The Pokemon Go effect

To motivate healthy behavior changes, take some cues from Pikachu and co.

BY SIU-HIN WAN, MD

In 1973—a time when color televisions were replacing black and white sets, and drivers were beginning to embrace automobile seat belts—Motorola engineer Martin Cooper made the world’s first call from a handheld mobile phone. The prototype weighed about 2.5 pounds and proved to be revolutionary. Since then, the cellular phone has evolved from a tool for remote communication to a personal multimedia entertainment device.

For some users, mobile phones have also contributed to improvements in health and fitness. That’s largely been accomplished with natural extensions of previous technologies, achieved through miniaturization and new integrations of sensors and processors—for example, using phones to track speed and distance while walking or biking, or to monitor heart rhythms. But other, more novel (and perhaps unforeseen) applications have also had an impact, providing not only tools, but also insights and ideas we physicians can use to promote successful behavioral change among our patients.

At a time when obesity is becoming an epidemic and heart disease is a leading cause of mortality and morbidity in this country, that’s important. According to the National Health and Nutrition Examination Survey, 35 to 40 percent of American adults are obese, a figure that’s been trending upward since the 1990s.

Addressing such health concerns often requires significant lifestyle modifications that are only feasible when bolstered by an underlying foundation of motivation, feedback and social support. Clinicians aren’t likely to adequately satisfy each of these needs during short outpatient visits. So perhaps it’s not surprising that only about 10 percent of patients counseled to increase exercise and lose weight are successful. Can mobile technology help better those odds? Maybe after a physician sends a patient home, it’s time for Pikachu to step in and assist.

Video game changers

Video games have long had a bad rap among health and fitness advocates, perhaps with good reason. Dating back to the arrival of Pong in the 1970s, video games have offered some mental and emotional stimulation but rarely called for any physical activity beyond minimal movement of the hands and thumbs. Rather than inspire children to go outdoors, explore, and pursue fitness, video games have commonly been viewed as the anathema to exercise. The correlations have been constant: What’s fun isn’t healthy; and vice versa.

But as technology has advanced in recent years, the integration of accelerometers, gyroscopes and smart cameras into video game consoles has altered the way humans interact with gaming systems. Instead of playing tennis by moving a joystick, one now must swing an arm. Onscreen dancing is no longer powered by a series of keystrokes, but through full-body movements. Nintendo’s Wii Fit, introduced in 2007, is a suite of strength-training, balance and aerobics activities. Such paradigm-changing products have allowed exercise to permeate many new settings, from day care centers to nursing homes.

Augmented reality arrives

Technology’s influence on health is taking a further step forward with the advent of augmented reality. Historically, video games have relied on elements of virtual reality—using visuals, sound and other stimuli to simulate imaginary environments. Virtual reality can transport us to...
new worlds of imagination and adventure. But often, our time there is highly sedentary. When we enter a virtual world, we leave our actual surroundings behind and we disregard our bodies.

Augmented reality is different. By integrating a camera, a processor and a video display, an augmented reality system can introduce digitally created elements into real-world settings. Augmented reality has been present for years, initially appearing in aerospace and other high-tech industries to empower head-up navigational systems, which superimpose information onto a windshield or other transparent surface within the user’s field of view. But augmented reality did not become widely popular or utilized until the gaming industry got a hold of it—perhaps best illustrated by the worldwide sensation launched last year: Pokemon Go.

For the uninitiated, Pokemon Go literally takes a 20-year-old video game franchise into new, uncharted directions. Inspired by insect collecting, past Pokemon iterations ran on game consoles and computers. Players sought hidden fantasy characters within a virtual world. Gamers never had to move; just press buttons while their avatars walked around.

Pokemon Go, however, marries mobile technology with augmented reality. Instead of sitting on a couch operating a joystick, a player ventures outdoors, moving from place to place, seeking fictional monsters that seem to appear within real-life surroundings. A smartphone’s GPS system tracks its user’s location while the onboard camera captures live images. The creatures that players covet only appear onscreen when the device is in close proximity to a particular landmark, public place or other physical location.

Clearly, the approach has been popular. Within three weeks of Pokemon Go’s release, 50 million people downloaded the game to their mobile devices. News outlets buzzed with reports of people gathering in parks and other common spaces, walking for miles, daily, drawn by the prospect of catching nonexistent animated critters. This scenario counters traditional perceptions that video games are detrimental to players’ health. A cultural craze that leads people to run around outdoors and explore one’s surroundings? It is, in many ways, a dream for clinicians trying to encourage youth to get up from the couch and exercise.

Pokemon Go accomplishes what often seems impossible: It makes fitness fun. The game encourages people to exercise, without appearing to do so—or, at least, without offering overt instruction. The lesson here is that nobody wants to be told they need to exercise any more than they want to be told to eat more vegetables or brush their teeth. The appeal of Pokemon Go is its promise of a fun distraction. The exercise that’s integral to the experience? That happens to be a healthy side effect.

Clear goals and reliable feedback
Among the most important tenets of behavior modification are active involvement and willing participation. For physicians to secure such buy-in from patients, it’s important to establish goals and plans that are as specific as possible.

Measuring success, then, requires feedback. But how much do patients really know about themselves when it comes to their health? We’ve all heard, “I exercise,” “I eat healthy,” etc. But what do such vague statements mean? How much do you exercise? Over what time period? Such details are often unknown.

To help improve documentation, we might ask patients to keep a health diary, where they can record daily amounts of activity and food intake. But even this strategy is not foolproof, as there is often reporter bias—especially if the patient feels interrogated. What the patient and clinician both need is an accurate tool that provides reliable data.

One of the most intriguing aspects of Pokemon Go is its integration of travel within game play. By walking a certain distance, a player can hatch a Pokemon egg or earn Pokemon candy. This exchange not only provides incentive for exercise and clear goals for the player; it also requires tracking of the player’s movements, thereby generating precise, objective feedback.

Similar tactics are also employed by more conventional mobile fitness applications. Activity trackers built into phones, watches, wristbands and even jewelry provide real-time data for a number of parameters, including steps taken, miles traveled, amount of sleep per day, and calories consumed and expended. The lesson here is that when sophisticated technology is applied in a user-friendly fashion that reports measurable, easy-to-digest results, patients become empowered. Motivating people with goals, and keeping them apprised of their progress toward those goals, makes healthy behavior more appealing—and meaningful change more likely.

Social support
Finally, another important tenet of lasting behavioral modification is social support. No matter how strong one’s internal motivation might be, it can be difficult to negotiate a change when outside forces seem to push in the opposite direction.

Pokemon Go has shined at tackling this challenge. The game created a social phenomenon in which exercise and outdoor activity are not only accepted, but encouraged. Certain game play elements, such as gym battles waged between char-
goals. The feedback also equips physicians with valuable information that can support our work as care providers.

Finally, when attempting behavioral modification related to fitness or other health needs, pursue social support. Success is more likely within a community that values such traits as perseverance and teamwork—where a healthy lifestyle is the norm rather than the exception.

Capitalizing on the possibilities that mobile technology presents might require physicians to make some adjustments of our own. But if we explore new technological frontiers, challenge our preconceptions that video games are inherently sedentary, and take some cues from popular cultural phenomena such as Pokemon Go, we might land on new ways to help our patients make healthy behavioral changes.

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New challenges arise
Augmented reality applications aren’t without their own challenges. New technological approaches to promoting healthy behavior can, in fact, create new health hazards. For example, Pokemon Go has been implicated in automobile and pedestrian accidents that occurred when players were more focused on their screens than on the road. (Given the game’s potential for distracting drivers—which raises a public health concern—it’s not surprising that Pokemon Go now disables some elements of gameplay when it detects the device it’s loaded on has exceeded a certain speed.)

There are also significant questions about the long-term impacts Pokemon Go will have on exercise habits. Given the game’s breakthrough nature when it debuted in July 2016, the initial enthusiasm it engendered was understandable. But three months later, news outlets were already issuing stories about waning interest. Pokemon Go’s fad status probably ensured usage would drop. That meant many related health gains were soon lost, as well.

Lessons to learn
Regardless of Pokemon Go’s staying power, however, the game can have a lasting impact if we heed the lessons it highlights.

First, find ways to make exercise enjoyable, not a chore. Instead of prescribing a certain amount of exercise, point patients to fun, innovative activities that draw interest for reasons other than physical fitness—but improve health, nonetheless.

Second, seek ways to capture and provide accurate, objective feedback about physical activity. This builds motivation through positive reinforcement, empowering people by educating them about progress they’ve made toward meeting personal goals.

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