

# Could computer games encourage people to adhere to COVID-19 measures?

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The game takes place in a simulated office environment. Credit: Dr Abe Karnik

Computer games could become a useful tool in educating more young adults about the risks of COVID-19 and following preventative public health measures such as social distancing, hand washing and mask wearing.

A team of computer science Masters students led by Dr. Abe Karnik

from Lancaster University developed a prototype "serious game" as part of a study exploring how computer games could be used to get across public [health](#) messages, and affect behaviors in the [real world](#).

The researchers' target audience is 19- to 25-year-olds. This age group experiences a lower death rate from COVID and [young adults](#) have been identified by the World Health Organisation as the least compliant to COVID-19 preventative measures.

Younger people are also less engaged with traditional mediums for health messaging, such as TV. Though this is also a generation that is very familiar with computer gaming.

Dr. Abe Karnik, Lecturer at Lancaster University's School of Computing and Communications, said: "COVID-19 has highlighted the need to find new tools to understand perception of risks and in turn behaviors around conformity to preventative instructions. We wanted to explore serious educational games to engage members of the public and change their perception about the pandemic and preventative measures, particularly with younger people who may not engage with traditional channels and forms of media.

"A serious game provides this group with a new innovative way to learn COVID-19 safety measures in an accessible, engaging and non-intrusive way and on a format they are familiar with."

The researchers' game, called "Point of Contact," was inspired in its design by Innersloth's popular PC game "Among Us." As a co-operative team game, the scenario of "Point of Contact" mimics a shared office workplace where players have to perform tasks in order to increase a shared economy score. However, one of the players' characters starts the game with a COVID-19 infection. As well as the economy score the game also includes a health score based on how many characters become

infected.

As the game progresses, the players have to balance completing economy tasks with undertaking COVID-preventative measures based on the UK Government's "Hands, Face, Space" campaign, such as washing hands, opening windows, and mask wearing. Players can also be voted into quarantine to reduce risk of transmission, but this prevents them from contributing to the economy score.

The game applies probability calculations and knowledge of how COVID-19 spreads in real life to model infections, taking into account standing near colleagues and touching objects that infected colleagues had previously handled. It also models symptomatic and asymptomatic infections.

Results from the studies, obtained through questionnaires completed before and after the 23 participants played the game, as well as gameplay data, revealed players vastly underestimated how often they were breaking social distancing rules and not following guidelines.

The study also showed a clear shift in the participants' perception of risk after playing the game and participants' opinions changed on the lives versus livelihood balance—with a shift towards prioritizing health. The number of participants who favored health doubled and only 13% of participants favoring the economy more than health.

There was a heightened awareness towards COVID-19 transmission risk in everyday real life interactions and 87 percent of the participants said they would be more careful in following COVID-19 preventative guidance. While the immediate impact on participants' awareness was obvious, further studies would be needed to determine if computer games could affect awareness over the long-term.

Although the game is not designed for public release, this study shows that these kinds of serious games could possibly be effective at getting across public health messages to harder to reach demographics in the future.

Dr. Abe Karnik said: "We expected the participants to view the preventative measures more favorably and actually perform them more as the game-play progressed. While this was confirmed, we were not expecting such a drastic shift in favor of health and against economy. The result showed us the real impact of the serious game can have on altering perception through a simulated experience."

The study's findings are detailed in the paper "Point of Contact: Investigating change in perception through a serious [game](#) for COVID-19 preventative measures," which will be presented at the ACM's CHI Play 2021 academic conference this week.

**More information:** Joshua Hill et al, Point of Contact, *Proceedings of the ACM on Human-Computer Interaction* (2021). [DOI: 10.1145/3474701](#)

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