Video games: Factors associated with problem use

Nick Harris, PhD, R. Psych

Original Video Games

- 1975: Pong played on Atari is released.
  - Became very popular
- 1977-1980’s: Arcade games such as Pac-Man and Donkey Kong.

- Beginning of an era
  - Entertainment

Evolution of Video Game Technology

Evolution of Video Games

- 1970s to 1980s
  - Pay-to-play arcade games
- 1980s to 2000s
  - Home console games
  - Handheld games
  - PC games
- 2000s
  - Online multi-player play
    - Shooter games (e.g., Call of Duty, Halo 5)
    - Role-playing in virtual worlds

    (e.g., World of Warcraft, Everquest, Identity)

Motivations for Video Game Use

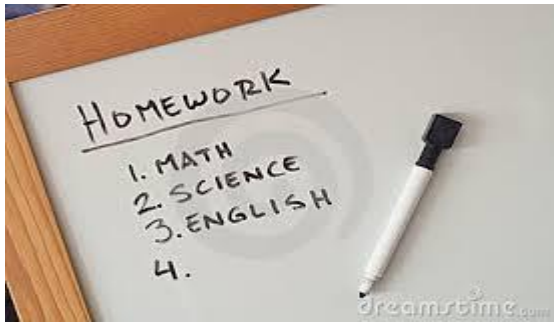
1. **Arousal**: fast action and high quality graphics that stimulate emotions.

2. **Challenge:** push self to higher skill level/personal accomplishment.
   - High score
   - Higher character status
   - Beat the game

3. **Competition:** prove to others that they have superior gaming skills/ win

Motivations for Video Game Use

4. **Diversion:** Avoid stress associated with daily living or everyday responsibilities



5. **Fantasy:** Can do things one cannot do in real life or act like someone else

6. **Social Interaction:** Use games to interact with others

Video Gaming Industry

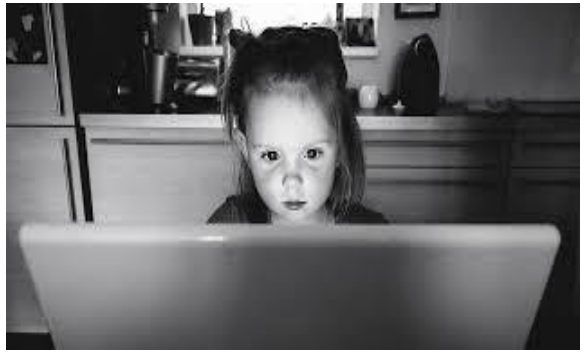
- Game designers
  - Use these motivations to their advantage to develop video games that people want to continue to play. For example,
    - Arousal – Exciting, intense, fun, real

(Cooper, 2008)

Continuum of Video Game Use

- For most individuals who play video games their play does not become excessive or problematic.
  - Play in moderation

- For some individuals gaming may become excessive and negatively impact their ability to function in everyday life.



Prevalence of gaming problems

- 12-17 years of age Canadian (n = 2,832)
  - 85% reported playing past year
  - 18.3% reported playing daily
  - 9.4% identified as engaging in problem use with significant negative consequences
    - (15.1% males; 3.1% females)

- Canadian Adults (n = 4,121)
  - 2.7% of adults self-identified as having a problem with gaming
  - More commonly reported by individuals 20-32 years of age

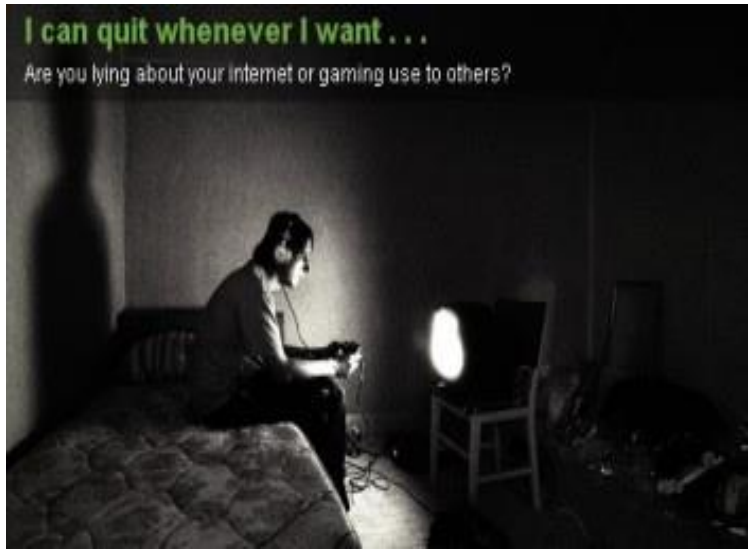
(Thege et al., 2015a; Thege et al., 2015b; Turner et al., 2012)

Symptoms/Signs of Excessive Gaming

1. **Preoccupation** – may become irritable, distracted, or talk about the game almost constantly when unable to game.

2. **Downplay gaming use** – downplay amount of time playing video games, make excuses about playing, or outright lie about amount of time played.

3. **Lack of control** – unable to control the amount of time gaming



Symptoms/Signs of Excessive Gaming

4. **Loss of time** – game for longer periods of time than realized

5. **Negative impact on other areas of life** - academic, social, leisure, and family functioning

6. **Hide from negative feelings or situations** – sadness, fighting with friend/parent, bad grade on test.

Symptoms/Signs of Excessive Gaming

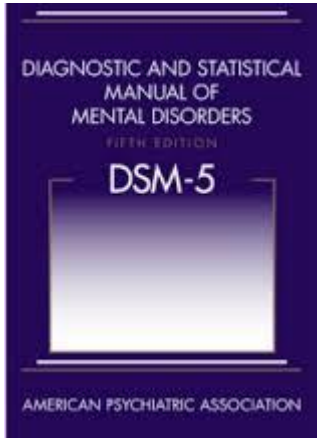
7. **Defensiveness –** may become defensive when asked about his/her gaming. Express denial that anything is wrong.

8. **Misuse of money** – may spend a disproportionate amount of money on gaming related items.

9. **Mixed feelings** – may begin to feel guilty over time

(http://www.video-game-addiction.org)

DSM-V: Conditions for further study



- **Internet Gaming Disorder (Gaming Addiction)**
  - Substance use and behavioural addiction
  - Conditions for further study
  - Working group did not add any other behavioural addictions
- 5 or more of 9 criteria over 12-month period that impairs functioning:

1. Preoccupation with Internet games
2. Withdrawal symptoms when Internet gaming is taken away
3. Need to spend increasing amounts of time gaming on Internet [tolerance]
4. Unsuccessful attempts to control participation in Internet gaming [loss of control]
5. Loss of interest in hobbies and entertainment as a result of Internet gaming
6. Continued excessive use of Internet games despite knowledge of psychosocial problems
7. Deceptions of family members, therapist, or others regarding amount of time playing games
8. Use of Internet gaming to escape or relieve a negative mood
9. Loss of a significant relationship, job, or educational or career opportunity because of participation in gaming

Risk Factors

- Personality traits
  - Sensation seeking/prone to boredom
  - Neuroticism
  - Aggression and hostility
- Motivations for gaming
  - Escapism
  - Online relationships (e.g., may prefer online relationships)
  - Gain status or recognition within the game
- Online play - massive multiplayer online games (e.g., WOW)
- Attention deficits
- Male
- Adolescents/University Students
- Access to video games in bedroom (youth/young adults)

Current Study
Background Information and Purpose

- Number of reasons individuals play video games
- Prevalence of problem gaming is increasing
- Number of factors believed to be and found to be associated with problem gaming

- However,
  - Minimal research has actually examined such factors using standardized scales
  - Minimal research has examined such factors across video game types

- **Research questions:**

1. Upon examining facets of sensation seeking, emotion dysregulation, and competitiveness which of these predictors would account for a significant portion of problem gaming variance?

2. Do predictors of problem gaming differ between those who identify as playing mostly shooter games and those who identify as playing mostly role-playing virtual world games?

Participants and Measures

- 228 individuals reported to have played a video game at least 1 time over the previous month (*M* age = 24.9 years; *SD* = 5.8) (144 males)

- Completed a series of self-report questionnaires online :
  - Problem Video Game Scale (PVP; Tejeiro-Salguero & Bersabe-Moran, 2002)
  - Sensation Seeking Scale Form V (SSS-V; Zuckerman et al., 1978)
  - Difficulties in Emotion Scale - Short Form (DERS-SF; Gratz & Roemer, 2004)
  - Competitiveness Orientation Measure (COMP; Newby & Klein, 2014)

Descriptive Statistics

- What types of video games do you play? Please specify all:
  - Action/First Person shooter games (*n* = 164; 76.6%)
  - Role playing games (*n* = 169; 79%)
  - Sports (*n* = 61; 28.5%)
  - Simulation (*n* = 62; 29%)
  - Other (*n* = 72; 33.6%)

- What type of video game do you play the most?
  - Action/First Person shooter games (*n* = 100; 43.9%)
  - Role playing games (*n* = 107; 46.9%)

Descriptive Statistics

- Problem Video Game Scale Score ranging from 0 to 9

1. Preoccupation with video games
2. Withdrawal symptoms when gaming is taken away
3. Need to spend increasing amounts of time gaming [tolerance]
4. Unsuccessful attempts to control participation in gaming [loss of control]
5. Loss of interest in hobbies and entertainment as a result of gaming
6. Continued excessive use of video games despite knowledge of psychosocial problems
7. Deceptions of family members, therapist, or others regarding amount of time playing video games
8. Use of gaming to escape or relieve a negative mood
9. Loss of a significant relationship, job, or educational or career opportunity because of participation in gaming

Number of PG criteria endorsed	Number and percentage of participants (*N* = 211)
0	(*n* = 3; 1.4%)
1	(*n* = 9; 4.3%)
2	(*n* = 21; 10%)
3	(*n* = 39; 18.7%)
4	(*n* = 46; 21.1%)
5	(*n* = 37; 17.7%)
6	(*n* = 22; 10.5%)
7	(*n* = 24; 11.5%)
8	(*n* = 9; 4.3%)
9	(*n* = 1; 0.5%)

(*M* = 4.35 criteria endorsed; *SD* = 1.88)

Analysis and Results

1. **Upon examining facets of sensation seeking, emotion dysregulation, and competitiveness which of these predictors would account for a significant portion of problem gaming variance over and above the variance accounted for by age and gender?**

- Preliminary sequential regression analysis predicting problem gaming severity (*n* = 209)

- Step 1: Age and gender

- Step 2:
    - Sensation Seeking Scale Form V
    - Difficulties in Emotion Scale - Short Form
    - Competitiveness Orientation Measure

Results

- Step 1:
  - Gender found to be significant predictor of problem gaming severity $t(207) = 5.12$, $p < .001$, $R^2 = .15$. Males endorsed more problem gaming criteria.

- Step 2:
  - Competitiveness, sensation seeking, and emotion dysregulation $F(3, 198)$ for r^2 change = .24, $p < .001$ (multiple $R = .39$)
  - All 3 predictors found to make a unique contribution:
    - Competitiveness r^2 change = .08
    - Emotion dysregulation r^2 change = .11
    - Sensation seeking r^2 change = .05

Results

2. Do predictors of problem gaming differ between those who identify as playing mostly shooter games and those who identify as playing mostly role-playing virtual world games?

- Two additional regression analyses were performed:
  - Action/First Person shooter games (*n* = 100). Significant predictors:
    1. Gender r^2 change = .14
    2. Competitiveness r^2 change = .11
    3. Sensation seeking r^2 change = .09
  - Role playing games (*n* = 107). Only significant predictor:
    1. Emotion dysregulation r^2 change = .24

Discussion

- Entry of the competitiveness, sensation seeking, and emotion regulation scales accounted for a significant proportion (24%) of problem gaming variance after age and gender had been accounted for.

- However, upon further examination these predictors differed depending on the participants game of choice
  - Gender, competitiveness, and sensation seeking scales were significant among those who played mostly action/shooter games
  - While only the emotion regulation scale was significant among those who played mostly role-playing games

Implications

- Fulfilling ones desire for competitiveness and sensation seeking via action packed shooter games may become problematic for some individuals - particularly males
  - May be less likely to give up because they want to beat their opponent or conquer game objectives
  - May seek out video games that provide increased opportunity for competition

- Those who struggle with regulating or managing difficult emotions appear to be at an increased risk of developing problems associated with role-playing type games.
  - May use these games as a form of distraction from the stressors associated with everyday life
  - May come to prefer their ‘online’ identity to that of their ‘real world’ identity

Future Research

- What other factors may predict problem gaming severity among those who prefer role-playing games?
  - High levels of cooperation
  - Socially anxious or shy individuals

- What about deficits in attention?
  - Children diagnosed with ADHD are 2-3 times more likely to develop a gaming problem
  - Symptoms of inattention have been found to be a stronger predictor of increased gaming frequency and problem gaming than symptoms of hyperactivity among adults (Panagiotidi, 2017)

Problem gaming and attention deficits

- Hand-eye coordination

- Constant information processing
  - Player chat (voice & text)
  - Manage short & long-term objectives
  - Presented with constant novel stimuli

Thank you