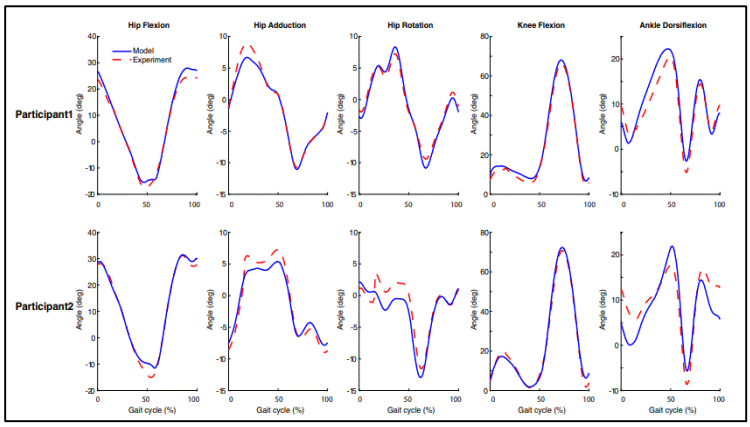

Figure 1. Comparison between model-predicted kinematics (blue solid lines) and corresponding experimental results (red dashed lines) obtained for two participants walking at their preferred speeds

The deliberate ground powers were followed RMS blunders < 0.03 body weight (BW), 0.08 BW and 0.03 BW in the front rearward, vertical, and mediolateral headings, separately. Albeit not unequivocally followed, the model processed knee-contact loads were additionally in great concurrence with comparing estimations got from the instrumented inserts, with RMS blunders of < 0.4 BW.

We carried out direct collocation on a full-body 3D neuromusculoskeletal model to work out muscle powers, ground response powers and knee contact powers at the same time for one pattern of human walk. An information following collocation issue was tackled for typical stride (strolling at the favored speed) to lay out the possibility of consolidating a 6-DOF model of articular contact and a model of foot-ground connection expressly in a unique enhancement reenactment of development.

Conclusion

The main impediment of the current review was that trial step information from simply two subjects were utilized to assess the model reproduction results. Tried models give high constancy portrayals of a considerable lot of the inborn complex ities of the neuromusculoskeletal framework and can be utilized to investigate an extensive variety of logical ques tions. More exploration is expected to figure out how best to acquire in vivo gauges of the calculation and properties of the neuromusculoskeletal framework with the goal that this information might be coordinated into the subject-explicit demonstrating process.

References

1. Lin, Y.-C., Walter, J. P., & Pandy, M. G. (2018). Predictive Simulations of Neuromuscular Coordination and Joint-Contact Loading in Human Gait. Annals of Biomedical Engineering, 46(8), 1216–1227. doi:10.1007/s10439-018-2026-6.

2. Pandy, M. G. (2001). Computer Modeling and Simulation of Human Movement. Annual Review of Biomedical Engineering, 3(1), 245–273. doi:10.1146/annurev.bioeng.3.1.245.

3. Delp, S. L., & Loan, J. P. (2000). A computational framework for simulating and analyzing human and animal movement. Computing in Science & Engineering, 2(5), 46–55. doi:10.1109/5992.877394.

MEDICAL MEASUREMENT DEVICE DESIGN AND PROGRAMMING BY CREATING SOFTWARE FOR DATA ANALYSIS IN YEMENI HOSPITALS

Omer Abdulkarem Al-Ameri (student)

Gomel State Medical University, Gomel, Belarus

Scientific Supervisor – **M. F. S. H. AL-Kamali**

(Ph.D., Associate Professor of the Department of "Industrial Electronics" Sukhoi State Technical University of Gomel)

Abstract: Accurate and efficient medical measurement devices are crucial for healthcare providers to deliver quality care and make informed decisions. In Yemen, where healthcare

resources are limited, developing software for data analysis can enhance the functionality and usability of medical measurement devices, improving patient outcomes. This report explores the importance of medical measurement device design and programming in Yemeni hospitals and emphasizes the creation of software for data analysis. It highlights the benefits of integrating software solutions into medical devices, discusses key considerations for device design, and emphasizes the significance of data analysis in improving healthcare delivery. By adopting these approaches, Yemeni hospitals can enhance their diagnostic capabilities and optimize patient care.

Key words: medical measurement devices, software development, data analysis, healthcare delivery, Yemeni hospitals.

Introduction

Medical measurement devices are essential tools used in healthcare settings to collect accurate and reliable patient data. In Yemen, where healthcare resources are limited, the design and programming of medical measurement devices, coupled with the creation of software for data analysis, can significantly improve the quality of healthcare delivery. This report emphasizes the importance of device design and programming in Yemeni hospitals, focusing on the integration of software solutions for data analysis. By adopting these strategies, Yemeni hospitals can enhance their diagnostic capabilities, streamline healthcare processes, and improve patient outcomes.

Results and discussion

Integrating software solutions into medical measurement devices offers several advantages for healthcare providers in Yemen. Software enables real-time data transmission, allowing healthcare professionals to access patient information promptly and make timely decisions. Additionally, software solutions can automate data analysis, reducing human errors and increasing efficiency in healthcare workflows. Integrated software also facilitates data storage, retrieval, and sharing, enabling seamless collaboration among healthcare providers and improving continuity of care. By leveraging software, Yemeni hospitals can enhance the functionality and usability of medical measurement devices, leading to improved patient outcomes[1-2].

Designing medical measurement devices for Yemeni hospitals requires careful consideration of specific factors. Firstly, devices should be user-friendly, with intuitive interfaces and clear instructions to ensure ease of use for healthcare professionals with varying levels of technical expertise. Secondly, the devices should be robust and durable, capable of withstanding the challenging environment of healthcare facilities in Yemen. Thirdly, devices should be adaptable and compatible with existing healthcare infrastructure, ensuring seamless integration into clinical workflows. By addressing these considerations, device design can be optimized to meet the unique needs of Yemeni hospitals and healthcare providers.

The creation of software for data analysis is a critical component of medical measurement device design in Yemeni hospitals. Data analysis allows healthcare professionals to derive meaningful insights from collected patient data, aiding in accurate diagnosis, treatment planning, and monitoring of patients' progress. By analyzing data trends and patterns, healthcare providers can identify potential health risks, optimize treatment protocols, and make evidence-based decisions. Moreover, data analysis can contribute to population health managemata analysis; Yemeni hospitals can enhance their diagnostic capabilities and improve healthcare delivery in the country [3].

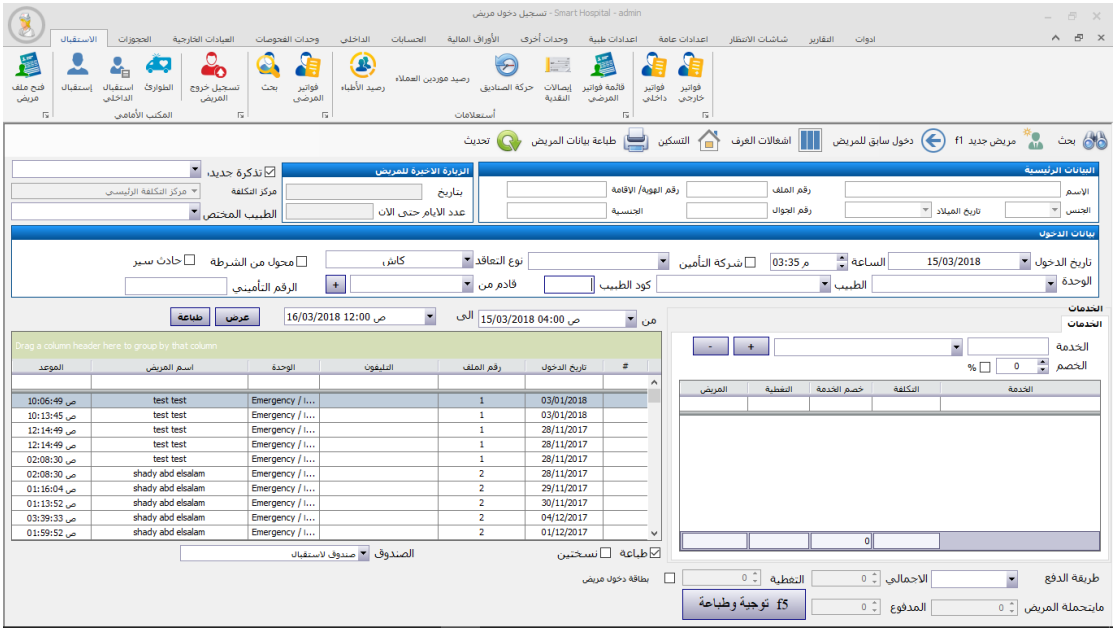

Fig 1. Smart program's interfaces for managing medical facilities and hospitals [4]

Various hospital management programs are in use worldwide. Based on these, we will work to redesign programs that meet Yemen's needs. This will facilitate citizen booking of appointments or medical consultations with therapists through the application, as well as make it easier for physicians to access patient information to support one another. In order to accurately and effectively follow up on each patient's condition, it contains sufficient and accurate information about the following topics: complaints and symptoms; examinations, analyses, and x-rays; operations; diagnoses; doctor's orders and follow-up on their implementation; monitoring the patient's condition; medications; and medical recommendations. Fig.1. show one of the Smart program's interfaces for managing medical facilities and hospitals, which we must program into Yemeni hospitals [3].

Conclusion

The design and programming of medical measurement devices, coupled with the creation of software for data analysis, hold immense potential to improve healthcare delivery in Yemeni hospitals. By integrating software solutions, Yemeni healthcare providers can enhance the functionality and usability of medical measurement devices, streamline healthcare processes, and improve patient outcomes. Device design should prioritize user-friendliness, durability, and compatibility with existing infrastructure. Furthermore, the analysis of collected data through software solutions empowers healthcare professionals to make informed decisions, optimize treatment plans, and contribute to population health management. By adopting these strategies, Yemeni hospitals can enhance their diagnostic capabilities and optimize patient care.

References

1. Al-Maweri, S. A., et al. (2019). Challenges and opportunities of telemedicine in Yemen. Journal of Telemedicine and Telecare, 25(7), 441-443.

2. Al-Dubai, S. A., et al. (2017). E-health readiness assessment factors in Yemen. Studies in Health Technology and Informatics, 245, 1333.

3. Al-Wesabi, S. A., et al. (2019). Challenges and strategies for implementing electronic health records in Yemen. Health Informatics Journal, 25(1), 130-141.
https://smartsoftde.com/%D8%A8%D8%B1%D8%A7%D9%85%D8%AC%D9%86%D8%A7/%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D8%AC-%D8%A7%D8%AF%D8%A7%D8%B1%D8%A9-%D8%A7%D9%84%D9%85%D8%B3%D8%AA%D8%B4%D9%81%D9%8A%D9%80%D9%80%D8%A7%D8%AA/