Chapter 1
Artificial Intelligence Integration in Medical Tourism:
Medical Breakthroughs – Are We Truly Progressing?

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ABSTRACT

This study explores the future of medical tourism (MT) through the lens of evolving artificial intelligence (AI) technologies, recognizing their profound impact on healthcare. From medical devices and the Internet of Things (IoT) to AI integration, the study examines transformative trends in diagnosis, decision support, and personalized medicine. It scrutinizes technologies like surgery robots, automation, blockchain, virtual and augmented reality, and genomics. Promising the potential of distant healthcare solutions like medical wearables and telemedicine, the study underscores their role in improving access to care are presented. Regulatory, privacy and ethical considerations are addressed, emphasizing the need for ongoing research and robust legislation to unlock the full potential of these technologies in shaping the future landscape of medical tourism.

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INTRODUCTION

Healthcare and technology integration presents a dynamic environment where the effectiveness of Artificial Intelligence[1] (AI) emerges as a powerful catalyst for change in the field of medical tourism[2,3] (MT) (Rodríguez et al., 2023; Alaziz et al., 2023). The emerging discipline of cross-border healthcare, wherein individuals seek medical services across their national boundaries, recognizes the crucial role of AI in improving patient experiences and outcomes (Yoo et al., 2023). In addition to fostering innovation, AI plays a transformative role in the field of healthcare by fundamentally altering the way healthcare services are delivered. This includes enhancing the processes of diagnoses, treatment planning, and improving the accessibility of patient care. This research investigates the various applications of AI and highlights its potential to significantly transform medical decision-making processes, enhance diagnostic precision, and empower patients on a worldwide scale (Heinz et al., 2023; Fahim et al., 2023). The increasing demand for MT necessitates the integration of AI to ensure the provision of high-quality healthcare services across different geographical locations (Shafk, 2023).

This study investigates the implications of AI-driven medical devices, sensors, and the Internet of Things (IoT) on patient monitoring, safety, and healthcare quality, with a particular focus on the influence of real-time data (Jun et al., 2021). Comprehending these complexities is essential for comprehending how artificial intelligence functions as a catalyst for individualized, patient-centered healthcare (Maulida & Marlina, 2023). The present study aims to examine the profound effects of robotics and automation on surgical procedures, therapeutic interventions, and senior care. Specifically, the focus is on exploring how these technological advancements contribute to improved precision and accelerated recovery periods (Akhavan et al., 2023; Kalinaki et al., 2023). AI offers a comprehensive patient experience, encompassing diagnosis, treatment, and post-treatment care, which is particularly advantageous for individuals seeking efficient medical interventions as medical tourists (Mason et al., 2023).

The significance of blockchain technology[4] in the context of MT is subject to critical examination, with particular emphasis placed on its potential to enhance data security, interoperability, and patient privacy. The applications of virtual and augmented reality in the context of pain management and mental health therapies for those seeking medical treatment abroad (Karadayi-Usta & Serdarasan, 2023; Matinkhah et al., 2019). The integration of genomics and precision medicine, facilitated by genome sequencing, presents personalized healthcare solutions that are in line with the objectives of MT, which seeks to provide state-of-the-art therapies (Kusuma et al., 2023). The potential of emerging technologies such as telemedicine,