

Using thin or obese avatars in motion-controlled gaming can influence physical activity

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The difference between a normal BMI and and obese one used in the study.
Credit: Jorge Pena

Those New Year's Resolutions to get fit slowly wane as February comes to a close. Buying the new shoes and athletic gear can motivate you to get into the gym or take on a sport at the beginning, but not seeing quick results can be disheartening. What we want to see in our reflections isn't taking shape. But what if an ideal version of yourself was reflected in an avatar? A recent study conducted by researchers at the University of California, Davis, found that gamers using thin avatars showed increased physical activity compared to those using obese avatars.

Jorge Peña, Subuhi Khan, and Cassandra Alexopoulos (University of California, Davis) published their findings in the *Journal of Computer-Mediated Communication*. The researchers conducted an experiment where participants were randomly assigned to a normal weight or obese avatar as well as normal weight or obese opponent in virtual tennis game. The avatar and the opponent were essentially the same male virtual character. The body size of the avatar was manipulated by setting a different Body Mass Index (BMI) for the normal or obese virtual character. The [normal weight](#) character was thin and had a BMI of 18.6 (where normal range BMI is 18.5 to 24.9). The obese character had a BMI of 32.1.

The researchers found that regardless of participants' own BMI, those using thin avatars showed increased physical activity compared to those using obese avatars. In addition, downward social comparison effects - or comparing oneself to someone perceived as less skilled - were identified as participants that perceived their avatar as more obese than their virtual opponent showed decreased physical activity in the real world while playing the game. This implies that perceiving oneself at a virtual disadvantage (self avatar is obese but opponent character is thin) discouraged physical activity.

These findings replicate the researcher's previous studies using an all-male sample. The previous study (Peña & Kim, 2014, Computers in

Human Behavior) featured an all-female sample. This implies that the effect of avatars on people's physical activity while playing video games that require physical activity replicates on both men and women. The findings reinforce the importance of priming effects in gaming and virtual contexts, and the importance of study replication.

"I think the findings have real-world applications, such as using avatars in video games to 'nudge' people to increase physical activity, or getting people more comfortable with small increases in physical activity before taking on more intense physical routines," said Peña. "This also illustrates that people may show decreased [physical activity](#) when they perceive their avatar to be at a disadvantage, like when an [avatar](#) is obese and their virtual opponent is thin, and this insight may be applied to the design of virtual characters."

More information: Jorge Peña et al. I Am What I See: How Avatar and Opponent Agent Body Size Affects Physical Activity Among Men Playing Exergames, *Journal of Computer-Mediated Communication* (2016). [DOI: 10.1111/jcc4.12151](https://doi.org/10.1111/jcc4.12151)

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