



# Digital Health Marketing and Mobile Applications: A Neglected Priority in Iran's Health Care System

Mohammad Jalilian  <sup>1</sup>, Mehran Rostami  <sup>2</sup> and Javid Zare  <sup>3,\*</sup>

<sup>1</sup>Department of Clinical Sciences, Faculty of Veterinary Medicine, Garmser Branch, Islamic Azad University, Garmser, Iran

<sup>2</sup>Department of Health, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>3</sup>Telfer School of Management, University of Ottawa, Ottawa, Ontario, Canada

\*Corresponding author: Telfer School of Management, University of Ottawa, Ottawa, Ontario, Canada. Email: [javidzare@gmail.com](mailto:javidzare@gmail.com)

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## Dear Editor,

With the advancement of technology and the spread of the internet in the digital era, marketing has significantly developed (1). Digital health marketing is an ever-changing process referring to any marketing activity conducted through electronic devices with advanced computing systems. Digital health marketing, particularly e-health, is an emerging interdisciplinary topic used by digital health care stakeholders (including medical professionals, health care providers, patients, technology companies, technology startups, academic research institutions, and regulators) to electronically manage health-related data (1). Digital health marketing should focus on these potential clients (2).

Mobile health applications are expected to improve public health services and provide valuable information to patients and clinicians (2). For example, an e-health mobile (m-health) application named Stay Alive ([www.stayalive.app](http://www.stayalive.app)) is used to prevent suicide in England. In one of the digital health marketing campaigns, Stay Alive achieved 4 million digital impressions and 25 800 clicks and experienced 450% and 67% increases in engaged app sessions and accessibility of suicide prevention services, respectively (3). A variety of m-health apps are used to monitor and manage different health conditions and diseases, including HIV/AIDS (4), cardiovascular diseases, type 2 diabetes mellitus (5), blood pressure, hypertension (6), asthma, allergic diseases (7), cardiac care during the COVID-19 pandemic (8), alcohol/illicit drug use (9), and weight management (10).

Today, due to the increased access to the internet, people rely on it to find health-related solutions. In this re-

gard, all kinds of health services can be viewed through digital health marketing to make health delivery more efficient. For example, we can imagine an online service capable of conducting blood tests and announcing the results without needing blood samples from patients in hospitals or medical centers. There is a service in Iran named Homeca ([www.homeca.ir](http://www.homeca.ir)) that provides health care services by providing online advice to prevent and treat diseases. Although there are several online medical services like Homeca in Iran (eg, Snapp Doctor [[www.snapp.doctor](http://www.snapp.doctor)] and Drsaina [[www.drsaina.com](http://www.drsaina.com)]), it appears that the number of local mobile applications available for different health care purposes, including improvements in training, preventing, diagnosing, and treating various types of diseases, is limited. Some of the limitations of digital health marketing, which can lead to poor acceptance or lack of attention to it, are as follows:

(1) A significant portion of society has low or insufficient digital health literacy;

(2) not all target audiences may use digital devices, particularly the elderly;

(3) not all the theoretical benefits of implementing digital health in clinical practice have been understood in practice by stakeholders;

(4) lack of trust in patients concerning health data privacy and some ethical aspects of the doctor-patient relationship that indirectly increases the cost of marketing; and

(5) remote rural areas of Iran have limited access to the internet.

Developing multiple digital marketing and e-health tools can significantly facilitate people's access to health

care services. Primarily, by learning lessons from other countries, decision-makers in the Iranian health care system can facilitate the development of e-health. For example, they can invest in projects informing patients and digitalizing hospitals and health clinics. To achieve this, they should pay particular attention to the specific applications of the internet of things, big data, artificial intelligence, chatbots, and virtual reality in the Iranian health system. In addition, at the government level, integrating “mobile app-based health promotion programs” into current Iranian Ministry of Health prevention programs can improve clinical outcomes and should not be neglected in the future.

## Footnotes

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## References

- Eysenbach G. What is e-health? *J Med Internet Res.* 2001;3(2):E20. [PubMed ID: 11720962]. [PubMed Central ID: PMC1761894]. <https://doi.org/10.2196/jmir.3.2.e20>.
- Moses JC, Adibi S, Shariful Islam SM, Wickramasinghe N, Nguyen L. Application of Smartphone Technologies in Disease Monitoring: A Systematic Review. *Healthcare (Basel).* 2021;9(7). [PubMed ID: 34356267]. [PubMed Central ID: PMC8303662]. <https://doi.org/10.3390/healthcare9070889>.
- Grassroots Suicide Prevention. *Stay Alive app.* Brighton, England: Grassroots Suicide Prevention; 2020. Available from: <http://prevent-suicide.org.uk/find-help-now/stay-alive-app/>.
- Safdari R, Seyed Alinaghi SA, Mohammadzadeh N, Noori T, Rahmati P, Qaderi K, et al. Developing Aysoo: a mobile-based self-management application for people living with HIV. *HIV/AIDS Rev.* 2022;21(1):24–30. <https://doi.org/10.5114/hivar.2022.113389>.
- Buss VH, Varnfield M, Harris M, Barr M. A Mobile App for Prevention of Cardiovascular Disease and Type 2 Diabetes Mellitus: Development and Usability Study. *JMIR Hum Factors.* 2022;9(2):e35065. [PubMed ID: 35536603]. [PubMed Central ID: PMC9131155]. <https://doi.org/10.2196/35065>.
- Jamaladin H, van de Belt TH, Luijpers LC, de Graaff FR, Bredie SJ, Roeleveld N, et al. Mobile Apps for Blood Pressure Monitoring: Systematic Search in App Stores and Content Analysis. *JMIR Mhealth Uhealth.* 2018;6(11):e187. [PubMed ID: 30429116]. [PubMed Central ID: PMC6262205]. <https://doi.org/10.2196/mhealth.9888>.
- Kagen S, Garland A. Asthma and Allergy Mobile Apps in 2018. *Curr Allergy Asthma Rep.* 2019;19(1):6. [PubMed ID: 30712150]. [PubMed Central ID: PMC6394463]. <https://doi.org/10.1007/s11882-019-0840-z>.
- Gonzalez Garcia M, Fatehi F, Ershad Sarabi R. Telecardiology and Digital Health for Cardiac Care During COVID-19 Pandemic: Opportunities and Precautions. *Health Scope.* 2020;9(3):e107401. <https://doi.org/10.5812/jhealthscope.107401>.
- Tofighi B, Chemi C, Ruiz-Valcarcel J, Hein P, Hu L. Smartphone Apps Targeting Alcohol and Illicit Substance Use: Systematic Search in Commercial App Stores and Critical Content Analysis. *JMIR Mhealth Uhealth.* 2019;7(4):e11831. [PubMed ID: 31008713]. [PubMed Central ID: PMC6658280]. <https://doi.org/10.2196/11831>.
- Ghelani DP, Moran LJ, Johnson C, Mousa A, Naderpoor N. Mobile Apps for Weight Management: A Review of the Latest Evidence to Inform Practice. *Front Endocrinol (Lausanne).* 2020;11:412. [PubMed ID: 32670197]. [PubMed Central ID: PMC7326765]. <https://doi.org/10.3389/fendo.2020.00412>.