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Psychological Distress and Problematic Video Gaming: The Role of Psychological Inflexibility and Emotion Dysregulation

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PSYCHOLOGICAL DISTRESS AND PROBLEMATIC VIDEO GAMING: THE ROLE OF PSYCHOLOGICAL INFLEXIBILITY AND EMOTION DYSREGULATION

A Thesis

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by

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ABSTRACT

Our increasingly technology-driven society has seen a dramatic increase in reports of problematic video gaming. Emerging evidence suggests that psychological distress and avoidance lead to problematic internet use in psychologically vulnerable individuals (Burleigh et al., 2017; Rapinda et al., 2021; Yang et al., 2021). There is also evidence that this process is associated with psychological inflexibility and emotion dysregulation, which are two psychological mechanisms thought to be predictive of maladaptive coping. (Chou et al., 2017; Blasi et al., 2019). Although existing evidence points to a role of uncontrolled processes in maladaptive behavior, psychological mechanisms in which distressed individuals specifically develop problematic gaming are under researched. We expanded on this research by investigating the role of inflexible and uncontrolled responses to adversity in problematic video gaming. Specifically, we hypothesized that psychological distress and loneliness would predict problematic video gaming, and these relationships would be mediated by psychological inflexibility and emotion dysregulation. We conducted online surveys to measure these states and processes in a sample of 200 undergraduate students. We found that psychological inflexibility but not emotion dysregulation mediated the relationship between psychological distress/loneliness and problematic gaming. Clinical and theoretical implications of findings are discussed to inform efforts to prevent, treat, and classify excessive gaming behavior.

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CHAPTER ONE

INTRODUCTION

Statement of the Problem

The surge of technological innovation in recent decades has naturally resulted in a dearth of studies examining psychological sequelae of technology use. In the domain of video games, online gaming has seen a global and exponential increase in popularity. Although internet video gaming has benefits as a source of entertainment, distraction, or social connection, many children and adults develop problematic relationships with their gaming indulgence. There is evidence that this problematic gaming behavior is a worldwide issue arising in many western and eastern countries (Cheng et al., 2018), and one meta-analysis indicates a prevalence of 3.3% (Kim et al., 2022). The Diagnostic and Statistical Manual of Mental Disorders Fifth Revision (DSM-5; American Psychiatric Association, 2013) refers to this phenomenon as Internet Gaming Disorder, and states that people with this condition develop significant impairment or distress in several aspects of their lives (American Psychiatric Association, 2013). The current literature has not sufficiently provided consensus on the processes underlying the development of these excessive video gaming behaviors and thus investigating the etiology of this condition is necessary to inform efforts to prevent and treat individuals struggling with these problematic behaviors. This study expanded on this limited research by analyzing whether the observed relationships between psychological distress and problematic video gaming is

indirect and whether the processes of emotion dysregulation and psychological inflexibility account for this relationship.

Literature Review

Definition, Prevalence, and Nomenclature

In the literature, there are two terms most commonly used to refer to problematic video gaming. The American Psychiatric Association (2013) refers to it as Internet Gaming Disorder (IGD) and proposes it as a condition in which further research is needed to include it as an official diagnosis in the DSM-5. It is also commonly referred to as Gaming Disorder (GD) which is the name of the official diagnosis in the International Classification of Diseases 11th Revision (ICD-11; World Health Organization, 2019). These classifications are accompanied by diagnostic criteria within a biomedical model of addiction which parallels those of substance use disorders such as pre-occupation, withdrawal, and tolerance (Petry et al., 2014). The research shows a significant prevalence of this behavior globally. Kim et al. (2022) analyzed 61 studies that included 227,665 participants across 29 countries to provide prevalence estimates for Gaming Disorder. They pooled an overall prevalence of 3.3% with an estimate of 8.5% in men and 3.5% in women. After adjusting for publication bias, they estimated a prevalence of 1.4%. The researchers also noted that there was high heterogeneity in these studies which was influenced by participant demographics and methodological problems related to self-report surveys.

DSM-5 Proposed Diagnostic Criteria

The DSM-5 proposed diagnostic criteria for Internet Gaming Disorder as a proposed disorder requiring further study is conceptualized as an addictive disorder in which the symptomatology is consistent with substance use disorders (American Psychiatric Association, 2013). There are 9 symptoms listed in which five or more are necessary in a 12 month period for diagnosis. Similarly to substance use disorders, the first symptom is related to preoccupation with gaming behavior. The second symptom refers to withdrawal symptoms such as irritability, anxiety, or sadness when access to gaming is restricted. This is different from typical pharmacological dependence in which the symptoms are more physical and related to the specific substance of abuse. The third symptom is tolerance and refers to the need to engage in increasing amounts of gaming in order to satisfy urges to game. This symptom is also different from typical pharmacological tolerance with substance dependent tolerance symptoms and has more to do with one's need to spend increasing amounts of time gaming. The fourth symptom is characterized by one's unsuccessful attempts to control gaming indulgence (e.g., unsuccessful attempts to reduce gaming frequency or quit gaming). The fifth symptom is a loss of interest in previous hobbies, entertainment and other important activities and a preference for gaming. The sixth symptom is defined by the continued excessive use of Internet games despite knowledge and experience of psychosocial problems (e.g., loss of relationships, diminished social and occupational functioning). The seventh

symptom refers to deception and involves lying to others about time spent gaming. The eighth symptom refers to using video games to escape negative moods. The final symptom has to do with jeopardizing a relationship or responsibility due to gaming use.

Problematic Video Gaming: Associated States and Processes

To investigate the etiology of problematic video gaming, it is important to identify associated psychological states and processes associated with excessive gaming. Previous research shows that problematic video gaming is associated with higher levels of psychological distress such as depression, anxiety, and stress (Burleigh et al., 2018; Fazeli et al., 2020). Burleigh et al. (2018) employed a cross-sectional and longitudinal design to examine risk factors for IGD such as depression and attributes of the gamer-avatar relationship. They conducted three measurements over a period of 3 months in a sample of young Australian adults. Similarly to the current study, they measured problematic video gaming using the Internet Gaming Disorder Scale–Short Form 9 (IGDS-SF9). Using hierarchical linear regression models, they found that depressive symptoms consistently predict and precede the severity of Internet Gaming Disorder. They also found that the gamer-avatar relationship (e.g., attachment with the avatar, perceived self-presence of one's identity, etc.) was also predictive of IGD overtime. Since depression is prevalent in our technology-driven society, it makes sense that depression may lead to problematic indulgence in activities such as video gaming that provide immediate escape

from negative moods. Fazeli et al. (2020) also provide evidence that problematic video gaming is associated with psychological distress. They studied IGD within the context of psychological distress (i.e., depression, anxiety, stress) and negative health outcomes (i.e., insomnia, quality of life). They used a cross-sectional design to study these factors in adolescents during the COVID-19 outbreak. They found that IGD was associated with insomnia and diminished quality of life and that psychological distress mediated this relationship. This serves as further evidence for the association between psychological distress and IGD, and it further highlights the maladaptive and harmful nature of IGD. Together, these findings suggest the possibility that problematic gaming and other maladaptive coping strategies are used by individuals to deal with distressing psychological states.

Functional Similarities between Substance and Behavioral Addictions

It is unclear whether behavioral addictions should be understood in the same way as substance addictions. There is research that identifies similar neural mechanisms and dysfunction underlying substance use disorders and problematic video gaming. Using fMRI scans, Ge et al. (2017) compared differences in dorsolateral prefrontal cortex (DLPFC) function between individuals with Internet gaming disorder as well as individuals with nicotine dependence. They found that compared with healthy controls, individuals with IGD and individuals with nicotine dependence showed decreased functional connectivity in prefrontal areas associated with craving and impulse control. These findings

support the idea that the DLPFC, which is important for cognitive control processes, appears to be dysfunctional in both behavioral and substance addiction. Kim et al. (2019) also analyzed neurobiological similarities and differences between IGD and a substance use disorder. Their participants consisted of patients with alcohol use disorder (AUD), Internet Gaming Disorder, and healthy controls. They used PET scans to analyze metabolic connectivity differences between these groups. They found that there was an overall reduction in functional connectivity in both AUD patients and IGD patients compared to healthy controls in multiple brain areas. There were some areas that showed functional differences between AUD and IGD such as the occipital and parietal regions, but both disorders showed significant deficits in overall function compared to healthy controls. This literature was introduced to compare substance use disorders and problematic video gaming; however, we introduced this literature briefly to provide support for similar neurobiological underpinnings and thus classification schemes (DSM and ICD) for both substance and behavioral addictions. More research is needed to solidify the nomenclature of these phenomena.

Psychological Distress and Problematic Video Gaming

It is possible that the association between psychological distress and problematic video gaming is due to the distress one experiences as a result of excessive gaming; however, there is much more evidence for psychological distress as a predictor rather than an outcome of maladaptive video game

behavior. Reinecke (2009) used online surveys to study video game use in a sample of 1614 participants recruited from popular German gaming magazines. They used structural equation modeling (SEM) to test the relationships between a variety of variables related to well-being and coping. They found evidence that video games were systematically used after exposure to stress. Their results also showed that participants with emotion-focused coping styles tended to use games for coping more than participants with problem-focused coping styles. These results exemplify the avoidant process in which psychological distress leads to maladaptive gaming behavior. Rapinda et al. (2021) sampled 289 North American participants recruited from MTurk, an online marketplace for workers, to complete surveys to analyze the direction of relationship between depression and problematic gaming. They used a cross-lagged panel model to test temporal associations between depression and both time spent gaming and gaming-related problems. They found that depression consistently precedes gaming problems. This suggests that individuals are already distressed when engaging in excessive gaming, and they use gaming as a means to escape or manage distress.

There is more evidence that problematic video gaming may be a result of maladaptive coping tendencies. Plante et al. (2019) tested coping with stress and anxiety as an etiological factor in problematic video gaming. They tested this in a sample of 930 undergraduates at a midwestern university. They used serial mediation analyses to test if people with higher anxiety and who use video

games as a means of coping with that anxiety are more vulnerable to video game addiction. They found that anxiety and these video game coping behaviors predicted video game addiction symptoms which provides more evidence that distressed individuals engage in maladaptive coping through using video games. Yang et al. (2021) wanted to test the relationships between sense of coherence (i.e., the degree to which one is confident in their coping ability), psychological distress, escape motivation, and Internet addiction (IA). They used SEM in a sample of 4171 Chinese college students to test their hypotheses. They found that sense of coherence (the extent to which one is confident to cope) directly predicts IA and indirectly predicts IA through psychological distress and escapism. This provides further evidence that individuals use the Internet as an escape from psychological distress. Estevez et al. (2019) explored coping and problematic gaming within the context of attachment styles. They sampled 472 secondary education students to examine the relationships between attachment, coping, and behavioral addictions (i.e., gambling, gaming, Internet use). They used mediation analyses to test a variety of coping strategies as mediators in the relationship between attachment style and behavioral addictions. They found that avoidant coping as well as self-blame are associated with multiple behavioral addictions including problematic gaming. These findings suggest that distressed individuals often use video games as means to escape from psychological distress which often results in problematic video gaming.

Loneliness and Problematic Video Gaming

There is emerging evidence that problematic video gaming is associated with loneliness. Koban et al. (2021) studied the role of perceived stress, social interaction anxiety, and loneliness in compensatory video gaming. They sampled 3742 participants from a variety of video game-related forums at reddit.com. They used hierarchical regression models to analyze adverse gaming outcomes (i.e., sleep deprivation, loss of relationships,or job opportunities). They found that stress, social interaction anxiety, and loneliness each uniquely predicted negative gaming outcomes. Cudo et al. (2019) studied potential factors for problematic video gaming in emerging adulthood. They sampled 370 university students from Poland who had declared that they have been playing video games in the last year. They used self-report measures to test the role that loneliness, empathy, self-esteem, and self-efficacy play in problematic video gaming. They found that time spent playing computer games per week is directly associated with problematic video gaming. In males, they also found that personal distress mediated the relationships between self-esteem, loneliness, self-efficacy and PVG; however; they did not find this effect of loneliness in females. Travaglino et al. (2020) tested a model to understand how social and pathological factors interact with problematic video game use. They used online surveys to collect data from 304 Chinese university students. They found that identification as a gamer significantly predicted problematic video gaming through strong social support from gamer groups. They also found that support from students is

negatively associated with loneliness, and they found that perceived support from gamers is positively associated with loneliness. Together, these studies show that problematic video gaming may be a result of psychosocial distress and loneliness.

Psychological Inflexibility

Psychological inflexibility is defined as the dominance of avoidant and maladaptive psychological reactions to life demands over chosen values, commitment, and contingencies in guiding action (Bond et al., 2011). There are six subtypes of psychological inflexibility. Experiential avoidance is the tendency for an individual to avoid or distract themselves from negative thoughts and experiences. Lack of contact with the present moment refers to feelings of being on auto-pilot, going through the motions, or mindlessness. Self as content refers to one's tendency to be critical of their own thoughts and feelings which facilitates an unhealthy self-narrative. Fusion refers to one's perception of being trapped by negative thoughts and emotions. Lack of contact with values refers to the inability to prioritize or be aware of one's values. Finally, inaction refers to the dominance that negative thoughts and emotions have over one's ability to act on what is important to them.

Psychological Inflexibility and Problematic Video Gaming

Even though the existing literature repeatedly displays a relationship between psychological distress, and both maladaptive coping and problematic gaming, efforts to explain the mechanistic processes underlying these

relationships are lacking. One mechanistic explanation for maladaptive coping includes psychological inflexibility (Chou et al., 2017). Many studies show a significant relationship between psychological inflexibility and psychological distress (i.e., depression, anxiety, stress) even in diverse populations (Leleux-Labarge et al., 2015; Mendoza et al., 2018; Tavakoli et al., 2019). Additionally, in a related line of research, there is evidence that psychological inflexibility underlies substance use disorders or addictions. Mallik et al. (2021) studied the unique and shared influence of mindfulness and psychological flexibility on substance craving. They implemented a cross-sectional design to test their hypotheses in a sample of 284 treatment-seeking adults with substance related addiction. They found that psychological inflexibility and mindfulness each play a unique role in substance-related cravings. Levin et al. (2012) studied experiential avoidance within the context of alcohol use. They sampled 240 undergraduates in their first year in college. They implemented a cross-sectional design in which participants completed a diagnostic interview and online self-report survey. Using hierarchical linear regression analysis, they found that experiential avoidance, a dimension of psychological inflexibility, predicted problematic alcohol use even when controlling for psychological distress. Weeks et al. (2020) analyzed the relationship between minority stress and harmful youth outcomes. They used a sample of 152 LGB+ adolescents in which 88% identified as white. The participants completed an online survey which included measures of psychological inflexibility, minority stress, suicidality, and alcohol misuse. They

tested psychological inflexibility as a moderator in the relationship between minority stress and substance misuse and suicidality. They found that psychological inflexibility moderated the relationship between minority stress and substance misuse, but not the relationship between minority stress and suicidality. Together, these results show that psychological inflexibility consistently plays a role in problematic substance use.

There is also evidence that psychological inflexibility is associated with other problematic behaviors. Although there currently seems to be no evidence linking psychological inflexibility with problematic video gaming, there are few studies that analyzed psychological inflexibility within the domain of general Internet addiction. Chou et al. (2017) examined psychological inflexibility and experiential avoidance within the context of general Internet addiction (IA). They included a sample of 500 college students between 20 and 30 years old, where participants were instructed to complete an in-person survey that assessed psychological inflexibility, experiential avoidance, IA, and mental health symptoms. They found that psychological inflexibility and experiential avoidance was positively associated with IA. Cheng et al. (2015) tested psychological mechanisms underlying Internet addiction and psychosocial maladjustment also proposed avoidance and inflexibility as potential mechanisms underlying the relationship between psychological distress and general Internet addiction. They found that avoidant coping and coping inflexibility mediated this relationship, which further supports the notion that avoidance and inflexibility serve as

psychological mechanisms that may render distressed individuals vulnerable to problematic Internet behavior.

Emotion Dysregulation and Psychological Distress

Another potential mechanism underlying maladaptive coping includes difficulties with emotion regulation which is also known as emotion dysregulation (Farstad & von Ranson, 2021). Emotion regulation refers to the extent of one's ability to modulate an emotion or set of emotions (VandenBos, 2015). Emotion dysregulation is defined as difficulties in the awareness, understanding, and acceptance of emotions, and the ability to act in desired ways regardless of emotional state (Gratz & Roemer, 2004). Similarly to psychological inflexibility, there is evidence that emotion dysregulation is associated with psychological distress (Kaynakçı & Güneri, 2022) and substance use disorders (Dingle et al., 2018). Kaynakçı & Güneri (2022) tested the role of emotion dysregulation in the relationship between five facets of mindfulness (i.e., observing, describing, acting with awareness, nonjudging, and nonreactivity) and psychological distress. They sampled 620 undergraduate students between the ages of 18 and 30 years. They created a Structural Equation Model to test the role of emotion dysregulation in the process in which mindfulness predicts psychological distress. They found that their model accounted for 57% of variance in psychological distress. More specifically, they found that emotion dysregulation explained the relationship between these facets of mindfulness and psychological distress. These results suggest that although mindfulness is

important in managing psychological distress, emotion regulation plays a more crucial role in this process by facilitating the ability to practice mindfulness. Dingle et al. (2018) used a facial emotion expression flexibility task to experimentally test the role of difficulties in emotion regulation in substance use disorders. They compared emotion regulation difficulties between participants with substance use disorders and participants without them. They found that participants with substance use disorders experienced significantly more difficulties in all domains of emotion regulation as well as a higher tendency for negative self-views. These findings suggest that emotion dysregulation may serve as a mechanism in substance use disorders.

In addition to substance abuse, there is evidence that emotion dysregulation is associated with a variety of maladaptive/addictive behaviors. Kun et al. (2021) and Farstad and von Ranson (2021) provide evidence for emotion dysregulation as a mechanistic explanation for maladaptive coping. Kun et al. (2021) wanted to better understand the factors leading to exercise addiction. They tested the role of emotion dysregulation and eating disorders in the relationship between psychological distress and exercise addiction. They sampled 1,790 men and women between the ages of 18 and 60 years old. Participants were given online surveys where they self-reported their degree of emotion dysregulation, disordered eating, psychological distress, and exercise addiction. They created a mechanistic model in which they hypothesized that psychological distress leads to maladaptive coping through emotion

dysregulation and eating disorder symptoms. They found that emotion dysregulation mediated the relationship between psychological distress and exercise addiction which supports the mechanistic nature of emotion dysregulation in the relationship between psychological distress and maladaptive coping. Farstad & von Ranson (2021) also examined emotion dysregulation within the context of maladaptive coping. They tested their hypotheses in a sample of women who engaged in binge-eating as well as risky gambling. They found that emotion dysregulation was associated with both binge eating and problematic gambling. These studies provide evidence that emotion dysregulation plays an important role in maladaptive and excessive behavior.

Emotion Dysregulation and Problematic Video Gaming

There is recent research that tests the role of emotion dysregulation specifically in problematic video gaming. Blasi et al. (2019) assessed emotion regulation, problematic use, and escapism in 390 massively multiplayer online role-playing game (MMORPG) players. They define escapism as the involvement in video games to relax or to distract oneself from real-life problems (i.e., avoidance, maladaptive coping). They found that emotion dysregulation predicted problematic gaming, and escapism explained this relationship. These results show a process in which problematic gamers escape in online gaming as a maladaptive response to adverse emotions. Uçur & Dönmez (2021) investigated the role of emotion dysregulation and social support in adolescents engaging in problematic video gaming. They used a stepwise logistic regression

analysis to conclude that male identity, high emotion dysregulation and low perceived social support play an important role in problematic video gaming. Shin et al. (2022) studied potential neural mechanisms underlying problematic video gaming. They examined neural correlates of tasks related to response inhibition and emotional states in participants with and without problematic video gaming behavior. They found an increased activation of widespread brain networks related to impulsivity and emotion dysregulation in participants with problematic video gaming. These studies highlight the potentially essential role of emotion dysregulation specifically in problematic video gaming.

Study Overview and Hypotheses

Given the prevalence of maladaptive video gaming behavior and the associated mental and physical health sequelae, we expanded on the limited problematic gaming literature by examining the specific psychological states and processes that may lead to maladaptive video gaming. Guided by the existing literature, we proposed that psychological distress, loneliness, psychological inflexibility and emotion dysregulation will all be positively associated with problematic video gaming. Moreover, we hypothesize that psychological inflexibility and emotion dysregulation will mediate the relationships between psychological distress/loneliness and problematic video gaming and thus serve as mechanistic processes underlying the development of maladaptive video gaming in psychologically distressed/lonely individuals. This prediction is supported by the previously discussed literature in which psychological distress,

emotion dysregulation, and psychological inflexibility are consistently shown to be associated with each other as well as predictive of various forms of maladaptive coping, including problematic Internet use, behavioral and substance addictions.

CHAPTER TWO

METHOD

Participants

Participants consisted of 138 undergraduate students enrolled in psychology courses at a Hispanic-Serving Institution (HSI) in Southern California. Participants consisted of 60 men (43.5%), 74 women (53.6%), and 4 non-binary people (2.9%). Participants were between the ages of 18 and 54 with a mean age of 25.71 and a SD of 6.98. The ethnic composition of the sample was 68.1% Hispanic/Latino, 16.7% white, 5.8% indicated other, 5.1% were Asian American, 2.9% were African American, 0.7% were Native American, and 0.7% were Pacific Islanders. Participants were sampled through their institution's SONA research management system, a research participation database where participants receive the choice to select from a list of active studies. Participants were excluded if they indicated that they do not play video games. Participants were compensated for their time by receiving SONA credits, which count towards credit in their psychology courses at their instructor's discretion.

Materials

Demographics Form

A demographics form assessing participants' age, gender, ethnicity, weekly time spent playing video games, preferred gaming platform, and whether single-player or multiplayer gaming is preferred.

The Short Form Version of the Depression Anxiety Stress Scale (DASS-21; Henry and Crawford, 2005)

The DASS-21 is a 21-item, four-point Likert scale measuring depression, anxiety, and stress across three subscales and provides a total score. "I felt that I had nothing to look forward to" is a sample of one of the items. Items are rated on a Likert scale ranging from 0 to 3, where 0 = Did not apply to me at all and 3 = Applied to me very much or most of the time. The authors demonstrated adequate internal consistency across the subscales with α's ranging from .82 to .90 and a reported total score α = .93. The authors provide evidence of concurrent validity of the DASS-21 with the full DASS and two independent measures of anxiety and depression.

UCLA Loneliness Scale - Eight Item (ULS-8; Hays et al, 1987)

The ULS-8 is an 8-item, four-point Likert scale measuring the degree of loneliness. "I feel isolated from others" is a sample of one of the items. Items are rated on a Likert scale ranging from 0 to 3, where 0 = never and 3 = always. The authors demonstrated adequate internal consistency across multiple samples with Cronbach's α ranging from .89 to .94. The authors provide evidence of concurrent validity of the UCLA-9 with the full UCLA-20 and several independent measures of related constructs with correlation coefficients ranging from .66 to .95.

Internet Gaming Disorder Scale – Short-Form (IGDS9-SF; Pontes and Griffiths, 2015)

The IGDS9-SF is a 9-item, five-point Likert scale measuring proposed DSM-5 Internet Gaming Disorder symptoms including preoccupation, tolerance, withdrawal, and mood modification. “Do you systematically fail when trying to control or cease your gaming activity?” is a sample of one of the items. Items are rated on a Likert scale ranging from 1 to 5, where 1 = never and 5 = very often. The authors demonstrated adequate internal consistency with a reported total score of α = 87. The authors provide evidence of concurrent validity of the IGDS-9 with another measure of gaming problems (r = .82) and self-report of weekly gaming time (r = .32).

Multidimensional Psychological Flexibility Inventory (MPFI): Inflexibility Subscale (Rolffs et al., 2016)

The MPFI: Inflexibility Subscale (MPFI-I) consists of 30 items from the 60-item MPFI. The MPFI-I measures the six dimensions of Psychological Inflexibility from the Acceptance and Commitment Therapy (ACT) Hexaflex model including cognitive fusion, experiential avoidance, lack of contact with the present moment, fusion with the conceptualized self, and unclear values and lack of commitment. “I tried to distract myself when I felt unpleasant emotions” is a sample of one of the items. Items were measured on a six point Likert scale ranging from 0 to 6, where 0 = never true and 6 = always true. The authors demonstrated adequate internal consistency across multiple demographic groups with alpha coefficients

ranging from .95 to .97. The authors provide evidence of concurrent validity of the MPFI-I with three common measures of inflexibility with correlation coefficients ranging from .77 to .87.

Difficulties in Emotion Regulation Scale - Short Form (DERS-SF; Kaufman, 2016)

The DERS-SF is an 18-item, five-point Likert scale measuring the degree to which one has problems with emotional regulation across six measures including nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. “When I’m upset, I lose control over my behavior” is a sample of one of the items. Items were rated on a Likert scale ranging from 1 to 5, where 1 = almost never and 5 = almost always. The authors demonstrated adequate internal consistency with a reported total score of $\alpha = .94$. The authors provide evidence of concurrent validity of the DERS-SF with the full DERS with subscale correlation coefficients ranging from .91 to .98 and several independent measures of anxiety and depression with correlation coefficients ranging from .66 to .75.

Procedure

Participants used SONA, an online survey recruitment tool, to self-select to participate in the current study. On SONA, potential participants will choose from a list of active studies to participate in. Prior to selecting a given study, participants will have access to a brief description of each active study as well as the amount of SONA credits they may receive for participating in a given study.

Participants were only allowed to participate in the current study if they indicated that they play video games and were 18 years old or older. After committing to participate in the proposed study, participants received a link to participate in the study via Qualtrics, an online survey tool that was used to create and distribute the study surveys. Participants were informed of the potential minimal risks of participating and asked if they consent to participate. After completing the informed consent, consenting participants completed a series of questionnaires that assessed their psychological distress, psychological inflexibility, emotion dysregulation, and problematic video gaming behaviors. The order in which these questionnaires are presented was random. After completing the questionnaires, a demographics form was given to assess age, gender, ethnicity, income, time spent playing video games, and preferred platforms for gaming. After completing the survey, participants were provided with a post study information form describing the purpose of the study. Additionally, counseling resources were provided.

CHAPTER THREE

RESULTS

Design and Statistical Analyses

The current study employed a non-experimental and correlational design. We created and analyzed mediation models with measures of psychological distress and loneliness as independent variables (predictors) and problematic video gaming as the dependent variable (outcome). Emotion dysregulation and psychological inflexibility were the proposed mediator variables. Mediational hypotheses were tested using PROCESS (v4.1), an SPSS modeling macro that allows testing of mediation and moderation hypotheses (Hayes, 2018).

Descriptive Statistics and Correlational Analyses

Descriptive statistics, correlational analyses and alpha coefficients for all study variables are presented in Table 1. As hypothesized psychological distress, loneliness, psychological inflexibility and emotion dysregulation were all positively associated with problematic internet use (See Table 1.).

Mediation Analyses

Overall, results partially supported my study hypotheses. Psychological inflexibility but not emotion dysregulation mediated the relationships between psychological distress/loneliness and problematic gaming behaviors.

Psychological Distress Model

For the psychological distress model, analyses revealed that psychological inflexibility, but not difficulties with emotion regulation, mediated the relationship between psychological distress (i.e., anxiety, depression, and stress) and problematic gaming. Specifically, in the psychological distress model, psychological distress, psychological inflexibility, and difficulties with emotion regulation accounted for 17.48% of the variance in problematic internet gaming, F (3, 134) = 9.46, p = .0001. Psychological inflexibility (B = .05, t = 2.06, p < .05) but not difficulties with emotion regulation (B = .02, t = .45, p > .05) nor psychological distress (B = .08, t = 1.42, p > .05) accounted for unique variance in problematic internet gaming. Moreover, psychological inflexibility (95% CI [LL .0162; UL .361]) but not difficulties with emotion regulation (95% CI [LL -.1165; UL .1861]) mediated the psychological distress - problematic internet gaming relationship (See Figure 1.).

Loneliness Model

Similar results were found for the loneliness model where loneliness, psychological inflexibility, and difficulties with emotion regulation accounted for 18.75% of the variance in problematic internet gaming, F (3, 134) = 10.31, p = .0001. Specifically, psychological inflexibility (B = .05, t = 2.50, p < .05) and loneliness (B = .21, t = 2.04, p < .05) but not difficulties with emotion regulation (B = .03, t = .60, p > .05) accounted for unique variance in problematic video gaming. Moreover, psychological inflexibility (95% CI [LL .0172; UL .233]) but not

difficulties with emotion regulation (95% CI [LL -.0698; UL .1295]) mediated the loneliness-problematic internet gaming relationship (See Figure 2.).

CHAPTER FOUR

DISCUSSION

Overall, results partially supported our study hypotheses. We hypothesized that psychological inflexibility and emotion dysregulation would mediate the relationships between psychological distress/loneliness and problematic video gaming. While psychological distress, psychological inflexibility and emotion dysregulation were correlated with problematic video gaming, a multiple regression analysis revealed that only psychological inflexibility was a significant predictor of problematic gaming and the only mediator of the relationship between psychological distress and problematic video gaming. These findings suggest that psychologically distressed individuals develop problematic video gaming behaviors through experiential avoidance and inflexible coping approaches to emotional experiences that interfere with the commitment and pursuit of important life values/directions. The findings for the loneliness model revealed that loneliness and psychological inflexibility but not difficulties with emotion regulation were unique significant predictors of problematic gaming and that psychological inflexibility but not emotion regulation difficulties mediated the loneliness and problematic video gaming relationship. Together, these findings are consistent with previous literature where psychological inflexibility served as a mechanism through which psychologically vulnerable individuals (e.g., lonely or psychologically distressed) engage in maladaptive coping, e.g., problematic internet use and video gaming.

Contrary to our hypotheses, emotion dysregulation did not serve as a mechanism in the development of maladaptive video gaming. This is inconsistent with previous research showing that emotion dysregulation plays an important role in problematic video gaming (Blasi et al., 2019; Uçur & Dönmez, 2021). This inconsistency may be due to systematic differences between the current sample and the populations studied in previous research. Blasi et al. (2019) sampled participants who specifically play the computer game World of Warcraft whereas the current study included participants who indicated the use of video games in general. Blasi et al., participants may be systematically different from ours due to the strong motivation for escapism that was revealed in the Blasi et al. (2019) study. This may speak to the escapist potential of heavily social video games like MMORPGs due to their facilitation of belonging, prestige, and social connections. Also, our findings are also inconsistent with Uçur & Dönmez's (2021) findings. Uçur & Dönmez (2021) looked at the role of emotion dysregulation and social support in adolescents engaging in problematic video gaming, and they found that emotion dysregulation significantly predicted problematic video gaming. This inconsistency may be due to the different age demographic of participants that other researchers used to measure these relationships. They specifically included adolescent participants in their study while the current study was mostly made up of young adults. The role of emotion dysregulation in avoidance via gaming may be different in adolescents due to the unique set of challenges and emotions they face. Adolescents often experience a variety of emotions in

extreme ways and are at high-risk for developing psychiatric disorders as well as suicidal ideation (De Berardis et al., 2020). These challenges may be a more causal mechanism in emotion dysregulation which may yield more maladaptive behaviors in adolescence. Another potential explanation may be that the effects of emotion dysregulation are accounted for and expanded on by psychological inflexibility. The current study is the first to test the influence of emotion dysregulation and psychological inflexibility simultaneously in problematic video gaming. Our analyses revealed that when examined together, psychological inflexibility solely explained the relationship between psychological distress/loneliness and problematic video gaming even though emotion dysregulation was significantly associated with each of the constructs we examined. Consistent with this explanation, a post-hoc analysis with only emotion dysregulation as the mediator revealed that emotion dysregulation by itself mediated the loneliness-problematic gaming relationship but not the psychological distress-problematic gaming relationship. A possible explanation for this result is that the inability to regulate lonely feelings may result in seeking unconventional social connections such as in online gaming. This may be different from other forms of psychological distress such as anxiety and depression where those affected are more likely to engage in excessive gaming as a result of a broader tendency for avoidance versus seeking connection (e.g., psychological inflexibility). Together, these findings provide additional evidence

that psychological inflexibility is a more central mechanism in problematic video gaming.

We provide evidence that psychological inflexibility serves as a mechanism through which struggling individuals specifically develop maladaptive gaming behaviors. This is consistent with previous research showing that psychological inflexibility predicts maladaptive Internet use (Chou et al., 2017) as well as research showing the mechanistic nature of psychological inflexibility in problematic Internet use (Cheng et al., 2015). Since the majority of past research only looks at problematic internet use in general, our findings expand on this research by demonstrating that this process is also present specifically in problematic video gaming. There is research showing that problematic video gaming is associated with lower levels of mindfulness (Li et al., 2023) and higher tendency for experiential avoidance (García-Oliva & Piqueras, 2016). This may imply that in the face of psychological distress and loneliness, video gamers who lack goal-driven behavior, mindfulness, and an optimistic self-narrative are more vulnerable to experiential avoidance which manifests itself as pathological video gaming.

Clinical Implications

Significant findings may also inform the proposed classification of Internet Gaming Disorder in the Diagnostic and Statistical Manual of Mental Disorders which requires further research (American Psychiatric Association, 2013). Our findings are consistent with the proposed DSM-5 classification for Internet

Gaming Disorder. Specifically, we found that experiential avoidance, cognitive fusion, and lack of clear valued driven behaviors, three components of psychological inflexibility were strongly associated with problematic video gaming and the DSM-5 criteria of preoccupation with video games, use of video games for mood modification and an interference in social and occupational functioning due to gaming. Additionally, our results are consistent with the DSM-5 proposal of IGD as an addictive disorder due to the large presence of experiential avoidance, cognitive fusion, and lack of clear valued driven behaviors which are also key mechanisms in substance use disorders (Levin et al., 2012; Mallik et al., 2021).

Current findings also support the evidence based Hexaflex Model of Acceptance and Commitment Therapy (ACT) approaches, which targets the detrimental effects of experiential avoidance, diffuse values and reduced commitment to valued behaviors (Harris, 2006). Our results suggest that clinical intervention and prevention efforts for problematic video gaming should target loneliness as well as utilize ACT approaches to target psychological inflexibility as a means of addressing excessive gaming behavior. Current findings help expand on the limited research regarding the etiology and risk factors for problematic video gaming. Video gaming is one of many highly effective escape strategies from the experience of unpleasant psychological distress and thus is negatively reinforced via the temporary reduction of these unpleasant psychological states. Understanding the psychological processes underlying the

lack of control problematic gamers experience may serve as a tool for clinicians to improve the prevention and treatment of this phenomenon. Identifying and understanding specific mechanisms for this behavior gives professionals specific targets for the prevention of this behavior in their clients and communities. Findings may also help schools and parents address these potential issues in children by increasing their awareness of the relationships between loneliness, psychological distress, inflexible coping and problematic video gaming. Prevention efforts could include the teaching of psychological flexibility in parenting programs or school based social emotional learning programs with an emphasis on mindfulness, present moment awareness, diffusion strategies and the clarification of values and values driven pursuits.

Limitations and Future Directions

A potential limitation of the current study is the limited generalizability of findings due to the very specific population in which participants were sampled (i.e., undergraduates enrolled in psychology courses at a Hispanic Serving Institution). The sample of the current study may be systematically different from the general population in relevant domains such as their attitudes towards video games and their access to them. This is also inconsistent with much of the literature previously discussed in which the samples are from clinical populations. Since we are not able to diagnose any of our participants with Internet Gaming Disorder, symptoms and correlates of problematic video gaming may not be as accurately represented. Suggestions for future research include replicating the

results in a broader population as well as further examining the variables of interest in individuals who are already struggling with excessive video gaming. Another possible limitation may be related to how problematic video gaming is conceptualized by the scale used in the current study. This measurement comes from the DSM-5 proposed diagnostic criteria for Internet Gaming Disorder which is a proposed addictive disorder requiring further study (American Psychiatric Association, 2013). This conceptualization measures symptoms very similar to substance use disorder criteria which may not be an ideal way to measure problematic video gaming. Some researchers have suggested that this measurement may be over pathologizing normal gaming behavior (King et al., 2020). There is concern that there is a high risk of false positive classification in measurement tools for this disorder which may certainly influence the results of the current study. Other researchers have suggested that problematic video gaming may be a reflection other underlying mental health disorders such as social anxiety disorder (e.g., excessive use online games as an avoidance of in-person social interaction) or ADHD (Pettorruso et al., 2020). Future research should further test the psychometric properties of this scale in non-clinical populations as well as in populations diagnosed with related disorders.

Implementing a correlational prospective design to further analyze problematic gaming may yield more accurate results due to the proposed temporal and antecedent mechanistic nature of these processes. Since our cross-sectional data shows a single snapshot of the relationship between these

constructs, we are less certain of the direction of the relationship between psychological distress/loneliness and problematic gaming. It may be that problematic video gaming reduces an individual's psychological flexibility and triggers loneliness and psychological distress by giving people easy access to avoidant outlets. Likewise, it is possible that problematic video gaming increases one's psychological distress/loneliness through the neglect of social relationships, personal values, and responsibilities that are associated with these avoidant behaviors. Future research may implement a prospective design where participants are examined over time to properly assess the proposed directional temporal relationships in our study.

The recent rise in anxiety and depression in adolescents and emerging adults coupled with the continual exponential development of the internet, social media and video game technologies creates problematic avoidance avenues for psychologically distressed and lonely individuals. Consequently, problematic video gaming is likely to increase alongside this rise, and intervention for this behavior is increasingly becoming necessary. It is essential for researchers and clinicians to fully understand the processes and correlates of problematic video gaming to prevent this maladaptive cycle of technology aided avoidance coping.

APPENDIX A

TABLES

Table 1

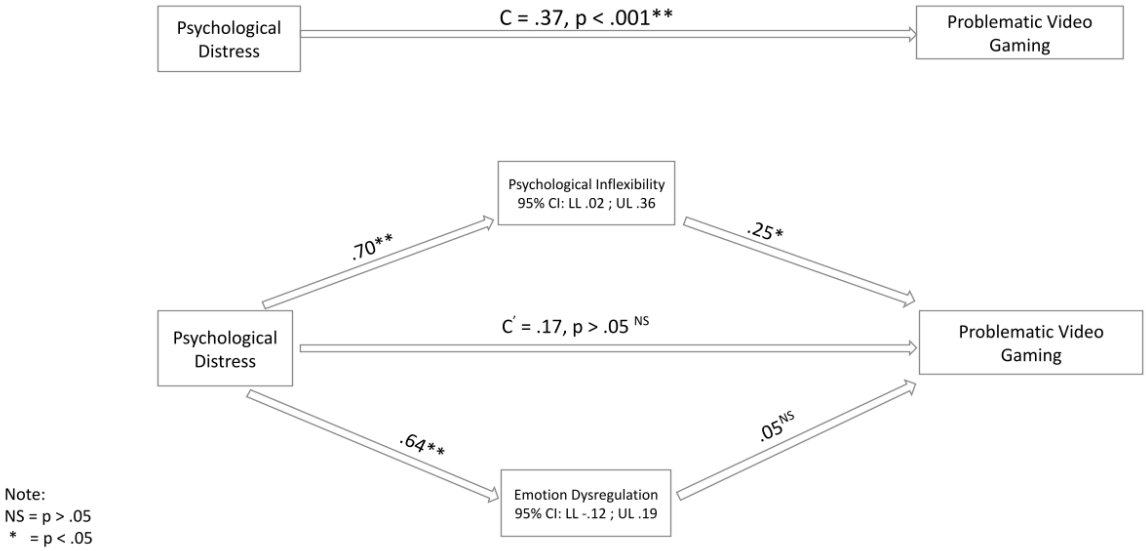
Descriptive Statistics, Internal Consistency, and Correlations for Study Variables

Variable	Mean (SD)	Scale alpha	Correlations				
			1	2	3	4	5
1. DASSTOT	38.04 (11.78)	.93	1.00				
2. UCLAL	17.16 (4.83)	.82	.485**	1.00			
3. DERST	40.44 (11.71)	.88	.640**	.429**	1.00		
4. MPFITOT	86.53 (27.29)	.96	.703**	.469**	.658**	1.00	
5. IGDTOT	16.20 (6.03)	.83	.371**	.336**	.318**	.395**	1.00

APPENDIX B

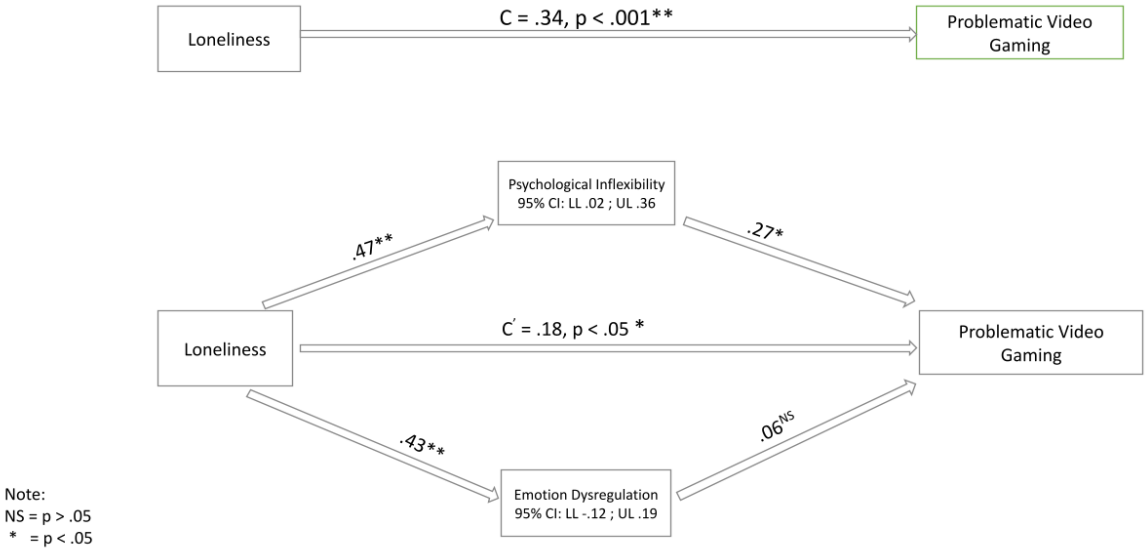
FIGURES

Figure 1. Psychological Distress Model



Note:
NS = p > .05
* = p < .05
** = p < .001
All coefficients are standardized.

Figure 2: Loneliness Model



Note:
NS = p > .05
* = p < .05
** = p < .001
All coefficients are standardized.

APPENDIX C

STUDY MEASURES

Demographics Form (Self-Developed)

Please answer each question to the best of your knowledge.
1. Age: _____
2. Gender: M ___ F ___ Other ___
3. Ethnicity:
Asian (Asian American) ____
African American (Black) ____
Caucasian (White)____
Native American ____
Latino (Hispanic) _____
Bi-cultural ____ (please specify multiple ethnic origins)
_____
Other ____ (please specify) _____

4. Please indicate your current weekly time spent playing video games on computers, consoles, and/or other gaming platforms (e.g., hand-held devices). Choose the one best category applicable to your gaming activity.
I do not play video games_____
Less than 7 hours_____
between 8 and 14 hours_____
between 15 and 20 hours_____
between 21 and 30 hours_____
between 31 and 40 hours_____
more than 40 hours_____

5. Please indicate the gaming platform that you spend the most time using.
Computers____
Consoles____
Mobile Devices____
Other____
N/A____

6. Please indicate whether you spend more time playing single player video games, offline multiplayer video games, or online multiplayer video games.
single player____
offline multiplayer____
online multiplayer____
N/A____

Depression Anxiety Stress Scale (DASS-21)

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree or a good part of time
3 Applied to me very much or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (e.g. in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

UCLA Loneliness Scale - 8 Item (UCLA-8)

Instructions: The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by checking the appropriate response for each question.

1. I lack companionship.
2. There is no one I can turn to.
3. I am an outgoing person.
4. I feel left out.
5. I feel isolated from others.
6. I can find companionship when I want it.
7. I am unhappy being so withdrawn.
8. People are around me but not with me.

Multidimensional Psychological Flexibility Inventory: Inflexibility Subscale (MPFI)

Please read each statement carefully and then select the answer which best describes how much the statement was true for you during the past two weeks.

Never True
Rarely True
Occasionally True
Often True
Very Often True
Always True

1. When I had a bad memory, I tried to distract myself to make it go away
2. I tire to distract myself when I felt unpleasant emotions
3. When unpleasant memories came to me, I tried to put them out of my mind
4. When something upsetting came up, I tried very hard to stop thinking about it
5. If there was something I didn't want to think about, I would try many things to get it out of my mind
6. I did most things on "automatic" with little awareness of what I was doing
7. I did most things mindlessly without paying much attention
8. I went through most days on auto-pilot without paying much attention to what I was thinking or feeling
9. I floated through most days without paying much attention

10. Most of the time I was just going through the motions without paying much attention
11. I did most things on "automatic" with little awareness of what I was doing.
12. I did most things mindlessly without paying much attention.
13. I went through most days on auto-pilot without paying much attention to what I was thinking or feeling
14. I floated through most days without paying much attention.
15. Most of the time I was just going through the motions without paying much attention
16. I thought some of my emotions were bad or inappropriate and I shouldn't feel them
17. I criticized myself for having irrational or inappropriate emotions
18. I believed some of my thoughts are abnormal or bad and I shouldn't think that way
19. I told myself that I shouldn't be feeling the way I'm feeling
20. I told myself I shouldn't be thinking the way I was thinking
21. Negative thoughts and feelings tended to stick with me for a long time.
22. Distressing thoughts tended to spin around in my mind like a broken record.
23. It was very easy to get trapped into unwanted thoughts and feelings.
24. When I had negative thoughts or feelings it was very hard to see past them.
25. When something bad happened it was hard for me to stop thinking about it.
26. My priorities and values often fell by the wayside in my day to day life
27. When life got hectic, I often lost touch with the things I value
28. The things that I value the most often fell off my priority list completely
29. I didn't usually have time to focus on the things that are really important to me
30. When times got tough, it was easy to forget about what I truly value
31. Negative feelings often trapped me in inaction
32. Negative feelings easily stalled out my plans
33. Getting upset left me stuck and inactive
34. Negative experiences derailed me from what's really important
35. Unpleasant thoughts and feelings easily overwhelmed my efforts to deepen my life

Difficulties in Emotion Regulation Scale - Short Form (DERS-SF)

Please indicate how often the following apply to you.

1 = Almost Never (0-10%)

2 = Sometimes (11-35%)

3 = About Half Of the Time (36-65%)

4 = Most Of The Time (66-90%)

5 = Almost Always (91-100%)

1. I pay attention to how I feel
2. I have no idea how I am feeling
3. I have difficulty making sense out of my feelings
4. I care about what I am feeling
5. I am confused about how I feel
6. When I'm upset, I acknowledge my emotions
7. When I'm upset, I become embarrassed for feeling that way
8. When I'm upset, I have difficulty getting work done
9. When I'm upset, I become out of control
10. When I'm upset, I believe that I will end up feeling very depressed
11. When I'm upset, I have difficulty focusing on other things
12. When I'm upset, I feel guilty for feeling that way
13. When I'm upset, I have difficulty concentrating
14. When I'm upset, I have difficulty controlling my behaviors
15. When I'm upset, I believe there is nothing I can do to make myself feel better
16. When I'm upset, I become irritated with myself for feeling that way
17. When I'm upset, I lose control over my behavior
18. When I'm upset, it takes me a long time to feel better

Internet Gaming Disorder Scale–Short-Form (IGDS9-SF)

Instructions: These questions will ask you about your gaming activity during the past year (i.e., last 12 months). By gaming activity we understand any gaming-related activity that has been played either from a computer/laptop or from a gaming console or any other kind of device (e.g., mobile phone, tablet, etc.) both online and/or offline

1. Do you feel preoccupied with your gaming behavior? (Some examples: Do you think about previous gaming activity or anticipate the next gaming session? Do you think gaming has become the dominant activity in your daily life?)
2. Do you feel more irritability, anxiety or even sadness when you try to either reduce or stop your gaming activity?
3. Do you feel the need to spend increasing amount of time engaged gaming in order to achieve satisfaction or pleasure?
4. Do you systematically fail when trying to control or cease your gaming activity?
5. Have you lost interests in previous hobbies and other entertainment activities as a result of your engagement with the game?
6. Have you continued your gaming activity despite knowing it was causing problems between you and other people?
7. Have you deceived any of your family members, therapists or others because the amount of your gaming activity?
8. Do you play in order to temporarily escape or relieve a negative mood (e.g., helplessness, guilt, anxiety)?
9. Have you jeopardized or lost an important relationship, job or an educational or career opportunity because of your gaming activity?

APPENDIX D

IRB MATERIALS

IRB Confirmation Email

CSUSB INSTITUTIONAL REVIEW BOARD
Administrative/Exempt Review Determination
Status: Exempt
IRB-FY2022-133

Michael Lewin Frank Nieblas
CSBS - Psychology
California State University, San Bernardino
5500 University Parkway
San Bernardino, California 92407

Dear Michael Lewin Frank Nieblas :

Your application to use human subjects, titled “The Relationship between Psychological Distress, Emotion Dysregulation, Psychological Inflexibility and Problematic Video Gaming” has been reviewed and determined exempt by the Institutional Review Board (IRB) of California State University, San Bernardino under the federal regulations at 45 CFR 46. As the researcher under the exempt category, you do not have to follow the requirements under 45 CFR 46 which requires annual renewal and documentation of written informed consent which are not required for the exempt category. However, exempt status still requires you to attain consent from participants before conducting your research as needed.

Your IRB proposal is approved. You are permitted to collect information from **[200]** participants for **[1 SONA credit]**from **[SONA]**. This approval is valid from November 4, 2021.

This approval notice does not replace any departmental or additional campus approvals which may be required including access to CSUSB campus facilities and affiliate campuses. Investigators should consider the changing COVID-19 circumstances based on current CDC, California Department of Public Health, and campus guidance and submit appropriate protocol modifications to the IRB as needed. CSUSB campus and affiliate health screenings should be completed for all campus human research related activities. Human research activities conducted at off-campus sites should follow CDC, California Department of Public Health, and campus guidance. See CSUSB's COVID-19 Prevention Plan for more information regarding campus requirements.

Your responsibilities as the investigator include reporting to the IRB Committee the following three requirements highlighted below. Please note, failure of the investigator to notify the IRB of the below requirements may result in disciplinary action.

- **Submit a protocol modification (change) form if any changes (no matter how minor) are proposed in your study for review and approval by the IRB before being implemented in your study to ensure the risk level to participants has not increased,**

- **Submit an unanticipated/adverse events form if harm is experienced by subjects during your research, and**
- **Submit a study closure through the Cayuse IRB submission system when your study has ended.**
- **Ensure your CITI human subjects training is kept up-to-date and current throughout the study for all investigators.**

The protocol modification, adverse/unanticipated event, and closure forms are located in the Cayuse Human Ethics (IRB) System. If you have any questions regarding the IRB decision, please contact Michael Gillespie, the Research Compliance Officer. Mr. Michael Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at mgillesp@csusb.edu. Please include your application approval identification number (listed at the top) in all correspondence.

If you have any questions regarding the IRB decision, please contact Dr. Jacob Jones, Assistant Professor of Psychology. Dr. Jones can be reached by email at Jacob.Jones@csusb.edu. Please include your application approval identification number (listed at the top) in all correspondence.

Best of luck with your research.

Sincerely,

Nicole Dabbs

Nicole Dabbs, Ph.D., IRB Chair
CSUSB Institutional Review Board

ND/MG

REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Blasi, M. D., Giardina, A., Giordano, C., Coco, G. L., Tosto, C., Billieux, J., & Schimmenti, A. (2019). Problematic video game use as an emotional coping strategy: Evidence from a sample of MMORPG gamers. *Journal of Behavioral Addictions*, 8(1), 25–34. https://doi-org.libproxy.lib.csusb.edu/10.1556/2006.8.2019.02

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., Waltz, T., & Zettle, R. D. (2011). Preliminary psychometric properties of the Acceptance and Action Questionnaire–II: A revised measure of psychological inflexibility and experiential avoidance. *Behavior Therapy*, 42(4), 676–688. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.beth.2011.03.007

Burleigh, T. L., Stavropoulos, V., Liew, L. W. L., Adams, B. L. M., & Griffiths, M. D. (2018). Depression, internet gaming disorder, and the moderating effect of the gamer-avatar relationship: An exploratory longitudinal study. *International Journal of Mental Health and Addiction*, 16(1), 102–124. https://doi-org.libproxy.lib.csusb.edu/10.1007/s11469-017-9806-3

Cheng, C., Sun, P., & Mak, K.-K. (2015). Internet addiction and psychosocial maladjustment: Avoidant coping and coping inflexibility as psychological

mechanisms. *Cyberpsychology, Behavior, and Social Networking*, 18(9), 539–546. https://doi-org.libproxy.lib.csusb.edu/10.1089/cyber.2015.0121

Cheng, C., Cheung, M. W.-L., & Wang, H. (2018). Multinational comparison of internet gaming disorder and psychosocial problems versus well-being: Meta-analysis of 20 countries. *Computers in Human Behavior*, 88, 153–167. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.chb.2018.06.033

Chou, W.-P., Lee, K.-H., Ko, C.-H., Liu, T.-L., Hsiao, R. C., Lin, H.-F., & Yen, C.-F. (2017). Relationship between psychological inflexibility and experiential avoidance and internet addiction: Mediating effects of mental health problems. *Psychiatry Research*, 257, 40–44. https://doi.org/10.1016/j.psychres.2017.07.021

Cudo, A., Kopiś, N., & Zabielska-Mendyk, E. (2019). Personal distress as a mediator between selfesteem, self-efficacy, loneliness and problematic video gaming in female and male emerging adult gamers. *PLoS ONE, 14*(12). https://doi-org.libproxy.lib.csusb.edu/10.1371/journal.pone.0226213

De Berardis, D., Fornaro, M., Orsolini, L., Ventriglio, A., Vellante, F., & Di Giannantonio, M. (2020). Emotional Dysregulation in Adolescents: Implications for the Development of Severe Psychiatric Disorders, Substance Abuse, and Suicidal Ideation and Behaviors. *Brain sciences*, 10(9), 591. https://doi.org/10.3390/brainsci10090591

Dingle, G. A., da Costa Neves, D., Alhadad, S. S. J., & Hides, L. (2018). Individual and interpersonal emotion regulation among adults with substance use disorders and matched controls. *British Journal of Clinical Psychology*, 57(2), 186–202. https://doi-org.libproxy.lib.csusb.edu/10.1111/bjc.12168

Estevez, A., Jauregui, P., & Lopez, G. H. (2019). Attachment and behavioral addictions in adolescents: The mediating and moderating role of coping strategies. *Scandinavian Journal of Psychology*, 60(4), 348–360. https://doi-org.libproxy.lib.csusb.edu/10.1111/sjop.12547

Farstad, S. M., & von Ranson, K. M. (2021). Binge eating and problem gambling are prospectively associated with common and distinct deficits in emotion regulation among community women. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, 53(1), 36–47. https://doi-org.libproxy.lib.csusb.edu/10.1037/cbs0000239

Fazeli, S., Mohammadi Zeidi, I., Lin, C.-Y., Namdar, P., Griffiths, M. D., Ahorsu, D. K., & Pakpour, A. H. (2020). Depression, anxiety, and stress mediate the associations between internet gaming disorder, insomnia, and quality of life during the COVID-19 outbreak. *Addictive Behaviors Reports, 12*. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.abrep.2020.100307

García-Oliva, C., & Piqueras, J. A. (2016). Experiential avoidance and technological addictions in adolescents. *Journal of Behavioral Addictions,*

5(2), 293–303. https://doi-org.libproxy.lib.csusb.edu/10.1556/2006.5.2016.041

Ge, X., Sun, Y., Han, X., Wang, Y., Ding, W., Cao, M., Du, Y., Xu, J., & Zhou, Y. (2017). Difference in the functional connectivity of the dorsolateral prefrontal cortex between smokers with nicotine dependence and individuals with internet gaming disorder. *BMC neuroscience*, 18(1), 54. https://doi.org/10.1186/s12868-017-0375-y

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41–54. https://doi-org.libproxy.lib.csusb.edu/10.1023/B:JOBA.0000007455.08539.94

Harris, R.F. (2006). Embracing your demons: an overview of acceptance and commitment therapy. *Psychotherapy in Australia*, 12, 70.

Hayes, A. F. (2018). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (2nd ed.). *Guilford Press*.

Henry, J. D., & Crawford, J. R. (2005). The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. *The British journal of Clinical Psychology*, 44(Pt 2), 227–239. https://doi.org/10.1348/014466505X29657

Kaufman, E. A., Xia, M., Fosco, G., Yaptangco, M., Skidmore, C. R., & Crowell, S. E. (2016). The Difficulties in Emotion Regulation Scale Short Form

(DERS-SF): Validation and replication in adolescent and adult samples. *Journal of Psychopathology and Behavioral Assessment*, 38(3), 443–455. https://doi.org/10.1007/s10862-015-9529-3

King, D. L., Billieux, J., Carragher, N., & Delfabbro, P. H. (2020). Face validity evaluation of screening tools for gaming disorder: Scope, language, and overpathologizing issues. *Journal of Behavioral Addictions*, 9(1), 1–13. https://doi.org/10.1556/2006.2020.00001

Koban, K., Biehl, J., Bornemeier, J., & Ohler, P. (2021). Compensatory video gaming Gaming behaviours and adverse outcomes and the moderating role of stress, social interaction anxiety, and loneliness. *Behaviour & Information Technology*. https://doi-org.libproxy.lib.csusb.edu/10.1080/0144929X.2021.1946154

Ünlü Kaynakçı, F. Z., & Yerin Güneri, O. (2022). Psychological distress among university students: the role of mindfulness, decentering, reappraisal and emotion regulation. *Current Psychology*. https://doi.org/10.1007/s12144-021-02682-8

Kim, H. S., Son, G., Roh, E.-B., Ahn, W.-Y., Kim, J., Shin, S.-H., Chey, J., & Choi, K.-H. (2022). Prevalence of gaming disorder: A meta-analysis. *Addictive Behaviors*, 126. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.addbeh.2021.107183

Kim, H., Kim, Y. K., Lee, J. Y., Choi, A. R., Kim, D. J., & Choi, J. S. (2019). Hypometabolism and altered metabolic connectivity in patients with

internet gaming disorder and alcohol use disorder. *Progress in Neuro-psychopharmacology & Biological Psychiatry, 95*, 109680. https://doi.org/10.1016/j.pnpbp.2019.109680

Kun, B., Urbán, R., Szabo, A., Magi, A., Eisinger, A., & Demetrovics, Z. (2021). Emotion dysregulation mediates the relationship between psychological distress, symptoms of exercise addiction and eating disorders: A large-scale survey among fitness center users. *Sport, Exercise, and Performance Psychology.* https://doi-org.libproxy.lib.csusb.edu/10.1037/spy0000274

Leleux-Labarge, K., Hatton, A. T., Goodnight, B. L., & Masuda, A. (2015). Psychological distress in sexual minorities: Examining the roles of self-concealment and psychological inflexibility. *Journal of Gay & Lesbian Mental Health*, 19(1), 40–54. https://doi-org.libproxy.lib.csusb.edu/10.1080/19359705.2014.944738

Levin, M. E., Lillis, J., Seeley, J., Hayes, S. C., Pistorello, J., & Biglan, A. (2012). Exploring the relationship between experiential avoidance, alcohol use disorders, and alcohol-related problems among first-year college students. *Journal of American College Health: J of ACH, 60*(6), 443–448. https://doi.org/10.1080/07448481.2012.673522

Li Anthony, W., Mills, D. J., Stanmyre, J. F., & Nower, L. (2023). Facets of mindfulness among video game players: A latent profile analysis.

Psychology of Addictive Behaviors. https://doi-org.libproxy.lib.csusb.edu/10.1037/adb0000904

Mallik, D., Kaplan, J., Somohano, V., Bergman, A., & Bowen, S. (2021). Examining the Role of Craving, Mindfulness, and Psychological Flexibility in a Sample of Individuals with Substance Use Disorder. *Substance use & misuse*, 56(6), 782–786. https://doi.org/10.1080/10826084.2021.1899220

Mendoza, H., Goodnight, B. L., Caporino, N. E., & Masuda, A. (2018). Psychological distress among Latina/o college students: The roles of self-concealment and psychological inflexibility. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, 37(1), 172–179. https://doi-org.libproxy.lib.csusb.edu/10.1007/s12144-016-9500-9

Petry, N. M., Rehbein, F., Gentile, D. A., Lemmens, J. S., Rumpf, H. J., Mößle, T., Bischof, G., Tao, R., Fung, D. S., Borges, G., Auriacombe, M., González Ibáñez, A., Tam, P., & O'Brien, C. P. (2014). An international consensus for assessing internet gaming disorder using the new DSM-5 approach. *Addiction (Abingdon, England)*, 109(9), 1399–1406. https://doi.org/10.1111/add.12457

Pettorruso, M., Valle, S., Cavic, E., Martinotti, G., di Giannantonio, M., & Grant, J. E. (2020). Problematic Internet use (PIU), personality profiles and emotion dysregulation in a cohort of young adults: trajectories from risky behaviors to addiction. *Psychiatry research*, 289, 113036. https://doi.org/10.1016/j.psychres.2020.113036

Plante, C. N., Gentile, D. A., Groves, C. L., Modlin, A., & Blanco-Herrera, J. (2019). Video games as coping mechanisms in the etiology of video game addiction. *Psychology of Popular Media Culture*, 8(4), 385–394. https://doi-org.libproxy.lib.csusb.edu/10.1037/ppm0000186

Pontes, H. M., & Griffiths, M. D. (2015). Measuring DSM-5 Internet Gaming Disorder: Development and validation of a short psychometric scale. *Computers in Human Behavior*, 45, 137–143. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.chb.2014.12.006

Rapinda, K. K., Kempe, T., Kruk, R. S., Edgerton, J. D., Wallbridge, H. R., & Keough, M. T. (2021). Examining the temporal associations between depression and pathological gaming. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, 53(3), 274–284. https://doi-org.libproxy.lib.csusb.edu/10.1037/cbs0000197.supp (Supplemental)

Reinecke, L. (2009). Games and recovery: The use of video and computer games to recuperate from stress and strain. *Journal of Media Psychology: Theories, Methods, and Applications*, 21(3), 126–142. https://doi-org.libproxy.lib.csusb.edu/10.1027/1864-1105.21.3.126

Rolffs, J. L., Rogge, R. D., & Wilson, K. G. (2018). Disentangling components of flexibility via the hexaflex model: Development and validation of the Multidimensional Psychological Flexibility Inventory (MPFI). *Assessment*,

25(4), 458–482. https://doi-org.libproxy.lib.csusb.edu/10.1177/1073191116645905

Shin, Y. B., Kim, H., Kim, S. J., & Kim, J. J. (2021). A neural mechanism of the relationship between impulsivity and emotion dysregulation in patients with Internet gaming disorder. *Addiction Biology, 26(3)*, e12916. https://doi.org/10.1111/adb.12916

Tavakoli, N., Broyles, A., Reid, E. K., Sandoval, J. R., & Correa-Fernández, V. (2019). Psychological inflexibility as it relates to stress, worry, generalized anxiety, and somatization in an ethnically diverse sample of college students. *Journal of Contextual Behavioral Science*, 11, 1–5. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.jcbs.2018.11.001

Travaglino, G. A., Li, Z., Zhang, X., Lu, X., & Choi, H.-S. (2020). We are all in this together: The role of individuals' social identities in problematic engagement with video games and the internet. *British Journal of Social Psychology, 59(2)*, 522–548. https://doi-org.libproxy.lib.csusb.edu/10.1111/bjso.12365

Uçur, Ö., & Dönmez, Y. E. (2021). Problematic internet gaming in adolescents, and its relationship with emotional regulation and perceived social support. *Psychiatry research*, 296, 113678. https://doi.org/10.1016/j.psychres.2020.113678

VandenBos, G. R. (2015). *APA dictionary of psychology, 2nd ed* (G. R. VandenBos (Ed.)). American Psychological Association. https://doi-org.libproxy.lib.csusb.edu/10.1037/14646-000

Weeks, S. N., Renshaw, T. L., Galliher, R. V., & Tehee, M. (2020). The moderating role of psychological inflexibility in the relationship between minority stress, substance misuse, and suicidality in LGB+ adolescents. *Journal of Contextual Behavioral Science*, 18, 276–286. https://doi-org.libproxy.lib.csusb.edu/10.1016/j.jcbs.2020.10.007

World Health Organization. (2019). ICD-11: International classification of diseases (11th revision). Retrieved from https://icd.who.int/

Yang, W., Morita, N., Ogai, Y., Saito, T., & Hu, W. (2021). Associations between sense of coherence, psychological distress, escape motivation of internet use, and internet addiction among chinese college students: A structural equation model. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*. https://doi-org.libproxy.lib.csusb.edu/10.1007/s12144-021-02257-