ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 02,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

MODIFICATION OF TREATMENT METHODS USING MEDICAL TECHNOLOGIES

Makhmudova Zarina Ilkhomovna
trainee-assistant Samarkand State Medical University
Maxmudov Mironshox Kamollidinovich
Student Samarkand State Medical University
Mustafaqulov Shexroz Sherzodovich
Student Samarkand State Medical University
Berdiqulov Azim Suxrobovich
Student Samarkand State Medical University

Annotation: The modification of treatment methods using medical technologies represents an important step in modern healthcare. Modern technologies, such as robotic systems, telemedicine, artificial intelligence, and various innovative medical devices, significantly enhance the effectiveness of treatment and diagnosis, reduce patient recovery time, and lower the risks associated with medical procedures. This article explores the main directions in which traditional treatment methods are modified through the application of high technologies. The advantages and potential risks related to the implementation of such technologies in clinical practice are also evaluated. Examples of successful applications of medical technologies in various medical fields, such as surgery, cardiology, and oncology, are discussed. The work aims to create a foundation for further improving clinical practice through the introduction of new medical technologies, as well as raising awareness among specialists about the importance of their application to enhance the quality of medical care.
Keywords: Modification of treatment methods, medical technologies, robotic system, telemedicine, Artificial intelligence, medical devices, treatment effectiveness, Diagnosis, Surgery, Cardiology, Oncology, Medical innovations.

The methodology of the study on the modification of treatment methods using medical technologies is based on a systematic approach, analyzing existing practices and implementing innovative solutions. The study employs several key methods, including:

Analysis of existing treatment methods: Initially, traditional treatment methods in various medical fields, such as surgery, cardiology, and oncology, are studied along with their limitations and risks. Comparative analysis: A comparison is made between traditional treatment methods and those that incorporate medical technologies, such as robotic surgery, telemedicine, artificial intelligence, and other innovations. This helps identify the advantages, disadvantages, and opportunities for improvement. Clinical data review: To assess the effectiveness of new technologies, data from clinical trials, practical examples, and experiences from leading medical institutions that use innovative treatment methods are gathered and analyzed.

Interviews with experts: Interviews are conducted with doctors, surgeons, medical researchers, and technology experts to obtain opinions and recommendations regarding the implementation of medical technologies in clinical practice.

Safety and ethics evaluation: The potential impact of medical technologies on patient safety and ethical considerations, such as the role of machines versus human clinicians in decision-making, are evaluated. Development of recommendations: Based on the collected data, recommendations for the implementation and improvement of medical technologies are developed, considering economic, technical, and practical aspects. The methodology is aimed at identifying areas where

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 02,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

medical technologies can improve the quality and accessibility of healthcare and assessing their impact on traditional treatment methods.

Results: The introduction of medical technologies into traditional treatment methods has a significant impact on diagnostic and treatment effectiveness, as well as improving patient outcomes. The application of innovative technologies such as robotic surgical systems, artificial intelligence, and telemedicine allows for increased diagnostic accuracy and treatment quality while reducing recovery time for patients. The use of medical technologies results in improved precision in medical procedures, a reduction in errors, and enhanced patient safety. For example, robotic surgery allows for minimally invasive procedures, which carry fewer risks and lead to quicker recovery. Artificial intelligence and machine learning algorithms help doctors make faster and more accurate analyses of medical data, leading to more personalized and effective treatments. Additionally, these technologies make healthcare more accessible and efficient. For instance, telemedicine allows patients to receive consultations remotely, which is particularly valuable in remote areas or for people with limited mobility. However, for the full potential of medical technologies to be realized, several issues must be addressed. One of the challenges is the significant financial investment required for equipment and staff training, which may pose barriers for some healthcare institutions. Additionally, it is important to continue educating and training healthcare personnel to effectively use new technologies. Overall, the use of medical technologies leads to significant improvements in the healthcare system. However, to successfully implement these technologies, it is necessary to ensure proper infrastructure, staff training, and adherence to ethical norms, which will maximize the benefits of these innovations.

Conclusion: The modification of treatment methods using medical technologies significantly enhances the quality of healthcare, improves diagnostic accuracy, and increases treatment efficiency. The use of technologies such as robotic surgery, artificial intelligence, and telemedicine contributes to reducing risks, shortening recovery times, and enabling a more personalized approach to treatment. However, the successful integration of these technologies into medical practice requires substantial financial investment, as well as the training and retraining of medical personnel, which could pose challenges for certain institutions. Ethical aspects and issues of data privacy must also be taken into consideration when using new technologies. Thus, despite existing challenges, the potential of medical technologies to improve patient health and enhance the effectiveness of medical processes is enormous. To achieve maximum results, healthcare systems must continue to improve technologies, ensure their accessibility to all population groups, and provide adequate training for specialists.

Literature:

1. Abdullayeva S., Maxmudova Z., Xujakulov S. TIBBIY TA'LIMDA VR TEXNOLOGIYA //Eurasian Journal of Academic Research. – 2022. – T. 2. – №. 11. – C. 1140-1144.
2. Ne'matov, N., & Ne'matova, N. (2022). OLIY TA'LIM TIZIMI TALABALARIGA O'ZBEK TILINI O'QITISHDA AXBOROT TEXNOLOGIYALARINING O'RNI. Академические исследования в современной науке, 1(19), 37-38.
3. Ismatullayevich N. N., Ilxomovna M. Z. Automation of Sanatorium Work: Reservation Service and its Structure //Miasto Przyszłości. – 2022. – T. 29. – C. 65-67.
4. Berdiyevna, A. S., Ilhomovna, M. Z., & Ogli, K. S. S. (2023). Modern methods of information exchange in polyclinic conditions. Genius Repository, 25, 16-20.

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 02,2025
Journal: https://www.academicpublishers.org/journals/index.php/ijai

5. Abdullayeva, S., Maxmudova, Z., & Xo'jaqulov, S. (2023). MODERN METHODS OF INFORMATION EXCHANGE IN POLYCLINIC CONDITIONS. Modern Science and Research, 2(10), 304-310.
6. Махмудова, З. И., & Аббосова, Р. Р. (2023). ТЕМА: РОЛЬ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИИ В ФАРМАЦЕВТИЧЕСКОЙ ОТРОСЛИ. Gospodarka i Innowacje., 33, 164-169.
7. Илхомовна, М. З., & Ражабоевна, А. Р. (2023). ТЕМА: РОЛЬ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИИ В ФАРМАЦЕВТИЧЕСКОЙ ОТРОСЛИ.
8. Maxmudova, Z. (2023). THE ROLE OF INFORMATION TECHNOLOGY IN THE PHARMACEUTICAL INDUSTRY. International Bulletin of Engineering and Technology, 3(3), 52-54.
9. Maxmudova, Z., Mehmonov, A., Maxsiddinova, O., & Tirkashev, A. (2023). SCIENTIFIC STUDIES SHOWING HOW MUCH PART OF THE BRAIN A PERSON USES. Modern Science and Research, 2(10), 960-964.
10. Ilhomovna, M. Z., Berdiyevna, A. S., Shaxboz o'g'li, Y. T., & Mirkobilovna, S. R. (2023). The Importance of IT Technologies in Ultrasound Examinations. Journal of Intellectual Property and Human Rights, 2(12), 121-125.
11. Ismatullayevich, N. N. (2024). Medical Higher Education Institutions in Medicine and Science Lessons from the Use of Information Technology in the Organization of the Laboratory of Multimedia Tools. American Journal of Biomedicine and Pharmacy, 1(6), 16-20.