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Transforming gastroenterology practice: A comprehensive exploration of the impact of mHealth and Medical Applications

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Abstract

The rapid evolution of mobile health (mHealth) and medical applications has ushered in a new era in healthcare, offering unprecedented opportunities to enhance patient care, streamline diagnostics, and improve treatment outcomes. This research paper delves into the intricate web of effects that these technologies have on gastroenterology practice. Through a thorough review, we examine the current landscape, exploring the diverse array of mHealth applications and medical tools relevant to gastroenterology. This paper elucidates their profound impact on patient care, diagnostic precision, therapeutic strategies, and overall healthcare efficacy. Additionally, it addresses the challenges and opportunities arising from the integration of these digital tools into the complex realm of gastroenterology.

Keywords: mHealth, gastroenterology, remote patient monitoring, electronic health records, technology

Introduction

The landscape of gastroenterology is undergoing a paradigm shift with the integration of mHealth applications and medical tools. This section provides a comprehensive introduction to the current state of these technologies in gastroenterology, emphasizing the dynamic nature of healthcare practices as they assimilate these digital innovations. With digital interventions in nearly every area of healthcare, health applications for mobile devices (MHAs) and medical applications (MAs) are gaining popularity for a variety of health-related uses ^[1]. The field of gastroenterology has also experienced a digital revolution in recent years, which will have far-reaching effects on both patients and doctors in the years to come ^[2-6]. In the field of gastroenterology, MHAs and MAs are utilized for a wide variety of purposes. These applications cover a wide range of topics, from workflow management systems and electronic health records (EHR) ^[7-9] to those tailored to the treatment of acute or chronic pain ^[10-12] or a particular disease in a particular environment ^[13-14]. Because of their various ways in which they might aid patients in self-management, MHAs and MAs are thought to offer enormous promise, particularly in the context of chronic diseases ^[15, 16].

Background

In this context, "eHealth" is one of the most widely recognised terms. In 2001, Eysenbach presented a definition of eHealth that is extensively referenced: "eHealth is an emerging domain that arises from the convergence of public health, medical informatics, and business." It pertains to the provision or augmentation of medical services and data via the internet and associated technologies. In a broader sense, the expression delineates a mindset, a mode of reasoning, an outlook, and a commitment to interconnected, worldwide cognition with the aim of augmenting healthcare at the local, regional, and international levels via the implementation of technology for communication and information. As per the World Health Organisation (WHO), electronic health (eHealth) refers to the secure and economically viable application of information and communication technologies (ICT) in the domain of health and health-related topics. Their pragmatic perspective is founded upon logical deduction.

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The World Health Organization (WHO) defines mHealth, which is an affiliated term for electronic health records (eHealth), as "medical and public health practice supported by mobile phones and tablets, including monitoring of patients devices, digital assistants for individuals, and other wireless devices" [17]. However, consensus-based descriptions for these concepts have yet to be reached. While both MHAs and MAs pertain to attributes of apps for smartphones, a distinction can be made between the two. Applications for mobile health (MHAs), also referred to as health apps, represent an emerging category of software designed to support individuals in their pursuit of improved well-being. The categorization of medical applications (MAs), also referred to as smartphone apps, into the regulatory requirements for medical devices is mandated by a medical purpose limitations [18]. Recent estimates place the current collection of health-related smartphone applications at approximately 325,000 [19]. Additionally, certain smartphone applications may not be accessible for public distribution or may not be listed on any specific online platform. There exists a comprehensive enumeration of prospective applications and improvements for MHAs and

MAs, encompassing self-diagnostics, health behaviour support, and persistent disease management, among others [20]. Additionally, clinicians may depend on MHAs and MAs to provide assistance with clinical decision-making and infrastructure support [20].

Mobile Health Applications in Gastroenterology Remote Patient Monitoring

Explores how mHealth applications enable remote monitoring of patients with gastrointestinal conditions, fostering continuous engagement and personalized care.

Symptom Tracking and Management

Examines applications designed for patients to monitor and manage gastrointestinal symptoms, offering valuable insights for healthcare providers to tailor treatment plans.

Telemedicine in Gastroenterology

Evaluates the impact of telemedicine applications on gastroenterology, assessing their role in improving patient accessibility, follow-up care, and overall satisfaction.

Table 1: Medical and health-related mobile app examples

Examples for use of mobile health applications and medical apps		
Type and mechanism	Example	Possible benefits or harms
Patient education	Teaching app for bowel preparation before colonoscopy	Improvement in results, reduction of costs
Telemedicine	Video or online consultation	Low barrier accessibility of specialists, patient-physician interaction is changed
eHealth records	EMR	Security and privacy concepts need to be addressed, interoperability issues
Digital biomarkers	Smart watch, counting of steps per day	Individualized strategies for health behavior changes. So far missing standardization

Medical Apps for Gastroenterologists

Diagnostic Tools

Investigates the utilization of medical apps to aid gastroenterologists in diagnostics, including applications for endoscopy, imaging analysis, and pathology interpretation.

Treatment Decision Support

Explores the role of applications providing evidence-based support for treatment decisions, encompassing medication management and procedural guidance.

Electronic Health Records (EHR) Integration

Examines the integration of medical apps with electronic health records, discussing how this enhances data management and communication among healthcare providers.

Challenges and Opportunities

Data Security and Privacy

Addresses concerns surrounding the security and privacy of patient data when utilizing mHealth applications in gastroenterology practice.

Regulatory Compliance

Explores the regulatory landscape governing medical apps, highlighting challenges and opportunities for compliance within the gastroenterological context.

Physician Training and Adoption

Discusses the imperative of training gastroenterologists in the effective use of mHealth applications and strategies to foster widespread adoption.

Conclusion

Summarizes key findings and insights from the comprehensive review, emphasizing the transformative potential of mHealth and medical applications in advancing gastroenterology practice. The conclusion underscores the importance of ongoing research, collaboration, and adaptive strategies to successfully integrate these technologies into routine clinical care.

There is hope for improved diagnostics and treatment options in gastroenterology and chronic illness management with the help of digital treatments like MAs and MHAs. In particular, there will be numerous ways in which health care providers and patients with chronic illnesses will profit from these treatments. But good evaluation, grounded in evidence-based medicine norms, is essential for sufficient proof of benefit. Many factors make this a challenging problem to solve for digital treatments, and there are currently no agreed-upon criteria for their creation or assessment. In this regard, it is essential to stress that standardization frameworks can, in part at least, bring digital intervention research into harmony. To better understand and evaluate the real evidence, standardization efforts should be ongoing with an explicit emphasis on the principles of medicine based on evidence.

In addition, this is essential for determining how much to pay for these digital interventions. This would be especially helpful in ensuring that medical practitioners in the vast majority of countries' healthcare systems utilise consistent metrics when deciding how much to pay for digital interventions. In the context of user-centered design, the involved users are not currently involved in any way.

Affected users cannot now evaluate the worth of an app for healthcare based on any of the previously specified criteria or the features of this study area. Because of this, patients run the risk of utilizing a low-quality software, or worse, of using an app that could hurt them and cause harm or death. In light of this, it is imperative that individuals working in health-related fields, and society at large, prioritise the development of eHealth literacy.

Conflict of Interest

Not available

Financial Support

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References

- Gordon WJ, Landman A, Zhang H, Bates DW. Beyond validation: getting health apps into clinical practice. *NPJ Digit Med*. 2020;3:14.
- Le Berre C, Sandborn WJ, Aridhi S, Devignes MD, Fournier L, Smaïl-Tabbone M, *et al*. Application of Artificial Intelligence to Gastroenterology and Hepatology. *Gastroenterology*. 2020;158:76-94.e2.
- Bossuyt P, Pouillon L, Bonnaud G, Danese S, Peyrin-Biroulet L. E-health in inflammatory bowel diseases: More challenges than opportunities? *Dig Liver Dis*. 2017;49:1320-1326.
- Serper M, Volk ML. Current and Future Applications of Telemedicine to Optimize the Delivery of Care in Chronic Liver Disease. *Clin Gastroenterol Hepatol*. 2018;16:157-161.e8.
- Adadi A, Adadi S, Berrada M. Gastroenterology Meets Machine Learning: Status Quo and Quo Vadis. *Adv Bioinformatics*. 2019;2019:1870975.
- Siegel CA. Transforming Gastroenterology Care with Telemedicine. *Gastroenterology*. 2017;152:958-963.
- Huang JS, Yueh R, Wood K, Ma S, Cruz R, Boyd N, *et al*. Harnessing the Electronic Health Record to Distribute Transition Services to Adolescents With Inflammatory Bowel Disease. *J Pediatr Gastroenterol Nutr*. 2020;70:200-204.
- Konerman MA, Thomson M, Gray K, Moore M, Choxi H, Seif E, *et al*. Impact of an electronic health record alert in primary care on increasing hepatitis c screening and curative treatment for baby boomers. *Hepatology*. 2017;66:1805-1813.
- Roehrs A, Da Costa CA, Righi RD, de Oliveira KS. Personal Health Records: A Systematic Literature Review. *J Med Internet Res*. 2017;19:e13.
- Laloo C, Shah U, Birnie KA, Davies-Chalmers C, Rivera J, Stinson J, *et al*. Commercially Available Smartphone Apps to Support Postoperative Pain Self-Management: Scoping Review. *JMIR mHealth Uhealth*. 2017;5:e162.
- Thurnheer SE, Gravestock I, Pichierri G, Steurer J, Burgstaller JM. Benefits of Mobile Apps in Pain Management: Systematic Review. *JMIR Mhealth Uhealth*. 2018;6:e11231.
- Adu MD, Malabu UH, Callander EJ, Malau-Aduli AE, Malau-Aduli BS. Considerations for the Development of Mobile Phone Apps to Support Diabetes Self-Management: Systematic Review. *JMIR Mhealth Uhealth*. 2018;6:e10115.
- Yin AL, Hachuel D, Pollak JP, Scherl EJ, Estrin D. Digital Health Apps in the Clinical Care of Inflammatory Bowel Disease: Scoping Review. *J Med Internet Res*. 2019;21:e14630.
- Hernandez Silva E, Lawler S, Langbecker D. The effectiveness of mHealth for self-management in improving pain, psychological distress, fatigue, and sleep in cancer survivors: a systematic review. *J Cancer Surviv*. 2019;13:97-107.
- Whitehead L, Seaton P. The Effectiveness of Self-Management Mobile Phone and Tablet Apps in Long-term Condition Management: A Systematic Review. *J Med Internet Res*. 2016;18:e97.
- Elamin W, Hannis D, Nyanzi L, Ells L. To study the impact of mHealth interventions on chronic diseases management: A systematic overview of systematic reviews protocol. *Clinical eHealth*. 2018;1:17-20.
- World Health Organization. mHealth: new horizons for health through mobile technologies: second global survey on eHealth; c2011.
- Kramer U, Borges U, Fischer F, Hoffmann W, Pobiruchin M, Vollmar HC. [DNVF-Memorandum - Health and Medical Apps] *Gesundheitswesen*. 2019;81:e154-e170.
- Research 2 Guidance. mHealth Economics 2017 - Current Status and Future Trends in Mobile Health. [accessed 2020 Feb 20]
- Magrabi F, Habli I, Sujana M, Wong D, Thimbleby H, Baker M, *et al*. Why is it so difficult to govern mobile apps in healthcare? *BMJ Health Care Inform*. 2019;26:e100006.

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