REPORT

Osh State University

"Public Health & Medicine:

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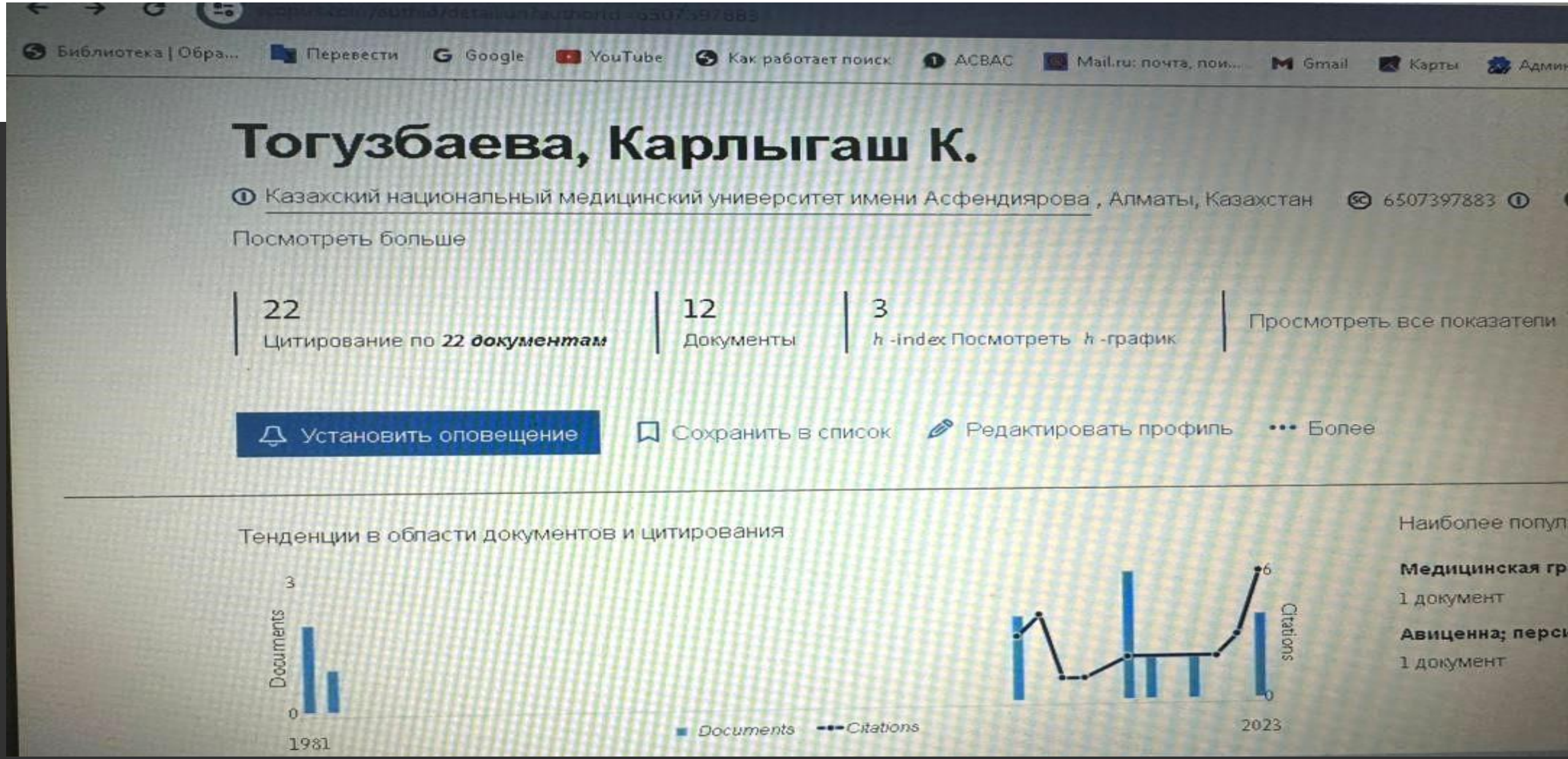
17.01.2024

SUPERVISORS



THE EFFECT OF HYPOXIC THERAPY ON LUNG SPIROMETRY IN COVID-19 SURVIVORS

Objective

- To study the pathogenic features of the influence of residual changes in the lungs after suffering from Covid-19 on the functional parameters of the upper respiratory tract of the lungs in those examined to restore respiratory function.

RESEARCH OBJECTIVES

- 1. Use spirometry to study the functional indicators of the state of the respiratory system in people who have had Covid-19.
- 2. Using spirometry to study the functional indicators of the state of the respiratory system in people with Covid-19 after exercise.
- 3. To study the parameters of lung spirometry in patients who have undergone Covid-19 after hypoxic therapy.
- 4. To study the indicators of lung spirometry in people who have had Covid-19, against the background of physical activity.

THE NOVELTY OF THE WORK

For the first time, a method for the rehabilitation of Covid-19 survivors using hypoxic therapy will be developed.

RESEARCH METHODS

- Fifty young adult COVID-19 survivors (18 to 24 years) underwent comprehensive spirometry tests to establish a baseline for subsequent assessments. Key parameters, including Forced Vital Capacity (FVC), Forced Expiratory Volume in 1 second (FEV1), Peak Expiratory Flow (PEF), and Total Lung Capacity (TLC), were meticulously recorded.

- **The Intermittent Hypoxia Therapy:** The Intermittent Hypoxia Therapy protocol involved breathing a hypoxic mixture in a cyclic fractionated mode: participants inhaled the mixture for 3-5 minutes, followed by breathing atmospheric air for 3-5 minutes (one cycle). This cycle was repeated for 20 days, with each session lasting 60 minutes. Spirometry assessments were conducted after three cycles, at 10 days, and at the conclusion of the 20-day period.

- **Hypoxia Therapy Monitoring:** Throughout INHT sessions, participant vitals, including temperature, blood pressure, pulse, and SpO2, were closely monitored to ensure safety and to gather comprehensive data on physiological responses.

WORKING WITH LITERATURE AND RESEARCH TOPICS IN THIS FIELD

- Google Scholar: http://scholar.google.de
- Research Gate : https://www.researchgate.net
- Pubmed: http://www.ncbi.nlm.nih.gov/sites/entrez
- Mendeley - Reference Management: http://www.mendeley.com

- II. Articles from magazines, countries of near and far abroad, including local publications are studied.
- III. The method of spirometry has been mastered, which will allow to determine the respiratory rate (HR), tidal volume (TO), vital capacity of the lung tissue (YELLOW), fixed YELLOW index, forced expiration, peak airflow rate.
- IV. Attended lectures and practical classes of the supervisor, other teachers of the department.

SCIENTIFIC RESEARCH INTERNSHIPS

- I have completed a month-long research internship at the Kyrgyz State Medical Academy named after Akhunbaeva from 15 January 2023 to 22 February 2023.

- During my research work in Department of Pathological Physiology, I have performed 50 spirometry tests of COVID survivors and performed intermittent normobaric hypoxia therapy on 25 COVID-19 survivors aged from 18-24 years from 15 January 2023 to 22 February 2023. The study aimed to assess the efficacy of Intermittent Normobaric Hypoxia therapy in improving lung function in young adults who had recovered from COVID-19.

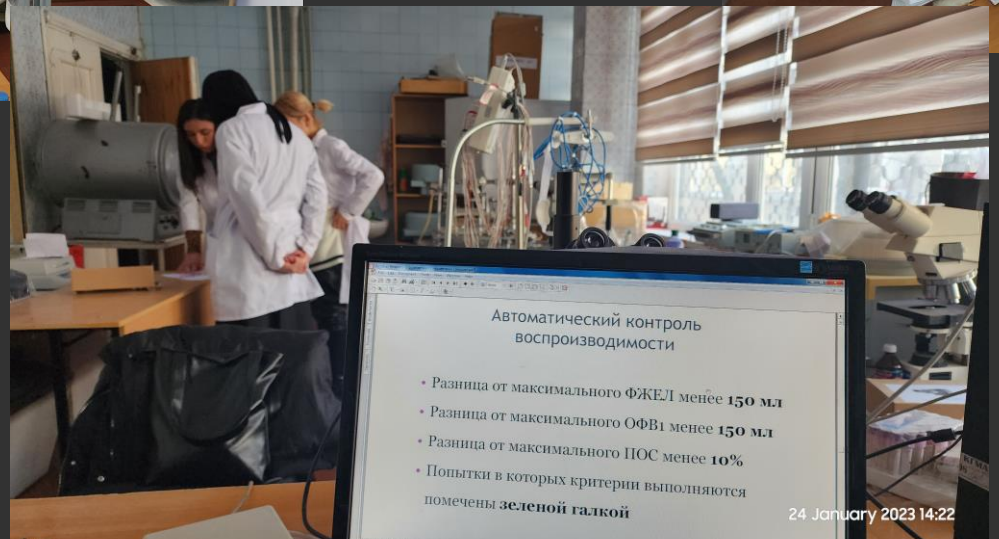
- We tested the hypothesis that training by inhaling a hypoxic mixture will increase the respiratory capacity of the lungs in COVID Survivors.

PROGRESS

- 1. Completed training in the method of spirometry and deciphering its indicators;
- 2. Was trained in the method of hypoxic therapy using a hypoxicator.
- 3. Passed the safety method for handling high pressure cylinders.
- 4. Together with Professor Tukhvatshin R.R. gave a lecture on respiratory system disorders in those who have recovered from Covid-19.
- 5. Formed groups of those wishing to undergo spirometry examination with a course of hypoxic therapy.
- 6. Developed a questionnaire.
- 7. Prepared an informed consent sheet.
- 8. Conducted a survey of 50 people. using spirometry before and after treatment with hypoxytherapy.
- 9. Prepared summary tables of survey results.
- 10. The research results are processed.

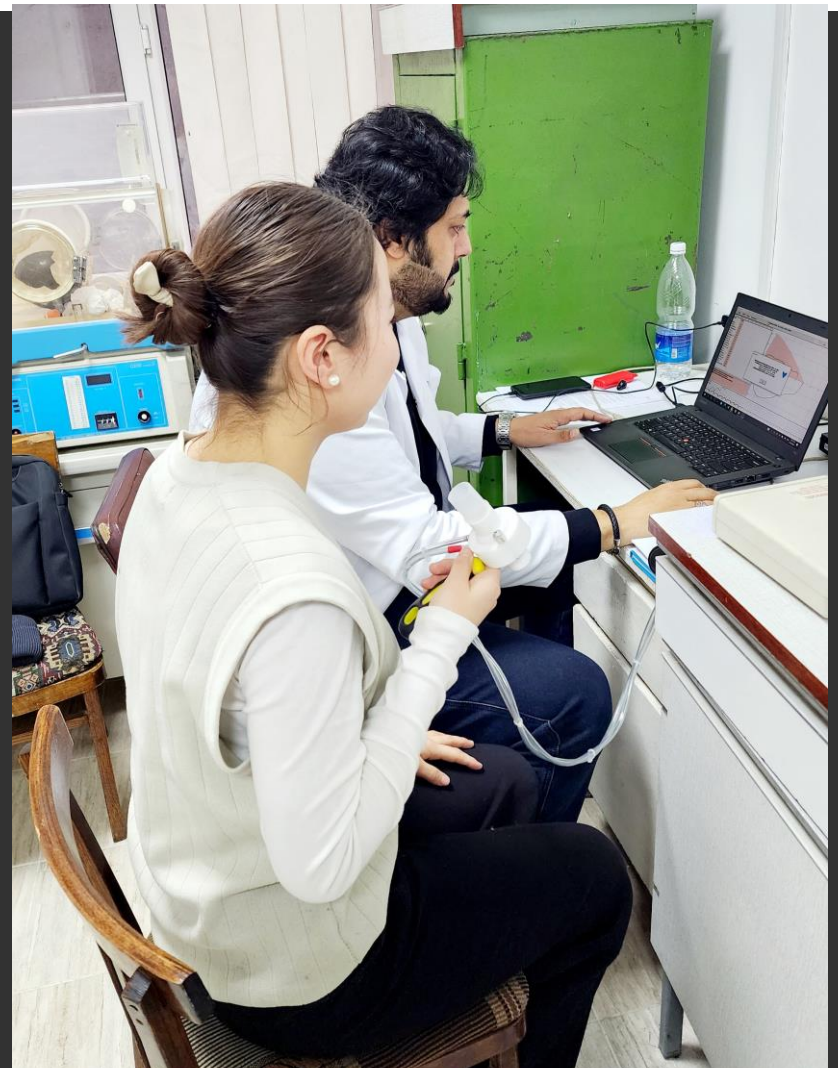
ATTENDING LECTURES IN KSMA

MASTERED THE METHOD OF SPIROMETRY



HYPOXIA THERAPY

HYPOXIA THERAPY & SPIROMETRY



INTERNSHIP IN PAKISTAN
KING EDWARD MEDICAL UNIVERSITY

- **King Edward Medical University** is a public medical university located in Lahore, Pakistan. It was established as *Lahore Medical School* during the British Raj in 1860 and is named after King Edward VII.

INTERNSHIP IN DEPARTMENT OF COMMUNITY MEDICINE, KING EDWARD MEDICAL UNIVERSITY, LAHORE

Objectives of the Internship:

The primary objectives of the internship were to:

1. Learning Basic and Applied research.
2. Basics of Public Health and Community Medicine
3. Understand the role of community medicine in preventing and managing health issues at the population level.
4. Observe and participate in community outreach programs.

KEMU – DURING INTERNSHIP FROM 30-07-2023 TO 29-08-2023

LEARNING OUTCOMES:

1. **Holistic Approach:** I learned to appreciate the holistic approach of community medicine, emphasizing prevention, health promotion, and community empowerment.
2. **Interpersonal Skills:** Engaging with diverse community members enhanced my interpersonal skills, enabling effective communication with individuals from different backgrounds.
3. **Public Health Challenges:** The internship highlighted the multifaceted challenges faced by public health practitioners, from resource constraints to cultural considerations.
4. **Team Collaboration:** Working with a multidisciplinary team emphasized the importance of collaboration in addressing community health issues.

PRELIMINARY CONCLUSIONS

· The comparative analysis of spirometry results pre- and post-INHT reveals compelling insights into the efficacy of this therapy in young survivors of COVID-19.

- **Forced Vital Capacity (FVC):**
  - The significant increase in FVC post-INHT supports the notion that INHT positively influences lung capacity, essential for optimal respiratory function.
- **Forced Expiratory Volume in 1 second (FEV1):**
  - The robust improvement in FEV1 post-INHT implies enhanced expiratory flow, contributing to improved respiratory efficiency.
- **Peak Expiratory Flow (PEF):**
  - The notable increase in PEF post-INHT suggests improved maximum airflow during forced expiration, indicating enhanced respiratory performance.
- **Total Lung Capacity (TLC):**
  - The marked enhancement in TLC post-INHT indicates an overall increase in lung capacity, contributing to improved respiratory function and well-being.

ANALYSIS OF RESEARCH RESULTS

- **Under Process**

5. PARTICIPATION IN CONFERENCES & SEMINARS

SKMA 1979 SOUTH KAZAKHSTAN MEDICAL ACADEMY

NURSULTAN NAZARBAEV QORY

Avicenna

СЕРТИФИКАТ

Әли Мұнир Мырза

«Оңтүстік Қазақстан медицина академиясы» АҚ мен Абуали Ибни Сино атындағы Тәжік мемлекеттік медицина университеті және Нұрсұлтан Назарбаев Қоры бірлесіп ұйымдастырған «Биология, медицина және фармацияның даму болашағы» атты жас ғалымдар мен студенттердің IX халықаралық ғылыми конференциясына қатысқаны үшін беріледі.

выдан за участие на IX Международной научной конференции молодых ученых и студентов «Перспективы развития биологии, медицины и фармации», организованной АО «Южно-Казахстанская медицинская академия» совместно с Таджикским государственным медицинским университетом им. Абуали Ибни Сино и с Фондом Нурсултана Назарбаева.

awarded for attendance in the IX international scientific conference of young scientists and students "Prospective development of biology, medicine and pharmacy", organized by the Science Council under the Nursultan Nazarbayev Foundation and with South Kazakhstan medical academy and Tajik State medical university Abuali Ibni Sino.

Ректор М.М.Рысбеков

8-9 желтоқсан 2022 жыл
Шымкент қаласы, Қазақстан Республикасы

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ КЫРГЫЗСКОЙ РЕСПУБЛИКИ

Ошский государственный университет

СЕРТИФИКАТ

выдается

Әли Мұнир Мырза

прошел (а) курсы повышения квалификации в обьеме 36 часов
по дополнительной профессиональной программе
«Формативное и суммативное оценивание в вузе»
в период с 5 июня по 10 июня 2023 года

К.Г. Кожобеков
ректор ОшГУ, профессор

SEMINARS

ПЕПТЕК

PROJECT

СЕРТИФИКАТ

удостоверяет, что

Ами Мунир Мирза

является участником 3-ей онлайн научно-практической школы-конференции

«Клиническая иммунология, аллергология и инфектология» в объеме 16 часов.

29-30 апреля 2021г

президент РНОИ, рук. ИИФ УрО РАН, РАН, д.м.н., проф. Черешнев В.А.

ректор ЖАГУ д.т.н. проф. Усенов К.Ж.

рук. МПП J Project по стран. ЦАР, ген.сек. РНОИ, глав. науч. сотр. ИИФ УрО РАН, ЗДН РФ, д.м.н., проф. Тузанкина И.А.

директор НЦОМиД, д.м.н., проф. Узакбаев К.А.

ректор КГМИПиПК им. С.Б. Даниярова, д.м.н., проф. Курманов Р.А.

CONCLUSIONS

- Planned work for PHD doctoral studies from 2022 to 2024 can be analyzed as completed according to plan.
- Articles are in process of publication.
- Thesis is in proves and will be completed soon.

Thank You for Kind Attention !

Dr. Ali Munir Mirza, MD, MPH

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