

## Opinion

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# Will the 'Pokémon' be Heroes in the Battle Against Physical Inactivity?

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Physical inactivity increases the risks of dying prematurely, dying of heart disease, and developing diabetes, colon cancer and high blood pressure.<sup>1</sup> However, there exists a large portion of the population who remain physically inactive and others who are active but do not engage in a sufficient amount of physical activity to maintain health.<sup>2</sup> Multiple factors underlie this dilemma, including personal, social and environmental issues, all of which have made the promotion of physical activity a challenging endeavor. Interestingly, in the past few months (as of early July, 2016) anecdotal evidence suggests more people have been going outside and engaging in physical activity. This is not related to any "national fitness initiatives" or the like, but simply as part of playing a game called 'Pokémon Go'. This new mobile gaming application uses an augmented reality and GPS location systems to create a map of the local environment. Individuals can use their phones to track and catch Pokémon (virtual creatures). The most intriguing aspect from a public health perspective is that people must actually engage in physical activity (e.g. walking, biking) to be successful playing the game. Amit Khera, MD, Director of Preventive Cardiology, UT Southwestern Medical Center, Dallas, Texas notes, "Unlike many apps or video games which are largely sedentary endeavors, this one promotes physical activity in the outdoors. Importantly, the physical activity is a by-product rather than an explicit component, such as one sees with other "Fit" video games that can turn off some young adults. So, kids and adults are getting outdoors, engaging in social interaction, and are participating (unintentionally) in physical activity - it is a win-win all around"! With reported downloads of the game exceeding 100 million since July 2016, why is this particular game, with inherent design features to promote physical activity, so popular? Maybe even more importantly, can this popularity (as well as the associated increased physical activity participation) be sustained over a long enough period to impact public health?

As noted by Dr. Khera, the physical activity component is actually a by-product of playing the game, but activity has been cleverly engineered into the game as a major determinant of game achievement and success. In addition to having a required physical activity component, there are other design features to help sustain player interest. Several articles have previously discussed the potentially "addictive" features of online gaming and the unique design features of the Pokémon game which can influence player behavior.<sup>3</sup> These factors include the random rewards structure,<sup>4</sup> the Pokémon nostalgia,<sup>5</sup> the concept of collecting items,<sup>6</sup> and incorporation of an augmented reality. Additionally, the game itself is free to play on mobile devices, is easy to play, incorporates the potential for social interaction, provides feedback and recognition for achievement and really has no definitive end point.<sup>3</sup> It would appear that in combination, these psychosocial factors may provide the stimulus needed to engage more individuals in physical activity. While the potential health benefits exist, risks associated with the game have also been identified including; increased risk of injury, abduction, trespassing, violence, and cost (of in game purchases).<sup>7</sup> However, these risks can largely be reduced with appropriate precautions, attention and parental oversight in the case of minors. All factors being considered, the potential health benefits of increased physical activity as related to the Pokémon Go game would seem to outweigh the preventable risks, with one key issue in question. Do (or will) Pokémon Go players experience any significant physical activity related health benefits?

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Intuitively, one might argue the inevitable health benefits of playing Pokémon Go as originally designed to promote walking or biking outdoors (e.g. not driving or riding around in a slow moving vehicle) and support the “it’s better than nothing” argument. However, one must also consider that attainment health benefits for healthy adults aged 18-65 have been related to meeting the recommended minimum physical activity guidelines involving 30 minutes of moderate intensity exercise (i.e. brisk walking) on 5 days each week.<sup>2</sup> The Physical Activity Guidelines for Americans, issued by the U.S. Department of Health and Human Services, recommend that children and adolescents aged 6-17 years should have 60 minutes (1 hour) or more of moderate physical activity each day. Are players meeting these guidelines? While playing the game, players are tracked *via* their phone’s GPS to determine specific location. Both speed and distance covered are also monitored and then used as variables in the reward delivery system. For example, in order to “hatch Pokémon eggs” and collect new Pokémon, as well as points towards advancement in player level, one must walk or bike various distances (i.e. 2, 5 or 10 kilometers). This process requires the collection and storage of user mobility data. Per the user agreement, Niantic as the game developer has the right to share non-identifying information with third parties “for research and analysis, demographic profiling and other similar purposes”. Thus, if a clever investigator were able to gain access to user mobility data, coupled with the user demographic data, they could begin to more clearly answer important health questions involving physical activity. For example, are players are meeting age appropriate physical activity recommendations while playing the game? Consider the possibilities if Niantic was encouraged to incorporate a few activity-related surveys as part of the game, just a few simple questions could provide a wealth of health information on a global scale. For example, are the individuals currently playing Pokémon Go previously involved in physical activity or did the game actually engage previously inactive persons. Data could also be collected which could be used to determine the most effective game design features to promote positive health behaviors to help sustain or even increase physical activity; as part of the Pokémon Go game or even in the development of future games.

So, back to our original question, will the Pokémon be heroes in the battle against physical inactivity? Anecdotal evidence suggests there are many individuals playing the game and logging many kilometers catching the elusive Pokémon. This initial surge in physical activity participation represents movement in a good direction, but only time will tell regarding the sustainability and the potential impact on health. If the game was designed, at least in part, to help increase physical activity as suggested by its creators, Niantic could certainly do more to help assess the effectiveness. Let’s hope for the best, but we may need to wait for results from the next U.S. Department of Health and Human Services report on physical activity and the prevalence of inactivity related diseases to determine if the Pokémon are deserving of hero status.

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