Problem video gaming in adolescents: An examination of the Pathways Model

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ABSTRACT

Problem video gaming (PVG) as a behavioral addiction contributes to physical, psychological, and inter-personal issues and is associated with increased mental health issues. Estimated prevalence rates for PVG range from 1.7% to 10% among adolescent and adult samples. Further, adolescence is a developmental period marked by substantial changes that occur biologically, cognitively, socially, and emotionally, increasing likelihood of excessive engagement in video gaming. Like other behavioral addictions, it has been proposed that PVGs are part of a heterogeneous group with different profiles dependent on specific factors that define them. Thus, the following study aims to test one of the most widely accepted frameworks for gambling, the Pathways Model, to explain the etiology of PVG among adolescents. Utilizing a cross-sectional design and self-report questionnaire from high-school students in Wood County, Ohio, the study included 228 PVGs (score of 30+ on IGDS-9; 64.9% male). Additional measures examined hours played, internalizing (anxiety/depression), and externalizing (aggression/ delinquency) problems. A latent class analysis concluded 6 classes and provided preliminary support for three distinct subgroups like those proposed by the original Pathways Model. Findings suggest that gamers form a heterogeneous group with each profile requiring different considerations in developing targeted treatments. Implications for future research are discussed.

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INTRODUCTION

- Recent reports have indicated that nearly 3.1 billion people worldwide play video games[1]. In 2019, the World Health Organization (WHO) recognized problem video gaming (PVG) as a mental disorder (termed gaming disorder), characterized by a persistent engagement in gaming, impaired control over gaming, and functional impairment due to gaming over a period of at least 12 months[2].
- Estimated prevalence rates for PVG range from 1.7% to 10% in adolescent and adult samples.[3]
- At particular risk, adolescents with PVG have shown increased levels of anxiety, depression, aggression, emotional distress and loneliness.[4]
- The Pathways Model, [5] a widely accepted framework for problem gambling has been suggested to explain the heterogeneous profiles of PVGs as well.
- Three pathways:
  - *Behavioral conditioned PVGs:* absence of specific premorbid psychopathologies.
  - *Emotionally vulnerable PVGs:* Present with premorbid anxiety and/or depression, hx of poor coping and problem-solving skills.
  - *Antisocial/Impulsivist PVGs:* Distinguished by features of impulsivity, antisocial behaviors, and/or attention deficits

STUDY OBJECTIVES

- The following study aims to test one of the most widely accepted frameworks for gambling, the Pathways Model,[5] to explain the etiology of PVG among adolescents.

METHODS AND MATERIALS

2020 Alcohol, Drug Addiction and Mental Health Services (ADAMHS) Board/Wood County Ohio Educational Service Center Survey on Alcohol and Other Drug Use. Ethical approval was granted by the ADAMHS ethics committee.

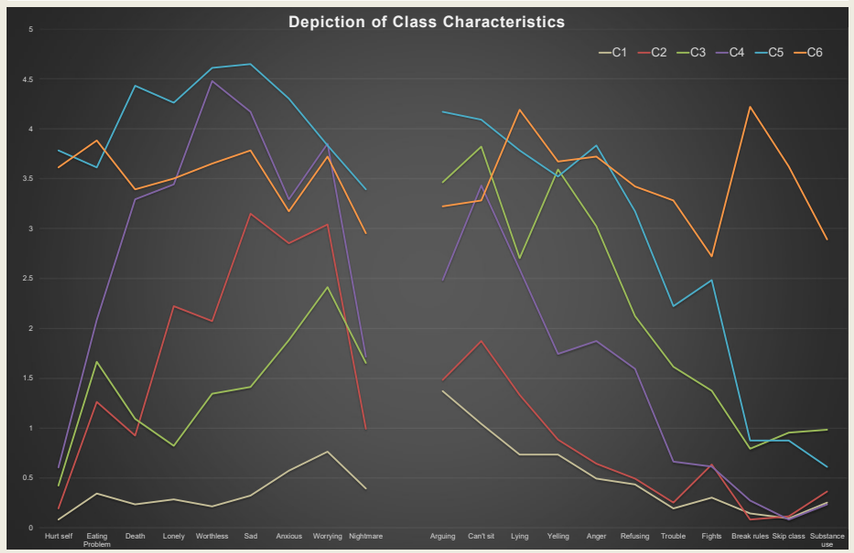
Measures:
Internet Gaming Disorders Scale- Short form (IGDS-9)[6]
Ohio Scales Youth Problem Severity Scale (PSS) [7]
Participants:
228 problem gamers (scores 30+ on IGDS-9)
64.9% male, M_{age} = 14.64, *SD* = 1.74 (range 12-18)

RESULTS

# of classes	BIC	Lo-Mendell-Rubin (*p* value)	Entropy
2	17,114	.00	.966
3	16,648	.44	.962
4	16,393	.26	.969
5	16,307	.39	.962
6	**16,251**	**.24**	**.966**
7	16,366	.32	.95

Six-Class Model of Problem Video Gamers

Class 1: Low internalizing (*M* = 3.18) & externalizing problems (*M* = 5.76) – BC Gamers
Class 2: Mild internalizing (*M* = 16.69) & low externalizing problems (*M* = 8.12) – At-risk
Class 3: Mild internalizing (*M* = 12.68) & moderate externalizing problems (*M* = 24.41) – At-risk
Class 4: Moderate internalizing (*M* = 26.93) & mild externalizing problems (*M* = 15.55) – EV Gamers
Class 5: High internalizing (*M* = 32.65) & moderate externalizing problems (*M* = 29.61) – EV Gamers
Class 6: High internalizing (*M* = 37.85) & externalizing problems (*M* = 38.23) – AI Gamers



DISCUSSION

Pathway 1 – Behaviorally Conditioned (BC)
- Class 1: adolescents with low to minimal internalizing and externalizing problems

Pathway 2 – Emotionally Vulnerable (EV)
- Class 2: adolescents considered at-risk of emotional vulnerability (mild internalizing and low externalizing)
- Class 4-5: adolescents with high internalizing problems and mild/moderate externalizing problems

Pathway 3 – Antisocial/Impulsivist (AI)
- Class 3: adolescents considered at-risk of AI (mild internalizing and moderate externalizing)
- Class 6: adolescents with high levels internalizing and externalizing symptoms including; *delinquency/conduct/oppositional behaviors*

IMPLICATIONS

- This study provides preliminary support for three distinct subgroups like those proposed by the original Pathways Model.
- Importance of prevention programs to be based on pathway type.
- Importance of initial evaluation when created treatment programs for PVGs.
- Each pathway (or type of PVG) requires different treatment measures in order to achieve best results for overall mental health and well-being.

REFERENCES

1. DFC Intelligence (2020); 2. WHO (2019); 3. Griffiths & Kuss, (2012); 4. Wartberg et al. (2019); 5. Blaszczynski, Nower (2002); 6. Pontes & Griffiths (2015); 7. Ogles et al. (2001)

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