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## **IMPACT OF POKEMON GO ON PHYSICAL ACTIVITY: A PRE-POST ANALYSIS**

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**Background:** In July 2016, a location-based augmented reality mobile game called Pokémon GO was released and quickly saw millions of players. Anecdotal accounts suggest the game can increase physical activity, as players follow prompts to move around outdoors. We sought to quantitatively evaluate whether the game has improved activity levels and wellness by analyzing behavior before and after starting play.

**Methods:** To identify Pokémon GO players and non-players, we utilized a proprietary platform (Achievemint.com) where members can connect trackers and apps to receive rewards for healthy behaviors. We distributed a single question survey to members who had an activity tracker connected asking whether they were playing Pokémon GO. Affirmative responders were sent a follow-up survey with questions such as when they started playing, general experience, and perceived impact of the game on activity and mood. We analyzed both survey responses as well as activity tracker step data for 30-days pre/post each player's start date. Those who responded that they were non-players composed a control group, using step data pre/post the game's launch date.

**Results:** Of the 1,721 people who responded to the single question survey, 597 (35%) reported playing Pokémon GO. Of those, 340 (57%) completed the follow-up survey. Prior to starting Pokémon GO, players were less active than non-players based on activity tracker step data (8,726 vs 9,430 average daily steps,  $p=0.002$ ). After starting, players' daily average steps increased significantly by 906 ( $p<0.001$ ) in the first 2 weeks; however, in weeks 3 and 4, average daily steps significantly decreased from that peak by 477 ( $p=0.015$ ). Users who reported a body mass index (BMI) higher than 30 increased their daily average step count by 890 more than those with BMI lower than 30 ( $p=0.057$ ).

**Conclusions:** Pokémon GO players had significantly increased activity levels in the short-term after starting play, and the increase in steps was two times greater in obese players. However, the increase in physical activity waned over time. This analysis highlights the potential for augmented reality mobile game concepts to be utilized for improving physical activity and wellness in certain populations.