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Kim Hazel
Butler University

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A Game of Phones: Capitalizing on Health Applications, Gamification, and Improving Patient Outcomes

Kim Hazel

Abstract: Healthcare applications are certainly on the rise. Advances in application technology, such as gamification, have the ability to transform patient health and clinical research from the palm of our hands. Is it time for healthcare providers to support and implement these technology trends?

Winter is coming according to Jon Snow, which may have been true for Westoros. However, in the health care world, a technology revolution is coming. Health-based technology has grown significantly in the past few years, but what exactly does that mean for health care providers? To put it simply, times are changing, and patients are becoming more and more reliant on their devices for health management, monitoring, and improvement needs. This shouldn't come as a surprise considering 50% to 60% of Americans have smartphones.¹ As a healthcare provider, it will become exponentially important to understand the role smartphone applications play in the health care process going forward. Today, apps are used for a wide variety of health care demands such as counting calories, reminding patients to take their medications on time, and encouraging behavior modifications.

Currently, research shows that health services can benefit from the usage of smartphone applications for improving patient outcomes.¹ Furthermore, smartphone applications are becoming more and more effective at encouraging behavior modifications for users.² In the past, the use of smartphone apps for health care or health interventions was simply too clunky, time consuming, and not user friendly to be viable. However, apps are now considered to be more functional with largely scalable possibilities for implementation.² This comes as good news for both health professionals and patients alike. Since we all find ourselves frequently absorbed in our smartphones, the possibility of improving health outcomes via a highly interactive and rapid system should be an exciting prospect for providers in all specialties. Imagine a world with video visits for minor illness or injury, access to basic health information with the push of a button, and the ability to remind patients of upcoming appointments via notifications. Now, take a moment to realize that we already live in a world where this is possible. A brief search of "video visits dr" provides a return of over 170 million results. Currently, there are over 47,878 health apps available on iOS smartphones.³ So, it is safe to say yes, there probably is an app for that.

However, with a high volume of health applications there is bound to be some bad apples in the bunch. And much like Westoros, there are *some really bad apples*. So, how are providers expected to know if their patient is using a safe and effective app that adequately protects their health information and delivers significant health benefits? A study conducted in 2015 sought to understand potential problems concerning health security and mobile health applications. Results showed that providers should

only recommend and use applications that are not self-regulated, abide by federal guidelines, or are a part of the Health Apps Library maintained by the National Health Service in England.⁴ This is incredibly crucial because 89% of apps transmit their data to internet-based services and 66% of that data is not encrypted.⁵ Providers recognize that this lack of security is a huge red flag. Still, apps that value the protection of patient data do exist! Most research suggests that providers interested in employing applications for patient care or improvement of health outcomes are careful to select apps that protect patients' data with the level of scrutiny that is required for their respective offices.

A question most providers would be asking at this point is: *"I can barely get my patients to comply with all my recommendations once they leave the office, so why would recommending some app be any different?"* The answer is simple: gamification. Gamification is the act of taking game-like elements or designs and implementing them in nongame settings.⁶ This is an effective way to keep patients engaged in their health journey while also making some difference in modifying behaviors that lead to negative health outcomes. Current research suggests that gamified health apps do lead to the modification of behaviors; however, they do not follow the more commonly accepted behavior modification theories.⁷ Some professionals are critical of utilizing apps with gamification simply because they feel that patients will recognize these platforms as glorified customer loyalty programs rather than ways to positively reinforce good behaviors.⁶ One app in particular is working to combat that current perception.

LifeOmic's LIFE Extend app is a gamified health app that is focused on precision health outcomes.⁸ It is clear that LifeOmic takes the gamification portion of their health apps very seriously as each published application has some form of game quality. The LIFE Extend app, for example, highlights the five pillars of health quality through gamification. These are healthy diet, exercise, sleep/rest, mindfulness, and fasting time.⁸ Users gain "life points" for engaging and tracking their habits that fall in each category. In addition, LifeOmic doesn't stop at simply making their users feel like they're winning by gaining points on their own. Rather, they have added social themes to encourage enjoyable competition with friends, coworkers, neighbors, and whomever else you invite into your "circle".⁸ To health care providers, this may seem like another gimmick health app with

no real substance. Interestingly, however, LifeOmic gained credibility by partnering with the Indiana Clinical Translational Science Institute, a collaboration between Indiana University, Purdue University, and the University of Notre Dame.⁸

This unique collaboration has led to the reshaping of the LIFE Extend app to become "All IN for Health". This is a population health movement that provides Indiana residents with access to additional health-related information, groundbreaking clinical research, and opportunities to improve health literacy. Most providers would agree that this application is a great advancement for the improvement of health outcomes and research studies. Additionally, the app uses artificial intelligence to recommend unique and personalized ways for patients to improve their health as part of their precision health initiative.⁹ LifeOmic is just one of the many applications that can help monitor and improve patient outcomes.

As a provider, it is important to stop and assess the direction in which health care is advancing. The field of Health Science Technology and Health Information Exchange continues to grow and expand its influence on the healthcare industry. It would not be surprising if health care startups became dedicated to bringing health apps, gamification, and information exchange into practices across the globe. Therefore, it may be time for health care providers to show their support for this trend. Now winter has come and gone for Westoros, but the health technology revolution is just beginning in the world of health care.

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