



Using technology and electronic devices to provide cardiac rehabilitation services

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Letter to Editor

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Dear Editor

A brief study on the executive structure of cardiac rehabilitation centers in Iran reveals the limitation of cardiac rehabilitation services provision through smart phones. In spite of the progress of cardiac rehabilitation programs over the last decade, the provision of hospital-based cardiac rehabilitation services in Iran is still a preferred method. This traditional and common model of cardiac rehabilitation faces fundamental challenges such as cost and access constraint, and does not meet the needs of those patients who more need to reduce risk factors, such as older people, women, different ethnic groups and rural populations, low-income people of the society, and most patients who need secondary prevention;¹ as patients who live in neighboring towns and remote areas face several challenges to receive cardiac rehabilitation services and attend such centers. Therefore, providing measures to increase patients' participation in, as well as adherence to treatment and prevent treatment withdrawal, is one of the priorities of cardiac rehabilitation management. Addressing this gap in services delivery is a clear need to develop alternative models to increase access to rehabilitation services via mobile technology; so that, in addition to keeping costs down, the efficiency and effectiveness of services can be improved on a large scale.² In this regard, the previous studies support the feasibility and applicability of mobile technology for cardiac rehabilitation in patients with ischemic heart disease.³ Recent advances in technology and development of mobile applications,⁴ and the availability of this technology, have provided significant opportunities to improve health outcomes in at-risk populations. Additionally, by focusing on health behaviors, they have provided opportunities to expand therapeutic and expandable interventions.⁵ Therefore, focusing on innovative and electronic services (e.g., using

mobile technology and application development) can have the potential to cope with barriers to accessing cardiac rehabilitation, and provide a useful tool to reduce costs and increase participation.⁶ However, the innovative services model with an emphasis on mobile technology is an application that can empower patients through digital self-care, and by facilitating services provision for patients living in remote areas, can increase their participation and access to cardiac rehabilitation services. This can be attractive and applicable for a substantial portion of patients. Moreover, the implementation of our proposed plan may affect the adoption of a healthy lifestyle in the long term. Therefore, we suggest that some studies be conducted to investigate the efficacy and applicability of these methods in patients with cardiovascular disease in Iran and in low-income areas.

Conflict of Interests

Authors have no conflict of interests.

References

1. Clark RA, Conway A, Poulsen V, Keech W, Tirimacco R, Tideman P. Alternative models of cardiac rehabilitation: A systematic review. *Eur J Prev Cardiol* 2015; 22(1): 35-74.
2. Latif S, Rana R, Qadir J, Ali A, Imran MA, Younis MS. mobile health in the developing world: Review of literature and lessons from a case study. *IEEE Access* 2017; 5: 11540-56.
3. Beatty AL, Fukuoka Y, Whooley MA. Using mobile technology for cardiac rehabilitation: A review and framework for development and evaluation. *J Am Heart Assoc* 2013; 2(6): e000568.

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4. Xu L, Li F, Zhou C, Li J, Hong C, Tong Q. Theeffect of mobile applications for improving adherence in cardiac rehabilitation: A systematic review and meta-analysis. *BMC Cardiovasc Disord* 2019; 19(1): 166.
5. Sharma A, Harrington RA, McClellan MB, Turakhia MP, Eapen ZJ, Steinhubl S, et al. Using digital health technology to better generate evidence and deliver evidence-based care. *J Am Coll Cardiol* 2018; 71(23): 2680-90.
6. Hamilton SJ, Mills B, Birch EM, Thompson SC. Smartphones in the secondary prevention of cardiovascular disease: A systematic review. *BMC Cardiovasc Disord* 2018; 18(1): 25.