A Cross-Lagged Study of Developmental Trajectories of Video Game Engagement, Addiction, and Mental Health

# Details

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## Sample

A nationally representative sample of 3,000 adolescents aged 17.5 years was drawn from the population registry of Norway in 2012 and invited to participate in annual surveys spanning 3 years (NT1 = 2,059, NT2 = 1,334, NT3 = 1,277).

## Implications For Parents About

## Implications For Educators About

Professional development

## Implications For Policy Makers About

## Implications For Stakeholders About

* Researchers
* Industry
* Healthcare

# Abstract

Objectives: Video game addiction has been associated with an array of mental health
variables. There is a paucity of longitudinal studies investigating such associations, and
studies differentiating addicted gaming from problem and engaged (i.e., frequent but
non-problem) gaming. The current explorative study investigate the natural course of
gaming behavior in three sub-studies. The aim of study 1 was to investigate antecedents
and consequences of video game addiction measured as a unidimensional construct
(pathological gaming). Aimof study 2 was to investigate the same associations in terms of
typologies of gamers (“engaged,” “problem,” “addicted”). Furthermore, study 3 aimed to
investigate the estimated stability and transitions occurring between the aforementioned
typologies, and a non-pathological gaming group.
Methods: A nationally representative sample of 3,000 adolescents aged 17.5
years was drawn from the population registry of Norway in 2012 and invited
to participate in annual surveys spanning 3 years (NT1 = 2,059, NT2 = 1,334,
NT3 = 1,277). The respondents completed measures of video game addiction,
depression, anxiety, loneliness, aggression, and alcohol use disorder. Statistical analysis
comprised cross-lagged path modeling, Satorra-Bentler chi square test (study 1),
regression analyses (study 2), hidden Markov model of transition probabilities (study 3).
Results: Findings in study 1 showed that depression and loneliness were reciprocally
associated with pathological gaming. Physical aggression was identified as an
antecedent, and anxiety was a consequence of pathological gaming. Investigation of
the three typologies of gamers (study 2) identified loneliness and physical aggression
as antecedents, and depression as a consequence of all typologies. Depression was
found to be an antecedent of problem and engaged gamers. Loneliness was found as a
consequence of problem gamers, and anxiety was a consequence of addicted gamers.
High alcohol consumption was found antecedent to addicted gamers, and low alcohol
consumption was found antecedent to problem gamers. The estimated stability of video
game addiction was 35%.
Conclusion: A reciprocal relationship between pathological gaming and measures of
mental health problems seems to exist. The stability of video game addiction indicates a
condition that for a substantial number of people does not resolve spontaneously over
the course of 2 years.

# Outcome

Findings in study 1 showed that depression and loneliness were reciprocally associated with pathological gaming. Physical aggression was identified as an antecedent, and anxiety was a consequence of pathological gaming. Investigation of the three typologies of gamers (study 2) identified loneliness and physical aggression as antecedents, and depression as a consequence of all typologies. Depression was found to be an antecedent of problem and engaged gamers. Loneliness was found as a consequence of problem gamers, and anxiety was a consequence of addicted gamers. High alcohol consumption was found antecedent to addicted gamers, and low alcohol consumption was found antecedent to problem gamers. The estimated stability of video
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