого металла с помощью определённого восстановителя [7].

Для осуществления вычислений и обработки полученных результатов применялось компьютерное приложение MS Excel 2013.

Состояние вопроса

Ввиду наличия в шахтных противоточных восстановительных печах для получения железа из железосодержащего сырья (сыродутных горнах, штюкофенах, блауофенах, доменных печах и пр.) загружаемого в них кокса или угля, образуется значительное количество восстановительного газа CO в результате неполного (т.е. при недостатке кислорода) горения углерода, содержащегося в указанных материалах: $2C + O_2 = 2CO$.

Считается [3], что в процессе восстановлении железа в рудно–термических печах под воздействием газа–восстановителя CO в растворе железа из более высшего оксида марганца можно восстановить его более низший оксид:

$$2MnO_2 + CO = Mn_2O_3 + CO_2 + Q_1 = 227,56 \text{ МДж}; \quad (1)$$

$$3Mn_2O_3 + CO = 2Mn_3O_4 + CO_2 + Q_2 = 170,77 \text{ МДж}; \quad (2)$$

$$Mn_3O_4 + CO = 3MnO + CO_2 + Q_3 = 52,08 \text{ МДж} \quad (3)$$

Чёткая точка зрения об условиях протекания данных восстановительных процессов в современной металлургической науке отсутствует.

По одной версии [8], Mn_2O_3 *и частично* Mn_3O_4 *восстанавливается из* MnO_2 *на верхних горизонтах засыпи при 300–400°С с выделением тепла. Восстановление остальной части* Mn_3O_4 *и MnO соответственно по реакциям (2) и (3) происходит в шахте печи при 400–800°С. При использовании марганцовистого агломерата высшие оксиды марганца (*Mn_2O_3 *и* Mn_3O_4*) восстанавливаются при агломерации.*

По другой версии [9] восстановление Mn_2O_3 *из* MnO_2 *начинается при 500°С или при более низкой температуре. Примерно при этих же температурах отдает свой кислород оксид* Mn_2O_3*, образуя оксид* Mn_3O_4*.* Mn_3O_4 *– более прочный оксид, поэтому из него MnO восстанавливается в интервале температур 570–1050°С. При этом часть* Mn_3O_4 *и часть MnO восстанавливается соответственно из* MnO_2 *и* Mn_2O_3*. Соединение* Mn_3O_4 *обычно улетучивается (вернее сначала возгоняется металлический марганец, а в верхних горизонтах он окисляется до* Mn_3O_4 *и в таком виде уходит из печи).*

По третьей версии [10] высшие оксиды марганца (Mn_2O_3 *и* Mn_3O_4*) восстанавливаются практически до конца уже при 400–500°С. Восстановление MnO из* Mn_3O_4 *протекает в интервале 600–1000°С.*

По поводу восстановления Mn из низшего оксида MnO за счёт газа CO также существуют различные теории [3, 11–21].

По одной из них [11–13] Mn из MnO может восстанавливаться газом CO по реакции косвенного восстановления [2]:

$$MnO + CO = Mn + CO_2 - Q_4 = 121,80 \text{ МДж} \quad (4)$$

По другой теории предполагается [3, 10, 14–16], что для протекания реакции (4) непрямого восстановления марганца требуется менее 0,01% CO_2 *в газовой фазе, а в реальных условиях восстановительной плавки это недостижимо; при этом даже при небольших количествах* CO_2 *возможна обратная реакция (4). На основании несоответствия реального состава газовой фазы в восстановительной печи якобы необходимым условиям протекания реакции (4) принимают, что Mn из MnO в реальных условиях может восстанавливаться только прямым путём, т.е. за счёт твёрдого углерода. Данное положение о содержании* CO_2 *в газовой фазе было изложено в источнике [14], с которого авторы всех последующих работ, по–видимому, просто копировали себе эту фразу.*

Ещё одна теория предусматривает [2, 8, 9, 17–21], что косвенным путём (за счёт CO) Mn из MnO восстанавливается значительно труднее, чем Fe из FeO, поэтому реакция (4) косвенного *восстановления марганца в условиях реальной восстановительной плавки практически невозможна, а Mn из MnO восстанавливается только прямым путём, да и то частично.*

На основании двух последних теорий считают, что заключительная стадия восстановления марганца из его оксидов – это эндотермическая реакция прямого восстановления Mn из MnO твёрдым углеродом C [3]:

$$MnO + C = Mn + CO - Q_5 = 288{,}29 \text{ МДж}, \qquad (5)$$

а количество восстанавливаемого марганца, согласно указанной реакции (5), существенно возрастает с повышением температуры.

При этом указывается [8], что осуществление этого процесса в стандартных условиях становится термодинамически возможным, начиная с 1430°C, а в доменной печи Mn из MnO восстанавливается при частичном связывании его с углеродом в виде карбида, и это обстоятельство обеспечивает восстановление марганца углеродом при более низких температурах, чем 1430°C.

По другой версии [9] металлический марганец восстанавливается твёрдым углеродом из MnO, начиная с 1100°C; в присутствии железа (не понятно почему? – прим. автора) восстановление начинается при 1030°C, а в заметных количествах (от 15 до 73%) – при 1200–1400°C. При восстановления графитом в вакууме процесс начинается при температуре 850–900°C и заканчивается при 1050°C. В условиях доменной печи марганец не полностью переходит в чугун – обычно переходит 40–60% всего марганца; 5–10% уносится с газом, а остальное уходит в шлак.

При этом часть учёных–металлургов всё же пытается объяснять реакцию (5) «восстановлением марганца через газовую фазу»[19] *(теория Г.И.Чуфарова) – за счёт суммарного протекания реакций (4) и (6), из которых и выводят реакцию (5), говоря о возможности восстановления Mn газом CO (4) «в присутствии твёрдого углерода»[1] [12–16, 22].*

В печи газ CO образуется не только по приведённой выше реакции горения твёрдого углерода C при недостатке окислителя, но и за счёт реакции газификации твёрдого C [18], больше известной как реакция Белла–Будуара [3]:

$$C + CO_2 = 2CO - Q_6 = 166{,}32 \text{ МДж} \qquad (6)$$

которая является важной с точки зрения обеспечения косвенного восстановления прежде всего Fe, а также Mn и других элементов из их оксидов, содержащихся в железе [19].

Для оценки возможности протекания химических реакций (1)–(4), (6) применим метод, основанный на том, что граничная температура реакции (температура начала или конца восстановления низшего оксида марганца из высшего (для реакций (1)–(3)), марганца из его низшего оксида (для реакции (4)), CO из CO_2 (для реакции (6)) газом CO (для реакций (1)–(4)) или твёрдым C (для реакции (6)) соответствует температуре, при которой степени химического сродства к кислороду восстанавливаемого марганца (реакция (4)), его восстанавливаемого оксида (реакции (1)–(3)) или CO (реакция (6)) и восстановителя (газа CO для реакций (1)–(4) или твёрдого C для реакции (6)) становятся одинаковыми. При этом, степени химического сродства в зависимости от температуры оцениваются численными значениями свободной энергии Гиббса ΔG_T^0 в зависимости от температуры T, вычисленными по взятым из различных литературных источников формулам, которые соответствуют химическим реакциям окисления кислородом пары тех же веществ (восстановителя до продукта окисления и восстанавливаемого продукта реакции до исходного вещества), которые присутствуют в каждой из химических реакций (1)–(4) и (6). В точках пересечения каждой пары линий окислительных реакций и будет то искомое значение граничной температуры $T_{гр}$ для каждой из реакций (1)–(4) и (6), до или свыше которого её протекание будет невозможным.

Такой (т.е. с применением данного метода) термодинамический анализ частично уже был сделан автором работы для процессов восстановления Fe, Mn, Si и газификации C [23–25]. Более полный такой анализ для процесса ступенчатого восстановления железа из гематита газом CO автором также уже был сделан [26].

Термодинамические исследования

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19 Сомнительные формулировки, к тому же противоречащие научным положениям физической химии о химическом сродстве веществ к кислороду и о роли катализатора.

Из курса физической химии и основанной на её положениях теории металлургических процессов известны следующие химические реакции окисления Mn до MnO, MnO до Mn_3O_4, Mn_3O_4 до Mn_2O_3, Mn_2O_3 до MnO_2, C до CO, CO до CO_2 и различные уравнения для вычисления энергии Гиббса ΔG^o_T этих реакций в зависимости от температуры T [5, 11, 17, 27–30]:

1. $$2Mn + O_2 = 2MnO \quad (5)$$
$$\Delta G^o_T = -\ 770372 + 147{,}460 \cdot T,\ \text{Дж/моль}\ O_2\ [5,\ 11]; \quad (5.1)$$
$$\Delta G^o_T = -\ 722000 + 212{,}780 \cdot T,\ \text{Дж/моль}\ O_2\ [27]; \quad (5.2)$$
$$\Delta G^o_T = -\ 770372 + 123{,}000 \cdot T,\ \text{Дж/моль}\ O_2\ [28]; \quad (5.3)$$
$$\Delta G^o_T = -\ 769800 + 120{,}600 \cdot T,\ \text{Дж/моль}\ O_2\ [29]; \quad (5.4)$$
$$\Delta G^o_T = -\ 770372 + 119{,}492 \cdot T,\ \text{Дж/моль}\ O_2\ [30]; \quad (5.5)$$

2. $$6MnO + O_2 = 2Mn_3O_4 \quad (6)$$
$$\Delta G^o_T = -\ 464534 + 234{,}120 \cdot T,\ \text{Дж/моль}\ O_2\ [11]; \quad (6.1)$$

3. $$4Mn_3O_4 + O_2 = 6Mn_2O_3 \quad (7)$$
$$\Delta G^o_T = -\ 210510 + 168{,}540 \cdot T,\ \text{Дж/моль}\ O_2\ [11]; \quad (7.1)$$

4. $$2Mn_2O_3 + O_2 = 4MnO_2 \quad (8)$$
$$\Delta G^o_T = -\ 155213 + 201{,}580 \cdot T,\ \text{Дж/моль}\ O_2\ [11]; \quad (8.1)$$

5. $$2C + O_2 = 2CO \quad (9)$$
$$\Delta G^o_T = -\ 221120 - 179{,}750 \cdot T,\ \text{Дж/моль}\ O_2 [5,\ 11,\ 17]; \quad (9.1)$$
$$\Delta G^o_T = -\ 204200 - 178{,}600 \cdot T,\ \text{Дж/моль}\ O_2\ [28] \quad (9.2)$$

6. $$2CO + O_2 = 2CO_2 \quad (10)$$
$$\Delta G^o_T = -\ 565390 + 175{,}170 \cdot T,\ \text{Дж/моль}\ O_2\ [11,\ 17]; \quad (10.1)$$
$$\Delta G^o_T = -\ 566307 + 175{,}470 \cdot T,\ \text{Дж/моль}\ O_2\ [5]\ \text{при}\ T=773\text{–}2273\ K \quad (10.2)$$

На рис. 1 приведены построенные автором графические зависимости рассчитанных по формулам (5.1)–(5.5), (6.1), (7.1), (8.1), (9.1), (9.2), (10.1), (10.2) численных значений свободной энергии Гиббса ΔG^o_T от температуры T, по которым можно судить об изменении степени химического сродства к кислороду указанных в левой части приведённых химических реакций (5)–(10) исходных веществ (элементов и соединений) при изменении температуры T.

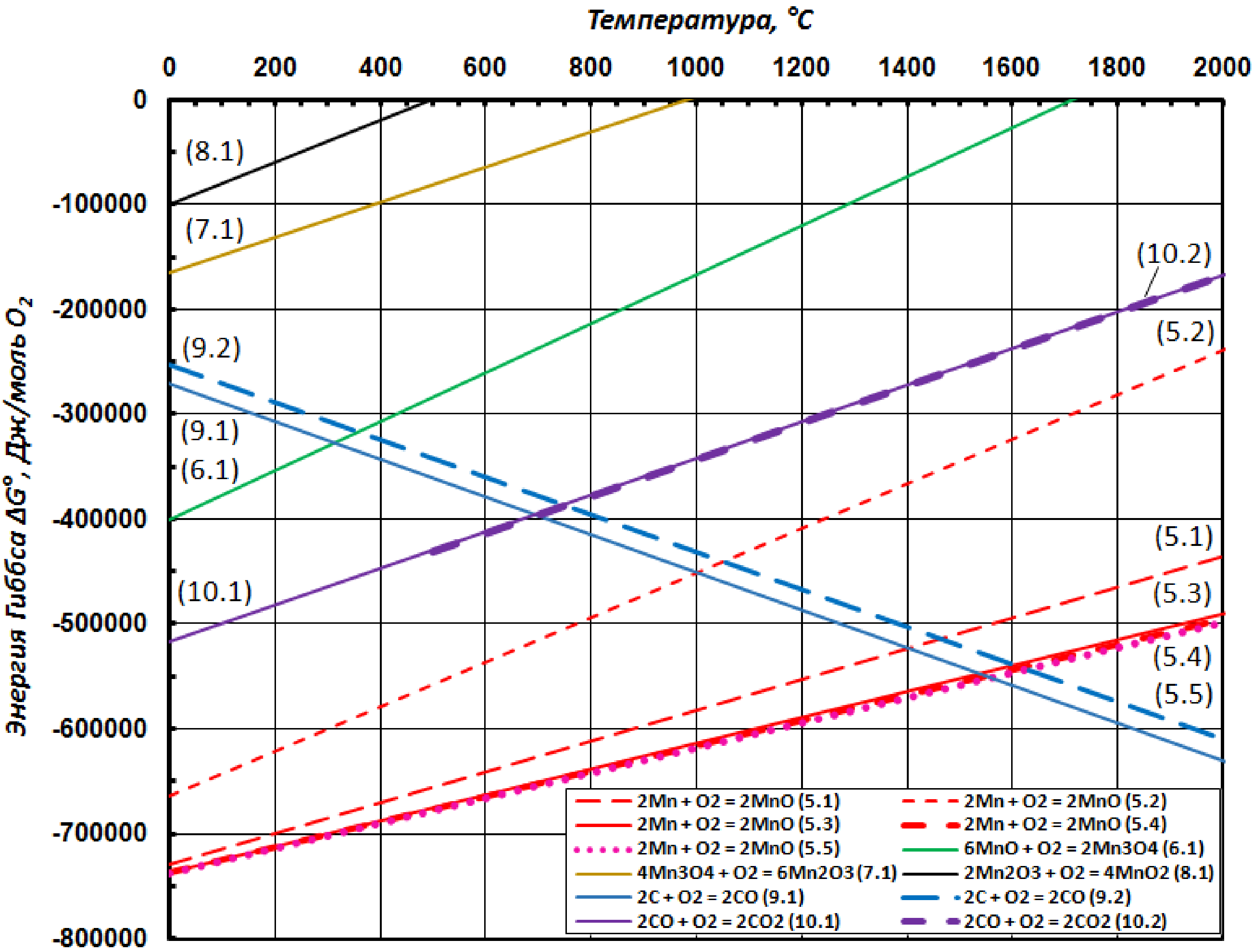

Рисунок 1. Зависимости значений энергии Гиббса ΔG_T^o от температуры T для реакций (5)–(10), рассчитанные по выражениям (5.1)–(5.5), (6.1), (7.1), (8.1), (9.1) и (9.2), (10.1) и (10.2), взятым из литературных источников [5, 11, 17, 27–30]

Температура, при которой пересекаются две линии значений свободной энергии Гиббса ΔG_T^o (одна – линия для каждой из реакций (5)–(8) образования оксида марганца и реакции (9) окисления твёрдого углерода C до CO, вторая – линия для реакции (10) окисления CO до CO_2), соответствует одинаковому значению степени химического сродства к кислороду марганца (реакция (5)) или его низшего оксида (реакции (6)–(8)), или CO (реакция (10)) и восстановителя (которым в реакциях (1)–(4) является газ CO (реакция 10), а в реакции (6) – твёрдый углерод C (реакция (9))), при этом должно соблюдаться условие [5]:

$$\Delta G_T^o(1) = \Delta G_T^o(2) \qquad (11)$$

Т.е. указанные точки пересечения соответствуют той температуре, при которых достигается равновесие реакций восстановления низшего оксида марганца из его более высшего оксида (реакции (1)–(3)) и марганца из MnO (реакция (4)) газом CO, также реакции Белла-Будуара (6).

В прямом направлении химические реакции (1)–(4), (6) будут протекать в том диапазоне температур, где восстановитель будет обладать меньшим численным значением свободной энергии Гиббса ΔG_T^o, т.е. большей степенью химического сродства к кислороду, чем восстанавливаемое вещество (соответственно низший оксид марганца из его более высшего оксида, Mn из MnO, CO из CO_2).

Найденные с помощью уравнения (11) значения температур в точках пересечения линий ΔG_T^o реакций (5)–(9) с линией ΔG_T^o реакции (10) (т.е. значения граничных температур $T_{гр}$ для реакций (1)–(4), (6)) занесём в табл. 1.

Таблица 1. Температуры $T_{гр}$ и $T_{пр}$ для химических реакций (1)–(4) и (6) [20]

20 Об условиях протекания химических реакций (1)–(4) и (6) свидетельствуют знаки «>» и «<» между температурами $T_{пр}$ и $T_{гр}$.

Химические реакции	Формулы Для расчёта ΔG_T^o	Расчётные значения $T_{гр}$ и диапазона $T_{пр}$, °С
$2MnO_2 + CO = Mn_2O_3 + CO_2 + Q_1$ (1)	(8.1) и (10.1) (8.1) и (10.2)	$T_{гр}$ = –21093,485; $T_{пр} > T_{гр}$ $T_{гр}$ = –15744,696; $T_{пр} > T_{гр}$
$3Mn_2O_3 + CO = 2Mn_3O_4 + CO_2 + Q_2$ (2)	(7.1) и (10.1) (7.1) и (10.2)	$T_{гр}$ = 53253,395; $T_{пр} < T_{гр}$ $T_{гр}$ = 51068,558; $T_{пр} < T_{гр}$
$Mn_3O_4 + CO = 3MnO + CO_2 + Q_3$ (3)	(6.1) и (10.1) (6.1) и (10.2)	$T_{гр}$ = –1983,874; $T_{пр} > T_{гр}$ $T_{гр}$ = –2008,260; $T_{пр} > T_{гр}$
$MnO + CO = Mn + CO_2 – Q_4$ (4)	(5.1) и (10.1) (5.1) и (10.2) (5.2) и (10.1) (5.2) и (10.2) (5.3) и (10.1) (5.3) и (10.2) (5.4) и (10.1) (5.4) и (10.2) (5.5) и (10.1) (5.5) и (10.2)	$T_{гр}$ = –7670,402; $T_{пр} < T_{гр}$ $T_{гр}$ = –7558,434; $T_{пр} < T_{гр}$ $T_{гр}$ = 3891,052; $T_{пр} > T_{гр}$ $T_{гр}$ = 3899,956; $T_{пр} > T_{гр}$ $T_{гр}$ = –3929,116; $T_{пр} < T_{гр}$ $T_{гр}$ = –4162,175; $T_{пр} < T_{гр}$ $T_{гр}$ = –4018,831; $T_{пр} < T_{гр}$ $T_{гр}$ = –3981,639; $T_{пр} < T_{гр}$ $T_{гр}$ = –3954,562; $T_{пр} < T_{гр}$ $T_{гр}$ = –3918,450; $T_{пр} < T_{гр}$
$C + CO_2 = 2CO – Q_6$ (6)	(9.1) и (10.1) (9.2) и (10.1) (9.1) и (10.2) (9.2) и (10.2)	$T_{гр}$ = 696,993; $T_{пр} > T_{гр}$ $T_{гр}$ = 747,974; $T_{пр} > T_{гр}$ $T_{гр}$ = 698,756; $T_{пр} > T_{гр}$ $T_{гр}$ = 749,699; $T_{пр} > T_{гр}$

Анализ полученных результатов

Проанализируем графические зависимости, изображённые на рис. 1, и данные табл. 1.

Исходя из приведённых в табл. 1 парных совокупностей выражений для вычисления ΔG_T^o реакций (5)–(9) продукта восстановления и восстановителя в соответствии с каждой реакцией (1)–(4) и (6), последние будут протекать соответственно при следующих теоретических (термодинамических) температурах $T_{пр}$ протекания рассматриваемых процессов восстановления Mn и газификации твёрдого углерода С:

- *реакция (1): $T_{пр} > –21093{,}485$°С или $T_{пр} > –15744{,}696$°С, т.е. результаты расчёта по формуле (11) и построенные графические зависимости (см. рис. 1) свидетельствуют, что реакция (1) может протекать в диапазоне температур $T_{пр}$, значения которых больше 0°С (т.е. при Т > 0°С) в обоих случаях (см. табл. 1);*
- *реакция (2): $T_{пр} < 53253{,}395$°С или $T_{пр} < 51068{,}558$°С, т.е. результаты расчёта по формуле (11) и построенные графические зависимости (см. рис. 1) свидетельствуют, что реакция (2) может протекать в диапазоне температур $T_{пр}$, значения которых больше 0°С и меньше $T_{гр}$ (т.е. при 0°С<Т<$T_{гр}$) в обоих случаях (см. табл. 1);*
- *реакция (3): $T_{пр} > –1983{,}874$°С или $T_{пр} > –2008{,}260$°С, т.е. результаты расчёта по формуле (11) и построенные графические зависимости (см. рис. 1) свидетельствуют, что реакция (3) может протекать в диапазоне температур $T_{пр}$, значения которых больше 0°С (т.е. при Т > 0°С) в обоих случаях (см. табл. 1);*
- *реакция (4): $T_{пр} < –7670{,}402$°С или $T_{пр} < –7558{,}434$°С; $T_{пр} > 3891{,}052$°С или $T_{пр} > 3899{,}956$°С; $T_{пр} < –3929{,}116$°С или $T_{пр} < –4162{,}175$°С; $T_{пр} < –4018{,}831$°С или $T_{пр} < –3981{,}639$°С; $T_{пр} < –3954{,}562$°С или $T_{пр} < –3918{,}450$°С, т.е. результаты расчёта по формуле (11) и построенные графические зависимости (см. рис. 1) в одних случаях (при использовании формул (5.1), (5.3)–(5.5)) свидетельствуют, что реакция (4) может протекать в диапазоне температур $T_{пр}$, значения которых больше 0°С (т.е. при Т > 0°С, см. табл. 1), а в другом случае (при использовании формулы (5.2)) – в диапазоне температур $T_{пр}$, значения которых больше 0°С и меньше $T_{гр}$ (т.е. при 0°С<Т<$T_{гр}$, см. табл. 1); что вызывает сомнения в правильности части формул для расчёта ΔG_T^o химической реакции (5).*

● *реакция (6): $T_{пр} > 696,993$°C или $T_{пр} > 698,756$°C, или $T_{пр} > 747,974$°C, или $T_{пр} > 749,699$°C, т.е. результаты расчёта по формуле (11) и построенные графические зависимости (см. рис. 1) свидетельствуют, что реакция (6) может протекать в диапазоне температур $T_{пр}$, значения которых больше $T_{гр}$ (т.е. при $T > T_{гр}$) во всех случаях (см. табл. 1); кроме того, в источнике [8] графические зависимости значений энергии Гиббса ΔG_T^o от температуры T для реакций (9) и (10) свидетедьствуют о том, что реакция (6) начинает протекать примерно свыше 830 K (т.е. примерно свыше 557°C).*

Так как значения граничных температур для реакций (1)–(4) и (6), вычисленные автором по формулам из литературы как в данной работе, так и в работе автора [4], отличаются друг от друга своими значениями, необходимо вывести собственные формулы для расчёта значений свободной энергии Гиббса ΔG_T^o и провести вычисления с использованием этих формул по обоим методам, сравнив между собой все полученные результаты.

***Выводы**. На основании имеющейся информации в технической литературе и учитывая всё изложенное выше можно сделать следующие выводы:*

1. Восстановление Mn_2O_3 из MnO_2 за счёт газа CO термодинамически возможно при любой температуре свыше 0°C.

2. Восстановление Mn_3O_4 из Mn_2O_3 за счёт газа CO термодинамически возможно при любой температуре свыше 0°C.

3. Восстановление MnO из Mn_3O_4 за счёт газа CO термодинамически возможно при любой температуре свыше 0°C.

4. Восстановление Mn из MnO за счёт газа CO термодинамически невозможно при любой температуре свыше 0°C (по всей видимости, восстановление Mn из MnO происходит твёрдым углеродом угля (кокса, древесного угля)).

5. Газификация твёрдого углерода (реакция Белла–Будуара) термодинамически возможна свыше граничной температуры $T_{гр}$, значение которой находится в пределах 696,993–749,699°C (согласно источника [7] граничная температура $T_{гр} \approx 557$°C).

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MANAGEMENT OF INFORMATION AND PERSONNEL SECURITY IN BANK SYSTEM

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Abstract

The main aim of the article is to study information and personal security of the bank. Serious work is being done in the country regarding the protection, stability and continuity of information processes, protection of information resources of state bodies, prevention of threats in this area, assessment and management of risks in the field of cyber security in state and non-state information infrastructure entities.

Protection of national information resources, protection of national interests in the field of information was defined by the President of the Republic of Azerbaijan Mr. Ilham Aliyev as one of the directions of the national security policy. In order to successfully implement this policy and ensure the continuous development of the national information resources protection system, there is a need to mobilize efforts, coordinate activities in the field of information protection, and strengthen awareness.

The article is a research article, the analysis method was used in its writing. The material can be used in lectures and seminars in higher education institutions, as well as useful for those interested in information and personnel security.

Аннотация

Основной целью статьи является исследование информационной и личной безопасности банка. В стране ведется серьезная работа по обеспечению защиты, стабильности и непрерывности информационных процессов, защите информационных ресурсов государственных органов, предотвращению угроз в этой сфере, оценке и управлению рисками в сфере кибербезопасности в государственных и негосударственных учреждениях. субъекты государственной информационной инфраструктуры.

Защита национальных информационных ресурсов, защита национальных интересов в сфере информации была определена Президентом Азербайджанской Республики господином Ильхамом Алиевым одним из направлений политики национальной безопасности. Для успешной реализации этой политики и обеспечения непрерывного развития национальной системы защиты информационных ресурсов необходимо мобилизовать усилия, координировать деятельность в области защиты информации, повысить осведомленность.

Статья является исследовательской, при ее написании использовался метод анализа. Материал может быть использован на лекциях и семинарах в высших учебных заведениях, а также полезен тем, кто интересуется информационной и кадровой безопасностью.

Keywords: bank, staff, personal, security, information
Ключевые слова: банк, персонал, персонал, безопасность, информация

Introduction

The most important issue in the existence of every state, in its dynamic development, and in the foundation of the security of the state in general, is the issue of personnel. Thus, from this point of view, it is no coincidence that the national security concept of the Republic of Azerbaijan focuses on the formation of a professional national workforce [1].

One of the important decisions made by the Great Leader was the success of sending Azerbaijanis to advanced universities of the former USSR for important required specialties in Azerbaijan. If we look at the official data in this direction, we will see that in more than 170 of the most highly rated universities in more than 50 cities of the former USSR, there are 250 most needed courses covering more than 80 fields of national economy, science, education and culture of our republic. More than 15,000 young

Azerbaijanis in more than 100 specialties have the opportunity and conditions to receive higher education and to train as highly qualified specialists [1].

So, all institutions operating in the country, including banks, attach importance to personnel policy, its security, including information security. For this purpose, relevant departments are active in enterprises. Departments conduct trainings and seminars for their personnel several times a year, based on appropriate instructions and following the action plan.

Appropriate decisions have been made to regulate personnel and information security in banks. Note that these decisions are prepared in accordance with the standards of the international standardization organization.

Taking into account the requirements of the ISO/IEC 2700X standards of the International Organization for Standardization, the "Rule for Information Security Management in Banks", which defines the minimum requirements for information security in banks operating in the Republic of Azerbaijan, was developed and approved by the Decision of the Board of the Central Bank and entered into the State Register of Legal Acts of the Republic of Azerbaijan [1].

According to the information provided by the Central Bank, taking into account that for the implementation of the new Regulation in the field of information security, it will take considerable time to build the appropriate information technology infrastructure in banks and to prepare policies and procedures for the organization of information security business processes, the said Regulation will come into force on April 1, 2022 and that It was decided to cancel the "Rules on the security of information systems in banks" approved by the Decision of the Board of the Central Bank of the Republic of Azerbaijan dated December 10, 2014.

Formation and organization of the "Information security management system" in banks in accordance with the requirements of ISO/IEC 2700X standards, human resources security, asset management, access control, cryptography, physical and perimeter security, security of information exchange, acquisition of information systems, includes control mechanisms and requirements for ensuring security during implementation and support, protecting information security in service relations with external suppliers, and managing information security incidents. The Central Bank constantly focuses on ensuring information security in the country's banking sector, especially on timely detection of possible cyber attacks, reduction and prevention of their negative effects.

Strategy of the Republic of Azerbaijan on information security and cyber security for 2023 - 2027" (hereinafter - the Strategy) aims to increase the national 2 information security level, state and private networks, critical serves to organize the identification and implementation of measures related to ensuring the security of information infrastructures, as well as the protection of personal data, the creation of more favorable conditions for the observance of human rights and freedoms established by the Constitution of the Republic of Azerbaijan. The strategy is based on the Constitution of the Republic of Azerbaijan and other normative legal acts, including the laws of the Republic of Azerbaijan "On National Security", "On Information, Informatization and Protection of Information", "The Law of the Republic of Azerbaijan" approved by Decree No. 2198 of the President of the Republic of Azerbaijan dated May 23, 2007 is based on the concept of national security, as well as international agreements on information security [3].

Result

To sum up, it can be concluded that personnel and information security has historical roots, every institution is interested in its provision. In order to keep up with the times, which are modernized from year to year, the innovations applied in the field of personnel and information security should be followed and implemented by the relevant institutions of the enterprises.

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Veterinary sciences

DEVELOPMENT AND USE OF AN INACTIVATED POLYVALENT AUTOVACCINE AGAINST ANIMAL COLIBACTERIOSIS FROM LOCAL STRAINS OF THE PATHOGEN

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РОЗРОБЛЕННЯ ТА ВИКОРИСТАННЯ АУТОВАКЦИНИ ІНАКТИВОВАНОЇ ПОЛІВАЛЕНТНОЇ ПРОТИ КОЛІБАКТЕРІОЗУ ТВАРИН З МІСЦЕВИХ ШТАМІВ ЗБУДНИКА

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Аннотация
Розроблено та проведено випробування у виробничих умовах аутовакцини – вакцини інактивованої полівалентної проти колібактеріозу тварин з місцевих штамів збудника. За результатами досліджень щеплення вакциною скорочувала загибель поросят-сисунів від колібактеріозу в 2 рази в порівнянні з результатами використання вакцин закордонного виробництва та в 1,5 рази в порівнянні з біофабричною вітчизняною вакциною. Ефективність застосування аутовакцин – позитивний ефект досягається у 50-70 % клінічних випадків. Аутовакцина застосовується тільки під контролем ветеринарного фахівця. Рішення про доцільність застосування аутовакцини приймається за результатом лабораторного дослідження та клінічних симптомів запального процесу.

Ключові слова: аутовакцина, колібактеріоз, бактерії, штами мікроорганізмів.

Вступ. *На сьогодні гострим питанням галузі тваринництва є масове використання антибіотиків у господарствах. Антибіотики виступають порівняно дешевим та простим способом вирішення проблеми хвороб тварин з погляду господарства. Їхнє масове використання призводить до посилення резистентності вірусів і бактерій. Наслідком є зниження ефективності застосування антибіотиків при лікуванні людей через підвищення резистентності бактерій.*

Одним із альтернативних методів лікування тварин є використання аутогенних вакцин. Аутовакцина – це адресна вакцина, в якій використовуються мікроорганізми, які ізольовані безпосередньо від хворих тварин [1-5].

Недоліком імунобіологічних препаратів є те, що їх застосування індикує імунітет у тварин тільки до зазначених антигенів, які часто не співпадають з місцевими епізоотичними штамами, які циркулюють в регіоні (господарстві). Тому вакцинація тварин таким препаратом повністю не забезпечує захист від хвороботворної дії збудників, які розповсюджені в даній місцевості.

Метою *наших досліджень було одержання інактивованої вакцини проти колібактеріозу (ешеріхіозу) тварин з місцевих штамів збудника, в якій для імунопрофілактики хвороби використовуються епізоотичні штами, що спричиняють хворобу в даній місцевості.*

Матеріали та методи. *Виготовлення аутовкцин здійснювалося згідно розробленої та затвердженої наукової документації. Термін виготовлення аутовакцини становить 14 днів з моменту отримання результату лабораторного дослідження, комплексного посіву з підтитруванням виділених мікроорганізмів до антибіотиків.*

Результати досліджень. *Вакцина інактивована полівалентна проти колібактеріозу тварин з місцевих штамів збудника, що включає виділення культур ешеріхій від загиблих та вимушено забитих тварин безпосередньо на певній території (фермі), передбачає їх ідентифікацію і використання для виготовлення препарату.*

До складу вакцини входять такі компоненти: 1. Епізоотичні штами ешеріхій, які відповідно ідентифіковані. 2. Гель гідроокису алюмінію або розчин галуну. 3. Формалін.

Виготовлення вакцини проти колібактеріозу передбачають культивування визначених вакцинних штамів О8; О9; О78; О138; О141; О147; О149, О157, які збагачені адгезивними антигенами, в тому числі К88 та інактивацію формаліном.

Випробування вакцини у виробничих умовах дали такі результати. В контрольній групі свиноматок не щепили, в інших вакцинували біофабричними чи комерційними зарубіжними препаратами. У дослідній групі щепили свиноматок розробленою та виготовленою аутовакциною згідно затвердженої наукової документації. Спостереження проводили за поросятами в перші 15-20 днів після народження. Відомо, що в ці дні основними причинами загибелі поросят є шлунково-кишкова інфекція – колібактеріоз.

Вакцина з місцевих штамів збудника значно, в 2 рази, скорочувала загибель поросят-сисунів від колібактеріозу в порівнянні з результатами використання вакцин закордонного виробництва та в 1.5 рази в порівнянні з біофабричною вітчизняною вакциною.

Висновки. *Вакцина інактивована полівалентна проти колібактеріозу тварин з місцевих штамів збудника знайшла застосування в тваринницьких господарствах різних форм власності, неблагополучних щодо колібактеріозу (ешеріхіозу), а також господарствах із складною епізоотичною ситуацією з хворобами молодняка свиней, в проведенні профілактичних та оздоровчих заходів. Вакцина може бути використана для імунопрофілактики найпоширенішої кишкової інфекції молодняка.*

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